The Transition into Virtual Reality

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Abstract
In "The Virtual and the Real," David Chalmers argues that there is an epistemic and ontological parity between VR and ordinary reality. My argument here is that, whatever the plausibility of these claims, they provide no basis for supposing that there is a similar parity of *value*. Careful reflection upon certain aspects of the transition that individuals make from interacting with real-world, physical environments to interacting with VR provides a basis for thinking that, to the extent that there are good reasons to deny the reality of virtual objects, there are also reasons to place a correspondingly *higher* value upon the experience of interacting with a VR environment. Chalmers' assumption to the contrary arises from a subtle misrepresentation of how the phenomenon of *cognitive penetration* works in the perception of virtual objects, and from an unwillingness to acknowledge how our attitudes toward virtual environments are conditioned by the values we adopt when engaged in gameplay.

Keywords
Virtual reality, David Chalmers, games, cognitive penetration, experience machine.

In "The Virtual and the Real," David Chalmers make the startling contention that "in the long term, and in principle, virtual reality may well be on a par with physical reality."[1] My aim in this paper will be to examine some of the implications of this claim. I shall say nothing to directly challenge Chalmers' proposal that objects, events, and experiences that take place in virtual reality (hereafter VR) are real and non-illusory, nor shall I raise any objections to the broader program of metaphysical structuralism out of which this claim arises. But I do want to articulate some reasons to be skeptical about

[1] Chalmers 2017: 350.

Chalmers's suggestion near the end of his paper that whatever case can be made for an epistemic and ontological parity between VR and ordinary reality also provides support for a similar parity of *value*. I shall argue that careful reflection upon certain aspects of the transition that individuals make from interacting with their real-world, physical environments to interacting with a virtual environment in fact provides powerful reasons to believe the contrary. For at least a very wide range of cases, to the extent that there are good reasons to *deny* the reality of virtual objects, there are also reasons to place a correspondingly *higher* value upon the experience of interacting with a VR environment. To the extent that this represents a robust correlation, the plausibility of the first three propositions of Chalmers' formulation of what he calls "digitalism"[2] about VR will turn out to undermine the plausibility of proposition (4), thereby threatening the overall coherence of his position.

I shall restrict my attention for the most part to the sorts of temporary and "imperfect" virtual environments that can already be accessed via widely available VR interface technologies such as the Oculus Rift, the Icaros, Senso Gloves, etcetera. It is easier to draw axiological conclusions about types of VR experiences that are already available to consumers than it is to speculate about the sorts of experiences that technologies of the far future might or might not be able to provide. For such imaginative exercises require one to build in an awful lot of *ceteris paribus* considerations—for example, that our on-board organic sensoria will continue to operate more or less as they do now as new VR technologies develop, or that the physical environment human beings inhabit will not itself in the meantime become radically more or less hospitable to us. At the end of the present paper, however, I shall also very briefly raise some concerns about what Chalmers has to say about one purely hypothetical example of what he describes as a "perfect and permanent"[3] virtual environment: Robert Nozick's famous experience machine.

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[2] Chalmers 2017: 311.

[3] Chalmers 2017: 310.

1 Naïve and sophisticated perceivers

A crucial feature of Chalmers' defense of digitalism is the distinction he draws between naïve and sophisticated users of VR. He argues that when one is first beginning to accustom oneself to certain sorts of virtual environments, one might well develop the false belief that one is interacting with non-virtual objects. The attractive flower-pot or the rampaging security guard one sees whilst gazing into an Oculus Rift might well strike one ("viscerally"[4] and pre-cognitively, at least) as being type-identical to the flowerpot on one's kitchen table, or the security guard one fled from earlier on that day through actual, physical space. If users of VR devices reliably remained stuck in this "naïve" state, then this would, Chalmers suggests, be evidence that the perception of objects in virtual environments is illusory.[5] But in fact, after a while, *cognitive penetration* (or what Chalmers refers to as "cognitive orientation") will almost inevitably take place, and the psychologically normal VR user will be bound to acquire the habit of viewing virtual guards and flowerpots *as* virtual (i.e. rather than physical) objects.

To support this point, Chalmers develops a suggestive analogy between the experience of VR and the perception of objects in mirrors. Any driver who has become habituated to using a car's rear-view mirror will see the other cars it reflects as being behind her own. Similarly, habituated users of a regular plane mirror will see the objects reflected therein as being on the near side of the glass. This, Chalmers proposes, can be taken as evidence for the plausibility of what he calls "mirror veridicalism." And the case to be made for veridicalism abut mirrors is analogous to the case that he thinks can be made for realism about virtual objects, based upon his observations about VR users who have overcome their initial naiveté.

I am not entirely sure that Chalmers' claim about how we see objects in mirrors captures the ordinary idioms used by non-philosophers to characterize the phenomenon of *seeing-as*. Recognizing that an oar half-immersed in water isn't really bent reflexively enough to see it *as straight* is a matter of ordinary habituation. But seeing

[4] Chalmers 2017: 327.

[5] Chalmers 2017: 329.

the image of the oar underneath the water *as refracted* requires a significantly richer conceptual repertoire. Seeing objects within one's visual field *as virtual* seems likewise to require the possession of some relatively sophisticated concepts (e.g. that of *virtuality* itself). There is no obvious parallel for this in the case of seeing objects reflected in a plane mirror as being behind one's back.

These minor reservations may be set aside for the moment, however, in order to focus upon what strikes me as a more serious limitation of the analogy between mirrors and VR. The metaphysical conclusions that Chalmers wants to draw about VR derive at least some of their plausibility from a crucial assumption that underlies this analogy. Chalmers takes it to be the case that, for both of these two perceptual media, the phenomenon of "cognitive orientation" provides the perceiver with an unequivocal epistemic and practical *benefit*. This is close to self-evident in the case of mirrors: being led by one's perceptions to believe and act as though reflected objects were behind the back of a plane mirror would make the existence of the bathroom wall upon which it hangs an ontological mystery, and would possibly also lead to some nasty bruises. But it is only the case about a naïve VR user's perceptions of virtual objects to the extent that we think of her as being subject to a very specific type of *confusion* about her own position in both physical and virtual worlds. And it seems to me that she will only experience the relevant type of confusion when the transition that she undergoes from perceiving objects in a physical environment to interacting with a VR environment takes place under very specific and highly contingent sorts of circumstances. I shall elaborate upon this point at greater length in what follows, in the context of some broader reflections on the extremely psychologically and axiologically diverse uses of VR.

2 Games as paradigms of VR

Chalmers very sensibly observes that our tendency to think of VR environments as video games can be a source of unwarranted prejudice. As VR technologies continue to develop and are integrated more firmly into the cultural mainstream of first-world societies, we will probably see them being used increasingly as media of communication, social intercourse, and experimental science. That having

been said, the decision that one makes when one chooses to play a highly immersive video game seems to me to possess some teleological features that make gameplay a useful paradigm to consider when trying to figure out the epistemic, metaphysical, and axiological significance of the transition to VR.

In talking about the distinguishing characteristics of gameplay here, I shall take my cue from the very famous and influential account Bernard Suits provides in his 1978 philosophical masterpiece *The Grasshopper.* Suits' characterization of what all games have in common is the most influential such discussion (with the possible exception of Wittgenstein's strictly deflationary account) in modern philosophy, and has been a touchstone for philosophers and researchers in game studies since before VR technologies became widely available. For Suits, to play a game is simply to engage in "the voluntary attempt to overcome unnecessary obstacles."[6] We choose such activities because the goals that they present us with, while often superficially inconsequential (e.g. throwing a ball through a hoop, removing all of an opponent's plastic counters from a sheet of cardboard) are worth pursuing simply in order to experience the activities associated with their pursuit. In a well-designed game, the placement of obstacles (e.g. the rule in basketball against double dribbling, the prohibition in checkers against moving backwards) enhances the value for players of actively pursuing the game's otherwise strictly nugatory goal.

The aims of somebody who puts on a VR headset or haptic gloves in order to play a game (thus conceived) can be described in a few different ways. She will, in the first place, have an interest in engaging in the sorts of activities that gameplay makes possible—fleeing from virtual security guards, shooting down virtual space invaders, or (in the brilliantly conceived 2016 VR game *Job Simulator: The 2050 Archives*) preparing virtual fast food meals for friendly virtual robots. Assuming the plausibility of Suits' analysis of what all games share in common, she will thereby also have an interest in pursuing the goals that the game directs her to pursue.

To the extent that the player of a VR game is able to sustain this entirely artificial interest in a game's ultimate goal, her attitude will bear a curious similarity to that of Chalmers' naïve users of the

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[6] Suits 2014: 44.

medium. She will not necessarily be shocked or exhibit clumsiness every time virtual flowerpots or virtual security guards fail to exhibit some of the traits their non-virtual counterparts do. But the state of voluntary self-delusion she had entered into as the result of *choosing to value* the goal of the game will require her to orient herself toward the objects in the VR environment both cognitively and affectively in a manner that involves suppressing any developing tendency to see them *as* virtual. The extent to which this is true will of course vary depending upon the nature of the game, mainly as a function of how deliberately stylized an environment it presents, as opposed to aspiring to whatever one might call the VR equivalent to photorealism. But it will especially be the case for any game the goal of which the player is required to represent to herself in the game's own proprietary idiom (i.e. "rescue the princess," or "escape the zombies," rather than "score the most points" or "defeat the other (real-life) players"). And yet, this sort of voluntarily selective attention is quite different from the kind of confused disorientation that Chalmers seems to think will be a more or less inevitable consequence of naïveté about VR. The reason for this seems to me to be that, when we think about Suitsian gameplay in virtual environments, we cannot help but discover an interesting ambiguity in the very notion of cognitive penetration.

Other philosophers have defended the idea that our experiences of the everyday world are unavoidably penetrated by cognition in the context of a wide variety of more traditional debates about, e.g. the theory-ladenness or relativity of perception, the irreducibility of the mental, and the idea that all human thought constitutively involves inference. Such arguments almost always seem to turn upon the idea that some intrinsic feature of a particular type of experience must be altered by the experiencer's application of a *concept* to the *content* of that experience. Sometimes, in such arguments, it is the thinker's *evaluative attitudes* that are treated as the source of conceptual involvement in perception, whereas in others, it is merely her inclination to integrate novel information into a broader worldview that brings concepts into play. An example of the first sort of cognitive penetration is the well-documented tendency exhibited by children from poor families to see coins as physically larger than the children

of wealthy families do.[7] Some examples of the second sort are the tendency of experimental subjects wearing inverting spectacles to (eventually) perceive the world through them as right-side-up,[8] and the tendency of ordinary observers of blurry and ambiguous 2D images to see them as being separated into figure and ground.[9]

But what Chalmers characterizes as naiveté about VR environments actually seems to me to be a more complicated type of hybrid state. The agent who enters a VR environment with the aims of the Suitsian gamer will on the one hand be motivated to treat the virtual objects she encounters with a type of selective attention that would be impossible to sustain toward middle-sized dry goods for very long in everyday life (at least consciously).[10] For the virtual rocks and stones and tress all around her in virtual space will be objects of interest to her almost exclusively insofar as they possess properties that will either aid or impede her search form the princess/fight against the aliens/etc. At the same time, though (and for close to the same reasons) she will be powerfully motivated to *see them as* real rocks, or stones, or trees, even if their surface resemblance to such things is badly compromised, whether by common limitations of contemporary VR hardware such as pixilation, lag, or a restricted color palette, or by some more subtle, holistic source of difference from the everyday world exhibited by the VR environments of the future.[11]

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[7] See Bruner and Goodman 1947: 33–44.

[8] See Churchland 1988: 167–87.

[9] See Zeimbekis 2015: 298–328.

[10] See Suits 2014: 11–2 for some interesting speculations as to whether the evaluative attitudes of the gamer might be somewhat more pervasive than we usually think, at least at a subconscious level.

[11] One's interest in gameplay thus works a bit like the way subconscious drives are supposed to operate according to the Freudian theory of dream interpretation. Chalmers remarks that "mind-dependence may entail that experience in dream worlds is less valuable than non-virtual experience, since we value engaging with a world outside our minds." But he also suggests that this source of disvalue may be mitigated if one is dreaming lucidly, which he seems to regard as analogous to "sophistication" about VR (see Chalmers 2017: 348). For the Freudian about dreams (like the Suitsian about games) their value as experiences will be determined less by the degree of self-awareness with which they are undergone,

How might what Chalmers calls "sophistication" about VR environments manifest itself in these sorts of circumstances? Perhaps some gamers will occasionally undergo a subtle shift in evaluative attitudes that allows them to retain the motivation to apprehend virtual objects *as* objects, while focusing their attention less exclusively on the properties thereof have that are manifestly relevant to gameplay, i.e. treating them as *less* valuable, at least relative to their own proximate concerns. In her 1997 book about interactive storytelling *Hamlet on the Holodeck*, Janet Murray describes her experience of a similar sort of moment while watching an especially immersive IMAX film:

> A couple in what would ordinarily be the background crosses the street. But there is no background. I am there. My attention is caught, and I want to follow that couple and see what *their* story is. Instead, the camera relentlessly drags me into a bar on the corner with the young boy…I am uncomfortable at these moments because the three-dimensional photography has put me in a virtual space and as thereby awakened my desire to move through it autonomously, to walk away from the camera and discover the world on my own.[12]

Some well-regarded but eccentric indie video games (e.g. Double Fine Productions' 2017 game *Everything,* Imagineering's 1995 game *Desert Bus*, and some recent so-called "walking simulators" such as *Dear Esther* and *The Stanley Parable*) and some episodes from more successful mainstream games (e.g. the final scene of Cyan's 1993 bestseller *Myst*) do seem to be designed to bring about something like this effect in the ordinary player. But it is an unquestionably marginal phenomenon, and often (if not usually) provokes the same sort of frustration and imaginative resistance in gamers that Murray experienced as a filmgoer.

In light of these observations, it is also worth asking to what extent species of VR that we do not normally think of as principally game-like also rely for their effectiveness upon inducing or provoking Chalmers-style "sophistication" in their users. Given the broad

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and more by the intrinsic qualities of how it feels to navigate one's way toward some partially deferred object of desire.

[12] Murray 2017: 54.

diversity of uses of VR, both present and projected, speculation on this topic should be extra-tentative. But it seems to me that as a general rule, one could expect the sophistication in one's perceptions of a virtual world to have a positive effect upon the value of those experiences more or less to the extent that one's decision to make the transition to VR in the first place was motivated by purely instrumental considerations. What distinguishes the experimentalist, the teleconferencer, and the speed-dater from the gamer is that they do *not* value the experience of occupying a VR environment because it enables them to take on an entirely novel set of goals. When you get on *Facebook Spaces* because you want to talk to a friend, or put on an Oculus Rift to drive an actual tank by remote control, your actions need not take on any new teleological characteristics that they didn't have before you transitioned into the relevant VR environment.[13] If one ever reaches a point at which one comes to see the objects within such environments *as* virtual, there is no particular reason to think that this will interfere with the original purpose one entertained upon first plugging in. Such "sophistication" might, in fact, usually be helpful, insofar as it reduced the possibility of distraction or carelessness in performing one's social or navigational maneuvers. Whereas most game-specific goals can only be described and entertained by deliberately eliding the distinction between virtual and non-virtual objects. Ask any active player of *The Brookhaven Experiment* what she is up to, and she's far more likely to say "I'm fighting zombies" than "I'm engaging in shooing practice" or "I'm interacting with computational objects." To the extent that she becomes persistently aware of the virtuality of the dark beings galloping toward her through the darkness, she might fare either better or worse at marksmanship or point-scoring, but she would surely have less success at achieving the sorts of psychological states that fans of such survival horror games

[13] The widespread use of VR in educational contexts (e.g. to train surgeons or cure phobias) occupies an interesting middle ground between these two extremes. The aspiring surgeon isn't cutting into her virtual patients in order to thereby heal some specific, non-virtual human being; rather, if the experience in VR goes well for her, it increases the likelihood that similar experiences outside of VR will go well, when there's a lot more at stake. But it is the phenomenological similarity of this real-world experience to what happens in VR that makes the VR training experience worth undergoing in the first place.

typically immerse themselves in VR in order to pursue.

To summarize: it is not exactly that the greater the value of our experiences in VR, the less "sophisticated" our perception of virtual objects will tend to be. It's rather just that, if we take games as described by Suits as the paradigmatic example of VR experiences that are undergone for their own sake, then (at least as a crude initial approximation) the less "sophistication" is required for an experience of VR, the more *intrinsic* value such experiences can be presumed to have for those who undergo them.

Games themselves do, of course, also have instrumental value—they distract us from the wearing demands of our practical lives and can be played competitively for real-world status and material rewards. And VR-enhanced communication, social interaction, and scientific experimentation can also themselves be worth engaging in partly because of the element of playfulness involved. But given the overwhelming *de facto* contemporary predominance of gameplay as the preferred form of interaction with VR environments, I think that, to the extent that the lines start to blur between gameplay and the other activities Chalmers mentions, that should only increase our confidence that video gaming (at least as understood according to Suits' relatively expansive criteria) deserves to be regarded as the paradigmatic type of VR experience.

For Chalmers' variety of structuralist realism, one of the main reasons to think that some virtual *X* is real is that, if it exhibits sufficiently similar "abstract causal organization" to a regular *X*, then it just is, also, a regular *X*. So, to use Chalmers' own example, a virtual calculator that can perform the requisite operations *via* a similar virtual interface just *is* a calculator.[14] Based on the observations provided earlier about the nature of Suitsian gameplay, when a virtual environment is designed to elicit user participation for traditionally game-specific purposes, this is bound to increase the probability that the objects one finds there will actually bear *less* of the relevant sort of similarity to their external counterparts. For such objects will be designed to either facilitate or impede the player's pursuit of game-specific goals, not to reliably mimic some critical percentage of the causal/counterfactual properties of the non-virtual objects they

[14] Chalmers 2017: 14.

superficially resemble. As long as the virtual flowerpot matches with the virtual sofa covers, or can be thrown at the virtual zombies, it's not going to matter whether or not it's virtually water-permeable. [15] As for the case of the hypothetical VR environment that *perfectly* mirrored the abstract causal organization of the one that we presently occupy, what possible reason could one have for entering it at all, other than a temporary, morbid, and probably quickly exhausted curiosity?

"If it is structure (perhaps along with the mind) that gives things value," says Chalmers, "it is no surprise that virtual reality (along with the mind) can be valuable." [16] I have tried to suggest, using Suits' account of the peculiar teleological structure of gameplay as a guide, that the paradigmatic mental attitudes that can be expected to motivate the transition into VR will place relatively little value on complexity of causal structure. What matters experientially about the objects in a VR environment is more normally the extent to which they serve as the right sorts of aids or obstacles to the achievement of the user's intensely pursued, but ultimately ephemeral aims. And if this is true, then to believe that value is strongly correlated with reality for the inhabitant of VR, we would also have to believe that the whole rest of the universe was designed this way too, as a sort of ubiquitous Suitsian playground. [17] I doubt that Chalmers would be prepared to endorse such a brashly optimistic theological worldview.

3 Experience machines and ubiquitous virtuality

Near the end of his paper Chalmers discusses Robert Nozick's famous "experience machine" argument, and argues that many of the best reasons for not plugging in to the experience machine (hereafter EM) should *not* also be taken as reasons against using VR. The chief axi-

[15] Chalmers cleverly remarks that such virtual *X*s might still qualify as "toy" ordinary *X*s (Chalmers 2017: 14). But it is hard not to read this remark as merely placing them somewhere or other along a continuum between being *X*s and being non-*X*s.

[16] Chalmers 2017: 350.

[17] Suits himself exhibited a curious, perhaps mostly playful willingness to entertain this hypothesis. See his 1967: 209–13.

ologically relevant differences between the EM and VR are, Chalmers claims, that the experiences provided in the former must be "illusory" because users of the EM are not aware they are plugged in, and that the EM is "preprogrammed" in such a way as to make the content of the experiences one ends up undergoing independent of one's "choices along the way."[18] In VR environments we are, by contrast, "sophisticated" about their contents because they are aware of where we are, and are thereby also able to act as free, autonomous agents.

Both of these observations seem to me to be convertible into an argument that plugging into the EM is just as likely to be *more* rationally appealing than most (or, perhaps, all) of the other types of VR environments that Chalmers has in mind. The illusoriness of one's experiences in the EM is derived from the fact that part of the deal one makes when deciding to plug in is to erase one's own memory of the transition. But this feature of the EM is presented by Nozick (quite correctly, I think) as an *incentive to* plug in. It's supposed to be (at least hedonically) better that "while in the tank...you'll think it's all actually happening."[19] Given the irreversibility of the decision once it's made, why leave oneself with potentially nostalgia-inducing memories of a realm (and a set of goals and interests) to which one can no longer return? The EM is thus by its very nature less subject to the type of "interference" that Chalmers himself is a "reasonable worr[y]" about one's experience of VR.[20] This type of incentive attached to choosing the EM strikes me as differing only in degree from the desire of temporary users of VR and fans of video games to have as immersive and absorbing an experience as possible.

Chalmers' claim that one can be a truly "free agent" in a VR environment to a greater degree than in the EM stirs up some metaphysical bugbears that I would prefer to avoid agitating very much further. But even if one were to accede to a conception of the nature of freewill that really did make genuine agency possible in VR but impossible in the EM,[21] it seems to me that the distinctive way in

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[18] Chalmers 2017: 339.

[19] Nozick: 1974: 43.

[20] Chalmers 2017: 341.

[21] Thomas Hurka articulates just such a conception of the value of agency,

which one is robbed of personal liberty in Nozick's machine would be radically different from the sorts of constraints on our agency that we usually mind about. The existentialist's lament about how we are all "condemned to be free"[22] seems to raise at least the possibility that the relevant type of agency might be more of a burden than a blessing. And enough people certainly cause harm in the real world through the exercise of their free agency to make one think that the EM might deserve to be admired as a reliable prophylactic against human folly.

The comparisons just made between Chalmers' account of VR and Nozick's experience machine should all be taken with a grain of salt, given how difficult it is (as I have argued elsewhere) [23] to bring before one's mind what it would actually be like to be plugged into the EM. Would one be in an entirely passive state, receiving one's experiences as an unmediated rush of continuous sensation? Or would it resemble the active life of a much happier person than oneself as one lived outside the machine? The answer to both questions would surely have to depend partly upon the preferences of the user himself—philosopher, orgiast, gamer, or mountain-climber—and partly upon aspects of the machine's interface that Nozick considered it beneath his purview to describe.

4 Paranoia, realism, and value

Chalmers' paper seems to me to provide a valuable corrective to the attitude of paranoia about VR that one frequently encounters not only in science fiction (where it's arguably part of the fun) but within a certain genre of more sober cultural criticism. Too much use of VR and similar media, so the story often goes, will leave us unmoored from reality, isolated from one another, and detached from our fundamental human nature.[24] Since the dawn of the industrial age, sen-

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with specific reference to the EM argument, in *The Best Things in Life: A Guide to What Really Matters* (2011: 98–9). For defenses of an alternative view, see Cogburn and Silcox 2014: 561–79, and Tavinor 2017: 99–112.

[22] Sartre 1956: 186.

[23] See Cogburn and Silcox 2014: 265–8.

[24] See, for example, Langan 2000 and Dreyfus 2003: 18–31.

sible, balanced philosophical accounts of what is actually going on when human beings interact with new technologies have too often seemed to lag behind less carefully thought-through injunctions to avoid such technologies at all cost.

That having been said, my aim in this paper has been to argue that there is a tension between realism about objects in virtual environments—specifically, the type of "digitalist" realism that Chalmers defends—and at least some of the reasons for attributing value to the experience of VR. I do not suppose that I have raised any concerns here that tell strongly against the main metaphysical and epistemological theses that Chalmers is mainly interested in defending about VR in his very rich and suggestive paper. Indeed, the extent to which Chalmers treats his own claims about the value of VR experiences as utterly ancillary to the paper's central theses suggests that he regards them as following more or less self-evidently from his metaphysical realism about VR. If this were in fact the case, then he would certainly not be the first philosopher in the western tradition to assume a strong correlation between the value of human experiences and the degree of reality or authenticity possessed by either the subjects or the objects of those experiences. To trace the path that this assumption has made through the history of philosophy would be a difficult, but fascinating project that unfortunately exceeds the scope of the present work.

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