The Virtual isn't Real

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Abstract

The suggestion that we might live in a giant computer simulation seems plausible in large part because the hypothetical sophistication of the hypothetical simulation can be increased to meet almost any objection. From an engineering standpoint, the technological increases required by this strategy may not always be feasible. Proceeding nevertheless from an idealization, David Chalmers argues that the virtual objects and worlds displayed in perfect and permanent computer simulations could be regarded as real because, on those terms (perfection and permanence), our own world could just as well be virtual. I counter that real reality, or RR, possesses (at least) five features that no VR simulation could ever reproduce: RR involves genuinely causal regularities, it is older than any machine, it will outlast any machine, it supports living bodies in ways that cannot be replaced, and thus belongs to an entirely different category than artifacts. These differences are especially robust, since they all grant the possibility of present-moment indistinguishability while halting any collapse or blurring of the virtual/real distinction.

Keywords

disjunctivism; embodiment; pragmaticism; simulation argument; virtual reality

1 Introduction

Keanu Reeves once tried to explain *The Matrix*'s plot to a 15-year-old who had not seen the film, telling him how the protagonist is defending reality from an all-encompassing VR simulation. He was dismayed by the Gen Z's reply: "Who cares if it's real?".

Many people care. I certainly do—and so does Keanu (Watercutter [2023]). However, one of our most influential living philosophers, David Chalmers, would agree with the blasé

teenager. In 2017, Chalmers published an article in this journal arguing that the virtual is real. His position, which has since received a book-length treatment, can be broken down into three claims (Chalmers [2022: xvii]):

- "What happens in VR really happens", insofar as "[t]he objects we interact with in VR are real".
- "Life in virtual worlds can be as good, in principle, as life outside virtual worlds".
- "The world we're living in could be a virtual world. I'm not saying that it is. But it's a possibility we can't rule out".

In developing these claims, Chalmers tells an elaborate story for why "[v]irtual worlds need not be second-class realities. They can be first-class realities" ([2022: xvii]). I disagree with Chalmers' stance, so I want to tell a story of my own. I will argue that "real reality" or RR—to boost it with a redundancy rivaling the oxymoron "virtual reality"—has (at least) five features forever distinguishing it from VR.

In Section 3, I will argue that RR and VR contain *different regularities*, because the causal order one observes in RR might be (and most likely wasn't) programmed, whereas in VR it must be programmed. The mock cause and effect couplings found in VR could thus be altered by some mind, whereas in RR such alterations are simply not an option.

In Section 4, I will argue that RR and VR have *different histories*, because a VR world would need to be created at a time prior to its activation, thereby ensuring that RR is always older. RR may thus be understood as whatever was there prior to the invention of all machines.

In Section 5, I will argue that RR and VR have *different destinies*, because VR is a technology and all technologies eventually fail. This induction holds even when the event occurs in the distant future. RR may thus be understood as whatever will remain after the termination of all machines.

In Section 6, I will argue that RR and VR assume *different bodies*, because tricking the perception-action loop does nothing to satisfy the body's ingestion-excretion loop. RR can furnish both loops without VR, whereas the most sophisticated VR would still depend on RR.

In Section 7, I will argue that RR and VR belong to *different categories*, because VR is an artifact whereas RR is not. "Holographic Tiger" is a species of the genus "Hologram", not a species of the genus "Tiger". The same applies to VR. So, even when subjects cannot

confidently classify a given instance, subjects are either looking at a real object or a simulated one—with an exclusive disjunction between the two.

I have tried to arrange the first four differences in an ascending order of strength, with the fifth difference (in categories) acting as a big bow around the whole. Nevertheless, since a single successful argument would suffice to show that the virtual isn't real, it is possible to go directly to whatever section strikes one as most promising or intriguing. Importantly, the five differences I evince all grant the present-moment indistinguishability of VR, so we should begin by examining what that means.

2 The stalemate of indistinguishability

Presumably, an object is perfectly simulated when it cannot be distinguished from a non-simulated object. Suppose, for example, that a Hollywood company wishing to gauge the effectiveness of its special effects were to put before viewers a computer-generated moving image of an ape, of the sort seen in the recent *Planet of the Apes* series. Suppose that, when asked under controlled conditions whether the movie makers used trained monkeys or CGI, viewers perform no better than chance. I have consumed enough big budget Hollywood productions to accept that, with sufficiently-sophisticated CGI or whatnot, we can be visually duped. For better or worse, Chalmers takes phenomenology to be a "fancy word" for "subjective experience" ([2022: 214]). We may thus say that, "[i]n its maximal realization, VR would be tantamount to the creation of artificial phenomenal states, to a technological realization of synthetic phenomenology" (Metzinger [2018: 4]).

Thought-experiments like Descartes' "malicious demon of the utmost power and cunning" ([1984: 15]) have disposed generations to regard such massive deception as possible. Chalmers' account of VR capitalizes on those intuitions ([2022: 45–55]). Although at the moment "reality and digital virtuality [...] are still very much phenomenologically distinguishable" (O'Shiel [2020: 1]), the most extreme case of VR imitating RR would put us smack between two inferences, which we might capture as follows:

> Premise: This looks real.
>
> Premise: If this was real, it would look real.
>
> Therefore,
>
> Conclusion: It is real.

This competes with another reasonable inference:

Premise: This looks real.

Premise: If this was an elaborate fake, it would look real.

Therefore,

Conclusion: It is an elaborate fake.

Starting from first-person observational evidence, we have to reason to a conclusion about what is really real. The conclusions drawn are conjectures, since the content of each second premise is pulled out of thin air. So, if we judge these arguments by the canons of deductive logic, both commit the fallacy of the affirmation of the consequent. Such abductive inferences are nevertheless indispensable (Bellucci and Pietarinen [2020]), since they are the only way to generate fresh contents (neither certain deduction nor probable induction can do this). Yet, apart from maxims like the principle of parsimony or Ockham's razor, there is no armchair method for adjudicating competing abductive inferences. Hence, until and unless something is added to the mix, we are stuck between two arguments, either of which could be yielding a true conclusion.

Chalmers is mainly interested in a perfected version of VR technology, where all its current kinks have been worked out. For the most part, I will go along with this idealization. We should nevertheless flag that, from an engineering standpoint, perfect simulations might not be feasible, no matter how long we work at them. On the hardware front, silicon microchips are used for their property as semiconductors, but "the kinds of materials needed to create the sorts of complete simulations that Chalmers describes might not be possible. "There *are* physical limits to what can be done" (Lassiter and Kagan [2024: 1004]; emphasis in the original). On the software front, we can rightfully wonder "[w]hat algorithm can identify conscious subsystems and their intention and then quickly fill in the required information without ever producing an observable inconsistency? That's a much more difficult issue" than proponents of indistinguishable VR typically appreciate (Hossenfelder [2021]).

As we shall see in Section 5, people who work in software know that no system of any complexity is ever bug-free. This explains why such systems always need some measure of maintenance in order to stay functional. Yet, even with bug-free coding, differences could be revealed via unexpected interactions and affordances—which may be too numerous to list and thus program (Juul [2019: 337]). Additionally, if RR is continuous or analog, then discrete digital models will invariably leave something out (Juul [2011]).

Chalmers is nevertheless convinced that, once these technological hurdles are surmounted and human conduct is fully modeled, it will be possible to swap VR and RR

without loss. He discusses many variants such as augmented reality or AR, but it is unmixed VR which invites strong philosophical claims. In an AR simulation like *Pokémon GO*, the kitchen table that props up a mythical creature is not altered, so no major memory or computational resources are devoted to simulating the table (apart from what is required to reproduce it visually). As roboticists like to say, the world is its own best model (Brooks [1991: 140]). A VR table, by contrast, would have to be stored as a complex code of polyhedral shapes with surface textures and diffuse light reflections that shift as a user's spatial vantage changes (Christou and Parker [1995]).

Strangely, despite abandoning non-simulated elements, reality still takes up half of the expression "virtual reality" coined by Jaron Lanier (Bown *et al.* [2017: 248], Saker and Frith [2020: 1428]). This is confused and confusing. "Philosophy", Wittgenstein said, "is a battle against the bewitchment of our intelligence by means of language" [1958: 109]. I surmise that, if the public imagination had instead latched onto the rival label "ultimate display" (Sutherland [1965]), we would not be thinking that new worlds are now upon us. As things stand, marketing ventured into metaphysics, so we can start undoing some of the damage done by clarifying what reality really is. It is to that task that I now turn.

3 VR and RR involve different *regularities*

Clearly, VR can be "more realistic than other traditional forms of depictive media" (Tavinor [2019: 1]). It is quite another matter, however, to infer philosophical realism from photorealism. Real reality is more than convincing. It is, we might say, obstinate. As the philosopher and scientist Charles S. Peirce put it:

> The chair I appear to see [...] simply knocks at the portal of my soul and stands there in the doorway. It is very insistent, for all its silence. It would be useless for me to attempt to pooh-pooh it, and say, "Oh come, I don't believe in the chair". I am forced to confess that it appears. Not only does it appear, but it disturbs me, more or less. [...] I can only get rid of it by an exertion of physical force. It is a forceful thing. Yet it offers no reason, defence, nor excuse for its presence. It does not pretend to any right to be there. It silently forces itself upon me. [Peirce 1931–58: vol. 7, para. 619–21]

Paraphrasing Francis Bacon, the chair, to be commanded, must be obeyed. By contrast, a user in VR can warp a chair and/or stretch it to another size. Possibilities like these show that, "despite its thing-like characteristics, a digital-being cannot be a thing, because [...] it

defies the spatiotemporal constraints [...]" (Kim [2001: 107]). VR environments thus afford a level of control unmatched in RR. Indeed, "[t]he 'perfect' form of VR technology would be one in which the user [...] could reliably set the 'level of realness' for the experience" (Metzinger [2018: 5]). Importantly, this difference holds even if a simulated environment deactivates its safeguards to mimic more closely real objects and events. Relinquishing one's freedom is an adjustment that designers and/or users decide to do. RR, by contrast, is a setting without settings (or monthly fees).

Scientific laws show that the world is mathematically structured, so going further by holding that the world *is* mathematical structure (Ladyman *et al.* [2007], Worrall [1989]) can "help support simulation realism" (Chalmers [2022: 402]). After all, if reality is fundamentally mathematical, then the digital objects displayed by VR devices do not seem out of place. This, however, overlooks the fact that "mathematics in the animation industry [...] not only directs and organises, but *creates* non-mathematical theory, therefore its role is ontologically different [from] what we normally think about applied mathematics" (Hoffmann [2022: 2]; emphasis added). The regularities observed in RR are discovered, whereas the regularities observed in VR are made.

Even if we suppose that the universe was "fine-tuned" (Manson [2009]), the constants that resulted cannot be modified by us in any way resembling computer programming. So, if one stipulates that a simulation must be *perfect*, *permanent*, and characterized by laws that *never change*, then all that "simulation" adds is a designer (Zerilli [2022: 503]). Chalmers [2022: 134–5] seems surprisingly ready to accept this. Yet, whatever one thinks of intelligent design, it certainly counts as a difference. Imagine an indoor movie set for a small town with a large spotlight above it, in lieu of the sun. Suppose that a set designer consistently switched the light on and off to match, minute-for-minute, regular sunrises and sunsets. The movie set would thus be lit for the shortest duration on December 21st and the longest duration on June 20th. This lighting scheme could be observed, compressed into a law-like pattern, and predicted. Even so, the regularity at hand would be supported by agency, not causality.

Computers can simulate the normal appearance and behavior of real objects. Yet, when Chalmers writes that a tree "grounded in digital processes in a computer [...] produces leaves (which are themselves digital objects), it supports (digital) birds, and it produces experiences in me and in others who look at it" ([2022: 115]), his first uses of the verbs "produce" and "support" are "just loose talk" (McDonnell and Wildman [2019: 383]). Language often rests solely on convention, so fans of the video game *Street Fighter II* can say that "Chun-Li *struck* Ryu" while understanding perfectly well what they mean. However, not only are the

characters Chun-Li and Ryu fictional, "impacts" between them are fictional also. Better graphics will not change this.

This point can be recast as a difference in topological complexity. The causality of RR is a dyadic relation between a cause A and an effect B. By contrast, in VR, A relates to C (a computer, say) and C relates to B in a way that makes it appear that A causes B. So, while some (*e.g.* Wheeler [2022]) have argued that displays of causality in VR qualify as causal in the usual sense, the regularities of VR hold merely as a kind of pre-established harmony. As McDonnell and Wildman correctly note, "the genuine causal interactions are between the execution of bits of code that decide which frames to render, not between the rendered frames themselves" ([2019: 382–3]). Saying that a digital fist "hits" a digital face or that a digital branch "supports" a digital bird is thus like saying that, since my house gets its electricity from the city and since my neighbor's house gets its electricity from the city, my neighbor's house gets its electricity from mine.

"Digital" is shorthand for "number-based". Numbers do not causally interact with one another. This, however, is what "digital causality" would amount to. I fail to see how something devoid of substance could "cause" anything (in the sense of efficient causation). I readily grant that sufficiently sophisticated digital displays could fool users into thinking that they are witnessing some sort of causal interaction. But, to determine what is really real, being convinced here and now is insufficient. We must also consider what is before and after a given experience. It is to these neglected segments of the timeline that I now turn.

4 VR and RR have different *histories*

Chalmers thinks VR objects and worlds are real. It is impossible to assess this claim without considering the past, since VR could only pass as an imitation of RR "if every single facet of our perceptual experiences is covered to the level of indistinguishability, including an erasure of the 'stepping in' moment to the technology [...]" (O'Shiel [2022: 183]; see Slater and Sanchez-Vives [2016: 37]). We should therefore apply the methods used by curators and track *provenance*.

In the art world, looking harder at a painting is not considered enough to spot fakes. One must also track the "unbroken chain of ownership from the artist" to the current owner to "verify that the painting is the real deal" (Moses [2020: 39]). This is different from scrutinizing a present object in the hope of detecting some flaw or give-away. Tracking provenance is a historical inquiry, in which how we got to where we are matters. Even if

one could somehow erase all relevant memories, there remains a fact of the matter about whether or not one entered a VR simulation. A fact is no less factual by being in the past or forgotten. To say that duping one person (or many) about the past changes what happened in the past would be tantamount to saying that, if my partner gets hit on the head and forgets my infidelity, I never cheated on her. Subjective experience is thus ill-placed to settle metaphysical matters.

Chalmers would not be impressed by this appeal to provenance, since he thinks the world in which VR was invented could be an invention too. The basic idea is that, if one's standards for distinguishing the real from the unreal were acquired in a simulated setting, then it has always been fine for digital objects to be certified as real. So, "[i]f I've lived my whole life in a simulation, [then] every real flower I experience has been digital all along" (Chalmers [2022: 116]). This is clever. We mustn't forget, however, that Chalmers' argument has a conditional as its premise: the conclusion follows *on the assumption that* one has indeed been in a simulation for as long as one can remember. Not only is this contentious; it is the very claim in need of justification. So, either Chalmers' argument remains hypothetical—in which case it fails to prove what it ought; or it must be turned into a stronger *modus ponens*—in which case we need to be told in a non-circular way why the antecedent of the conditional ("I've lived my whole life in a simulation") should be endorsed.

Chalmers' arguments all proceed from a hypothesis: "To sum up: if we're in a *perfect*, *permanent* simulation, [then] the objects we perceived are real" ([2022: 116]; emphasis added). This conditional is only as plausible as its antecedent. The argument of the next section will be that VR can never be perfect, because it can never be permanent.

5 VR and RR have different *destinies*

It costs nothing to say things like "This civilization will last *forever*" or "He/she will *forever* be remembered". But, as I must remind my kids, forever is a very long time. Is it plausible to think of a VR simulation running forever? I argue that VR is destined to reveal its imperfections. Such an appeal to inevitable outcomes may seem surprising, but "[i]t is a superstition [...] to suppose that the word fate can never be freed from its superstitious taint. We are all fated to die" (Peirce [1931–58: vol. 5, para. 407, fn]).

Some (perhaps all?) concepts get their meaning from a contrast. To maintain that *all* objects and events are "virtual" would be akin to saying that all the speakers at a conference went beyond the average speaking time (I borrow this nice analogy from Bueno [2005: 11],

who borrowed it from Dagfinn Føllesdal). This explains why "[e]ven the story of *The Matrix*, where there is a virtual world, would not get off the ground if *no one* knew there was a difference" (Meijsing [2006: 444]; emphasis in the original). Chalmers thus investigates "sim signs" ([2022: 91–3]) that would reveal a world's virtuality.

This approach is on the right track. Signs are distinguished by their ability to lie (Eco [1976: 58]), but since the action of signs is a process (Deely [1990: 22–32]) constantly revealing new things, signs also have an irresistible urge to tell the truth—eventually (Champagne [2023a]). Of course, if we focus solely on present-moment experiences, our individual ability to distinguish VR from RR often fares no better than chance. Yet, to infer from this inability that the two experiences have indistinguishable sources is, on reflection, incomplete. What is really happening is that VR and RR are indistinguishable *for you*. In fact, to be more precise, the two are indistinguishable for you *now*. So, while Chalmers takes the correct approach, he unduly restricts its temporal scope, insofar as his discussions of a sign that "gives definitive evidence of the simulation" ([2022: 73]) all take place within the searchers' lifetime.

In our eagerness to know how things really are, we tend to forget that "[n]othing in the concept of truth requires it to surface fully in one generation, let alone in one's own generation" (Champagne [2020: 182]). Thus, in his famous imitation test, Alan Turing "made suggestions about length of interaction (five minutes)" that "are unmotivated and seem off-hand" (Dietrich *et al.* [2022: 130]). The fact that one is duped for the time being does not mean that everyone is duped or that one will be duped forever. Hence, "to make single individuals absolute judges of truth is most pernicious" (Peirce [1931–58: vol. 5, para. 265]). That is why, from this point onward, I will speak of *present-moment* indistinguishability (I could have also used short-term indistinguishability).

Factoring in extended time makes a big difference. William James argued that "there is no [distinction] so fine as to consist in anything but a possible difference of practice" ([1907: 46]). However, James got this ("pragmatist") idea from Peirce [1931–58: vol. 5, para. 402], who enjoined us to focus—not just on current practical effects—but on the totality of future effects. A fake is fake because it will eventually be detected, provided that the investigation is carried far enough. This ("pragmaticist") perspective, I argue, allows us to distinguish VR from RR.

In the inferential stalemate of Section 2, both arguments began with the premise "This looks real". We can venture a guess when we lack evidence, but such abduction is only one phase in inquiry. The full sequence is: belief as habit, tangible interruption of that habit, abduction as a guess about what might be happening, deduction of the observational

consequences that would follow were the guess correct, induction as a search for these consequences, and finally resumption of belief once the starting habit has been improved (Atkins [2023]). Since this self-corrective process happens over time, waiting can supply a difference, no matter how slight, that enables a differentiation. Crucially, because this verdict will be rendered in the future, it cannot come from a closer examination of the present evidence. Inquiry should therefore be collective and geared towards the long-term (Misak [1991]). Were we to express this outlook in a slogan, we could say that the first-person should not be given the last word.

Like physicists who start believing in fictions like frictionless surfaces, philosophers accustomed to manipulating toy models can be drawn to talk of perfect and permanent simulations. But, "[a]nyone who has ever written a program knows that mistakes are inevitable" (Chess and West [2007: 9]). From cars to hand blenders to desktop computers, breaking down is the one trait common to all the technologies I have ever handled. We may thus draw the inductive generalization that, sooner or later, all devices malfunction or are terminated. Call this view "malfunctionism".

Murphy's Law, the familiar adage that "Anything that can go wrong will go wrong", tracks experiences on an elongated timeline. Circumstances may fool one or many person(s) for a while. The malfunctionist nevertheless insists that, if we bide our time, whatever is fake will eventually reveal itself *as* fake. This long wait may be cumbersome, methodologically. Yet, no geologist ever rejected the idea that mountains move on account of our inability to witness this first-hand, within one lifetime. When discussing reality, the fact that the evidence takes a long time to show up just goes with the territory.

Chalmers [2022: 111] endorses the science-fiction author Philip K. Dick's definition of reality as "that which, when you stop believing in it, doesn't go away". In a way, this resembles the obstinacy encountered at the start of Section 3. Yet, given that computers can now generate high-fidelity graphics convincing enough to outsmart our human powers of discrimination, we must specify that reality is what doesn't go away when you stop all machines. When all simulated "worlds" shut down (due to wear or some other cause), whatever remains will, by necessity, be RR.

Faced with this malfunctionist appeal to end dates that can be postponed but never avoided, a proponent of VR might reply that she can "imagine" a computer program running smoothly without end. I, for one, find it *a priori* obvious that no machine can work forever. Since my intuitions are vivid and backed by all the actual evidence, who is to say that eternally-running simulations aren't just a fantasy? We easily go astray when we confuse what can be conceived with what is possible (Seddon [1972: 481]).

Speaking of things that seem possible but aren't, users immersed in VR could swear that their body is dispensable—until, that is, they feel hungry or need to pee. How seriously should we take such phenomena? Very seriously, I contend. I thus want to spend the next section exploring the ramifications of embodiment, since it sets RR decisively apart from VR.

6 VR and RR assume different *bodies*

In tech circles, it is common to contrast the cyberspace of VR with the "meatspace" of RR (Garley and Slade [2016: 126]). Why bother meeting friends or relatives in person, when virtual visits are so much easier? "Travel", says the narrator of *Neuromancer*, is such "a meat thing" (Gibson [1988: 75]). Indeed, "[r]unning through all cyberpunk texts is a fascination with the ways in which the flesh is inessential, irrelevant; there is a disdain for the too, too human flesh" (McCarron [1996: 267]). Ostensibly sympathetic to this, Chalmers recognizes that "[s]ome will say that sheer *physicality* is missing in VR, and physicality is something we value" [2022: 322; emphasis in the original]. But, he finds it "hard to see why sheer physicality should make the difference between a meaningful life and a meaningless life" (Chalmers [2022: 322]). I think our embodied physicality makes all the difference.

In contrast with Chalmers, Maurice Merleau-Ponty felt that "the flesh" captured a feature so fundamental and misunderstood that "there is no name in traditional philosophy to designate it" [1964: 139]. I want to stay away from exegesis, so I will not hazard a guess about what Merleau-Ponty's incomplete investigations hoped to discover. But, one result that kept resurfacing is that seers must be seeable, touchers must be touchable, and so on (Jenkinson [2017: 932]). VR severs this intertwining, since it turns all these musts into options. In the process, a certain metaphysical and social connection is lost. Let me explain.

Imagine a glass of wine. Proponents of VR like Chalmers consider the subjective perception of that glass and help themselves to the idea that a sufficiently sophisticated simulacrum would be indistinguishable from the genuine article. Once this starting point is accepted—the next section will show how it can be avoided—proponents of VR suggest that many first-person experiences could be coordinated to yield verifications that are fully virtual yet fully convincing. Hence, like an item in a multiplayer online role-playing game "cross-played" on different servers (McDonnell and Wildman [2019: 379]), a glass of wine becomes nothing more than a long string of 0s and 1s streaming into various brains in tandem. Since Chalmers holds that "being X is a matter of how things and people are interconnected, rather than a matter of what things are made of" ([2022: 201]), he deems

this approach sufficient.

Postponing for a moment the decisive question of how a digital simulacrum of liquid could ever be ingested, a real glass of wine means that it had to be produced, which in turn means that there needs to be wine producers, who learned their craft from other persons and who had to harvest real grapes. So, rephrasing Chalmers, I would say that being X is a matter of how things and people are interconnected, which *depends precisely* on what things are made of.

To be sure, a VR programmer could fine-tune things so that perception of wine requires perception of wineries and wine-makers. Still, coordinating first-person perceptions will take VR only so far, because *faux* food would fail to supply users with energy. Those preoccupied with epistemological questions make much of the fact that, when a simulation is good enough, the user experiencing it cannot know whether the world and things before them are real or fake. Investigating the stalemate laid out in Section 2 is the standard reflex. What I am arguing now is that this entire preoccupation with knowledge is irrelevant, because "[w]e feed on food, not knowledge of food" (Champagne [2023b: 28]). If all that is behind the food I perceive are 0s and 1s, I am duped. But, if all that is behind the food I ingest are 0s and 1s, I am dead. The famous "brain in a vat" is not a spirit in a vat, so it would need sugars. Hence, even in a world of fantasy, some tether to RR must remain.

Chalmers [2005] originally developed his stance as a reflection on *The Matrix*. When that movie's villainous character Cypher makes a Faustian bargain to re-enter the simulation and enjoy "juicy and delicious" steak, he gets the qualia but no calories. Pipes must thus supply his flaccid RR body with the carbohydrates, proteins, and other nutrients needed to sustain life. A satisfactory philosophical account must therefore take into consideration organs besides perceptual and motor organs.

We absorb *information about* the world via our senses, but we absorb the *world itself* via our gut (and lungs). Without the latter, the former would be impossible. Even the VR novel *Ready Player One* has the wherewithal to describe RR as "the only place to get a decent meal" (Cline [2011: 167]). VR cannot simulate digestive functions, so it would be a mistake to think that computers can program nutritious substances into being.

Our bodies fend off entropy and heat-loss (Schrödinger [1992]) by converting matter into energy, tissue, and the genetic instructions needed to rinse and repeat (Thompson [2007: 91–127]). The body shapes the mind (Gallagher [2006]), but the world shapes—and in fact becomes—the body (Mol [2021: 40–1]). So, while VR technology aims to understand and control perception and action, "such functions hardly exhaust the breadth and depths of the human body", insofar as "[b]eneath the surface body, perceiving

and perceived, acting and acted upon, lies an anonymous visceral dimension" comprised of "a set of vegetative functions hidden from myself no less than others" (Leder [1990: 209]). Far from arising spontaneously, the urge to pee that one gets when playing in VR (or doing anything else) for too long is the felt manifestation of processes that have been going on all along.

This assimilation of food does not fit neatly in the functionalist account of mind that philosophers and computer scientists rely on to gauge the convincingness of VR (*e.g.* Kim *et al.* [2020: 71]). Interestingly, in the classic Chinese Room paper that critiqued functionalism, John Searle wrote that some human traits (like intentionality) could not be fully captured by a computer program "because I am a certain sort of organism with a certain biological (i.e. chemical and physical) structure [...]" ([1980: 422]). Since ingestion and excretion can survive the deletion of perception and action but not *vice versa*, ingestion and excretion are at the base of that biological structure.

The brain and nervous system are only parts of a larger whole (Dryden [2016]). Neglecting what happens in our gut thus shows that "[t]he old dualism between soul and body is now reformulated in terms of a dualism between the neural body and the nonneural body" (Morujão and Leite [2025: 1333]). Chewing is under one's control, but we surrender that control once we decide to swallow. It is not just agency that vanishes but also interoception, since beyond a certain point one stops feeling what is going down one's throat. Barring indigestion, food inside one's belly is like the proverbial tree falling in the forest, since it is not perceived. Despite this mind-independence, the foods we send down our throats get digested just fine. Hence, like the dot inside the paisley of a Yin Yang chiasm, we have a pocket of the external world within us. Thinkers like Descartes and Chalmers believe that perception cannot reach this external world, but giving innards their philosophical due provides a "subterranean passage" that "places us all at once in the fortress that could not be taken by attack from without" (Schopenhauer [1844: 195]).

Chalmers recognizes that eating is "either impossible or at least extremely limited in current VR. One's physical body can supply some of these things, but then one is relying on physical rather than virtual reality" (Chalmers [2017: 341]). This admission does not bother him though, since he believes it "is probably not an essential and permanent problem" (Chalmers [2017: 342]). It is unclear how to answer this combination of nonchalant unconcern and optimistic forecast. In any event, methods currently used to trick the brain into thinking that it is eating include sending mild electrical currents on the tongue, altering the temperature inside the mouth, and sending chewing sounds into the ear drums via soft tissues and bones (Niijima and Ogawa [2016], Ranasinghe and Do [2016]). Leaving aside

the question of whether such methods are convincing, I find it distressing to see humans devising more ways to eat made-up food alone or in the company of made-up people (Spence *et al.* [2019]). I find it even more distressing to see one of our ablest philosophers cheering them on and demoting concern for the body as a possible "fetish" (Chalmers [2022: 322]).

In a bid to make his stance look more attractive, Chalmers ends up invoking a paradigm that undoes his entire outlook. Discussing the African philosophical concept of *ubuntu* (Ewuoso and Hall [2019], Gathogo [2008]), he writes: "I'd like to think that when I meet up with fellow philosophers in VR during the pandemic, we have *Ubuntu*" (Chalmers [2022: 319]). Although I would not blindly defer to traditional cultural insights that call for clarification and development, I believe the "way of looking at humanity" present in some African philosophies avoids "the mistakes of contemporary scientific and technological culture" (Shutte [2001: 8]). Chalmers' reference to *ubuntu* in particular backfires, because commensality or eating together is a vital component of that notion.

The Xitsonga expression "[o]ne finger cannot pick up a grain" (Meiring [2015: 1]) is usually invoked to stress the importance of communing with other people (Friedman [2023], Jönsson *et al.* [2021: 2]). But, given recent worries about being trapped in a giant simulation, we should stress how eating is also a communion with the world (the "grain"). Since VR lacks this crucial corner of the I-food-you triangulation (Davidson [2001: 86]), it is questionable whether genuine *ubuntu* can ever take place in a virtual medium. Tech companies sold us the idea that we can "meet" online (Hardesty and Sheredos [2019]). But, if the joint ingestion of food is as important as I suspect it is, we can only meet in meatspace.

Hospitality is such a pervasive part of our daily lives that we fail to notice just how metaphysically remarkable it is. We offer guests carefully chosen and carefully prepared chunks of the world that they voluntarily place in the dark spot within them, where action and perception vanish. If a belief is what a person is prepared to act upon (Bain [1872: 372]), then swallowing is a tangible bet that, despite one's inability to feel or control the smooth muscles of the viscera, the food stuffs in question will not cease to exist. Sharing a meal becomes a joint bet in realism—with all the trust in each other that a mind-independent world allows. Since a shared meal is both a natural event and an inter-subjective phenomenon, it acts as an "integrator" (Douglas [2003: 273]) meeting nutritional and social needs.

Compared with the vast literature on perception and action, Western philosophers have written little on ingestion (there are precedents in discussions of the Eucharist, *e.g.* Marion [2017]). "Obviously, Merleau-Ponty knew very well that humans only thrive as long as they eat, but he did not pursue the topic" (Mol [2021: 32]). Even less has been written on excretion (some exceptions would be Mboti [2015], Sarukkai [2002: 465]). I think it is a

mistake for assessments of VR to neglect these vital aspects of the human condition. Even Kant realized later in his career that what "seems to harmonize best with true humanity is *a good meal in good company*" [1798: 179; emphasis in the original]. In fact, meals with others were, "for Kant, part of the 'highest ethicophysical good,' the ultimate resolution of the conflict between our physical body and our moral powers" (Cohen [2008: 315]).

In a continuation of the chiasm motif, eaters can be eaten (Douglas [2013: 251–2], Sarukkai [2002: 473]). Revealing my beliefs in action, I acknowledge that you are more than a spectacle of surfaces when I eat what you *give* me but not what you *are*. Reciprocal ethical agents must therefore "foreswear cannibalism if they seek entrance into a human cosmos" (Jager [1999: 94]). It is not surprising, then, that commensality brings people together (Kniffin *et al*. [2015]) and reduces polarization (Chapple-Sokol [2013]). In a move relevant for today's lack of viewpoint diversity, Kant enjoined us to share meals in "alternating company" [1798: 179]. The person across the table is not an enemy to be objectified, but rather a flesh and blood human, just like you.

Participants to philosophical debates about VR all grant that the technology "can supplant the real *almost* completely, leaving only basic needs like some food, sleep and going to the bathroom left over" (O'Shiel [2022: 178]; emphasis added). These non-simulatable elements are typically mentioned in passing, when they are mentioned at all. However, I think they are decisive. The reason is simple (and testable): Without nutrition, there can be no cognition.

The body assumed by VR is a perception and action loop, whereas the body in RR is that plus an ingestion and excretion loop. Again, if the goal is to identify fundamental differences, this certainly counts as one.

7 VR and RR belong to different *categories*

The previous section stressed the importance of internal organs. However, like the digital glass of wine that can be seen and handled but never consumed, VR reduces everything to perceived surfaces. Chalmers [2022: 213] is impressed by the fact that, when surfaces change as a user moves, the coordination can result in a "cognitive penetration" (Kljajevic [2021: 11]) making 2-dimensional displays look 3-dimensional. Must we now accept that things with insides might not have any and that things without insides might?

> Consider situations in which a subject seems to see that, say, there is a red cube in front of her. The idea is that even if we focus on the best possible case, her experience could be

> just as it is, in all respects, even if there were no red cube in front of her. This seems to reveal that perceptual experience provides at best inconclusive warrants for claims about the environment. And that seems incompatible with supposing we ever, strictly speaking, *know* anything about our objective surroundings. [McDowell 2006: 22]

Descartes, for example, believed that (without Divine intervention) "the senses misrepresent the material world and its properties" even "in normal circumstances" (De Rosa [2010: 1]). Repudiating global skepticism (Chalmers [2022: 459]) on account of his structural realist commitments ([2018]), Chalmers never actually affirms that we are in a virtual world ([2022: xvii]). He does say, however, that "[o]nce simulations become a serious possibility, [...] we can't use" our commonsense views about the external world "to extract us from doubts" (Chalmers [2022: 80]). So, for all you know, the person in front of you may be an online avatar lacking internal organs.

We can call this use of present-moment indistinguishability the "highest common factor view". According to this view, our epistemic access to veridical cases can never be better than our access to misleading cases, because their superficial appearance is the same. Section 5 argued that we can know how things really are by waiting. It nevertheless seems that by placing the RR or VR verdict in the future, we concede "that it is impossible, on the occasion of a present lived experience, to decide whether it belongs in the category of truth or appearance" (Romano [2015: 305]). I could manipulate a seemingly solid object to determine whether it has a back side, but "[t]he tenth time I turn [it], will its existence be more certain than the first time?" (Romano [2015: 305]). Certainly, if one accepts the highest common factor view, such an exploration seems pointless.

I reject this entire approach. When one takes a pregnancy test on Monday and learns the result the following day, one does not become pregnant on Tuesday. Likewise, even if the status as VR or RR will be conclusively settled once all simulations stop/crash, there is a truth of the matter right now. We should therefore "express the knowledge in question as being of a disjunctive form", such that subjects "are *either* perceiving something *or* that they are merely under the impression that they are" (Smith [2010: 385]).

The possibility of being in a simulated environment may be high or low, depending on the circumstances. But, according to the disjunctive view I want to switch to, if one is in a RR-involving state, then one is fully in that state, with no hint of deception. One's inability to check the solution sheets does not alter this difference. I am, for example, horrible at the game of darts. So, when I throw, "I only sometimes hit the bull's eye. But, in any given shot, it is clear-cut whether I have or have not landed in that inner zone" (Champagne [2015:

157]). This holds even when I close the lights and render myself unable to gauge how I did. Capacities like dart-throwing and perceiving are liable of erring (in a manner expressible by a ratio or probability), but token uses of those capacities simply succeed or fail.

Chalmers makes much of the fact that, "[i]n a good-enough simulation, the world would look and feel to you exactly as today's world looks and feels to you now" ([2022: 57]). Does this possibility saddle us with the simulation predicament, such that we must demote the idea of RR? "This is where the disjunctive conception does its epistemological work. It blocks the inference from the subjective indistinguishability of experiences to the highest common factor conception" (McDowell [2006: 25]). Ram Neta explains this blockage nicely:

> [T]he similarities between a veridical perception and a subjectively indistinguishable hallucination are not like the similarities between one tiger and another tiger: different creatures of the same species. Nor are they like the similarities between a particular Bengal tiger and a particular Siberian tiger: different creatures of different species, but belonging to the same genus. Rather, the similarities between a veridical perception and a hallucination are like the similarities between a tiger and a hologram of a tiger: the former is an animal of a certain genus and species, whereas the latter is not an animal at all but a fundamentally different kind of thing. *There is no genus the species of which include tigers and holograms of tigers*. [Neta 2008: 312; emphasis added]

This may be illustrated by tracking comparative degrees of abstraction and concreteness (Kelley [2014: 9–41]). The fact that subjects can be deceived does not license the taxonomy shown in Figure 1.

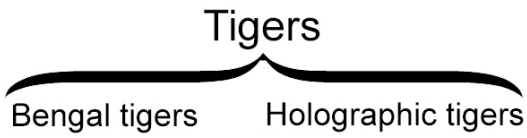

Figure 1: The highest common factor view

There is no highest common factor between Bengal tigers and holographic tigers, at least none that is metaphysically relevant. Even if a subject is unable to tell which is which, a subject is *either* looking at an animal *or* a technological artifact. Given this exclusive disjunction, the correct way of picturing the situation is captured in Figure 2.

Figure 2: The disjunctive view

The comparison I have just made could no doubt be rendered in greater detail. Still, it suffices to articulate the thought that RR and VR house *different kinds* of things—even if first-person observation often leaves one unable to assign a particular instance to the correct category. Conceptual arrangements are often not evident, in the same way that making "Whale" subordinate to "Fish" is an honest mistake. Still, in philosophy just as in science, getting a classification wrong can only cause confusion. I think a similar category mistake happens whenever people say that VR is "real".

The assumption dominating discussions of technology since Alan Turing's [1950] imitation test is that, if a subject cannot tell an artificially-generated experience apart from a naturally-generated one, then we can essentially swap one for the other. The disjunctivist is prepared to accept that a sufficiently sophisticated digital tiger could fool zoo visitors and biologists. However, despite such present-moment indistinguishability, the virtual/real distinction holds. Our inability to distinguish reals from fakes is a *psychological* feature; it cannot transmute fiction into fact and fact into fiction. So, by dismantling the highest common factor view, a disjunctive conception of experience robs Chalmers of the very first move he depends on.

Disjunctivism, as I have used it here, is not some positive thesis or piece of constructive theorizing about perception or illusion. Rather, it is part of a "therapeutic" approach to philosophy. In some instances, we deem something a conundrum only because a picture has "held us captive" (Wittgenstein [1958: 115]). A therapeutic approach thus "involves exposing mistaken assumptions [...] and, once we have realized the error of our way of seeing things", putting "forward new pictures" (Dingli [2005: 195]). Such interventions can be modest. Here, we are invited to switch from a conjunction to an exclusive disjunction. Looking at the two arguments juxtaposed in Section 2, the highest common factor view stresses that the first premises are the same (which is true), whereas the disjunctive view stresses that the second premises are different (which is also true). No argument "compels" one to foreground the difference over the similarity, so reshaping how the relevant categories hang together brings into play an element of voluntarism. Even so, I submit that the taxonomy shown in Figure 2 is more reasonable than Figure 1. The previous four differences, I think, support this.

In the short span since we invented computers, the computing power of those devices has increased dramatically. We have also run countless simulations. Assuming that these trends continue, "[w]hat are the odds that we are among the relatively few nonsimulated beings?" (Chalmers [2022: 82]; see Bostrom [2003]). The entrepreneur Elon Musk puts the odds of being in RR at "one in billions" (quoted in Koebler [2016]). The physicist Lisa Randall thinks that the probability of massive VR deception is "effectively zero" (quoted in Moskowitz [2016]). Somewhere in between, Chalmers [2022: 101] estimates that we have a 25% chance of being in VR.

I have no idea how people are reaching these numbers. Moreover, I worry that the simulation argument begs the question, since it employs "fictional constructs that only serve their purpose if we engage with them as if they were true" (Agatonović [2023: 1584]). In any event, since humans are prone to the base rate fallacy, we should clarify that, when there is a 25% chance that one is looking at a holographic tiger, one is not looking at something composed of three parts flesh and one part light. Rather, one is either looking at something 100% holographic or something 100% real—in the same way that a woman with a 5% chance of being pregnant isn't 5% pregnant. Disjunctivism thus reminds us that, if the dart lands on the 75% probability space calculated by Chalmers, then we are 100% in RR.

8 Realistic I.T. does not become reality

Clearly, the signs relied on to figure out what is real must themselves be real in order for metaphysical inquiry to even be attempted (Champagne [2022: 131–4]). Photons emitted from a surface in accordance with a digital code thus exist and stand ready to be interpreted. However, securing this mind-independence does not secure the reality of what those photons and code are *about*. Chalmers recognizes that "[v]irtual worlds involve not just data structures but also human users" who experience them ([2019: 455]). He nevertheless believes that "[i]f I take my [VR] glasses off but leave the program running, the digital object [...] satisfies our first three criteria for reality—existence, causal powers, mind-independence—at least to some extent" ([2022: 235]). Surely it will not do to argue that the character Gollum from *Lord of the Rings* is real by insisting that this movie can continue playing after all attendees have left the room.

Naturally, when minds experience them, the various objects shown in a VR simulation satisfy Chalmers' criterion that a thing be as it seems ([2022: 116]). We could thus say that:

> [S]eeming presupposes being, and in two ways. On the one hand, seeming is often, if not

> always, precisely, a seeming *to be* [...]. On the other hand, seemings *are* beings; whether they turn out to be objects or properties or events or relations, they are in any case *not nothing*. [Carman 2007: 99; emphasis in the original]

This minimal concession, however, does not entail that every candidate for the ontological status of "real" gets this stamp of approval, merely in virtue of showing up in experience. After all, scientifically-inclined thinkers who denied the unicorns of European lore never put themselves in the implausible position of denying that such beasts could be drawn on the pages of medieval bestiaries. VR may be fancier than manuscript illumination, but the basic insight remains untouched.

Even so, let us suppose for the sake of argument what I have said is wrong and that VR meets the criteria usually relied on to gauge what is real. How should we react? Such a situation would, I contend, precisely throw those criteria into doubt. By analogy, imagine what would happen if a pharmaceutical company developed a performance-enhancing drug for athletes that perfectly mimicked regular blood markers. Drug detection agencies would not accept the prohibited artificial enhancement as now part of the natural human profile. Instead, they would strive for better testing. Likewise, if Chalmers has shown that VR meets our standard ontological criteria, then this is a great reason to think that those criteria need to be revised/expanded.

Luckily, no revision or expansion is needed, since Chalmers' "list of criteria for applying the word 'real' [...] departs from ordinary usage, in which in order for a thing to be 'real' it is 'not simulated on a computer'", (Robinson [2022]). It would be disappointing if, when all is said and done, talk of VR objects and worlds being "real" rested merely on a shift in meaning. As one technology author observed:

> There was a time (still in living memory) when "virtual" [...] meant "almost true" or "for all intents and purposes, but not completely, not *truly*". One could say, "I was virtually happy". Were you truly happy? No, you weren't, because adhering to the "virtually" was the sense of the false note, something missing [...]. The word "virtual" [...] has been captured by computers. To say "virtual" means living in the not-quite-here-ness of the machine and its software. The word retains the sense of the missing, the not real. But somehow this not-ness has become a good thing. [Ullman 1997: 126–27]

Some regard VR goggles and gloves "as a present, successful, direct, empirically informed, and relatively well understandable [*sic*] technology to create reality" (Ropolyi [2016: 46]). This is preposterous. No company can sell a machine capable of "creating reality". VR is the

ultimate display (Sutherland [1965]); nothing less, nothing more. This ultimate display may support "consensual hallucinations" (Chalmers [2022: 206]), but consent and hallucination can accomplish only so much.

Of course, in the heyday of postmodernism, some French thinkers held that VR abolishes the separation "between the subject and the object, between the real and its double", with the consequence that "nowhere is value judgement now possible anywhere any longer: either in art, or in morality or in politics" (Baudrillard [2004: 57]). Culturally, the efforts of these Continental provocateurs bore fruit—*The Matrix* includes a subtle reference to Baudrillard's *Simulacra and Simulation* [1995]. However, most analytic philosophers pride themselves in having dodged the fashionable relativism "that made it respectable to be cynical about truth and facts" (Daniel Dennett, quoted in Cadwalladr [2017]).

Chalmers' contribution clearly belongs to the analytic tradition (Chalmers [2022: 370]; see Breil [2024: 41]). Yet, I fail to see why, if the postmodernist "update on the old Protagorean relativist theme that 'man is the measure'" (Norris [2020: 10]), was worth rejecting when it came from a Parisian *café*, it suddenly becomes worth adopting when it comes from Silicon Valley. Reality is not "socially constructed"—and it is not technologically constructed either.

9 Conclusion

Tech companies are already vying to capture our attention with customized information feeds (Zuboff [2019]), but VR is poised to dramatically enhance this. So, when the reign of smartphones ends, the successor device will likely be more invasive. Premature sales pitches for a "metaverse" swallowing all platforms (Han *et al.* [2022], McStay [2023]) have thus provided a precious window of time in which to think more critically about VR. Chalmers explains how, in his "book depicting VR as a twenty-first century version of Plato's Cave, Mark Zuckerberg is running the simulation" (Chalmers and Doolan [2022: 43]; illustration in Chalmers [2022: 8]). He notes that "[w]hoever owns these virtual worlds are going to be basically like the gods" (Chalmers and Doolan [2022: 43]) and remarks that, "[i]t's easy to imagine that in the future, [...] [i]nstead of a single universal reality, there will be Apple Reality, Facebook Reality, and Google Reality" (Chalmers [2022: 230]). I too find this easy to imagine. I also find it frightening—more frightening, at any rate, then Chalmers seems to.

The speculative hypothesis that "[w]e are and always have been in an artificially designed computer simulation of a world" (Chalmers [2022: 29]) is especially annoying, because it

normalizes goods and services sold by for-profit companies into an inevitable part of the human condition. Gen Z may not care whether it's real, but we ought to care that they don't care (Champagne [2024], Haidt [2024]). Such resistance, however, seems futile when a technological development is presented as a done deal. The message being sent is clear: " 'Virtual reality is genuine reality' so embrace it, says philosopher" (Chalmers and Sample [2022]; see also Chalmers and Webb [2022]).

I ardently disagree. So, at the risk of championing "an outmoded view of reality" (Chalmers and Ramakrishna [2019]), I have highlighted five reasons why the objects and worlds displayed in VR are not and can never be really real: RR involves genuinely causal regularities, RR is older than any machine, RR will outlast any machine, RR supports living bodies in ways that cannot be replaced, and thus RR belongs to an entirely different category than artifacts. This, in sum, is the story I wanted to tell. Hopefully one or more of these arguments can empower those who share my concerns about VR's encroachment.

Importantly, VR and RR remain different—even if individuals are unable to spot the difference. The irony is that this deflation of indistinguishability was pioneered by Chalmers. In *The Conscious Mind* [1996], he juxtaposed a real human and a consciousness-lacking counterpart, granted their indistinguishability, yet rejected the conclusion that indistinguishability turned real humans into "zombies". Here, I have juxtaposed a real object and a reality-lacking counterpart, granted their present-moment indistinguishability, yet rejected the conclusion that such high-fidelity mimicry turns simulated objects into real ones. Arguments about consciousness eventually succeeded in convincing many (most?). I surmise that, in time, arguments about the distinctive nature of RR will meet with similar success.

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