1% Skepticism

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Abstract:

A 1% skeptic is someone who has about a 99% credence in non-skeptical realism and about a 1% credence in the disjunction of all radically skeptical scenarios combined. The first half of this essay defends the epistemic rationality of 1% skepticism, appealing to dream skepticism, simulation skepticism, cosmological skepticism, and wildcard skepticism. The second half of the essay explores the practical behavioral consequences of 1% skepticism, arguing that 1% skepticism need not be behaviorally inert.

1% Skepticism

Certainly there is no practical problem regarding skepticism about the external world. For example, no one is paralyzed from action by reading about skeptical considerations or evaluating skeptical arguments. Even if one cannot figure out where a particular skeptical argument goes wrong, life goes on just the same. Similarly, there is no "existential" problem here. Reading skeptical arguments does not throw one into a state of existential dread. One is not typically disturbed or disconcerted for any length of time. One does not feel any less at home in the world, or go about worrying that one's life might be no more than a dream (Greco 2008, p. 109).

[W]hen they suspended judgement, tranquility followed as it were fortuitously, as a shadow follows a body…. [T]he aim of Sceptics is tranquility in matters of opinion and moderation of feeling in matters forced upon us (Sextus Empiricus, c. 200 CE/1994, I.xii, p. 30).

I have about a 1% credence in the disjunction of all radically skeptical possibilities combined. In other words, I am about 99% confident that I am awake, not massively deluded, and have existed for decades in roughly the form I think I have existed, doing roughly the sorts of things I think I have been doing; and I find it about 1% subjectively likely that, instead, some radically skeptical possibility holds – for example, that I am a radically deceived brain in a vat, or that I am currently dreaming, or that I first came into existence only a few moments ago.

I aim to persuade you to embrace a similar credence distribution, on the assumption that you currently have a much lower credence in skepticism, neglecting skeptical possibilities entirely in your daily decision-making. Since 1% is non-trivial in affairs of this magnitude, the practical stakes are substantial. The 1% skeptic ought to live life a bit differently from the 0% skeptic.

1. Grounds for Doubt: Dreams.

Sitting here alone in my office, I am almost certain that I am currently awake.

I can justify this near certainty, I think, on phenomenological grounds. It's highly unlikely that I would be having experiences *like this* if I were asleep. I might have some non-phenomenological justifications too, as I'll discuss soon.

My current experience has both general and specific features that I think warrant my conclusion that I am awake. The general features are two. First, I am having a fully immersive visual phenomenology, auditory phenomenology, and tactile and proprioceptive phenomenology, in a way that seems to me to be rich with sensory detail. (At least, I think this is my experience. See Schwitzgebel 2011, ch. 6, for some doubts, which I bracket here.) But according to the theories of dream experience that I favor (McGinn 2004; Ichikawa 2009), the phenomenology of dreaming is *imagistic* rather than *sensory* – like the images that come before my mind in a daydream – and not rife with detail in every modality. The phenomenology of dreaming might even be highly indeterminate in features like coloration (Schwitzgebel 2011, ch. 1). On such views, the experience of dreaming that I am on the field at Waterloo is more like the experience of imagining that I am on the field at Waterloo than it is like the experience of standing in the field of Waterloo taking in the sights and sounds; and dreaming that I am in my office is more

like the imagery experience I have at home, lying in bed at night, thinking about going to the office tomorrow, than it is like my current experience of visually experiencing my computer screen, of tactilely experiencing my fingers on the keyboard, and of auditorially experiencing the hum of the 60/215 Freeway.

The second general feature of my current experience that I believe warrants my confidence that I am awake is that everything appears to be mundane, stable, continuous, and coherently integrated. I seem to remember how I got here (by walking across campus after lunch), and this memory seems to fit nicely with my memories of what I was doing this morning (planning to work on this essay) and with my memories of what I was doing yesterday and last week and last year. Nothing seems weirdly gappy or inexplicably strange. I share Descartes' view (1641/1984, p. [89-90] 61-62) that if this were a dream, it would involve discontinuities in perception and memory that would be evident once I thought to look for them. I wouldn't be able to piece together an entirely coherent story of how I got to where I am, which I could hook up with my life in general; and things would not stay stable.

There are also specific features of my current experience that bolster my confidence that this is not a dream. In my dream experience, written text tends to be especially unstable: Words won't stay put when I look at them but instead always change and scatter away. But here I am, visually experiencing a stable page. And pain is not as vividly felt as in waking life; but I have just pinched myself and experienced the vivid sting. Light switches don't change the ambient lighting; but I have just flicked the switches, or seemed to, changing the apparent ambient light. If you, reader, are like me, you might have your own favorite tests.

But here's the question. Are these general and specific features of my experience sufficient to justify not merely *very high* confidence that I am awake – say 99.9% confidence –

but full-on 100% confidence? I think not. I'm not all *that* sure I couldn't dream of a vivid pinch,

or of a light-switch changing in the ambient lighting. Likewise, I'm not all that sure that my

favorite theory of dreams is the correct one. Other dream theorists – including some of the very

best informed – have held that dreams are sometimes highly realistic and even

phenomenologically indistinguishable from waking life (Revonsuo 1995; Hobson, Pace-Schott,

and Stickgold 2000; Windt 2010). Given such eminent disagreement, my confidence in my

preferred theory of dreams is by no means 100%. So *maybe* I could have experiences just like

this, in sleep. I would not risk a million dollars, or even a thousand, for the sake of one dollar on

the denial of that possibility. I'm not sure I'd even risk five for one.

But even if I can't point to a feature of my current experience that seems to warrant 100%

confidence in my wakefulness, might there be a philosophical argument that would rationally

deliver 100% confidence? Maybe externalist reliabilism about justification is true? And if so,

maybe my opinion that I am awake is counterfactually connected in the right way, with

extremely high reliability, to the fact that I am indeed awake, even though I can't fully articulate

my grounds (e.g., Sosa 2007); and if so, maybe if I felt absolutely certain, I would be justified in

that absolute certainty. But for me, at least, such philosophical arguments don't deliver 100%

confidence. I'm not highly confident that I am perfectly attuned to my wakefulness (for

example, I seem to recall "false awakenings" in which I seemed to judge myself awake in a

mundane, stable world); nor am I highly confident in the philosophical truth of the required

theories of justification. (For critiques of Sosa's version in particular see Ichikawa 2008 and

Brown 2009.)

Is it, maybe, just *constitutive of being rational* that I assume with 100% confidence that I

am awake? For example, maybe I'm rationally compelled to treat my current wakefulness as an

unchallengeable "framework" assumption in Wittgenstein's (1951/1969) sense. I feel some of the allure of Wittgenstein. However, I am not at all sure that such an approach to rationality is the best one. It's a philosophical theory, and philosophical theories of this sort are somewhat dubious. So the thought that such a theory of rationality might be correct, though somewhat comforting, does not vault my confidence to the ceiling.

If my life is approximately what I think it is, then every day I spend about eight hours asleep – some substantial portion of that time dreaming – and sixteen hours awake. For the reasons just described, I don't think it at all likely that this is one of those sleeping hours rather than one of those waking hours. But all the reasons I can think of for being confident that I'm awake seem to admit of some doubt; and even stacking those reasons together, some doubt remains. I hesitate to put a number on my doubt, because that suggests an artificial precision – but ordinary English terms have the complementary vice of being too fuzzy and variously interpretable. So, with caveats, I'll put it this way. Given my reflections above, I find that in my own case, right now, a 90% credence that I am awake seems unreasonably low. I am much more confident that I am awake that that a coin flipped four times will come up heads each time. On the other hand, a 99.999% credence seems unreasonably high, now that I have paused to think things through. I'd bet a lot of money that I'm awake, but I wouldn't wager my entire retirement fund on it for sake of a dollar, if that were somehow possible. Neither my apparent phenomenological grounds nor my dubious philosophical theorizing about the nature of justification seems to license that extreme a credence. Splitting the difference, something in the ballpark of a 99.9% credence seems about right, give or take an order of magnitude.

If you think you can defend a much higher credence than 99.9% – say, two orders of magnitude higher (99.999%) or more – then presumably you believe that you can do so through

a philosophical argument of near apodictic power or through some almost incontrovertible empirical understanding of dream phenomena. But such a high confidence in the current range of philosophical and empirical arguments concerning dreams seems rash. Or alternatively, maybe you think that you can reasonably maintain such extreme confidence despite being unable to deliver a scientific or philosophical argument of such impressive power? Maybe you just *choose* to embrace a giant credence, sure beyond proof that any apparent grounds for doubt must be misleading. But that sounds like faith, not reason.

2. Grounds for Doubt: Simulation Skepticism.

John Searle has argued that digital computers could never have conscious experience (Searle 1980, 1984). There's some chance he's right about that. But he might be wrong. And if he is wrong, it might be possible to create conscious beings inside of computers who live entirely within simulated environments – like Moriarty in Star Trek's "Ship in a Bottle" (Echevarria 1993) or like the "citizens" who live their whole complex lives within powerful computers sheltered in the Earth's crust in Greg Egan's *Diaspora* (1997). And *if* such beings exist, some of them might be ignorant of their nature as computationally constructed beings in artificial environments. They might think that their world is not the computational creation of some other set of beings. They might think they occupy what we might call the "base level of reality" rather than some artificial or virtual reality built up from computational processes executed at the base level. They might even think that they live on "Earth" in the early "21st century" – and if some further technological and philosophical assumptions are granted, they might even have experiences that are in every way subjectively indistinguishable from the experiences of 21st-century base-level Earthlings.

Now I normally think that I am *not* a simulated being instantiated in some other being's computational device. Might I be wrong about this?

Nick Bostom (2003) imagines the possibility of a technologically advanced civilization with vast computational capacity, able to very cheaply run vast numbers of "ancestor simulations" who are conscious, self-reflective, philosophical, and most of whom mistakenly assume that they are living at the base level of reality. Bostrom argues that we should assign about a one-third credence to our beings "sims" of this sort, because, he suggests, we should give approximately equal epistemic weight to three possibilities: (a.) that such technologically advanced civilizations do not arise, (b.) that such advanced civilizations do arise but choose not to run vastly many ancestor simulations, or (c.) that such civilizations do arise and the world contains vastly many more simulated beings than base-level beings. Bostrom argues that our credence that we are in fact sims should be approximately equal to our credence in the last of these three possibilities, since in that scenario the vast majority of beings who are in a subjective and epistemic situation relevantly similar to ours are in fact sims.

One might object to the starting assumptions, as Searle would. Or one might object, with Weatherson (2003), that the indifference principle here raises technical philosophical challenges. Or one might object that to the extent we assign credence to the possibility that we are sims, that credence assignment undercuts our grounds for conjecturing about the future of computation (Birch 2013; Crawford 2013). Or one might object, on technological grounds, that Bostrom overestimates the probability that civilizations ever progress to a point where huge numbers of conscious ancestor simulations are run. Legitimate concerns, all! And yet none of these concerns seems to imply that we should assign *zero* credence to our being sims in Bostrom's sense. What if we reserved, say, 0.1% of our credence for the possibility that we are sims? Is

that plainly too high? Given the amazing trajectory of computation through the 20th and 21st

centuries, and given the philosophical and empirical tenuousness of the objections to Bostrom's

argument, it seems reasonable to accord at least a modest credence to the possibility that the

universe contains many simulated beings; and if so, it seems reasonable to accord some sub-

portion of that credence to the possibility that we are among those beings.

As David Chalmers (2003/2010, 2012) has emphasized, the simulation possibility needn't

be seen as a *skeptical* possibility. Chalmers analogizes to Berkeley. Berkeley (1710-1713/1965)

holds that the world is fundamentally composed of minds and their ideas, coordinated by God –

and yet, Berkeley insists, this is no form of skepticism. Cups, tables, houses, rivers, brains, and

fingers all exist just the same, according to Berkeley, and can be depended upon; they are only

metaphysically constituted rather differently than people tend to suppose. Likewise, we might be

fundamentally constituted by quarks and bosons and that sort of business, or we might be

fundamentally constituted by them and something else too, like an immaterial soul, or we might

be fundamentally constituted by pure information, if that makes any sense, or by something else

still – and although such facts about fundamental constitution might matter quite a lot in some

ways, it doesn't seem that my ignorance of such matters should impair my high confidence that

my family will really be there when I go home tonight, in the sense that they might be there if

certain radically skeptical scenarios are true.

To count, then, as a properly radical skeptical scenario in the same sense that the dream

scenario is radically skeptical or the "brain in a vat" scenario is radically skeptical, we must be in

a *small* sim or an *unstable* sim – maybe a short-term sim booted up only a few minutes ago in

our subjective time (with all our seeming-memories in place, etc.) and doomed for deletion soon,

or maybe a spatially small sim in which only a small portion of reality as we take it to be actually

exists (only this room, or only this city), or maybe a sim with inconstant laws that are soon due for a world-destroying change.

Conditionally upon assuming that I am in a sim, how much of my credence should I distribute to the possibility that I am inside a large, stable sim, and how much should I distribute to the possibility that I am instead in a small or unstable sim? Philosophical advocates of the simulation hypothesis have tended to emphasize the more optimistic, less skeptical possibilities (Bostrom 2003; Chalmers 2003/2010; Steinhart 2014), but it's unclear what would justify high degrees of optimism. *Maybe* the best way to develop conscious beings within simulations is to evolve them up slowly in giant, stable sim-planets that endure for thousands or millions or billions of sim-years. But maybe that project is more laborious and resource-consuming than simulation programmers would want or need. Maybe it's just as easy, or easier, to cut and copy and splice and spawn variants off a template, creating person after person within small sims, or lots of copies of pre-fab worlds that endure briefly as scientific experiments or toys – like the millions of sample cities pre-packaged with the 21st-century computer game SimCity.

Our age is awestruck by computers, but we should also bear in mind that a simulation might take another form entirely: A simulation could conceivably be created from ordinarily-structured analog physical materials, at a scale that is small relative to the size and power of the designers – a world in miniature in a sandbox, as it were. Or there might be future technologies as different from electronic computers as electronic computers are from clockwork and which can give rise to conscious beings in a manner we can't even begin to understand. Simulation skepticism thus needn't entirely depend upon hypotheses about the power of computing technology. As long as we might well be artificially created playthings, and as long in our role as playthings we might well be radically mistaken in our ordinary day-to-day confidence about

the recent past or the near future or the existence of distant lands, we might well be sims in the sense relevant to sim-skepticism.

Bostrom's argument for a 1/3 credence that we are sims should be salted with caveats both philosophical and technological – and yet it seems that we have positive empirical and philosophical reason to assign *some* non-trivial credence to the possibility that the universe contains many sims, and conditionally upon that to the possibility that we are among the sims, and conditionally upon that to the possibility that we (or you, or I) are in a sim-environment small or unstable enough to count as a skeptical scenario. Multiplying these credences together, it seems reasonable to be quite confident that we are not in such a small or unstable sim-environment, but it's hard to see grounds for being *hugely* confident about that. Again, I venture that a reasonable credence would be about 99.9% plus or minus an order of magnitude.

3. Grounds for Doubt: Cosmological Skepticism.

Mainstream quantum mechanics seems to imply that there is an extremely small, but finite, chance that a molecule-for-molecule duplicate of you (within some very small error tolerance) could spontaneously congeal, by random chance, from disorganized matter. And it needn't be only you: It could be you plus some large portion of your environment, perhaps even an entire galaxy. This is sometimes called the *Boltzmann brain* scenario, after physicist Ludwig Boltzmann, who conjectured that our galaxy might have originated from a random fluctuation, given infinite time to do so (Boltzmann 1897; Carroll 2010; De Simone, Guth, Linde, Noorbala, Salem, and Vilenkin 2010; Crawford 2013).

It seems reasonable to assign some sizeable credence to the following philosophical hypothetical: *If* such a Boltzmann brain or "freak observer" emerged, it could have some

philosophical and cosmological thoughts, including possibly the thought that it is living on a full-sized, long-enduring planet that contains philosophers and physicists entertaining the Boltzmann brain hypothesis. (If, given some kind of content externalism, e.g., Putnam 1981, it would require a thousand years of history to have a thought with that content, imagine a Boltzmann brain system with that spatiotemporal size or more.) The standard view is that it is vastly more likely for a relatively small Boltzmann brain system to emerge than for a relatively large one to emerge. If so, almost all Boltzmann brains who think they are living on long-enduring planets and who think they will survive to see tomorrow are in fact mistaken: They are a blip in the chaos that will soon consume them.

Might I be a Boltzmann brain of this sort?

Well, how many Boltzmann brains are there in the universe, compared to human-like cosmological observers who have arisen by what I think of as the more normal process of millions of years of evolution on a large, stable rock? If the world is one way – for example, if the universe is infinite, and prone to fluctuations, and Big Bangs are an extremely rare occurrence – then the ratio of Boltzmann brains to normal human-like observers might be large as the size of the patch under consideration goes to infinity. If the world is another way – for example, if it limited to a few Hubble-lengths' size and duration after which it settles into an unfluctuating state, then there might not be a single Boltzmann brain anywhere. If the world is still another way, the ratio might be about 50-50. Do I have any compelling epistemic reason, grounded in contemporary cosmology, to think that I am almost certainly in a universe with a highly favorable ratio of human-like observers to Boltzmann brains? Given the general dubiety of (what I think of as) current cosmological theorizing, it seems rash to be hugely confident about which sort of universe this is.

But maybe my rational credence here needn't depend on such cosmological ratios. Suppose that there are a million doomed Boltzmann brain duplicates of me who think they are "Eric Schwitzgebel" writing about the philosophy of Boltzmann brains, etc., for every one evolved-up "Eric Schwitzgebel" on a large, stable rock. Maybe there's a good philosophical argument favoring the rationality of the evolved-up Erics assigning 99.9999% or more credence to their being non-Boltzmannian, even after they have embraced cosmological dubiety about the ratio of freak observers to normal observers. Maybe it's just constitutive of my rationality that I entirely sure I'm not such a being, or maybe it's an unchallengeable framework assumption, or maybe some externally-secured forward-looking reliability, which a freak observer cannot have, warrants the stable Eric Schwitzgebel's supreme confidence – but again, as in the dream case, it seems unreasonable to be absolutely certain that such philosophical arguments succeed. If so, retaining supreme confidence in hope that one has such perfect warrant seems intellectually complacent.

Here's another cosmological possibility: Some divine entity made the world. A lot of well-informed people take that possibility seriously; that's one reason to do so ourselves, especially since on the question of the origin of the universe, atheistic cosmology has not yet produced a stable scientific consensus.

But although it seems possible that some entity intentionally designed and launched the universe, I'm inclined to think that a sober look at the evidence does not compel the conclusion that if such a deity exists, it is benevolent. The creator or creators of the universe might be perfectly happy to have created lots of doomed Boltzmann brains. They might not mind deceiving us, might even enjoy doing so. The divine will, if it exists, is obscure. Maybe God is not a very skilled constructor of universes and I am one of a million trial runs, alone in my room,

like an artist's quick practice sketch. Maybe God is a sadistic adolescent who has made a temporary Earth so that he can watch us fight like ants in a jar. Maybe God is a giant computer running every possible set of instructions, most of which, after the Nth instruction, produce only bizarre results at the $N+1^{th}$. (Some of these scenarios overlap the sim scenarios.) Natural theology is an uncertain business. Revealed theology is – or should be – even more uncertain.

It seems unreasonable to maintain extremely high confidence – 99.999% or more – that our position in the universe is approximately what we think it is. The Boltzmann brain hypothesis, the sadistic adolescent deity hypothesis, the trial-run hypothesis – those are only some of the possibilities. We appear to have a very narrow and limited perspective on the world. The positive evidence that we are narrow and limited in this way is grounds for cosmological doubt. We are like fleas on the back of a dog, watching a hair grow, and saying "ah, so that's the nature of the cosmos!" It is rational, I think, to reserve a small credence – again, I'd suggest about 0.1% – for epistemically catastrophic cosmological possibilities, in which we are radically wrong about huge portions of what we normally take to be utterly obvious.

4. Grounds for Doubt: Wildcard Skepticism.

These three skepticisms – dream skepticism, simulation skepticism, and cosmological skepticism – are the only specific skeptical scenarios that currently draw a non-trivial portion of my credence. I think I have *grounds for doubt* in each case – grounds, that is, for at least a sliver of dream doubt, simulation doubt, and cosmological doubt. People dream frequently, and there are respectable theories, not my favorite but not entirely dismissible, on which dreams and waking life are often indistinguishable. Similarly, there are positive reasons, not purely

hypothetical what-ifs, to assign a small but non-trivial credence to simulation doubts and cosmological doubts.

In contrast, I currently see no good reason to assign even a 0.0001% credence to the hypothesis that aliens removed my brain last night and are now keeping it in a vat and feeding it fake input. Even if I think such a thing is *possible*, nothing seems to point toward anything but a negligible chance of its being true. I also find it difficult to assign much credence to the possibility that I am a vastly deluded madman, living in a ditch or asylum somewhere, hallucinating an office and falsely believing I am the not-very-famous philosopher Eric Schwitzgebel. I see no positive argument that gives these doubts much grip. But I also think that if I knew more, my epistemic situation might change. I want to reserve a small amount of credence for the possibility that there is some skeptical scenario I am overlooking or not taking seriously enough. Call this *wildcard skepticism.*

5. Grounds for Doubt: Conclusion.

A *radically skeptical scenario,* let's say, is any scenario in which a large chunk of the ordinary beliefs that we tend to take for granted is radically false. Paradigm examples are the scenarios described above – that this is a dream, that this is a small sim, that we are brief and soon-doomed creations of chance or of an indifferent deity – as well as other cases discussed in the literature on radical skepticism, such as the brain-in-a-vat scenario, radical solipsism, or a case in which induction utterly fails and the future is radically unlike the past or present. Call the view that things are more or less as they seem and no such radically skeptical scenario holds *non-skeptical realism.*

For each of the radically skeptical scenarios described in Section 1-3, and for the wildcard skeptical possibility suggested in Section 4, I suggest that a reasonable credence would be about 0.1% plus or minus one order of magnitude. Combining these considerations together, I would suggest a final credence in the disjunction of all radically skeptical possibilities combined should be between about 0.1% and 1%, plus or minus an order of magnitude; and thus it is reasonable to invest about 99% to 99.9% credence in non-skeptical realism, plus or minus an order of magnitude. This is the view I am calling *1% skepticism*.

I'm not concerned here about exact numbers. Nor is it incompatible with my intended thesis entirely to reject numerical approaches to confidence. I intend the numbers for convenience only, to gesture toward a degree of confidence much higher than an indifferent shrug but also considerably lower than nearly absolute certainty.

I am also not concerned to defend my view against complaints that it is insufficiently skeptical. There are few genuine radical skeptics. Reserving even 0.1% credence for radically skeptical scenarios might already seem bizarre and extreme. I assume that opposition to my view will come almost entirely from philosophers much more confident than I in the truth of non-skeptical realism.

Although my thesis concerns skepticism, the reader might notice that I have never once used the word "know" or its cognates. I'm not concerned, in this essay, about the application of the term "knowledge". Maybe I know some things that I believe with less than 99.9% credence (e.g., that person X is less politically conservative than person Y, or that my son is currently at school); and so maybe I know that I am awake despite not having perfect credence in my wakefulness. My concern is rational credence, not knowledge.

6. Is 1% Skepticism Self-Refuting?

If I am a Boltzmann brain, then my evidence for my cosmological beliefs, including the belief that I might well be a Boltzmann brain, is not caused in the proper way by scientific evidence for those beliefs. If I am in a small simulated world, my evidence about the fundamental nature of the world, including the nature of simulations, is likewise probably dubiously grounded. If I am dreaming, my seeming memories of what it is generally like to dream and what it is generally like to be awake might themselves be mere dream errors. The scenarios I've described can, it seems, at least partly undermine the evidence that seems to support them (Moore 1959; Maitzen 2010; Crawford 2013).

Such apparently self-undermining evidence does not, however, defeat skepticism. Montaigne compares skeptical affirmation to rhubarb, which flushes out everything else and then itself last (1580/1595/2003, p. 590; also Diogenes Laertius 3rd c. CE/1972, on Pyrrho). For example, suppose your only evidence about the outside world were through video feeds. If you were to discover video-feed evidence that the video feeds were generally unreliable, the proper response would not, it seems, be to discard that evidence as self-defeating and retain high confidence in one's feeds. It would be surprising if it were generally the case that evidence that one is in a risky epistemic position somehow bites its own tail, making itself disappear through self-defeat, leaving certainty in its place. If something in your experience suggests that you might be dreaming – maybe you experience yourself seeming to levitate off your chair – it would not, presumably, be sensible as a general policy to dismiss that evidence, reasoning that if you are dreaming such evidence is unreliable. If something hints than you might be a in a simulation, or if the scientific cosmological evidence seems to lead toward increasingly bizarre and dubious options, the correct response would seem to be more doubt, not less.

What *is* plausibly self-defeating or epistemically unstable is high credence in *one specific skeptical scenario*. For example, if I take some bit of dream evidence to establish beyond a doubt that I am dreaming, based on my memory that such evidence could never occur in waking life, maybe I should temper this thought with the further thought that such evidence might also be consistent with being in a simulation. Conversely, if a voice from on high tells me this is a simulation and then starts working miracles, that should probably somewhat increase my credence that this is indeed a simulation; but I should also probably consider the possibility that this is a dream or mad hallucination. In this way, evidence that on the face of it invites high credence in specific skeptical scenarios might be partly self-undermining. But 1% skepticism, since it trades only in low credences and tolerates a diversity of scenarios, is a different type of case.

7. Should I Try to Fly, on the Off-Chance That This Is a Dreambody?

Philosophers sometimes say that skepticism is unlivable and can have no permanent effect on those who attempt to endorse it. See the Greco quote in the epigraph, for example. Arguably, this is Hume's view, too, in Part One of his *Treatise* (1740/1978). I stand on the other side, with Sextus (the other epigraph quotation): Radical skepticism, including 1% skepticism, need not be behaviorally inert. I will explore this idea using examples mostly from my own life, which I have chosen because they are real, as best I can recall them – and thus hopefully also realistic – but if you prefer you may interpret them as merely hypothetical.

Let's begin with a whimsical case. I was revising the dreaming section of this essay. Classes had just been released for winter break, and I was walking across campus to the science library to borrow more books on dreaming. I had just been reading Thompson (forthcoming) on

false awakenings. There, on the wide-open, empty path through east campus, I spread my arms, looked at the sky, and added a leap to one of my steps, in an attempt to fly.

My thinking was this: I was almost certainly awake – but only *almost* certainly. At that moment, my credence that I was dreaming was higher than usual for me, but still I think not an unreasonably high credence, maybe about 0.3%. I figured that *if* I was dreaming, it would be a delight to fly around instead of trudging. On the other hand, if I was not dreaming, it seemed no big deal to leap, and in fact kind of fun – perhaps a bit embarrassing if someone saw me, but no one seemed to be around.

I'll model this thinking with a decision matrix. I don't intend the numbers to be precise, nor do I mean to imply that I was at the time in an especially mathematical frame of mind.

Call dream flying a gain of 100, waking leap-and-fall a loss of 0.1, dreaming leap-and-fall a loss of only 0.01 (since there's even less reason to be embarrassed if it really is a dream), and continuing to walk in the dream a loss of 1 (since why bother with the trip if it's just a dream) – all relative to a default of zero for walking, awake, to the library. For simplicity, I will assume that if I'm dreaming, things are not overall much better or worse than if I'm awake (for example, I can get the books tomorrow). Let's assign a 50% likelihood of successfully flying, conditional upon its being a dream, since I don't always succeed when I try to fly in my dreams.

So here's the payoff matrix:

	dreaming (0.3%)	not dreaming (99.7%)
leap	50% fly: +100 50% not fly: -0.01	-0.1
don't leap	-1	0

The expected value formula yields approximately +0.05 as the expected gain for leaping and -0.003 as an expected loss for not leaping.

It was an unusual occasion. Normally more is lost for trying to fly (e.g., embarrassment or distraction from more important tasks), and normally my credence in the dream possibility, when the issue even occurs to me, is probably lower than 0.3%. And I'm assuming a high relative payoff for flying. Maybe flying isn't really *that* much better than walking, in my more common moods. Also, the decision is not repeatable. If I even once try to fly and fail, that will presumably influence my sense of the various probabilities and payoffs. For example, my first leap-and-fail should presumably reduce my credence that I am dreaming and/or my credence that if this is a dream I can fly.

You might say that if the effect of skeptical reflections is to make one attempt to fly as one is walking across campus, that is not a good result! However, if the objection assumes hindsight certainty that I was not dreaming, then it is a poor objection. A similar argument could be mounted against having bought car insurance. A better version of this objection considers the value or disvalue of the type of psychological state induced by 1% skepticism, conditional upon the acknowledged 99%-99.9% subjective probability of non-skeptical realism. If skeptical doubt has a sufficiently negative effect on how I approach what I am 99%-99.9% confident is my real life, then there would be pragmatic reason to reject it.

I'm not sure that in this particular case it played out so badly. The leap-and-fail was silly, but also whimsically fun. I briefly punctured my usual professional mien of self-serious confidence. I very much doubt I would have leapt in that way, adding that particular weird color to my day, and now to my recollections of winter break, if I hadn't been thinking so much about dream skepticism.

You might object that if skepticism is on the table, then I should give some credence to the possibility that my attempt to fly would result in displeasing a deity who then condemns me to eternal torment. To this objection, I have a two-part response. First, the type of skepticism I have in mind here is not groundless skepticism in which I can concoct any old hypothesis and give it non-trivial weight. There are positive reasons for taking the dream hypothesis seriously (and the sim hypothesis, and general cosmological skepticism), and then conditionally upon that the possibility that I can fly – since I seem to remember dreams often allowing that – but there is no correspondingly substantial positive reason for assigning any but the most minuscule credence to the god-who-damns-me-for-attempting-to-fly hypothesis. Second, even if I allow a very tiny credence to the god-who-damns-me hypothesis – one in 10^{30}? – symmetry suggests that I assign a similar credence to a complementary god-who-rewards-me-for-trying-to-fly hypothesis, and a reasonable simplifying assumption might be that all such remote possibilities cancel out.

8. Weeding or Borges? And Long-Term Planning.

It was Sunday and my wife and children were at temple. I was sitting at my backyard table, in the shade, drinking tea – a beautiful spring day. Borges' *Labyrinths,* a favorite book, lay open before me. It occurred to me that I should probably weed the garden. It had been a few weeks, and the weeds were vigorously sprouting. But Borges was appealing. Perhaps I should seize the current pleasure and defer the weeds? As I recall it, I was exactly on the cusp between these two options – and rationally so, let's assume. I remember this not as a case of weakness of will but rather as a case of rational equipoise.

Skeptical possibilities hadn't yet figured in my deliberations, but then suddenly they came to mind. This might be a dream, or I might be in a short-term sim or some other brief world, or in some other way I might be radically mistaken about my position in the universe. If so, I figured that I weeding might not have the long-term benefits I hoped. I might wake and find that the weeds still needed doing. I might soon be unmade, I and the weeds dissolving into chaos. None of this, of course, I regarded as *likely*. But if figured that *if* my decision situation, before considering skepticism, was one of almost exact indifference between short-term benefit and long-term benefit, then this new skeptical consideration should ever so slightly tilt me toward the short-term benefit. I lifted the Borges and enjoyed my tea.

Before considering the skeptical scenarios, my decision situation might have been something like this:

Borges: short-term expected value 2, long-term expected value 1, total expected value 3.

Weeding: short-term expected value -1, long-term expected value 4, total expected value 3.

With 1% skepticism, the decision situation shifts to something like this:

	some skeptical scenario holds (1%)	the world is approximately how I think it is (99%)
Borges	short-term gain: 2, long-term gain: 50% likely to be 1 (e.g., if the sim endures a while), 50% to be 0.	short-term gain: 2, long-term gain: 1
weeding	short-term gain: -1	short-term gain: -1

	long-term gain: 50% likely to be 4	long-term gain: 4

This yields an expectation of +2.995 for Borges vs. +2.980 for weeding.

Of course, again, I'm oversimplifying. If I'm a Boltzmann brain, I probably won't even get through the first sentence of Borges. If I'm a sim, there's some remote chance that the being in charge of my world will bestow massive pleasures on me as soon as I start weeding. Etc. But the underlying thought is, I believe, a plausible one: To the extent radically skeptical scenarios render the future highly uncertain, they tilt the decision theoretical scales slightly toward short-term benefits over long-term benefits that require short-term sacrifices. It doesn't follow, of course, that I should blow my retirement funds on a crazy night in Las Vegas – not unless I'm *sure* I'm a short-term sim or about to wake up, and of course I'm sure of no such thing, indeed I'm almost sure of the opposite.

Some friends of mine have gently suggested that my backyard reasoning was just post-hoc rationalization – that I was already set upon choosing the Borges and just looking around for some justifying excuse. Maybe so! This throws us back into the pragmatic question about the psychological effects of 1% skepticism: Would it be a good thing, psychologically, for me to have some convenient gentle rationalization to justify a bit more carpe diem? In my own case, probably so – as long as I'm careful with such reminders of impermanence. Maybe this is true of you too, if you're the type to get this deep into a philosophy article rather than going off skipping among the trees?

9. My Airplane Descends Through the Fog, and Whether I Really Believe I Might Be a Sim.

I'm a passenger in a jumbo jet which is descending through turbulent night fog into New York City. I'm not usually nervous about flying, but the turbulence is disturbing me. I estimate that the odds of dying in a jet crash with a major U.S. airline are well under one in a million – but descent in difficult weather is one of the riskiest situations in flight. So maybe my odds of death in the new few minutes are about one in a million? I can't say those are odds I'm *entirely* happy about.

But then I think: Maybe I'm a short-term sim. Based on the reasoning in Section 2, my credence that I am a short-term sim should be about one in a thousand. In a significant portion of those short-term scenarios, my life will be over soon. So my credence that I die within the day because I'm a short-term sim should be at least an order of magnitude higher than my credence that I die in a mundane plane crash.

I fail to derive comfort from these reflections.

Now maybe I *shouldn't* derive comfort from these reflections. When I was only considering the plane's descent, I estimated my odds of death at about one in a million. When I began to consider simulation scenarios, my credence in near-term death rose to maybe one in ten thousand. Maybe I should be distressed by this seemingly increased credence in near-term death. On the other hand, though, I am accustomed to facing the simulation possibility with equanimity. The odds are low, and I don't see much that I can do about it. The descent of the airplane adds only a small bit to the odds of my near-term death, on this way of thinking – within rounding error – and in the airplane, as in the sim, no action recommends itself as likely to improve my odds. I should just sit tight. The airplane's turbulent descent seems to have made no material change in my prospects or in my decision options, and perhaps reflecting on that fact should restore my equanimity.

The fact that these reflections left me somewhat cold, as I sat there in the plane, might be taken to reveal that I don't really *believe* the skeptical conclusions that I draw. I don't really have a credence of about 0.1% that I am in a small simulation – not even when I explicitly think about the possibility and think that I am endorsing it. The non-trivial likelihoods of imminent death that flow from the short-term sim scenario don't register emotionally with me, don't really drive my spontaneous thinking, are some kind of intellectual froth, philosophical word games disengaged from life.

Elsewhere, I have argued for what I call a "phenomenal, dispositional" account of belief, on which to believe some proposition P – for example, to believe that there is a non-trivial chance that one is a sim – is to match, to an appropriate degree, a certain stereotypical dispositional profile, including phenomenal and cognitive dispositions as well as the more traditional behavioral dispositions (Schwitzgebel 2002). Applying this account to the present case, I'd say: To have a credence of about one in ten thousand that I am a short-term sim would be, in part, to be disposed, when the occasion arises, sincerely to affirm that I have such a credence; to feel assent to something like that credence when I reflect on the matter; and to do further reasoning in light of that credence (for example, about the higher subjective likelihood of dying that way than in an airplane crash). But it is also emotionally to feel the existence of such a risk and to react spontaneously, both inwardly and outwardly, as though the risk is real – dispositions I appear mostly to lack, as shown by the descending airplane case. In truth, too, I must admit that my feelings of sincerity about 1% skepticism tend to wane as soon as the arguments fade from active consideration. I am, I think, at best an *in-between* believer in 1% skepticism. I am, perhaps, like Kaipeng the trembling Stoic (Schwitzgebel 2010), who sincerely

asserts on philosophical grounds that death is not bad but who still mourns his friends and trembles on the battlefield.

Would it be epistemically or pragmatically rational for me to try to shape myself toward a stable and thorough conformity to the dispositional structure constitutive of being a 1% skeptic – as the Stoic (or Buddhist or Christian or…) might engage in spiritual exercises to shape her habits of thinking to better conform to her philosophical positions?

My hunch is: no. First, the program presumably would take considerable time and require considerable world stability, so it's not likely to succeed unless non-skeptical realism is true; and there's something perverse about launching a program that will succeed in creating genuine doubt only on the condition that feared outcome does not occur. Second, pragmatically speaking, I suspect it is not in fact salutary to be a thoroughgoing 1% skeptic, as I will discuss in Section 12. If so, a certain amount of irrational fluctuation might serve us well.

10. Agnosticism.

I used to say that my credence in the non-existence of God was about the same as my credence that my car was still parked where I left it rather than stolen or towed – a credence of maybe 99.9%, given the safety of my usual parking spots, a credence sufficient, I thought, to warrant the label atheist. But reflection on radically skeptical possibilities has, I believe, as a matter of personal intellectual history (to the extent one can judge such things), converted me to an agnostic.

Cosmological skepticism and wildcard skepticism seem to leave plenty of room for the possibility of a god or gods – 50%/50%? 10%? – conditional upon accepting them. That puts the 1% skeptic who takes these possibilities seriously already in the ballpark of a 0.1% credence in a

divine power. I also think that if I am in a simulation, the power that the creators of the simulation likely have over me – the power, for example, to stop the sim, to erase me or radically change me, to resurrect me, to work miracles – are sufficient that I should regard them as gods (Bostrom 2003; Schwitzgebel 2014; Steinhart 2014). And of course there are plenty of non-skeptical scenarios that involve a god or gods (including non-skeptical simulation scenarios and non-skeptical Big Bang cosmologies). It would be odd to assign a 1% credence to the disjunction of all radically skeptical scenarios, and some substantial sub-portion of that to skeptical scenarios involving divinity, while assigning only negligible credence to non-skeptical scenarios involving divinity. Once I see myself as that flea gazing at a hair, I can no longer sustain my formerly high levels of atheistic self-assurance. It doesn't follow that the 1% skeptic should invest any more than 2% credence in theistic options, or that orthodox monotheism, with a perfect and benevolent god, is the best theistic option.

Reflection on radically skeptical possibilities tends, I suspect, to increase open-mindedness and tolerance of disagreement in general. (In Schwitzgebel 1996 I argued that this was Zhuangzi's aim in advancing skeptical arguments.) I intend this claim as an empirical conjecture about the psychology of philosophy. Ordinary intelligent readers who engage with good, accessible skeptical texts like those of Zhuangzi, Sextus, Montaigne, Bayle, and Hume, will, if I am right, tend to experience a reduction of philosophical self-confidence, even if they do not accept the skeptic's conclusions.

Given the diversity of philosophical opinion, most philosophers who confidently hold specific philosophical opinions about matters of contentious philosophical fact must be mistaken. So a skeptically-induced reduction in philosophical self-confidence might, in general, be good epistemic medicine.

11. Dire Straits.

Let me add one case not from my own life. You're a prisoner, innocent, facing the executioner. You are strapped to the chair with no way out, and in comes the executioner with the lethal injection. If you're a 1% skeptic, you might consider the possibility that this is a dream or a simulation, and this might suggest action plans that might not have been open to you before. Imagine the executioner turning into a dog. If this is a dream, that might work, converting the dream from nightmare to something else. If it's not a dream, then it's not clear that anything is lost, and maybe something (hope?) has been gained. Again, given the high probability that this is not a dream and the huge, durable cost of making real-world as opposed to dream-world mistakes, I would not recommend attempting such dream-escapes unless there were no real-world options left open that had a non-trivial chance of success.

12. The Problem of Social Disengagement.

My father had a good career as a humanistic psychologist. His 1965 book *Streetcorner Research* explores juvenile delinquency, describing some of his street-level direct experimental interventions, and along the way it discusses Nietzsche, Freud, Jung, and Teilhard de Chardin. His 1980 book coauthored with his twin brother was, in its day, one of the leading discussions of the relationships between psychology and law. Now, in his eighties, fighting cancer and chronic pain, my father regularly engages me in long, sophisticated conversations about philosophy and death and religious belief, especially Pascal's wager. So he knows how to think about big philosophical issues and their connections with slender subjective probabilities.

During one of these conversations about death and betting, I told him that, accepting certain skeptical possibilities as live, I should be about 99.5% certain that he exists. As I said this, this seemed the wrong thing to say. *Do* I really believe that? *Should* I believe that? It seems morally and interpersonally odious genuinely to reserve doubt about his existence, especially with him right there – a bizarre and insulting disengagement. Can you fully love a parent or spouse or child while explicitly doubting their reality?

I tried a similar thing later on my fourteen-year-old son, driving him on the way to school. He and I also regularly discuss philosophy, and he knows my arguments for 1% skepticism. A propos of nothing, I said, I'm *almost* certain you exist. A joke, of course. I can't mean it seriously, can I?

In those moments I don't think I do mean it seriously, nor would I want to. It is one thing to entertain 1% skepticism, to feel the pull of it, to intellectually and maybe even emotionally endorse it, when I am in my backyard alone sipping tea or when I am strolling across campus during winter break. At such times, it can even provoke awe and wonder, impelling me to appreciate my (possibly very limited) moment. But it's quite another thing to say it to your father.

I see four possible ways to resolve this tension.

One would be to refrain (usually) from expressing my doubts aloud, but nonetheless still allow myself to entertain them seriously, following my 1% skeptical arguments where they seem to lead. If they lead to my judging it 0.1% likely the person I think I see before me is really a dream image, so be it. This doesn't mean that a thought to that effect need very often be explicitly before my mind, just as I needn't very often think about other low-probability events if my action is not much governed by consideration of them. Given that dreams (and short sims

and most Boltzmann brains) are ephemeral, while decisions in waking life endure, it rarely makes sense to compromise the latter on the thin chance of the former, unless one is right on the cusp, as I discussed in my dream-flying and backyard examples. So maybe, since I will mostly disregard them, retaining such doubts is fine after all?

No, I'm inclined to think not. I don't think I should be disposed to give *any* decision-theoretic weight to the possibility that my son or father, there before me, is merely a dream image or non-conscious part of a mock-up sim environment. As Pascal recommends wagering on the existence of God and trying to shape one's belief accordingly, I will wager 100% credence on the existence of my father before me. And I do not, perhaps, even need a Pascalian regimen to shape up that belief. It's already there; it's already what I feel when I see him. I need only refrain from trying to dislodge it from a misguided commitment to following 1% skepticism to its logical ends.

But then, maybe – and this is the second possible resolution – have I discovered that I should simply reject 1% skepticism, resolving all or virtually all of my credence onto non-skeptical realism? Have I discovered a pragmatic justification for supreme confidence, or (alternatively) a commonsense justification that bad philosophy had hidden from me in my earlier reflections?

Such absolute rejection of 1% skepticism doesn't seem right to me either. Common sense, despite some merits, is no sure guide in philosophy (see Schwitzgebel forthcoming for an extended argument on this point), and my arguments seem reasonable – more reasonable, when I consider them, than the extreme self-assurance of 0% or 0.0001% skepticism. So I don't see epistemic merit in entirely abandoning 1% skepticism. Is the case against 1% skepticism, then, purely pragmatic or moral? – that I'll live a better life or give more to the world if I am a

consistent, across-the-board 0% skeptic than a 1% skeptic? That's not at all clear to me. If I'm going to be a bit epistemically irrational, on pragmatic or moral grounds – and who isn't? – then I might as well go for the sweets on both sides of the issue rather than insist upon consistency. There seem to me to be two ways of doing this. These are the third and the fourth resolutions.

Third resolution: Consistently invest the skeptical portion of my credence only in scenarios in which the people I love exist, and in which we are in parallel epistemic positions. Thus, for example, I might say to my son: Maybe *we* were created five minutes ago in a small sim, or maybe this is a *joint* dream we are having together; but I would not say or genuinely think maybe this is my dream and you are a mere dream figure, maybe I am in a small sim and you are a mere mock-up sprite without genuine consciousness.

Fourth resolution: Let myself be swayed by mood, inconstant over time. When I'm in the backyard, go ahead and permit a sliver of doubt even in the existence of my family, if that's where my reflections and inclinations seem to lead. When I'm driving my son to school, let go of skeptical doubt entirely.

The third resolution seems awkwardly to allow some possibilities while disallowing others very nearby without good epistemic reason; I'm not sure I can quite get my mind there. The fourth resolution, however, seems a little too comfortably mercenary, if it turns into simply believing whatever seems to make me happiest, given my current mood, without epistemic integrity.

So all four resolutions are flawed. I see no other way out. I suppose my 1% skepticism bites its own tail after all, though it can't quite swallow itself.[1]

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