On what there is in particular

JONATHAN D. PAYTON

1. The problem

Ontology, Quine says, is about what there is (1980: 1). It's not about what exists, if what exists is taken to be a restriction on what there is (compare Azzouni 2004: 49–122). For x to exist is just for there to be such a thing as x. Nor is it about what's most fundamental, or about what depends on what (Schaffer 2009; compare Schaffer 2008). Those are interesting *metaphysical* issues, but not specifically *ontological*. Ontology is simply about what there *is*. To be ontologically committed to *F*s is to be committed to quantifying over *F*s.[1]

This sketch of Quinean meta-ontology suggests that any ontological thesis can be expressed as a simple *existential* commitment:

$$\exists x Fx$$

Fine (2009: 165–68) argues that this gets the logical form of (some) ontological theses wrong.[2]

Suppose that Alice accepts the thesis that Fine calls 'realism about natural numbers', or 'Natural Realism' for short: she believes in 1, 2, 3 and the rest of the natural numbers. By contrast, Beth accepts 'realism about integers', or 'Integer Realism' for short; in addition to all the natural numbers, Beth believes in –1, –2, –3 and the rest of the negative integers.[3] Quinean meta-ontology suggests that Alice's and Beth's ontological commitments should be rendered, respectively, as follows:

$$\begin{array}{ll} (\mathrm{Nat}_{\mathrm{Q1}}) & \exists x\,(\mathrm{Natural}\,(x)) \\ (\mathrm{Int}_{\mathrm{Q1}}) & \exists x\,(\mathrm{Integer}\,(x)) \end{array}$$

But, Fine says, this can't be right. Intuitively, Integer Realism is a stronger view than Natural Realism. After all, every natural number is an integer (but not vice versa):

$$(1) \qquad \forall x\,(\mathrm{Natural}\,(x) \supset \mathrm{Integer}\,(x))$$

So Beth believes in everything Alice does, *and more besides*. Quineans get this backwards. $\mathrm{Nat}_{\mathrm{Q1}}$ and (1) together imply $\mathrm{Int}_{\mathrm{Q1}}$, but the converse implication

1 For further development and defence of this meta-ontology, see Eklund 2014, Rayo 2007 and van Inwagen 2009.

2 Fine (2009) gives other arguments against Quinean meta-ontology. For discussion, see Kroon and McKeown-Green 2020: 13–25 and Payton 2021: 27–29.

3 It's not clear that these labels have been used outside of Fine 2009 or responses to it, but they're natural labels for the views Fine describes.

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fails. So Integer Realism comes out as the *weaker* position.[4] Quineans get the logical forms of Natural Realism and Integer Realism wrong.

In Payton 2021: 29–30 I gave a simple reply. Alice and Beth are supposed to disagree on the truth of Integer Realism. But they both *accept* Int_{Q1}: they agree that there are integers; they disagree about whether any of them are negative. That is, they disagree about:

$$(\mathrm{Neg}_{Q1}) \qquad \exists x\,(\mathrm{Negative}\,(x))$$

So, I suggested, Integer Realism should be rendered not as Int_{Q1} but as the conjunction of Nat_{Q1} and Neg_{Q1}. Thus Integer Realism is stronger than Natural Realism, since $(p \,\&\, q)$ is stronger than p.

This reply fails, but its failure is instructive. It gets the right result, but for the wrong reason.

Recall how Alice's and Beth's views have been described. Alice doesn't *merely* make the existential claim that there's at least one natural number. She makes a further claim about *which* natural numbers there are – namely, 1, 2, 3 and the rest. Similarly, Beth doesn't *merely* make the existential claim that there's at least one negative integer. She makes a further claim about *which* negatives there are – namely, −1, −2, −3 and the rest. In addition to *existential* commitments to the effect that there are *F*s, Alice and Beth take on *particularized* commitments about which *F*s there are. It's this fact – and not merely the truth of (1) – which underlies our intuition that Beth believes in everything Alice does and more besides, and hence that she holds the stronger view. But this fact isn't reflected in my proposed solution.

To see this, compare Alice and Beth to Cathy and Diane. Cathy is a realist about *some* naturals, but not all: she believes in 1, but not in 2, 3 or the rest. Similarly, Diane is a realist about *some* naturals and *some* negative integers, but not all: she believes in 2, but not in 1, 3 or the rest of the naturals; and she believes in −1, but not in −2, −3 or the rest of the negatives.[5] As with Alice and Beth, Cathy accepts Nat_{Q1} while Diane accepts both Nat_{Q1} and Neg_{Q1}. But unlike with Alice and Beth, it's simply not true that Diane is committed to every object Cathy is, and more besides. Indeed, there's *no* overlap in the numbers they're committed to. We get the right result, but for the wrong reason.

This clarifies the problem for the Quinean. Natural Realism and Integer Realism are naturally understood as *particularized* commitments, not merely *existential* ones. The Quinean needs to capture such commitments within her meta-ontology.

4 Nat_{Q1} needn't be *logically* stronger than Int_{Q1}, since (1) needn't be *logically* true. Compare Warren 2020: 2853.

5 Admittedly, these are strange views. But what's important isn't their defensibility, but their content.

2. *The solution*

To take on a particularized commitment to *F*s is to take a stand on which *F*s there are. It requires you to specify which *F*s you're committed to. There are (at least) two ways to do this. The first is to make a list of all the *F*s you think there are and existentially generalize over them:

$$\exists x_1 \ldots \exists x_n\,(x_1 = a_1 \;\; \& \;\; \ldots \;\; \& \;\; x_n = a_n)$$

But in many cases this is impractical. The second way is through a recipe for generating names or reference-fixing descriptions for all the *F*s. Rather than make a list of all the natural numbers (which is impossible, since the naturals are infinite), Alice can adopt a recursive definition of 'natural number' that generates an infinite number of reference-fixing descriptions. For example, adopting the axioms of Peano arithmetic, she can say:

1 is a natural number.
Every natural number has a successor.
Every successor of a natural number is a natural number.

This lets her construct potentially infinite series of definite descriptions ('the successor of 1', 'the successor of the successor of 1' etc.) and proper names ('2', '3' etc.) for the objects described. When Alice talks about 'the natural numbers', she attempts to talk about the objects (if any) that these terms denote.[6] And she affirms that there are such objects. That is:

$$(\mathrm{Nat}_{Q2}) \qquad \begin{array}{ll} \text{(i)} & \exists x\,(x = 1 \;\&\; \mathrm{Natural}\,(x)) \\ \text{(ii)} & \forall x\,(\mathrm{Natural}\,(x) \supset \exists y\,(\mathrm{Successor}\,(y, x))) \\ \text{(iii)} & \forall x \forall y\,((\mathrm{Natural}\,(x) \;\&\; \mathrm{Successor}\,(y, x)) \supset \mathrm{Natural}\,(y)) \end{array}$$

Natural Realism should be rendered not as Nat_{Q1} but as something like Nat_{Q2}.[7]

Similarly, Beth can adopt a recursive definition of 'negative integer':

–1 is a negative integer.
Every negative integer has a predecessor.
Every predecessor of a negative integer is a negative integer.

This lets her construct potentially infinite series of definite descriptions ('the predecessor of –1', 'the predecessor of the predecessor of –1' etc.) and proper

6 Linnebo (2018: ch. 10) gives a similar account. I leave aside Putnam's (1980) model-theoretic argument and its implications for such definitions and our understanding of realism about (any category of) numbers; see Button 2022 and Button and Walsh 2018: 143–250.

7 I say 'something like'. Nat_{Q2} is *a* way of specifying Alice's commitment; it needn't be the *only* way.

names ('–2', '–3') for the objects described. When Beth talks about 'the negative integers', she attempts to talk about the objects (if any) that these terms denote. And she affirms that there are such objects. That is:

$$(\text{Neg}_{Q2}) \quad \text{(i)} \quad \exists x\,(x = -1\,\&\ \text{Negative}\,(x))$$
$$\text{(ii)} \quad \forall x\,(\text{Negative}\,(x) \supset \exists y\,(\text{Predecessor}\,(y, x)))$$
$$\text{(iii)} \quad \forall x \forall y\,((\text{Negative}\,(x)\ \&\ \text{Predecessor}\,(y, x)) \supset \text{Negative}\,(y))$$

Integer Realism should be rendered as the conjunction of something like Nat_{Q2} and Neg_{Q2}.

If we understand Natural Realism and Integer Realism this way, we get their comparative strengths right. Integer Realism is a conjunction with Natural Realism as one of its conjuncts; since (p & q) is stronger than p, Integer Realism is stronger than Natural Realism. But now we get this result for the right reason. When Alice affirms Nat_{Q2}, she takes on a particularized commitment to naturals that encompasses 1, 2, 3 and the rest. Beth affirms Nat_{Q2}, too, so she believes in all the things Alice does. But she also affirms Int_{Q2}, taking on a particularized commitment to negatives that encompasses –1, –2, –3 and the rest. So she believes in everything Alice does, and more besides.

3. *Fine's objections*

Fine (2009: 166) considers renderings of Natural Realism and Integer Realism like those I've suggested and gives two objections.

First, because Natural Realism and Integer Realism don't have the same logical form on this account, Fine objects that the resulting picture of ontological commitment isn't uniform. '[T]here should be a uniform account of what it is to be committed to *F*s. There should be a completely general scheme φ(*F*), where what it is to be committed to *F*s is for φ(*F*) to hold' (Fine 2009: 166, slightly modified; see also Warren 2020: 2857).

But I distinguish between two kinds of ontological commitment: *existential* and *particularized*. In Quinean meta-ontology, all existential commitments *do* share the same logical form: '∃*xFx*'. Particularized commitments don't all share the same logical form, but that's to be expected. To take on such a commitment, you have to specify which *F*s you take there to be. There's little reason to expect the same method of specification to work for any choice of '*F*', and every reason to expect the opposite. For example, the method of specifying which natural numbers there are (if any) will be different from the method of specifying which composite objects there are (if any), which will in turn be different from the method of specifying which possible worlds there are (if any).

There's still a lack of uniformity on this view, since I distinguish two varieties of ontological commitment. But Fine can't object on this score since, as we'll see, he also distinguishes two varieties of ontological commitment. Moreover, to the extent that a uniform account of ontological commitment is desirable, it's already provided by the core claims of Quinean metaontology: that ontology is about what there is; and that to be ontologically committed to *F*s is to be committed to quantifying over them. As long as the contents of various ontological theses can be captured in ways that conform to these claims, it's not clear why any further uniformity should be required.

Second, Fine objects that certain varieties of realism can't be understood in anything like the way I've proposed to understand Natural Realism and Integer Realism. Sometimes we lack a list of names for the *F*s we'd like to be realists about, or even a way to recursively generate such names.

Suppose you believe in sets. *Which* sets do you believe in? You may be able to give a partial answer to this question. For example, adopting von Neumann's principles of set construction (and given the null set), you can commit yourself to all sets in the series

$$\varnothing,\ \{\varnothing\},\ \{\varnothing,\ \{\varnothing\}\},\ \{\varnothing,\ \{\varnothing\},\ \{\varnothing,\ \{\varnothing\}\}\}$$

But do you also believe in all the singleton sets? That is, for any object x, are you committed to $\{x\}$? If so, *which* singleton sets do you believe in? The only way to answer *that* question is by first specifying all the *objects* there are, which you presumably aren't in a position to do. Are we prohibited from being realists about sets, Fine asks, simply because we can't specify *which* things we're thereby committing ourselves to?

The answer, of course, is 'No'. But the Quinean needn't think otherwise. 'Realism' is a technical term with no more meaning than what its users give it. Participants in some ontological disputes may use 'realism' to denote a particularized commitment, a specific view about which *F*s exist. This is plausibly the case for what, following Fine, I've called 'Natural Realism' and 'Integer Realism'. We expect someone who describes herself as a 'realist about natural numbers' to hold a view like Alice's, not a view like Cathy's. Likewise, we expect someone who describes herself as a 'realist about negative integers' to hold a view like Beth's, not a view like Diane's. But participants in other disputes may use 'realism' to denote an existential commitment, so that realism is simply opposed to nihilism, the view that there are no *F*s. This is plausibly the case for realism about sets (and for many other familiar 'realisms'). Two people can disagree about which sets there are (since they can disagree about which objects there are, and hence which singletons there are) while still counting as realists. That's because 'realism about sets' is ordinarily used not to denote a specific view about *which* sets there are but simply to denote the view that there *are* sets. So the Quinean needn't look for a rendering similar to my renderings of Natural Realism and Integer Realism. She can simply render the view as:

$$(\mathrm{Set}_Q) \qquad \exists x\,(\mathrm{Set}\ (x))$$

The inability to specify which sets there are doesn't prohibit you from accepting Set_Q.

In short, I claim only that *some* varieties of 'realism' are particularized ontological commitments, not that *all* are. Fine might find this lack of uniformity unsatisfying. But given that 'realism' is a technical term which has meaning only in the context of a particular dispute, a demand for a more unified account of 'realism about *F*s' would be misplaced.

4. *Alternatives*

I've argued that we can solve the problem for Quinean meta-ontology by treating Natural Realism and Integer Realism (and perhaps other views) as particularized commitments. I'll close by comparing my solution to two alternatives.

Fine (2001) distinguishes what's *true* from what's *true in reality*: roughly, a proposition which is *true in reality* is one whose structure reflects the structure of reality. He claims that ontology should be concerned not with what there *is* but with what's *real* (2009: 167–76, 2017), where x is real just in case, for some way that x is, it's true in reality that x is that way (2009: 172; 2017: 100).

Fine (2009: 173; 2020: 399) also distinguishes *partial* and *full* ontological commitment. *Partial* commitment corresponds to Quinean existential commitment: to be partially committed to *F*s is to believe that at least one *F* is real. *Full* commitment is Fine's way of capturing what's distinctive of Natural Realism and Integer Realism. To be fully committed to *F*s is to believe that *all* of them are real. Alice believes that all natural numbers are real, while Beth believes that all integers are real:

$$(\mathrm{Nat}_F) \qquad \forall x\,(\mathrm{Natural}\,(x) \supset \mathrm{Real}\,(x))$$
$$(\mathrm{Int}_F) \qquad \forall x\,(\mathrm{Integer}\,(x) \supset \mathrm{Real}\,(x))$$

On Fine's view, the question of which *F*s are real is independent of the question of which *F*s there are (2009: 169). So if Alice denies that there *are* any negatives, she can accept Int_F: by her lights, the naturals are the only integers there *are*, and since she accepts that *they're* real, she should think that Int_F is true.[8] So we haven't yet captured the idea that Beth is ontologically committed to everything Alice is and more besides.

8 Warren (2020: 2858) makes a similar point.

Fine's solution to this problem is to claim that:

> the intended import of [various realist and anti-realist positions] rests upon supposing not merely that there are *F*s but that there are all the *F*s that we commonly take there to be … It is only if the existence of these objects is already acknowledged that there can be debate as to whether they are real. (169)

That is, we should understand Alice and Beth as *agreeing* that there are all the naturals and negative integers we ordinarily think there are. Beth says that all of these things are real, while Alice says that only some of them are.

It's not clear that this idea will work for all realism/anti-realism debates, as Fine suggests. Consider the debate about sets. Fine construes the realist as claiming that some, or perhaps all, sets are real, and the anti-realist as claiming that none are. But if the anti-realist were to say that no sets are real because there *aren't* any, her position would be consistent with the realist's. So the realist and the anti-realist must apparently agree that there are all the sets we commonly take there to be, and merely disagree about which are real. But it's not clear that there are such things as 'all the sets we commonly take there to be'. Different mathematicians, logicians and philosophers accept different set theories, and it seems wrong to treat this as merely a disagreement about which sets are 'real'. A mathematician who adopts a set theory without singletons should presumably think that competing theories that include such sets aren't just false 'in reality' but false *simpliciter*. She should think that there *is* no empty set and that there *are* no singletons. Moreover, two mathematicians who agree that there are singletons will disagree about *which* singletons there are, unless they completely agree on which *objects* there are. We've already seen that there's little reason to expect success in specifying all the objects we believe in. There's even less reason to expect complete agreement.

Fine argued that the inability to specify which sets there are poses a problem for the Quinean construal of realism about sets and supports his preferred meta-ontology. I think the shoe is on the other foot.

Leaving this issue aside, how does the idea work in the case of Alice and Beth? How can we cash out the supposition, allegedly shared between Alice and Beth, that there are all the naturals and negatives that we commonly take there to be? (2) won't do.

(2) $$\forall x((\text{Natural}(x) \vee \text{Negative}(x)) \supset \exists y\,(y = x))$$

Not only is (2) logically trivial, it can be held in common by people who disagree about which naturals and negatives there are.

What's needed is a way to specify *which* naturals and negatives we commonly take there to be, and which Alice and Beth can agree that there are. This common commitment is *particularized* (although Fine won't call it 'ontological'). So, I suggest, Fine should think that the common supposition between Alice and Beth is that something like Nat_{Q2} and Neg_{Q2} from §2 are both true. But then he must accept that Nat_{Q2} and Neg_{Q2} suffice to tell us what someone believes when they believe that there *are* the naturals or the negatives, respectively. And we've seen that the Quinean can use this same idea to capture the particularity and comparative strengths of Natural Realism and Integer Realism, without any appeal to the distinction between what there is and what's real. In this respect, at least, Fine's meta-ontology has no advantage over the Quinean's.

Warren (2020) and Kroon and McKeown-Green (2020) independently make a different proposal. Rather than drawing a distinction between what there is and what's real, they draw on the resources of plural logic.[9] Let '*xx*', '*yy*' etc. be plural variables which can take more than one object as their value, and let '$\preccurlyeq$' be an 'inclusion' predicate, roughly corresponding to the English phrases 'one of' and 'among'. We can now regiment Natural Realism and Integer Realism as commitments to *pluralities* of objects: the former is a commitment to a plurality containing all and only natural numbers – or *the natural numbers*; the latter is a commitment to a plurality containing all and only integers – or *the integers* (Warren 2020: 2856, Kroon and McKeown-Green 2020: 26).

$$(\mathrm{Nat_P}) \qquad \exists xx \forall x\, (x \preccurlyeq xx \equiv \mathrm{Natural}\,(x))$$
$$(\mathrm{Int_P}) \qquad \exists xx \forall x\, (x \preccurlyeq xx \equiv \mathrm{Integer}\,(x))$$

This proposal doesn't capture the particularity of Alice's and Beth's views. Nat_P is perfectly acceptable to Cathy, who believes in 1, but not in 2, 3 and the rest. On her view, 1 is the only natural number there is, so *the natural numbers* include just one thing, namely the number 1. Since she accepts that *it* exists, she accepts Nat_P without accepting Natural Realism as Alice does. (Likewise *mutatis mutandis* for Int_P and Diane.)

Relatedly, the proposal gets the comparative strengths of Natural Realism and Integer Realism wrong. Given (1), Nat_P implies Int_P. But the converse implication doesn't hold.

This is unsurprising. Standard plural logics incorporate a plural comprehension schema: if at least one *x* satisfies the formula 'φ', then there's a plurality containing all and only things satisfying the formula, or *the φ-ers*.

$$(\mathrm{Comp}) \quad \exists x \varphi x \supset \exists xx \forall y (y \preccurlyeq xx \equiv \varphi y)$$

The inverse also holds: if there are *the φ-ers*, then there's at least one φ-er. (There are no 'empty' pluralities.) But then Nat_P and Int_P are *equivalent* to the original Quinean renderings from §1 (Fine 2020: 399).

9 See Oliver and Smiley 2016 for a recent survey.

Warren attempts to solve this problem. First, he notes that Int_p *will* entail Nat_p when combined with Comp and the assumption that, if the integers exist, then at least one natural exists:

$$\exists xx \forall x\,(x \preccurlyeq xx \equiv \text{Integer}\,(x)) \supset \exists y\,(\text{Natural}\,(y)) \tag{3}$$

The antecedent of (3) is Int_p, so if (3) is true, then Int_p implies that at least one natural number exists. By Comp, this implies Nat_p (Warren 2020: 2856).

But now the proposal's failure to capture the particularity of Natural Realism and Integer Realism rears its head again. The claim 'If the integers exist then at least one natural exists' is plausible if we assume that 'the integers' denotes a plurality which includes 1, 2, 3 and so on. But this isn't guaranteed simply by the logical analysis of the description 'the integers' given in Int_p. Someone who believes that the negative integers are the only integers will *accept* Int_p but *reject* (3), blocking the inference from Int_p to Nat_p.

Surprisingly, Warren doesn't attempt to block the implication from Nat_p to Int_p. Instead he insists that Nat_p *should* imply Int_p:

> Someone who rejects the existence of non-natural number integers will still accept that there are some integers and so there is a plurality of all integers. What they reject is only the existence of *negative integers* … So for them, the plurality of integers is simply the plurality of naturals. (2020: 2857)

But this is just to acknowledge that Int_p doesn't capture the particularity of Integer Realism, since it's acceptable to someone who doesn't believe in any negative integers.[10]

Bilkent University
Turkey
jonathanpayton@bilkent.edu.tr

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