

Many Minds Logic Virtual Reality Probability Limit & Pruned Plenitude

Sascha Vongehr^{1,i}

¹Nanjing University, China

Abstract: Virtual Reality (VR) and “reality” are indistinguishable. The implied limit on low probabilities is very similar or even description-dual to the Planck length. Resolving Newcomb’s paradox further elucidates the nature of causality in such “timeless” physics. All these support that Many Minds (MM) analytic logic “prunes plenitude” to less than the ‘unfettered fecundity’ of unitary quantum physics. It must avoid ‘Real-VR mistakes’ such as VR or brains “giving rise” to associated minds. Such is unacceptable without addressing obvious ethical objections. This in turn results at once in conclusions relevant to religion. VR administrators doubt their own reality. This reformulates the “fundamental creator gods” regress. A secular religion emerges. An “all seeing eye” demands merit, not mere belief. Finding “one’s self” resurrected necessitates memory passing judgment.

Keywords: Quantum Mechanics, Probability, Plenitude, Predictor Paradox, Causality, Many Worlds/Minds Ethics, Secular Religion

1 Introduction

One of the most fundamental and controversial issues is the plenitude principle. Standard physics as known today knows no limit on small probabilities that could imply impossibility. All conceivable scenarios seem possible, regardless how unlikely. However, if I seemingly tossed heads instead of tails $N = 30$ or 300 times in a row, Virtual Reality (VR) scenarios are the most likely, at some N even due to unintended accidents, say if all conceivable configurations of (quantum) computers are possible. VR is a fundamental limit on empirical science. However, one must sidestep discussing whether “reality is really real” as much as possible, hence:

- Initially, I re-emphasize close similarities with the Planck limit as if “all is real”.
- Ironically, many believe that 1) being trapped in a VR computer is impossible while insisting on 2) that the universe and brains are “real” mechanisms, computers actually computing our subjective experience. I exploit the latter belief to undermine the former. “Reality” becomes fundamentally indistinguishable from VR *anyways*.
- Eventually, we must use analytical (~ “transcendental) logic where “real” cannot have a satisfyingly meaningful definition (never directly arguing against “realism”).

Suggesting equivalence of VR and “reality” as such is not new. Described as systems in a quantum universe, we are anyway “simulations”. We are computed by the universe if we describe it as a quantum computer. The universe is isomorphic (Aaronson 2005)ⁱ to a quantum Turing machine as defined by Deutsch (Deutsch

¹ Corresponding author’s electronic mail: vongehr8@yahoo.com, vongehr@163.com

1985),ⁱⁱ see also (Bernstein 1997).ⁱⁱⁱ Deutsch writes “The simulated universe passes the test for reality because the calculations to create it are physical processes within the computer, and the computer is an ordinary physical object, and perfectly real.” (Deutsch 1997)^{iv} Although seemingly rock-bottom fundamental, such considerations have not yet led to any concrete conclusions relevant to physics for example, because “reality”, undefined and, by their own arguments, anyway indistinguishable from any “unreal” alternative that could justify such distinguishing labels, is never abandoned. Afraid of inevitable, unpalatable fundamental conclusions, the VR-“reality” equivalence is not actually taken seriously. In this work, it is taken seriously, and so there are, inevitably, ethical issues that cannot be left as loose ends. Tying them implies conclusions relevant to religion.

2 Fundamental Limit on the Smallness of Probability

Fundamental aspects such as length cannot have simple, rigid limits. Such limits would only imply that something is hidden beyond. For example, misunderstanding the nature of the Planck length as implying Planck sized checker board squares, we ask what even smaller things make the squares. However, Heisenberg uncertainty allows any degree of fine resolution of length Δx . The limit is indirect, through the related increase in the uncertainty Δp of the momentum p . Although Δp rises, not p directly, it leads to so much energy being involved, at some point Δx is in a black hole with an event horizon larger than Δx . And space-time curvature turned it into a time-like distance, so we cannot claim “but actually it is still really inside”. Limits on fundamental aspects such as Δx or probability P must be like this. At some point they are so small as to be unobservable on principle and therefore meaningless. The distinction that the concept was supposed to make, the “difference that makes a difference”, disappeared. Insisting it is still “really there though, just hidden” neglects its fundamental nature, such as space being fundamentally apparent (\sim emerging) from time ($dx = c dt$). By the way, “reality” being fundamentally indistinguishable from VR has direct implications for fundamental physics such as the Planck length. In VR, space is obviously illusion, time far more fundamental. Description duality between Many Minds (MM) logic and Many Worlds (MW) geometry may mean that probability limits are Planck limits.

A Paper-Scissors-Rock knockout competition with $2^{10} = 1024$ participants ensures a winner who won by chance ten times in a row. Therefore, we can prove such to be possible by experiment. A few thousand people tossing coins, somebody among them will soon find himself having tossed a coin heads-up $N = 10$ times in a row. It is about as likely as obtaining only sixes when rolling four dice. However, $N = 30$ needs a whole civilization ($2^{30} = 10^9$), all playing in a way that makes cheating impossible. This can already not be practically empirically verified like we can easily for $N = 10$. It is like only sixes with 12 dice, but we cannot claim impossibility! Starting with dinosaurs on Earth, my configuration of genes arising now is far more unlikely, yet

here I am, “here”, so it seems. Our existence proves the possibility of very unlikely scenarios. We must describe better how they are possible in order to find out what is impossible.

After obtaining 10 heads in sequence, another head is still just as likely as tails. However, if I have already obtained about 20 or so, although I may believe it to be physically possible, I no longer trust my observation of heads occurring as empirical verification. Instead, in spite of both, theory allowing it and apparent empirical verification, I suspect that this is “not real”. Although “physically possible”, deception instead is more likely. Just like with the Planck size limit, otherwise negligible fundamental aspects become relevant. As if by conspiracy, they always somehow destroy the possibility of making the desired distinction, whatever ingenious trick you try. Suddenly, we must consider black holes curving space-time, mangling otherwise distinguishable lengths Δx . With the probability P of observing N heads, we treat N equal 10 as if based on “real physics”. For example, we can count branches in MW models. MW is not “real” in the sense of ‘Counter Factual Definiteness’ (CFD), but in the philosophically more naïve sense like discussed in (Kent 1990).^v Thus, we take P to equal one divided by the number of branches, which in turn equals two to the power N . However, with $N = 30$, suspecting VR implies a completely different tree. We cannot just add VR-branches and squeeze all branches into a MW model as “real” as before. A black hole does not merely squeeze lengths together either. The radius of a black hole is not a distance inside of it, but rather the remaining time for a freely falling observer after passing the event horizon. Planck limits need the relativistic unification of space and time, which came from understanding how these are observed and distinguished at all. In VR, space is obviously an illusion emerging from time, so we should expect a unification of it all. At least, in order to understand limits on probability, we must understand how “reality” is indistinguishable from VR.

3 The Limit and ‘Real-VR Mistakes’

Hilary Putnam famously claimed that brains in vats are impossible. Such is obviously misleading sophistry, because our heads are such vats; all brains are brains in vats anyway. VR technology improves rapidly. On principle, nothing prohibits trapping brains in VR so well as to keep them unaware of their incarceration. Some futures have vast numbers of “simulations living in VR”. I may be already trapped in a simulation of a past. Imagine you find yourself obtaining 30 heads in a row. Something, for example this text, would have motivated you to toss a coin that many times! Surely, you ought to bet on being trapped in VR rather than having been literally incredibly, unbelievably lucky. Hence, we have a limit on low probability, and shaped like fundamental limits must be. No sudden fixed walls! The concept gradually lost its applicability. It cannot help distinguishing the symmetries of six sided dice from those of coins if instead the VR administrator decided to drop us a hint. However, I argued as if the probability of VR can be estimated from how likely

it seems that VR systems improve and how many brains they may trap. This reminds of expecting that we are trapped in VR already on grounds of that VR seems to be so easy that it is bound to simulate far more brains than a real planet can accommodate (also known as the “simulation argument”, popularized by Nick Bostrom). However, VR may only seem easy in my VR! Then I am also already in VR, but the reasoning now rests in this logic. Perhaps I am the only one. The correct argument cannot rest on that “real VR” is so easy that civilizations can exist in them. The argument turned on itself, revealing a weakness. The weakness is the tacit assumption of “realism”, so I label it a “Real-VR mistake”. Similar: Finding yourself trapped as if in VR does not imply a “real physical” VR system more real than the universe. *Vice versa*, VR systems, such as brains, cannot directly imply the reality of the associated minds. This will be vehemently attacked, but notice the irony again: Many who insist that brains are conscious, that brain calculations are not “mere simulations”, doubt VR, for example saying that “mere simulations” are not conscious, while, in effect, they hold brains to be precisely such VR systems. Of course, they then insist on some mysterious difference, but this is the core irony. Desperate realists always need something truly ghostly, such as brain quantum magic that quantum computers somehow just cannot have, or “spooky” (Einstein’s words) non-locality that MW geometries do not need.

My argumentation above is sufficient for this introduction of a fundamental limit on probability. I showed that there is a point beyond $N = 10$ where the corresponding “real physics” probabilities cannot be trusted, but without more detailed claims about the limit size. Alien civilizations may routinely pay out prize money to players reaching N equal to 30. Any more detailed considerations will mislead if they commit ‘Real-VR mistakes’. Therefore, I should discuss further that they are serious mistakes.

For one group it is obvious that “finding myself trapped as if in VR implies a real VR system” is a mistake: For those who understand that apparently finding myself in this universe does not imply that the universe is “real”. A VR in my universe cannot be more real than the universe itself. For some philosophically inclined, the fact that 1) VR and “reality” are fundamentally indistinguishable is equivalent to 2) that there is fundamentally no difference. They take my argument for 1) as proving 2). However, those holding on to “real physics” stay unconvinced. We arrived at where I should refuse naïve realisms also more directly.

4 Refusing Naïve Realisms more Directly: Succinct Ways

The two fastest and philosophically superior arguments against a naive “from mind (M) independently existing physics (P) actually really going on” are: 1) In such P, randomness needs a “random randomness” regress (Vongehr 2013).^{vi} 2) “Sober”, “awake” states are “real” on grounds of alternatives such as “illusions” or “hallucinations” or “dreams” being relatively “unreal”. A “real P” cannot be

meaningfully fundamentally defined as an alternative to an “unreal” one. They are indistinguishable even just in theory, let alone empirically. The grounds on which such a distinction would necessarily rest is their common realm, and the nature of its “reality” is the fundamental one. It is neither real nor unreal, because it is the grounds on which this distinction is made. We have another regress. In other words, “independent existence” cannot refer to anything. Trying to create good terminology, such “real reality” is always either formally meaningless, grounded in inconsistent language that satisfies gut-feelings, or otherwise no longer satisfying those gut-feelings and thus not what we “meant to mean” by “independent” or “existing”, or “real”.

I should mention a third argument against a particular realism, CFD, important in quantum mechanics. CFD basically insists on a single “independent P really going on”, so that there is a *definite* state P (a single one, no superposition) even if we cannot fully know which. The main motivation is the fear of that P instead includes or branches into all possible futures. Apart from undermining religious concepts such as my single soul being judged, decisions may not matter and all possible horrible scenarios seem inevitable. My one “real P now” feels safer than including also all alternative outcomes such as having fallen sick and all possible accidents. If there is only this one, worse ones are not. However, this is mistaken! **If one P can be by itself independently, there being no connection to any alternative P, nothing can stop all other conceivable P to be in the same way independently each by itself.** And you cannot know in which one you are. You may be in one that will turn out to be utterly horrible. This is closely related to the core of quantum mechanics. There can only be order to randomness if different P are entangled so that they do not all equally are, and only then is there hope that merely conceivable crazy P do not belong to the totality of all possible P. Otherwise, nothing can make them impossible. This argument is only one step, from “one real P”, or world (W), to “one real many-P”, or MW, without CFD realism. But as clarified below, this is a crucial step, because MW already no longer “really goes on”. Futures are other alternatives already there, worlds that seem to have started earlier.

Sadly, these arguments do not resonate, and ironically especially not with most physicists. “Physicists do of course carry around with them a working philosophy. For most of us, it is a rough-and-ready realism, a belief in the objective reality of the ingredients of our scientific theories.” (Weinberg 1994)^{vii}

5 Refusing Realisms with: Time-Flow illusive, so “Real P” impotent

The likely most widely convincing but lengthy argument clarifies the nature of time, because “real P” is desired to *make* brains that *give* rise to M. In a nutshell: If time-flow is merely a deceptive feeling, P is no longer “really doing” anything; it does not “produce” the illusion of time that is somehow anyway. M seems as independent

from P as P from M, and so the whole point of having P is moot.

There are again several paths that arrive at that the “flow of time” is a deceptive feeling, an illusion. The most widely convincing path is always slow and lengthy, such as starting with: How fast does time flow? What if it flowed a thousand times slower? Discussing differences that make no difference, we may slowly convince some neuro-typical humans that the “flow” cannot mean what we desire, what we “mean to mean”. A flow-rate of time can have meaning, for example when comparing different observers in special relativity (or VR; think of 6000 years per God’s day or rather *vice versa* if the Planck time serves as inspiration). The fundamental rate for any observer by himself is then one second per second, a 1 without units. *It is not zero!* “Time stands still” is as misleading as “time flows”. It helps that modern physics supports the conclusions, but apparent empirical science is not a properly logical, strict argument, neither if considering VR, nor with a quantum physics allowing all possible microstates regardless how unlikely they are. The ‘theory of everything’ cannot arrive as a falsifiable hypothesis (Vongehr 2015).^{viii} Experiment can at most indicate which possible cosmos you may be in. A theory of everything includes all possible observations by definition and can on principle not offer possible observations that falsify it. Fundamental physics must derive from analytic logic. This is relatively easy for special relativistic physics, starting from the necessity of a dual description where the network of interactions is instantaneous (timeless), or from the necessity of having the past in the past (not now) while “making the present” now without infinite regress (Vongehr, unpublished), but here is not the place to present a widely convincing lengthy argumentation for any such details.

Since time-flow is merely a deceptive feeling, P does not do anything. It does not produce or “give rise to” my feelings. My feelings are, that much is certain; I basically am my feelings. Logic, that feelings are about something, implies an apparent world, an Apparent Physics (AppPhys). Something that seems to be my body interacting in it can also be concluded, even if hidden from me. However, we only add a badly misleading mistake when thinking that AppPhys needs some “independent P behind it”, and such gives us nothing in return. Even if they both somehow were, their shapes matching each other, M still implies P as what appears to M, as AppPhys, but P does not in turn imply M. The physical is apparent with logically consistent timings, but starting from some independent P, associated states of mind M may happen a year after or before, or never. The correlation is one way, $M \rightarrow \text{AppPhys}$. We can now argue with inter-subjectivity between different M and their correlations with shared AppPhys in order to construct some “P”. However, “ $P \rightarrow M$ ” only succeeds if in effect returning on the arrows from M to AppPhys. Starting with P alone, independent, without M, philosophers writing “I think therefore I am” evolve, but M never arises.

That time-flow is an illusion is so important because its corollary is that everything you feel is a fundamental illusion anyway in the sense that nothing behind it produces the illusion. A “real P” cannot be responsible and is “impotent anyway” even if you

insist that P nevertheless also “really is”.

6 Ethics & Small MW/M-Geo Description-Dual to MM Logic

I rejected ($P \rightarrow M$) in several different ways. It is all minds M that fit into logically self-consistent stories ($L \rightarrow M \rightarrow \text{AppPhys}$). AppPhys, such as evolution of brains, is our way of thinking and being able to talk about the logic constraining the possibilities of minds. Self-consistent many-world/mind space-time geometry (MW/M-Geo) of the AppPhys contents of minds is a dual description of the self-consistent logic L concerning the possible many minds. Calling MW/M space-time “real” would call L so, too. It adds nothing, and that L cannot practically be described otherwise takes nothing away. Hence, considering logic and minds, and therefore VR, is more important to physics than physics to minds and VR. We must avoid ‘real-VR mistakes’. Administering a VR to some sort of brain in my AppPhys does not directly create that mind that feels as if finding itself inside that VR “simulated” world! Nothing creates minds M that are not already implied in eternal analytic logic L. Nothing makes them suffer more. We must resolve why Alice should not enjoy bashing in Bob’s brain, else truth is proven unethical. Reformulating concepts such as ‘responsible agency’ and causality so that they do no longer clash with fundamental, “timeless” science is difficult but very important and possible. It is similar to explaining the theory of evolution properly to people who hold on to misconceptions such as species “wanting to survive” or giraffes developing long necks “in order to” reach tree crowns. Such work is in progress and beyond the scope of this article, but there is a minimum that we must discuss now or else our “unconscious brains” stay unpalatable.

First, assuming “real P” is ethically worse. No matter how unlikely, standard modern physics implies the possibility of the microstate of your body smashing the heads of your loved ones. All such scenarios would inevitably exist in eternity. Your decisions seem to make it less likely, but all serious attempts at showing even just what this can mean support the “dark side”, that it is wishful thinking. According to the best available established “real physics”, Alice might as well. However, ($L \rightarrow M \rightarrow \text{AppPhys}$) allows that some merely conceivable scenarios do not belong to totality. Your decision on harming others is logically consistent with what belongs to totality.

Starting with my M and its AppPhys, with possible space-time geometries of brains that fit to what my M may find scanning its own apparent head, what is the MW/M-Geo, and therefore L, that embeds it? It fits your possible M, too, of course. The eternal shape of MW/M-Geo also somehow includes possible states of my universe around me. However, as already cautioned, we must be very careful with, for example, assuming shapes that either “really are” deceiving VR systems and other branches that “really tossed” heads 300 times sequentially. We must not in effect recover a naïve universe “really going on” where we can just count branches in a

global shape or estimate number densities of such in infinitely large, infinitely redundant models.

A better model of MW/M-Geo may be like a relatively small sphere (though with very many dimensions) around a superposition of many or all possible brains. Our universe seems to be infinitely large. However, anything a distance dx away is, up to quantum entanglement, in a superposition of all possible futures starting with the past that is consistent with our observations, as it was at least a time dx/c ago, c being the speed of light. This includes the evolution of a copy of us already at stars only a few thousand light years away. They see a slightly different star background in the sky, utterly irrelevant to my state of mind right now. So, the universe is like a sphere of uncertainty, of potentiality around our brains. After removing much redundancy, an improved model may be surprisingly small, far less than our ‘Hubble bubble’. The distance to systems with copies of us in superposition may be a very rough estimate of the radius to the background of potentiality around the superposition of possible brains, but it is infinitely better than infinity. A sort of sphere around a superposition of many possible minds is at first simply a dual description (\sim quantum solipsism) with less redundancy. The main relevance here: In a small, finite geometry, entanglement can prune plenitude enough to be ethically relevant.

Present branching into futures is modeled by quantum superposition states turning into distinguished worlds, quantum entanglement “disentangles”. However, every disentanglement leads to other states entangling (such as in quantum teleportation when the traveler is taken out of the entangled teleportation channel). Differences that were distinguishable disappear, become indistinguishable. Previously distinguishable and partially excluded pasts merge and become possible pasts of the new present. It is as if the number of distinctions is finite. Hence, a further reduction of the number of otherwise seemingly possible distinguishable futures is reasonable. In a large “real” universe, global entanglement could not possibly avoid, for example, the microstate configuration of you torturing a loved one. However, removing redundancy and being dual to MM logic, a proper MW/M-Geo fitting our apparent brains may be surprisingly small. The distance to planets with copies of us in superposition may still be a misleading over-estimation. Considering conceivable minds, very strange conceivable situations vastly outnumber commonly expected situations. Therefore, a world apparently ordered according to physical laws could not be observed at all if very strange conceivable situations were not somehow suppressed. MW/M-Geo may be, in effect, so small that global entanglement prunes plenitude.

7 Newcomb’s Predictor Paradox

Extremely important for the understanding of the nature of quantum mechanics is Peres’ statement that “*quantum phenomena are more disciplined*” (Peres 1993)^{ix} than even perfect classical common cause correlation can provide. I will show that William

Newcomb's Predictor paradox (Nozick 1969, Gardner 1974)^{x,xi} is a non-quantum scenario for the generation of a more "disciplined" correlation, and also by something that is naively expected to only add randomness, much like quantum mechanics is widely misunderstood. In the EPR setup of quantum mechanics, having all the alternative worlds (0 and 1) of Alice and Bob allows that their entanglement makes some observations (such as both observing 0) impossible that would otherwise be possible alternatives. In that case, 'non-locality' is often misinterpreted as if interactions can travel faster than light and in such a way as to violate causality, the future influencing the past. Newcomb's paradox is also easily misinterpreted as demanding that the present (my choosing a box) causally changes the past (the filling of the boxes), an effect apparently traveling backwards through time. Therefore, the Predictor Paradox facilitates the understanding of all our main topics, including "timeless" fundamental theory, and without necessitating quantum mechanics. Here is a simple version of the paradox:

We obtain two boxes. The *second* box always contains 5 gold coins. In the considered *present*, when we must decide, there are only two *present* alternatives: The *first* box contains either 10 or no coins. We must decide to either open the first box only or both. The predictor rewards modesty, punishes greed. If he predicts that we open both boxes, he puts no coins in the first box. If the predictor is always correct, there are only two possible alternative futures: "1-Boxers" open only the first box. They obtain $C_{1\text{Box}} = 10$ (coins). "2-Boxers" open both boxes and get less: $C_{2\text{Box}} = 5$.

The predictor is usually correct, because he has a detailed model of our brains. Even if the accuracy of prediction is only $p = 99\%$, we should still only open the first box. Those who open both boxes usually only get 5 coins. However, 2-Boxers may claim: "The prediction has already been made in the past. Regardless what is in the first box, it cannot change anymore. You are free to change your mind and open both boxes so that you can have another 5 coins." Can the future (my decision) somehow (seem to) influence the past (the filling the boxes)? The predictor may have an exact replica of your brain. This functionally complete copy of you "instantiates" "you" just as much as the "real" you (either both do or both do not, depending on what you believe). Therefore, while you are deciding whether to open both boxes, you cannot know whether you are the "real you" or the "mere simulation". If you are the simulation, or better, "to the degree that you are the simulation", your decision *causes* the predictor's action. The paradox is thus also relevant to artificial intelligence (AI), which may also reasonably assume being trapped in VR, made to test whether AI can be trusted. Of course, we do not need considering VR for much of the argument. My decision now is strongly correlated with what I am. If we are the type of person that listens to a 2-Boxer and reconsiders, there is nothing in the first box. If I stick to resolutions, the first box is likely filled. You only "really are" such a principled person if you "really reject" the second box in spite of being certain that the first box is filled due to that you are such a principled character. However, few people are that principled. Considering VR and MW can support ethical (principled) behavior. More importantly

for our main topic here: Being indistinguishable from the VR simulation provides a *cause* that enforces the correlation. It is a logical cause as strong as a physical causation, and fundamentally is precisely that, namely indistinguishable from “real physical causation”.

Randomness changes the outcomes. Consider that the decider decides with a rate $r = 75\%$ (3 of 4 worlds) to be a 1-Boxer, either because that is how these deciders are or because they consciously employ such a random method in order to decide. A ‘**Lazy Predictor**’ runs the simulations only once, thus not discovering the rate with which the decider decides to be a 1-Boxer. Predictability is low and, unsurprisingly, fewer coins can be had on average. How many? 1-Boxers obtain 10 coins if predicted correctly, otherwise zero. Their average expected gain seems to always be $10p$, at most 10 coins. However, this is incorrect. A hidden problem does not occur in the simplest scenarios and therefore likely stays hidden. MW models take automatically care of such. In a simple model of this scenario, every present branches into 4 futures, and so the 4 present worlds have again each 4 futures, namely 3 that decided to be 1-Boxers and only one is a 2-Boxer. We expect $(9 \cdot 10 + 3 \cdot 15 + 0 + 5)/16 = 8.75$ (coins).

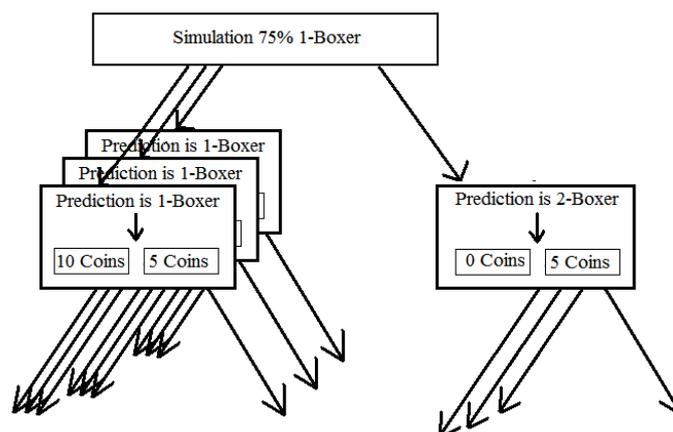


Figure 1: A simple MW model prevents mistakes which more elegant seeming, “purely mathematical” statistical arguments and equations for expectation values often keep hidden.

A ‘**Proud/Forced Predictor**’ runs the simulation many times, recognizes that we are mostly 1-Boxers, and therefore always predicts 1-Boxing, thereby maximizing the rate of correct prediction to $p = r = 75\%$. He proudly desires to be known with the highest prediction rate possible. It shall soon become obvious why this makes him a “forced” predictor. In 12 futures, the 1-Boxer prediction is correct, in 4 worlds incorrect. The expected return is $(12 \cdot 10 + 4 \cdot 15)/16 = 11.25$ (coins), *more* than the 10 coins thought to be maximally available. The optimal strategy is as follows. I as a decider employ a method that lets me randomly but with $r = 51\%$ open only the first box. In 49% of all cases I will take the coins from both boxes. The predictability is now maximally $p = 51\%$, but the predictor is forced to always predict 1-Boxing in order to reach this. Therefore, there are always 10 coins in the first box. Moreover, almost half the time (namely 49%) also the second box is opened for another 5 coins,

so the expected average is 12.5 coins!

This is a remarkable result. Not only is it surprising in that we obtain such a high value. Randomness usually lowers the Newcomb's Predictor scenarios' average outcomes to be below seven coins instead of the 10 coins for everybody if all only ever open the first box. It usually seems as if randomness simply adds unpredictability, not only for the predictor, but also for the decider. The maximum obtainable seemed to be 10 or less, but my optimal random strategy surpasses that value. The introduction of randomness results in more useful predictability! In applied sciences, such is more widely known. Noise can make detectors such as our ears more sensitive for example. Many biological structures, neurons and neural networks firing for example, exploit noise. Molecular motors are fundamental to the functioning of cells, and they use the thermal ratchet mechanism, extracting directional motion from random heat vibrations. In fundamental physics however, in spite of being known since the 1960s, it is still not sufficiently appreciated that the randomness of quantum mechanics prunes plenitude more than classical physics can do, rather than supposedly leading to "unfettered fecundity".

8 VR-Administrators & Why they may Bother

If I make VR systems in my apparent world, I can enter them and find myself inside, for example experiencing hyperbolic, non-relativistic space. We can enjoy the gains of selling such VR systems. However, disregarding unethical realities such as copious funding for nonsense, why resurrect brains in VR heavens if this cannot change the possibility or probability of anybody finding themselves resurrected in VR (knowingly or not)? All possible resurrections already exist eternally anyway. Beings powerful and intelligent enough to have VR computers with brains trapped inside are likely educated about these issues. They know that their apparent doing adds nothing to eternal (~ "timeless") totality, so why bother?

Let us temporarily commit Real-VR mistakes, believing that creating a VR system with brains trapped inside adds those M that find themselves as if in those VR worlds. Who to create? The main aim would be the future resurrection of "myself", generally speaking. At least, if nothing else, this can nevertheless ease my evolved fears around death. Creating others is less useful. For example, considering bad people torturing innocent to death such as happens in every war and more, some may like to resurrect in order to reward and punish. However, none of it can remove the suffering of the tortured (and deterrence is sadly ineffective against murders or torture). If such suffering is as much as it seems to be and not just an illusion, we can only be grateful for the illusion of time, for at least the eternal suffering finds some relief in the illusion that the pain is over soon.

Aiming for self-resurrection, we may want to prepare a brain that is very similar to

ours and additionally have our own brain be used after we die. However, if we fix the resurrections too firmly and some parameters are somewhat off, there is a nagging fear: A similar person is created instead. (This is philosophically naïve, but we now consciously commit real-VR mistakes in order to prepare better conclusions.) In order to be resurrected, some randomness should be allowed. The most efficient way of ensuring my own resurrection is a *similar but random* VR! With quantum random parameters, all possible future outcomes belong to totality. I consider “similar but random” because of the unknown details around the limits on low probabilities. Without such limits, a single random VR resurrection/creation would create all possible minds. No undesired outcomes could be avoided! Anyway, I now, and all my resurrections would be included even if most of the minds will be rather alien animals on distant planets. Therefore, one would make systems that do not resurrect/create bad beings! The initial memory configuration would be analyzed and, if it remembers torturing the innocent, discarded for another trial. This is the judging “all seeing eye”, staring at us right now, always! VR-“Real” duality/unification and Newcomb’s Predictor Paradox make this obvious; this is not a frivolous analogy. Also, the VR system would not randomly dispense as much Hell as Heaven either. We desire a few more happy thousand years, in loops that make us feel as if heaven never stops but without the dread of boredom or facing the fundamental meaninglessness of such. (A friend of friends clearly remembers ingesting LSD and then watching the second hand on a clock slowly coming to a complete stop in his silent room, nothing moving at all; we could claim that that mind found eternal heaven! I personally remember eternally repeating hell on psilocybin mushrooms, ingested involuntarily by mistake of course.)

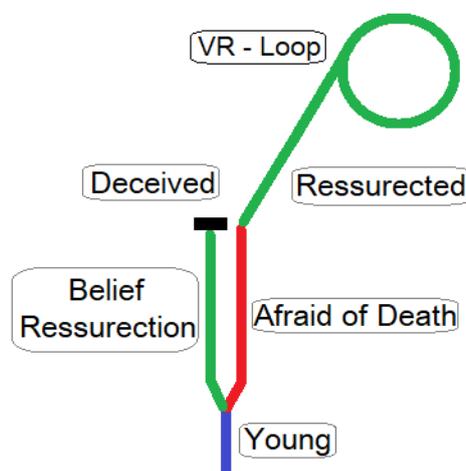


Figure 2: A diagram with multiple futures including resurrection into an endless after-life, but clearly secular in that it does not encourage naïve beliefs into such.

If not falling for Real-VR mistakes, why still create resurrection VR? Well, logic may require that the administering of VR cannot be completely absent, that such is “actually done in some rare parallel world” or otherwise, except for brief dream-like states such as hallucinations you may already remember having had, minds finding themselves as if resurrected are impossible. Therefore, some will decide to actually

compute those VR with some probability that they deem to be safely far above any limits on low probabilities. Even if any non-zero probability, no matter how low, is believed to ensure possibility and thus eternal existence in the totality of all possible minds, one would decide to run the VR system with a probability, say one in a million, that is larger than VR simulations being calculated by accidents such as Boltzmann Brain like computers, because those are more likely resurrections in Hell than in Heaven. We might like to at least expect Heaven more, and be a little more at ease (in the hope that there is still something we just do not understand about low probability and all is fine, no parallel Hell to fear). If people then “win” the one in a million lottery, they would likely comply. If they still do not bother making VR systems, there will be a fear growing: My laziness could be logically consistent with that my heavenly resurrection does not belong to the totality of minds after all, that it is impossible, consistent with that nobody ever makes such VR simulations and that limits on low probability should have been considered more seriously.

Finding myself after my death suddenly with a fresh body would imply VR, and yet, it may not imply a conscious administrator outside of that VR, certainly not directly. Again, you cannot conclude more reality on grounds of seemingly being in a VR than from your remembered “relatively more real” life, which is already fundamentally the illusion of time, of “actually living right now”. But we may be afraid of that our heaven may turn sour soon, if on grounds of our laziness we expect witnessing an accidental VR rather than a well administered one. Logical consistency constrains before and after both ways, like in Newcomb’s paradox, so it is relevant for what to do now. We are led to conclusions relevant to religion and religious practice.

9 Discussion & Conclusions Relevant for Secular Religion

Leaving the obvious religious issues to others less careful or invested would be irresponsible. We must reject certain obvious misinterpretations. Minds may find themselves resurrected without the memory of having been devoted to some great administrator. The probability of resurrection may even *decrease* with the belief into it (**Figure 2**), for example if such belief renders us too comfortable and thus meritless! I reject any over-interpretation of my considering that a single random VR could ensure all possible minds and not resurrect/create bad beings or suffering. Is this and some circular logic the fundamental basis of our existence and all severe suffering is just illusion making it more interesting or testing us? This misunderstanding may arise because I was carefully conservative about the willingness of people creating VR simulations. VR will be used to harm, like all technology is used especially initially in warfare. Most VR systems available already today are either merely involved in the dread of work (remote digging in dangerous environments) or scary games. VR will be used to torture and threaten with what seems as never ending torture, creating suffering so hellish as has never been experienced before, and it is always the innocent and morally upstanding who get it worst. Given human carelessness, hate

and greed makes my theoretically methodic consideration of that nobody may bother creating resurrection VR practically silly.

It does not matter how unlikely it is that somebody bothers with trying to resurrect you specifically. There will be a religiously driven desire to create as many as possible heavenly VR brains, even if those who do so suspect that this does not increase the probability of the associated minds but merely confirms their logical possibility. Moreover, the systems will test if the memories about to be resurrected deserve such! With all this in mind, there are quite obvious general and personal “religious” conclusions.

1) Creator Gods or VR Administrators: Most generally, it is not new that the concept of “fundamental creator Gods” needs regress without definite termination (infinite regress). Who created the creator? I personally thought in this way since childhood. It gave me immunity against all religious zealots, including “New Atheists” and “Skeptics” pretending to stand on the rock of empirical science, which is utterly naïve pretension. Empirical science can on principle say nothing about such fundamental issues. However, the logic of consistent stories implies that we co-evolved with social systems. Fundamental arguments do not resonate with neuro-typical humans. The reformulation of creator gods as VR administrators helps. Everybody, even I may become a VR administrator, a god. Obviously, gods do have nagging questions about how real their own reality really is.

2) Merit or Belief: If your memory is being tested, do you expect to pass? Are you worthy of finding yourself (as if) resurrected in a heaven? If not, it is time to doubt the worth of convenient religious beliefs such as the all too common “well, somebody died for me on a cross; I only need to believe it and I do, so let’s party”. MW/M ethics is superior. It provides secular religion demanding socially responsible merit, not belief. Sure, wise people have always detested entering the heaven of vain gods that play hide-and-seek, that test whether you can find them or judge on whether you believe in them nevertheless, giving you no credit if instead you were too busy helping suffering others. But such is straight religion, belief. MW/M ethics is fundamental science, analytic logic abhorring mere belief.

3) All Seeing Eye: Reality and VR being indistinguishable means that your M right now is as much “the real one” as it is the one in the VR that tests whether you pass the test. These “alternatives” are together as one, although it may help to think of it as if being one quantum superposition on which you supervene (on both simultaneously as if there are two alternatives that however cannot be in isolation). The “all seeing eye”, if it looks at all, looks right now, “really” as according to straight secular logic. You should no longer cast it aside as a silly religious thought, evolved or cultural. Putting it off, thinking that it does not look now, but only much later, clings to differences that do fundamentally not exist. In MW ethics generally, no responsibility can be pushed aside as far away in the future or merely unlikely.

4) Practical Ethics, as if judged in VR yet as if caused suffering is real: Although there is fundamentally no difference between VR and “reality”, emphasizing the different interpretations selectively shapes ethics. “I am already in VR so nothing matters” is unwise. Instead, even if completely deceived, we would be judged according to how much we lived as if the suffering we caused was real. It may be helpful to consider that at any moment, in some futures, your thought right now may be the last you have thought, say those futures where a plane fell on top of your location now, destroying your brain faster than the brain needs to notice anything. Therefore, in this sense, regardless of how many futures go on “in real reality”, many of your future continuers could find themselves resurrected. *However, it persistently seems as if you do not find yourself resurrected but still living instead.* This is logically consistent with that you always fail the test of worthiness, so there are no such resurrected future continuers! You may for all practical purposes assume that you are watched and judged, every moment. Of course I am no longer talking about proper expectation values, but about considerations that can help people with finding motivation to adopt more authentically ethical lifestyles. Scientific secular religion advises that you need to truly improve, now rather than “as soon as possible”! The overwhelmingly common, convenient, pretentious virtue signaling that basically all humans engage in is not fooling a system that knows your memory. And every moment is a now; it is always now and stays so, so it is the wisdom of ‘the path (dao)’.

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