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Naturalism and Placement (or, What should a good Quinean say about mathematical and moral truth?)

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Abstract

What should a Quinean naturalist say about moral and mathematical truth? If Quine's naturalism is understood as the view that we should look to natural science as the ultimate 'arbiter of truth', this leads rather quickly to what Huw Price (2011) has called, 'placement problems' of placing moral and mathematical truth in an empirical scientific worldview. Against this understanding of the demands of naturalism, I argue that a proper understanding of the reasons Quine gives for privileging 'natural science' as authoritative when it comes to questions of truth and existence also apply to other stable and considered elements of our inherited worldview, including, arguably, our firmly held mathematical and moral beliefs. If so, then the 'thin' mathematical and moral realisms of Penelope Maddy (2011) and T. M. Scanlon (2014), respectively, are vindicated. We do not need to shoehorn mathematical and moral truths into the pushings and pullings of our empirical scientific worldview; for the busy sailor adrift on Neurath's boat, mathematical and moral truths already have their place.

We use the phrases 'there is' and 'there are' with some profligacy: there are tables, chairs, beermugs; there are prime numbers greater than 100, and infinite numbers greater than any finite number; there are many ways the world could have been (and some ways it could never have been); there are plenty of good reasons not to torture cats… . We can think of the philosophical project of ontology is to adjudicate which (if any) of these 'there is' claims to take seriously, as genuinely committing us to objects of a particular kind. 'Naturalism', as an ontological proposal, offers an approach to making such adjudications, according to which we should take seriously those existence claims that are justified according by the lights of our best scientific understanding of the world around us. Some ordinary existence claims will be set aside when we apply this standard, as they are not vindicated by our most considered (scientific) efforts to describe and understand reality. Other more surprising existence claims that do not crop up in our folk ontology will be ruled in by this approach; perhaps we will discover a fundamental ontology of strings amongst the building blocks of reality.

The key idea behind naturalism, respect for the worldview identified by natural science, has been developed in different directions. Huw Price (2007) singles out two such developments, Eleatic and Quinean naturalism (sometimes referred to in the literature as ontological and methodological naturalism respectively). According to Eleatic naturalism, the world that natural science tells us of is

a world of causes, so 'we should believe in the existence of whatever figures in good causal explanations of observed phenomena, and our experiences and beliefs in general' (Price, 2007, p. 375). Quinean naturalism, on the other hand, does not prejudge that the ontology vindicated by science is an ontology of causes. Quinean naturalism starts from a non-sceptical respect for the methods of the sciences wherever they may lead us – as Price (2007, p. 375) puts it, 'the ontology we should accept is the ontology that turns out to be required by science' but leaves it open that the requirements of science may go beyond an ontology of physical objects entering into causal relations.

Placement Problems and RER Strategies

On either understanding, though, naturalism's focus on the worldview provided by the sciences and the ontology vindicated by that worldview means that many of our ordinary apparently ontological claims are hard to place. This is where the work for philosophical naturalists trying to adjudicate existence questions arises. Our talk of mathematics, of morals, of modality – all of these present us with what Price calls 'placement problems'. 'The problem', Price (2011, 8) tells us, 'is that of "placing" various kinds of truths in the natural world.' Given what science tells us about our own cognitive apparatus and our ways of finding out about the world around us, some of the rich ontological claims of ordinary discourse look distinctly problematic, leading us to ask, but how could beings like us come to have reliably true beliefs about objects like that?

The 1970s saw classic statements of naturalistic placement problems in the philosophy of mathematics and in metaethics, due to Paul Benacerraf (1973) and J. L. Mackie (1977) respectively. Benacerraf focuses on mathematical truths and worries about how to square a standard account of mathematical truths with our best understanding of our cognitive capacities, while Mackie's 'queerness' worry about objective values presents parallel concerns with finding a place for these in the kind of world that spatiotemporal beings such as ourselves could come to know about. The challenge for the naturalist is to work out what to do when we have on the one hand a body of *prima facie* knowledge, but on the other hand no obvious way of placing these known truths in the world of things accessible to us according to our best scientific understanding of ourselves and our cognitive capacities? What, in particular, should a Quinean naturalist say about our apparent knowledge of moral and mathematical truths?

Given a 'problematic' truth P, whose subject matter is not straightforwardly physicalistic, the problem is of placing that truth in a scientific setting S. Again following Price (2011), we can identify three standard naturalistic strategies in dealing with such placement problems, which I will refer to as 'RER strategies'. When faced with the problem of fitting P into S, naturalists could either:

> *Reduce P*: show that P actually reduces to some unproblematic 'natural' scientific truth; *or*
>
> *Expand S*: show that the methods of science actually vindicate our belief in truths like P, even if it turns out that P requires an ontology that goes beyond the ontology of causes traditionally associated with the sciences (so that methodological naturalism requires us to reject ontological naturalism); *or*
>
> *Reject P*: show that P, despite surface appearances, turns out not to be true after all.

If none of these strategies works, it looks as though the final option will have to be to give up on naturalism, at least understood as the view that all our knowledge is fundamentally 'scientific' in character, since these options seem to exhaust the possibilities for finding a place for 'problematic' truths such as P in S.

In the case of mathematics, Philip Kitcher's (1984) attempted reduction of claims about numbers to claims about our (idealized) collecting and segregating abilities may be the best worked out attempt to reduce the mathematical to the physical. In metaethics, Frank Jackson (1988) provides an example of an attempt to reduce moral properties to natural ones. In mathematics again, the influential Quine-Putnam indispensability argument for the existence of abstract mathematical objects (QPIA) is a naturalistic argument for the expansion of the recognised domain of natural science beyond the physical, arguing that our ordinary scientific standards of evidence vindicate belief in mathematical truths as well as physical ones. In metaethics David Enoch's (2011) defence of robust metanormative realism is modelled on the QPIA, with Enoch arguing that the role that normative talk plays for us can only be accounted for by adopting a robust realist conception of normative truths. In both such cases, ontological naturalism is set aside in favour of methodological naturalism: mathematical and moral truths are made scientifically respectable despite a non-physical subject matter by showing such truths to be knowable using the usual methods of science (particularly, inference to the best explanation) – such truths thus have a place in an empirical scientific worldview since we come to know them through scientific methods, broadly construed. In my own work in the philosophy of mathematics (Leng 2010) I have defended the fictionalist strategy of rejecting the face-value truth of mathematical claims. In metaethics, as Price points out, the rejection strategy has more variations beyond fictionalism – live options also include *eliminativism* and *expressivism* – but all join in rejecting the truth-at-face-value of moral claims, and thus the need to place these truths in our naturalistic worldview.

Rejecting RER Strategies: Price's Neo-Carnapianism

If we accept the naturalist's project as one of looking for a place for apparently problematic truths in our scientific worldview, then RER strategies seem to be the only way to proceed. But Price thinks that naturalists in the Quinean tradition are mistaken in accepting this placement project. Price's reason for this stems from his understanding of the roots of Quinean naturalism in Carnap's critique of traditional metaphysics (in 'Empiricism, Semantics, Ontology'). In ESO, Carnap presents an account of theoretical frameworks for speaking of objects, which, he thinks, shows the folly of trying to ask, externally to any such framework, 'but are its claims *really* true?'. Framework rules are linguistic conventions that give meaning to the terms introduced. They tell us in what circumstances it is appropriate to assert sentences within the given framework, either purely as a matter of logic or in conjunction with empirical input. Once a framework is adopted then we can ask (against the backdrop of the conventions adopted) internal questions as to which claims then become warranted (given framework rules and evidence). But, Carnap claims, if we try to ask substantial metaphysical claims about the *real* existence of the objects introduced by means of the framework, we are not asking internal questions (which are answered against the backdrop of the framework's linguistic rules), but are rather trying to ask somehow about the 'truth' of the conventions themselves. This kind of question, Carnap argues, is something we try in vain to ask 'framework free', and as such, he suspects, will lack any cognitive content. All we can ask is the practical question of whether such-and-such conventions are convenient to adopt in theorizing, not whether they are really true.

We can see how this is meant to go by looking at an example of a theoretical convention adopted in order to get theorizing going. In developing the special theory of relativity, Einstein starts with the assumption that the speed of light is constant in all frames, and on the basis of that proposes a definition of distant simultaneity: two spatially separated events are simultaneous in a given frame of reference if the light signals emitted from both reach an observer positioned at their midpoint together. Once this definition is in place we can synchronize clocks and only then can we measure time elapses (within a frame of reference) from one spatial point to another, and therefore determine facts about speed (distance travelled divided by time taken). As Einstein points out, this might strike one as circular, since we assumed the constancy of the speed of light in order to motivate our definition of simultaneity, and yet it is only once that definition is in place that we can go about measuring the speed of light. However, he argues, this circularity should not concern us as we do not need (and cannot get) empirical justification of our assumption of the constancy of the one-way speed of light; it is simply a stipulation we introduce in order to make measurements possible (and thus arrive at empirically testable predictions downstream of that stipulation). There are, then, in Einstein's view, no theory-independent facts of the matter about the one-way speed of light; all facts about speed are downstream of a conventional choice to adopt a particular definition of simultaneity. Similarly, Poincaré and Reichenbach argue that there are no theory-independent facts of the matter about the geometry of spacetime, but only facts that fall into place modulo conventional decisions about how to measure the sameness of length of distant objects (assuming that rigid measuring rods do not change size as we move about in space). In both cases, we can test empirical claims against the backdrop of our conventional choices about how to measure time and space, but we cannot test those conventions themselves, as there are no theory-independent standards of simultaneity or congruence to fall back on. All we can ask is whether a particular conventional choice strikes us as a practical way of proceeding.

Now Quine's naturalist response to Carnap was meant to get us out of this predicament, by repudiating Carnap's strong distinction between the conventions we start with in getting our theories going and the theoretical questions that we can ask and answer *modulo* those conventions. For, Quine argues, what is tested when we use our theories to describe reality is not individual claims, but the whole theoretical package. As such, the fact that an assumption is initially adopted as a convention to get theorizing going does not stop it from receiving empirical confirmation – that we have continued with a particular framework rather than dropping it in favour of a more convenient alternative counts as vindication of that framework, 'conventions' and all, so that what started out as convention comes, through its continued presence in our best, reflective, theoretical worldview, as well confirmed as any empirical claim made 'downstream' of that convention. So while Quine agrees with Carnap that we've not made sense of traditional metaphysicians' attempts to step outside of the theoretical frameworks given to us by science to ask whether they're 'really' true, whether they really match reality, that doesn't mean that there's no philosophical project of ontology. Rather, the project is recast as the project of uncovering the ontological commitments that reside in our best confirmed, most considered, theoretical judgments: the frameworks that have proved their worth through their continued presence as part of our best efforts at understanding the world we find ourselves in.

Price's attack on this apparent revival of substantial ontological questions (which proceeds by blurring the practical/theoretical divide, and presenting practical reasons to adopt frameworks in our best theories as reasons to believe the ontological claims licensed by those frameworks) is two-fold. First, Price notes, if we accept Quine's point that there is no sharp practical/theoretical divide, there are two ways of reacting to this blurred boundary. While post-Quinean ontologists see this as good news for ontology, as it makes conventional decisions as empirical as anything else, Price notes that we could equally read this in the other direction as bad news, as recognising the element of practical convention in all of our theoretical claims, even those that seemed to us to be most empirical. In Price's view, the 'bad news' reading is the correct one:

> a metaphysican who takes this as a vindication of his position—who announces triumphantly that Quine has shown us that metaphysics is in the same boat as natural science... is someone who has not been told the terrible news. (Price, 2007, p. 393)

Second, Price argues, once we have recognised, as Carnap does, the possibility of multiple linguistic frameworks adopted for various practical purposes, the proper response is a pluralism about ontology: each framework will have its own internal ontology, some may be more practically useful to us than others, but none will be vindicated as 'more true' than any other. The Quinean naturalist who privileges *natural science* as answering ontological questions is, Price thinks, relying on a mistaken view of natural science as uniquely representational that both Quine and Carnap repudiated. But if we repudiate this representational picture of science as the one framework that really 'matches' reality, then Quine's monist privileging of natural science as *the* arena in which ontological questions are answered loses, Price claims, any motivation. We're left, then, with an ontological pluralism: each of many theoretical frameworks, which we may or may not choose to adopt for various practical purposes, brings with it its own ontology, and we have no reason to privilege any one of these as 'the last arbiter of truth' (Quine 1960, p. 23).

Now I don't think that Price is right in his negative assessment of the extent to which Quine is able to resurrect a meaningful philosophical project of ontology from Carnap's sceptical attack. But we will return to that issue later. Let us suppose for now that Price is right. The upshot of this, Price proposes, is that we should adopt 'a kind of global expressivism':

> The right thing to do, as theorists, is not to say that it turns out that none of our statements are genuine representations; it is to stop talking about representation altogether, to abandon the project of theorising about word–world relations in these terms. (Price 2011, p. 12)

Price sees an advantage to this in recasting apparently intractable questions about the truthmakers of, e.g., moral claims as internal claims about the practices of moral assessment:

> with Representationalism and that notion of truthmaking out of the picture, here – with all our semantic notions suitably deflated – we can ask "What makes is true that P?" with our gaze on other kinds of matters. We can ask "What makes it true that causing unnecessary harm to animals is wrong?", for example, requesting some sort of moral explanation or elucidation, without feeling any of the Naturalists' pressure to read this as an enquiry about the material world (or, for that matter, metaphysical pressure about some other kind of world). (Price 2011, p. 16)

If no discourse is properly thought of as representational, and if no discourse is privileged as *the* arena in which matters of truth are decided, then all we have is internal, framework-relative truth. In this case, questions about the truth of claims of a discourse are then properly answered simply by appeal to the internal standards of justification for the relevant linguistic framework, without any need to match the internal claims to an external reality.

Pluralist Naturalisms and the Authority Problem

Despite this advantage of enabling us to set aside what seem to be intractable questions of the 'external' truthmakers for our talk about the mathematical or the moral, neo-Carnapian pluralism comes at a significant price. The problem is that, if all truth is internal truth, and if no discourse is privileged as the ultimate arbiter of truth and existence, then it is hard to avoid the conclusion that any theoretical framework is as true as any other. Insofar as there are internal standards of assertibility within a discourse, then claims within that discourse will be true according to those standards, and any attempts to challenge the truth of such claims 'from the outside' must fail. When asked why we prefer astronomy to astrology; conventional medicine to homeopathy; the big bang to Greek tales of the Titans, if our model is global expressivism, then it seems that all we can do is reiterate our preference.

In the context of the philosophy of mathematics, this problem has been pressed against Penelope Maddy's (1997) attempt to extend naturalistic respect for the claims justified according to the internal frameworks standards of the natural sciences to claims justified according to internal mathematical standards. Maddy's aim in that work is to deal with a problem that she sees as arising from the Quinean naturalist account of mathematics. Mathematics, though extremely useful to the natural sciences, has a large degree of autonomy from empirical sciences. Mathematicians develop their theories using mathematical standards of fruitfulness, without concern for whether the theories they develop are vindicated by the natural sciences. The Quinean view of mathematics can allow that mathematicians develop mathematical frameworks autonomously, but then adds that it is only insofar as a mathematical framework developed in this way becomes confirmed by its indispensable role in empirical science that we can accept its claims as true. Thus, while most set theoreticians find axioms such as the axiom of constructibility, $V = L$, implausibly restrictive on the size of the set theoretic hierarchy, and look for alternative axioms that better fit their conception of the iterative hierarchy as having, at each successor level, sets containing all arbitrary combinations of sets from the previous level, Quine notes that $V = L$ is likely to be sufficient to serve the needs of science. As such, in Quine's view, $V = L$ is confirmed by the use of mathematics in empirical science, and while mathematicians may choose to investigate the consequences of more generous set theoretic axioms, we should look upon their practice as 'mathematical recreation … without ontological rights' (Quine, 1986, p. 400). Taking it as absurd that the internal standards of justification within mathematics, which lead to a great deal of agreement on the rejection of $V=L$ in favour of more expansive axioms, should be overruled by the needs of empirical science, and in light also of concerns about whether the role played by mathematics in empirical science could *ever* count as confirmation of the mathematics used, Maddy argues that we should respect mathematics as an autonomous domain with its own standards of justification, neither needing nor receiving 'any justification beyond proof and the axiomatic method' (Maddy, 1997, p. 184).

Maddy presents her proposal to allow mathematical truth and existence to be determined by the internal standards of the practice as in the 'fundamental spirit that underlies all naturalism: the conviction that a successful enterprise, be it science or mathematics, should be understood and evaluated on its own terms' (Maddy, 1997, p. 184) But it is here that critics have raised the concern of a slide to a pluralistic approach to truth and existence of the sort Price proposes, that seems to make truth and existence just too cheap. Gideon Rosen presses the point, arguing that if Maddy's naturalism requires that we suspend attempts to judge practices from an external vantage-point and believe whatever is considered acceptable given the internal goals of a given practice, then this 'is absurd as a general principle':

> 'Theological naturalism' is a patent non-starter, so if mathematical naturalism is different there must be something special about mathematics.
>
> We can give the problem a useful name. Say that a practice is *authoritative* if, whenever we have reason to accept a statement given the proximate goal of the practice we have reason to believe it is true. For Maddy, on the present interpretation, set theory and natural science are authoritative; but theology is not, or so we may assume. And the problem—the Authority Problem for Naturalized Epistemology—is to give some sort of principle for telling the authoritative practices from the rest. (Rosen 1999, p. 471)

Quine takes natural science as authoritative; Maddy proposes to extend the same respect to set theory. But in Price's view, once we abandon the representationalist project of externally vindicating the internal existence claims of domains via their 'matching' how things really are, then it seems we must conclude that no practice is authoritative over any other. But then no serious ontological project remains.

A similar difficulty arises for another ontological proposal that has striking similarities to Maddy's project in the philosophy of mathematics. In metaethics, T. M. Scanlon has argued for a realist account of practical reasons that bypasses the traditional RER strategies in metaethics, moving instead to a self-consciously Carnap-inspired realism about the framework of practical rationality. Scanlon takes it that there are some straightforward truths about our reasons to act (for example, Scanlon (2014, p. 3) suggests, 'For a person in control of a fast moving automobile, the fact that the car will injure and perhaps kill a pedestrian if the wheel is not turned is a reason to turn the wheel.'). Furthermore, Scanlon takes it that our discourse about practical reasons enables us to refine our views about what reasons we have through a process of reaching reflective equilibrium, which enables us to revise some of our intuitions about reasons in light of theoretic proposals, while still taking them as an important input in achieving an overall account. Normative discourse, Scanlon thinks, is respectable as a discourse in its own right, and not in need of 'placing' within a worldview sanctioned by empirical science. Thus, Scanlon proposes that

> the way of thinking about these matters that makes most sense is a view that does not privilege science but takes as basic a range of domains, including mathematics, science, and moral and practical reasoning. It holds that statements within all of these domains are capable of truth and falsity, and that the truth values of statements of one domain, insofar as they do not conflict with statements of some other domain, are properly settled by the standards of the domain that they are about. Mathematical questions, including questions about the existence of numbers and sets are settled by mathematical reasoning, scientific

> questions, including questions about the existence of bosons, by scientific reasoning, normative questions by normative reasoning, and so on. (Scanlon, 2014, p. 19)

Scanlon's picture fits rather neatly alongside Maddy's project of extending of naturalistic respect to mathematics (and particularly set theory as foundational within mathematics) as an autonomous domain with its own internal standards of truth and falsity. Indeed, Scanlon's motivation for his reasons fundamentalism is an analogous picture about sets, which rejects Benacerrafian worries about external truth-makers for mathematical claims. This resonates with Maddy's own more recent (2011) characterization of her 'Thin Realism' about sets as in contrast with traditional Platonism (or, as Maddy calls it, 'Robust Realism'), according to which it is conceivable that set theoretic claims might be completely settled by internal set theoretic standards, and yet still not true (since not 'matching' set theoretic reality). For Maddy's Thin Realist, even where (as in the case of the continuum hypothesis) mathematical questions are independent of current axioms, there are objective standards for 'going on' in set theory in the search for mathematically deep new axioms that at least for now provide grounds for thinking that CH has an objective truth value independent of our current state of knowledge. That a reflective equilibrium may be reached, landing on a mathematically deep conception of set that answers CH, is enough, Maddy thinks, to motivate Thin Realism about sets, but not Robust Realism (traditional Platonism), as in the latter case but not the former it remains conceivable that the contours of mathematical depth uncovered by set theoretic methodology do not track the mathematical facts.

In the case of normative discourse, Scanlon holds that our discourse about reasons plays an analogous foundational role to our mathematical discourse about sets. And while the process of reaching reflective equilibrium may have led to more stability in our discourse about sets than our discourse about practical reasons, for Scanlon this is a difference of degree rather than kind. To the extent that we have reached relatively stable shared conclusions about reasons, to that extent we should adopt a (metaphysically thin) realism along the lines of the proposed (thin) realism about sets:

> there are central cases in which judgments about reasons seem clearly true. If we should reject these judgments, this has to be on the basis of substantive grounds for thinking them mistaken; not on the basis of questions about how we could be in touch with such facts at all. General doubts of the latter kind would be relevant only if normative conclusions could have the significance they claim only if the facts they purport to represent had some special metaphysical character that would make them inaccessible to us. I see no more reason to believe this in the case of conclusions about practical reasons than in the case of truths about sets. (Scanlon, 2014, p. 86)

The neo-Carnapian message here is clear: the 'representational' paradigm fails for normative claims as it fails elsewhere; our standards for judging normative claims should be the substantive internal standards of the normative domain, not some misguided worry about whether these claims *really* match some independent reality. But given its neo-Carnapian roots, Scanlon's picture faces the same 'authority' problem that we have seen threatens Maddy's view (and that, in Price's view, ultimately reduces all ontological questions to triviality). Unlike Price, Scanlon doesn't think that, when it comes to truth and existence, 'anything goes', and that the internal claims of any framework are on a par.

He says that the internal existence claims of domains are to be accepted insofar as they do not '*have any presuppositions or implications that might conflict with those of other domains, such as science*' (Scanlon, 2014, p. 27). But the neo-Carnapian reading of Scanlon's project offers no reason for preferring science in the case of a conflict, or for adjudicating between domains other than science that conflict with one another (should we, for example, prefer the domain of *numbers*, or *parities*, both of which arise out of abstraction principles that are consistent with empirical facts but inconsistent with one another). And where there is no conflict, Scanlon's position seems to force us to an undiscriminating form of blanket realism about all claims made internal to theoretical frameworks, a position hardly worthy of the label 'realism'.

This challenge has been pressed most forcefully against Scanlon's view by the robust metanormative realist David Enoch, who asks us to imagine a community engaging in what he calls the counter-normative discourse.

> The standards internal to the counternormative domain license claims quantifying over counter-reasons. Those engaged in that discourse treat counter-reasons much as we treat reasons. For instance, they take them to be relevant to their practical deliberation, or perhaps counter-deliberation, in roughly the same way we take reasons to be relevant to ours: when they judge that there is a counter-reason to Φ, they tend to Φ, to criticize those who do not Φ, and so on. But their judgments about counter-reasons would sound very weird to us (once translated into reasons-talk). For instance, they think that it is rather obvious that that an action will cause the agent pain is counter-reason *for* performing it.

Enoch suggests that, by Scanlon's lights, counter-reasons 'are as ontologically respectable as reasons are', arising, as they do out of an internally consistent framework that is not in conflict with empirical science. 'Of course,' Enoch (2011, p. 125) continues, counter-reasons 'are not as *normatively* respectable as reasons are.' By Scanlon's lights, reasoners can certainly criticize counter-reasoners for not acting on *reasons*. The internal standards for reason-discourse have it that if we have a reason to Φ, then we should Φ (and certainly not ψ, where ψ is something that we have a counter-reason, but no reason, to do). But the same goes, *mutatis mutandis*, for the counter-reasoners. Faced with both practices, if we try to ask (externally to either's normative outlook) ought we to act on reasons or counter-reasons, this external question seems to float framework-free, and as such starts to look like a Carnapian 'pseudo-question', lacking cognitive content. We cannot, it seems, in a non-question-begging way justify our decision to act in accordance with reasons as opposed to counter-reasons; all we can do is make our choice.

Solving the Authority Problem

In response to Enoch, Scanlon (2014, p. 29) appears to bite the bullet of saying that, despite the symmetry between us reasoners and the counter-reasoners, we can nevertheless stand firm with our own conception of reason and continue to act in accordance with our own conclusions, rather than the conclusions of the counter-reasoners. The metaphysical ground is given – there are indeed counter-reasons, but these are not *reasons*, and as such their existence presents no challenge to us *reasoners*, who are guided by normative rather than counter-normative considerations. But need Scanlon accept a realism about counter-reasons? Our authority problem came from the lack of a principled reason to privilege science as, as Price (2007, p. 23) puts it, 'the only ontologically-committing game in town'. Seeing other discourses with their own internal standards of assertibility,

whose claims neither have nor seem to need justification as true from their role in natural science, we are led to wonder whether to extend our naturalistic respect to mathematical and normative discourse respectively. Once we are no longer privileging natural science, we seem to be in the neo-Carnapian pluralist predicament of seeing all domains as on a par ontologically - and if all internal existence claims are vindicated, then none are. But is Price right that once we reject the 'representationalist' reason for privileging science, then all we can do is view all frameworks as ontologically on a par, accepting reasons and counter-reasons as metaphysically equally respectable? Is Price right that there is no argument in Quine's work for privileging 'science' over other domains, but only the spectre of a misplaced representationalism?

When we look at what Quine has to say about the naturalist's predicament, it appears that Price is right that there's very little there that justifies privileging *science* in particular as the arbiter of truth and existence. But that doesn't mean that we can't privilege some domains over others. For why does Quine privilege 'science'? Not because of some argument about its superior methods that mean that it is better placed to uncover truths about the underlying reality it represents than other domains with different methodologies. No, we trust 'science' simply because it's all we have, the net result of our best communal efforts at organizing our experiences and understanding the world around us.

> we do not break with the past, nor do we attain standards of evidence and reality different in kind from the vague standards of children and laymen. Science is not a substitute for common sense, but an extension of it. The quest for knowledge is properly an effort simply to broaden and deepen the knowledge which the man on the street already enjoys, in moderation, in relation to the commonplace things around him. (Quine 1957, p. 229)

'Science' is privileged here in Quine's picture not because it stands out as a different kind of discourse, not because its methods are uniquely placed to produce an account that matches reality, but simply because of the historical fact that our current science has been reached by our best efforts at refining our beliefs in light of evidence – it is modern science, rather than Greek mythology, we appeal to in providing our most considered account of who we are and where we come from. But if that is what *science* stands for here, then perhaps Price is right that Quine hasn't really provided us with an argument for privileging *natural science* as such. For, if Maddy and Scanlon are right about set theory and normative theory respectively, then our collective efforts to broaden and deepen the knowledge that we already enjoy, in moderation, concerning sets and reasons themselves give rise to autonomous discourses whose internal standards of reflection and criticism justify our beliefs in those areas, without need for any reduction or vindication from the natural sciences. Naturalism may then require that we trust our most considered and stable beliefs about sets or about reasons, simply because they too are the net results of our best collective efforts at refining the judgments of common sense.

In fact, if we look elsewhere in Quine's discussions of the demands of naturalism, we see less about natural science as such and more about the naturalist requirement to work within our inherited worldview. Thus in Quine's famous image,

> The naturalistic philosopher begins his reasoning within the inherited world theory as a going concern. He tentatively believes all of it, but believes also that some unidentified

> portions are wrong. He tries to improve, clarify, and understand the system from within. He is the busy sailor adrift on Neurath's boat. (Quine, 1981, p. 72)

A reading of naturalism as 'scientism' reads our 'inherited world theory' in this quote as 'the account of the world provided by our best empirical science'. But if we take seriously Quine's route to naturalism, based in his recognition of the impossibility of stepping outside our inherited worldview to ask the external question 'but is it *really* true?', and his rehabilitation of practical reasons to adopt a way of speaking in our most considered attempts to describe and understand the world as theoretical reasons to believe that the world is as described, things look somewhat different. In particular, it is hard to see how we could exempt from this any stable and considered aspects of our inherited worldview that remain through our processes of refinement. And if this is the case, then our most stable mathematical and normative beliefs do have 'something rather special' about them that allows us to see them as authoritative in a way that Greek mythology and counternormative discourse are not. What is special is their history, and the fact that they have survived in our worldview through our collective best efforts at trying to determine what we ought to believe and how we ought to behave. We may be able to imagine a community of counter-reasoners, just as we may be able to imagine a community of counter-inductivists who build their 'science' on the gambler's fallacy. But we have no more reason to be realist about the claims made internal to the discourses of either such community, since we have no reason to think that these frameworks could have arisen as stable and successful solutions to the dual problems of working out how we should behave or what we should believe.

If, then, we take the motivation for Quinean naturalism to be the recognition that we cannot step outside of our inherited worldview, but must work from within to refine our picture of reality, then this presents an alternative to Price's neo-Carnapian pluralism that does not rely on representationalism to separate out the commitment-worthy frameworks from the rest. Our privileging of the claims of natural science comes from our recognition of those claims as vindicated by our best collective efforts at refining our inherited worldview. But the same goes for our considered views about sets and about reasons (and not for the frameworks of Greek mythology or counter-reasons). True, *ontological* naturalism would rule out set talk and reason talk on grounds that these frameworks invoke a non-physical ontology that doesn't match a supposed underlying physical reality. But this ontological naturalism is motivated by a representationalism that Price rightly points out should not have survived the lessons of Quine's and Carnap's critique of traditional metaphysics. If we set aside ontological naturalism in favour of Quinean methodological naturalism, the placement problem remains only if we insist that the only methods we should recognise as authoritative are the methods of natural science, an insistence that is not vindicated by Quine's arguments for naturalism as rooted in the need to refine our inherited worldview from within. On the alternative picture I am recommending, mathematical and normative discourse alike have a firm place in our inherited worldview, as autonomous discourses whose internal standards of justification stand alongside those of empirical science, not in need of vindication by empirical science.

Residual Threats

Greek mythology and the counter-normative discourse are easy to dismiss on this picture. In our best efforts at working out what we ought to believe so as best to explain and predict physical phenomena, we have set aside the accounts offered by the Greek myths in favour of the stories told

in contemporary science. In our best efforts to work out how we ought to behave in order to flourish as stable human societies living together, we have found it conducive to be driven by reasons and not by counter-reasons (indeed, given natural human reactions to pain it is hard to see how a *human* society of counter-reasoners could have developed). Harder cases arise, though, when we consider frameworks of thought that have naturally arisen, either historically or in other sociocultural contexts, and that we would still wish to dismiss as error ridden. For the Spartans, the weakness of a new baby was considered sufficient reason for infanticide. Even bearing in mind historical and social contingencies that may *by our own lights* make some actions reasonable for some people at some times (even though not reasonable for us now), I take it that many would still wish to say that the Spartans were just wrong on this point. Similarly, we do not have to look too far to find cultures whose views on practical reasons differ substantially from our own and where, even when we factor in social contingencies, we would still wish to challenge their claims to be acting reasonably. But to the extent that the conceptions of the reasonable at work in these alternative cultures are the historical result of their own collective efforts to answer the question 'how ought we to behave?', aren't we required to conclude that *their* reasons (or perhaps reasons*) are just as ontologically respectable as our own? Does the Quinean route to realism about reasons require that we live with moral relativism, given the vast variation in inherited moral outlooks?

Here the Quinean naturalist route to Scanlon's account of reasons offers grounding for a limited relativism, but given that realism about reasons is justified in this picture in parallel with our naturalist justification for scientific realism, the level of relativism that results may be less worrying than it may at first seem. Consider what the Quinean scientific realist has to say about alternative theoretical worldviews, both historical and contemporary. In the historical case, while we can agree that *in the 17th century*, by their own lights, scientists had reason to believe in phlogiston, whereas we now take it that we have reason to deny its existence, this does not shake Quine's commitment to scientific realism. Rather, we hold, our science has progressed. The anti-realist's pessimistic induction tries to undermine our confidence in current science by noting that in the heyday of phlogiston theory scientists were as confident in the correctness of their account of combustion as we are in the correctness of ours. Shouldn't that undermine our attitude to our own current theories? For the Quinean, the pessimistic induction is resisted by the emphasis of the naturalist's predicament: we have to take seriously our own current worldview simply because there is no better place to stand. Hence the naturalist 'tentatively believes all of it, but believes also that some unidentifiable portions are wrong', and works from within to identify those errors and continue to improve. The normative claims of previous historical epochs can be dealt with in a similar manner: while at the time it might have seemed reasonable for the Spartans to act as they did, it turns out that they were wrong about this, as the refinement and development of our normative worldview has shown us.

The existence of alternative normative outlooks across cultures presents harder cases. Looking backwards to past cultures we can explain why we take our current worldview (including its normative, mathematical, and empirical scientific components) to be better: in these earlier epochs, the evidence and considerations that have led to our current frameworks were just not available to those societies. There is an asymmetry of information that grounds our assessment of our worldview as better. But when alternative cultures have, despite equal access to relevant information, come to vastly different normative conclusions than ours, is there anything more than cultural imperialism that leads us to conclude that it is our normative outlook that is preferable?

Here we should be careful about assuming that alternative outlooks are completely alien to our own. In some cases differing conclusions may not always reflect an alien normative framework, but may rather be a result of the sheer difficulty of questions of how to weigh relevant considerations, and differences of opinion about which features to take as salient. Faced with communities where entirely different behaviours are considered reasonable, even once variation in locally relevant parameters (such as cultural conventions) have been taken into account, we may in light of this evidence look back on our own conclusions and question whether we should amend any of these – whether we have taken into account all relevant considerations and weighed them appropriately. If we do this and remain convinced by our own lights that our own conclusions are the correct ones, we may then try to convince the other groups that there are considerations that they have missed, again assuming that we are working within essentially the same normative framework but with different views as to what follows within that framework.

But doubtless on many occasions we will be faced with deadlock. In such cases Scanlon's response to the counter-reasoners looks like it should apply: we stand firm to our own normative picture and hold the alternative community to be mistaken about what reasons they have (and reaffirm that, if their conclusions are about reasons*, they are mistaken in thinking that they should be acting on reasons* rather than reasons). But then shouldn't our recognition that there are alternative places to stand, alternative apparently stable and considered frameworks providing others with their answer to the question 'how ought we to act?', undercut our firm commitment to our *own* normative account and the answers it provides? If we take our cue from Quine's naturalism, then it need not: the naturalist philosopher recognises that what is reasonable *for her* to believe in empirical science is dependent in part on her own cultural heritage but reaffirms her realism nonetheless. Scanlon's realism about reasons to act is in no worse a position in this regard: 'I philosophize from the vantage point only of our own provincial conceptual scheme and scientific epoch, true; but I know no better' (Quine 1957a, p. 22).

Finally, given Rosen's challenge to Maddy, we should consider the status of theological claims within this picture. Christian theology, for example, looks to have the status of a stable and considered framework that, at least for many, is part of their cultural inheritance. Does that mean that, by the lights of the picture I have been developing, the post-Quinean naturalist should be adopt a (thin) realist construal of the internal claims of this framework, and thus endorse theism? A lot depends, here, on how the framework of commitments provided by Christian theology is understood. For many theists, claims about God and His attributes are meant to provide answers to questions of what we ought to believe and how we ought to behave, where secular science and normative discourse are perceived as falling short (and indeed where the felt shortcomings of the accounts provided by a secular worldview are thought of as evidence for the theistic picture). To the extent that theists are presenting their framework as a challenge to the completeness of secular scientific and normative discourse, then it looks like the proper response is just to have those debates and see what gets preserved. My proposed post-Quinean naturalism does not, then, object to claims about the Christian God on the principled grounds that they cannot be found a place in the framework of natural science. Rather, to the extent that such claims are objected to, it should be on the grounds that their answers to the questions of what ought we to believe and how ought we to behave are unnecessary supplements to an already adequate secular worldview (if indeed they are). On the other hand, though, we might imagine a purely internal theism that posits the existence of God but draws no empirical or normative conclusions from this. Were such a framework to exist the proposal

of assessing it at the ground level by its contribution to our empirical and normative worldviews would not come into play, and it might look like we'd be committed to accepting *its* truths as truths on a par with mathematical, empirical, and moral truths. As with the counternormative domain, we may wonder how any such framework could come to be adopted by human inquirers, but if it did, and if it offered objective standards of discourse reached through reflection of the participants, then perhaps a 'thin' realism about the resultant (clearly rather thin) Deity would be the appropriate response.

Realism or Fictionalism about Sets and Reasons?

The post-Quinean position I have outlined countenances realism not just about our best empirical science, but about stable and considered parts of our inherited conceptual schemes, even when these include frameworks such as the frameworks of mathematics or of practical rationality that stand alone and are not reduced or otherwise 'placed' into the picture of physical reality provided by empirical science. This realism follows from the naturalist picture of treating one's inherited worldview as 'a going concern', in light of the inability to step outside of this to reject it wholesale. This doesn't mean that there is no room for criticism of aspects of our cultural inheritance – there is plenty of work for the 'busy sailor', especially when parts of our worldview conflict. In the case of mathematical and normative discourse, though, to the extent that there are indicators of objectivity and a sense that (in at least some cases) there are right ways to go on, then we can be realist about such discourse. Thus, the picture I have outlined supports Maddy's 'Thin Realism' about sets and Scanlon's related form of realism about reasons. But how does this realism fit with the mathematical *fictionalism* that I have defended elsewhere? Must I confess a Damascene conversion, and repudiate my previous work?

The answer to this, as I explain in my (2016) discussion of Maddy's 'thin realism', is that, in the case of mathematics at least, both Maddy and I agree that 'thin realism' and fictionalist 'arealism' are, as Maddy puts it, 'equally accurate, second-philosophical descriptions of the nature of pure mathematics. They are alternative ways of expressing the very same account of the objective facts that underlie mathematical practice' (Maddy 2011, pp. 111-2). In both cases, it is Robust Realism (with its implication that everything internally to mathematics could be in perfectly good order and yet our mathematical theories could still be false by virtue of not matching some external reality of abstracta) that is rejected. Whether the resulting account is labelled a realist or arealist one – whether we take the objects internal to the framework of mathematics to exist due to the objectivity of the framework, or preserve the literal use of the term 'exists' for physical objects in the causal nexus and think of mathematical objects as merely useful fictions – is really just a matter of decision about how to go on with the term 'exists' when it is taken beyond its paradigm cases as applied to physical objects. The real work in both cases is in (a) rejecting the Robust Realist's request for *something more* than an objective theoretical framework for mathematics, and (b) showing that the amount of objectivity provided by internal mathematical standards is sufficient to account for the uses to which we put mathematics. In the mathematical case, then, the suggestion is that the traditional Platonist/anti-Platonist divide should be replaced with Robust Realism on the one hand versus thinner realist and fictionalist accounts on the other. The implication in the case of metaethics should be clear: if (as I have been suggesting) analogous considerations favour a thin Scanlonian form of realism about reasons, this position should be thought as most naturally opposed to more Robust forms of realism (such as Enoch's) than many positions that have traditionally fallen on the anti-realist side.

Conclusion

Quinean naturalism, when read as 'scientism', leads to placement problems. If we are justified in believing in all and only those claims that are justified as part of an empirical scientific worldview, then apparent truths that do not obviously fit nicely in with that worldview need to be found a place or discarded. Hence much effort both in the philosophy of mathematics and in metaethics has been expended on RER strategies that seek either to find a place for moral or mathematical truth within, as Blackburn (1998, p. 49) puts it, 'the disenchanted, non-ethical order which we inhabit, and of which we are a part', or to abandon those 'truths' as not really true at all. But if we take seriously the critique of traditional metaphysics on which Quine and Carnap were agreed, and take a closer look at the reasons why, in light of this critique, Quine's naturalism holds that we are nevertheless entitled to believe the results of our best empirical scientific theorizing, we see that these very same reasons should apply also to the results of our best efforts at theorizing in other domains. If naturalism requires us to be nonskeptical about our inherited empirical scientific worldview, while working from within to improve and refine, then the same should go for other aspects of our conceptual inheritance. To the extent that they are present in our worldview as the result of reflection and refinement of *prima facie* truths, our stable and considered mathematical and normative beliefs are as warranted for us as the most considered claims of empirical science. We do not need to shoehorn mathematical and moral truths into the pushings and pullings of our empirical scientific worldview; for the busy sailor adrift on Neurath's boat, mathematical and moral truths already have their place.[1]

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