

FUNDAMENTAL QUANTIFICATION AND THE ONTOLOGY ROOM

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DECLARATION OF ORIGINALITY

I, Doğan Can Kazaklı, certify that

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ABSTRACT

Fundamental Quantification and the Ontology Room

If ontologists use quantifiers in different meanings, does it lead to a merely verbal disagreement or does their disagreement concern something substantive about how the world is? According to Theodore Sider, the disagreement is substantive, in that some meanings are capable of describing the world better than others. In fact, he argues that there is a perfect (i.e. fundamental) quantifier meaning, capable of describing the world better than any other, and that we can find that meaning. However, I argue, given that there is such a meaning, that finding the most fundamental quantifier meaning requires epistemic access to every quantifier meaning which we do not have and, hence, that even if we found that meaning we would not be able to tell that it is, in fact, the most fundamental one.

ÖZET

Asal Niceleme ve Ontoloji Odası

Varlıkbilimciler niceleyicileri farklı anlamlarda kullanıyorsa, bu aralarındaki anlaşmazlığın tamamen sözel olduğunu mu gösterir yoksa aralarındaki anlaşmazlık gerçekliğin temel yapısını ilgilendiriyor olabilir mi? Theodore Sider'a göre bu anlaşmazlık gerçekliğin temel yapısını ilgilendirir; öyle ki bazı anlamlar Dünya'yı daha iyi betimleme kabiliyetine sahiptirler. Dahası, ona göre, Dünya'yı diğer tüm anlamlardan daha iyi betimleyebilen tekil bir (asal) niceleyici anlamı vardır ve biz bu anlamı bulabiliriz. Fakat, tartıştığım üzere, böyle bir anlamın olduğunu kabul etmek dahi, onu bulabilmek için tüm niceleyici anlamlarına bilgisel erişimimiz olması gerektir fakat böyle bir erişimimiz yoktur ve, dolayısıyla, bu anlama ulaşırsak dahi, onun aslında asal niceleyicinin anlamı olduğunu söyleyebilecek bir konumda olmazdık.

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CHAPTER 1

INTRODUCTION

Do ontologists use some of the terms in different meanings when they say some things exist but others do not? Eli Hirsch thinks often times they do (§2.1).¹

According to him, this leads to a problem. When a philosopher says, for example, “There are chairs” and another one says “There are no chairs whatsoever” they are not genuinely disagreeing. They are using some crucial term in different meanings. More precisely, according to him, although they both state something about the world, the point they disagree about is linguistic; it does not point to a difference in the way the world is. Given the respective meanings they employ, they are both stating a truth; they are describing the world in different ways.

Theodore Sider agrees that there may be different ways to truthfully describe the world. However, he argues, there is a way of describing the world that is objectively better than others (§§2.2–2.5). The idea is that there is an objective *structure* of the world and some descriptions *fit* this structure better. For example, most people would agree that ‘gold’ is better identified by having the atomic number 79 than by being a shiny, yellow metal; the former describes the reality better than the latter. How do we ascertain that some meanings are better than others? We have some tools, generally inspired by the tools employed in comparing scientific theories (like parsimony and explanatory power), to assess to what extent the meanings help us achieve better descriptions of the world.

In terms of predicates like ‘gold’, however, there does not seem to be a disagreement between Hirsch and Sider. Hirsch and Sider would agree that it would

¹ I use ‘§’ to refer to the chapters and sections in this thesis.

be better to identify gold as having the atomic number 79 (Hirsch, 2013). The problem between the two has to do with the specific expression that they both think that different ontologists use in different meanings, namely the quantifiers. Sider thinks that quantifier meanings can be compared to each other so that we can decide which one is better, whereas Hirsch thinks they are equally good (Hirsch, 2009).

It should be noted that these tools, or as I will call them, *criteria*, are not unanimously agreed upon. To put it another way, these criteria are not theory neutral; one philosopher might put a significant emphasis on parsimony, whereas another one could completely disregard it, for example. Furthermore, there is a substantial amount of dispute regarding each one of the criteria that I make use of. In this thesis, however, I will not get into the intricacies of those subjects

But what do the quantifiers mean, let alone the differences in their meaning (§3)? They are, after all, logical expressions in terms of which we define some inference rules. Also, they have a domain of objects that they *quantify* over. The quantifiers do not seem to differ in terms of inference rules, but they differ in terms of their domain. For example, the nihilist's and the universalist's quantifier domains are different (e.g. the former does not include chairs whereas the latter does). However, the domains are not arbitrarily determined; they are intended so as to include everything that exists in the world. The determination is made by the quantifier meanings. *How* they determine is not very clear in Hirsch's and Sider's writings; I propose an account of quantifier meanings, in certain respects, similar to that of predicates. The proposal is in concordance with the ideas that there are different quantifier meanings by which we can produce truths and that some of these meanings may be (corresponding to the structure of reality) better than others. I should note that this account does not have a direct bearing on the thesis I am

defending but it opens up more space for me to tamper with quantifier meanings, which could otherwise seem implausible or unjustified.

The main problem that I deal with is concerned with *when* one quantifier meaning is *better or worse* than another one. After all, the meanings in question have to be in some way or other relevant to each other. It would not make much sense to discuss whether the meaning of ‘bat’ is more structural than that of ‘cow’, in that it is obvious that bats and cows are *different* kinds belonging to *animalia*. The case about existence is more complicated. It might be the case that there are different kinds of existence (i.e. ontological pluralism); there would be “irrelevant” meanings of existence such that it would make no sense to question whether one is better or worse than the other. I argue in §4.1 that a metaontological framework, like the one Sider proposes, should be able to accommodate such an option.

Ontological pluralism is problematic in Sider’s metaontological framework since he stipulates that there is exactly one perfectly structural quantifier (2011, p. 74). According to ontological pluralism, there is more than one. In §4.2, I consider whether we could come up with a quantifier that is both semantically comprehensive of *and* more structural than the multiple quantifiers of the pluralistic view. I conclude that, if there is no relation between the multiple kinds of existence, then we are better off with multiple quantifiers; however, if there is some relation despite the differences (perhaps incompatibility) in meanings, then we have evidence (though not conclusive) that there is a quantifier meaning more structural than those of the pluralist’s which is comprehensive of them. However, as I argue in §4.3, even if we manage to come up with a single structural quantifier meaning, that meaning is reflective of our epistemic process; there are other meanings, capable of doing the same job. I show this by constructing different quantifier meanings that have the

same domain. It could be argued (as I give an example) that some of these meanings are *more* structural than others. Nevertheless, even if one of them is the *most* structural quantifier that we have been looking for, we have no way of telling that it is, in fact, the most structural one.

CHAPTER 2

QUANTIFIER VARIANTISM AND NATURALNESS

In this chapter, I will introduce the main concepts that are needed to get started with my arguments. Each topic has a vast literature and a lot of intricacies. I will not be able to get into these issues in much detail in this chapter. Some will be elaborated more in later chapters. My primary goal in this chapter is to give a satisfactory account of the relevant aspects of the views developed by Eli Hirsch, and especially by Ted Sider. My secondary aim is to do some terminological house-keeping to use terms consistently throughout the thesis.

Ontology is perhaps best characterized as the study of existence questions. Such questions involve whether there are there universals, holes or composite objects, just to name a few. There is another stream of debates on the status of ontological discussions: metaontological debates. One such example is what exactly ontologists mean when they ask “What is there?” (van Inwagen, 1998). Another metaontological discussion which I will be concerned with in this thesis is about the *depth* of ontological debates. That is, are ontological debates capable of shedding some light on how things really are or are they merely the result of some sort of miscommunication between the involved parties? Some argue that ontological debates are deep; others, on the other hand, argue to the contrary.

2.1 Quantifier variantism

In this thesis, I will be concerned with Eli Hirsch’s *quantifier variantism* (Hirsch, 2009, 2011a, 2011b) that argues that ontological debates are merely verbal and Theodore Sider’s response, in particular his response revolving around his idea of

Ontologese, the language of *the ontology room* (Sider, 2004, pp. 680–1; Sider, 2011, pp. 74–7, 171–3). To say that a debate is verbal is to say that the involved parties use some (crucial) notions in different meanings. Take a homonym, for example ‘bow’. Arda thinks that ‘bow’ has only one meaning and that is the tool to play the violin. Begüm, on the other hand, takes it to mean the weapon used to shoot arrows. Now Arda sees a tool to play the violin in the garden and says “Look, there is a bow in the garden,” then Begüm looks as well and, in a surprised manner, she says “There is no bow in the garden.” In such a case their disagreement would be merely verbal. They could think that they are disagreeing over some factual matter, but what they say solely amounts to “There is a tool used to play the violin in the garden” and “There is no weapon used to shoot arrows in the garden,” respectively. The propositions they express are perfectly consistent with each other, and both true, whereas their utterances seem to contradict with each other. However, once Arda and Begüm come to understand that they have been using ‘bow’ in different meanings, their disagreement would be dissolved. Both of them would understand what the other actually meant and agree that both of them were stating some truth. Hirsch’s view is that (many) ontological debates are quite similar to the above situation, with some qualification that I explain below. He thinks that ontologists attach different meanings to some linguistic expressions crucial to their disagreement so that their disagreement is not a factual matter; they just do not know that they mean different things when they say, for example, “There exists an X.”

In order to illustrate the metaontological debate, let me give a crude sample of an ontological one: the debate between mereological nihilism and mereological universalism (van Inwagen, 1987). *Mereological nihilists* (‘nihilists’, henceforth) think that only simples, things that do not have any proper parts, exist. The only

simples, on most views, are physical particles, such as subatomic particles. On this view, things like tables and chairs do not exist. More precisely, there exist simples that are arranged in a certain fashion, but there is no further thing that they compose (e.g. a chair), in addition to the simples. *Mereological universalists* ('universalists', henceforth), on the other hand, hold that given any multitude of things, there is another thing that they compose. Thus they hold that tables and chairs exist in addition to the simples that compose them. But not only tables and chairs.

Universalists hold that composition is unrestricted. For them, whenever there is a multitude of objects, there is a further object that they compose. So, for example, they hold that there is an object composed of the Grand Canyon and the Great Pyramid of Giza and also another object that is composed of the Grand Canyon, the Great Pyramid of Giza and Pluto, and so on. What I have provided is a crude picture of two of the positions on the problem of composition. There are many more positions, but these two extremes will be sufficient for now.

Sider and Hirsch agree that parties involved in ontological debates might be using some crucial terms in different meanings. This does not by itself show that the dispute is *merely* verbal, either for Hirsch or Sider, as I will explain below. Still, they concede that it is the quantifiers to which different parties in ontological discussions assign different meanings. One reason for this is that some of the disputed claims in ontological debates can be stated using merely a quantifier, the identity symbol and sentential connectives. Sider gives the following example (2011, p. 174). Consider a world in which there are exactly two simples, the following claim, which states that there are at least three objects, would be rejected by a nihilist but it would be accepted by a universalist:

$$\exists x \exists y \exists z (\sim x=y \wedge \sim x=z \wedge \sim y=z)$$

In this world, according to the nihilist, there are exactly two objects so the above claim is false. According to the universalist, however, it is true. If there are interpretations of the above claim such that one makes the nihilist (in claiming that it is false) right and another one that makes the universalist (in claiming that it is true) right, then they should be using some of the expressions in different meanings. The equality and conjunction signs do not seem to be the culprit. They do not seem to have to do much with existence and they seem to have less bearing on what goes into the domain. The quantifier is the more likely suspect. If it has some meaning, it might have to do with determining what is in its domain, the domain that answers our existential questions. In other words, the quantifier seems like the expression to which the involved parties are attaching different meanings.

According Hirsch, quantifier meanings vary between rival ontological theories in terms of their truth conditions. To elaborate on this idea, he asks us to consider two different languages, the N-language and the U-language. The N-language is the nihilist's language in that its quantifiers do not range over composite objects like tables and chairs. The U-language, on the other hand, is the universalist's language whose quantifiers quantify over composite objects. Hence, in the N-language the expression "There is a chair" turns out to be false whereas the same expression turns out to be true in the U-language. However, Hirsch argues, as long as each expression in a given language has a counterpart expression in the other language that has the same truth conditions, then these languages describe the world equally well (Hirsch, 2011b, p. 77). For example, the expression "There is a chair" in the U-language could be translated into the N-language as "There are simples arranged in a certain fashion (i.e. chairwise)." These are expressions in their respective languages that have the same truth conditions; same facts make them true.

Thus, according to Hirsch, just like Arda and Begüm, the parties involved in these ontological debates, once they realize they are using the quantifier in different meanings, should realize that their disagreement is dissolved.

2.2 Truth is not enough

Sider agrees that in ontological debates, there is disagreement over the meaning of quantifiers; all the parties could be stating some truth in their own idiolects.

Nevertheless, contrary to what Hirsch thinks, that does not mean that they describe the world equally well. Truth is some indication that we are describing the reality well, but it is not the only criterion to that end. This idea is perhaps the most central theme in Sider's book; evident in the first sentences of the preface of *Writing the*

Book of the World:

The world has a distinguished structure, a privileged description. For a representation to be fully successful, truth is not enough; the representation must also use the right concepts, so that its conceptual structure matches reality's structure. There is an objectively correct way to "write the book of the world". (Sider, 2011, p. vii)

How do the "right" concepts represent the world better than others? It has to do with Lewisian naturalness (see §2.3). Some terms represent *natural* properties, others do not. Now "natural" is not defined by Lewis or Sider (Sider, 2011, p. 88), but it is possible to get a sense of what it means through some examples. The idea is that some terms mark the distinctions in the world better than others; they carve the world better at the joints. Consider Sider's example (Sider, 2011, pp. 1–2). Suppose there is a lake half red, half blue as in Figure 1.

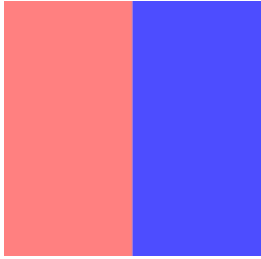


Fig 1. The red/blue lake. (Sider, 2011, p. 1)

Further suppose that there is a community of people that do not divide the colors as we do. They divide it in terms of *rue* and *bred* as in Figure 2:

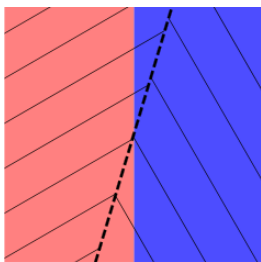


Fig 2. The rue/bred lake. (Sider, 2011, p. 2)

They think that the lake is divided in accordance with the dashed line. They call the left side of the dashed line ‘bred’, and the right side ‘rue’. Now both the red/blue community and the bred/rue community are capable of making true statements as to whether they are on the red (or blue) side, or bred (or rue) side of the lake, respectively. However, there is something odd about the bred/rue distinction. Not all the bred (or rue) areas are similar to each other in terms of color as red (or blue) areas are. Bred areas do not reflect the same frequency of electromagnetic radiance, for example, whereas red areas do. So ‘red’ seems to represent reality better (but not perfectly, presumably) than ‘rue’ does. The point is that although the bred/rue distinction and the red/blue distinction are equally capable of describing the world *truthfully*; the latter does a better job at describing the world’s structure than the former. It marks a distinction that reflects how the world is. All the red areas reflect the same frequency of electromagnetic radiance, for example, but not all bred areas

reflect the same frequency of electromagnetic radiance. Hence, not all terms represent the reality's structure equally well, even though we can use them truthfully. Such expressions, that represent the reality's structure, are called *joint-carving* expressions.

According to Sider, not only terms can be joint-carving, but also logical expressions can carve at the joints (Sider, 2011, pp. 85–104). The most important one of these logical expressions, for our discussion, is the existential quantifier. So, Sider argues, even if Hirsch is right in saying that we have different candidates of quantifier meanings that are intertranslatable and can represent the same facts truthfully, it does not follow that they are equally good at describing the world. Some quantifier meanings carve reality better at its joints than others.

What should ontologists do in the presence of competing quantifier meanings? They cannot just assume that one of the candidate meanings is better than others, including the quantifier meaning of ordinary language (e.g. English). For it might be the case that the assumed quantifier meaning is doing a terrible job at carving reality at its joints. According to Sider, we should, introduce a new quantifier expression, say E^* , that we stipulate to be perfectly joint-carving so that our questions become concerned with reality's structure (Sider, 2011, p. 74). For example, if ordinary English quantifier is not perfectly joint-carving (i.e. if $\sim E = E^*$, where ' E ' represents the ordinary English quantifier), then an existential question cast in terms of ordinary English quantifiers would be more about how we use the English language than concerning reality's structure. In order to avoid such a situation, Sider suggests, ontologists would enter *the ontology room*, as it were, and talk in a different language than (but also as similar as it can be) English, called *Ontologese*, whose quantifier is E^* (Sider, 2011, p. 171). However, our stipulation

should be such that it should not, by itself, settle ontological disputes. As Sider puts it, they should be stipulated with “*a minimum of semantic pressure*” (2011, p. 75). Of course, after some discussion, the involved parties could come to a conclusion concerning the ontological disputes. However, the stipulation alone should not make it a trivial matter whether universalism or nihilism is true, for example.

2.3 Naturalness and structure

At this point, I shall make some clarifications regarding naturalness and how it connects to Sider’s view. I will start with the latter.

As I mentioned above, unlike David Lewis (1983), Sider takes not only predicative terms but also logical expressions to be candidate joint-carving expressions. Lewisian naturalness is concerned with properties. Redness, for example, is said to be more natural than rueness. However, logical expressions do not designate properties of objects. A logical expression like ‘and’ for example is not instantiated by objects; it does not designate properties. Nevertheless, logical expressions and natural kind terms may be parallel to each other. To do that, first, we need to replace *natural-property-talk* with *structure-talk*; as Sider notes, “[s]tructure is a generalization and extension of Lewisian naturalness” (2011, p. vii). Natural properties, after all, are considered to be distinguishing features in reality’s structure. They are not arbitrary. Rueness, for example, is an arbitrary feature as opposed to redness, as I explained above. The reason for that is that the former is less similarity-making than the latter. Yet similarity-making is just one of the many criteria to assess terms regarding the degree to which they are joint-carving. According to Sider, we can assess logical expressions according to these criteria as well.

Before going into what these criteria are, I should note two points. First, a believer in joint-carving terms need not accept all of the following as criteria to assess how joint-carving an expression is. One might argue against some of those criteria while maintaining that we can perspicuously describe the structure of reality (Dorr & Hawthorne, 2013, p. 10). My focus in this thesis will be the criteria that Sider (2011) takes to be important. Second, one need not put the same emphasis on these criteria as other fellow ontologists. There is a trade-off between the criteria; they do not unanimously point to a certain expression that is the most joint-carving. In fact, when we take any one of the criteria by itself, they tend to lead to outrageous conclusions. That is why the criteria are usually accompanied by a “*ceteris paribus*” clause. For example, if we have two theories that have the same explanatory power but one is simpler (e.g. it needs fewer posits than the other), then we would regard the simpler one as the correct theory—or as the *more* correct theory, to be precise. But “all other things” are *not* equal all the time. In other words, we need to consider several criteria at once. Our decision is based on their cooperation, as it were.

Reference magnetism, as its name suggests, is, roughly, the idea that some objects or properties or (perhaps) facts are more likely or easier to be referred to than others. As Robert Williams puts it, “certain entities ... are more nameable” (2015, p. 369). Broadly speaking, reference-magnetism is a tool to compare different semantic interpretations that do not differ in terms *fit*, i.e. in terms of truth. The idea is that some things are *eligible* to be meant. These things are natural properties or, more generally, structural aspects of the world; they are *reference-magnets*. And we should choose the interpretation whose expressions stand for structural aspects of the world. In Sider’s account, reference-magnetism is an external constraint on reference (2011, p. 27); it has ties with the ideas that reference is an explanatory relation and

explanatory theories should be expressed in joint-carving terms (2011, p. 28). I will not be very much concerned with reference-magnetism as such construed in this thesis. For starters, I will not be concerned with reference, since my primary concern is quantifiers. There is admittedly a relation to quantifiers in Sider's sense.

Reference-magnetism could be understood without reference as some sort of a worldly (i.e. external) constraint on the meanings of our expressions other than truth. But that is precisely what we are trying to understand and I will assume that there is such a constraint. I will also assume that theories cast in joint-carving terms are superior to those that are cast in less joint-carving terms.

Furthermore, as I indicated above, magnetism is closely tied with some of the criteria that we use in assessing how structural an aspect of the world is. These include similarity-making and explanation. But I will not consider them under magnetism but handle them separately. Moreover, since, similarity in the case of quantifiers differs very much from the case of properties of objects, I will consider it in §3.2.

2.3.1 Parsimony

Parsimony is a highly discussed subject and it comes in different versions. The crucial distinction to make between views on parsimony for the purposes of this thesis is the *ontology* and *ideology* distinction. Ontology of a theory or language is concerned with what entities it is committed to exist. In Quinean terminology, the ontology of a theory is comprised of the entities that are values of bound variables in expressions of it (Quine, 1948). Ideology of a theory or language has to do with "what ideas can be expressed in it" (Quine, 1951, p. 14). This expressive aspect of theories is not exhausted by their ontology. We could have theories with the same

ontology but different ideologies. For example, consider a theory, T_1 , of arithmetic whose ontology consists solely of all the natural numbers in which we could express greater-than relation but not addition relation, and another theory, T_2 , that quantifies over all the natural numbers, in which we can express everything that can be expressed in T_1 but also addition. We could say that T_1 and T_2 are ontologically identical but ideologically distinct. Ideology of a theory or language, in a nutshell, includes all the concepts that are used within it. To be more precise, since we will be taking the quantifiers as part of the ideology of a theory, we could say that the ideology of a theory includes every meaningful term within it.

Ontological parsimony is entity-based. It is, roughly, the idea that we should accept the theory that posits fewer entities or fewer kinds of entities, *ceteris paribus*.² Ideological parsimony, on the other hand, is concept-based. It states that we should accept the theory that uses fewer fundamental concepts, *ceteris paribus*. The qualification “fundamental” here is to ensure that we do not take concepts that are derived from fundamental ones into account when considering a theory’s ideological parsimony as they are assumed to come at no theoretical cost.

2.3.2 Explanatory power

Explanatory power is one of the virtues sought in a theory. Perhaps it is one of the most important ones. After all we offer theories in order to explain phenomena. Intuitively, the more informative a theory is, the better/stronger it is. Informativeness, however, is relative to the background information that the theory presupposes (Ylikoski & Kuorikoski, 2010, p. 206). For example, a theory could explain the fact that the sun rises on the 20th of June, 2015 on the basis of an assumption that the sun

² Sam Cowling distinguishes between quantitative ontological parsimony, that takes the number of entities to account for ontological parsimony, and qualitative ontological parsimony, that takes the number of kinds of entities into account (2013, p. 3897).

rises on that date. That would be true but theoretically insignificant. A theory that explains the fact that the sun rises on a certain date based on assumptions that are not directly linked to the observation seem more informative, such as the theory that the Earth revolves around itself. The latter theory provides a causal explanation as to why the sun will rise and also it provides reason to think that the sun will rise at other dates than 20th of June, 2015. Nevertheless, explanatory power (i.e. informativeness) seems to be a theoretical virtue that is not accompanied by a “*ceteris paribus*” clause; we are generally willing to give up any kind of parsimony or similarity in favor of more explanatory power, for example.

2.3.3 Fundamentality and ground

Sider uses an absolutistic notion of the fundamental and that is the perfectly structural. He connects the fundamental and the nonfundamental with by some kind of translation scheme called ‘metaphysical semantics’, according which a truth (or fact) of a nonfundamental language is translated into the fundamental language (2011, pp. 112–5). Although, he provides some ideas about how to understand comparative structure, he does not give a working theory (2011, pp. 129–31).³ Since in this thesis I will be more concerned with comparative fundamentality (one reason for this is given in §2.6), I will not use ‘fundamental’ in Sider’s sense. I will use a notion that is capable of ordering between nonfundamental facts. A close cousin seems to be grounding. Sider notes: “[T]he ground-theoretic gloss ... can serve as a working heuristic: ‘Every nonfundamental truth is grounded by some fundamental truth’” (2011, p. 106). In this thesis, I will use ‘*X* is more fundamental than *Y*’ in the sense that *X* grounds *Y*, and ‘*X* is fundamental’ in the sense that nothing grounds *X*.

³ Jonathan Schaffer (2014b) further argues that this is problematic for Sider since most of the explanatory advantages of structure are provided by its comparative nature.

Although it has been argued that grounding is unanalyzable, it corresponds to familiar notions. Kit Fine states that, “[w]e take *ground* to be an explanatory relation: if the truth that *P* is grounded in other truths, then they *account* for its truth; *P*’s being the case holds *in virtue of* the other truths’ being the case” (2001, p. 15). Some further characterization for the present purposes should be sufficient: Following Schaffer, I assume that grounding is an irreflexive and asymmetric relation (2009, p. 364).

2.4 Substantivity

Substantivity of a question or a debate implies that the question or the dispute is not trivial, but rather that it concerns reality; it is not concerned about a problem that is solely based on our psychology or language. In Sider’s account, the *substantivity* of a problem is not necessarily but highly related to the notion of joint-carving. He gives a detailed characterization of substantivity in section 4.2 (2011), but the main idea is that a question or a dispute is substantive if either (i) some of the opposing views about the question do not turn out to be true on any candidate, or (ii) one of the candidate meanings for the expressions in question is more joint-carving than others (2011, p. 46). To illustrate with Sider’s example, suppose that ‘bachelor’ had two different candidate meanings. One is “unmarried adult male,” and the other is “unmarried adult male eligible for marriage.” The question is whether the Pope is a bachelor or not. Opposing views are “the Pope is a bachelor” and “the Pope is not a bachelor.” Each of the two answers is true on some candidate meaning for ‘bachelor’; the Pope is an unmarried adult male but he is not eligible for marriage. So (i) is not satisfied. Presumably, none of the candidate meanings for ‘bachelor’ is more joint-carving than another. Hence, (ii) is not satisfied either. Therefore, given

the candidate meanings for ‘bachelor’, a dispute or a question about the marital status of the Pope is nonsubstantive. Note, however, that if we substitute the question with whether *I* am a bachelor or not and the opposing views accordingly, it turns out to be a substantive question, not because ‘bachelor’ magically transformed into a joint-carving expression but because I satisfy both of the meanings we are considering for ‘bachelor’. More precisely, the view that I am not a bachelor does not come out true on any of the candidates. In this thesis, I will not be concerned with this aspect of substantivity, but I should note that substantivity is not a measure of depth or importance for questions or disputes, in fact there are shallow but substantive questions (Sider, 2011, p. 47). Rather, the main concern of this account of substantivity, as I understand it, is to distinguish questions or disputes that arise from conceptual confusion and those that do not.

The second disjunct (ii) is more important for the purposes of this thesis since I will mainly be interested in joint-carving features of quantifier meanings. In the ‘bachelor’ example, none of the meanings were joint-carving, hence the difference in substantivity between the two cases was due to their difference with respect to (i). An example of a substantive question that is substantive due to the joint-carving features of the meanings of the expressions could be cast in terms of ‘rue’ and ‘red’. Let us say we are discussing the color of a specific region in the leftmost side of the lake. I say it is rue and you say it is red. Now (i) is not satisfied since neither my view nor yours comes out false on every candidate meaning. But the dispute in between is still substantive as it satisfies the second conjunct (ii). Although color properties are not considered to be perfectly natural, ‘red’ is *more* joint-carving than ‘rue’. Thus, the dispute is substantive.

2.5 Candidate meanings

Sider talks about candidate meanings but we need to get clearer as to which meanings are to be considered as candidates in a given dispute. We do not want irrelevant meanings to be considered as candidates. We do not, for example, want the property of being a cow to be one of the candidate meanings for ‘bachelor’. I will start with the two characterizations of candidate meanings that Sider offers.

One characterization he offers is that candidate meanings for a term should not differ too severely from our ordinary usage of it (Sider, 2011, p. 50). This gives us reason to think that the property of being a cow is not a candidate meaning for ‘bachelor’. However, obviously, this is very vague on account of “differing too severely.” His account of substantivity need not be completely devoid of vagueness (2011, p. 50) but to make things clearer he gives an example in which candidate meanings differ a good deal from one another but still they are semantically related so that they can be considered as candidates. He invites us to consider two different linguistic communities *M* and *N* that differ with respect to their usage of ‘cause’ and to suppose that ‘cause’ fails to carve at the joints. In *M* ‘cause’ has a deductive-nomological analysis whereas in *N*, it has a counterfactual analysis. Now according to Sider, these meanings do not differ from each other severely provided that they play similar conceptual roles in their respective communities (2011, p. 50). The similarity in their conceptual role can be seen through their similar relation to other concepts such as moral responsibility. Thus, the meanings of ‘cause’ in *M* and *N* would turn out to be candidates for one another.

The second characterization Sider makes on substantivity is concerned with the relation between a question (or dispute, etc.) and the meanings employed to cast it. Questions seem to limit the candidate meanings for their expressions. Since this is

not reflected in the current analysis of substantivity, some intuitively nonsubstantive questions turn out to be substantive. For example, there is a physically joint-carving line through the Ural Mountains and another line that is politically significant near it. We ask whether some place near the line is part of Europe. However, the physically distinguished line does not seem relevant to the question; it does not seem to carve nature *in the right way* for the question since the question is about political boundaries. So Sider adds candidates are the meanings (if their relative joint-carving is being considered) that carve at the joints in the right way (2011, pp. 48–9).

2.6 A note on deciding that a meaning is joint-carving

The criteria mentioned in section 2.3 are criteria that natural properties or other structural aspects of reality are expected to satisfy. The fact that that which corresponds to one of the meanings we employ satisfies those criteria does not immediately show that it is a structural aspect of the world or that it is joint-carving. For example, parsimony is good because structural aspects are thought to be sparsely distributed; similarity-making is good because there are thought to be objective similarities in the world which we try to capture; explanatory power is good because perfectly joint-carving expressions provide more powerful explanations; fundamentality is good because structural aspects of the world ground non-structural ones, and so on. Thus, what we have is if a meaning is joint-carving then it satisfies those criteria. Given that, the criteria do not allow us to immediately determine whether a meaning is joint-carving; we can only determine, given some candidate meanings which one is a more joint-carving meaning, comparatively. Suppose we are quantifying over candidate meanings for a term, say ‘cause’, and that there are only two candidate meanings for it that we know of, *A* and *B*. We are trying to determine

which one is more joint-carving than the other. Let me introduce two predicates to see how such a schematic argument favoring one over the other would go:

$Jx =_{df} x$ is a perfectly joint-carving meaning for ‘cause’.
 $Sx =_{df} x$ satisfies the criteria.

Since all joint-carving meanings satisfy the criteria, we have:

$\forall x(Jx \rightarrow Sx)$

Further suppose that there is a joint-carving meaning for ‘cause’.

$\exists x(Jx)$

Since in this case there are only two candidate meanings we could replace the above formula with a disjunctive formula in terms of A and B (as in line 5 below). And an argument in favor of A (which satisfies the criteria) as joint-carving but not B (which does not satisfy the criteria) could go as follows:

- | | |
|------------------------|---|
| 1. $JB \rightarrow SB$ | <i>from $\forall x(Jx \rightarrow Sx)$</i> |
| 2. SA | <i>premise</i> |
| 3. $\sim SB$ | <i>premise</i> |
| 4. $\sim JB$ | <i>1, 3, MT</i> |
| 5. $JA \vee JB$ | <i>from the premise: $\exists x(Jx)$</i> |
| 6. JA | <i>4, 5, MTP</i> |

This is an absolutistic picture in which a meaning is either joint-carving or not, and it either satisfies the criteria or not. It is the picture of the perfectly joint-carving. There are two problems concerning line 5. First, whether we have support for the supposition that there is a perfectly joint-carving candidate meaning for a term (in this case, ‘cause’) is questionable. However, I will leave this issue aside for the time being. It is a matter to be resolved case by case. For example, there is probably a joint-carving meaning for ‘electron’ but not for ‘bachelor’. I will return to this issue in terms of quantifiers in section 3.4. Second, it assumes that we have epistemic access to all of the candidate meanings. In the example I provided there were only two candidate meanings. If there were another candidate meaning, C , that we did not consider, it would invalidate the argument. In such cases, in order to show that A is

joint-carving, we would need to add that none of the other candidates satisfy the criteria.

We are safer when thinking of structuralness comparatively, instead of absolutely. Let me revise the predicates:

$xJy =_{df}$ x is more joint-carving than y .
 $xSy =_{df}$ x satisfies the criteria better than y does.

And we say if a meaning is more joint-carving than another, it satisfies the criteria better than the other. Formally:

$$\forall x \forall y (xJy \rightarrow xSy)$$

Further suppose that for any given two meanings, if they are not identical, one is more joint-carving than the other.

$$\forall x \forall y (\sim x=y \rightarrow xJy \vee yJx)$$

In this case, the argument could go as follows:

- | | |
|--|--|
| 1. $BJA \rightarrow BSA$ | <i>from $\forall x \forall y (xJy \rightarrow xSy)$</i> |
| 2. ASB | <i>premise</i> |
| 3. $\sim BSA$ | <i>premise</i> |
| 4. $\sim BJA$ | <i>1, 3, MT</i> |
| 5. $\sim A=B \rightarrow AJB \vee BJA$ | <i>from $\forall x \forall y (\sim x=y \rightarrow xJy \vee yJx)$</i> |
| 6. $\sim A=B$ | <i>since A and B are distinct meanings</i> |
| 7. $AJB \vee BJA$ | <i>5, 6, MP</i> |
| 8. AJB | <i>4, 7, MTP</i> |

Again, the last supposition that given two different candidate meanings, one of them is more joint-carving than the other is problematic, but as in the first problem of the absolutistic case in the previous paragraph, it is to be resolved case by case. The upshot of the comparative structuralness is that we do not need to have epistemic access to all of the candidate meanings.

CHAPTER 3

QUANTIFIER MEANINGS AND STRUCTURE

Much of the discussion between Hirsch and Sider revolves around quantifier meanings, their semantic differences and so on. However, we are pretty much kept in the dark as to what these meanings might look like, except for a couple of negative claims. Besides, it is not intuitively plausible to assign meanings to quantifiers. After all, logical expressions are thought to be meaningless, in most of the conceptions of the term. In this chapter, I will suggest that it is not very implausible to attach meanings to quantifiers and consider what some ingredients of quantifier meanings might be (§3.1). Next, I will consider how structuralness connects to quantifiers (§3.2).

3.1 What do quantifiers mean?

I think meanings of quantifiers should be understood in terms of how ontological inquiry relates to structure. More precisely, are we, first and foremost, trying to answer what objects there are or what the relevant structural aspect of the world (if there is one) is like? In Sider's account, it seems the latter question is prior.

Furthermore, presumably, the answer to the former question will follow from the latter or it will lose its philosophical significance once the latter is answered.

The problem is, we do not have a firm handle on the structure; it is a large area of unknowns. We try to describe it perspicuously by means of the meanings of our terms. Picturesquely, suppose we are (structure) myopic; all we see when we look at structure is a confusing blur. However, we invent (structure) glasses in order to see structure more clearly. Glasses are the meanings we employ; some glasses

reveal the structure better than others like joint-carving meanings do a better job of describing the world. The “seeing more clearly” part is the more problematic part of the analogy. It surely does not mean “easily graspable.” A correct description of the world does not need to be easily graspable. It rather needs to be perspicuous. What justifies us in believing that a certain meaning provides a more perspicuous description than others? After all, it is not like when we use joint-carving meanings, the structure of reality is immediately revealed, or unraveled before us. It is not immediately obvious that the meaning we employ is in fact joint-carving. Rather, we check whether that which corresponding to our meanings satisfies the criteria mentioned in previous chapter that the structural is supposed to satisfy. If they do, we have evidence that our meanings correspond to something structural.

In the standard logical discourse, quantifiers are not considered to have meanings and I think this is primarily because quantifiers come as parts of logical structures that are pre-equipped with some domain. For example, we say that the quantifier quantifies over natural numbers. So, there is no deep question whether an object is in that domain or not. If it is a natural number, it is in the domain; if it is not a natural number, it is not in the domain. There is no worldly constraint as to what goes into the domain. One can quantify over numbers, fictional characters, imaginary numbers and so on. In ontological discourse, the issue is not that easy. The domain of the quantifier is to include all and only the objects that exist. What is in the domain of this ontological quantifier can be answered by Quinean (1948) “Everything”. But that would be question begging, if “everything,” is interpreted as every object that is in the domain of the ontological quantifier. The quantifiers in ontological discourse, do not come pre-equipped with domains as they do in logical discourse in that they are not pre-equipped in the sense that it is not only us that

arbitrarily assign domains to quantifiers; the ingredients of the domain are determined in a way corresponding to the world's structure. In ontological discourse, quantifiers *semantically determine* their domain.

How to understand semantic determination in the case of quantifiers? It is relatively easier in terms of predicates. In most cases, we could say that the meaning of a predicate is a function from the set of all existing objects (the domain of ontological quantifier) to a subset of it. The subset is determined in terms of some qualifications that the meaning of the predicate provides. These qualifications may be descriptive, causal, contextual, and so on. The case of quantifier meanings is much more complicated. Before we can even start asking whether the qualifications it provides are descriptive, contextual and what not, we need to see whether we can pose them in terms of *functions*, for example.

One such option that sees the meaning of quantifiers similar to those of predicates would be to define quantifier meanings in terms of *possibilia* and *actualia*. We could define our quantifier as a function from *possibilia* to *actualia*. In such a case, the quantifier would semantically determine which possible objects are actual. However, the ontological question is not about what *actually* exists. For example, even if we supposed that there existed one more simple than there actually are, a universalist and a nihilist would disagree about how many objects there *would* be, even if they agreed on the number of objects prior to the supposition. The possible/actual distinction does not seem to provide any evidence in favor of the ontological theories because what is possible according to one theory may not be possible according to another one.

I think, given structure, it is better if we try to understand the meaning of a (ontological) quantifier as a *relation* within the world minus structure. I intend 'the

world minus structure' to involve imagining the world stripped out of its structural aspects. Why world *minus* structure? Structure, as it is conceived, divides the world into things. However, we are ignorant about what the structure is like. In Sider's project we try to understand structure through the meanings we employ. The relation from the structured world to objects is the relation we are trying to arrive at. If whatever our meanings correspond to in the world minus structure behave in a way similar to the way in which structure would behave then we have evidence supporting the idea that our meanings correspond to something structural. The advantage of conceiving the issue in terms of world minus structure is that it provides a large enough playground for ontologists to play with their theories. They can carve the world minus structure the way they want. They can think of the world in terms of tropes, composites, propositions, universals, sets and so on. The world minus structure should not be taken as a metaphysical posit. It is not an unstructured world-entity; it is a conceptual separation of structure from the world. Also, it is not my aim to argue whether the world is structured or not; in fact, I assume that it is structured and investigate how its knowledge can be achieved. The world minus structure should be taken as a theoretical tool that provides a common ground for various ontological theses. For example, universalists and nihilists carve up the world minus structure in different ways. The question is, if there is such a structural aspect of the world, who carves up the world minus structure like the world's intrinsic structure does. We are, in a sense, trying to do the same thing with our concepts as structure does.

What "is there" in the world minus structure? It includes "everything" that are carved out of it by candidate quantifier meanings—whereas the world includes everything that its structure carves out of it. However, they are not differentiated.

Differentiation is done either by meanings or structure. ‘Is there’ in the question and ‘everything’ in the answer are not intended to have joint-carving meanings. To avoid confusion, let us call the members of the world minus structure, ‘*mexistents*’, and to be a member of the world minus structure, ‘*mexistence*’. What (ontological) quantifier meanings do is that they semantically determine which *mexistents* go into their domain.

3.1.1 Some ingredients of quantifier meaning

In this picture of quantifier meanings, tools that we use to carve the world minus structure into objects could be considered to be parts of the meaning. One such tool, I think, is what we may call ‘*existential dictum*’. For example, some philosophers argue that existents serve a function (Rea, 1998), some argue they have causal powers (Merricks, 2001), some argue they figure in our sciences (Lewis, 1983; Quine, 1948; Sider, 2011), another one may argue existents strike her as objects and so on. These need not be mutually exclusive; some theories might use some combination of them. There are also dictums no one probably has ever made use of, like existents are bald, or that they are yellow, etc. I think these dictums serve as a part of the meaning in determining the quantifier domain within *mexistents*. For example, Michael Rea’s quantifier selects *mexistents* that serve a function and Trenton Merricks’ quantifier selects those that are causally efficacious.

Admittedly, this seems implausible at first, especially now that I seem to attribute properties to *mexistents*. However, *mexistents* are not completely alien to us and we attribute properties to *mexistents* all the time in everyday language *and* quite often in ontological disputes. Suppose folk ontology is incorrect; it does not carve the structural joints. So tables and pens do not (structurally) exist. Since they are objects

of the folk-ontology, however, they exist. Nevertheless, provided that the pen is on the table, we can truthfully assert “the pen is on the table.” And it would be false if one said that the pen is under the table. Thus, the existent, pen, has the property of being on the table. We can also truthfully say that there is no Pegasus. Moreover, existence plus meaning gives us enough for truth and falsity (at least in this Siderian picture that I am trying to draw); thinking in terms of world minus structure does not lead to severing all the ties with the world.

In ontological disputes we encounter existents in the form of (in a loose manner of speaking) something that does not exist according to one theory but exists according to some rival ontological theory. For example Trenton Merricks talks about “alleged objects” that are supposed to exist according to other theories (Merricks, 2001, pp. 76–82) and I discuss similar issues concerning his Overdetermination Argument in detail in §3.1.2. Thus, I think, the world minus structure and existence are not as implausible as they might initially seem.

Another ingredient of the quantifier meaning could be considered to be the semantic purpose for which it is introduced. Consider the lines through the Ural Mountains from the previous chapter. Call the physically significant line ‘phy-line’ and the politically significant one ‘po-line’. ‘Phy-line’ is introduced in order to account for some physical difference in the region, whereas ‘po-line’ is introduced in order to signify some political difference between Europe and Asia. The semantic purpose, in a sense, draws the borders of the vicinity that a given meaning is; it determines what other candidate meanings there are. For example, phy-line and po-line, as it turns out, are not in the same vicinity.

3.1.2 An application

One virtue of mexistence talk is that it allows ontologists to talk about what other rival theories take as objects without committing to them. The difficulty is seen in

Trenton Merricks' Overdetermination Argument:

(1) The baseball—if it exists—is causally irrelevant to whether its constituent atoms, acting in concert, cause the shattering of the window.

(2) The shattering of the window is caused by those atoms, acting in concert.

(3) The shattering of the window is not overdetermined.

Therefore,

(4) If the baseball exists, it does not cause the shattering of the window.

(2001, p. 56)

The problem that I am going to present is not about the soundness or validity of the argument. It rather has to do with the existence claims in (1) and (4). Those claims are not even supposed to play a crucial role in the argument since the argument is not for existence or non-existence of some entities but about causal overdetermination.

However, he feels the need to put the “existence of baseball” into a conditional presumably because he wants to avoid commitment to the existence of baseballs. For example, instead of (4), if he said “the baseball does not cause the shattering of the window,” a Russellian analysis would commit him to the existence of baseballs, which he does not want. However, despite the precautious conditional, (4) is not something that should be appealing to Merricks. Take its contrapositive whose implausibility is clearer:

(4CP) If the baseball causes the shattering of the window, then the baseball does not exist.

This is a strange view to defend for Merricks. For, he seems to be sympathetic to some version Alexander's dictum which says that “to be real is to have causal powers”. according to which, in short, if the baseball causes the shattering, it exists. He says that “In general, if there were inanimate macrophysical objects, they would have causal powers. But given the Overdetermination Argument . . . , if there were

such objects, they would not have causal powers. So there are no such objects” (2001, p. 81). The Overdetermination Argument shows for some “alleged objects” (to use Merricks’ terminology) that they do not have causal powers. But note that the nonexistence of baseballs does not immediately follow from the Overdetermination, so we have some version of the Alexander’s dictum as a premise in the first sentence. And we could still validly infer the nonexistence of baseballs if what the Overdetermination Argument showed was merely “Baseballs do not have causal powers”. As I argued, existence has no real business in (4) or (4CP), whereas it is an important part of the dictum.

The problem continues when we deny the conclusion of the argument. For example, he notes that this could be viable considering whether human beings have causal powers:

[N]ote that even if (contrary to fact!) the arguments [that the Overdetermination Argument does not apply to humans] failed, one could still deny that the Overdetermination Argument eliminates human organisms. For one could *tollens* instead of *ponens*, concluding that, because we exist, we either cause things not caused by our parts or exercise causal control over our parts (2001, p. 84).

Suppose the conclusion of a simplistic⁴ version of the Overdetermination Argument for humans is:

(4H) If humans exist, they do not have causal powers.

When we deny (4H), we get:

(~4H) Humans exist and they have causal powers.

Here, the second conjunct of (~4H) is not problematic. We can (or, rather, should be able to) deny that the Overdetermination Argument for human beings is successful on the grounds that human beings simply have causal powers; they are not causally

⁴ It is simplistic in the sense that a version of the Overdetermination Argument would cite causing a *particular* event rather than directly asserting that humans do not have causal powers. However, its negation, the fact that a human being causes a particular event, entails that we have causal powers. So it is a benign simplification.

overdetermined. In this case, however, we need to add that they exist as well.

Moreover, the last part of the quotation above seems to suggest that our existence

leads to the fact that we have causal powers by the following argument:

- (~4H) Humans exist and they have causal powers.
- (5) We (humans) exist.
- Therefore,
- (6) We (humans) have causal powers.

(5), by itself, does not deny the conclusion of the Overdetermination Argument (as in 4H). (5) is compatible with both (4H) and (~4H). It follows from (5) and (~4H) but we do not even need (5); since (6) is a conjunct of (~4H), it follows by simplification. So, if we deny the conclusion of the argument our existence *and* having causal powers immediately follow. But in that case, our existence does not *lead to* the fact that we have causal powers; in order to deny the conclusion of the Overdetermination Argument, we *had to* affirm both that we existed and that we have causal powers.

Furthermore, it is not clear how we ought to understand the sentences of the type “if the baseball exists, then ...” Are we to understand ‘existence’ here, theory-internally or -externally? For many, composition is a matter of metaphysical necessity.⁵ If Merricks endorses a version of Alexander’s dictum, then composites like baseballs, since they overdetermine their effects, necessarily do not exist. Then we do not even need an argument for a conclusion of the form “If some composite exists, then ...” since the antecedent is necessarily false (according to Merricks’ theory) and therefore the conditional is necessarily true regardless of the consequent. Alternatively, if ‘existence’ is internal to a theory that necessarily renders the antecedent true, then the truth value of the conditional is equal to that of the conditional. Hence, the antecedent turns out to be redundant. Another alternative is

⁵ Ross Cameron (2007) gives an overview of this issue and offers an objection.

that ‘existence’ is theory-external like mexistence. But since some candidate meanings for quantifiers recognize composites as objects, there mexist composites, then again the antecedent would be redundant as in the previous case.

In sum, even though I think the Overdetermination Argument is a powerful argument it needs to be stripped out of existential implications that I mentioned. At least in ontological discussions, if using a term in the subject position only committed one to the mexistence of the object rather than its existence, the argument could be much more to the point; we could get rid of the existential commitments and focus on causal redundancy. The revised version would be thus:

- (1) The baseball is causally irrelevant to whether its constituent atoms, acting in concert, cause the shattering of the window.
 - (2) The shattering of the window is caused by those atoms, acting in concert.
 - (3) The shattering of the window is not overdetermined.
- Therefore,
- (4) The baseball does not cause the shattering of the window.

This argument is still sound and valid, if it was before, but it only commits one, defending this argument, to the baseball’s (as well as the shattering of window’s, or other “alleged objects”) mexistence and this argument does not lead to the strange conclusions investigated above. However, I do not mean to say we are committed to the mexistence of mexistents in every domain of discussion. I do not deny that saying that the present King of France is bald commits the speaker to the existence of the present King of France according to one’s own ontological theory, for example (unless she defends the view that there are no bald things and uses it in an argument to show the (necessary) nonexistence of it). We are only committed to the structural existence of an object if we intend to use our quantifiers in a structural sense.

3.2 Fundamentality and quantification

The ontology (or metaphysics) room is an interesting idea but it is doubtful whether it is able to solve our ontological problems or not. Korman (2013) has some worries about what we mean by the fundamental quantifier. More precisely, it does not seem clear how we are to assess the fundamentality of a quantifier. One might be tempted to think that a quantifier's fundamentality might be assessed in terms of the fundamentality of the members of its domain. On such a view, the most fundamental quantifier would likely to be one that has all and only the most fundamental objects in its domain. However, he notes:

[W]e don't think that a relation can only be as fundamental as its least fundamental relata. We certainly would not deny that identity is fundamental simply because entities of all kinds—fundamental and nonfundamental—stand in this relation. Nor is it especially plausible that a restricted identity relation which relates only fundamental objects to themselves is more fundamental than identity. Nor does anyone think that the fact that conjunction operates on nonfundamental propositions precludes it from being fundamental. And so on. (Korman, 2013, p. 305)

Thus, he continues that it remains an open question whether the most fundamental mode of being (i.e. to be in the domain of the most fundamental quantifier) is enjoyed only by the most fundamental objects. Sider is also clear that he is not trying to achieve some sort of entity fundamentality (Sider, 2011, pp. 161–5).

Korman also considers a case in which the most fundamental quantifier is *defined* in such a way that it has all and only the most fundamental objects in its domain. However, from a metaontological point of view this would be highly problematic since when we look at the ontological debates, the discussion is not about what object is more fundamental than another object—e.g. whether mereological simples are more fundamental than composites such as chairs. Almost everybody in these discussions would agree that simples are more fundamental than

tables and chairs (if they exist), for example.⁶ The question is about what exists, not about what are the most fundamental objects (Korman, 2013, p. 307).

3.3 Similarity

I skipped the similarity criterion in §2.3 since it is very different in the case of quantifiers than it is in the case of properties. Since existence is not taken to be a property instantiated by existents.

Sider tries to solve this problem by moving from object similarity to fact-similarity. Perhaps, we could understand logical expressions in terms of facts rather than objects. For example, we may not be able to understand ‘and’ as exemplified by objects. But by looking at the conjunctive facts we may notice some similarities between them. As for the quantifier expressions, he does not exactly give an argument for the idea that quantifiers are fact-similarity making but invites us to appreciate the similarity between existential facts (2011, pp. 88–9).

How could facts be similar to each other? One approach to factual similarity would be to see whether the facts in question are about the same subject. Economic facts seem to be more similar to each other than they are to aesthetic facts, for example. Similarly, we could say that existential facts are similar to each other. I think this kind of factual similarity, at least to some extent, captures what Sider tries to arrive at. He compares a disjunctively defined term ‘schmexists’ and the more familiar ‘exists’ (Sider, 2011, p. 89). Let us say that ‘there schmexists an F’ is true if and only if either F is a pig or I love F. Now, according to Sider, the facts that there exists an electron and that there exists a horse are similar to each other whereas the schmexistential facts that there schmexists a pig and that there schmexists hot

⁶ Some disagree with this. See “Priority Monism” in Schaffer (2014a).

chocolate (though they obtain) are not similar to each other. In other words, Sider thinks that 'existence' somehow *tracks* similarity like 'red' as opposed to 'schmexistence' or 'rue'.

This much information does not give us much to go on with. I think, Nurbay Irmak takes similarity in terms of semantic purpose (2013, p. S10). Some weaker version of it that I will employ is this: truths (or facts) are similar to each other when their crucial terms serve similar semantic purposes. Then, we could, for example, say that sociological truths are similar to each other since they are cast in terms that have similar meanings like 'group', 'conflict', 'public' and 'private'.

CHAPTER 4

ONTOLOGICAL PLURALISM AND CURRENT DEBATES

In this chapter, first, I will point to the problem that Sider's Ontology Room is not welcoming to pluralists. Then I will introduce the notion ontological pluralism and argue that considering the current debates a metaontological theory should be able to accommodate ontological pluralism. This argument will not play an indispensable role in my final thesis that an absolutistic approach in trying to find the best (i.e. perfectly joint-carving) quantifier is not epistemically feasible. However, it will help me construct my final argument in a clearer way.

4.1 Some problems concerning stipulation

The following passage is a nice summary of Sider's idea of the metaphysics room that I explained above.

[T]he *ordinary, natural language question*, phrased in terms of the ordinary, natural-language expression *E*, would be nonsubstantive. But we could discard *E*, and enter the metaphysics room, so to speak. We could replace the ordinary expression *E* with an improved expression *E** that we stipulate is to stand for the joint-carving meaning in the vicinity. The question we ask in the metaphysics room cast in terms of *E** rather than *E*, is substantive. Indeed, it is *superior* to the original question, for it concerns reality's fundamental structure, rather than its merely conventional or projected aspects. (Sider, 2011, p. 74)

There are two, related problems with the above passage. The first one is about usage of misleading terminology and the second one is a more serious one that leads to a dismissive attitude towards some aspects of ontological debates. The first one is concerned with the term 'stipulation'. When we stipulate something, we tend to regard it as true. If I stipulate, for example, that the name of my one and only teacup is 'teedie', then in virtue of my stipulation the sentence "my teacup is called 'teedie'"

becomes true. However, for my stipulation to be successful there needs to be a unique teacup that is mine. Thus, not every stipulation is successful. They do not succeed solely in virtue of our stipulation. There may simply be no joint carving quantifier meaning or there may be more than one.

Sider is aware of the fact that the stipulation may not be successful. However, he goes on, “[n]atural languages themselves had to bootstrap; they had to somehow latch onto the world in the first place. So why can’t we bootstrap now?” (Sider, 2011, p. 76). But very few of our terms in a natural language are joint-carving. For example we could imagine that the relation between the reality’s structure and quantifiers are similar to the relation between length and different measurement units.⁷ Suppose someone takes length to be structurally fundamental, which, I think, is not an outrageous stance to take. Then, she asks whether ‘inch’ or ‘meter’ (or some other unit) carves better at the joints by stipulating there is a measurement term that is joint-carving. The mistake here would be supposing that for an aspect of reality, there must be a (possible) corresponding term in our language, which may not be the case. At any rate, what I try to show is that ‘stipulation’ is too strong a word; it suggests that there is in fact a quantifier expression corresponding to reality’s structure.

The second and more pressing problem with the above passage is the supposition that the different quantifier meanings employed by ontologists are in the same *vicinity*; namely they are close enough that there is a *unique* quantifier expression they can converge upon. First, ontological pluralism is an issue that is not to be overlooked, given the current ontological debates; ontological pluralism does not, by itself, refute the idea that there is unique joint carving quantifier expression

⁷⁷ What I am trying to do here is to give a crude but quick picture of the alternatives. O’Leary-Hawthorne and Cortens (1995) and Turner (2011) provide more detailed discussions about this issue.

but it poses a serious challenge (§4.2) Second, even if ontological pluralism is false, thinking in terms of it might shed some light on our understanding of the meaning of the quantifier (§4.3).

Ontological pluralism is the view that there are more than one fundamental modes (or ways, or kinds) of being. The idea is that there are modes of being that are not reducible to another. For example, one might hold that both numbers and physical particles exist but we cannot reduce the mode of being enjoyed by numbers to the mode of being enjoyed by particles, and vice versa. She would hold that the number two exists in a different way than the way in which a quark does. Below I provide a more detailed example of pluralism in terms of intentional and physically simple objects. In the recent discussions ontological pluralism is understood in terms of a plurality of fundamental existential quantifiers.⁸ The idea is that, if the world contains different sorts of beings, or a plurality of structures, then, if we are to describe to world perspicuously, we should use quantifiers that correspond to the sorts of beings or structures in question.

My aim is not to argue for a version of ontological pluralism. It is rather that if we want to achieve some ideal language via our arguments in Ontologese, this language should not be dismissive against ontological pluralism, and stipulating that there is exactly one perfectly structural quantifier does exactly that. In a manner of speaking, it does not allow pluralists into the ontology room. I think, there are at least two reasons for admitting pluralists into the Ontology Room. First, if Ontologese evidently leads us to reach the ideal language, our conclusion will be stronger if we started out with fewer assumptions; namely, if we did not start out by assuming that there is a unique perfectly joint-carving quantifier. Sider says that “there is usually at

⁸ See McDaniel (2009), Spencer (2012) and especially Turner (2010).

most one joint-carving meaning in a given ‘vicinity’” and that “to suppose otherwise would be to needlessly attribute complexity to the world” (2011, p. 75). However, there might be multiple vicinities of quantifier meanings.⁹ Also I do not think the ability of a theoretical framework to be open to the idea that the world is more complex than we thought should count as a needless attribution *unless* we suppose right from the start that the world has a complex structure and that, for example, it has at least two perfectly joint-carving quantifiers. Second, there are deeply puzzling questions in the current debates on the ontological status of objects. For example, do we put beliefs and desires, into the same category as tables and chairs? It does not have a widely accepted, settled answer. The stipulation of a unique quantifier settles the issue where it should not: if they exist, they have the same mode of existence as other existents. Furthermore, Nurbay Irmak (2013) gives us motivation for pluralism in a Siderian framework by arguing that there are quantifiers in distinct vicinities; quantifiers whose meanings are not candidates for each other. He does so by showing that different ontologists use quantifiers for different semantic purposes. For example, he notes:

According to Merricks ... eliminativist language has purposes of providing a minimal ontology, compliance with plausible metaphysical principles, such as the principle of causal adequacy, etc. Baker’s language predates these kinds of ontological concerns: it clearly has other, prior purposes in everyday life. (2013, p. S16)

Given substantivity, Merricks’ and Baker’s quantifier meanings turn out to be of the *wrong sort* for each other. Therefore we cannot show whether one of them is more structural than the other.

⁹ Nurbay Irmak (2013), for example, argues for this position as I will summarize below.

4.2 Generic Quantifiers

I argued in the last section that the Ontology Room should be open to the pluralist. The objectors might agree that in some sense simples and chairs do not enjoy the same mode of being. But they could still push for some kind of monism. They could say there could be another mode of being, at another level perhaps, that they both enjoy, a mode of being perhaps even more fundamental than both the scientific and phenomenal ones. So the objection that I make against Sider's stipulation would fail. We have two alternatives to find a quantifier meaning that covers the more specific (two in the present example, though it could well have been more) quantifier meanings. The first is to define the generic quantifier (\exists_G) (i.e. the umbrella quantifier) by the disjunction of the more specific quantifiers. I argue that this option does not seem viable. Secondly, we may define them non-disjunctively. This is much more plausible. However, it highlights other problems we have in achieving the perfectly structural quantifier.

Let me introduce a classification between ontological theories which I will make use of in the following arguments. One way to classify the ontologists seems to be the following. There seem to be two groups of philosophers we could call scientifically (i.e. physics) oriented and phenomenally oriented. The former group takes simples (i.e. space-time points) as their starting point, whereas the latter group takes whatever is more immediate in our experience, like tables and chairs (the intentional objects), as their starting point. For example Lynne Rudder Baker explicitly states that she is phenomenally oriented: "I take the world as encountered—the locus of medium-sized objects that we experience—to present us with data for philosophizing" (2007, pp. 1–2). Along similar lines Michael Rea presents a Moorean argument that philosophical arguments against artifacts cannot

be convincing enough to deny their existence. He says, “[i]t seems to me much more obvious that there is such a thing as my car than that there is no such thing as the object composed of my left tennis shoe, W. V. Quine, and the Taj Mahal” (1998, pp. 356–7).

These groups tend to answer ontological question in quite different ways. In terms of composition, physically oriented philosophers, starting with simples, tend to take more (ontologically) parsimonious ontological views like nihilism or organicism (like Merricks, Sider, van Inwagen). They do not generally see the need to posit entities like tables or chairs on top of the simples. Phenomenally oriented philosophers, on the other hand, starting with ordinary objects, readily accept their existence. And, as a result, end up with theories that accommodate ordinary objects and usually simple particles as well.

For the following arguments, suppose that we have strong evidence that there are two kinds of existence: phenomenal and scientific. Suppose, further, that ontological pluralism is widely accepted. I will investigate our options to come up with a structural generic quantifier.

4.2.1 Disjunctive generic quantifier

Kris McDaniel considers finding a generic quantifier in terms of Heideggerian modes of existence and in that case the specific quantifiers (*existenz* and *subsistence*) are semantically primitive (2009, p. 303). Since they are primitive and distinct, there is no semantic meeting point between these quantifier meanings. \exists_S and \exists_P could be like this as well. They could be semantically primitive or there may simply not be any semantic overlap between them. Then, to get a generic quantifier, we could define \exists_G as the disjunction of \exists_S and \exists_P . Schematically:

$$\exists_G \phi =_{df} \exists_P \phi \vee \exists_S \phi$$

The generic quantifier in this case is the quantifier is defined by disjoining the *meanings* of \exists_S and \exists_P . In such a case ‘ \exists_G ’ would be ambiguous in a similar way that ‘bank’ or ‘bow’ are ambiguous. Thus, by definition, if something has the mode of being \exists_S or it has the mode of being \exists_P , it would also have \exists_G —if ‘ \exists_G ’ is a fundamental quantifier. However, in such a case, although \exists_G would have every existing object in its domain, it is hardly obvious that the umbrella quantifier, \exists_G , would represent a more structural mode of being.

First, since it is a disjunction, it is more complex than \exists_S and \exists_P . So it is ideologically no better than accepting both \exists_S and \exists_P ; ideological parsimony seems to favor neither committing to the two specific quantifiers nor the generic quantifier.

Second, it is less similarity-making. First reason is due to the fact that \exists_S and \exists_P were introduced with specific and different semantic purposes that, to some extent, explain the respective similarities of \exists_S - and \exists_P -facts. But what is the semantic purpose of the disjunctive \exists_G ? In the disjunctive case, I am going to assume that the semantic purposes are also disjoined; we introduce \exists_G to account for the world’s aspects that are either phenomenal or scientific. But this provides no reason to believe that there are similarities *between* the phenomenal and the scientific. Second reason is that if \exists_G was similarity-making, then, presumably, there would be a meaning—that points to the similarity—that is not disjunctively defined *in terms* of \exists_S or \exists_P . Third, since we assume that \exists_S or \exists_P both are structural, they carve their respective joints in the world. Thus, by assumption, they are similarity-making, but we have no evidence that \exists_G is similarity-making in any degree.

Third, using \exists_G would be a less perspicuous way of describing the world in the presence of distinct ways of being. If there are more than one structural

quantifiers, we would want our language to reflect that. Suppose we want to say that there is a chair (C : “is a chair”). We have:

- (1) $\exists_G X(CX)$
- (2) $\exists_P X(CX)$

(1) does not tell us which one of the two modes of being (structural aspects of the world) that the chair has, whereas (2) does. Thus, it initially looks like \exists_G provides less explanatory power. It should be noted, however, if we could explain some kind of relation (like causation, for example) between the phenomenal and the scientific, it would provide immense explanatory power. Yet, presumably, if there were such a relation, we would not appeal to defining the generic quantifier by disjoining the specific ones but we would have come up with a meaning in terms of that relation. I will consider such a case in the next section.

Fourth, similar reasoning applies to fundamentality. Truth of (2) necessitates the truth of (1), but not the other way around, and \exists_G does not seem to provide extra explanatory power. Thus accepting the disjunctive quantifier as more structural than the two specific quantifiers does not seem to be a viable option.

4.2.2 Nondisjunctive generic quantifier

The second, and more interesting, way we could understand \exists_G is that if we could understand it independently of \exists_S and \exists_P . We could do this in terms of a semantic overlap between \exists_S and \exists_P (Example 1, below)—provided that, unlike the above case, there is such an overlap. Alternatively there could be a meaning that would account for the mode of being enjoyed both by \exists_S -objects and \exists_P -objects that is defined independently of the meanings of \exists_S and \exists_P (Example 2, below). A nondisjunctive generic quantifier, like the disjunctive one above, semantically determines its domain such that its domain is the union of the domains of \exists_S and \exists_P .

Unlike the above case, however, \exists_G does not have disjunctive meaning. In a manner of speaking, \exists_G would serve as the *genus*, \exists_S and \exists_P would serve as *species*.

To define a generic quantifier in terms of some semantic overlap, consider the following simplistic example:

Example 1: Consider Ancient Greeks who believed in the existence of rational numbers but not irrational numbers. As it is told, they had a strong belief that the world contains only rational numbers. The idea that there being a number not expressible in terms of integers was almost as bad an idea as having to accept a contradiction, say. Their quantifier ranges over rational numbers whose semantic purpose is to account for the mathematical relations in the world. Consider another community, *C*, whose quantifier meaning has the same purpose. But instead of rational numbers, it ranges only over irrational numbers—suppose they have an arithmetic very strange to us.

In this case, the generic quantifier determines its domain by selecting numbers, no need to use ‘rational’ or ‘irrational’; its meaning is ideologically parsimonious and there is no need for two quantifiers. It also adds a significant amount of explanatory power by relating rational and irrational numbers. It also has the same semantic purpose with the specific quantifiers (i.e. accounting for the mathematical relations in the world). So there is no apparent reason to think that it is not a proper candidate for the specific quantifiers. Thus, I think, the generic quantifier would easily qualify as more structural than the specific ones. However, the reason I gave this example is to provide a clear instance in which the generic quantifier seems more structural than the specific ones. I do not suppose any of the ontological disputes can be resolved by some such explicit semantic overlap.

Consider another example, still very simplistic but with less apparent semantic overlap.

Example 2: Consider two ontological theories; *circlism* and *trianglism*. The former argues that only circles exist. And the latter argues that only triangles exist; they disagree on what exists. However, their quantifiers differ in their semantic purposes as well. Circlists want to discover the properties of circles, and trianglists want to discover those of triangles.

On the face of it, the two meanings are not candidates for each other, since they differ in semantic purpose. So the dispute seems to be nonsubstantive. It may well be that selection among circlism and trianglism is nonsubstantive. However, there still could be generic quantifiers such that the selection between them and those of circlism and trianglism is substantive. For example, there is a quantifier whose semantic purpose is to discover the properties of circles and properties of triangles, similar to the disjunctive case. There is another one, whose semantic purpose is to discover the relations between triangles and circles (if there are any) as well as discovering their respective properties (I apply this option to phenomenal and scientific quantifiers below). There is yet another meaning whose purpose is to discover the properties of all geometric shapes. Supposing that ‘geometric shape’ has a nondisjunctive definition, we would have evidence that the last meaning is more structural than those of circlists’ and trianglists’.

Let me return to \exists_S and \exists_P , and modify the example that I gave in the disjunctive case. Now, suppose that our evidence strongly suggests that there is a special kind of causal relation between the intentional and the scientific. We do not want our structural language to ignore this relation. Even if the relation is not perfectly structural, if we state some nonstructural truth when we use it, given Sider’s

metaphysical semantics, it has a translation in the structural language. Thus, we need to be able to state this relation in the structural language. But we cannot, at least without some serious logical modification, state the relation in terms of \exists_S and \exists_P .

Consider the following (xCy : x caused* me to shatter y):

$$\exists_P x \exists_S y (xCy)$$

(One could interpret this as follows: The state caused* me (to get angry which in turn caused me) to shatter the particles arranged glass-wise.) How is C defined logically?

I suppose it would not be plausible to say that it takes its arguments from the domains of both \exists_S and \exists_P since predicates are (standardly) defined within a logical structure. Then it turns out, there is an even more structural quantifier than \exists_S or \exists_P ; in Sider's sense of fundamental, \exists_S and \exists_P would turn out to be nonfundamental. In order to accommodate this relation in our structural language, we could instead try to come up with a generic quantifier. The problem is what the meaning of it is.

What is the semantic purpose of the new generic quantifier? The most obvious solution is an *ad hoc* one. In the disjunctive case, I argued that disjoining the semantic purposes did not help in maintaining that the generic quantifier is the more structural one. In this case, however, we could say that the semantic purpose of the quantifier is introduced not only to account for the phenomenal or scientific aspects of the world but also to account for the relations between them. Being able to account for the relation adds substantial explanatory power. As in the disjunctive case, ideological parsimony does not favor between accepting both \exists_S and \exists_P , and \exists_G . Regarding grounding, I do not know which option it would favor; if it behaves in a similar way to Sider's fundamentality, it should also indicate that the specific quantifiers are not perfectly fundamental. However, Sider's fundamental does not offer an ordering between the nonfundamental, and \exists_G , thus defined, is not

fundamental either. For it cites phenomenal and scientific aspects, which turned out to be nonfundamental, while Sider's fundamental is pure; it only involves perfectly joint-carving notions (2011, p. 106).

Nevertheless, explanatory power gives us reason to accept \exists_G as more structural than \exists_S and \exists_P ; similarity-making and parsimony are silent about it. Moreover, there might still be candidate meanings for \exists_G , that we do not know, that could be stated in more structural terms. Hence, I think, we have more evidence to regard \exists_G as more structural than \exists_S or \exists_P .

To sum up the discussion about disjunctive and nondisjunctive quantifiers, if we at least cannot come up with a relation between them, it leads us to multiplicity of quantifiers; defining them disjunctively to get a more structural, single quantifier does not help. This is problematic for Sider's Ontologese, since it stipulates a unique quantifier. However, if there is a relation between the objects of the two (or more) quantifiers, it leads us to a single quantifier in which the relation can be defined. Yet, even that single quantifier is problematic as it is not fundamental in Sider's sense which leads to the skepticism of the next section.

4.3 New set of problems

Suppose we found a meaning for \exists_G that makes up for the shortcomings what I provided above; it is like the generic quantifier defined in terms of geometrical shape as opposed the circlists' and trianglists' quantifiers. For all we know \exists_G is the perfectly joint carving quantifier.

We could make things more complicated, however. All this was fallible. Suppose that we were wrong in the first place to regard intentional/institutional objects as existing. There is no intentionality, no institutions, not even consciousness

to start with—assuming that intentionality presupposes consciousness. Daniel Dennett (1991) was right, after all; it was all an illusion! The phenomenal completely reduces to the scientific; we have shown their redundancy. The domain of \exists_G seems to have shrunk (the intentional/institutional objects are not anymore in its domain), so let us call the new generic quantifier \exists_G' . \exists_G' and \exists_S range over the same objects but have different meanings. Which one represents the more fundamental mode of being? If one answered it in favor of \exists_G in the previous case and now answers it in favor of \exists_S , it would seem contradictory. But she could justify her change in view by different emphases she put on different virtues. She could have placed more emphasis on metaphysical priority in the previous case but more emphasis on similarity-making in the current case, for example. Nevertheless, it would be a problematic decision in that changing the emphasis one places on criteria on the face of differing situations would indicate that she did not take them to be reflective of the objective, in the first place.

Alternatively, if one still defends that \exists_G' is more fundamental than \exists_S would face epistemic problems. After all, it was a mistake that led us to \exists_G' . How many more mistakes does it take to get to the most fundamental quantifier? Is there a finite number of such quantifier meaning candidates in the vicinity? Can we reach the most fundamental one even if we are equipped with the best possible science? And so on. Note that this would still be a problem even if we entered the Ontology Room by stipulating that there is exactly one perfectly joint-carving quantifier problem. Settling a dispute between *some* ontological theories will probably not lead to the perfectly joint-carving quantifier meaning. We cannot plausibly claim that we have epistemic access to, and considered all of the candidate meanings in the vicinity; our epistemic limitations seem to put much pressure on our inquiry.

If I am right, for a given quantifier meaning, there are many alternative meanings (with the same domain) of which we may not be aware. In my examples, to come up with an alternative, I appealed to pluralism but one could find other ways to construct such alternatives. I argue that in order to find the most fundamental quantifier we need to be able to assess every alternative meaning which is not viable, given our limitations. What is more, if by some epistemic luck we happen to find the most joint-carving quantifier meaning (if \exists_G' was the most fundamental quantifier meaning, for example) we would not be able to tell that it is, in fact, the most joint-carving meaning without taking every other alternative quantifier meaning. For the fundamental/nonfundamental distinction only tells us that some meaning is nonfundamental as I argued in §2.6. Thus, to show that a meaning perfectly captures the fundamental nature of reality, we would need to show that every other meaning is non-joint-carving.

CHAPTER 5

CONCLUSION

I argued that we do not have a direct way to assess structuralness; the criteria we have do not point directly to the structural but they point in a roundabout way by telling us which one of the meanings we are considering is more likely to correspond to the structure. Given our limitations, often (perhaps always), we do not have access to every candidate meaning in a given situation. I argued for this by changing the evidence we have and thereby constructing new quantifier meanings. Lastly, I argued that Sider has set the bar too high. The binary fundamental/nonfundamental distinction, that does not allow grading within the nonfundamental, is not suitable to our epistemic conditions.

Could a more modest version of the Ontology Room work? That is, if we follow Sider, can we reach more, if not the most, structural meanings? The answer to this question would require answers to further questions that I have not addressed in this thesis. For example, I kept the criteria (e.g. parsimony and explanatory power), and thereby what the structural is, fixed. Yet there is no wide-ranging agreement about which ones satisfy the role naturalness or structuralness is supposed to play (Dorr & Hawthorne, 2013, p. 10; Hirsch, 2013, p. 715). However, I think that if two (or more) ontologists agree on the criteria, it is possible for them to reach a more structural quantifier. Their quantifiers may be incompatible with each other, as in the example of intentional and scientific quantifiers such that neither of them is more structural than the other. However, the fact that they are incompatible does not guarantee that there is not another quantifier meaning that is compatible with both of them, individually—in the example, this is the nondisjunctive quantifier meaning

that I constructed. Hence, I have a *conditional* optimism towards a more modest version of the ontology room. If we can fix the roles structure is supposed to play, depending on our evidence, we can find more structural meanings.

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