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QUANTIFIER VARIANCE

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Imagine three tribes.[1] The first tribe speaks *Nihilese* – their linguistic dispositions are the same as those of English speakers, except that in their ordinary interactions they speak as though the theory of mereological nihilism is unproblematically true.[2] If we were to ask them, "What kinds of things are there? Tables? People? Things entirely composed of tables and people?" they'd say things like:

1   Although there are simples arranged table-wise and people-wise, there are no tables or people, or things composed of tables and people.

In the second tribe, people speak *Universalese*. Their linguistic dispositions are also the same as those of English speakers, except that in their ordinary interactions they speak as though the theory of mereological universalism is unproblematically true.[3] If we were to ask the homophonous question in their language, they'd say things like:

2   There are tables and people, as well as things entirely composed of tables and people.

The third tribe's members are speakers of *Shmenglish*, and they differ linguistically from English speakers only (if this is a difference) insofar as they speak as though a common-sensical theory of mereological composition is unproblematically true. In response to the homophonous question in their language, they'd say things like:

3   There are tables and people, but nothing composed of just a table and a person.

According to proponents of *quantifier variance*, the three tribes assert truths in their respective languages when they make these utterances.[4] The reason they don't contradict each other is (at least in part) that their uses of the phonetic strings 'something' and 'there are' have different truth-conditional contributions, even though the resulting expressions function in their respective languages similarly to our unrestricted quantifier. To put the claim more concisely: the unrestricted-quantifier-like expressions in these languages express different unrestricted-existence-like notions. Moreover, none of the tribes has a way of describing reality that is more metaphysically distinguished or perspicuous compared with the rest.

Of course, none of this entails that what exists depends on what language we speak – for example, that there wouldn't be any tables if we chose to speak Nihilese instead of English (Hirsch 2002b). That inference would be a simple use-mention error. If we were to speak Nihilese, the sentence homophonous with 'There are no tables' would be true. And if we were to speak Universalese, the sentence homophonous with 'There are no tables' would be false. But adopting another language would have no effect at all on whether there are tables.

However, quantifier variance about a debate may have some other dramatic consequences. For one thing, it seems to *deflate the significance* of the relevant debate.[5] Take a quintessential dispute about mereology between three contemporary metaphysicians: a nihilist, a universalist, and a common-senser. They treat each other as having a substantial disagreement and attempt to resolve it by subjecting their theses to a range of quasi-scientific criteria, such as parsimony considerations. Now, if quantifier variance is true, then there is a sense in which each participant in the debate has an equally good way of talking about the world. This is not to say that they are all speaking truly – since arguably they must all be treated as speaking the same language. But regardless of who is speaking truly – or even whether it's determinate who is speaking truly – there is no deep victory to be had by any of the disputants. Maybe the universalist is technically wrong when she says *in English* that there are things composed of people and tables; but if we were all to adopt her way of talking, her utterances would all be *true* in our new shared language. And we'd be no worse off, metaphysically speaking, for deciding to talk that way.

If this is right, not only does it deflate the significance of the original debate, but it also seems to have implications for how we should go about pursuing whatever's left of that debate. The idea is that, insofar as we still care which of the three ontologists is speaking truly in English, standard methods in ontology are ill-conceived. Instead, we should be asking, in effect, which of the various possible languages we're actually speaking. And the answer to *that* question is properly in the domain of semantics (and meta-semantics).[6]

So much for broad brush-strokes. In this chapter, we'll start by stating the thesis itself with more care, and then sketch the main arguments that support it (§2). We'll then explore some challenges to the two main components of quantifier variance (§3 and §4). And finally, we'll ask whether, if we accept quantifier variance and its allegedly deflationary consequences about an ontological debate, we should just cede the remaining shallow victory to common-sense ontology (§5).

1 The claim

The thesis of quantifier variance has two separable components:[7]

> **Quantifier variance about a debate (rough)**
> (i) Corresponding to each answer in the debate, there is an unrestricted-existence-like notion interpreted in terms of which that answer is true, and (ii) none of these is more metaphysically distinguished than any other.

Call the first claim *pluralism* and the second claim *egalitarianism*. Both could use sharpening, especially around the phrases 'corresponding to', 'unrestricted-existence-like notion', and 'metaphysically distinguished'.

Let's start with pluralism. Letting the tribe thought experiment be our guide, and closely following Dorr (2014), we can flesh out pluralism about a debate as follows:

For each answer in the debate, there are possible isolated communities such that: (i) they speak languages superficially like ours (and are like us in other respects) except that they treat the relevant uninterpreted sentences as unproblematically true; (ii) the sentences are in fact true in their languages; and (iii) the counterparts to our unrestricted quantifier in those languages have different meanings.

Two main questions of clarification arise.

a   What exactly does it mean to say that a tribe treats the relevant sentences as "unproblematically true" (Dorr 2014)? This could mean that the tribe merely treats the sentences as true but doesn't worry about their truth. On stronger interpretations, the tribe considers the sentences to be *obvious*, or even as quasi-analytic, and treats those who reject the sentences as if they are not competently speaking the same language. As we'll see, as we vary the strength of 'unproblematic truth', we vary the plausibility of the corresponding interpretation of quantifier variance and its consequences.

b   What exactly does it take for an expression in some possible language to be considered its counterpart to our unrestricted quantifier? Can we specify a syntactic or semantic feature in virtue of which a term counts as an unrestricted-quantifier-like expression (or 'UQE') in the counterfactual languages? We consider this question in detail in §3.1. In brief: such a feature is at least very tricky to specify directly, but that may not matter much for the purposes of quantifier variantists.

The second component of quantifier variance is *egalitarianism*: the claim that none of the relevant UQEs is more metaphysically distinguished than any other.

But what does it mean for a UQE to be metaphysically distinguished? We might say that a UQE is distinguished to the degree that its semantic value is *fundamental* or *natural*.[8] Or we might focus on the *expressive power* of its language, where this is a measure of the range of propositions, facts, or truth-conditions it can express.[9] Alternatively, we might say that a UQE is distinguished to the degree that there are special "metaphysical reasons" to use it.[10] In what follows, we'll try to avoid treating any particular variation of egalitarianism as canonical.

2 Arguments for quantifier variance

A direct style of argument for quantifier variance appeals directly to our ability to competently make judgments about meanings and patterns of entailment in the kinds of scenarios sketched in the introduction. On this line of reasoning, if we judge that the relevant sentences as uttered in those scenarios are true, and that the UQEs in the respective languages have different meanings, we have reason to accept quantifier pluralism. And if we then intuit that none of the languages in our tribe scenario are better off, metaphysically speaking, we have reason to accept egalitarianism as well.[11]

An alternative form of argument for pluralism appeals to a *principle of interpretive charity* that creates pressure to interpret our tribes as speaking truly and inferring correctly in their languages.[12] The idea is that it is more charitable to interpret the tribes as meaning different things with counterpart sentences than to interpret them as making mistakes about what exists. In particular, Hirsch argues that we can't get away with ascribing only subtle and reasonable mistakes to the speakers: instead, we'd have to ascribe error to their perceptual, a priori, and necessary judgments. And these are precisely the sorts of judgments for which considerations of charity are particularly weighty. (This claim is most plausible for counterfactual scenarios where speakers

treat the relevant claims as quasi-analytic, partially constituting linguistic competence, even if such scenarios depart somewhat from actual patterns of use.)

A charity-based argument along these lines requires three additional things:

1   First, it requires that there actually *are* multiple candidate semantic values available to relieve the *prima facie* pressure to assign different meanings to UQEs. We discuss this assumption in §3.2.
2   Second, it requires the relevant differences in meanings between tribes to stem from differences in the meanings of their UQEs, rather than from differences in the meanings of their *other* expressions (such as their predicates). Arguably, positing variation in the UQE-meaning provides the most economical explanation (Dorr 2005). Moreover, as Sider (2009b, sec. 4) points out, the tribes will also diverge in which *counting sentences* they accept, where these state how many things there are using only UQEs, truth-functional connectives, the identity predicate, and perhaps the predicate 'concrete'.
3   Finally, it requires that charity considerations are not swamped by other factors that determine meaning. For example, on some meta-semantic views, metaphysical naturalness acts as a "reference magnet," creating pressure to interpret expressions as having more natural candidate meanings (see Lewis 1983; 1984). So, if one candidate meaning for UQEs is particularly metaphysically natural, this could potentially outweigh contrary pressure from charity.[13] On the other hand, tribes that treat the relevant claims as quasi-analytic are plausibly exhibiting dispositions that can resist even the pull of a reference magnet.[14]

As we'll see, considerations of naturalness are relevant to both components of quantifier variance. One could use considerations of naturalness either to block quantifier pluralism by appealing to reference magnets, or one could grant pluralism while still holding that one of the tribes has a more natural UQE than the rest. Accepting pluralism while rejecting egalitarianism still arguably avoids the deflationary consequences of quantifier variance, especially if we hold that ontologists are using a specialized quantifier intended to have the most metaphysically distinguished meaning (see §4.2).

3 Challenges for quantifier pluralism

Let's now turn to three of the most influential challenges facing the first component of the thesis of quantifier variance: quantifier pluralism.

3.1 *The demand for a direct specification of UQEs*

We noted earlier that it is difficult to specify what it takes for an expression in some possible language to be a counterpart to our unrestricted quantifier – for the expression to be functioning in its language like an unrestricted quantifier. But if we can't do this, it might be argued that the thesis of quantifier variance can't properly be stated, let alone adequately motivated.

We have our doubts about this complaint. Suppose that in fact the tribes in our counterfactual scenarios utter the relevant sentences truly in their own languages, and that those languages are metaphysically on a par. For the purposes of raising deflationary concerns about ontological disputes, it doesn't seem to matter whether we can independently specify the semantic or syntactic feature in virtue of which the tribes can be said to be using "unrestricted-quantifier-like expressions." If there were such a feature, it should perhaps not be very surprising if it's beyond our ability to directly specify that feature in English – just as it appears to be

beyond our ability to specify what knowledge amounts to without using the term 'knowledge'. (We should be mindful of the expressive limitations of our home language, and shun the fantasy that we can use it to directly specify every thinkable intension.) If there is no such feature, then perhaps the term "quantifier variance" is a misnomer, but the deflationist concerns about onto-logical debates seem just as pressing. As long the tribes in our thought experiments all speak truly, and their languages are on a par, the deflationist concerns about ontological debates seem just as pressing – even if the term "quantifier variance" is a misnomer it seems we could have chosen to speak in any of these ways without missing out on anything, metaphysically speaking.

With these dialectical qualifications in mind, let's see how far we can get with a more direct method of specifying what it takes to count as a UQE. At a first pass, the semantic role shared by the natural language word 'something' and the existential quantifier of first-order logic is this: there is a domain of objects such that, when these terms are conjoined with a predicate, the resulting sentence is true just in case something in that domain satisfies the predicate. (We'll be ignoring, along with the bulk of the literature, the fact that most English quantifiers are binary and syntactically require restriction.)[15] So it's tempting to delineate the UQEs as those that, in this sense, range over that domain.

Unfortunately, this doesn't capture the idea of a UQE as intended by the quantifier varian-tist. Since our own unrestricted quantifier by definition ranges over everything, we can say that every domain is a subset of the domain of our unrestricted quantifier. But this seems[16] to imply that we can only give a quantifier variantist account of our tribes' languages if universal mere-ological composition is true. Otherwise, what domain does the UQE of Universalese range over? Quantifier variantists should allow that there are UQEs in more plenitudinous languages than ours – languages whose speakers would describe our quantifier as one that 'doesn't have everything in its domain'.

Another strategy is to treat the UQEs in a language as the expressions that share, in that lan-guage, the core inference rules associated with unrestricted quantification.[17] We could start, for example, with some natural-language analog of the classic introduction and elimination rules of the formal quantifier (∃):

Classical ∃-Introduction: $\varphi\left(\dfrac{\tau}{x}\right)$ entails $\exists x \varphi(x)$, where $\varphi\left(\dfrac{\tau}{x}\right)$ is the result of replacing a name-like expression τ for all free occurrences of x in $\varphi(x)$.

Classical ∃-Elimination: If Γ together with $\varphi\left(\dfrac{\tau}{x}\right)$ entails ψ, and τ doesn't occur in Γ, $\varphi(x)$ or ψ, then Γ together with $\exists x \varphi(x)$ entail ψ.

One immediate concern for this approach is that it appeals to the category of 'name-like' expressions – but what does this amount to? For the same reason that we cannot (in English) delimit UQEs as those that range over some domain, we cannot delimit name-like expressions as those that refer to an item in a domain (Sider 2007, pp. 217–218). A potential solution is to characterize UQEs and name-like expressions *simultaneously* – they are the categories of expres-sions in the language which *together* play the characteristic inferential and grammatical roles of quantifiers and names. (Similarly for predicate-like and variable-like expressions.)[18]

However, the relevant inference rules may not be rich enough to delimit the intended class of expressions. For example, there are expressions that play the roles specified by these rules but are too foreign from the ordinary idea of existence to count as 'quantifier-like'. For example, imagine a language that maps each sentence φ to the proposition that *according to Bob, φ*, where

Bob is "logically perfect, maximally opinionated, and totally nuts" in the sense that his beliefs are completely unhinged from reality (Sider 2009b, pp. 391–392). In this language, the expression 'there is' will obey the inference rules above, but its meaning seems too distant from our notion of existence for it to count as "functioning like an unrestricted quantifier" in the language.[19]

In fact, it is not clear that we are all on the same page about what ought to count as "unrestricted-quantifier-like" even when it comes to actual expressions of natural language. For example, suppose we take plural quantification in English as primitive rather than as singular quantification over pluralities. In that case, should we treat the unrestricted plural existential quantifier as a UQE, despite its syntactic and semantic differences with the singular quantifier?

Looking beyond English, there's an even richer array of words that resemble our toy formal paradigm for unrestricted quantifier expressions in some ways but not others. For example, languages have obligatory classifier systems for quantification, making it unclear whether quantifiers are ever truly unrestricted. Or consider the particles *ka* and *mo* in Japanese, which combine with interrogative phrases (e.g. "who is happy," "why did you do that," and "where did you go") to yield quantification within the corresponding categories (e.g. people, reasons, and locations, respectively). In many languages, "the same particles [that] build quantifier words [also] function as connectives, additive and scalar particles, question markers, existential verbs, and so on" (Szabolcsi 2013).[20] This makes the quantifier words semantically compositional, and complicates the task of delineating the inferential roles of the relevant particles.

In short, those who wish to nail down exactly what it takes to count as a UQE face a bewildering array of choice points and complications when it comes to actual languages, let alone merely possible ones. Of course, as we stressed earlier, it's far from clear that we can saddle the quantifier variantist with the burden of providing a sharp definition of a UQE.

3.2 *The demand for inter-linguistic semantics*

Much of the debate around quantifier variance has focused on the ability to provide semantic theories of the requisite languages. Schematically, consider a quantifier variantist who posits two languages – Biglish and Smallish – with different UQEs, where a plenitudinous ontological theory comes out true in Biglish and a sparse theory comes out true in Smallish. Under this supposition, we can ask whether speakers of each language can give a semantic theory for the other. Assuming speakers of Biglish can give a semantic theory for their own language, it's plausible that they can also give a semantic theory for Smallish, by interpreting speakers of Smallish as using a quantifier with a smaller domain. But it's less clear whether speakers of Smallish can give a semantic theory for Biglish. And one might take the absence of such a theory as a basis for undercutting some dialectical motivations for quantifier variance.

First, let's ask: how important is it to the quantifier variantist that speakers of Smallish be able to formulate a semantic theory for Biglish?

It will be helpful to distinguish a couple of things we might mean by "a semantic theory" for Biglish.[21] Here are two candidates: (1) a *minimal semantic theory* for Biglish is a theory that specifies a *translation function* from every sentence in Biglish to a sentence in Smallish with the same truth-conditions and (2) a *compositional semantic theory* for Biglish is a theory that specifies a *compositional function* from each word in Biglish to a semantic value, together with combination rules for determining the truth-conditions of sentences in Biglish.

The availability of a Smallish minimal semantic theory of Biglish might help convince a sparse ontologist that there is in fact an interpretation of speakers of Biglish on which they are speaking truly (supporting pluralism) and that every intension expressible in Biglish can be

expressed in Smallish (supporting egalitarianism).[22] And, if that semantic theory is compositional, it might help convince the sparse ontologist that the truth-preserving interpretation is psychologically realistic.

However, arguably a sparse ontologist shouldn't need a Smallish compositional semantic theory of Biglish to be convinced that there is a psychologically realistic truth-preserving interpretation of speakers of Biglish (Hirsch 2005, p. 158). After all, the sparse ontologist herself is often in the business of providing paraphrases of plenitudinous language that are supposed to be intentionally equivalent to the originals. For example, for 'there is a table', nihilists offer 'there are parts arranged tablewise', and so on. If she can do this, she herself instantiates a translation function from Biglish to Smallish that provides an interpretation of speakers of Biglish on which they are speaking truly. She needn't be able to articulate exactly how that translation function works! And given that she can actually produce this pairing, the interpretation not only exists but is apparently psychologically realistic.

Alternatively, one might justify the demand for a Smallish semantic theory of Biglish on the grounds of expressiveness equivalence. One might claim that without a Smallish compositional semantic theory of Biglish, Biglish would be more expressive than Smallish – viz. in that it can provide a semantic theory for Biglish.[23] Perhaps this expressive superiority might then be used to undermine egalitarianism and thus quantifier variance.

We will discuss significance of expressive superiority further in §4.1. However, note that the issue turns on subtle questions about how to understand expressive power. For instance: semantic theories are arguably necessary, so if expressiveness is understood in terms of which intensions are expressible, Smallish can trivially express a sentence that is intensionally equivalent to the Biglish semantic theory of Smallish.

A related basis for demanding an inter-linguistic semantics focuses on reference and its relationship with truth. Eklund (2009) and Hawthorne (2006) have pointed to a tension between quantifier variance and the following Tarskian principle:

> **T-Strong** For any sentence of *any* language of the form "$F(a)$" to be true, the singular term must refer.

T-Strong (and similar principles for predicates) encodes a demand for a compositional semantic theory *given in terms of reference* (a 'referential semantic theory'). But it's hard to see how speakers of Smallish could give a referential semantic theory for Biglish. If no such theory is possible, then perhaps a sparse ontologist who accepts T-Strong should hesitate to accept that speakers of Biglish are speaking truly.

However, it's not clear why we should accept T-Strong as opposed to:

> **T-Weak** For any sentence in *this* language of the form "$F(a)$" to be true, the singular term must refer.

which does not underwrite a demand for a Smallish referential semantic theory of Biglish (Hirsch 2009, pp. 240–243). One might try to justify T-Strong over T-Weak on the basis of highly controversial principles about the nature of truth, such as the principle that truth must be explained by reference.

Such principles can be denied (Hirsch 2009, pp. 238–239). Moreover, applying such principles requires some subtlety in the context of quantifier variance. After all, as Sider (2007) points out, speakers of Smallish plausibly shouldn't interpret Biglish sentences as even coming in predicate-name form. As he puts it: "names and quantifiers are connected. [Speakers of

Smallish] should deny that [the Biglish] expression 'a' is a name (i.e. deny that it is a name*small*"
(p. 218). In other words, speakers of Smallish can claim: what appear to be names in Biglish are
in fact merely name-*like* expressions. That is, they play, in Biglish, the characteristic grammatical
and inferential role of a name, but are not genuine names. Genuine names refer; but name-like
expressions need not. (Compare the case with quantifier-like expressions and domains.) Of
course, speakers of Biglish will still truly utter the sentence homophonous to 'Names refer'. So
it seems chauvinistic to demand that truth be explained only by the relation picked out by 'ref-
erence' in Smallish rather than the relation picked out in Biglish. Indeed, arguably the Biglish
sentence 'truth is explained by reference' is true, just as the homophonous sentence in Smallish
is true. In this case, perhaps the quantifier variantist can supplicate intuitions about referential
semantics by adopting the principle that truth in each language is explained by whatever plays
the reference-role in that language.

So even if the variantist cannot articulate a Smallish semantic theory of Biglish, this doesn't
obviously undercut the variantist position. But in fact the variantist arguably *can* provide such a
theory. Dorr (2005), for example, suggests a highly general strategy for translating sentences of
Biglish into Smallish that exploits the semantics of fictionalist or counter-possible conditionals:
each sentence '*S*' in Biglish will be mapped to the (apparently sensical) Smallish sentence 'In the
fiction of such-and-such metaphysical theory, *S*' or 'If such-and-such metaphysical theory were
the case, then it would be the case that *S*'. Modulo concerns about impossible antecedents and
fictionalist operators, such a translation scheme seems relatively straightforward, at least for
simple fragments of Biglish. Alternatively, we might pursue more specific translation schemes
for particular ontological disputes.[24] For example, speakers of Nihilese can help themselves to
plural quantification ('there are some *X*s'), plural terms ('the *A*s'), and a stock of plural predicates
('are arranged cupwise') to translate a significant fragment of Universalese. Universalese sen-
tences like 'there is a cup' and '*a* is a cup' are translated as 'there are simples arranged cup-wise'
and 'the *A*s (taken plurally) are arranged cup-wise'.

These translational schemes can even be extended to a compositional semantics. Dorr, for
example, sketches such a compositional semantics by letting the semantic value of predicate-like
expressions be properties and the semantic value of quantifier-like expressions be second-order
properties, so that a sentence like '$\exists xFx$' is true iff the semantic value of the predicate-like term
instantiates the semantic value of the quantifier-like expression. According to speakers of Small-
ish, the semantic value of 'cup' in both Biglish and Smallish is the property *being a cup*. The
semantic value of the Smallish quantifier is the property of properties *being instantiated* while the
semantic value of the Biglish quantifier-like expression is the property of properties *would be
instantiated if such-and-such metaphysical theory were the case*. Similarly with more specific translation
schemes: for instance the Nihilist minimal semantics of Universalese that deploys plural quanti-
fication can in principle be extended to a compositional semantics.[25]

To be sure, there are various complications and difficulties with these suggested semantic
theories – especially when we consider attitude and modal operators. But giving a semantics for
any language is a complicated and difficult business – at the very least, it's not obvious that the
demand for a Smallish semantics of Biglish cannot be met by the quantifier variantist, even
assuming she has this dialectical burden.[26]

3.3 Collapse arguments

According to pluralism, there is a plurality of UQEs with different meanings contained in
various possible languages. So-called collapse arguments object to this claim.[27] These arguments
are inspired by the following observation: any two expressions in the same first-order language

which grammatically combine with all variables and formulas in the way typical of quantifiers and which obey **Classical ∃–Introduction** and **Classical ∃–Elimination** are logically equivalent – their inferential roles 'collapse' (Harris 1982). To see this, suppose we have a language with two such quantifier-like expressions, $\exists_1$ and $\exists_2$. Consider an arbitrary formula $\varphi(x)$ free in x, letting $\varphi\left(\dfrac{\tau}{x}\right)$ be the result of replacing all free occurrences of x with a name τ that doesn't appear elsewhere in $\varphi(x)$. By **Classical ∃–Introduction** applied to $\exists_2$, we have: $\varphi\left(\dfrac{\tau}{x}\right) \vdash \exists_2 x\varphi(x)$. And by **Classical ∃–Elimination** applied to $\exists_1$, we have: $\exists_1 x\varphi(x) \vdash \exists_2 x\varphi(x)$. *Mutatis mutandis* in the other direction. Call this result 'the collapse result'.

If we thought that the inference rules that delineate UQEs include **Classical ∃–Introduction** and **Classical ∃–Elimination** (and we suppose logically equivalent expressions have the same meaning), then pluralism posits two inequivalent expressions both of which obey these rules. Does this contradict the collapse result? Not obviously. The collapse result shows that any two expressions that obey these rules are equivalent *if they are in the same language*. But pluralism posits unrestricted-quantifier-like expressions with different meanings *in different languages* (Warren 2015).

Bridging this gap seems to require a 'combined' language that (i) includes two UQE terms with the same meanings of the UQE terms in the separate languages and (ii) includes a common stock of variable-like, name-like, predicate-like, etc. terms that play the characteristic grammatical and classical-inferential role with respect to both quantifier-like terms. (That is, both quantifier-like terms can combine with the same formulas and obey the classical inferential rules with respect to those formulas.) Given the existence of such a language, the collapse result should lead us to conclude that the two UQEs are logically equivalent, and thus arguably have the same meaning. And since each has the same meaning as one of the UQEs in the separate languages, the latter expressions also share a meaning, contradicting quantifier pluralism.

But is there such a combined language? It's not clear that we can stipulate *both* that the quantifier-like expressions in the combined language have the same meanings as the quantifier-like expressions in the separate languages *and* that they obey the requisite classical inferential roles *relative to a common stock of expressions* (see Sider 2007, p. 218; Warren 2015).

Suppose we attempt to construct such a language by taking one of the separate languages, say Schmenglish, and adding terms that have the same meanings as the terms in the other language, say Universalese. From the perspective of Schmenglish, the terms in Universalese are not (unrestricted) quantifiers, names, or predicates – they are merely (unrestricted) quantifier-like, name-like, and predicate-like, playing the corresponding grammatical and inferential roles in Universalese. (Some name-like terms in Universalese don't refer to anything, so aren't names.) The inferential rules of the Schmenglish quantifier governs how it interacts with sentences with names – not sentences with name-like terms. Insofar as a quantifier-like term interacts with these merely name-like terms in the way given by the classical inference rules, that quantifier-like term appears to no longer have the same meaning as our quantifier. (Indeed, it appears to have the meaning of the Universalese UQE!) And, insofar as we can insist that there is a term in the combined language with the same meaning as the Schmenglish quantifier (which can sensically combine with formulas in requisite way), we wouldn't expect it to obey classical, as opposed to, say, free, inference rules.[28]

Summing up: the collapse arguments for the equivalence of UQEs within a language don't straightforwardly apply to the equivalence of UQEs across languages. That's not to say that this gap cannot be bridged, but doing so is not straightforward.[29]

4 Challenges for quantifier egalitarianism

As we saw at the end of §2, those who think some potential quantifier meanings are more meta-physically distinguished than others can reject quantifier pluralism by holding that all of the tribal UQEs in our thought experiment should be interpreted as having the most metaphysically distinguished meaning. (On one version, this is because ordinary speakers harbor some deep linguistic intention to use the quantifier in a distinguished way, and this intention weighs more heavily even than charity to the truth of claims they find unproblematic; on another version, there is "semantic magnetism" that operates despite a lack of such intentions.) On this view, the thesis of egalitarianism, as we've stated it, becomes moot because all the tribes have the same quantifier meaning.

In this section, we'll discuss an alternative view, which acknowledges that the tribes all have different quantifier meanings – thus granting quantifier pluralism – but denies that all of these meanings are on a par, metaphysically speaking. On this kind of view, one might also claim that, while English speakers may be using a sub-par quantifier, contemporary ontologists are best interpreted as making their assertions in a language that has the most metaphysically distinguished meaning for its UQE.

Some reject egalitarianism on the grounds that one of the languages is more expressive than the others; others on the grounds that one is more natural than the others. We'll consider each strategy in turn.

4.1 Expressiveness

Assume a coarse-grained conception of content.[30] Can languages with existence-like notions that are more restrictive than ours express all of the coarse-grained contents that we can express with our more generous existence-like notions (see Hawthorne 2009, §2)?

Suppose we are speaking Shmenglish, and that some simples are first arranged tablewise to fuse a table *a* and later arranged tablewise to fuse a distinct table *b*. And suppose further that we think there is a possible world in which the simples composes *a* without *b* existing at all, and also a world in which the simples compose *b* without *a* existing at all – and that these worlds are indistinguishable with respect to the simples, differing only in the haecceitistic identities of *a* and *b*. The (Schm)english sentence '*a* exists' is true at the first world and false at the second. But it's hard to see how speakers of Nihilese can express this intension.

Spotting the modal assumptions required for this argument, does it undermine quantifier variance? Of course, the expressive differences conflict with certain regimentations of egalit-arianism and not others.[31] The important question is how the expressiveness of the languages interacts with the purported deflationary consequences of quantifier variance (see Manley 2009a, §7).

It might be argued that ontological disputes are taking place in – or should be resurrected in – the expressively superior language.[32] It's unclear, however, how far this line of thought extends. For one thing, even if some languages are expressively impoverished, there may be multiple languages corresponding to participants in an ontological dispute for which pluralism and egalitarianism are true. Furthermore, even if there were a unique most expressive language, it's not entirely clear how moving to this language would make the ensuing ontological debate more significant or how it would vindicate the quasi-scientific methodology traditionally used to adjudicate such debates.

However, a much deeper problem lies in the vicinity. What the above discussion shows is that which propositions and possibilities one countenances will depend on one's other

ontological views. So, in the sorts of ontological disputes that the variantist seeks to deflate, ontologists will not only be asserting contrary claims about, say, composition. They will also be asserting contrary claims about which propositions (and distinctions in modal space) there are. In the above example, the common-senser will assert, in addition to (2), sentences like:

4   For some simples, it's possible that they are arranged in exactly the same way, there are no other simples, and yet there is something that doesn't actually exist.

Meanwhile, the Nihilist will deny this sentence.

The problem for quantifier variance is that, when we include these claims among those under dispute, it's less clear that we should consider the corresponding communities for both sides of the debate to be speaking truly. Deflating debates over the existence of material objects is one thing; deflating debates over distinctions in modal space is another.

In replying to this challenge, the quantifier variantists face the question of how substantive or deflationary they take disputes about *de re* modality to be. If one treats them as substantive, one can deny that (4) is true even expressed in Shmenglish – though it seems surprising that quantifier variance would require a particular set of *de re* modal claims. Alternatively, given that quantifier variantists are deflationist about whether a particular object exists, it should hardly be surprising if they treat disputes about the trans-world identity of that object in the same way. In particular, one could claim that in asserting and denying (4) respectively, both communities are speaking truly after all, because the difference in quantifier meaning induces a difference in the meaning of modal expressions.[33]

4.2 Naturalness of the quantifier

Another strategy for rebutting quantifier variance is to extend Lewis's (1983) influential notion of natural properties to quantifier-like expressions. This directly undercuts strong forms of egalitarianism if the UQEs in some languages pick out more natural semantic values, assuming naturalness guarantees metaphysical distinction. If one candidate semantic value of UQEs is especially distinguished, perhaps ontologists can mimic traditional ontological debates by treating ontological theories as expressed in "Ontologese," a language whose UQE is stipulated to have that semantic value.

This kind of approach can be found fleshed out in different ways in Sider (2001, 2009b, 2011). The rough idea, setting aside some complexities of Sider's considered view, comes in three steps.[34]

Step 1. First, extend the theoretical role of naturalness to UQEs. Typically, natural properties are taken to be those that play the following theoretical role: they make for similarity, are easier to refer to, appear in more explanatory laws, etc.[35] At least some of these roles can be extended straightforwardly to UQEs: for instance, the more natural candidate semantic values of UQEs are those that appear in more explanatory laws, are easier to refer to, and perhaps make for greater similarity of facts (see Sider 2009b, pp. 404–405).

Step 2. Assert that something in the world answers to this theoretical role. This could be backed up by a variant of Lewis's argument that positing naturalness helps explain the various phenomena connected by its theoretical role (lawhood, similarity, reference, etc.) – it offers us a unifying theory of the otherwise disparate phenomena.

Step 3. Next, argue that a single UQE expresses a particularly natural semantic value relative to all the rest. Again, we can extend Lewis's methodology by holding that the terms that appear in our best scientific and/or metaphysical theories will express natural semantic values. If we

have independent access to the goodness of theories formulated in the various languages, we can exploit the connection between goodness of theories and naturalness. So, if we judge theories stated using a particular UQE as best, this gives us reason to treat that term's semantic value as particularly natural.[36]

So, how might a quantifier variantist respond to this idea? They could reject the extension of naturalness to the semantic value of UQEs, by denying an independent grip on the notion's supposed theoretical role, at least beyond its application to predicates. Alternatively, if we can explain phenomena like similarity and the explanatoriness of laws by appealing solely to the naturalness of properties, we might worry that the extended notion of naturalness is theoretically unnecessary.[37]

Quantifier variantists can also resist Step 3 in various ways. One option is to deny that we have independent epistemic access to the goodness of theories formulated in the various languages; this will at least leave us unsure about egalitarianism (see Dorr 2013 and Warren 2016). Another option is to hold that the theories expressed in the relevant languages are equally good. Even if some UQEs are more natural than others, there may be an equivalence class of equally natural UQEs, and as long as that contains all the UQEs in the tribes corresponding to positions in the relevant debate, egalitarianism with respect to that debate is preserved. Finally, one might ask why we should think that the best theory will include a quantifier-like term at all.[38]

5 Quantifier variance and common-sense ontology

Let's now suppose that we grant quantifier variance about some debate, and perhaps even accept that there is some sense in which this deflates the significance of that debate. We are still left with a question about which, if any, of the ontologists was *right* – if only superficially. In other words, which ontologist, if any, was speaking truly in the shared language of the debate?

A natural line of reasoning suggests that (in this sense) it's the common-senser who was right all along:[39]

  i Without overwhelming meta-semantic pressure to the contrary, English speakers are speaking whichever possible language makes their linguistic dispositions most reasonable. (Supported by the principle of charity)
 ii There isn't overwhelming pressure to the contrary. (Supported by egalitarianism)
iii English speakers are disposed to treat the common-senser's claims as unproblematically true and the common-senser's inferences as unproblematic.
 iv The language that makes these dispositions most reasonable is one on which those claims *are true* and the inferences *are entailments*, if such a language is possible. (Supported in part by egalitarianism)
  v Such a language *is* possible. (Supported by quantifier pluralism)
 vi So: English speakers are speaking a language on which the common-senser's claims are true.
vii The metaphysicians are making their assertions in English.
viii So: the common-senser's claims are true, and conflicting claims are false. Furthermore, {speaking English} there are tables and people, but nothing composed of a table and a person.

Of course, a number of these steps can be challenged. We'll focus on two key points.

1. First, there's a tension between premise (iii) and premise (iv), where depending on how strongly we interpret 'unproblematically true', one or the other premise becomes vulnerable.

Suppose that it's easy to count as treating the common-senser's claims as "unproblematically true" – it just requires finding them pretty obvious on their face, but not as quasi-analytic or constitutive of linguistic competence. Then it's hard to deny that English speakers do find the common-senser's claims unproblematically true.[40] But at the same time, it may not be so uncharitable to treat them as making some reasonable mistakes about what exists.

After all, perhaps they are disposed to retract their claims when presented with *other* considerations they find unproblematically true, such as the principle that no two objects can occupy exactly the same space at the same time.[41] How to weigh this conflict will depend on the specifics of the conflicting claims and how they are treated by English speakers (as analytic? obvious? potentially subject to revision?)[42] We may just face a meta-semantic challenge of weighing conflicting dispositions to use the expressions, all of which are relevant to interpretation. One potential upshot is that the meaning of the completely unrestricted English quantifier is indeterminate.

On the other hand, as we strengthen our reading of 'unproblematically true', it would be harder to charitably interpret people as making mistakes with claims they find unproblematically true. But it also becomes easier to reject the premise that English speakers really find the common-senser's claims unproblematically true in the relevant sense. Do ordinary English speakers really treat rival ontological claims as evincing a kind of linguistic incompetence? As Sider has stressed, adequately testing this kind of question on subjects arguably requires that they are properly prompted: for example, made to understand that the quantifiers are 'wide-open' and that certain paraphrases are not under dispute (2004, p. 680).

2. A second option is to reject (vii). As we've seen, some inegalitarians about quantifier meanings hold that metaphysicians are making their claims not in English but in the language of "Ontologese," in which the UQE has the unique perfectly natural candidate semantic value. But even granting egalitarianism, it might be that, the meaning of the quantifier in the ontology room is not simply settled by use facts in ordinary talk. After all, ontologists are trying to do something different with their words – unlike ordinary speakers, for example, they don't treat the questions they're asking as having straightforward answers. And in some cases they are explicitly intending to be using the quantifier to express a metaphysically distinguished notion.[43]

So what happens if there is no good candidate semantic value for the quantifier that answers to these intentions? In that case, perhaps the meaning of their quantifier reverts to that of the ordinary English one. But if our meta-semantics give their distinctive intentions enough weight, perhaps their quantifier just fails to express anything at all. Or if there is a tie among several most distinguished notions, it might be indeterminate which one gets expressed by the quantifier in the ontology room. And finally, we might decide that what is meant by ontologists' quantifier varies from one dispute to another, and hinges on the particular intentions involved in each one. (For example, some ontologists explicitly proclaim that they are using the ordinary English quantifier, while others view themselves as employing a specialized meaning.) In short, there are a variety of meta-semantic pictures that place enough weight on ontologists' dispositions to block the conclusion that the common-senser is technically right – even if we grant both components of quantifier variance.

6 Conclusion

The debate around quantifier variance is flourishing, and we have only been able to offer a brief overview. As we have seen, accepting the combined theses of quantifier pluralism and egalitarianism about an ontological debate arguably has major implications for that debate, both by deflating its significance and by motivating a new methodology. The stakes are high for those who pursue first-order ontological questions.

Notes

1 This story follows the opening thought experiments from Dorr (2005; 2014).

2 Mereological nihilism is the view that there are no proper parts.

3 Mereological universalism is the view that any two concrete objects compose a third.

4 See especially Hirsch (2011). Predecessors include the views of Carnap and Putnam.

5 For a prominent deflationary view about ontology that's not committed to quantifier variance, see Thomasson (2015).

6 Quantifier variance matters for other reasons too: for its connection to neo-Fregeanism, see Hale (2007), Hawley (2007), and Sider (2007); for its connection to indefinite extensibility, see Warren (2017); for its connection to vague existence see Liebesman and Eklund (2007), Sider (2009a), and Sud (2017; 2018).

7 Sometimes 'quantifier variance' is used to refer only to what we here call 'quantifier pluralism' (e.g. Manley 2009a, which uses 'egalitarian quantifier variance' for the stronger claim).

8 Sider is notably concerned with how natural or (in his terms) 'structural' the meanings of UQEs in various languages are (2007; 2009b; 2011).

9 See e.g. Eklund (2009). See also Manley (2009a; 2009b), who doubts that expressiveness confers metaphysical distinction.

10 As Hirsch put it, the language is preferable "on purely metaphysical (rather than pragmatic) grounds" (Hirsch 2011, p. xv); but he doubts that having natural meanings confers such grounds (Hirsch 1993).

11 A more oblique case for egalitarianism appeals to the judgment that the meanings of UQEs are highly sensitive to use, which on some meta-semantic theories will clash with the claim that any of them has a candidate meaning that is especially metaphysically natural. (For more on linguistic judgments and metaphysical distinction, see Manley 2017.)

12 We're leaving it open whether charity is an epistemic principle that guides meaning-judgments, or a metaphysical principle that is somehow *constitutive* of meanings. See Warren (2017, sec. 2) for a more specific meta-semantic argument for quantifier pluralism.

13 Elements of this reply can be found in Sider (2001, Introduction), Sider (2009b, p. 410), Sider (2011).

14 For related discussion, see Hirsch (2004; 2005, p. 176; 2008a; 2008b, p. 193 and fn 21). Hirsch suggests that naturalness at best tips the scales among equally charitable candidates.

15 Moreover, in treating *something* and *there are* as semantic atoms akin to the existential quantifier of first-order logic, we're ignoring some subtleties of natural language. Arguably, *something* combines the meanings of *some* and *thing*, where *some* is a binary quantifier whose first argument serves to restrict the domain at issue; but even on such a view, *something* can be unrestricted in the sense at issue in the paper as long as *thing* functions only as a "dummy" predicate that applies to the whole domain. Meanwhile, *there are* looks to be composed of two atoms, and also, when conjoined with a plural noun phrase *Fs*, results in a true sentence only if there is *more* than one F.

16 This implication is not obvious. For example, a nihilist might interpret the Universalese quantifier as ranging over sets of mereological simples (cf. Hirsch and Warren 2017).

17 See e.g. Hirsch (2011, Introduction) and Sider (2007; 2009b; 2011). Hirsch delineates the expressions by their 'formal-syntactic inferential role' in the language. Note that we're using a single notion of entailment to characterize the UQEs. However, if the meaning of 'entails' differs across the languages, we should arguably use each language's own notion of entailment to characterize its UQE (see Dorr 2014).

18 This strategy also needs some account of what it means for an expression to 'obey an inference rule'. For example, inference rules are often taken to give patterns of entailment; but is entailment in the relevant sense a matter of necessary truth preservation, conceptual or a priori deducibility, or what?

19 Another worry is that, even if these inferential rules characterize what it is for an expression to function like a quantifier, they don't seem limited to quantifiers that are *unrestricted*. After all, a restricted quantifier in a language with few or no names can obey these rules. A minimum requirement for quantifier-like expression '∃' to be unrestricted is that there is no *other* quantifier-like expression '∃o' in the language such that '∃o $x\phi$(x)' entails '∃$x\phi$(x)' but not vice versa (see Turner 2010). This requirement, however, is too easy to satisfy for languages that have only one quantifier-like expression. We might require the truth of explicit pronouncements in the language that the expression is supposed to be interpreted unrestrictedly; but it's not clear how one might make such a pronouncement non-trivially.

We could also try to exploit the open-endedness of natural languages by requiring that the expressions continue to obey the inference rules across natural ways the language may change, including the addition of new name-like and quantifier-like expressions to the language (Warren 2017, p. 90).

20 See also Shimoyama (2006) on Japanese *ka* and *mo* and Seibt (2015) on various classifier systems and their relationship to ontological categories.

21 We'll assume that a semantic theory is a theory of the truth-conditions of sentences, rather than a dimension of meaning other than truth-conditions (e.g. cognitive significance, assertibility-conditions, conversational effect, etc.).

22 Some arguments (which we don't appeal to here) for the deflationary consequences of quantifier variance (e.g. Hirsch 2005; 2009) include the premise that *both* sides of an ontological dispute can charitably interpret the other side as speaking truly.

23 Eklund (2009) presses for a Smallish *referential* semantic theory (discussed below) on these grounds.

24 See, e.g., Hirsch (2009, sec. 4) for a discussion of translation schemes in the context of disputes over persistence. Hirsch thinks that these translation schemes are conceptually more basic than Dorr's fictionalist and counter-possible schemas.

25 Indeed, depending on how exactly one understands "referential semantics," a Smallish "referential semantics" of Biglish is perhaps in the offing, at least for certain disputes. Hirsch and Warren (2017), for example, offer speakers of Nihilese a "Tarksian" semantics for Universalese, on which Universalese names for material objects are mapped to sets of simples (similarly for predicates of material objects). Although, they acknowledge this does not constitute a "referential semantics" on more stringent understandings of the expression.

26 See also Sider (2007) for an 'algebraic' characterization of the meanings of quantifier-like expressions in terms of the structure these meanings are meant to play in the theory of quantifier variance.

27 See, for example, Hale and Wright (2009). For a related argument, see McSweeney (2016).

28 As a final reply, the quantifier variantist might choose to use non-classical inference rules to define the class of quantifier-like expressions. This form of quantifier variance isn't susceptible to an analogous collapse result. (See Turner 2010 for a related discussion.) And given the use of empty names in English, perhaps the English notion of existence is best characterized by the free rules. (It's not clear, however, whether this move can support quantifier variantists' deflationary ambitions. Perhaps contemporary ontologists can simply introduce a new notion of existence, using the classical rules, and conduct their debates using this classical notion.)

29 For an advanced discussion on bridging this gap see Dorr (2014) who explores various collapse arguments that apply directly to the semantic values of the UQEs instead of going via a combined language.

30 On a structured conception of propositions, things get tricky. Consider the following sentences:

(i) There are simples arranged tablewise.
(ii) There is something composed of simples arranged tablewise.

Call the structured propositions that (i) and (ii) express in Schmenglish '*a*' and '*b*' respectively. One might hold that, even if the sentence (i) in Nihilese expresses *a*, no sentence in Nihilese expresses *b*, giving Schmenglish an expressive advantage. (See McGrath 2008.)

Here are two replies due to (Hirsch 2008a). First, a similar argument gives Nihilese a corresponding expressive advantage. Consider:

(iii) There is nothing composed of simples arranged tablewise.

Is there a sentence in Schmenglish that expresses what (iii) expresses in Nihilese? If not, then arguably neither language is strictly more expressive than the other. Second, one might insist that (ii) can be expressed by a speaker of Nihilese after all: perhaps she can express it by saying:

(iv) If it were the case that composition were common-sensical, then it would be the case that there is something composed of the simples arranged table-wise.

Of course, speakers of Nihilese and speakers of Shmenglish will differ on their acceptance of sentences like 'the proposition expressed in Nihilese by (iv) has *n* constituents'; but this could be because the two languages differ on what is meant by 'proposition', 'expressed', or 'constituents' (see Hirsch 2008a, fn.18 for a related discussion). For example, if structured contents are sets, even the axioms of impure set theory will be expressed in quantificational terms and thus, arguably, what's meant by 'set' will differ between the two languages.

31 As we've seen, one could use expressive superiority to target pluralism by treating superior expressiveness as an interpretive pressure that competes with the presumption that the tribes are speaking truthfully in their respective languages. But the pressure from expressive superiority would have to be quite strong. See McGrath (2008).

32 See McGrath (2008) for more discussion of how considerations of expressive power can be used to undercut some arguments deflating ontology.

33 This response fits more naturally with some theories of *de re* modality than others: for example, some counterpart-theoretic or conventionalist views may have the flexibility to identify suitable semantic values for modal expressions in both languages.

34 In fact, Sider's variant of *natural* (viz. *S* for *structural*) isn't predicated of semantic values: it's an operator that attaches to terms of any grammatical category. So, for instance, where we say *The semantic value of 'N' is structural*, Sider would prefer *S(N)*.

35 See Dorr and Hawthorne (2013) for more on construing Lewis's (1983) theory of naturalness as a term-introducing theory that defines the term 'natural' in the spirit of Lewis (1970).

36 There are various ways one could cash out the notion of goodness for a metaphysical theory: some candidate virtues include being more explanatory; having more natural expressions; describing a simpler world; having a simpler language; having a language whose simplicity matches the simplicity of the world. See Manley (2016).

37 For example, Hirsch (2008b, p. 195) argues that the reference magnetic influence of naturalness for properties derives from its similarity-conferring power; but the naturalness of quantifier-like expressions doesn't make for similarity, so it's not a factor in fixing meaning.

38 For more on this strategy see Dasgupta (2009; 2017); Sider (2011, especially sec. 9.6.4); Turner (2011; 2017); Donaldson (2015).

39 The argument given below is most similar to "the argument from charity" in Hirsch (2002a), although there are various differences. An alternative argument in Hirsch's later (2005) work goes via claims about the verbalness of ontological disputes (see Jackson 2012 for a reply).

40 However one might also reject (iii) by holding that, although they *appear* to be treating the claims of the common-senser as true, ordinary English speakers are using a contextually restricted quantifier or are speaking loosely. See Hirsch (2002a, pp. 104–107) for a convincing reply.

41 Hirsch (2002a) calls these "conflicts of charity."

42 Hirsch thinks (roughly) that such general principles should not command much meta-semantic weight, relative to specific claims that conflict with them (Hirsch 2002a, sec. 3).

43 See Dorr (2005), Sider (2009b, pp. 411–413), and Sider (2011, sec. 9) for more on speaking Ontologese. See also our §4.2.

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