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The Ethics-Mathematics Analogy

There is an influential tradition of comparing ethics to mathematics. Plato closely associated

ethical and mathematical knowledge (Burnyeat 2000), and later rationalists stressed an analogy

between simple arithmetic propositions and simple ethical ones (Clarke 2010/1705, 12; Peacocke

2004, 201).[1] According to this analogy, both ethical and mathematical propositions would be

knowable *a priori* -- i.e., independent of sensory experience. So, ethical realism and

mathematical realism would be of a piece, however different ethics and mathematics may

appear.

Other philosophers have emphasized differences between the cases. Mathematical propositions

admit of proof, while ethics is the subject to endless controversy (Rachels 1998, 3). Moreover,

mathematical theorems are logical consequences of empirically confirmed scientific theories, but

ethical theories seem to be immune to confirmation in this way (Harman 1977, 9-10). Such

differences would seem to show that ethical realism is on worse footing than mathematical

realism, after all.

In this article, I discuss apparent similarities and differences between ethical and mathematical

knowledge, realistically construed. I argue that some are are merely apparent, while others are of

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[1] See Gill [2007] for an overview.

little philosophical consequence. There is an important difference between the cases. But it is not an epistemological difference *per se*. The difference is that ethical knowledge, if it is practical, cannot fail to be *objective* in a sense that mathematical knowledge can. One upshot of the discussion is radicalization of Moore's Open Question Argument. Another is that the concepts of realism and objectivity, which are widely identified, are actually in tension.

1. Self-Evidence, Proof and Disagreement

The principal reason that ethical knowledge invites analogies with mathematical knowledge is that both areas can appear to be *a priori*. Just as we do not attempt to empirically discover whether there are infinitely-many twin primes, "we do not attempt to discover what people ought to do in particular circumstances by...performing crucial experiments" (McGrath 2010, 108-9). Of course, *whether* the circumstances are ones in which, say, happiness is maximized is an empirical question. But that something is or is not to be done when happiness is maximized does not seem to be. This similarity has led various philosophers to claim that "[t]here is the same kind of...support for the moral a priori thesis" as for the view that "we are justified in accepting that $2 + 2 = 4$...without...reliance on...our perceptual experiences" (Peacocke 2004, 201).[2]

It might, however, be thought the analogy ends there (Gill 2019; McGrath 2014; Pigliucci 2018; Rosenberg 2015). Even if our ethical and mathematical beliefs would both be *a priori* justified *if they were justified at all*, our mathematical beliefs would seem to have much better claim to

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[2] See (Putnam 2004, 1), (Scanlon 2014), and perhaps (Lillehammer 2007), for related companion in innocence arguments based on what (Leng 2016) usefully compares to the "thin" realism of (Maddy 2011). Scanlon, unlike Putnam or Lillehammer, appeals to an analogy between ethics and mathematics throughout his book. (Note that I use "ethical" and "moral" interchangeably throughout.)

being justified. After all, "[i]n mathematics there are proofs….But moral facts are not accessible by…these familiar methods" (Rachels 1998, 3).

In order to assess this contrast, we need to clarify what is meant by "proof". At first pass, a proof is deduction sketch from some sentences labeled "axioms". But there is a proof of any claim whatever in *this* sense. For any sentence, S, just let the axioms be {S}! What matters is how mathematical axioms compare to alleged ethical "axioms".

Unlike ethical principles, it is often claimed that mathematical axioms "are *self-evidently* true" (Greene 2013, 184, italics in original). But, on any reasonable conception of self-evidence, this is incorrect (Fraenkel, Bar-Hillel, and Levy 1973; Forster 2018; Maddy 1988a & 1988b; Shapiro 2009). First, if any mathematical propositions are self-evident, then it is generally the *theorems which the axioms imply*, rather than the axioms themselves (Godel 1990/1944, 121). Russell pointed out that we believe the axioms "because we can see that their consequences are true, instead of believing the consequences because we know" the axioms (1973/1907, 273–274). In other words, the logical order of our mathematical theories is often opposite their justificatory order -- as in the empirical sciences. Second, there remain intractable disagreements over the axioms of all of our mathematical theories -- from recondite axioms of higher set theory (Mayberry 2000, 10; Jensen 1995), to the characteristic axiom of the calculus (Kilmister 1980, 157), to such elementary axioms of arithmetic as the first-order induction schema (Nelson 1986, 1) and the principle that every natural number has a successor (Zeilberger 2004, 32-3).[3]

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[3] Another reason to doubt the epistemological significance of proof in mathematics is that standard proofs use classical logic. But whether classical logic is correct is also the subject of apparently intractable controversy. A

Of course, there are heretics in every field. So, it might still be rejoined that "persistent disagreement on foundational questions…distinguishes moral theory from inquiry in…mathematics, certainly in *degree*" (Leiter 2009, 1, my emphasis).[4] But what is the pertinent "measure" of disagreement? Ethical disagreement is not more *propositions-widespread*. That is, there do not seem to be more disputed ethical propositions in any useful sense. Certainly there are not more raw numbers of them. A dispute over P translates into a dispute over ~P, ~~P, and so on *ad infinitum*. But nor does there seem to be more disputed *kinds* of propositions. Even such banalities as that $1 + 1 = 2$ are denied by fictionalists (Field 1989, Introduction).[5]

Maybe, then, ethical disagreement is more *people-widespread*. That is, maybe there are more pairs of people who disagree over an ethical proposition. But how do we measure *that*? If we count raw numbers of pairs, then there turns out to be less disagreement in academic metaphysics than in genetics, simply because there are many fewer metaphysicians! But if we look at *proportions* of those who disagree, then there are two problems. First, most mathematicians seem to lack a serious view on the question of what axioms are true. Mathematics is focused on *logical truths* of the form *if* T, *then* S (where T is a finite conjunction of axioms). However, among those who have a view on the matter, we "encounter...divergences of viewpoint…that can easily remind one of religious, schismatic controversy" (Bell and Hellman 2006, 64). Second,

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standard proof of S from (a finite subset of) axioms T which is not, say, intuitionstically valid will do nothing to convince an intuitionist *even of the conditional* (T → S).

[4] See also McPherson (Forthcoming).

[5] Of course, fictionalism affords an intuitively philosophical or "second-order" reason to deny that $1 + 1 = 2$. But, similarly, what non-fictionalist (error theorist) denies that it is sometimes ethically permissible for some people to stand? I will return to the alleged "first-order"/philosophical distinction shortly.

even if most mathematicians do accept standard axioms, *experts on arguments relevant to them are clearly conflicted.* How could agreement among the ignorant show that our mathematical beliefs have better claim to being *a priori* justified?[6] As D.A. Martin puts it, "[f]or individual mathematicians, acceptance of an axiom is probably often the result of nothing more than knowing that it is a standard axiom" (1998, 218).

It might be countered that mathematical disagreement is *philosophical*, or "second-order", in a way that ethical disagreement is not. As Russell quipped, the point of philosophy is to take "something so simple as not to seem worth stating" and turns it into "something so paradoxical that no one will believe it" (1918, 514). Maybe mathematicians find standard axioms *initially credible*. It is just that philosophical arguments lead them astray. But, first, what does it matter that someone finds a principle credible *assuming that they would not if they had expert knowledge?* One may also find it "initially credible" that particles must have determinate locations. It is hard to see how this could count for much given that they would not if they studied quantum mechanics. Second, the assumption that we can partition "first-order" credibility judgments from "second-order" philosophical reflection is suspect. What would it even mean to have a view as to whether, e.g., Osama bin Laden is ethically blameworthy, *bracketing* whether we have free will, whether God exists, and whether ethical relativism is true?

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[6] This points to a dilemma for arguments from disagreement. Either disagreement among experts on foundational questions matters or not. If so, then all areas seem to be relevantly controversial, because all areas bottom out in controversial philosophy. If not, then it is hard to see why whatever distribution of opinion there is should count for much. The first horn has affinities with Frances' "empirical" argument for skepticism. See (Frances 2005).

It might still be held that the *a priori* justification that our mathematical beliefs are supposed to enjoy is *easier to explain* than that our ethical beliefs. Unlike our ethical beliefs, the *a priori* justification of our belief in "basic truths of mathematics [can] be explained...by seeing mathematics as a system" of so-called *analytic* truths "which are true by virtue of the meanings of the terms used…" (Singer 1994, 8). But, setting aside well-known worries about the intelligibility of truth in virtue of meaning (Quine 1951), it is hard to envisage an *argument* that a significant array of mathematical, but not ethical, truths are so true -- given that some theorist actually denies them. For instance, the Axiom of Foundation, which says that every set occurs at some level of the cumulative hierarchy, is supposed to be a paradigm of an axiom that is true in virtue of its meaning. It is just "part of what we mean" by "set" that every set is formed at some stage in a transfinite generation process *via* the Powerset and Union operations (Boolos 1971, 498; Shoenfield 1977, 327). But, far from commanding consensus, many take the corresponding iterative conception of set to not even "embody a...*coherent* notion" (Rieger 2011, 17-18, my emphasis)! After all, what could "formed" and "generation" *mean* when applied to abstract entities like (pure) sets (Potter 2004, Sec. 3.3)?[7]

Second, even if some mathematical, but no ethical, truths are true in virtue of meaning, it is hard to see how this would make the *a priori* justification of our mathematical beliefs easier to explain. If we were worried that some sets fail to be well-founded, then, under the assumption that it is just "part of the concept of set" that all sets are, we should just worry *that our concept of set is not satisfied*. Maybe instead of sets, there are only "shmets" -- where shmets are just like

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[7] For more reasons to doubt the "epistemically analyticity" of mathematical axioms, see (Clarke-Doane Forthcoming, Section 2.7).

sets except that some of them fail to be well-founded. In general, there is a "translation scheme" between the worry that sets might fail to be as we take them to be, assuming that no mathematical principles are true in virtue of meaning, and the worry that there might be only shmets instead of sets, assuming that all such (conditional) principles are (Clarke-Doane 2014, Section III). To be sure, *if every "consistent" concept of set were satisfied*, then truth in virtue of meaning might be of epistemological import. But the view that every consistent concept of set is satisfied is *methodologically* indistinguishable from the most uncompromising relativism (Field 1998). So, at least if we wish to be "objectivist" realists, this caveat is no comfort. (More on objectivity in Section 3.)

2. Indispensability, Confirmation, and Debunking

Our mathematical beliefs would, thus, appear to have no better claim to being *a priori* justified than our ethical beliefs, despite common allegations to the contrary. But our mathematical beliefs might still have better claim to being justified. Maybe they have better claim to being *empirically* justified. After all, "[i]n explaining the observations that support a physical theory, scientists typically appeal to mathematical principles [while] one never seems to need to appeal...to moral principles" (Harman 1977, 9-10). Let us call this difference *Harman's Contrast.*

Perhaps Harman's Contrast is misleading. Arguably, the mathematical principles to which scientists appeal are redundant in a careful regimentation of our scientific commitments (Arzenius and Dorr 2012; Chen 2017; Chihara 1990; Field 1980 & 1989; Hellman 1989; Leng

2010). Alternatively, maybe Harman overstates the case. "An interesting historical question",

for example, "is why vigorous and reasonably widespread moral opposition to slavery arose for

the first time in the eighteenth and nineteenth centuries, even though slavery was a very old

institution" (Sturgeon 1985, 64). According to Sturgeon, part of the answer appeals to the ethical

hypothesis that "chattel slavery…was much worse than previous forms of slavery" (Sturgeon

1985, 65).[8]

Even if we take Harman's Contrast at face-value, however, the idea that our belief that P is

empirically justified if and only if P is implied by a (true) explanation of some of our

observations is suspect in both directions.[9] Consider the *if* direction first. If that were true, then

key aspects of scientific methodology would be mysterious. As Maddy notes, "physicists seem

happy to use any mathematics that is convenient and effective, without concern for the

mathematical existence assumptions involved…" (1997, 155). But the postulation of new

particles and forces is met with empirical scrutiny. Indeed, if our belief that P were empirically

justified whenever P was implied by an explanation of some of our observations, then, for any

logical truth, P, we would *trivially* be empirically justified in believing that P -- simply because P

is implied by everything. Meanwhile, if the other direction of the above biconditional were true,

then our belief that P could never be empirically justified if P was epiphenomenal. For example,

if it happens to be the case that, unbeknownst to us, facts about pieces of paper are best

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[8] For additional problems with Harman's Contrast, see (Enoch 2010a, Ch. 3), (Liggins 2016), and (Roberts 2016)).
[9] I will assume that explanation is factive in what follows, so will not continue to make the qualification "true". An additional problem that I do not have room to discuss is that, even if it were assumed that our belief that P is empirically justified if P is implied by some explanation of some of our observations, this would not show that our mathematical beliefs generally are. There is little prospect that higher set-theoretic principles will ever be appealed to. From an empirical scientific point of view, at least some mathematics must be "recreation and without ontological rights" (Quine 1986, 400).

dispensed with in a regimented psychophysics (in favor, perhaps, of facts about particles arranged "paper-wise"), then your belief that there is a piece of paper in front of you would not now count as empirically justified. But even if your belief is vulnerable to *undermining* by knowledge of this explanatory dispensability, the suggestion that your belief that there is a piece of paper in front of you is not empirically justified *absent that knowledge* is difficult to swallow.

Maybe, then, the epistemological significance Harman's Contrast should be framed in terms of undermining. If ethical truths are dispensable, even to any explanation of our (token) ethical beliefs, then maybe knowledge that this is so undermines whatever justification our ethical beliefs enjoyed -- whether *a priori* or empirical (Joyce 2008, 2016). In other words, maybe our ethical beliefs are vulnerable to a Genealogical Debunking Argument. By contrast, while there may be an empirically confirmed explanation of our (token) mathematical beliefs too, "the fact that we have such a genealogical explanation" does not "demonstrate that we are unjustified in" believing the likes of $1 + 1 = 2$ (Joyce 2007, 182). For "we have no grasp of how such an "explanation could work "independent of assuming" that $1 + 1$ really does equal 2 (*Ibid*., 182).[10]

How might such undermining proceed? It is sometimes suggested that, if Harman's Contrast is true, then "[e]volution is not a truth-tracking process with respect to evaluative truth" (Kahane 2011, 111), so that "most of our [ethical] judgements are off track due to the distorting pressure of [causal] forces" (Street 2006, 109). But absent an independent account of "tracking" or "off

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[10] For other statements to this effect, see (Crisp 2006, 17), (Gibbard 2003, Ch. 13), (Sinnott-Armstrong 2006, 46), (Sosa 2002), (Street 2006, 160, fn. 35), and (Woods 2018). (I say "arguably" because (Clarke-Doane 2012, Sec. III) argues that we can explain the usefulness of our arithmetic beliefs without assuming their truth. But see (De Cruz 2016) and (Leng 2019) for a rejoinders.)

track", this gloss is not informative. Indeed, it may be just another way of *saying* that no explanation of our ethical beliefs implies their contents. Joyce suggests that "the intuition at the heart of truth-tracking is that beliefs may or may not be *sensitive* to the facts which they represent" (Joyce 2016, 147, emphasis in original). But if Joyce means by "sensitive" what epistemologists mean, then this is incorrect (if he does not mean this, then it is unclear what he means). Our belief that P is sensitive when, had it been that ~P, we would not still have believed that P (had we used the method that we actually used to determine whether P). Harman's Contrast gives us no reason to doubt that our ethical beliefs satisfy this condition (Sturgeon 1985). Consider any atomic ethical truth, A is M, where A names a particular person, action, or event and M ascribes an ethical property. Then had A not been M, A would have been different in non-ethical respects—since worlds in which the "explanatorily basic" truths which fix the supervenience of the ethical on the non-ethical are more distant from the actual world than worlds in which those truths are the same and A is not M, whatever their exact modal strength. But had A been different in non-ethical respects, our ethical beliefs would have reflected the difference. To tweak an example of Harman, had Joe been petting a cat rather than pouring gasoline on it, we would not have judged that the Joe was doing something wrong.

To be sure, if "counterpossibles" -- i.e., counterfactuals with impossible antecedents -- are not trivially true, then one might still argue that at least our explanatorily basic ethical beliefs are insensitive. But, first, what matters is that *Harman's Contrast gives us reason to believe this*. Second, this would be a special case of an apparently pervasive fact -- that our belief that P is insensitive, if not trivially sensitive, *whenever P would be necessary, if true*. In particular, as

Field writes, "we would have had exactly the same mathematical… beliefs even if the mathematical…truths were different…" (Field 2005, 81).[11]

Maybe, then, Harman's Contrast gives us reason to believe that our ethical, as opposed to mathematical, beliefs are "off track" in the sense that "we could easily have arrived at mostly false" ones (using the method that we actually used to form ours) (Braddock *et al*., 2012). In epistemological jargon, maybe Harman's Contrast gives us reason to doubt that our ethical, but not mathematical, beliefs are *safe*. But this is also incorrect. The whole point of arguments like Joyce's is commonly taken to be that we were "bound" to have the ethical beliefs that we do have "for reasons that have nothing to do with their truth".[12] But, if we could not have easily had different ethical beliefs, then, so long as their contents could not have easily been false, we could not have easily had *false* ethical beliefs. Of course, this does not show that our ethical beliefs *are* safe. (I will argue for the opposite conclusion shortly.) It shows that Harman's Contrast gives us no reason to doubt that they are.

Street (2006) suggests that Harman's Contrast gives us reason to believe that that our moral beliefs are "off track" in the sense that it would be a *coincidence* if they were true. But what does "coincidence" mean, if not something to do with sensitivity or safety? Harman's Contrast

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[11] Perhaps the upshot is just that all of our beliefs in necessary truths are undermined? Such a view would seem to "explode" (Clarke-Doane 2016, 2.4). If our belief that atoms arranged paper-wise compose a piece of paper is undermined, then how can we rationally maintain belief that we are looking at a piece of paper? Similarly, if our belief that *modus ponens* is valid is undermined, then how can we rationally maintain belief that Q, given that P and (P-->Q)? One *could* give up the requisite closure principles. But this would be a radical concession.

[12] For instance, Street writes, "among our most deeply and widely held judgments, we observe many...with exactly the sort of content one would expect if the content of our evaluative judgments had been heavily influenced by selective pressures" (2006, 116).

does not gives us reason to doubt that the *probability* that our ethical beliefs are true is high, contra Street (2016). If the probability at issue is epistemic, then the suggestion assumes the conclusion that the it is supposed to establish—that our ethical beliefs are not justified. But for any (explanatorily basic) ethical truth, P, the *objective* probability of P is presumably 1, given that such truths would be necessary. (If we say that only truths which are necessary in a more demanding sense -- e.g., "conceptually necessary" -- get probability 1, then, logicism notwithstanding, it is objectively improbable that there are infinitely-many prime numbers as well.) Meanwhile, it may be that Pr(we believe that P) ≈ 1, because the probability of our having the ethical beliefs that we do is high. But, then, Pr(P & we believe that P) ≈ 1, by the probability calculus. Since, (P & we believe that P) implies (our belief that P is true), Pr(our belief that P is true) may approximate 1 too. And while one might protest that the problem remains to explain "actual correlation" between our beliefs and the truths (Field 1989, 283; Enoch 2010b), no one has managed to say what this means -- if not that the contents of our moral (token) beliefs fail to imply their truth, or that the correlation holds in nearby worlds, so the actual correlation is no fluke (in which case we are back to safety).[13]

3. Pluralism and the New Problem of Safety

The arguments surveyed suggest that our mathematical beliefs have no better claim to being (defeasibly) *a priori* or empirically justified than our ethical beliefs. It is also doubtful that our

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[13] Nor would it help to gesture at a lack of "connection" between our ethical beliefs and the truths. If this means that their contents are not implied by any explanation of our having them, then we are back to (an application of) Harman's Contrast, not an explanation of how it could undermine our ethical beliefs. If it means something else, then we need to know why, epistemologically, we should care. Unless there being a lack of "connection" between our beliefs and the truths is evidence for lack of reliability, giving up our beliefs on account of it seems to be like giving them up because they are not polite. (See (Baras and Clarke-Doane forthcoming).)

ethical beliefs are peculiarly vulnerable to genealogical debunking. But there surely *is* an epistemological mystery surrounding ethical knowledge. How do we reliably detect the independent ethical truths? As Mackie put it, knowledge of such facts would seem to require "some special faculty of perception or intuition, utterly different from our ordinary ways of knowing everything else" (1977, 38). Debunkers' mistake was merely to think that this problem has anything to do with whether any explanation of our moral beliefs implies their contents.

This mystery, however, is just the analog to Benacerraf's famous worry that, if mathematical realism is true, then "the connection between the truth conditions for the statements of [mathematics] and any...events connected with...people… cannot be made out" (1973, 673). The Benacerraf Problem "is to...explain how our beliefs about [mathematical] entities can so well reflect the facts about them" (Field 1989, 26). For "*if it appears in principle impossible to explain this*, then that tends to *undermine* [our mathematical beliefs, realistically construed], *despite* whatever reason we might have for" them (Field 1989, 26, emphasis in original).

This is not precise. The question arises: what could "explaining the reliability" of our beliefs require such that (a) it appears impossible to explain the reliability of our ethical and mathematical beliefs, realistically construed, and (b) if it appears this way, then that undermines them, so construed (Clarke-Doane 2016)? Benacerraf (1973) suggests that it requires establishing a *causal relation* between our beliefs and the truths. But then (b) would be false. Not even the originator of the theory of knowledge to which Benacerraf appealed maintained that

the theory applies to our mathematical beliefs (Goldman 1967, 357).[14] Field suggests that "[t]he

Benacerraf problem…arise[s] from the thought that we would have had exactly the same

mathematical… beliefs even if the mathematical…truths were different...and this undermines

those beliefs" (2005, 81). And one might similarly object that "[w]hatever form the moral

facts...take, one would have the very same moral...beliefs because such things are causally

determined, and the causal order has not changed" (Bedke 2009, 196). However, (b) is false on

this reading for much the reason that Joyce's sensitivity argument fails (see, again, Section 2).

A clue to the proper reading of "explain the reliability" comes from reflection on what is widely

taken to be the only version of mathematical realism that affords an answer to it -- what I will

call *pluralism*. Field himself concedes that pluralists "solve the problem by articulating views on

which though mathematical objects are mind-independent, any view we had of them would

have been correct" (2005, 78). At first approximation, mathematical pluralism says that any

(first-order) consistent mathematical theory is true of the entities of which it is about.[15]

What epistemological problem does pluralism solve? It does not solve the problem of showing

that there is a causal, explanatory, or even logical connection between our beliefs and the truths.

Nor does it show that our mathematical beliefs counterfactually depend on the truths. Given a

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[14] Relatedly, "explaining the reliability" of our (token) beliefs might require showing that their truth is implied by some explanation of them. But that would make (b) implausible because it would transform the Benacerraf Problem into a Genealogical Debunking Argument. It would also make (a) trivially false in the mathematical case, if mathematics is indispensable to empirical science in the way that it is widely supposed to be. As Steiner writes, "suppose that we believe...the axioms...of number theory or analysis…. [S]omething is causally responsible for our belief, and there exists a theory — actual or possible, known or unknown — which can satisfactorily explain our belief in causal style. This theory, like all others, *will contain the axioms of number theory and analysis*" (1973, 61, italics in original).

[15] The view must be moderated if we are not to be pluralists about pluralism! A more tenable, but still radical, view would be that any Pi_1 sound theory is true of its intended subject.

"cooperative" metasemantics, pluralism solves the problem of showing that had our beliefs been systematically different they would not have been false. But (b) is false of this problem. Had we had perceptual beliefs as of ghosts, say, we would have been deluded. That does not undermine those beliefs. We only get a problem that might satisfy (b) if we add that we could have *easily* had systematically different beliefs. Given that pluralism is false of the objects of perception -- i.e., that there is one world to which our perceptions answer -- our perceptual beliefs would have been false had they been systematically different. So, if this scenario could have easily transpired, those beliefs are not *safe*. The problem that mathematical pluralism solves, and which may satisfy (a) and (b), is the problem of showing that our mathematical beliefs are safe.

But while mathematical pluralism is promising, there is something transparently unsatisfactory about ethical pluralism. At first pass: ethical theories are supposed to tell us what to do, and ethical pluralism leaves us clueless. While we can *believe* both deontological and utilitarian ethical (or ethical-like) theories (believe them true "of" different properties) we must either kill the one to save the five or not! Given that we ought$_{Utilitarian}$ to kill the one, but ought$_{Deontological}$ not, the *practical* question remains: whether to do what we ought$_{Utilitarian}$ or ought$_{Deontological}$ to do.

It is widely assumed that such considerations just show that, unlike mathematical realists, ethical realists should be "objectivists". This conclusion would be of epistemological import. It would mean that mathematical realists have an answer to Benacerraf's worry that ethical realists lack (Berry 2018).[16]

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[16] Arguments for ethical pluralism (even if not by that name) at both the metaphysical and metasemantic levels include the Cornell Realism of (Boyd 1988, 225f), the functionalism of (Jackson & Pettit 1995, 25), and the

However, even supposing that ethical objectivism makes sense,[17] the problem with ethical

pluralism can be turned into a problem for ethical realism -- pluralist or not. We can frame it in

terms of the logical law of weakening. This says that if a conclusion, C, follows from premise A,

then C certainly follows from premises A and B. Now suppose that we know that we ought to

kill the one to save the five in our circumstance. This cannot settle the practical question of

whether to, by weakening. For we can stipulatively introduce an ought-like concept, ought*,

according to which we ought* not kill the one to save the five.   It does not matter whether

ought* is actually satisfied. What matters is that, *under the assumption* that we ought to kill the

one, and that we ought* not, the practical question remains whether to do what we ought, or

ought*, to do. Since the premise that we ought to kill the one does not settle the question of

whether to kill the one *in tandem with* the premise that we ought* not kill the one, it cannot settle

the question of whether to kill the one on its own. If this is so, however, then settling the facts --

even the ethical facts -- fails to settle the practical questions at the center of our ethical lives

(Clarke-Doane 2015; Forthcoming A, Ch. 6; & Forthcoming B; Eklund Manuscript).

This argument is a kind of radicalization of Moore's Open Question Argument. Moore (1903,

Sec. 13) can be taken to show that an agent may know that A is F, for any *descriptive* property,

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neo-Carnapianism of (Scanlon 2014, 27). Note that while the first two views are supposed to be "naturalist", the last is not. On the pluralist implications of the former, see (Horgan and Timmons 1992, 460).

[17] This is questionable because, unlike mathematical theories, ethical ones at most "postulate" *properties*. They are about -- i.e., name or (first-order) quantify over -- uncontroversial inhabitants of the world, like people, actions, and events. For example, although "Hitler is wicked" predicates the property of wickedness, it only refers to a man. Properties, in the sense presupposed by such sentences, come cheaply on a wide variety of conceptions. And while one might protest that the pluralist metasemantics is less plausible in the ethical case than in the mathematical, *metaphysically*, it is hard to see how one could deny that there are ethical-like properties, if there are ethical ones.

F, while failing to "endorse" A in the sense that is characteristic of practical deliberation. The above argument seems to show that an agent may know that A is F, for any property, F, descriptive *or ethical*, while failing to endorse A. This is because she may always wonder whether to do what is F, rather than F*, for some alternative ethical-like concept, F*.

Of course, even if ethical facts fail to settle deliberation, it might still be that normative facts settle this. Many philosophers deny that ethics is overriding in that, sometimes, we all-things-considered ought to do what we ethically ought not do (Das [Forthcoming]). But if the argument works, it works for *any normative properties*, whether ethical, epistemic, prudential, or all-things-considered.[18] Even if we ought all-things-considered kill the one, we ought* not, and the question remains whether to do what we all-things-considered ought, or ought*, to do.

Non-cognitivists like Gibbard [2003] maintain that, ordinarily, talk of normative "facts" just is a way of expressing deliberative conclusions. Whether this is so is a question of natural language semantics. What matters for the argument is that ethical facts *as the realist (and, more generally, cognitivist) conceives of them* are practically anemic. This means that even if ethical pluralism affords a resolution to the Benacerraf Problem for ethical realism, understood as the problem of showing that our ethical beliefs are safe (as mathematical pluralism seems to), there is a new problem of safety that ethical pluralism fails to resolve (and which does not arise in the mathematical case).[19] Where we might have worried that we could have easily had different, and

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[18] It also works for normative properties, however *construed*. When transposed to the key of constructivism, for example, the problem is essentially the "agent/shmagent" problem of (Enoch 2006).

[19] To be sure, even given that, e.g., the Axiom of Choice is true of the sets and false of the shmets, we can wonder whether to theorize in terms of sets or shmets. But that is itself a practical question -- not one of (pure) set theory.

so false, ethical beliefs, we can now worry that we could have easily had ethical*, rather than ethical, beliefs. Had we, our ethical-like beliefs would not have been *false* (they would have been true of the ethical* facts). But we would have done what we would say in the vulgar we ought not have (insofar as were were rational*). We would have been using the "wrong" normative -- or normative-like -- concepts (Eklund 2017). But this is *not* to say that we would have been using concepts which fail to be "metaphysically privileged", contra McPherson and Enoch (2017). Metaphysical privilege, if it has ramifications for *good* theorizing, is itself a normative concept, and the argument from weakening just reapplies. Even if our ethical-like concepts would have failed to be metaphysically privileged, they would have been privileged* (Dasgupta 2017), and the practical question remains whether to theorize in terms of privileged or privileged* concepts. The new problem of safety is not *epistemological*. It is practical.

Conclusions

I have discussed analogies and disanalogies between ethical knowledge and mathematical knowledge, realistically construed. I have argued that our mathematical beliefs have no better claim to being *a priori* or empirically justified than our ethical beliefs. Nor are our ethical beliefs especially vulnerable to undermining. In general, if one is an ethical anti-realist on the basis of epistemological considerations, then one ought to be a mathematical anti-realist too.

And, yet, ethical and mathematical realism do not stand or fall together. Ethical questions, insofar as they are practical, cannot fail to be objective in a way that mathematical questions can.

This means that even if ethical pluralism affords a resolution to the epistemological problem of safety, there is a new practical problem of safety that ethical pluralism fails to resolve.

It also means that the concepts of realism and objectivity, which are widely identified, are actually in tension. If mathematical realism is true, and we can answer the Benacerraf Problem, then mathematics is not objective. Just as Euclidean and hyperbolic geometries are equally true, albeit true of different structures, the mathematical pluralist claims that "foundational" theories, like (pure) set theories, are too.[20] It is *as though* the most uncompromising mathematical relativism were true. Conversely, ethical questions, insofar as they are practical, are objective in the sense that, e.g., the question of whether the Parallel Postulate is true is not. While we can *believe* whatever theories we like, we must either kill the one, or not. Pluralism is not an option in the practical realm. But if practical questions answered to the facts, then it would be. We ought to kill the one, we ought* not, and that is all there is to it. There would be no further question to resolve. Since there would be, practical questions cannot be questions of fact.

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[20] I am referring to the pure mathematical theories, Euclidean and hyperbolic geometry. Clearly, not all geometries are true of spacetime.

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