Quantifiers, domains, and (meta-) ontology

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abstract — In metaphysics, quantifiers are assumed to be either binary or unary. Binary quantifiers take the concept(s) ALL OF and/or SOME OF as primitive(s); unary quantifiers take the concept(s) EVERYTHING and/or SOMETHING as primitive(s). Binary quantifiers (explicitly) range over domains. However, EVERYTHING and SOMETHING are reducible to the binary quantifiers ALL OF and SOME OF; EVERYTHING IS ALL OF some implied domain, and there is no natural, default, or inherent domain U such that EVERYTHING IS ALL OF U. Therefore, any quantifier ranges over a domain, and is thus binary, and there are no unary quantifiers. This implies that if two theories assign different truth values to “Fs exist”, while they agree about the relevant properties of Fs, then the two theories quantify over different domains, and a choice between these two theories is, therefore, a choice between domains. However, none of the common arguments for or against particular domains is up to the task, and therefore, there are at least some cases in which there is no single right domain. The choice for a particular domain is a pragmatic choice. In addition to substantiating the above arguments, this paper discusses its implications for the metaphysical debate between Carnap and Quine and the contemporary controversies in meta-ontology.

1. introduction

In “Empiricism, Semantics, and Ontology”, Carnap (1950) distinguished two kinds of ontological questions: internal questions concern the existence of certain entities within a given “framework”; external questions concern the “the choice whether or not to accept and use the forms of expression in the framework in question” (p. 207). Quine (1951) appears to reject the distinction, but it is unclear whether the distinction he rejected is Carnap’s. Quine’s response was part of an ongoing debate about metaphysics between Carnap and Quine, and that debate was plagued by terminological instability and obscurity. Presumably, the dispute wasn’t merely verbal, but it is far from obvious what exactly the essential difference is between Carnap’s (1950) “frameworks” on the one hand, and Quine’s (1948) “ontologies” or “conceptual schemes” on the other, or between Carnap’s “external questions” about the acceptance of a framework and Quine’s questions about the “acceptance of an ontology” (1948: 16).

1 Version of October 24th, 2014. This is a very slightly revised version of a paper presented at the symposium “Philosophy of Mental Time 3: Metaphysics of Time” on September 27th 2014 at Meikai University in Urayasu (Chiba), Japan. This and other working papers are available from www.lajosbrons.net
According to Quine, “the fundamental cleavages among modern points of view on foundations of mathematics do come down pretty explicitly to disagreements as to the range of entities to which the bound variables should be permitted to refer” (1948: 14). The range of entities to which a bound variable is permitted to refer is the *domain* (or universe) of the quantifier(s), and therefore, if Quine’s claim is applied to metaphysics in general (rather than just the metaphysics of mathematics), then it means that ontological disputes are disputes about the right (or appropriate) domain of quantification.

Carnap described “frameworks” primarily in grammatical terms, as “rules for forming statements and for testing, accepting, or rejecting them” (208), but what really seems to differentiate frameworks is not their grammars, but their “systems of entities”. These “systems of entities” are the collections of “things” that can be said to exist in the frameworks they are part of; that is, a system of entities is – in Quine’s terms – the range of entities to which a bound variable is permitted to refer, or in other words: a domain. If this is right, then an external question is a question about the right (or appropriate) domain of quantification.

I am not concerned with philology and make no claim that either Carnap or Quine’s position in this debate is correctly understood as being intended to be about domains of quantification, as the above might seem to suggest. Rather, in this paper I will argue (a) that, if this debate between Carnap and Quine is interpreted in terms of domains, then most of the apparent differences between the disputants evaporate; (b) that the same is true for the current meta-ontological debate between neo-Carnapians, neo-Quineans, and neo-Aristotelians; (c) that an understanding in terms of domains is the only way to make good sense of these debates; and (d) that many external questions about the choice between domains have no single right answers. My argument proceeds as follows:

1. Quantifiers (in the context of metaphysics) are either *binary* or *unary*. Binary quantifiers take the concept(s) *ALL OF* and/or *SOME OF* as primitive(s); unary quantifiers take the concept(s) *EVERYTHING* and/or *SOMETHING* as primitive(s). Binary quantifiers (explicitly) range over domains. (Section 2.)

2. *EVERYTHING* and *SOMETHING* are reducible to the binary quantifiers *ALL OF* and *SOME OF*, and are, therefore, not primitive. *EVERYTHING* IS *ALL OF* some implied domain. (Section 3.)

3. There is no natural, default, or inherent domain U such that *EVERYTHING* is *ALL OF* U. Therefore, any quantifier needs a domain specification, and strictly speaking, there are no unary quantifiers. (Section 4.)

4. If two theories assign different truth values to “Fs exist”, while they agree about the relevant properties of Fs, then the only explanation of this difference is that the two theories quantify over different domains. (Section 5.)

5. A choice between these two theories is, therefore, a choice between domains, but none of the typical arguments for or against particular domains is up to the task, and therefore, there are at least some – if not many – cases in which there is no single right domain. The choice for a particular domain is often a pragmatic choice. (Section 6.)

Aspects of claims (a) to (d) will surface at various occasions throughout the argument – (b) and (c) most prominently in section 5, (a) and (d) in section 6 – but I will return to them more explicitly in the final, concluding section 7.
2. quantifiers

Ignoring terminological differences, there are two kinds of accounts of quantification that play important roles in (meta-) metaphysics. One is more Fregean (in origin) or model-theoretic, the other is more Quinean or ordinary language-based.

Model-theoretic accounts of quantification build on Frege’s (1893) understanding of the universal quantifier as a second-order relation. In model theory, the standard universal and existential quantifier of first order logic are defined as follows:

\[ \models \forall x \phi \iff \|\phi\|^M = M \]
\[ \models \exists x \phi \iff \|\phi\|^M \neq \emptyset \]

or as some (notational) variants thereof. M is the domain or universe of the model \( M \) (of the language \( \mathcal{L} \)). Whether M is a set, a proper class, a plurality, a mereological sum, or something else is a matter of considerable controversy to which we will turn below (see section 4.1). If it is assumed that a domain M is a set or a proper class, then:

\[ \|\phi\|^M =_{\text{def}} \{ x : \phi x \land x \in M \} \]

and thus:

\[ \models \forall x \phi x \iff \{ x : \phi x \land x \in M \} = M \]
\[ \models \exists x \phi x \iff \{ x : \phi x \land x \in M \} \neq \emptyset \]

Alternatively, in case of pluralities rather than sets or proper classes, the symbol \( \propto \), meaning “is among the” or “is one of the” (Burgess 2004), needs to be substituted for \( \in \) (probably in addition to other symbolic changes that I will ignore), and \( \{ x : \phi x \land x \propto M \} \) should be read something like “the plurality of \( \phi \)s among the things that make up the plurality \( M \)”. Similar adaptations would have to be made for a mereological variant. As these differences matter little at this stage in the analysis, I will, for convenience, adopt a set-theoretical interpretation (which is the standard interpretation in model theory).

The general framework presented in these last formulas can be easily extended to define other natural language quantifiers as is done in Generalized Quantifier theory (e.g. Barwise & Cooper 1981; Peters & Westerståhl 2006). For example, a quantifier \( \exists^2 \) meaning “there are exactly two” would be defined as:

\[ \models \exists^2 x \phi x \iff \|\{ x : \phi x \land x \in M \}\| = 2 \]

Given the extensional identity criterion of sets, \( \{ x : \phi x \land x \in M \} = M \) is the case only if all (of the) \( \phi \)s in M are all of M. Furthermore, the latter – that is, “all (of the) \( \phi \)s in M are all of M” – would be a possible reading (rather than entailment) of plural-logical or mereological variants of \( \{ x : \phi x \land x \in M \} = M \), and therefore, is an ontologically neutral reading thereof that avoids unnecessary and controversial commitments (to sets etc.). However, “all (of the) \( \phi \)s in M are
all of $M$” is just a more clumsy way of saying that “all of $M$ is (a) $\phi$”. Consequently, a less formal representation of the model-theoretic account of the universal quantifier is:

$$\forall x \phi x =_{def.} \text{All of } M \text{ is } \phi.$$  

And similarly, for the existential quantifier:

$$\exists x \phi x =_{def.} \text{Some of } M \text{ is } \phi.$$  

In other words, beneath the formalism, the model-theoretic account takes as basic the notions \textit{ALL OF} and \textit{SOME OF}, and understands the universal and existential quantifier in terms of these.

The alternative, ordinary language-based account of quantification builds on Quine’s suggestion of “everything” as a conceptual foundation of the universal and existential quantifiers. For example, in the opening paragraph of “On what there is” (1948), Quine writes:

A curious thing about the ontological problem is its simplicity. It can be put in three Anglo-Saxon monosyllables: ‘What is there?’ It can be answered, moreover, in a word – ‘Everything’ – and everyone will accept this answer as true. (p. 1)

Following Quine’s suggestion, Peter van Inwagen (2009) explains the existential quantifier by showing how it can be introduced into ordinary English. As an example, he translates the sentence “anyone who acts as his own attorney has a fool for a client” (p. 496) into:

It is true of \textit{everything} that it, is such that (if it, is a person, then if it, acts as the attorney of it, then it is true of at least one thing that it, is such that (it, is a client of it, and it, is a fool)). (p. 496)

(in which “the antecedent of the bold-face occurrence of a pronoun is in bold-face”), and finally into:

$$\forall x (\text{if } x \text{ is a person, then, if } x \text{ acts as the attorney of } x, \exists y (y \text{ is a client of } x \text{ and } y \text{ is a fool})).$$ (p. 497)

which is directly followed by the statement that “we have, or so I claim, introduced the canonical notation using only the resources of ordinary English. And to do this, I would suggest is to \textit{explain} that notation” (p. 497).

If this indeed fully explains the nature of quantification, then from the substitutions in the example, we should be able to derive the following definitions:

$$\forall x \phi x =_{def.} \text{It is true of everything that it, is such that (it, is } \phi).$$  

$$\exists x \phi x =_{def.} \text{It is true of at least one thing that it, is such that (it, is } \phi).$$  

However, iff it is true of everything that it, is such that it, is $\phi$, then everything is $\phi$; and if “something” is taken to be a synonym for “at least one thing”, then iff it is true of at least one
thing that it is such that it is \( \phi \), then something is \( \phi \), and thus these two definitions can be shortened to:

\[
\forall x \phi x =_{\text{def.}} \text{Everything is } \phi. \\
\exists x \phi x =_{\text{def.}} \text{Something is } \phi.
\]

And here, according to Quine, we reach rock bottom:

words like ‘something’, ‘nothing’, ‘everything’. (…) These quantificational words or bound variables are, of course, a basic part of language, and their meaningfulness, at least in context, is not to be challenged. (1948: 6-7; emphasis added)

The difference between model-theoretic and ordinary language-based accounts then, is that of “all of M is \( \phi \)” versus “everything is \( \phi \)” for the universal quantifier, and “some of M is \( \phi \)” versus “something is \( \phi \)” for the existential quantifier. Hence, the first account is based on the pair of concepts \{all of, some of\} and the second on \{everything, something\}. This raises two closely related questions: (a) how – if at all – are these concepts interrelated, and (b) which – if any – of these concepts are further analyzable and which are primitives.

3. primitives

The concepts all of and everything and/or some of and something are theoretical primitives; that is, they are basic to the two accounts of quantification. A theoretical primitive of (or in) some theory is not further analyzed by that theory. In contrast, a metaphysical primitive cannot be further analyzed in any theory. The basicness of a theoretical primitive is relative; that of a metaphysical primitive is absolute (Asay 2013). Similarly, in natural language, local semantic primitives can be distinguished from universal semantic primitives, the first being language-specific or relative, the second being universal or absolute. A metaphysical primitive must be a universal semantic primitive as well, but not necessarily the other way around – if it would be analyzable in some language, it would be analyzable and thus not be metaphysically primitive, but conversely, it may be the case that some concepts are unanalyzable in all natural languages, but can be analyzed in some (semi-) formal language.

It is metaphysical primitives that we are after, but we need to know which of the concepts all of, some of, everything, and something are theoretically primitive before we can determine which of those theoretical primitives are metaphysically primitive. Both accounts accept that \( \forall x \phi x \iff \exists x \lnot \phi x \), which might seem to suggest that of the members of the two pairs of concepts \{all of, some of\} and \{everything, something\} only one of each pair can be basic, but that is not necessarily the case. If concept A is reducible to concept B and vice versa it may well be the case that both come together; that is, that they are a primitive contrasting pair. Unless forced by contrary evidence, I will assume this to be the case. That is, I will assume that both accounts of quantification have a pair of contrasting theoretical primitives: \{all of, some of\} in case of the model-theoretic account \{everything, something\} in case of the ordinary language-based account.
The difference between \{\text{all of, some of}\} and \{\text{everything, something}\} is that between \text{binary} or type \langle 1, 1 \rangle and \text{unary} or type \langle 1 \rangle quantifiers (Peters & Westerståhl 2006). Other examples of type \langle 1, 1 \rangle quantifiers are \text{one, two, three, zero, no, some, (a) few, a couple of, several, many, most, a lot of, a large number/amount of, all, every, both, each, at least one, more than two, exactly three, about five, at most six, half of, at most two thirds of, and so forth}; other examples of type \langle 1 \rangle quantifiers are \text{something, everything, nothing, someone, and everyone} \text{idem}.2 Type \langle 1 \rangle quantifiers are typically noun phrases. In many languages, type \langle 1, 1 \rangle quantifiers are determiners, but they also occur in the form of adverbs, auxiliaries, affixes, among others. According to Stanley Peters and Dag Westerståhl,

in natural languages type \langle 1, 1 \rangle quantifiers are more basic than type \langle 1 \rangle quantifiers. So far as is known, all languages have expressions for type \langle 1, 1 \rangle quantifiers, though some languages have been claimed not to have any expressions for type \langle 1 \rangle quantifiers. (p. 12)

Furthermore, type \langle 1 \rangle quantifiers can be reduced to type \langle 1, 1 \rangle quantifiers. “The meaning of a quantificational noun phrase in English is a type \langle 1 \rangle quantifier composed of the type \langle 1, 1 \rangle quantifier that the determiner expresses and the set that the nominal expression denotes” (idem). In other words, \text{everything} is a variety of \text{all of} with an implied domain M (i.e. “the set that the nominal expression denotes”: \text{everything} =_{\text{def}} \text{all of M}. Consequently, if Peters and Westerståhl are right, then the model-theoretic account is closer to natural language than the ordinary-language based account, and more importantly, unary or type \langle 1 \rangle quantifier can be reduced to binary or type \langle 1, 1 \rangle quantifiers and are, therefore, \text{not} primitive.

As mentioned, metaphysical primitives must be universal semantic primitives. Anna Wierzbicka and associates have been attempting to identify such universal semantic primitives or \text{semantic primes} in the research program called \text{Natural Semantics Metalanguage} (NSM) that spans over three decades (e.g. Wierzbicka 1972; 1996; Goddard 2002; 2010). Semantic primes – as understood in the NSM approach – cannot be analyzed or paraphrased in any simpler terms, and have lexical equivalents (either one or multiple) in all languages (but such lexical equivalents can be polysemous, and there are various other complications). A third criterion that applies not to individual candidate primes, but to the collection of primes as a whole is that it is “intended to enable reductive paraphrase of the entire vocabulary and grammar of the language at large” (Goddard 2002: 16).

This, quite obviously, is a very ambitious research program, and I have serious doubts that it can live up to its ambitions. For any candidate prime, showing that it cannot be analyzed or paraphrased in any simpler terms in any language – the first criterion of prime-ness – and that it has lexical equivalents in any language – the second criterion – would require a book length study at least,3 but typically, in the NSM literature, primes are posited and defended

2 There are further types of quantifiers, but those are (mostly?) irrelevant in metaphysics. Examples of a type \langle 1,1,1 \rangle and \langle 1,2 \rangle quantifier respectively, are \text{more ... than ...} and \text{each other}.

3 Of course, attempts to analyze a concept like \text{know} by philosophers fill entire libraries, but that a term is (believed to be) analyzable by philosophers and thus is not metaphysically primitive, does not imply that it is analyzable in natural languages and thus is not a semantic primitive. Whether some concept is a (universal) semantic primitive is – or should be – primarily an empirical question.
within the space of pages (see, for example, Wierzbicka 1996). These positing and defenses seem to be based on extensive knowledge of language (and I believe they are), but remain extremely opaque, and often evoke the suspicion of armchair speculation (or even of being driven by the theory they are supposed to support more than by available data). Nevertheless, despite these shortcomings, on the topic of natural language primitives there is no serious competition for the NSM literature: it may be flawed, but is the best we have. Moreover, one doesn’t need to accept the whole of the NSM program to provisionally accept its list and analysis of primes.

The most recent list of universal semantic primitives according to NSM (Goddard 2010) lists four primes that are relevant here: some, all, something/thing, and there is. All but the second of these can be expressed by means of ∃, but Wierzbicka (1996) stresses that from a natural language-semantic point they are different notions (p. 75).

The determiner some is better expressed as some of (p. 75). It is “some” in “some people ...”, “some men ...”, and “some of them ...”. Similarly, all seems to be all of, although Wierzbicka does not state so explicitly. All examples of the prime all, including those appearing in responses to deniers of this prime (e.g. 1996: 193-7; 2005), are examples of all of: “all of them ...”, “all of the people ...”, “all of the men ...”, and so forth. Hence, the primes all (of) and some (of) are the binary or type ⟨1,1⟩ quantifiers of the model-theoretic account, confirming their status as primitives.

The primes something/thing and there is and the analysis of the unary quantifiers everything and something are more complicated, however. something/thing is not the same as the theoretical primitive something identified above. It is a placeholder in sentences like “I saw something interesting” (Wierzbicka 1996: 39), “I said something”, and “something happened to me” (p. 119), and contrasts to someone (and thus not to everything). (Most occurrences of “thing” in this paper are expressions of this concept.) something/thing can combine with most (if not all) determiners including quantifiers such as one, two, some, most, and all: one thing, two things, some thing, most things, all things (p. 118). Wierzbicka suggests that everything is a combination of all with something/thing: all things (idem), and similarly, the quantifier something could be conceived as some something/thing: some thing. It is important to notice, however, that this placeholder something/thing is ontologically neutral: it does not imply existence (in any ordinary sense of that term), and it can refer to fictional or even impossible things.

The prime there is has a presentative function, and generally appears first in child language in a negative form (usually, “no ...” in English or “... nai” in Japanese). In other words, there is and its negation represent presence and absence respectively. there is (or be present) is often – but not always – interchangeable with exist. there is can apply to specific individuals in specific locations, while this is normally not the case for exist. For example, “there are no ghosts in this place” cannot be replaced by “ghosts don’t exist in this place” (p. 84). Although Wierzbicka does not state so explicitly, her analysis suggests that there is is binary rather than unary (while the opposite is the case for exist): it is a two-place relation there is (P,x) taking a place (in a very broad sense of “place”) as one of its arguments, but often letting context determine its value, and with the possibility of defaulting to somewhere (which is formed out of some and the spatial prime where/place).
If Wierzbicka and the NSM research program are right – and I’m not aware of any counter-evidence on this issue – then there are no primitive unary or type \(\langle 1 \rangle\) quantifiers \textsc{everything} and \textsc{something}. The most basic concepts of \textsc{everything} and \textsc{something} in the NSM framework are those constructed out of the binary or type \(\langle 1,1 \rangle\) quantifiers \textsc{all (of)} and \textsc{some (of)} with the placeholder \textsc{something}/\textsc{thing}. This confirms Peters and Westerståhl’s observation that English type \(\langle 1 \rangle\) quantifier are composed of “the type \(\langle 1,1 \rangle\) quantifier that the determiner expresses and the set that the nominal expression denotes” (see above), but specifies that set – the quantifier’s domain – by means of a more or less empty placeholder (\textsc{something}/\textsc{thing} in this context is really \textsc{anything}) without inherent limits as to what kind of thing it could refer to. In other words, \textsc{everything} in this sense, is absolutely everything, including the fictional, impossible, and so forth. This, however, does not seem to be the basic concept of \textsc{everything} of the Quinean/ordinary-language account of quantification. (See also the next section.)

In case of the quantifier \textsc{something}, there is a competing interpretation in terms of \textsc{there is} (in addition to the combination of \textsc{some (of)} with \textsc{something/thing}), but this suffers from the same problem. Like \textsc{somes (of)}, \textsc{there is} is binary: it “locates” something in some place, context, or domain. “There is a book” does not mean that there exists at least one book (although that may be implied by it), but that there is a book present in some contextually salient place. And “there is at least one self-contradictory set” most certainly does not mean that that set exists (or at least not in any ordinary sense of “existence”). Perhaps, a quantifier \textsc{something} can be constructed by specifying \(P\) in the two-place relation \textsc{there is} \((P,x)\), but if \(P\) is a spatial/locational concept (or composition of \textsc{some} and a spatial concept as in \textsc{somewhere}), then this excludes everything without location from the range of that quantifier. Furthermore, \(P\) in case of “there is at least one self-contradictory set” is obviously non-spatial, but could be something like “the universe of naive set theory”. That, however, is a domain (or universe; see previous section), and if that is right, then \textsc{there is} and \textsc{some (of)} are the same metaphysical primitive, even if they are semantically distinct. (There is a difference, however, in the preference for spatial domains in case of \textsc{there is} and of non-spatial, intensionally defined domains in case of \textsc{some (of)}.)

In any case, contrary to the ordinary language-based account of quantification, the unary quantifiers \textsc{everything} and \textsc{something} are not semantically primitive, and therefore not metaphysically primitive. Rather, they can be reduced to the binary primitives \textsc{all of} and \textsc{some of} plus some domain specification. Nevertheless, a case can be made for the basicness of \textsc{everything} and \textsc{something} if they have an inherent, default, or natural domain, especially if that domain is metaphysically primitive. The difference between the model-theoretic account and the ordinary language-based account then, is not a difference between quantifiers – both adopt the binary quantifiers \textsc{all of} and \textsc{some of} – but a difference of domains. According to the model-theoretic account, the domain is open and thus needs to be specified; according to the ordinary language-based account there is some natural, default, or inherent domain of quantification. The domain of these quantifiers is “Everything” (\(\text{I.e.}\) the quantifier \textsc{everything} ranges over the domain “Everything”), and that domain is the natural or default understanding of “Everything”. Hence, the question is, is there a plausible natural, default, or inherent understanding of “Everything” (as domain rather than quantifier).
4. everything

According to Quine, “existence is what existential quantification expresses” (1969: 94). This, of course, implies that everything exists, and that what doesn’t exist does not belong to everything (see also Quine 1948). Existence, in this sense, does not come in gradations or degrees; it is not a fuzzy concept: something exists or it doesn’t. And therefore, “Everything” has crisp boundaries, and whatever determines membership or being-amongness or parthood (etc.) of “Everything” cannot be a prototype concept, family-resemblance, or other kind of fuzzy property. Perhaps, this is even more obvious from a more technical perspective. The notion of a fuzzy range of a quantifier makes no sense: either something is within the range of the quantifier, or it isn’t; there is no gray area.

Secondly, if there is a plausible natural, default, or inherent understanding of the domain “Everything”, then this notion of everything must be unambiguous and universal, or very nearly so at least. (Unless one would be willing to accept a radical form of linguistic relativism according to which what exists differs from language to language.) This does not necessarily mean that it must be lexical in all languages, but that it must be introduceable and unambiguously definable in all languages that lack the notion. The latter, however, can only be guaranteed if it is completely reducible to universal semantic primitives in relatively few steps. (Otherwise, it would have to be shown.)

Thirdly, this notion of everything must not just be universal in the latter sense, but it must be the universal natural, default, or inherent understanding of the domain of quantification in existential claims in all languages. In any language, saying that something exists must be understood naturally or by default (etc.) as saying that that something belongs to Everything in that sense. These last two requirements may seem to be excessively strong, but rejecting them would equate natural/default (etc.) with natural/default in English, which is not necessarily the same. (Even if there has been a tendency in Anglo-Saxon philosophy to think that English is the universal language.)

Fourthly, “Everything” should neither include too much nor too little to be metaphysically useful. The notion of “absolutely everything” seems an obvious candidate for an understanding that is too broad. Furthermore, it is controversial what “absolutely everything” means and whether quantifying over “absolutely everything” is possible. This issue is related to the controversy about sets versus pluralities and so forth mentioned in section 2.

4.1. absolute generality

The standard objection to quantification over absolutely everything is that it is proven incoherent by Russell’s paradox (and other contradictory and therefore impossible entities). This argument against absolute generality (AAG) is:

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4 See (Rayo & Uzquiano Eds. 2006) for a collection of papers on this topic.
1. If the domain $M$ includes absolutely everything, then $\exists x \left[ x = \{ y : y \not\in y \} \right]$ (Russell’s paradox).

2. $\neg \exists x \left[ x = \{ y : y \not\in y \} \right]$. ($\{ y : y \not\in y \}$ is self-contradictory, and therefore, there is no such set.)

3. Therefore (by modus tollens), $M$ does not (and cannot) include absolutely everything.

Various solutions to this problem have been proposed, but virtually all address premise 1. Some reject the (naive) set-theoretical interpretation of domains and opt for proper classes or pluralities instead. Others have attempted to construct notions of absolutely everything that exclude impossible entities. I doubt that these solutions work, however.

Plurals are extensionally defined, but the idea of extensionally defining “Everything” – or any metaphysically useful domain – seems nonsensical to me. A genuine extensional definition is a specification (or pointing out) of every particular in its extension without appealing to shared properties (i.e. intensions) of those particulars. That is impossible for any metaphysically interesting domain, and it certainly is impossible for “Everything”. And apparently extensional definitions like “the world” are either mere offerings of equally ambiguous synonyms and thus not definitions at all, or are not extensional, but define a domain in terms of a shared property of its members – something like “being part of the world” in this case. Of course, there is the option of refusing definition: “Everything” could be some undefined plurality, but such a notion is unlikely to satisfy any of the criteria mentioned above, unless perhaps, it would be an undefined, universally primitive plurality, but there is little reason to believe that is a plausible assumption (as this and the previous section show).

A domain of a quantifier must be intensionally defined. There must be some more or less complex property $D$ such that $M = \{ x : Dx \}$. Therefore, a domain cannot be a plurality and must be either a set or a proper class. A key difference between sets and classes is that the former are objects and can be members of sets themselves, while the latter are not and can not. Hence, if domains are proper classes, then premise 1 of AAG is false. However, this section is discussing different (possible) domains and is thus, effectively, quantifying over domains, and those, therefore, cannot be proper classes. Perhaps, it could be objected that it is not those domains that are members of the meta-domain, but just their names, but that objection fails. There is no obvious reason why the following sentence would be incoherent:

There is a domain of quantification $M'$ in which $c$ exists and another domain of quantification $M''$ in which it doesn’t.

The most straightforward formalization of this sentence is:

$$\exists x, y \left[ x = M' \land y = M'' \land \exists^{M''} z \left[ z = c \right] \land \neg \exists^{M'} z \left[ z = c \right] \right]$$

in which $\exists^i$ is the quantifier with the meta-domain $M^i$, and $\exists^{M'}$ and $\exists^{M''}$ are quantifying over $M'$ and $M''$ respectively. In this case, the two specific domains are not just members of the meta-domain, but $M'$ even overlaps with $M''$ as the constant $c$ must be a member of $M''$ as well. In any case, $M''$ does not just include the names “$M'$” and “$M''$”, but those domains themselves. Therefore, domains cannot be proper classes.
It seems then, that domains must be sets, and therefore, that premise 1 is true and AAG is sound.\textsuperscript{5} That conclusion would be premature, however. The problem, I think, is not premise 1, but premise 2. Premise 2 is false.

The notion of “absolutely everything” makes sense only if it indeed includes absolutely everything, but that means that it must be the superset of all possible domains. If the latter wouldn’t be the case, then there would be things that can be quantified over with some existential quantifier, but that aren’t part of absolutely everything. The idea of something not being part of everything is contradictory, however. If there are things in some domain and those things aren’t in domain N, then N is not absolutely everything.

Furthermore, the sentence “there is at least one self-contradictory set” is true if the domain of the quantifier is “the universe of naive set theory”. For a less abstract example, imagine a library where the management first asks for thematic lists of books, then for lists of lists, then for books that haven’t been listed, and finally for lists that haven’t been listed. A cleaner sees the notice with the last request, and mumbles: “there is at least one list the librarian will never be able to make.” In case of these examples, we have domains that include \( \{ x : x \notin x \} \). Therefore, \( \{ x : x \notin x \} \) is a member of absolutely everything. Therefore, premise 2 is false.

This leads to an obvious problem. \( \{ x : x \notin x \} \) is self-contradictory, and therefore, does not exist, cannot exist. The problem is, that absolutely everything – unless that term is some kind of deceptive euphemism – indeed includes absolutely everything, including the impossible, the imaginary, and the absurd. Absolutely everything includes an invisible pink square circle in a trapezoid orbit around the sun and \( \sqrt{-1} \).

Perhaps, \( \{ x : x \notin x \} \) can be thought of as analogous to the imaginary number \( i \) (defined as \( i^2 = -1 \)). There is no amount or number \( i \) of anything, and in that sense, \( i \) doesn’t exist, but there are situations in which the number is needed, and thus there is a set of numbers \( \mathbb{C} \) that includes it (in addition to the set of real numbers \( \mathbb{R} \)).\textsuperscript{6} Similarly, \( \{ x : x \notin x \} \) doesn’t exist in any ordinary sense of “existence”, but there are situations in which the notion is needed, and thus there are domains of quantification that (need to) include it.

Of course, this means that existential quantification over absolutely everything cannot be the definiens of “existence”, or at least not of any ordinary notion of “existence”, but it also means that this notion of everything is far too broad to be useful. If “existence” is to be of any use as a concept in metaphysics, it cannot be defined in such a way that the definition implies that invisible pink square circles in a trapezoid orbit around the sun and \( \sqrt{-1} \) exist. It seems then that here, contrary Quine (see section 2), “existence” and “everything” come apart.

These considerations point at an additional criterion, or perhaps a method of testing the already mentioned criteria more than a new one: If existential quantification is to be taken to mean existence in some more or less ordinary sense of that term, then for any kind of

\textsuperscript{5} I’m ignoring mereology here, under the assumption that standard logic and set theory can be adapted to quantify over chunks of mass stuff. Such an adaptation is necessary, of course, if one’s ontology is to include water and air (instead of or in addition to water and air molecules).

\textsuperscript{6} \( \mathbb{R} \) is the set of real numbers; \( \mathbb{C} \) is the set of complex numbers, which are defined as \( a + bi \) in which \( a \) and \( b \) are real numbers and \( i \) is defined as \( i^2 = -1 \). By implication, \( \mathbb{R} \) is a proper subset of \( \mathbb{C} \).
member \( \Phi \) of “Everything”, the question “do \( \Phi \)s truly exist” must be answered positively.\(^7\) For the invisible pink square circles and sets of the form \( \{x : x \notin x\} \), the answer would be “no”.

### 4.2. natural/default domains

Above, I argued that the domain “Everything” must be a set defined by some more or less complex property \( D \) such that \( M = \text{def.} \{x | Dx\} \). The question is – keeping the above criteria and test question in mind – whether there is any natural, default, or inherent property \( D \). I will not discuss all possible candidates (obviously), but limit myself to three of the most influential and most plausible candidates: natural, real, and independent.

**Natural** here, is David Lewis’s notion of naturalness (1983; 1986). It should not be confused with the more general idea of a “natural” domain of quantification. Lewis takes natural to be a primitive. Properties capture facts of resemblance, and natural properties capture the “primitive objective resemblance among things” (1983: 347); that is, they carve nature at the joints. The domain-defining property \( D \) is then defined as having a natural property, and by implication, anything that has a property that captures some objective resemblance of that thing with other things is a member of the natural/default domain \( M \).

An obvious problem for this idea is that the notions of “carving at the joints” and “objective resemblances” are controversial, and therefore, unlikely primitives. Most of Buddhist metaphysics rejects objective resemblance among things, for example, and in Western philosophy there is considerable opposition against inherent joints as well. Perhaps, this criticism confuses two questions, however, namely the meta-ontological question of defining a domain and the ontological question of what is in it. Critics of objective resemblances claim that a domain based thereon would be empty, but that is not necessarily a criticism of the notion itself. Moreover, the notion of resemblance itself can probably be defined quite directly in terms of the same and other, which are universal semantic primitives according to NSM. The question remains, however, whether natural is a plausible universal natural/default domain-determinant.

**Prima facie**, it seems a very good candidate, and the fifth criterion underlines this. If Donald Davidson (e.g. 1991; 1992; 1997) is right – and I think he is – then language can only be learned in interaction with (other) speakers in a shared world. Nouns are learned by observing similarities between words and things. Repeated uttering of something that sounds like “table” in the presence of table-like objects results in learning the word and concept “table”. But this means that most of the nouns in a language – and probably the same is true for verbs and adjectives (if those are distinguished) – refer to things (or properties) with salient similarities, and since those similarities must be salient to both learners and (other) speakers (i.e. teachers) they must be objective, or intersubjective at least (even if salience partly depends on culture and other circumstances). By implication, concrete single nouns and other concrete, relatively simple noun phrases tend to capture (more or less) natural properties. The question “do \( \Phi \)s truly exist” (the fifth criterion) is most likely to be answered with “yes”

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\(^7\) In modern English, it is more natural to ask whether \( x \) really exists, but that is too easily mistaken for “existing in the domain of the real”, which is one of the candidate domains to be discussed in this section.
or “yes, of course” if ϕ is replaced with a concrete single noun or other concrete, relatively simple noun phrase, because those ϕs are most salient, and is less likely to be answered positively or with more hesitation in case of some more complex, more abstract, and therefore, less salient ϕ. And therefore, natural indeed seems to be closely related to our ordinary concept of “existence”.

Nevertheless, if there are no inherent joints in reality, then “joints” may be more or less arbitrarily posited or created in this process (e.g. Brons 2012; Wheeler 2014), leading to non-coinciding natural/default domains for different languages (unless they all coincidentally coincide, but that would be extremely improbable). Furthermore, salience is relative, not just to culture and other circumstances of the learners and speakers involved, but also to the objective features of the part of the world that is in shared focus. Some similarities and differences are more conspicuous than others, regardless of the background of the observer (shape versus material constitution may be an example). But that means that resemblance is not dichotomous, and Lewis was well aware of this. He suggested “that some classes of things are perfectly natural properties; others are less-than-perfectly natural to various degrees; and most are not at all natural” (idem). In other words, natural is a fuzzy concept: it comes in gradations or degrees, and by implication, if D is defined in terms of natural, then M is a fuzzy set, which conflicts with the first criterion for a natural/default domain.

Theodore Sider’s (2003; 2007; 2009) meta-ontology is partially based on Lewis’s notion of naturalness, but on several occasions, Sider identifies “existence” with being real (see also Schaffer 2009). From an entirely different theoretical perspective, Kit Fine (2009), also argues for the basicness of the concept real. Indeed, the concept seems an obvious candidate for D: a natural/default domain of quantification only includes what is real.

Real is not a primitive in NSM. Wierzbicka (2002) argues that it can be paraphrased in terms of the primitive happen, but this seems applicable to real events only. What makes an object real? Being tangible seems a good candidate, and can and touch are NSM primitives. However, that might imply that air, for example, is not real. On the other hand, it is not implausible that many people consider air somehow less, or even not, real. Air only becomes “real” after learning the concept of a gas. This, however, points at a problem, aside from being a disjunctive concept (with different definitions for objects and events), at least one of the disjuncts of real seems to be fuzzy. Real comes in degrees: some things are more real than others. This, moreover, does not seem to be related to defining real in terms of can touch, but to be a feature of real itself, regardless of how and whether it is defined. Consequently, as in the case of natural, if D is real, then M is a fuzzy set, which conflicts with the first criterion for a natural/default domain.

Independence as a criterion for existence has a long history in both Western and Indian thought. The distinction between phenomenal appearances and independent reality runs as a red thread through the history of Western philosophy from its conception – even though the distinction was conceptualized very differently by different philosophers and traditions – but is also central to the Indian traditions. Barry Stroud (2000) discusses the problem of clarifying the Western variants of the concept, but it seems to me that the Indian – especially Buddhist – notion is less ambiguous.

The Buddhist notion of dependence is a broadly causal notion: dependence is causal dependence; and causality is an NSM primitive (listed as because). x exists independently, or is
“ultimately real”, if it exists (in some sense) and if it is not the case that it exists because of something else. That causing “something” can be a process of conceptual construction, or physical causation (if there is such a thing), or the ontological dependency of a whole on its parts, and so forth. *Independence* in this sense is relatively unambiguous, and easily introduced in any language that doesn’t have the concept already. However, as the Madhyamaka school discovered: nothing is independent in that sense. If ultimate reality is defined as what is independently real (in that sense), then nothing is ultimately real. Hence, to the question “do ϕs truly exist”, the Madhyamaka would answer “no”, regardless of what ϕ stands for (and assuming that “truly” is understood as “ultimately”), but that only shows that *independence* is no criterion for any ordinary notion of existence, and thus that it cannot be D.

Perhaps, more modest notions of *independence* can be constructed, as independence from conceptual construction, for example. This would seem to exclude chairs as chairs, but not as physical objects (depending on the definition of “object”) from M, and would exclude whatever has no non-conceptually constructed basis (weddings, perhaps) from M completely. Whether such a radical split between the world and how we perceive it can be made is controversial, however. Furthermore, it is doubtful whether this version of *independence* is a plausible candidate for a natural/default domain: it seems far removed from ordinary notions of “everything” and “existence” and would exclude many things that we ordinarily believe to exist. And by implication, this option conflicts with the fifth criterion.

None of the four candidates for a natural, default, or inherent domain discussed in this section turns out to be plausible, but perhaps that is the case because of the assumption that (the ordinary language notion of) existence is what is expressed with the existential quantifier. That assumption may be wrong.

The first two criteria, non-fuzziness and unambiguity, undeniably apply to any domain definition. The idea of a quantifier ranging over some fuzzy and/or ill-defined (ambiguous) domain just doesn’t make sense. However, *real* and *natural* appear to be fuzzy concepts – prototype concepts, perhaps, or family resemblances – which means that they cannot be domain-defining properties D. It may very well be the case that ordinary notions of existence are closely associated with *real* and/or *natural*, on the other hand. An obvious problem for this association (whatever its nature) is that *exist* does not seem to be similarly fuzzy, but that may be misperception. Someone may believe that weddings are less real than mountains, for example. If, immediately after making that reality judgment, this person is asked whether weddings exist, she might answer with some hesitation that they exist in some sense, while there would be no hesitation and no qualification (“in some sense”) in the case of mountains. Of course, it would have to be tested whether such effects do indeed occur, but it seems entirely plausible that they do, and if they do, then our ordinary notion of existence is a fuzzy category as well.

On the other hand, absolute generality cannot plausibly be what we mean with any existential sentence, but satisfies the first and second criteria, and seems the most plausible

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8 The unary quantifier *everything* was reduced to *all of* and *something/thing* in section 3, but this reduction also applies to absolutely everything as domain. Hence, the notion satisfies the second criterion.
candidate for a default domain (but not for a “natural” domain). That would mean that in the hypothetical case that the domain of a quantifier is not in any way specified, then it would default to absolutely everything. No one would ever want to quantify over absolutely everything, however, as this is pointless (given that absolutely everything is part of absolutely everything, obviously, including invisible pink square circles; see above), and no one ever did or does quantify over absolutely everything: there always is a domain, even if it is often implicit.

In conclusion (of this section) then, there is no natural domain, but there may be a default domain of quantification: absolutely everything. This default is moot, however, as there always is an explicit or implicit domain smaller than absolutely everything.

It was already shown above that the unary quantifiers EVERYTHING and SOMETHING are not metaphysically primitive, but can be reduced to the binary primitives ALL OF and SOME OF plus some domain specification (section 3). The present section adds to this that EVERYTHING and SOMETHING don’t have an inherent, default, or natural domain (except, perhaps, absolutely everything). That being the case, the ordinary language account of quantification needs to be rejected in favor of the model-theoretic account. The universal quantifier means that “all of M is ϕ” and the existential quantifier that “some of M is ϕ”, and there always is a domain M, which needs to be specified. In other words, there are no unary quantifiers.

5. domains

Ontological disputes are (or can be expressed as) disagreements about the existence of some kind of thing F. If theory A and theory B differ such that “Fs exists” is true in one and false in the other, then there are two obvious explanations of that difference: either (a) the two theories quantify over different domains, or (b) they quantify over the same domain, but disagree whether Fs are part of that domain. In somewhat different terms, in case of (a), A and B agree that Fs are Gs, but disagree about the existence of Gs (i.e. whether \{x | Gx\} is a subset of the domain of the existential quantifier); in case of (b), A and B agree largely about what kinds of things exist, but disagree whether Fs are among those. Type (a) disputes correspond more or less with Carnap’s external questions; type (b) with internal questions (see sections 1 & 6).

An example of type (b) is disagreement about the existence of God. The disputants generally quantify over more or less the same domain of “real” things (or something similar), which excludes fictional objects (a.o.), but differ with regards to the status of God: theists argue that God is real and thus belongs to that domain; atheists argue that God is a fictional object and thus does not. (This is an oversimplification, of course, but it is merely intended as an illustration here.) Disagreement about the existence of composite objects such as chairs, on the other hand, seems more typically an example of (a). Disputants agree that chairs are composite physical objects but disagree about the proper domain of existential quantification: simples only, or both simples and composites.

Disputes of type (b) are of limited relevance here, and will be mostly ignored in the remainder of this paper. The above may seem to suggest that if an ontological dispute is not of that type, then it must be of type (a); that is, it must be a difference between domains. However, the above only claims that (a) and (b) are obvious explanations, not that they are the
only explanations, and Eli Hirsch (2002) explicitly rejects (a) as an interpretation of his theory of Quantifier Variance. According to Hirsh, theories A and B may disagree on the truth value of “Fs exist” because of a difference between quantifiers other than a difference of domains. It is hard to make sense of this claim, however. Given the definition of the existential quantifier as

\[ \exists x \phi x =_{\text{def.}} \text{Some of } M \text{ is } \phi. \]

(see section 2), there is nothing that can differentiate two existential quantifiers aside from their domains M. There just isn’t anything else in the definition that can vary. Consequently, Hirsch is wrong, but that doesn’t mean that the difference between A and B can only be a difference of domains; that still has to be shown.

If “chairs exist” is true in A and false in B, then – assuming that A and B refer to the same extra-theoretical reality – either “chair” or “exist” (or both) has a different meaning in the two theories. Because “chair” is of no concern here, I will assume it means the same in A and B. But if that is the case, then A and B must differ in their understandings of what it means to exist; and if this difference is not a difference in domains, then it cannot be a difference in existential quantifiers, because those can only differ in their domains. The most obvious alternative seems to be that one of the two is not a quantifier, but a property. This alternative turns out to be illusory, however.

If “chairs exist” is true in A and “exist” is existential quantification over domain \( M^A \), then there is a domain-defining property \( D^A \) such that \( M^A = \{ x \mid D^A x \} \), and therefore, to say that something exists in A is equivalent to say that it has property \( D^A \). The converse is true as well. If “atoms exist” is false in B and “exist” is a property defined roughly as “being a fundamental constituent of reality”, then there is a class \( M^B = \{ x \mid x \text{ is a fundamental constituent of reality} \} \), and that class can be a domain of quantification. In other words, there is no fundamental difference between “existence” as property and as quantifier: one can be converted into the other without any change in truth value. The difference is notational or terminological, not substantial. And by implication, if B adopts an existential quantifier that ranges over “fundamental constituents of reality”, then nothing changes in the truth values of its claims, and it becomes obvious that the difference between A and B is nothing but a difference in domains.

If A and B both employ formal languages, then this seems to exhaust the possibilities. What else – aside from a quantifier or property – could a formal notion of existence possibly be? However, if A and B are expressed in natural languages, then there seems to be a further option, as illustrated by the following scenario. Theory A, which holds that only simples exist, is expressed in ordinary English. Theory B, which holds the same view, is expressed in Benglish, which looks very much like English, but which has a quus- or grue-like gerrymandered notion of existence, such that “Fs exist” is to be translated into English as “Fs exist” if F is a kind of simple, but as “Fs do not exist, but their part-less components do” if F is a kind of composite or whole. Then “chairs exist” is false in A and true in B and the difference is not merely a difference of domains.

But what would happen if a speaker of Benglish starts to doubt theory B and wants to propose an alternative theory C according to which it is true that chairs exist in addition to their parts? How exactly would she express C’s main claim? “Both chairs exist and chair-parts
exists” won’t do because in Benglish, “chairs exist” means that chairs do not exist, but only their parts do. Perhaps, there is another word “axist”, and C’s claim would be expressed as “chairs axist and chair-parts exist”, but then “axist” and “exist” would express the same concept and merely differ in the kinds of subjects they can take as arguments, in the same way that Japanese has different words for “to be” for animates and inanimates: iru and aru. (However, contrary to the iru/aru distinction, the exist/axist distinction is not based on salient features of reality, making it implausible that such a distinction could arise and survive in a natural language.) Furthermore, it is implausible that this wouldn’t be or become obvious to the speakers of that language themselves – it would only take a brief reflection on theory B and/or an attempt to formulate an alternative such as C to realize. Alternatively, lacking a word like “axist”, C could never be expressed in Benglish; perhaps, it couldn’t even be thought by a speaker of that language. There is, however, little reason to believe that there are natural languages that are radically impoverished in this sense: some things may be more difficult to express in some languages, but anything that can be said in one natural language, can – with some effort – be said in any other. (The same is obviously not true for formal and other artificial languages.)

It is very implausible, perhaps even impossible, that a natural language is gerrymandered in the way and to the extent needed to differ substantially from another language with regards to existential claims. (For a much longer and more detailed version of the argument in the last two paragraphs, see Brons 2013a, pp. 63-70.) And as this was the only remaining alternative to a difference in domains, it can now be concluded that if theory A and theory B differ with regards to the existence of some kind of thing F (while they agree about the relevant properties of F), then the only explanation of this difference is that the two theories quantify over different domains.

In the contemporary debate on the foundations of analytic metaphysics (see Manley 2009 for an overview) three or four main positions can be distinguished: neo-Quinean, neo-Aristotelian, and pluralist, the last of which can be further divided into neo-Carnapian and internal pluralist. With the exception of neo-Aristotelians, all of these focus on “existence”: ontology is about what exists. Neo-Aristotelians, such as Jonathan Schaffer and Kit Fine, on the other hand, take inspiration from Aristotle’s notion of substance. Ontology is about what is fundamental, or real, or independent. Hence, the core concepts of neo-Aristotelianism are properties, while “existence”, which is the core concept of the neo-Quinean and neo-Carnapian camps, is not a property, or not a property of individuals at least, but a quantifier or a property of properties.

According to neo-Quineans, “existence” is univocal. For example, Peter van Inwagen (1998; 2009) argues for five thesis, the first four of which can be summarized as “being = existence = ∃” (the fifth concerns his ontological method; see also section 6); and Theodore Sider (2003; 2007) appeals to David Lewis’s (1968) “naturalness” (see section 4.2) in defending a univocal notion of existence (which he writes in boldface). In contrast, ontological pluralists argue that

9 There are some minor and at least one major flaw in the rest of that paper, the major flaw being the undefended assumption of the model-theoretic account of quantification. The present paper is intended to fix that flaw.
there are multiple senses or kinds of existence, but such arguments come in two very different kinds. Internal pluralists, such as Gilbert Ryle (1949), and Heidegger and many other Continental philosophers, distinguish different senses of existence within one language. And because these different notions are part of the same language they need different terms to be kept apart. Thus sometimes “being” is distinguished from “existence”, or further terms, such as “subsistence”, “Dasein”, and so forth, are introduced, or varieties are distinguished by means of adverbs or “existence as ...” constructions. External pluralists or neo-Carnapians, on the other hand, argue for difference between languages, or conceptual schemes, frameworks, and so forth. In other words, the meaning of “existence” varies from language (etc.) to language. Views of this kind were also/further developed by Hilary Putnam and Richard Rorty. Influential advocates in the contemporary debate include Eli Hirsch, Matti Eklund, and David Chalmers.

The neo-Quinean and neo-Carnapian notions of existence are quantifiers, but they differ in their understanding of the domains involved. According to neo-Carnapians, domains differ between languages (etc.), but neo-Quineans reject the idea that their quantifier has a domain. That rejection is based on a misunderstanding (see sections 2 and 3), however, and the neo-Quinean claim is better understood as being that their quantifier has an inherent or natural domain, but that claim turned out to be false (see section 4). In contrast, neo-Aristotelians do not focus on quantification at all, but on fundamental properties. However, given that any property can define a domain and that any domain can be rewritten as a property, the difference between the focus on “existence” as property versus “existence” as domain is notational rather than substantial. Internal pluralism, finally, is rarely (if ever) expressed with sufficient clarity to infer the formal nature of its notions of existence, but considering the effective equivalence of properties and domains, this matters little. In all cases, differences between ontological core concepts (notions of existence, fundamental properties, and so forth) can be wholly reduced to differences in domains of quantifiers. And if “existence” is existential quantification, then any existential statement is “relative” to some domain.

6. external questions

Not every domain is equally appropriate to every purpose. If I want to make existential claims about fictional objects (such as “there is a detective living on 221B Baker Street”), I better not have a domain that excludes fictional objects. This, of course, is obvious: there are obviously bad domain definitions (where “bad” is purpose-dependent), but the opposite question is considerably less uncontroversial.

Carnap’s external questions are better understood as questions about the choice between domains. The thesis that many such external questions have no single right answers is commonly attributed to Carnap, but is vehemently rejected by neo-Quineans. According to Carnap, an external question “is a practical, not a theoretical question” (1950: 214), but there is a similar pragmatic tendency in Quine’s “adjudication among rival ontologies” (1948: 15). Quine suggests that:
Our acceptance of an ontology is, I think, similar in principle to our acceptance of a scientific theory (...): we adopt, at least insofar as we are reasonable, the simplest conceptual scheme into which the disordered fragments of raw experience can be fitted and arranged. (...) But simplicity, as a guiding principle in constructing conceptual schemes, is not a clear and unambiguous idea; and it is quite capable of presenting a double or multiple standard." (1948: 16-17)

The choice between rival ontologies or conceptual schemes in case of such a double standard is entirely pragmatic: the right ontology is the ontology that works in the given context. For describing aspects of immediate experience, in some contexts a physicalistic scheme has the advantage, but in other contexts a phenomenological scheme is more advantageous. Hence, ignoring terminological differences, it seems that – on the issue of external questions – Quine would side with the neo-Carnapians rather than with the neo-Quineans (see also Price 2009).

Historical questions aside, if metaphysical theories that do not substantially differ in their classifications of things disagree about the existence thereof can only be different in their domains of quantification (see previous section), then the battlefields of analytic metaphysics are disputes over external questions, attempts to adjudicate among rival domains; and the question that needs to be answered here, is whether and how such external questions can be answered. Two examples will help clarify the problem.

(Example 1.) In the debate about composition, two extreme positions and a number of intermediaries can be distinguished. One extreme is that composition always occurs; the other that it never occurs. Intermediary positions argue that composition occurs in certain circumstances. In terms of domains, the first extreme claims that all composites (including the one consisting of the apple in my fruit basket and Mount Fuji) are included in the domain of the existential quantifier, the second extreme claims that no composites are included (and thus that only simples exist), and intermediary positions claim that composites that satisfy some further requirement are included, but others are not. David Lewis (1986) is the best known advocate of the first of these positions; much of (early) Buddhist metaphysics argued for the second; and Peter van Inwagen’s (1990) argument that only composites that constitute a life exist is an example of the third.

(Example 2.) Presentists and eternalists disagree about the existence of past and future objects. Presentism assumes that time (in some sense) passes, and therefore, that only present objects exist. Eternalists, on the other hand, believe that time is more like space; that is, that time is an ordered series of moments and that there, therefore, are no real temporal properties, but only temporal relations (e.g. no one-place being one week in the future, but two-place being one week later than). And if that is the case, then objects at any moment in time exist. Hence, according to eternalism, not just present objects, but also past and future objects exist. (There is a third position in this debate, which claims that both past and present objects exist, but not future objects.) In terms of domains, eternalists quantify over past, present, and future, while the presentist existential quantifier ranges only over the present.10

10 Alternatively, the presentism/eternalism debate can be framed in terms of what is “real”: Is only the present real, or are the past and future equally real? This, of course, depends on the assumption of a primitive concept of real and/or reality, and as shown in section 4.2, it is doubtful that there is
Common arguments to prefer some specific domain and/or to reject its rival(s) can be (roughly) grouped into four kinds: (a) appeals to ordinary language notions of existence, (b) appeals to some version of Ockham’s razor, and (c) expositions of paradoxical or implausible implications or *reductio ad absurdum*.

There may seem to be a fourth type of argument related to the expressive richness of the competing domains and their associated theories, but that argument is closely related to (b) and (c), and to the pragmatic point about purpose and context made by Quine and Carnap. This type of argument depends on the obvious fact that if domain A is a subset of domain B then there are propositions that can be expressed with a quantifier that ranges over B, but not with a quantifier that ranges over A. This is the same point made in the first paragraph of this section: if the domain excludes things that one would want to quantify over, then that is a bad choice of domain. If presentism is understood as the claim that no quantification over non-present domains is allowed, then a presentist would be unable to make sense of sentences about past objects. If, on the other hand, presentism is understood as claiming that “existence” means quantifying over present objects, but allows other concepts to quantify over past and future objects (“existed” and “will exist” seem obvious candidates), then there is no such problem. In general, if domain A is a subset of domain B, then more propositions can be expressed with a quantifier ranging over B, but that is an argument in favor of B only if the theory associated with A rejects alternative quantifiers (i.e. alternative/additional domains), and if one actually accepts the additional propositions (that can be expressed with B but not with A) as true. Ockham's razor type arguments “cut away” the objects featuring in those false or superfluous propositions, while *reductio* type arguments (usually) attempt to show that too much has been cut away and that domain A is too narrow.

The most obvious argument for presentism and against eternalism is of type (a): when we talk about what exists, we talk about what exists now. Ordinary notions of existence are notions of present existence. If you’d ask someone whether dinosaurs exist, she’ll almost certainly respond “no”, perhaps followed by “not anymore” or something similar. There are (at least) two reasons why ordinary notions of existence do not provide a good criterion to adjudicate among rival domains, however. Firstly, there is little reason to believe that there is an unambiguous ordinary notion of existence. Rather, “existence” seems context-dependent, asymmetrical (in the sense that negative existential claims often seem to have a much more restrictive domain than positive existential claims), and may very well be a fuzzy concept (see section 4). Secondly, if the problem of ambiguity somehow can be minimized or even avoided, appeals to ordinary language use are essentially appeals to intuition or “common sense”, but it is doubtful that those are a reliable source. Classical mechanics is a lot more intuitive and/or common-sensical than relativistic and/or quantum physics, but no one would argue that, therefore, classical mechanics provides a better or more true description of reality.

Van Inwagen’s main argument in the debate about composition – and his ontological methodology in general – is based on Quine’s notion of *ontological commitment*. Quine wrote that “a theory is committed to those and only those entities to which the bound variables of the theory must be capable of referring in order that the affirmations made in the theory be

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such a primitive. Furthermore, *real* seems to be a fuzzy concept (a prototype concept, perhaps, or a family resemblance), and thus lacking clear boundaries.
true" (1948: 13-14; emphasis added). Anything that can be reduced to more basic things thus is excluded from the domain of the quantifier, which only includes the irreducible things that our best theories commit us to (see also the block quote in the previous section). Hence, this is an Ockham’s razor-type argument aiming for a minimal ontology. Van Inwagen applies this method to conclude that wholes and compositions do not exist because they can be reduced to their parts, except for those that constitute a life. Early Buddhist metaphysicians went a step further and rejected all wholes and compositions: only part-less parts and simples exist.

A problem for this kind of argument is that it depends on theories of reduction, which are contingent on the state of science and on other theoretical beliefs, and which are rarely uncontroversial (at least in the more interesting cases). Whether life can be reduced is an open, scientific question, for example, and will probably remain controversial for quite some time. And because of the contingency of reductions, new theoretical findings can radically change the domain of the existential quantifier. Secondly, in case of composition, appeals to ordinary language and appeals to Ockham’s razor pull in opposite directions. The latter implies that chairs don’t exist, but from an ordinary language-point of view, that claim is nonsense. This suggests that the appeal to Ockham’s razor is not an argument for a notion of existence, but for another ontological core concept, namely for some variant of the neo-Aristotelian notion of “being a fundamental constituent of reality”, and this points at a deeper problem for this kind of argument. While Ockham’s razor may convincingly support the importance for metaphysics of notions such as being fundamental, independent, or irreducible, it does not disqualify rival domains of quantification; it merely implies that those are less fundamental. In other words, rather than settling the debate about composition, Ockham’s razor-type arguments only recommend a particular point of view, without invalidating the others.

The most common variety of the third kind of argument is the natural enemy of the second. While appeals to Ockham’s razor try to cut away unnecessary entities, arguments of the third kind aim to show that some cutting away has gone too far and has paradoxical, implausible, or absurd consequences. One of the arguments against presentism, already hinted at above, is of this type. An apparent problem for presentism is to make sense of statements about non-present objects. If Aristotle doesn’t exist, then what is a sentence about Aristotle referring to? And how is it possible that the claim that Sauropoda were larger than Microraptors (i.e. a relation between two kinds of non-present objects) is perfectly meaningful? A similar problem also occurs in the debate about composition. In Buddhist metaphysics, two notions of the ultimately real (here understood as candidate domains) competed, being independent (see above) and being causally efficient, and the consequent necessity of explaining away apparently causally efficient wholes or composites – that is, in preventing the reductio – required some impressive (albeit ultimately unconvincing) intellectual acrobatics.

It can also be the corollary of the first. That is, a reductio type argument can be used to show that some domain definition implies the inclusion of kinds of objects that do not exist in any ordinary sense of “existence”. Of course, this type of argument suffers from the exact same problems as the appeals to ordinary language mentioned above.
Perhaps, the argument against presentism can be blocked with less impressive maneuvers. There are two kinds of *reductio* type arguments against presentism. According to the first, every true sentence has a truth-maker, and because presentism implies that there exist no truth-makers for sentences about the past or future, there are no true sentences about the past of future. This argument, however, depends on the correspondence theory of truth, which a presentist does not need to accept. The second kind of *reductio* focuses on statements about past or future objects (like the examples about Aristotle and dinosaurs) that can only be made good sense of if they are understood to involve domains that include non-present objects. The most obvious way to block this objection against presentism was already suggested above: if presentism is understood as claiming that “existence” means quantifying over present objects, then the *reductio* fails.

Buddhist metaphysics – regardless of whether it succeeds in defending against the *reductio* type argument – is illustrative here for another reason. Buddhist philosophy distinguishes two kinds or levels of reality, two domains of existential quantification, ultimate reality (*paramārtha* or *paramārtha sat*) and conventional reality (*samvṛti* or *samvṛtisat*) (e.g. Dunne 2004; Brons 2012; 2013b), but while the former is more fundamental than the latter, this does not invalidate conventional reality. The domain of ultimate reality consists of what is independent or – in more neo-Aristotelian terms – of the fundamental constituents of reality; the domain of conventional reality consists of the phenomena and phenomenal objects as we experience them. These domains are not rivals, but are complimentary (or even overlapping; see Brons 2013b), and both are real, albeit in a different sense.

Of the three kinds of arguments for or against specific domains, appeals to ordinary language notions of existence, appeals to some version of Ockham’s razor, and *reductio ad absurdum*, none is suited to the task. The relevance of ordinary language notions of existence for metaphysics is dubious, and the other two arguments may work to recommend some neo-Aristotelian ontological core concept and to check and sharpen that, but do not adjudicate among rival domains. Of course, the discussion in this section made use of only two examples, but I’m not claiming that all disputes about domains are undecidable, just that some of them are.

Quine and Carnap where right: the choice between domains (in at least some cases) is a pragmatic decision. The right domain is the domain that is appropriate for the purpose at hand. Sometimes that may be a domain of everyday objects (comparable to the Buddhist domain of conventional reality); sometimes that may be a domain of fictional objects; sometimes that may be a domain of some kind of independent objects. None of these and the many other options is inherently right, but all of them are right in some context, for some purpose. If metaphysics is aimed at determining the ultimate, fundamental constituents of reality, then that is often the most appropriate domain for metaphysics, although it may be preferable to think of this as a property rather than a domain. However, fundamentality or independence (*etc.*) is not an unproblematic notion: independence/fundamentality is an ambiguous notion (see section 4.2) and a judgment of independence is itself dependent on (other) theoretical beliefs about reality. Furthermore, even if some kind of fundamentality is often the most appropriate concern for metaphysics, that does not in any way imply that a corresponding domain of quantification is the *only* right domain.
In the introduction to this paper, I made the observation that the debate about metaphysics between Carnap and Quine was plagued by conceptual instability and obscurity. This hasn't improved much since that debate took place, however, as contemporary meta-ontology still lacks a widely shared or accepted terminology. Because of this, key terms in the debate, such as “quantifier”, “existence”, “domain”, and so forth, are understood differently by different participants. On a closer look, not all of those understandings make sense, however.

All quantifiers range over domains. A domain is nothing but the set (or class, or plurality, or sum, but see section 4.1) of things that can be quantified over (with that quantifier). Quantifiers differ in two, and only two respects: their number (some, all; but also: one, two, most, etc.), and their domain. By implication, if there is a difference between two existential quantifiers, then that is a difference of domains. (There are no other options.)

The account of quantification endorsed by sections 2 to 4, and partly summarized in the previous paragraph, is that of model theory and related theories. According to model theory, any formal language \( \mathcal{L} \) consists of a syntax, a vocabulary \( V \), and a model \( M \). The syntax is the set of logical symbols needed in formalization. The vocabulary \( V \) is the set of non-logical symbols: constants (named objects), predicates, and so forth. The model \( M \) consists of the domain or universe \( M \) and the interpretation function \( I \), which assigns interpretations to the elements of \( V \); that is, \( I \) determines which (kinds of) elements of the vocabulary (i.e. which predicate symbols and constant names) refer to which (kinds of) elements of the domain/universe \( M \).

Carnap’s (1950) frameworks consist of “systems of entities” and “rules for forming statements”. If a framework is comparable to a formal language \( \mathcal{L} \), then its system of entities is the domain \( M \), and its rules are the syntax (and perhaps, \( V \) and \( I \)). What matters in the choice between alternative frameworks is their systems of entities; hence, their domains. If Quine’s (1948) conceptual schemes are comparable to formal languages, then similarly, his terms “range of entities” and “ontology” refer to the domain \( M \). If this interpretation is right, then Carnap’s external questions about the acceptance of one framework or another and Quine’s questions about the acceptance of an ontology concern the adjudication among rival domains (and Carnap’s internal questions are about what exists in a given domain). Although it is unlikely that Carnap and Quine intended their theories to be understood in exactly this way, it is doubtful that there is a coherent alternative. Both framed ontological questions in terms of existential quantification, and that framing leaves no other options: if two existential quantifiers differ, then they differ in their domains. And if two frameworks, conceptual schemes, or languages differ in their existential claims, but not in their grammars and vocabularies, then they quantify over different domains. Consequently, there is far less disagreement between Carnap and Quine than their exchange suggests; to a large extent, the dispute was verbal.

To some extent the same is true for the current meta-ontological debate, although superficially, the neo-Aristotelian approach seems fundamentally different. Neo-Aristotelians focus on metaphysical properties such as being fundamental or independent rather than on the notions of existence and existential quantification, but as argued in section 5, that
difference is notational more than substantial: any domain can be reduced to a property and any property can define a domain. In terms of domains, neo-Quineans argue that there is only one right domain, namely “Everything” which is taken to be a primitive; neo-Aristotelians argue that there is one essential domain, namely “fundamental constituents of reality” or something similar; and neo-Carnapians claim that there are multiple domains, and that the choice between domains (i.e. answering external questions) is often pragmatic. Quine was a “neo-Carnapian” avant la lettre and the neo-Quineans are wrong: there is no primitive concept of “Everything” (see section 4). As was the case in the debate between Carnap and Quine, the contemporary meta-ontological debate is plagued by conceptual obscurity and terminological differences, and as was the case in the earlier debate, the options for sensible interpretation are limited. Existential quantifiers differ in their domains or not at all; there are no inherent or natural domains; and domains are defined by properties, and therefore, domains can be reduced to properties and vice versa.

By implication, the most fundamental debates in metaphysics are attempts to answer what Carnap called “external questions” and Quine “adjudication among rival ontologies”: deciding the right domain. There are three common kinds of arguments for and/or against specific domains: appeals to ordinary language notions of existence, appeals to some version of Ockham’s razor, and reductio ad absurdum. However, the relevance of ordinary language notions of existence for metaphysics is dubious, and the other two arguments may work to recommend that metaphysics should focus on some property like “being a fundamental constituent of reality” and to check and sharpen the class of objects with that property, but do not adjudicate among rival domains. And because all three kinds of arguments fail – at least as arguments for uniquely right domains – many external questions have no single right answers. This is no unequivocal endorsement of neo-Carnapianism, however. The considerations that lead to these conclusions also undermine the identification of “existence” with existential quantification unless the former is taken to be similarly domain-relative (see especially sections 4 and 6), and (to some extent, at least) support the neo-Aristotelian focus on fundamentality or independence, but also point at problems for the latter.
references


