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UNIVERSITY OF MIAMI

PURPOSE-RELATIVITY AND ONTOLOGY

By

Nurbay Irmak

A DISSERTATION

Submitted to the Faculty
of the University of Miami
in partial fulfillment of the requirements for
the degree of Doctor of Philosophy

Coral Gables, Florida

May 2014

UNIVERSITY OF MIAMI

A dissertation submitted in partial fulfillment of
the requirements for the degree of
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PURPOSE-RELATIVITY AND ONTOLOGY

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<u>Purpose-Relativity and Ontology</u>   (May 2014)

Abstract of a dissertation at the University of Miami.

Dissertation supervised by Professor Amie Thomasson.
No. of pages in text. (168)

Serious ontology is the view that metaphysical debates about existence are deep, theoretical, quasi-scientific debates about the nature and constituents of reality. Serious ontology has been the dominant metaontology for the last few decades, but recently it has come under attack.

Eli Hirsch's Quantifier Variantism is one of the most compelling criticisms of serious ontology. According to Hirsch many ontological debates are merely verbal because the alleged rivals in these debates can each agree that the other side is saying something true given the meanings of the existential quantifier in their own language, and none of those quantifier meanings is objectively privileged.

The most well developed response to skeptical metaontologies such as Quantifier Variantism is due to Theodore Sider's (2011) *Writing the Book of the World*. Sider agrees that the meaning of the existential quantifier may vary in different languages. However, he argues that even though the quantifier variantist might be right that both parties to the debate make true existential claims, the debate might still be substantive. On Sider's view it is substantive if one of the languages is objectively better than the other, where it is

better if the quantifiers in the language map the structure of reality or carve perfectly at the world's logical joints.

I argue that Sider's defense of serious ontology does not succeed, as he overlooks a very important assumption about the comparative evaluation of different languages. On my view, different languages could be comparatively evaluated only on the condition that they are introduced for the same purpose(s). Consider, for example, two countries, Leftia and Rightland, which share a border. The border is close to an inclined fault line according to which all Leftia and a very small part of Rightland in the region are on a lower wall and the almost all of Rightland is on a higher wall. Which language, geological or political, is objectively better at describing the region? It seems clear that the question 'Which language is better?' is incomplete without saying anything about the purpose of the description. But once we specify the purpose the answer seems to be fairly obvious. If the purpose of the description is to state geological facts (perhaps one of the two countries is planning to build a nuclear power plant in the region) then obviously the geological language is better, whereas if we aim to lay out the political facts (perhaps there is a significant archeological discovery on the border) then, of course, we should choose the political language. Hence, in order to claim that one language is better than the other they must serve the same purpose. If they do not have the same purpose we are not able to compare them at all. I argue that in most ontological debates, if not all, putatively rival languages are put forward for different purposes, and thus Sider's way of reinstating serious ontology in the face of the threat of Quantifier Variantism fails.

I consider the ontological debate over the existence of ordinary objects as a case study. I argue that in this debate between people like Lynne Baker and Trenton Merricks,

putatively competing languages don't have the same set of purposes; they are meant to do different things. Assuming that they are successful with respect to their purposes, we simply cannot deny either ontology on the grounds that one is objectively better than the other.

I conclude, *pace* Sider, that there are many different books of the same world, and that, given that these different books are written for different purposes, they cannot be compared. For all we know it can be the case that different languages such as the language of economics, biology, physics, or sociology could mark the objective similarities and differences in the world equally well. So perhaps we need not a book of the world, but an ever-growing encyclopedia, to serve our ever-expanding purposes.

The way ontologists can contribute to the writing of this encyclopedia, I argue, is not by engaging in debates about the complete inventory of what there is, but instead asking questions about the natures of the things that there are. By looking at both linguistic and non-linguistic practices concerning the objects in question, ontologists can answer questions such as under what conditions these kind of objects come into existence, how they persist, or how and on which entities their existence depends. Therefore, the conclusion is not that we should eliminate ontology altogether, but rather reorient its questions. In an appendix to my dissertation I give an example of how ontology may proceed along these lines, by taking up these questions for software where I argue that software is a kind of abstract artifact.

for zeynep

Acknowledgements

I would like to thank Amie Thomasson, the chair of my committee, for her support, encouragement, and hours and hours of work she put into this dissertation to make it better. I would never have been able to finish my dissertation without her guidance. I would also like to express my gratitude to members of my committee Simon Evnine, Otávio Bueno, and Jonathan Schaffer, my external committee member, for their help and encouragement. It has been a great pleasure and privilege working with them. I would like to extend my thanks to the faculty members and graduate students at the University of Miami for creating a productive and supporting work environment, and the Center for the Humanities for the award of a dissertation fellowship in Spring 2014. A special thank to my friends and precious family for their endless support throughout my studies in Miami. Lastly, I would like to thank Zeynep Savaş who has always been there for me. I cannot possibly imagine completing my dissertation without her unending support.

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Chapter One

Introduction and Motivations for yet Another Deflationary Metaontology

A quick look at recent debates in ontology provokes a rather depressing, if not embarrassing, feeling to anyone who is eager to have some answers to existence questions. Not only do we seem to have failed to build a consensus about ancient questions such as the question about the existence of universals, but also we now have a proliferation of existential questions about objects of different and sometimes very strange kinds. Do, for example, mereological sums (Inwagen 1990) or temporal parts (Sider 1997) exist? Are there tropes (Rodriguez-Pereyra 2002), haecceities (Adams 1979), powers (Mumford & Anjum 2010), laws (van Fraasen 1989), dispositions (Molnar 1999)? Is there a place for entities like events (Lombard 1986), possible worlds (Lewis 1986), truth-makers (Merricks 2007), fictional characters (Lamarque 1984), works of art such as musical works (Cameron 2008), or things like holes (Lewis & Lewis 1970), shadows (Sorensen 2006), or extended simples (McDaniel 2007) in our ontology? Does

stuff exist, or are there only things (Laycock 2005)? Are there certain objects that do not exist (Parsons 1982)? This list of existence questions could go on and on and yet it is clear from the ongoing discussion about these questions that there is no agreement among the disputants, as a result the idea has become increasingly popular that there is something wrong with these debates. Increasing numbers of philosophers such as Karen Bennett, David Chalmers, Bob Hale, Eli Hirsch, Stephen Schiffer, Amie Thomasson, and Crispin Wright to name a few have argued that these debates are impossible to solve, or there is no unique solution, or they are so easy to solve that the debate is pointless.[1] With these new challenges to maintain serious ontology, which takes existence questions as deep, theoretical questions about reality, it is even more pressing to determine what to make of philosophical questions of existence. In the present work I focus on the status of contemporary ontological debates: whether they are serious, deep, theoretical debates about reality.

Among the responses against the skeptical challenges mentioned above one of them, Theodore Sider's metaontological realism (2009; 2011), stands out as the most comprehensive, well-argued, and compelling defense of serious ontology. Sider's metaontological realism is mostly directed at a specific argument against serious ontology: Eli Hirsch's Quantifier Variantism (2002a; 2002b; 2009). According to Hirsch many ontological debates are merely verbal because the alleged rivals in these debates can each agree that the other side is saying something true given the meanings of the existential quantifier in their own language, and none of those quantifier meanings is objectively privileged. Sider argues that even though the Quantifier Variantist might be right that both parties to the debate make true existential claims, the debate might still be

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[1] For a review of such worries see (Manley 2009), (Bennett 2009) and (Chalmers 2009).

substantive. On Sider's view the debate is substantive if one of the languages is objectively better than the other, where it is better if the quantifiers in the language map the structure of reality or carve perfectly at the world's logical joints.

In the present work I argue that Sider's metaontological realism fails to save serious ontology as it has been practiced in the last few decades. It fails because, I argue, Sider overlooks a very important assumption about the comparative evaluation of different languages. On my view, different languages could be comparatively evaluated only with respect to a common purpose. In the absence of such a common purpose comparison of different languages cannot even get off the ground. I will argue that in many recent debates in ontology opposing parties either propose or use different languages to speak about the way the world is. I will also argue, however, that typically the proposed languages do not aim to serve the same purposes, and hence the debates fail to be genuine ontological debates because there is no way even to begin a comparative evaluation of those languages. I will say more on what purpose-relativity means for terms and languages, and more importantly what it could do for us in order to dissolve certain metaphysical debates in Chapter 3.

Here is a brief description of the structure of the dissertation:

In the present chapter I will, among other things, look at the history of the debate on existence questions and see if there is any lesson to derive from the classical debate between Carnap and Quine. I will examine the received view about the Quine/Carnap debate, namely the view that Quine's criticism of Carnap's deflationary metaontology is conclusive. Even though contemporary debates in metaontology have references to the debate between Quine and Carnap, it is difficult to understand the current discussion in

metaontology by merely focusing on their disagreement. That is one of the reasons why I provide a taxonomy for contemporary debates and positions in metaontology. The taxonomy will also help me to locate various metaontological views, and to give a context for the views I defend here. In the last section of this chapter, I will briefly explain the main theses of the dissertation.

In the second chapter I begin exploring Sider's metaontological realism in a much more detailed and systematic manner. I raise some questions and concerns about certain parts of his overall theory but my major objections are discussed in the following chapter.

In the third chapter I introduce a very crucial notion for my view: purpose relativity. I then begin to investigate the role of purpose both at the level of individual terms (as we introduce them into a language) and at the level of languages as a whole. I then construct my arguments against Sider's defense of serious ontology. I address possible objections to my arguments, and provide an interpretation for Sider's account that seems to avoid those problems. However, I argue that this new interpretation fails to save the substantivity of first-order ontological debates.

Chapter four is an application of my view to a particular debate in contemporary ontology. In this chapter I consider the debate over the existence of ordinary objects.

Chapter five concludes the dissertation with the discussion of the prospects for ontology; what it can and cannot legitimately do. In Chapter 6 I take software as a case study for my view and develop my own account of the nature of this ubiquitous artifact. So it gives me an opportunity to present an example for the kind of ontology that the view leaves room for.

1.1. A short history of metaontological debates

The current state of ontological debates owes much to the renowned dispute between Quine and Carnap on ontology. Most serious ontologists who argue that ontological debates are significant, theoretical, deep discussions over certain existence questions take Quine to be singlehandedly responsible for the revival of ontology as we know it today.

In his "Empiricism, Semantics and Ontology" (1947), Carnap's main purpose is to relieve empiricists who think that believing that there are abstract objects such as numbers would go against the backbones of the empiricist project as it seems we cannot acquire knowledge about abstract objects via empirical means. Nominalist philosophers were already working on eliminating commitments to abstract objects in mathematics and semantics for a while (Goodman & Quine 1947). Carnap argued that the belief that there are numbers, propositions, properties or sets is compatible with empiricism and the belief itself does not amount to Platonism about those entities.

Carnap's main focus is the existence questions about the disputed objects. He distinguishes two kinds of existence questions: internal questions and external questions. In order to speak about an entity or entities of any kind we first need to introduce a term into our language or, as Carnap calls, linguistic framework. Internal questions are the existence questions that are asked about certain kinds of entities within the linguistic framework. External questions, on the other hand, are not asked by ordinary people or scientists but only by philosophers. They are highly general questions such as "Are there numbers?" or "Are there concrete objects?". Internal questions can be answered either by empirical methods or logical or analytic means (Carnap 1947). For example, the question "Is there a beer in the fridge?" asked within the thing-framework (the framework we all

use in everyday life as we interact with each other and "middle sized dry goods" as J.L. Austin called) could be answered by just checking the fridge or the question "Is there a prime number between 8 and 19?" could be answered by appeal to purely logical methods. Of course, answering internal questions requires competence with the rules of use for the relevant terms. The rules of use for those terms determine how the question can be answered. External questions, Carnap argues, are only asked by philosophers and they are quite general questions such as "Are there numbers?" or "Are there concrete particular objects?" (Carnap 1947, 17). He argues that when these questions are purported to be asked literally, or, in other words, questions as aiming to get factual or theoretical answers, they are ill-formed pseudo-questions. Such questions cannot be answered. But alternatively, Carnap argues, these questions could be asked as pragmatic questions about whether we should adopt the number-framework or the thing-framework. Carnap suggests that we should interpret "ontological questions" as pragmatic questions about the advisability of introducing or adopting different framework to accomplish certain purposes (Ibid.). Take the question whether there are numbers, for example. According to Carnap, we should take this question as a pragmatic question about whether it would be useful for us to adopt the number talk given our purpose of, say, setting precise standards for measuring things.

We can draw a further distinction among existence questions, which is implicit in Carnap's paper but making it explicit here is necessary for the ease of explanation. There are specific and general existence questions. For example, "Is there a beer in the fridge?" is a specific existence question, whereas "Are there concrete material objects?" is a general existence question. One might think that Carnap's distinction between internal

and external questions maps onto the distinction between specific and general existence questions and so making this further distinction is redundant. It is easy to see, however, that collapsing these two distinctions would be a mistake. Consider the question "Are there numbers?". According to Carnap, asked as an external question, it is either an ill-formed question if it meant literally, or it is a practical question about adopting number framework. But there is another way in which the question could be asked. We can ask the question within the number framework after we already adopt and are able to use number concepts competently. That is, we can ask the question as an internal question which could be positively answered trivially in the following way. Assume that we have already adopted the number framework and thus can ask specific existence questions such as "Is there a prime number between 8 and 19?" and answer it by logical methods. Then we can infer a positive answer to the general internal question about numbers from the positive answer we give to this specific internal question: there is a prime number between 8 and 19, therefore there are numbers.

How should we understand metaphysicians' existence questions? Surely their questions are not specific internal questions, which could be answered relatively easily via empirical or logical means. Metaphysicians take existence questions to demand serious, deep discussions for their answers, so it would not be charitable to treat those questions as highly general internal questions as we can answer them quite easily with the same methods we use for specific existence questions. Metaphysicians' questions must be external questions. However, on Carnap's view external questions are ill-formed pseudo-questions if they are taken literally. So the best interpretation seems to be, Carnap argues,

to take those questions as pragmatic questions about whether we should adopt a certain framework in order to fulfill a particular purpose.

Quine's papers "On What There Is" (1948) and "On Carnap's Views On Ontology" (1951), which were published around the same time as Carnap's "Empiricism, Semantics and Ontology" (1947) address Carnap's deflationary attacks on ontology and are usually perceived, at least in contemporary analytic ontology circles, as a defense of ontology as a serious, deep, theoretical inquiry on what there is.

When one reads Quine's second paper on Carnap's deflationary views one cannot help but think that Quine's main target is the external/internal distinction, as he dedicates almost the whole paper to an argument which purports to show that there is a more basic distinction that Carnap's external/internal distinction relies on. However, at the end Quine accepts that Carnap might just forgo the distinction and still defend his deflationary views. So to avoid distraction I will leave aside his discussion on the distinction between internal/external questions and only present his main argument against Carnap's deflationary views, which comes towards the very end of his paper.

The real problem that Quine finds in Carnap's views is the way Carnap thinks that internal and external questions are answered. An internal question, be it a general or a specific question, can be answered, according to Carnap, by empirical or purely logical means, whereas an external question can be answered only if it is taken as a pragmatic question. According to Carnap, internal general questions can be answered easily by appeal to analytic relations between specific and general existence claims (e.g. "There are numbers" analytically follows from "There is a prime number between 8 and 19" which is itself analytic). Quine rejects the way Carnap distinguishes these three different ways

that one can answer existence questions. More specifically, Quine rejects the analytic/synthetic distinction that enables Carnap to distinguish internal questions that are answered by empirical means (synthetic claims) and the ones that are answered by logical or analytic means (analytic claims) (Quine 1951, 71). This rejection naturally leads to the rejection of Carnap's three methods of answering existence questions: empirical investigation (some internal questions), logical analysis or analytic methods (some internal questions), pragmatic evaluation (external questions). With the denial of this division of labor for different existence questions, Carnap's easy answers to general existence questions are not available anymore.

The main reason why serious metaphysicians are so easily on board with Quine might be his alternative methodology for evaluating existence questions. Quine replaces Carnap's easy methods to answer existential questions with his own naturalistic methodology. According to Quine's naturalist methodology, first we need to determine our best scientific theories. The criteria for choosing among different theories include coherence, explanatory power, (ideological) simplicity, (ontological) parsimony, elegance, etc. Quine seems to think that modern physics provides the best scientific theories given his criteria. Of course, our scientific theories evolve, so we might need to go back and revise our scientific theories and thus repeat the whole process accordingly. Secondly we need to regiment those theories so that we can avoid all ambiguities and confusion that the natural languages have, and more importantly we can clearly see what our quantificational terms quantify over. The canonical language for this kind of job is, according to Quine, first-order logic. Third, determine what values must be within the range of the bound variables or, in other words, the required domain of quantification so

that the scientific statements in this regimented language come out true. We are committed to all and only to the entities that must be included in the domain of our existential quantifiers in our regimented theory so that the statements of our best scientific theories are rendered true. It might be that there are apparent commitments to the existence of certain abstract objects such as, say, numbers. That is, it might seem that quantification over numbers is required in order to affirm scientific statements. Quine argues that we are so committed until we find some way to paraphrase away alleged commitments to numbers. This third step in the Quinean methodology is usually taken to be, what Quine calls, his criterion of ontological commitment. The criterion of ontological commitment, Quine argues, does not answer the ontological question, namely what there is, but it answers the question what there is according to a given theory. The methodology, which involves using the criterion, is supposed to answer the ontological question. The criterion of ontological commitment in this sense is supposed be neutral between different metaphysical positions; it is not supposed to favor, for example, realism about numbers over nominalism.

Quine's methodology for answering existence questions has been greatly influential in contemporary ontology. It seems quite reasonable to say that serious ontology is mostly Quinean. But of course serious ontologists have gone beyond the tools and methods Quine has provided for ontological enquiry. So, I think, the term Neo-Quinean ontology is quite apt to refer to the practice of serious ontology after Quine.

Neo-Quineans follow Quine in treating ontological views as theories just like scientific theories. According to them, ontology is not merely an inventory of what there is, but a theory that tracks the deep structure of reality. This seems to follow from

Quine's claim that ontological questions are on a par with scientific questions. As physical sciences aim to discover the deep physical reality, ontology aims at discerning a different aspect of the same deep structure, namely its ontology. Therefore, the same criteria apply to choosing among different ontologies.[2]

One of the core ideas of Neo-Quinean methodology is that no matter which theory you subscribe to you can eliminate certain kinds of objects that seem to be implied by the theory in question, just in case you can come up with a paraphrasing device, which avoids quantification over untoward kinds of objects. At the end of paraphrasing all problematic statements what you will in fact get is a different description of the world with a sparser ontology. The Neo-Quinean proposal comes down to comparative evaluation of different ontologies (and descriptions of the world) on the basis of the criteria that are borrowed from natural sciences.

One of the distinctive features of Neo-Quinean ontology is to take existence claims as claims about theoretical posits that must be evaluated on the basis of their contribution to scientific or philosophical theories. Neo-Quineans such as David Lewis and Theodore Sider argue that if certain theoretical posits, certain objects in one's ontology prove useful for different theories, unify different aspects of various theories or improve their explanatory power, etc. we are justified in thinking that there are such objects or posits (Lewis 1986; Sider 1997; 2011). David Lewis famously argues for his modal realism in this way. He tries to show that ontology of possible worlds is serviceable. It is beneficial to logic and adds a lot to the unity and economy of the principles and premises of logic. According to Lewis, it improves and simplifies our understanding of modality. It

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[2] See, however, Huw Price (2009). Price argues that reviving ontology by appeal to Quine's views on existence questions will not work, as the very idea of a separate field of ontology with its own standards is not Quinean at all (Price, 336-339).

provides an account of causality. He concludes that the benefits seem to be worth its

ontological costs. Therefore we have defeasible reason to think that there are possible

worlds. It is defeasible because it might turn out that there are very bad implications of

the theory that are unbeknown to us yet, or that there is a better theory with less costs and

more or at least the same benefits. Sider, similarly, argues for the idea that there is a

logical structure, on the basis that the idea of logical structure fits very well with different

areas like semantics, theory of reference, vagueness, etc. Therefore, there is a logical

structure (Sider 2011).

1.2. A taxonomy for metaontological debates

In this section I provide a taxonomy for contemporary views in metaontology. The

taxonomy is not intended to be comprehensive. There are certain views that are left out.

This is not a problem as the purpose of the taxonomy is not to provide a structured survey

of all contemporary views in metaontology. Rather, it is supposed to help us to see the

main questions and divisions in the debate, and give some context to the questions I ask,

and try to answer, in the dissertation. Some of the views in this taxonomy will follow an

extensive discussion where I try to understand and analyze the views in question, whereas

for some other views the discussion will be rather brief as their explication is not

essential for our purposes here.

Here is the plan of what follows. First, I explain and clarify the main question of our

taxonomy for metaontological debates. Then I present the recent views in metaontology

that are crucial for locating, motivating, and explaining the theses of the dissertation. I

begin with skeptical/deflationary views and move onto various defenses of serious

ontology. I finish this chapter with a sketch of the overall state of the metaontological debates.

I take the main question of metaontology to be "Are extant ontological debates serious?".[3] A few points to clarify the question.

First, I take ontological debates as the debates over existence questions such as whether there are ordinary objects, mereological sums, fictional characters, holes, etc. Therefore, we are not concerned here about the questions about the nature of causation, time, or modality that many philosophers consider to be a part of the ontological inquiry.[4]

Second, the question is about some of the actual ontological disputes that we see in the literature. In other words, it is not about some possible reconstruction or reinterpretation of extant ontological debates, but only about the ones that did or have taken place between ontologists of different stripes.

Third, even though serious ontologists tend to take all ontological questions seriously, it is hard to say that their rivals hold a skeptic or a deflationary view about every ontological debate.[5] This creates a difficulty for the taxonomy. So instead of taking the domain of the main question to include all extant ontological debates, we should take the debates, which most skeptics and deflationists argue against.

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[3] See Jenkins (2010) for a different classification. Nothing crucial depends on how we classify the recent views in metaontology. The classification that I present here will hopefully help us to understand the main positions and disagreements in the literature better.

[4] It is, of course, possible to take some of those questions as existence questions. For example, you can ask whether there are temporal parts, or modal properties, which would turn out to be ontological questions in the sense I use here.

[5] Even though, for example, deflationists such as Amie Thomasson argue that all ontological debates that are based on existence questions are easy to resolve, some deflationists disagree. Eli Hirsch, for example, argues that the debate over the existence of numbers might not be merely verbal, as it cannot be captured by his strategy. Similarly, Karen Bennett, who defends a version of epistemic skepticism, thinks that her arguments should not be generalized to all ontological debates. The decision must be made, according to her, on a case-by-case basis.

Last point is about how the term "serious" should be understood. Most serious ontologists are Neo-Quineans, which implies that they share a common ground for their understanding of the significance of ontological debates. This common ground is nothing but the idea that ontological debates are quasi-scientific, theoretical, deep, substantial debates about the nature and the constituents of reality. I use the term "serious" as shorthand for these features that they attribute to the debates in question.

I provide the flowchart below, which hopefully gives a good idea as to which view fits where.

Are certain extant ontological debates serious?

Yes

Are there many candidate meanings for the existential quantifier?

No

The existential quantifier is univocal.
Peter van Inwagen, Trenton Merricks, Lynne Baker

Standing Challenges
Easy ontology (Thomasson)
Epistemic pessimism (Bennett)
Moorean arguments (Schaffer)

Yes

One of the candidate meanings is objectively and absolutely the best.
Theodore Sider, Ross Cameron, Cian Dorr

Standing Challenges
Purpose-relativity (Ilmak)
Defective quantifier (Chalmers)
Esoteric metaphysics (Hofweber)

There is a certain parity between candidate meanings of the existential quantifier.
Eli Hirsch

No

Existence questions have easy answers.
Amie Thomasson,
Stephen Schiffer (for abstract objects, events),
Bob Hale and Crispin Wright (for numbers)

Ontological questions should be about fundamentality.
Jonathan Schaffer,
Kit Fine

1.2.1. Against serious ontology

It is difficult to group philosophers who think that the ontological debates in question are not serious under a single name. The difficulty comes from the existence of a wide variety of views about what went wrong in such debates, and what the proper methods and questions of ontology are.[6]

I divide the skeptical/deflationary views into two major categories: Easy answers to existence questions and quantifier variance. I discuss easy answers to existence questions below, however the main focus of my discussion here is Quantifier Variantism for two related reasons. First, it has been often taken to be the main challenge against serious ontology. Second, Sider constructs his metaontological realism mainly as a response to Quantifier Variantism.

i. Easy answers to existence questions

The first group of views that I will briefly sketch here defends the idea that existence questions have easy answers. There are two different kinds of views that that can be grouped under this general category. I call the first group of philosophers "easy ontologists" and the second "reformers".

The easy approach to ontological questions comes in different varieties. Neo-Fregeans in mathematics such as Bob Hale and Crispin Wright (2009), Stephen Schiffer (2003) who defends the view that abstract objects like numbers, propositions, and properties are pleonastic entities, and Amie Thomasson (2008; forthcoming a) who

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[6] There are some views that are difficult to classify under this taxonomy. For example, fictionalists about mathematical objects such as Stephen Yablo (2009) do not think that the answers to existence questions really speak to the ontological question. According to fictionalism our everyday talk and the whole mathematical discourse on numbers are merely fiction and thus should not be taken literally true. Therefore, even though we give positive answers to such questions in mathematics and everyday life, it does not follow that those answers are literally true leaving the ontological question about the existence of mathematical objects moot.

maintains an easy approach to existence questions in general argue that existence questions about the entities in question can be answered easily. Neo-Fregeanism is the most narrow application of the same general idea, namely that we can answer existence questions for numbers by, first, looking at some uncontroversial true statements which tacitly commit to the existence of those objects; second, transforming them into statements which introduce or make use of a singular term for those objects via a conceptual truth or an implicit definition (for Neo-Fregeans those statements must be biconditional and identity statements); third, inferring (or making explicit) the existence of the new kind of objects. On the easy approach the debate over the existence of numbers is not a substantive, theoretical or deep debate about reality. Quite the contrary, the question whether there are numbers can be answered quite easily by appealing to arguments of the following sort.

I ate two bagels. (Undisputed claim)

The number of bagels I ate is two. (Transformed claim)

There is a number. (Existence claim)

If the argument is sound, which seems to be the case, then we can conclude pretty easily that there are numbers. Similar arguments could be run for the kinds of objects that serious ontologists debate about such as propositions, properties (Stephen Schiffer), fictional characters, or ordinary objects (Amie Thomasson). Therefore, even though easy ontologists agree with serious ontologists that existence questions have one correct answer, they argue that the answer comes quite easily.

Reformers, such as Kit Fine and Jonathan Schaffer, agree with easy ontologists that existence questions of the relevant sort can be answered easily. Yet, according to them,

this does not mean that there is nothing left for serious ontology to do. According to Fine (2009), for example, there is a sense in which we can revise ontological questions and expect deep, theoretical debates about them. His proposal is to take "Is F real?" as the main ontological question where 'F' stands for disputed objects such as numbers, properties, mereological sums, etc. On Fine's account, ontologists could have a serious debate about whether, say, ordinary objects are real or not without the need of denying the common sense claims about their existence.

Jonathan Schaffer (2009) agrees that existence questions have easy answers, but he argues that this doesn't mean we should dismiss the ontological inquiry altogether. He proposes to change the form of the ontological question and ask whether F is fundamental, where 'F' stands for an entity of a certain kind. The fact that existence questions can be answered easily does not mean that they have no role at all in this new proposal, which he calls neo-Aristotelian metaphysics. Positive answers to existence questions give us what there is, and all that there is can be divided into three main category: grounds (fundamental object(s) that ground any other object), grounded entities (derivative objects that are grounded in basic object(s)) and grounding relations (ontological dependence relation that relates fundamental objects to derivative objects). Once we answer the existence questions, we still have a further and more important task, namely to distinguish grounds, grounded entities and grounding relations. In Chapter 5 I will revisit the debate on fundamentality and grounding and see what ontological inquiry looks like under this proposals for reform.

ii. Quantifier Variantism

Eli Hirsch argues that certain ontological debates such as whether there are mereological sums are merely verbal. A dispute is merely verbal if and only if the following is satisfied: each side will agree that the other party is speaking truth in its own language. Therefore, we cannot claim upfront that every ontological debate is merely verbal (Hirsch 2009, 232). We need to see if the criterion is met. Let me explain how a debate could be merely verbal by going through a different example. Take Karen Bennett's martini example (Bennett 2009). Let us say that we are at a bar and there is an alcoholic cocktail in a V-shaped glass on the table. I, knowing that it does involve alcohol and comes with a V-shaped glass with a couple of olives in it and believing that that is all what it takes to be a martini, claim that "There is a martini on the table." My all-knowing friend who knows that the drink on the table is not prepared using gin or vodka and dry vermouth, however, disagrees with me and insists that "There is not a martini on the table". Now according to Hirsch, our little debate at the bar is merely verbal not because we both are a little drunk but because we can agree that each side is claiming something true in their own language even though our statements seem to claim the exact opposite. Here is how. I know little about cocktails and am quite relaxed about how cocktails should be classified, and so allow that anything that involves alcohol and comes with a V-shaped glass is a martini. That is what the term "martini" means in my language. However, my friend is a 'purist', she takes martini to be made of a gin or vodka, dry vermouth and perhaps a couple of olives. That is what "martini" means in her language. By the principle of charity which states that if there are two possible interpretations of a statement in a given language, one correct and the other incorrect, then the principle of

charity demands that it should be interpreted in a way that makes the statement true. Accordingly, I ought to find a way to interpret my friend's claim in a way that it comes out true before claiming that she is mistaken. My friend has the same obligation as well. So I can provide the following interpretation for my purist friend's claim "There is not a martini on the table" in a way that she expresses truth in her language: "There is not an alcoholic cocktail made of gin or vodka and dry vermouth on the table". Similarly, she can give an interpretation for my claim by which I express something true: "There is an alcoholic cocktail served in a V-shaped glass on the table". Notice that it is not only that I and my friend can say what the other one says truthfully in our own languages but also that we would agree that the interpretation given for our original claim is correct. Therefore, our debate is merely verbal. However, this does not mean that none of us is mistaken. The mistake, however, is about the proper use of the term "martini". It might be that my friend is right about what it would take for there to be a martini on the table, then I am mistaken, even though our debate is not substantial in some significant sense of the word.

What happens in some disputes in ontology is quite similar, according to Hirsch. Let us take the debate between the common sense ontologist and mereologist. The common sense ontologist, or the anti-mereologist for short, argues that that there are tables and chairs, etc. but there is not a further object composed of any combination of those. On the other hand the mereologist believes that when there are some objects there is a further object composed of them. Let us take the following statement that the mereologist and the anti-mereologist debate about.

S There exists something composed of Clinton's nose and the Eiffel Tower.

The mereologist claims that S is true, whereas the anti-mereologist denies it.

According to Hirsch, the debate is merely verbal because both parties can agree that the

opposite side is saying something true with respect to S in their own language. For the

purposes of this discussion let us grant Hirsch that opposite parties speak different

languages even though they sound or look almost exactly the same.[7] Say that the

mereologist is speaking M-English and the anti-mereologist is speaking A-English.

Uttered in A-English S is false, whereas uttered in M-English S is true. In order for the

dispute between the mereologist and the anti-mereologist to be a merely verbal dispute

there must be, on Hirsch's view, some interpretations of S such that both could agree that

the other party says something true in their own language. That is, it must be the case that

the mereologist is able to provide an interpretation in her language for S such that when

the anti-mereologist says "S is false" she is expressing a truth in A-English. Likewise, the

anti-mereologist must be in a position to give an interpretation for S in her language such

that when the mereologist says "S is true" he says something true in M-English.

According to Hirsch, giving an interpretation for S is only giving truth conditions for S

(Hirsch 2002a, 103). Before going through possible interpretations for S, let's first

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[7] On Hirsch's view languages, at least in so far as the purpose of his discussion goes, are individuated by
their interpretation. Different languages do not have the same interpretation. An interpretation of a
language is a function that assigns each sentence of the language to certain truth-conditions:

> I'll follow Lewis in taking a "proposition" to be a set of possible worlds. And I'll follow
> Kaplan in taking a sentence's "character" to be a function that assigns to the sentence,
> relative to a context of utterance, a proposition (the proposition being the set of worlds in
> which the sentence holds true). The character can also be said to give the sentence's "truth
> conditions" (relative to a context of utterance). By the "interpretation" of a language I'll
> mean a function that assigns to each sentence of the language a character. Note that
> interpretation in this sense is defined in terms of the characters of sentences, not in terms
> of the reference of expressions. I assume that, at least for our present purposes, a language
> is individuated by an interpretation; that is, distinct languages do not have the same
> interpretation. (Hirsch 2010, 223-224)

resolve what to blame for the illusion that opposite parties engage in a serious debate about what there is. In our dummy example for a verbal dispute, we blamed the predicate "is a martini" for the source of the confusion. Could we look for the predicates in S for the suspicion that the debate is verbal? Almost everyone involved in the debate between the mereologist and the anti-mereologist, including Hirsch, agrees on the idea that if there is anything to blame in S it is the existential quantifier. I will not go over every argument for this conclusion, but let me explain the one that I find the most interesting. The argument is due to Ted Sider (2009). Deflationists like Hirsch, Sider argues, should not blame the predicate if they maintain that the debate is not serious even if it is put in terms of a regimented language. For, we can always translate the claim made by the mereologist into a claim about the number of objects using first-order logic in which we use nothing but quantifiers, logical connectives, the identity sign, etc. (Sider 2009, 390). For the sake of simplicity let us think of a universe in which there are only two elementary particles a and b and let the disputed claim S* be "There is something composed of particle a and particle b". Now the mereologist will say that S* is true whereas the anti-mereologist will deny S*. So we have almost the same circumstances like above. Now Sider argues that interpreting "particle" differently is not a happy way to dissolve the discussion for the deflationist, for we can always take the discussion about S* as a discussion about the number of things in this universe, for example a debate about the claim "There are three things" and regiment this claim in the following way:

S** $\exists x \exists y \exists x \, (x \neq y \ \& \ x \neq z \ \& \ y \neq z)$

There is nothing in S** but the existential quantifier, logical connectives and the identity sign. Therefore, Sider argues that if we will blame anything it must be one of

those logical and sentential terms and notions. Hirsch agrees that the problem is not that different ontological views employ different meanings for the crucial predicates but that they use the quantifier with different meanings. This is what Hirsch calls quantifier variance. More clearly, Hirsch argues that the quantifiers in A-English and M-English have different meanings; their meanings vary.

Quantifier variance, according to Hirsch, implies that there is an interpretation for "there exists something" or "there is" such that S comes out true and a different interpretation on which S is false. In M-English the quantifier has the meaning such that whenever there are some objects, there exists a further object composed of them. Call that M-quantifier. Therefore, S is true in M-English. However, in A-English, the use of quantifier is such that "There exists something composed of Fs and Gs" is true just in case Fs and Gs are related or connected in some special way (we don't need to say what exactly that restriction is for our purposes here). Let us call the quantifier in A-English A-quantifier. So let's begin with the mereologist and see if she can provide an interpretation for S so that the anti-mereologist expresses truth in A-English. It is relatively easy to see what such an interpretation would look like. The mereologist could interpret the anti-mereologist's quantifier in M-English as a restricted quantifier. That is, the mereologist could say that the anti-mereologist is using the M-quantifier in a restricted sense; restricted to the objects that are connected in some special way—say, by contact. Therefore, what the anti-mereologist says in her language, namely that "S is false" is true under the restricted use of the M-quantifier.

The issue is more complicated if we go the other way around. That is, providing an interpretation for what the mereologist says in her language within the anti-mereologist

language is harder, for the anti-mereologist cannot appeal to quantifier restriction. Hirsch discusses possible ways to give such an interpretation but the discussion of those proposals requires a lot more space than I have here.[8] Instead, I will look at a different suggestion by Cian Dorr (2006), which proves somewhat useful for Hirsch and is relatively simple and straightforward. Dorr suggests that the anti-mereologist could interpret S uttered by the mereologist in the following way. "If composition were unrestricted there would exist something composed of Clinton's nose and the Eiffel Tower" (Dorr 2006, 238). Ignoring all the complications that might stem from this counterfactual, we can say that the anti-mereologist successfully provides an interpretation for S such that he can agree that the mereologist is saying something true when he says "S is true" in her language.

Hirsch concludes that since both the mereologist and the anti-mereologist are able to provide plausible interpretations for S under which what the opposite party says comes out true in their language, the ontological debate on whether S is true is merely verbal.

Why should the disputants give such interpretations for each other's claims? Why not say that the opponent is just wrong to assert the disputed statement? For example, why should the anti-mereologist try to find some interpretation of S under which what the mereologist says about S is true in her own language? And similarly for the mereologist. Hirsch argues that we ought to try to find friendly interpretations because we have an obligation to follow the principle of charity. The principle of charity is this. If there are two possible interpretations of a statement in a given language, one correct and the other incorrect, then the principle of charity says that it should be interpreted in a way that makes the statement true (Hirsch 2002a).

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[8] See (Hirsch 2009; 2002a).

Let us go back to the point where we saw that a dispute's being merely verbal does not mean that none of the disputants is mistaken. In the dispute about whether there is a martini on the table, I am probably mistaken and my purist friend is right about martinis. In English we use the term "martini" to refer to an alcoholic cocktail made of gin or vodka, with vermouth and perhaps a couple of olives. Therefore, I am mistaken in this particular dispute, even though the dispute itself is merely verbal. Similarly, Hirsch argues that the mereologist is mistaken in their debate with the anti-mereologist, because in plain English the quantifier is A-quantifier, i.e. the anti-mereologist's quantifier. Not only is the English quantifier the A-quantifier, but also English is identical to A-English, the language that the anti-mereologist speaks. Therefore, in so far as the anti-mereologist and the mereologist claim to speak English, the mereologist is mistaken. If the anti-mereologist does not claim to speak English, but, say, a technical language that is used to state ontological facts, then Hirsch's argument does not follow, but, he argues, they have nothing to say against common sense existence claims either (Hirsch 2002b, 69). Hirsch claims that his argument here departs from Putnam's early formulation of quantifier variance in the sense that according to Putnam there are actually different senses of quantifiers in plain English (Hirsch 2002b, 62). This is important for Hirsch's foregoing argument because if in English we sometimes use A-quantifier and sometimes M-quantifier, we cannot claim that English is A-English and thus the mereologist is making a mistake. Nevertheless, this does not change the fact that, on both views (Hirsch's and Putnam's) the dispute is merely verbal.

1.2.2. How to remain serious about existence questions

I refer to the philosophers who answer "yes" to the question "Are extant ontological debates serious?" as "serious ontologists". Most serious ontologists are Neo-Quineans, so I won't repeat the view here. Instead I want to draw attention to some of the differences among serious ontologists concerning their metaontology.

The main disagreement among serious ontologists seems to be about the meaning of the existential quantifier. Therefore, I ask the question whether there are many candidate meanings for the existential quantifier as the second question for our taxonomy. Philosophers such as Peter van Inwagen (1998), Trenton Merricks (2011), and Lynne Baker (2007) think that the meaning of the quantifier is univocal; there is no variance in quantifier meaning. Van Inwagen (2009) argues that on Quantifier Variantism we are supposed to get different meanings by extending the meaning of "there is" in a given language. For example, we get a different meaning for the quantifier by extending, say, the A-quantifier and we get the mereologist's quantifier: M-quantifier. A similar example would be extending the meaning of the term "person" by convention. Let us say that we decide to extend the meaning "person" so that it applies also to corporations. But, van Inwagen argues, one could do so, only if one already believes that there is at least one corporation that this extended meaning of "person" would apply to. Similarly, in order for extending the meaning of "there is" so that it applies to mereological sums as well, one must already believe that there is at least one sum that the new quantifier ranges over. But if one already believes that there is at least one sum prior to extending the meaning of the quantifier, then the purpose of extension has already been accomplished even before the attempt to extend the meaning of the quantifier (van Inwagen 2009, 491).

> A single, 'fixed in advance' meaning for 'there is' (…) seems to be a presupposition of any attempt to extend the meaning of any term by convention: you need a fixed-in-advance sense of 'there is' to express your belief (a belief you must have if you are contemplating such a convention) that the class of 'new' things that the term is to apply to is not empty (ibid.).

As opposed to van Inwagen, Ted Sider (2011) is ready to accept that quantifier meanings could vary in different languages. On Sider's view what makes Hirsch's Quantifier Variantism a threat against serious ontology is a certain kind of parity among different candidate meanings for quantifier terms. Sider accepts the possibility of quantifier variance but rejects the parity claim, and argues that there is an objectively privileged meaning for the existential quantifier. Even if, he argues, ordinary English quantifiers lead to easy answers to existence questions, ontologists could recast their questions employing the privileged quantifier meaning, which guarantees that they are not easily answered by looking at the linguistic practices of ordinary speakers of English. Cian Dorr (2006) and Ross Cameron (2010) defend a similar position. They argue that even though English is not appropriate for serious ontological debates (for the reasons raised by some deflationists) one could always introduce a language, call it Ontologese, that is designed to use in asking philosophical existence questions in a serious, theoretical manner. Sider, Dorr, and Cameron have their differences about fundamental ontological dependence relations, but their defense of serious ontology relies on the idea that there is a single best meaning for the existential quantifier, and the insistence on a language to conduct ontological debates that employs this privileged quantification.

I will come back to this idea of privileged language in the next chapter, where I discuss Sider's view in much more detail.

1.3. The overall state of the debate and the thesis

First-order ontology needs a metaontology. In other words, serious ontology or the way most ontological debates has been done requires a theoretical ground, a robust defense. The need has always been there, but given a growing number of skeptical views that challenge the mainstream ontology it is now urgent. Let me explain.

Serious ontologists who reject quantifier variance, such as Peter van Inwagen, still have to respond to the following standing challenges:

Easy ontology: The easy approach to ontology does not rely on the idea of quantifier variance, and thus van Inwagen's defense of serious ontology does not speak to the arguments proposed by easy ontologists, such as Amie Thomasson.

Moorean objections: Reformers such as Schaffer argue for easy answers to existence questions by appealing to Moorean certainty. Take, for example, the question whether there are numbers. Schaffer argues that we can confirm that there are numbers by giving a trivial argument for their existence:

1. There are prime numbers.

2. Therefore, there are numbers.

The truth of 1, according to Schaffer, is secured by Moorean certainty, that it is "more credible than any philosopher's argument to the contrary" (Schaffer 2009, 357). And 2 trivially follows from 1 if we just drop the adjective. We can run a similar argument, on Schaffer's permissive view about existence questions, for other disputed entities such as ordinary objects, properties, fictional characters, etc.

Epistemic Pessimism: Karen Bennett (2009) argues that the ontological debate about composite objects has reached a permanent impasse, where there is little justification for

believing that the claim there are composite objects is true or false. Yet, this does not mean that ontological questions of this kind lack determinate truth-value. On the contrary, Bennett does think that the claim "There are Fs" is either true or false, and so the debate is not merely verbal. Her objection is about whether we have enough justification to think that the claim is true or false. It is important to note that Bennett's epistemic pessimism should not be automatically generalized to all ontological questions. She carefully explains that for some disputes epistemic pessimism is not the right attitude, and thus those debates should not be dismissed on these grounds.

Serious ontologists who accept quantifier variance but maintain that serious ontology is still justified, such as Ted Sider, have to respond the following standing challenges:

Anti-realism: David Chalmers (2009) defends what he calls anti-realism about ontological debates on which there is no fact of the matter as to how to answer ontological questions. Chalmers distinguishes two uses of the existential quantifier: lightweight and heavyweight. We can think of the lightweight quantification as the quantification we use in ordinary contexts. Heavyweight quantification is the one that serious ontologists such as Ted Sider attempt to use, which should carefully be distinguished from the existential quantifier of ordinary everyday English. Chalmers argues that unlike lightweight quantification heavyweight quantification is semantically defective. That is, the existential claims that attempt to use heavyweight quantification fail to have a determinate truth-value. The reason for this failure might be that heavyweight quantification fails to express a single concept, or it doesn't express a concept at all.[9] Chalmers does not give a definite answer to this issue due to the

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[9] "The difference is that the ontological anti-realist holds that the absolute quantifier is defective. Either it does not express a concept at all, or if it expresses a concept, that concept is defective too. In particular, the

complications that I cannot discuss here. But if Chalmers is right then Sider cannot

formulate a distinctively ontological question using the Ontologese quantifier and expect

a deep, theoretical debate about its answer.

Esoteric metaphysics: The second challenge is due to Thomas Hofweber. Hofweber,

in a series of papers (Hofweber 2005; 2007; 2009), argues against what he calls esoteric

metaphysics. According to esoteric metaphysics, metaphysics has its own terminology.

Not everyone would understand and be able to discuss metaphysical questions. On

esoteric metaphysics, there is no problem of explaining why these questions are

metaphysical, simply because they are asked in terms of metaphysical terminology, but

the problem is to understand the questions (Hofweber 2009, 266-267). Hofweber's

general worry about esoteric metaphysics is that it is not really clear at all what these

metaphysically privileged terms are supposed to mean. Take, for example, Sider's

fundamental quantifiers. Hofweber argues that Sider goes esoteric when he claims that

the existential quantifier in Ontologese is perfectly natural, or perfectly joint-carving. The

appeal to the notions of "naturalness" or "joint-carvingness", according Hofweber, is

what makes Sider's metaontology esoteric (274).

These two challenges are directed at Sider's idea of fundamental quantification. Both

Chalmers and Hofweber are worried about whether the Ontologese quantifier expresses a

single meaning, or expresses anything at all. Sider addresses similar worries about his

notion of "structure":

> Philosophical terms *can* be unclear: when they have been given no clear
> theoretical role to play. But "structure" has a relatively clear role—given
> in this book and elsewhere. What more is wanted? The perceived magical

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absolute quantifier does not have a determinate extension: something (a class of properties, say) that would combine with the extensions of otherwise unproblematic expressions to yield a determinate truth-value. Rather, if it has an extension at all, its extension is highly indeterminate (Chalmers 2009,102)."

> grasp of more familiar concepts like modality, in-virtue-of, or law of nature, is due solely to the fact that we've become accustomed to talking about them. The theoretical roles backing those concepts are no richer or better specified than the role backing structure. Philosophy is not just the building of theories on previously existing concepts. We also build new concepts, by building theories that use them.
>
> This is not to say that all there is to meaning and reference is inferential role. Meaning and reference may well be determined by external factors that transcend inferential role. So even if structure's inferential role is richly specified, the concept may nevertheless fail to refer to anything. But that's true of any philosophical concept: the world may simply fail to contain anything—or any unique thing—fitting the inferential role associated with the concept. My hope is that this unhappy possibility is not realized (Sider 2011, 9-10).

Sider goes on to argue that the idea of structure and especially what he calls quantificational or logical structure, which provides a ground for fundamental quantification, play crucial roles in different fields and disciplines, so, he argues, we have good reason to think that these notions actually refer.

I have similar worries about the meanings of some of the notions that are introduced to metaphysical discourse. However, my arguments against Sider's metaontological realism do not rely on this particular worry. So as the third and the last standing challenge against metaontological realism I present my own arguments which, in my opinion, are more compelling than the first two as I am ready to grant Sider that the talk of quantificational structure makes sense, and that the Ontologese quantifier has a perfectly natural meaning. I argue, however, that even if we accept these controversial premises, Sider's metaontological realism cannot save the seriousness of extant ontological debates:

Purpose-relativity of languages: I argue that Sider's defense of serious ontology does not succeed, as he overlooks a very important assumption about the comparative evaluation of different languages. On my view, different languages could be comparatively evaluated only relative to a common purpose. In the absence of a common

purpose comparison cannot even begin. I argue that in most ontological debates, if not all, putatively rival languages are put forward or used for different purposes, and thus Sider's way of reinstating serious ontology in the face of recent skeptical challenges fails. Because we cannot, after all, say that one response to the ontological question is better than the other in most cases, where the different responses serve different purposes.

Chapter Two

Metaontological Realism

Eli Hirsch's attacks on serious ontology have triggered a substantive amount of critical work in metaontology.[10] Serious ontologists of different stripes have proposed very different lines of responses against the idea of quantifier variance. Peter van Inwagen (2009), for example, denied that the meaning of the existential quantifier might vary in different languages and argued that Hirsch's critique is thus non-starter. A different route for serious ontology is suggested by Ted Sider (2011). As I briefly explained in the previous chapter, Sider argues that even if Hirsch is right about availability of different meaning assignments to quantifiers, serious ontology can still be maintained as there is a single, privileged meaning for the existential quantifier. Ontological questions when formulated using the most fundamental meaning of the existential quantifier are substantive, theoretical, deep questions about the constituents of reality.

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[10] See, for example, (Bennett 2009), (Dorr 2006), (Sider 2009; 2011), (Cameron 2010), (van Inwagen 2009), (Thomasson forthcoming a), (Hawthorne 2009), (Kriegel 2011), (McGrath 2008).

In this chapter I closely examine Sider's metaontological realism, and the surrounding theses that are significant for his defense of first-order serious ontology. Doing so is crucial for the purpose of the dissertation, as my arguments are directed at Sider's metaontological realism. I begin with his realism about structure and discuss its significance for various issues that will come up in the following sections. Then I introduce his realism about fundamental languages and in particular, what he calls, knee-jerk realism, which will play a central role in my arguments. One important task of this section is to carefully distinguish Sider's views from Eli Hirsch's quantifier variantism. I close this chapter with explaining Sider's metaontological realism.

2.1. In defense of serious ontology: Three realist theses

Ted Sider in his recent book *Writing the Book of the World* (2011*)* argues that there is an objectively correct way to write the book of the world. The book is an articulation and a defense of several realist theses: realism about structure, realism about fundamental languages and realism about the status of ontological debates. Realism about structure is the view according to which reality has an objective structure. Realism about fundamental languages is the view that there is an objectively privileged way of describing the structure or "writing the book of the world." Sider favors a particular form of this realism, which he calls "knee-jerk realism". According to knee-jerk realism physics as a language provides a privileged set of concepts that discerns reality objectively better than any other language. Realism about ontological debates (metaontological realism[11] from now on) is a metaontological view according to which

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[11] Sider's own term for his view on the status of ontological debates is 'ontological realism' but I prefer 'metaontological realism' because the former might have different and general implications other than metaontology. I think metaontological realism is better because it clearly identifies what this realism is

ontological debates are substantive in some important sense of substantivity.[12]

Metaontological realism adds to the simple realist thesis that there is a mind-independent

reality by endorsing the view that the ontological debates about this mind-independent

reality are deep, theoretical, quasi-scientific debates about the nature of reality. Sider

argues that realism about structure leads to realism about fundamental languages, and that

metaontological realism requires that reality has an objective structure. One of the main

purposes of the book is to preserve and secure realism about ontological debates, and

defend serious ontology against recent deflationist attacks, particularly Hirsch's

quantifier variantism.[13]

I argue in Chapter 3 that realism about fundamental languages and its particular form

that Sider defends, namely knee-jerk realism, are wrong. I also argue that Sider's defense

of metaontological realism fails to save certain debates in ontology in so far as it relies on

realism about fundamental languages. Nonetheless, I will argue that even if we give up

these further theses, we can preserve a certain form of realism about structure: namely the

idea that there are objective similarities and differences in the world that we try to

discover. As a result, Sider's case for realism about structure in this sense does not

require those who agree with it to accept his further theses that there is one best language

and that ontological disputes are genuine or substantive disputes about the world.

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about. On a further note, Sider is not 'realist' with respect to all metaphysical debates; he is ready to
dismiss the debates about, for example, causation and personal identity, as (metaphysically) non-
substantive but he defends substantivity of all ontological questions. Therefore, metaontological realism is
a better name than ontological or metametaphysical realism. I will say more on these distinctions below.
[12] I will explain how Sider describes substantivity in due course.
[13] See, for instance, (Chalmers 2009), (Hale & Wright 2001), (Hirsch 2002a; 2002b), (Schiffer 2003),
(Sidelle 2002), (Thomasson 2007; 2009; forthcoming a) for different deflationary views on ontology.

2.2. Realism about structure

It is widely accepted that some predicates like "green" reflect objective similarities better than predicates like "grue". There is something objective about reality that makes "green" a better predicate than "grue" for describing color properties of things. The idea is due to David Lewis (1984). Lewis, arguing against Putnam's radical semantic skeptic (Putnam 1981), claims that the meaning of certain predicates cannot be fixed only by use. And so he introduces another constraint, which he calls naturalness. According to Lewis, naturalness as an external constraint is in place for those predicates that purport to distinguish natural properties and relations. Therefore, the meanings of natural kind terms such as "water", "electron", "mammal", etc. are fixed by a combination of two constraints: the eligibility of natural properties and relations in the vicinity and use. Together with Lewis, Sider concludes that "natural properties and relations are 'intrinsically eligible meanings'; they are 'reference magnets'" (Sider 2011, 27). Sider prefers a different terminology to describe how certain terms get their meanings. Instead of Lewis's notion of naturalness, Sider says that for those terms that mark or fit structure better, they carve nature better at the joints. So speaking in Sider's terminology "green" is a better joint-carving term than "grue".[14]

So far the idea is quite familiar and plausible to many, leaving aside Sider's shift to a different terminology. But what is different and interesting about Sider's realism about structure is that he thinks we should further extend this structure to expressions of grammatical categories like logical notions and quantifiers. Thus the distinctive feature of

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[14] Comparative claims about joint carvingness are problematic on Sider's account since he regards structure as an absolute notion. I will come back to this issue below.

his realism about structure is his claim that structure has a quantificational aspect as well as a predicative one.

> Let "there schmexists an *F*" mean that the property of being an *F* is expressed by some predicate in some sentence of this book: "schmexists" is to the quantifier "there exists" as "grue" is to "green" (Sider 2011, p.vii).

He argues that there are many reasons to go beyond the predicate, and treat logical notions, and, more importantly, the quantifiers as joint carving terms. The main argument for this claim is Neo-Quinean. A Neo-Quinean argument for the existence of a certain kind of entity, roughly, claims that if positing the entity in question proves useful in our best scientific theories, then it gives us a good reason to accept that there is such an entity. One of the best examples of a Neo-Quinean argument is Lewis's argument for modal realism (Lewis 1986). Lewis famously argued that ontology of possible worlds is serviceable. According to Lewis, modal realism is beneficial to logic, and contributes to the unity and economy of logical principles and premises. It improves, and simplifies our understanding of modality. It provides an account of causality and the arrow of time. It seems that the benefits are worth its costs. Therefore, we have a defeasible reason to think that there are possible worlds. The reason is defeasible because it might turn out that unbeknownst to us there are untoward implications of the theory, or there is a better theory with less costs, and more or at least the same benefit. The gist of the underlying Neo-Quinean idea seems to be this. If certain theoretical posits, certain objects in one's ontology prove useful for different scientific theories, unify different aspects of various theories, or improve their explanatory power, etc. we are justified in thinking that there are such objects. Following the same strategy, Sider argues that that the connections that the extended notion of structure provides for semantics, explanation and laws, the

distinction between substantive and verbal disputes, etc. strongly suggest going beyond the predicate, and accepting that structure has a quantificational aspect to it (Sider, 88). Therefore, we have a good reason to accept that there is quantificational structure. If we do go beyond the predicate as advised, and grant that structure is not only predicative but also quantificational, then we grant that the quantifiers (and other logical notions) carve at the joints just as predicates such as "water" or "electron" do (Sider, 7).

Sider does not define or give a reductive analysis for the notion "structure". He prefers to take it as a primitive theoretical notion. Given his careful and a detailed discussion of the roles that the notion "structure" plays in different fields and issues in philosophy such as intrinsic properties, laws of nature and explanation, reference, induction and confirmation, substantivity, epistemic values, debates about time, modality, logic, and metametaphysics, I think in order to object his use of the notion, more than a mere complaint about clarity should be said.

The idea of structure is central in Sider's way of understanding fundamentality. I will not go into all the details of his account of the nature of fundamentality. Instead I will focus on three significant aspects of fundamentality that concern our discussion here.

First, the *fundamental is pure*: "fundamental truths involve only fundamental notions" (Sider, 106). Fundamental notions are the ones that carve perfectly at the joints. So purity implies that fundamental truths can be expressed only in the fundamental language. One of the significant consequences of purity will be that if the fundamental language is largely the language of physics (at least in terms its predicates), then biological, chemical, or economic truths cannot be included in our fundamental description of the world. Since biological or chemical terms are not perfectly joint carving, and so they are not part of the

fundamental language, any fact that employs such terms cannot be fundamental. Why should we accept purity? The following seems to be the driving motivation for its acceptance:

> When God was creating the world, she was not required to think in terms of nonfundamental notions like city, smile, or candy (Sider, 106).

So it seems that the idea is, roughly, since we can describe the world, and any fact about the world, be it fundamental or nonfundamental, only in terms of fundamental notions, we have a good reason to accept that the fundamental description of the world must be pure.

Second, the *fundamental is absolute*. Being structural is not a matter of degree: "I say 'is structural' rather than 'is more structural' (Sider, 128)." This leads him to claim that fundamentality is also absolute. There are no degrees of fundamentality. A truth is either fundamental or nonfundamental.

Third, the *fundamental is complete.* That is, the fundamental is responsible for everything in the sense that it must account for everything we experience: "Every nonfundamental truth holds in virtue of some fundamental truth (Sider, 105)."

An immediate question is how nonfundamental truths are related to the fundamental ones. Sider's use of "in virtue of" is only a placeholder for the relation between fundamental and nonfundamental truths. He avoids positing a fundamental metaphysical notion to replace "in virtue of". So he does not appeal to supervenience, reduction, or a truth-making relation to explain how the fundamental and the nonfundamental are related. The reason is purity: If we accept purity then connecting truths (for example, "There is a city in virtue of the fact that T") cannot be fundamental, as they involve nonfundamental notion(s) (i.e. "city"). But if these connecting truths are not fundamental,

then, since the fundamental is complete, the need arises to say in virtue of what these truths hold. These further connecting truths will not be fundamental either, as they will involve nonfundamental notions and so on (Sider, 110). Instead of positing a fundamental notion for the connection between fundamental and nonfundamental truths, Sider suggests a semantic theory. On this semantic theory, meanings (for nonfundamental facts) are to be given in perfectly joint-carving terms. The semantic theory might have different forms, but for ease of expression we can think of it as a truth-theory.[15] On this semantic theory nonfundamental truths hold since certain metaphysical truth conditions are satisfied or, as Sider puts it, there is some metaphysical semantics available for those truths (Sider, 112). A metaphysical semantics for a nonfundamental truth will provide truth-conditions that are stated in perfectly joint carving terms. Metaphysical semantics is different than linguistic semantics in that it "is free to assign semantic values that competent speakers would be incapable of recognizing as such, for [it] is not trying to explain what a competent speaker knows when she understands her language". A metaphysical semantics for a certain sentence S in a nonfundamental language L will take the following form:

Sentence S of L is true in L iff ϕ.

ϕ must be stated in the fundamental language so that it is guaranteed that it involves only joint carving terms (Sider, 113).[16]

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[15] One of those alternatives is expressivist semantic theory. Nothing significant hinges on our preference of truth-theory.

[16] Giving metaphysical semantics for S is different from giving a truth-maker for S in the sense that (i) the latter commits us to the existence of entities called truth-makers whereas the former has no such commitments, (ii) the latter requires positing a metaphysical relation between the fundamental and nonfundamental which violates purity while the former is introduced to avoid any metaphysical posits to explain the relation in question.

Providing metaphysical truth conditions for every single nonfundamental truth is, of course, very difficult: "We have no chance of actually giving a metaphysical semantics for any significant fragment of a natural language" (Sider, 117). What we can do instead is to provide some "toy" metaphysical truth conditions, which could convince us that real truth conditions do exist. Toy examples need not be stated in perfectly joint carving terms; they just need to give us some idea about how the real truth conditions would look like. Sider gives some toy metaphysical semantics for quantifiers. Take the following very simple claim in Chemistry.

(1) There exists an atom of hydrogen.

Assuming classical mereology, and taking the logical apparatus of first-order logic, $<$ for mereological parthood, and the following physical predicates as fundamental primitive notions we can give metaphysical truth-conditions for (1):

E ("is an electron"), P ("is a proton"), N ("is a neutron"), R ("orbits"), and U ("is a nucleus"). But first, to make things a bit simpler, we should define various mereological notions in the fundamental language. What we need, in order to work on (1), is defining "x overlaps y" and "x is fusions of $y_1 \ldots y_n$" in the following way:

Oxy ("x overlaps y") $=_{df} \exists z(z < x \wedge z < y)$

$xFu^n y_1 \ldots y_n$ ("x is fusions of $y_1 \ldots y_n$")$=_{df} y_1 < x \wedge \ldots \wedge y_n < x \wedge$

$\forall z(z < x \rightarrow (Ozy_1 \wedge \ldots \wedge Ozy_n))$

Now a metaphysical semantics for (1) will look like this:

(2) $\exists x \exists y \exists z(Ey \wedge Pz \wedge Ryz \wedge xFu^2yz)$

Sider claims that (2), in a way, translates[17] (1) to the fundamental language: "We could say, then, that the metaphysical truth conditions of any sentence in the language of chemistry is its translation" (Sider, 119).

If fundamental ontology is much more parsimonious than the example above—say, if nihilism is true—, then the metaphysical semantics for (1) will change accordingly (Remember that (2) is only a toy example). Metaphysical semantics for more complex languages, for example, the language of economics, will be much more complex. This might be a concern for very parsimonious ontologies or ideologies: "Austere views about fundamental ontology or ideology might make it impossible to give metaphysical truth-conditions for some high-level language—which might be a reason for abandoning such austere views" (Sider, 121).

Metaphysical semantics has, according to Sider, a very important advantage over theories that require serious revisions in the ordinary discourse: one can agree that natural language claims about tables, chairs, or events are true (even the existential claims) without holding that these objects find their place in the fundamental ontology (Sider, 122). Similarly for the claims in linguistics, sociology, chemistry, or biology, in so far as there are metaphysical truth conditions for those claims: "Special sciences can conduct their business without interference from metaphysics, if their languages can be given a metaphysical semantics" (Sider, 123).

Metaphysical semantics is significant for Sider for another reason. It helps, according to Sider, to understand what he calls comparative structure in perfectly joint carving terms. This is very important for the overall project in the following way. One

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[17] More specifically, a sentence P in the language of chemistry 'translates' a sentence S in the fundamental language if and only if S is a result of replacing non-fundamental terms in P with the fundamental ones (Sider, 120).

implication of absolutism about structure is that joint carvingness is an absolute relation

between terms and structure. That is, a certain term either carves perfectly at the joints or

fails to carve at all. Therefore, no term or a candidate meaning (compared to different

terms or candidate meanings) could carve nature merely *reasonably* well or badly at the

joints. A careful reader, however, would notice that Sider often in his account appeals to

comparative structure and fundamentality: that one can compare two notions in a way

that one could be more joint carving than the other. He is well aware that he makes use of

a comparative notion of structure, which should not be confused with the absolute notion

of structure:

> Throughout this book I have spoken of comparative structure: of carving
> 'reasonably well' at the joints, carving 'equally well' (though not
> perfectly) at the joints, carving 'badly' at the joints, and so on (Sider, 129).

Sider acknowledges that he employs the idea of comparative structure in multiple

cases such as his characterization of nonsubstantive questions and the doctrine of

reference magnetism. Since these are very important issues for the overall realist project

how should we understand this talk of comparative structure? Sider claims that one could

reconcile comparative structure with absolutism by distinguishing the comparative

notions of structure and fundamentality from the absolute notions of structure and

fundamentality. The relation between comparative and absolute notions of structure is the

same relation between nonfundamental and fundamental notions. There is, according to

Sider, a metaphysical semantics for the comparative notion of structure. Therefore, the

notion of structure we see in the above applications is comparative and should not be

confused with the absolute notion.

> The point of a comparative conception of fundamentality would largely be to connect fundamental to nonfundamental matters; but given purity, such comparisons cannot be fundamental facts (Sider, 130).

All facts about comparative structure are nonfundamental, whereas only facts about absolute structure are fundamental (130). Therefore, the notion of comparative structure (the talk of more/less joint carving terms or carving reasonably well/badly at the joints) and any fact about comparative structure must have a metaphysical semantics, or in other words they must have translations in the fundamental language.

Given purity, and knee-jerk realism –the claim that the fundamental language is mostly the language of physics—it seems to follow that according to Sider there are only physical and logical joints in nature. Here is an argument for this conclusion. According to Sider, only the fundamental language carves perfectly at the joints, or maps the absolute structure. If the basic terms of biology, chemistry, or economics carve perfectly at the joints, they must be part of the fundamental language. However, Sider argues that the fundamental language consists only of most basic predicates of physics, certain notions of first-order logic and a predicate for set-membership. Therefore, there are only physical and logical joints in nature, or in other words absolute structure involves only physical and logical joints.[18]

If I am right about the above argument then it follows that Sider's use of "carving better" or "carving equally well" for the terms other than the terms of the fundamental language should not be taken as discerning different aspects of the absolute structure, for example, geological, chemical, biological, etc. Therefore, when Sider claims that a certain term in chemistry, say, "molecule" carves reasonably well, the claim is not that the term "molecule" carves at the chemical joints in nature, or it discerns chemical

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[18] I am indebted to Amie Thomasson for this formulation of the argument.

similarities and differences in the world, rather it means that a certain metaphysical semantics for "molecule" in the fundamental language is possible.

The argument of this section is significant for what I do in Chapter 3 (to be specific in section 3.2.2). There, I will argue against Sider's view that structure (in the absolute sense) has only physical and logical joints. Instead I will defend a form of pluralism about the kinds of joints, or as I prefer to put it, pluralism about similarities and differences in nature.

2.3. Realism about fundamental languages

Sider argues that realism about structure leads to realism about fundamental languages (Sider, 8). Although Sider talks about fundamental language*s* he claims that the fundamental language that carves *perfectly* at the joints is the privileged language that we can use to describe reality as it is.

> The truly central question of metaphysics is that of what is *most*
> fundamental.
> So in my terms, we must ask which notions carve *perfectly* at the joints.
> […] To carve perfectly, one must use the most fundamental concepts,
> expressing the facets of reality that underly colors [because colors are
> presumably not perfectly fundamental]. Which concepts are the perfectly
> fundamental ones? In my view: certain concepts of physics, logic, and
> mathematics (Sider, 5).

The simple idea is this. There is a single best fundamental language that carves perfectly at the joints, and thus "there is an objectively correct way to 'write the book of the world'" (Sider, vii). His book, in a sense, is an investigation of what kind of language this fundamental language is, or should be, and how we are justified in thinking that there is such a language, and that this privileged language gives us an objectively correct way to represent the structure of reality.

2.3.1. Knee-jerk realism

This privileged fundamental language, Sider argues, is largely (in terms of its predicates) the language of the physical or better the language of physics.[19] The description of reality, which is provided by that physical language, is objectively better than any other candidate (Sider, 19). Physical concepts and descriptions that employ those concepts carve nature perfectly at the joints, and thus the physical description is better than other ways of describing the same reality. This privilege of the physical description of reality is, he thinks, a requirement for knee-jerk realism, a kind of realism that many (except, perhaps, anti-realists of different persuasions) wouldn't hesitate to believe. There is no explicit argument for knee-jerk realism or the privilege of the physical language. Sider explicitly says that knee-jerk realism is an unargued presupposition of his book (Sider, 18). But there are certain theses that one can identify in relevant passages that are important for understanding how knee-jerk realism might be defended. They do not form an argument for knee-jerk realism but we can construct an argument that makes use of them. Doing so will also help me to clarify the problems that I identify in this account. So here are the main theses:

1. There are objective similarities and differences 'out there' in the world. (Sider, 18)

2. The point of human inquiry is to conform itself to the world in a way that correctly represents these similarities and differences rather than to make or construct them (Ibid.).

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[19] The fundamental language does not only include certain predicates of physics but also basic logical apparatuses such as quantification, negation, etc. plus a predicate for set membership (292).

3. There might be different languages that state true propositions. But when there are, one must be the better description of reality. A description is better than the others just in case the propositions in that description are cast in joint-carving terms so that its ideology better matches the range of differences in the world (19).

4. There is an objectively privileged language which best carves nature at the joints and can be used for "writing the book of the world" (Ibid.).

From these theses we might construct the following implicit argument for knee-jerk realism.

a) The language that best carves nature at the joints is the best language (From 3 above).

b) The language of physics is the language which best carves nature at the joints.

c) Therefore, the language of physics is the best (most objectively privileged) language.

2.3.2. Quantifier variance vs. quantifier variantism

In the taxonomy I provided in Chapter 1 I distinguished two ways serious ontology could be defended against Quantifier Variantism. The first way is to deny that quantifier meanings could vary in different languages. The second way is to accept the possibility of quantifier variance but reject the claim that it undermines serious ontology. Sider takes the second way. But how is it possible to accept quantifier variance but reject Quantifier Variantism? Let me explain: Let us take quantifier variance as the idea that the quantifier might have different meanings in different languages, that there is no single meaning for

the quantifiers.[20] Quantifier Variantism, then, is the view that none of those meanings are objectively better than the other, or in Sider's terminology, none of the candidate meanings for the quantifiers carves perfectly at the joints, or none of them "are exceeded in joint carving by any other quantifier candidate" (Sider, 175). It means that a friend of serious ontology must reject Quantifier Variantism but could accept quantifier variance. He can do so by claiming that one of the candidate meanings for the quantifier carves perfectly (or better than the rest) at the joints. This is, I think, what exactly Sider does when he considers the possibility that the right ontology is very parsimonious. Let me explain the last possibility. Assume that eliminativist ontologist is right, and our ontology must be sparse; that is there are only simples and no complex entities exist. If this is the case, then how should we take the existential quantifier of natural languages? Sider argues that the most plausible thing to say would be that natural language quantifiers do not carve perfectly at the joints (171). But if that is the case, then the ontological realist needs to revise his claims about fundamental quantification:

> So even if there is *a* joint carving sort of quantification, the quantifiers of ordinary language might not carve at the joints. […] Ontological realism should not claim that ordinary quantifiers carve at the joints, or that disputes using ordinary quantifiers are substantive. All that is important is that one *can* introduce a fundamental quantifier, which can then be used to pose substantive ontological questions (Sider, 171).

In other words, if natural language quantifiers fail to carve perfectly at the joints, then one can introduce a new language, say Ontologese, where the quantifiers are stipulated to have a perfectly joint carving meaning.

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[20] It is a difficult question to explain what those different meanings for the quantifiers would look like. For now let us say that different meanings for the existential quantifier are given by different truth conditions that one could associate with existential claims. For example, the difference in the meaning of the existential quantifiers of an ontologically eliminativist language, and a natural language could be that the former would assign truth only to the existential statements of the form "There are *x*s" where *x*s are simples.

> Ontologese quantifiers are to have meanings that carve at the joints, but are otherwise as similar as possible (in inferential role, for instance, as well as in extension), and similar enough, to the meanings of the ordinary quantifiers (Sider, 172).

It seems clear to me, then, that Sider endorses quantifier variance (in the sense that I explained above), just as Eli Hirsch, and claims that the meaning of the quantifiers might vary in different languages (e.g. in natural languages and in Ontologese). What Sider rejects, *pace* Hirsch, is that there is a certain parity between different meanings for the quantifiers. One of the meanings, Sider argues, is the best, which makes it possible to retain serious ontology.

2.4. Metaontological realism

According to Sider, ontological questions are substantive questions about the fundamental structure of reality. Sider has an extensive discussion of what he means by "substantivity". The notions of "structure" and "joint carving" have a crucial role in his account of substantivity. A question S is nonsubstantive if the following conditions are jointly met. One or more expressions E in S are such that (i) rival views about S come out true on some candidate meaning for E, and (ii) none of those candidate meanings for E carves perfectly or better than the rest. Take, for example, the question "Is the Pope a bachelor?". Suppose that the following are among the candidate meanings for the term "bachelor": unmarried-adult-male, unmarried-adult-male-eligible-for-marriage, etc. Assuming that one could choose different candidate meanings for "bachelor", opposing views about the question could all come out true. Therefore, (i) is met. Sider argues that none of the candidate meanings for the term "bachelor" carves perfectly or better than the rest. There is nothing about the structure that would make one candidate meaning objectively better than the other. It seems that we adopt one of the candidates arbitrarily.

This means that (ii) is also met, therefore the question "Is the Pope a bachelor" is nonsubstantive (Sider, 46).

Substantive questions are the ones that are not nonsubstantive. Considering the above conditions for nonsubstantivity we can see that there are two ways that a question could be substantive. First, a question S might be substantive for the right answer to S is not sensitive to different choices of candidate meanings for expressions E. Second, for all the expressions in S, there is only one candidate meaning for each expression such that it carves nature perfectly at the joints.[21] Sider mostly makes use of this second way in his arguments for the substantivity of certain ontological debates. Therefore, in my discussion on substantivity I will refer to this particular sufficient condition unless stated otherwise.

This account of substantivity guides Sider through his discussions on metametaphysics and metaontology. I think we should distinguish metametaphysics and metaontology for the reasons I explain below. But let me point out that one could see a very similar, if not the same, distinction in Sider's work as well. Metaphysics is usually taken to be, very broadly speaking, the study of the nature of reality. Questions about the nature of time, existence, causation, modality, personhood, identity, free will, and so on are all regarded as questions in metaphysics. Ontology after Quine, on the other hand, has been taken to be the study of (philosophically interesting) existence questions. One might think of contemporary ontology as a particular branch of metaphysics, which focuses on the questions of existence.

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[21] Sider makes several refinements for the conditions of substantivity to accommodate certain complications, but I think nothing significant in my discussion turns on any particular refinement he proposes.

Based on this very general picture, it is possible to defend the claim that certain debates in metaphysics, for example the debate over causation, are nonsubstantive whereas ontological questions are always substantive. That is why we should distinguish metametaphysics and metaontology, as one could allow deflationism for certain issues in metaphysics, and yet defend substantivity for every first-order ontological debate. This, I think, is exactly Sider's position. He argues that debates about causation or personal identity are nonsubstantive, for none of the candidate meanings for the crucial terms in those debates (i.e. "causation" for the former, and "personhood" for the latter) carves perfectly at the joints (Sider, 72-73). This does not mean, however, that the debates are completely pointless. Sider argues that even though they are metaphysically shallow, they surely are conceptually substantive; that is, they tell us about how the notions of "causation" and "personal idenity" are embedded in our conceptual scheme (Sider, 73). Therefore, Sider's metametaphysics is not a defense of seriousness across the board.

The metaontology that Sider defends, which I call metaontological realism, is different in that regard. He argues that all ontological debates are substantive; they are "deep" and "about the world rather than language" (Sider, 168). The crucial term in all ontological debates, according to Sider, is the existential quantifier. Unlike the notions "causation" or "personal identity" there is a single perfectly joint carving meaning for the existential quantifier. The existential quantifier carves perfectly at the logical joints. Remember that this last claim is secured by Sider's idea of quantificational structure. There is an objective structure to world that we try to latch onto with the quantifiers, just like natural kind terms such as "electron" or "water".

If we accept metaontological realism we open ourselves to the possibility that much of our ordinary discourse is badly mistaken. If our ontology is sparse, that is, for example, if there are only simples, then a significant part of everyday discourse is threatened, as we take for granted the existence various kinds of complex objects. Some eliminativist ontologists try to solve this problem by providing an error theory for everyday discourse, which many find troublesome.[22] There is a different move available to Sider's metaontological realism. Sider argues that, given the sparse ontology, metaontological realists should regard ordinary language quantifiers as not carving perfectly at the logical joints. English quantifiers, then, "would not express fundamental quantification" (Sider, 171).

This is not a serious problem for the metaontological realist as there is Plan B, which I have already discussed to a certain extent above. If natural language quantifiers fail to carve at the joints, we can switch to Ontologese, whose quantifiers are stipulated to carve perfectly at the joints. To put it differently, it is not important if English quantifiers fail to carve perfectly at the joints, what is important is that a metaontological realist can always introduce quantifiers (as a part of a whole new language that is appropriate for ontology) that aim to carve perfectly at the logical joints. Therefore, even though one could come up with easy arguments for the existence of, say, tables using ordinary discourse in English, the metaontological realist need not be moved by those easy arguments. There are no easy answers to existential questions in Ontologese.

To summarize the above discussion, Sider argues that given that there is a best, objectively privileged language that can map the structure of the world as it is, we can say that ontological questions are substantive because they can be formulated in this

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[22] For typical examples of such eliminativist ontologies see (Merricks 2011) and (van Inwagen 1990).

privileged language. An ontological debate when it is done in this language, then, is a serious, quasi-scientific debate about which answer gives a better description of reality. What is at stake in those debates, in this account, is discovering the most fundamental structure of reality. Even though rival ontologies might both state true propositions about the world, one is the best. This is how Sider's defense of ontological realism needs realism about fundamental languages.

Chapter Three

Terms, Languages, Ontology and Purpose-Relativity

When we introduce an individual term to an existing language, or a novel language to communicate with our peers we do it for a reason. There is a certain set of needs and corresponding purposes we have in mind when we expand our language's vocabulary or adopt a new language. In the first half of what follows, 3.1., I argue that comparative evaluation of different candidate meanings, terms, and languages crucially requires the sameness of their purposes. The main thesis of this first section is that Sider's realism about fundamental languages fails due to purpose-relativity of comparative evaluation of linguistic entities of various sorts; i.e. candidate meanings, terms, sets of terms, and languages. In the second half, 3.2., I examine the consequences of purpose-relativity of languages vis-à-vis metaontological realism. I argue that metaontological realism cannot successfully defend the substantivity of extant ontological debates, as doing so relies on the truth of realism about fundamental languages. It is important to note that there are

different proposals to defend the substantivity of extant ontological debates. My concern here is Sider's proposal. The argument of this section relies on a significant metaphysical thesis about the nature of the world. Against Sider's parsimonious and pure metaphysical picture, I defend pluralism about the kinds of similarities and differences in nature. I argue that the kinds of similarities and differences in nature are not restricted to physical and logical ones, or to put in Sider's terminology, there are various kinds of joints in nature. In 3.2.2. I provide an argument for this pluralist view and discuss its consequences for the debate at hand.

As a response to my arguments, a metaontological realist could concede the purpose-relativity of languages and introduce an objectively privileged language for the purpose of conducting ontology. This line of response, I argue, is immune to my arguments from purpose-relativity. However, metaontological realism, under this interpretation, is no longer a defense of the ontological disputes of the last few decades but a new proposal for the language, the methods, and the main question of ontology.

3.1. Purpose-relativity of candidate meanings, terms, and languages

The idea that certain terms and languages are introduced to fulfill a certain purpose is not new. Carnap, for example, argues that the decision to accept a proposed language is not theoretical but practical in nature:

> The purposes for which the language is intended to be used, for instance, the purpose of communicating factual knowledge, will determine which factors are relevant for the decision [of accepting the thing language]. The efficiency, fruitfulness, and simplicity of the use of the thing language may be among the decisive factors (Carnap 1947, 15).

On Carnap's view the decision of choosing a language or a conceptual framework requires having a certain set of purposes, which will determine the criteria for the

comparative evaluation of those languages or frameworks. I defend a similar Carnapian idea for the purpose-relativity of languages on 3.1.3.

Sider uses the idea of purpose in his discussion of terms whose meanings are fixed conventionally. Sider thinks that the idea of a purpose has a crucial role for determining the meaning of those terms, namely it delimits the candidate meanings that we could choose among. I will say more on Sider's use of the idea of purpose below. What is important to notice here is that on Sider's account there is a certain role that the idea of purpose plays, but it is very restricted.

I argue that both Carnap and Sider are right about the particular role purpose plays in their views. What is distinctive about my account is that I take the idea of purpose-relativity further, and extend its role, and significance for the comparative evaluation of candidate meanings for an individual term, different (sets of) terms, and languages.

In what follows, I first explain the role of purpose for the introduction of new terms into a given language. Secondly, I argue that comparative evaluation of different (sets of) terms requires that they are compared with respect to a common purpose. Lastly, I argue that comparative evaluation of different languages is possible just in case they share the same or similar enough purposes.

3.1.1. Referential purpose and the introduction of new terms

When we introduce new terms to our language, we do it for a reason. There may be several kinds of purposes that we are trying to achieve when we do introduce new terms. There may, for example, be pragmatic purposes to introduce a new term to stand for a complex property just to make it easier to talk about it. Or there may be aesthetic purposes to introduce new terms for enhancing the poetic effect. The kind of purpose I

am interested is *referential purpose*. A referential purpose of introducing new terms to a language is being able to refer to (or to name) an object, a property, a relation, or an event of a certain kind. Once we have a referential purpose we can fix the meaning of the new term by choosing among different candidate meanings.

It is important to note that I do not argue that when we introduce a new term to a language, we first determine its referential purpose, then see what candidate meanings there are for the new term, and choose one among them, and thereby fix its meaning. The actual process of introducing new terms to a language is obviously very complicated, and mostly a collective action, which may or may not occur in the above order. My point is merely the following. The introduction and the survival of terms require that they serve some kind of a purpose. The referential purpose need not, and typically is not determined or expressed explicitly; it is implicit in the relevant individual or collective linguistic practices. In most cases the role of referential purpose is so obvious that the need of any explicit discussion of it does not arise.

There are various kinds of purposes that terms in our language are supposed to serve. Referential purpose is only one among many. Besides referential purpose, terms are intended to serve practical, syntactic, aesthetic, etc. purposes. I am interested in the referential purpose partly because it seems to be the most relevant sort of purpose to determine the meanings or the references, if any, of the new terms. However, it is possible that there are certain words that are not introduced or kept to serve any referential purpose at all. Consider the indefinite article in English. It seems that the main purpose of its introduction or survival is not to refer to, or name anything, but to indicate the type of reference being made by the noun it precedes. So, the purpose seems to be

grammatical, or syntactic rather than semantic. It seems difficult to think of a referential

purpose, alongside the grammatical or the syntactic one, for which the indefinite article is

introduced, or in virtue of which it manages to survive. This is not a problem for the view

I defend here, as the crucial idea is that terms of our language are intended to serve a

certain kind of purpose.

Let me give an example. Consider the term "electron". George Johnstone Stoney in

1891 introduced the term "electron" to the language of physics of the time. The

referential purpose behind this new term was to name a fundamental particle that carries

negative electrical charge:

> At the Belfast meeting of the British Association for the Advancement of
> Science in 1874 Stoney had already suggested that "[n]ature presents us in
> the phenomenon of electrolysis, with a single definite quantity of
> electricity which is independent of the particular bodies acted on." In 1891
> he proposed, "[I]t will be convenient to call [these elementary charges]
> electrons." (Arabatzis 2006, 70-71).

Although Stoney introduced the term, the idea that there are these elementary charges

that are responsible for electricity had already being discussed among physicists, which

explains the need of introducing a new term that makes easier to talk about the

phenomenon.[23] Given the referential purpose, the candidate meanings for "electron" are

by definition restricted to the elementary particles that carry a negative charge, and the

meaning of this term in question now can be fixed. The referential purpose partly

determines what meanings should count as candidates for the meaning of the new term.

It, thereby, enables us to make a very useful distinction between alien and candidate

meanings:

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[23] For a detailed discussion on the birth of the term 'electron' see (Arabatzis 2006).

Candidate meanings are the meanings that meet the demands of the referential

purpose.

Alien meanings are the meanings that fail to meet the demands of the

referential purpose.

Therefore, when we want to introduce a new term to our language like "electron" the

referential purpose of this new term can explain why we should not be worried about

being able to exclude alien meanings like table, mountain, galaxy, or the number three.

As I mentioned above, Sider acknowledges the significance of the idea of purpose.

He uses it to explain how certain conventional terms acquire their meaning. Here is the

basic idea: sometimes we need to achieve a certain semantic goal, and we introduce a

new term to achieve it. If there is a number of candidate meanings for the term and if all

of them would help us to achieve the goal equally well then the one that we pick out

would be arbitrarily chosen. Sider gives the following example to explain this. Consider

the word "inch". What Sider calls the semantic goal for introducing this word, according

to Sider, is to measure smallish things:

> The purpose of "inch" is to be a convenient measure for smallish things,
> the kinds of things we can hold in our hands (Sider 2011, 55).

This is odd since it is not the term "inch" that we use to measure smallish things, but

inch as a measurement unit that helps us to make measurements.[24] But this is not a

serious problem as I think Sider is on the right track; the purpose of introducing "inch"

should be to refer to a certain length (that could be used to measure smallish things).

Now, given this purpose our linguistic community might fix the meaning of this word in

many different ways. There are numerous candidate lengths that might satisfy the same

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[24] I would like to thank Simon Evnine for this observation.

goal equally well. We chose one among those slightly different lengths to signify the meaning of "inch" arbitrarily. So, this meaning acquisition is an instance of what Sider calls candidate-selection convention.

Consider this sentence:

(S) My computer screen measures exactly 15 inches across.

According to Sider, S is conventional since the meaning of "one inch" is fixed arbitrarily.

Sider makes two points about different candidates' achieving the given semantic goal equally well. First, he says all the candidate lengths carve at the joints equally well (Sider, 55). It is not so clear to me how to interpret this claim, as the candidates here are various lengths, which are parts of a continuum.[25] It seems odd to think that various lengths in a spectrum carve nature at the joints. In any case, I think the second point he makes is more important: adopting any length for the meaning of "inch" would help to achieve the same semantic goal. That is, any length that we assign for "inch" would enable us to make correct measurements. For instance, we could have measured whatever we want to measure in terms of "inch" even if we chose a mile for the meaning of "inch". But that would be inconvenient given our goal of measuring household goods rather than distances between cities. The range of candidate lengths is restricted to the lengths that would be more or less in accordance with the (referential) purpose for introducing the word "inch", that is, naming a certain length that could be used to measure smallish things conveniently. So on Sider's account semantic goal has almost the same role that I think referential purpose has: a purpose for a new term narrows down the range of

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[25] I think the kind of examples, including this particular example, Sider chooses to explain joint-carvingness or substantivity are unfortunate for his purposes.

candidate meanings. If we have a set of candidate meanings all of which could serve the referential goal equally well, then we have to make an arbitrary choice to fix the meaning of the term.

I submit that once one realizes that a purpose has the role Sider describes, i.e. restricting the range of candidate meanings when one fixes the meaning of individual terms, it goes beyond the introduction of new terms the meanings of which are fixed merely conventionally. Referential purpose has a similar but perhaps less transparent role in different kinds of discourses where the introduction of new concepts are not only for seemingly conventional matters like determining measurement units but also for physical, economical, aesthetic and moral subject matters. Remember the example of "electron" I gave above. The meaning of this physical term does not seem to be fixed conventionally yet the referential purpose has the same role as in the case of determining the meaning of "inch": it narrowed down the range of candidate meanings. Had the purpose for introducing the term "electron" been different, and instead of being able to refer to an elementary unit of negative electrical charge, it was, say, naming an elementary unit of life, then DNA, cells, or organs might have been among the candidate meanings for the term "electron". The reason why we don't realize that we have referential purposes when we do science, ethics or economics might be that those purposes are so obvious that they often need no explicit discussion.

One might think that in the case of "electron" we look for the best candidate that, in Sider's language, carves nature perfectly at the joints. So instead of having many candidates that carve nature equally well it might be that there is a single candidate meaning that carves nature perfectly or better than the rest. I argue below that this may

not be true for many expressions that are fundamental to physics. But even if it were true

that there is a single privileged candidate meaning for the term "electron" it only shows

that the best or better meaning is the one we can identify *given the relevant referential*

purpose, i.e. referring to an elementary unit of negative electrical charge. Therefore we

can conclude that comparing different candidate meanings and choosing among them

always requires being able to specify a certain referential purpose. Only given a

referential purpose can we compare possible meanings, and talk about whether certain

candidates are better or worse (as in the case of the term "electron") or come to see that

each candidate (within a certain range) serves that purpose equally well (as in the case of

the term "inch").

Sider employs the idea of purpose only for what he calls non-joint carving

notions, and it is not clear from his discussion whether he is willing to extend the role of

purpose for joint carving terms as well. However, here is an argument to show that Sider

needs to acknowledge the role of purpose regardless of whether the term is joint carving

or not. According to Sider, fundamental terms, as opposed to conventional expressions,

are the ones for which there is a single special candidate meaning, the meaning that

carves perfectly at joints. In his discussion on substantivity he says one way a question

could be substantive is "for the question to be cast in perfectly joint-carving terms (and

for none of the expressions in the question to have *multiple* perfectly joint-carving

candidates)" (Sider, 46). It is crucial for Sider, therefore, that there is a single joint

carving candidate meaning for fundamental terms. However, it seems very difficult to

achieve that without imposing any restriction on what could count as candidate meanings

for an allegedly fundamental term. Let me explain. Consider the term "electron" again.

Assuming that Sider takes the term to be an example of a fundamental notion[26], he would

claim that there is a privileged candidate meaning for "electron" that carves perfectly at

the joints, which is, of course, nothing but electron. Therefore, "electron" means electron,

not cow. But just why are things like proton, nuclei, atom, or photon not among the

candidate meanings for "electron"? What is it that renders them as 'alien' meanings? This

is important, for if, say, proton is among the candidate meanings for "electron", then

Sider can no longer claim that "electron" is a fundamental term since there is more than

one candidate meaning that carves nature perfectly at the joints: proton and electron.

Sider's account seems to work well if the only candidates are things like "being an

electron or being a cow" as candidates like these fail to carve the joints[27], however in the

presence of many perfectly joint carving candidates for "electron" it seems on his view

the term would turn out to be nonfundamental, which leads to a serious concern regarding

substantivity of questions involving the term "electron".

Sider seems to be aware of this danger about substantivity, that is, if "electron" turns

out to be nonfundamental then the questions involving the term will be nonsubstantive.

He proposes a number of refinements for the characterization of substantivity. In one of

those refinements he argues that even though a certain degree of mismatch with usage is

consistent with the candidacy of a meaning, match with usage is not altogether irrelevant.

> A candidate meaning *m* needn't perfectly match our usage of E; but the
> mismatch can't be too severe. If a linguistic community, roughly in our
> circumstances, *could* have used E to mean *m* without seeming
> 'semantically alien' –could have used E to reach 'the same semantic goal'

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[26] The assumption seems fair given that many of the examples Sider gives for of substantive debates are about electrons or their features: "… [T]he question of whether electrons repel one another is substantive (deep, objective, nonconventional, abut the world) (Sider, 44)".

[27] I am assuming here that cow is not a fundamental kind, if it turns out that it is, then Sider's account is in more trouble than I claim here.

as we use E to reach, albeit perhaps by a different route—then *m* is a candidate for E (Sider, 50).

So it seems that in order for *m* to be a candidate meaning for E, it must be the case that the referential purpose that is set for E is achieved by taking E to mean *m*. Consider the referential purpose of "electron" again: naming an elementary particle that carries negative electrical charge.[28] Given the referential purpose, candidate meanings for "electron" are naturally restricted to elementary particles that carry negative electrical charge, which means that things like proton or photon can no longer be among the candidate meanings as they fail to serve the same purpose that we agreed on for "electron". If this is the right interpretation for Sider's refinement above, then he does in fact employ the idea of referential purpose as a condition for the comparative evaluation of different candidate meanings regardless of whether the terms are intended to have perfectly joint carving meanings (i.e. "electron") or to be purely conventional terms (i.e. "inch").

I conclude that Sider needs to acknowledge that the role of purpose goes beyond the introduction of purely conventional terms. Comparative evaluation of different candidate meanings for any new term requires having a certain purpose.

3.1.2. Purpose-relativity and terms

One might wonder why Sider should worry about acknowledging the role of purpose for the introduction of new terms. Assuming the problems that I just mentioned above could be resolved without a significant cost for the overall theory, it seems that the idea

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[28] Sider doesn't specify the form of semantic goal. The most explicit discussion on semantic goal is about the introduction of 'inch' to a language. As I argued above the kind of semantic goal he ascribes to the word ('measuring smallish things') seems odd and needs to be reformulated. My efforts here, therefore, can also be thought of as providing such an account for semantic goal.

of referential purpose fits very well with Sider's realism about structure, and his account of substantivity. I will argue, however, that accepting the role of purpose at the level of introducing new terms has significant consequences for Sider's realism about fundamental languages. More specifically, his idea that a set of of terms is objectively better than another just in case it carves nature better will be difficult to maintain. Moreover, by extending the role of purpose further so that it applies to introduction of new languages we will see that it is no longer plausible to defend realism about fundamental languages, the idea that there is an objectively best language that one could use to describe the world.

Sider argues that whenever we have different sets of terms to describe the world, one is better if and only if it carves nature better at the joints. We can see a clear illustration of this idea in his very first example for introducing the notion of structure, and the idea that where we have different descriptions one must be absolutely, objectively better.

Consider Sider's original example. Suppose that there is a universe that is full of fluid. The left half of the universe is full of red fluid and the right half is full of blue. Imagine now a different linguistic community, which divides this universe in the following way. They draw a diagonal-like line and divide the universe differently from us and use different concepts that are in accordance with their division (See Figure 1). Let us say that they use "bred" for the half on the left and "rue" for the right half. Assume further that they don't have our color predicates "blue" and "red" (Sider, 1).

Figure 1

The first and the immediate irresistible reaction to this division, Sider thinks, would be that they are making some sort of mistake. Yet, for me it is hard to understand why. If they don't have our predicates to describe the universe as we do, but different ones that enable them to uniformly describe it, it might be because of the way they perceive this universe. Perhaps they are colorblind and yet they perceive that the line that they draw signifies some sort of distinction between the halves "bred" and "rue". But this point is not important since Sider doesn't think that they make a mistake. Quite the contrary, he thinks that they describe this universe truthfully. But truth, he argues, is not enough to discern the unique structure of this universe. He says that even if they are not making a mistake, they have the wrong concepts and thus they carve the world incorrectly. In other words, they are missing something; their beliefs are true but do not reflect the structure of this universe (Sider, 2). Our terms "red" and "blue", according to Sider, do a better job at carving at the joints than "bred" and "rue".

Let us look at this example more closely. Think about the purposes of these new (new for us of course) concepts "bred" and "rue". What is their use in this other linguistic community's language? Are they supposed to be color concepts? Let's first assume that

"bred" and "rue" have the same purpose as "red" and "blue", namely mapping color boundaries. Then "bred" and "rue" (on the assumption that this other community has the same color experience and that color concepts must apply uniformly) seem to fail to describe this fluid universe correctly. So it is not a matter of which of the two communities', ours or theirs, concepts carve nature better as Sider wants to say, it is a matter of describing this universe correctly. It is not that "it is nearly irresistible to describe these people as *making a mistake*" (Sider, 2); but rather they do make a mistake. But this interpretation seems to be too harsh. No anthropologist or linguist, acting on the principle of charity, would say that they are mistaken without looking at the linguistic practices. A better, and more appropriate interpretation would be that they are using these concepts with a different purpose. Let us suppose that "bred" and "rue" are political concepts.[29] When this other community divides this universe as bred and rue, they truthfully give a political description of it. However, thus construed this example fails to show that our concepts "red" and "blue" carve this universe better than "bred" and "rue". For, it just doesn't make sense to compare these two sets of expressions given that they are intended to serve different purposes. For all we know both set of concepts might carve this universe equally well given their purposes, and thus one cannot claim that their description of this fluid universe is worse. Therefore a comparative evaluation of different sets of terms requires that they were introduced for the same purpose.

Let us look at a more realistic example where people use different sets of terms for describing the same world. This time we don't need to introduce new concepts where we have to speculate about their use. Consider two countries, Leftia and Rightland, that share

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[29] "Bred" and "rue" could have been taken to be texture or directional concepts. There is no particular reason to take them as political concepts.

a border. Below, there is a cross-section map of a certain region from their borders. The border is close to a fault line according to which all Leftia and a very small part of Rightland in the below region are on a footwall and the almost of all Rightland is on a hanging wall.[30]
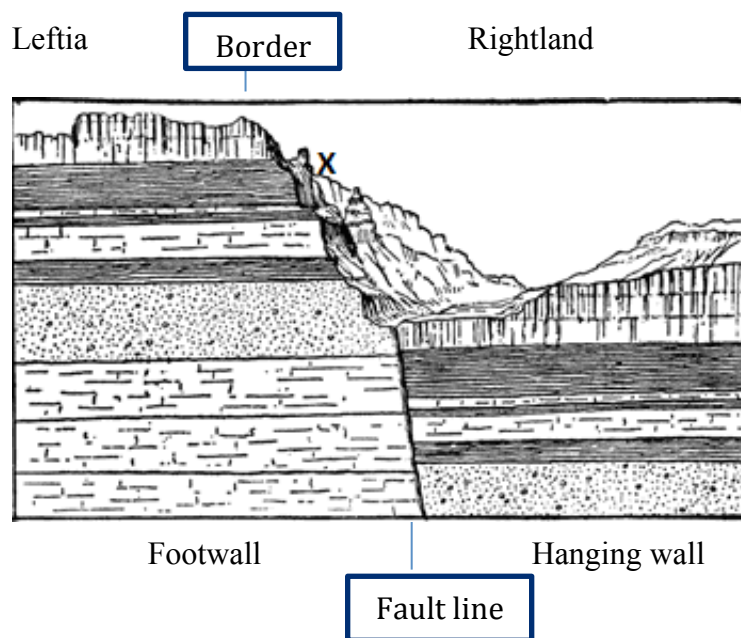
Figure 2

Let's now assume that on the one hand we have a certain set of geological terms that we would need to describe the region such as fault, fault line, fault zone, granitold, fold, extension, erosion, etc., and on the other hand we have a particular set of political terms that we would need to describe the same region such as border, government, sovereignty, hegemony, political party, elections, political interest, etc. Given these two sets of terms the question now is which one is better at describing the above region? From Sider's point of view, the question actually makes sense, as we can compare these two different

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[30] "Footwall" and "hanging wall" are theoretical terms in geology that distinguish the lower wall of an inclined fault from the higher one.

sets of terms and see which one carves better at the joints within the given region. However, the question seems incomplete. Comparative evaluation of geological and political terms requires a shared purpose, and yet this clearly is not the case. No matter what the particular purposes of the political terms are, they are not the same or similar enough to make them comparable to the geological terms. Comparison cannot even begin.

The same argument could be made for the comparison of a set of physical terms and, say, a set of terms from economics. Sider will argue that the former is better regardless of purpose-relativity as it consists of terms that carve at the joints better than the latter. However, as I just argued, the comparative evaluation of these different sets of terms, which are supposed to serve different purposes, is not possible since such comparison requires the sameness of purposes.

My argument against realism about fundamental languages is not complete yet. I argued in the previous sections that when we introduce new terms to our language we choose among different candidate meanings according to the referential purpose behind the introduction of the new terms. Without the referential purpose comparative evaluation of candidate meanings is not possible. I further argued that when we compare different sets of terms to choose one to be the better, it is required that they share the same purpose. In the absence of such a common purpose, the comparative evaluation is not possible. In the next section I will argue that sharing the same purpose is a requirement not only for comparing and choosing among different candidate meanings or sets of terms, but also for the comparative evaluation of different languages taken as a whole.

3.1.3. Purpose-relativity and languages

Sider argues that there is an objectively and unqualifiedly privileged language that one should use to write the book of the world. I reject that idea and argue that languages are better or worse only relative to a purpose. Before my argument, however, it is crucial to clarify what Sider and I mean by language. Since we both are interested in comparative evaluation of different languages, it is important to spell out how we individuate languages.

What language is is very difficult to answer. Considering the purpose, and the scope of this work, I don't need to provide an analysis, or give a definition for this challenging notion. However, I will make explicit what I mean by "language of physics" or "language of economics" as I have a particular notion of language in mind. Even though nothing significant hinges on my particular use of the term "language", saying more on how I use the term will be helpful for the following discussion.

One of the most important aspects of introducing a new language is providing its core vocabulary: the set of basic terms that could be used to extend the expressive power of the language. Different languages can share the same syntax or grammatical structure. What distinguishes various languages that share their syntax is partly the differences between the core vocabulary that is crucial for the successful communication among their competent speakers. It is in this particular sense that I distinguish the language of particle physics from the language of contemporary economics. Both languages have different sets of basic terms that are crucial for expressing the fundamental aspects of various theories in particle physics and economics. It may be true that there is a significant overlap between different languages in the way I use the term, and yet it does not mean

that they are the same language. For example, the language of physics and the language of economics share most of their syntax and semantics, however I will take them to be different languages. This will also make it easier to present my arguments against Sider, as he seems to have a similar use of the term "language".[31]

It is important to note that I am not talking about different natural languages such as English, Spanish, or Turkish when I make claims about comparative evaluation of languages. This is not a problem, as the disputants to the metaontological debates do not aim to compare various natural languages among themselves. Rather, the comparison is usually between natural languages in general and the language of physics, or novel languages that ontologists introduce. It is important, however, to say a bit more on the way I use the notion of natural language. When I talk about natural language, what I have in mind is mostly the language that we use in our everyday life to express/communicate our beliefs, emotions, feelings, describe our perceptual experience, give commands, ask questions, and so on and so forth. It is in this sense that I think it is plausible to make claims about the purposes that natural language has. However, it seems very clear that natural language has various purposes of which it is very difficult to give an exhaustive list. For the purposes of the present work it is not required to analyze all the functions, and the purposes of natural language. What is important for us here is to notice the differences between the purposes of natural language, and the particular languages that are introduced for very different, and mostly theoretical purposes.

Languages are introduced to serve certain purposes. Take, for example, the language of economics. The purpose of the language of economics is, very roughly, to track certain

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[31] "Linguistics, psychology, economics, and other special sciences may be carried out in their own languages—largely natural languages, enhanced here and there with special-purpose vocabulary (Sider, 123)."

kind of similarities and differences between the relations among individuals, and various

kinds, and sizes of human groups, and societies. It is important to distinguish the purpose

of, say, the language of economics, and a theory in economics. With the aid of the

language of economics we construct economic theories that aim at explaining, and

predicting the laws that govern the production, distribution, and consumption of goods

and services and underlying human interactions.[32] Different languages of economics

might be introduced to fulfill the very same purpose. Neoclassical economics, for

example, proposes a language for economics, where theoretical expressions such as

"supply", "demand", "utility", "economic agent", "price of goods", "equilibrium",

"productivity" etc. play an essential role in neoclassical economic descriptions of

different societies. Heteredox economic theories such as Marxist theory provides a

different language to track the same social and economic phenomena with a different set

of basic terms and expressions like "class struggle", "means of production", "surplus

value", "labor power", "bourgeoisie", "working class", etc. [33] Any proposed language of

economics is successful to the extent that it meets the demands that are set by its purpose.

Comparative evaluation of these languages (neoclassical and Marxist economical

languages) is possible as they were introduced to serve the same purpose.

How about comparative evaluation of various languages that are introduced to serve

different set of purposes? Is it possible to compare different languages and claim that one

is objectively and absolutely better than the other regardless of their purposes? My

answer is no. But a clarification is in order. Although different languages may be

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[32] This is only a rough and ready claim for the language of economics. The argument obviously does not require accepting this particular purpose.

[33] I am leaving aside the normative aspects of these theories. I am merely interested in their descriptive task.

compared only with respect to a purpose, the purpose that makes comparison possible

need not be the purpose that these languages are introduced or even actually used for.

One can compare different languages with respect to any purpose at all. For example, it is

possible to compare the language of physics and the language of biology with respect to

their ability to track sociological similarities and differences or discern physical features

in the world. With the respect to the first purpose it seems difficult to make any

comparison, whereas relative to the second purpose the language of physics seems to be

better than the language of biology. However, comparisons on the basis of such purposes

are not interesting, as the evaluation seems impossible or rather trivial. So throughout the

dissertation I will talk as if comparative evaluation of different languages is not possible

if they are not *introduced* or *used* for the same or similar enough purposes, even though,

strictly speaking, comparative evaluation of languages requires fixing a purpose, any

purpose (regardless of the particular purposes that they are introduced or used for). Here

are a few examples that will illustrate this point better.

Consider one more time the spatial region (Figure 2) where Leftia and Rightland

share a border. Which language, geological or political, is objectively better at describing

the region? It seems clear that the question which language is better cannot be answered

without saying anything about the purpose of the description. But once we specify the

purpose the answer seems to be fairly obvious. If the purpose of the description is to

formulate geological facts then obviously the geological language is better, whereas if we

aim to lay out the political facts then, of course, we should choose the political language.

Hence, in order to claim that one language is better than the other they must serve the

same purpose. If they do not have the same purpose we are not able to compare them at all.

Sider's knee-jerk realism is the claim that the language of physics is objectively privileged as its basic terms carve perfectly at the joints. The following example from Sider aims to illustrate how the language of physics is objectively better than the language of shymsics, which is the language that employs different terms to describe the same phenomena.

> Let T be the set of true sentences in the language of completed physics, and consider two sets of propositions. The first set, P, is the set of propositions expressed by the members of T, under their intended interpretation. Thus P is the set of physical truths. The second set, S, consists of "scrambled" propositions. To arrive at S, reinterpret all nonlogical symbols of the language of physics under some arbitrary permutation μ of the totality of objects, and let S be the propositions expressed by the members of T thus reinterpreted. The members of S are all true, since the members of T are true under their intended interpretation, and reinterpretation under a permutation preserves truth (Sider, 19).

Sider argues that P is an objectively better description of reality than S even though both of them are true descriptions, or include only true statements about the world. Denying this, he claims, would be saying that there is nothing mandatory about physics; any description of the world is just as good. It is not *merely* that P is pragmatically better or simpler than S, "the betterness … is that only the propositions in P are cast in joint-carving terms (Ibid.)."

So physics (the subject matter of P) gives us a better description than shmysics (the subject matter of S), not because P is more complete, or contains more true propositions than S but because physics, and its fundamental concepts (its ideology as Sider prefers to call it) are joint-carvers whereas shmysics and its fundamental concepts are not.

It seems fairly obvious here that Sider is assuming that physics and shmysics have the same purpose, i.e. being used to explain, predict and describe the fundamental physical structure of reality. Given that they share the same purpose I might agree with Sider that physics gives an objectively better description than shmysics. However accepting this does not support Sider's crucial thesis (3) (the claim that where we have different languages to describe reality one must be (absolutely) better) or his premise (a) of the argument for knee-jerk realism (the claim that the language that best carves world at the joints is the best language), because (3) and (a) require comparison of different languages regardless of the purposes they serve.[34] All we can conclude from all this is the following claim, which is no use for Sider's purposes: The language of physics is objectively privileged to track physical features of reality.

What would support (3) or (a) is to say that physical language is better than shymsical language *even if they don't have the same purpose*. Let us see if this is possible. Assume that P and S have different purposes in the following way. Consider that S is a set of propositions that just happen to express some aesthetic judgments. Together with Sider

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[34] I reprint here the theses and the argument for knee-jerk realism as I reconstruct it on section 2.3.1:
1. There are objective similarities and differences 'out there' in the world.
2. The point of human inquiry is to conform itself to the world in a way that correctly represents these similarities and differences rather than to make or construct them.
3. There might be different languages that state true propositions. But when there are, one must be the better description of reality. A description is better than the others just in case the propositions in that description are cast in joint-carving terms so that its ideology better matches the range of differences in the world.
4. There is an objectively privileged language which best carves nature at the joints and can be used for 'writing the book of the world'.

From these theses we might construct the following implicit argument for knee-jerk realism.
   a) The language that best carves nature at the joints is the best language (From 3 above).
   b) The language of physics is the language which best carves nature at the joints.
   c) Therefore, the language of physics is the best (most objectively privileged) language.

let us assume that aesthetic judgments have an objective element.[35] Assume further that for any statement T there is a corresponding aesthetic proposition in S. Can we say that P is better than S? No—it doesn't make sense to say so. Better for what? On what basis will we compare them? We cannot evaluate them by assuming that they both have the same purpose; this is just not the case. Thus, there are two possibilities. First, we might say that even though P and S are intended to serve different purposes, we can still compare them. Second, and more plausibly, we can concede that P and S are "just different"; they are different ways to describe reality. If we choose to go with the first one we better have good reasons to explain why the purpose of the physical description is objectively better than the purpose of the aesthetic description if, of course, comparing purposes in that way makes any sense. One might think that the physical description is more important for our survival than the aesthetic description. This is highly suspicious because we might think of situations where aesthetic or, say, political description is more important than the physical one for the purpose of our survival.[36] However, even if it is true it is hardly an argument for the objective betterness of the physical description. Therefore, we cannot say that P is better than S given that they do not serve the same purpose.

Therefore, I conclude that once we acknowledge that different languages may serve different purposes, we must reject the claim that where we have different languages to describe reality one must be (absolutely) better ((3) above). Betterness can be made sense of only relative to a purpose.

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[35] For every aesthetic judgment Sider argues that there is a physical property P that is the linguistic meaning of, say, 'is beautiful' and this is so because of the aesthetic values that the given linguistic community has. In this account aesthetic judgments are mind-independent in the sense that a mountain would still be beautiful even if there were no humans on earth. Yet there is an important sense in which these judgments are subjective (Sider, 58-59).

[36] Aesthetic descriptions are often thought to be particularly important for reproduction, and thus for the survival of the species.

When we reject (3) (that a true description of the world is better than the others just in case the propositions in that description are cast in joint-carving terms) it follows that the claim (4), that there is an objectively privileged language, is to be rejected as well. Therefore, we can conclude that the idea that there is a single best language with which one can "write the book of the world" is wrong.

Notice that once we reject (3) and (4), then the claim that the language that best carves world at the joints is the best language ((a) on Sider's implicit argument above) turns out to be false. Languages are better or worse only relative to a purpose. There are certain languages that are not introduced or used for joint tracking purposes. Think of various uses of languages such as poetry, fiction, or languages that are used to state or institute rules, or the language of law or legal theory. It does not seem that in such uses languages are trying to carve at the joints at all. Therefore the implicit argument for knee-jerk realism fails since the first premise (a) is false. Below I will argue that different languages with different purposes might mark different sorts of objective similarities and differences in nature. The world does not have only one kind of joints, namely the physical similarities and differences as one might think, but many, including aesthetic, moral, political, social, economic, etc. I will come back to this last point in 3.2.2.

3.1.4 A way out?

Sider might acknowledge the different purposes of inquiry, and the role they play in evaluation of different languages and descriptions (as we saw there are some points at which he does acknowledge, and make use of the idea of a purpose). Accordingly, he might retrench, applying his claim only to the languages that have the same purpose: mapping the fundamental physical structure of nature. The new claim would then be "The

language of physics carves nature better given that the purpose of the description is to map the fundamental physical structure." Then, he can conclude that, for instance, physics is better than shmysics, or the concepts "red" and "blue" are better than the concepts "bred" and "rue", or dividing the region with the fault line is better than dividing it with the border because the former carve nature at the joints better than the latter; the descriptions that we can get from the former employ joint-carving concepts whereas the latter descriptions fail to use terms that carve at the physical joints.

However, once Sider restricts his discussion to those languages that are intended to map the physical structure, his whole claim to preserve a robust sense of realism, namely his knee-jerk realism, loses its initial charm. If the scope of his arguments is restricted only to languages intended to describe physical then the privilege of the physical language simpliciter is a triviality; the language of physics is not unqualifiedly privileged over different languages of, say, aesthetics, economics, sociology, morality, etc. These different languages have different purposes; they are intended to do different things. Therefore, there is no ground for comparing them. If we cannot compare the language of physics with, say, the language of aesthetics, then we have no way to claim the objective privilege of the physical. So, if Sider acknowledges the plurality of purposes of languages, then he should forgo knee-jerk realism, taken as the view that the language of physics provides an objectively better description than any other language.

Perhaps Sider could make his thesis less trivial sounding by saying that the purpose of the physical language is to map the most fundamental joints, rather than the physical joints. Sider does not explicitly talk about fundamental and nonfundamental joints in nature. As we saw in 2.4. Sider's preferred view is that reality has an absolute structure.

There are no nonfundamental joints in nature. Comparative structure might be useful for different discourses, however the notion of comparative structure is not fundamental. But let's leave these interpretive difficulties aside[37], and assume for the sake of argument that Sider could actually accommodate the idea that there are degrees of fundamentality, and the purpose of the language of physics is to carve up the most fundamental ones. The question is would this move save knee-jerk realism? I argue that it doesn't. If fundamentality comes in degrees then it seems to follow that we can introduce a language to discern the less fundamental joints in nature. Call this language L. Coming back to the crucial question: could we say that the language of physics is objectively and absolutely better than L? Now that we have rehearsed this question a number of times, we can answer with confidence that no, we cannot. Comparing the language of physics and L requires that they share the same purpose in common, and yet they do not. The former aims at tracking the most fundamental joints, whereas L has the purpose of mapping a particular set of less fundamental joints. For example, take the language of economics. The purpose of economics, as mentioned above, is to explain and predict the production, distribution, and consumption of goods and services and underlying human interactions. On the proposed view, these economic phenomena are obviously not, if any, among the most fundamental joints of the reality. If the language of economics tracks reality's joints at all it carves the less fundamental ones. The question of whether the language of physics is objectively better than the language of economics can be answered only on the assumption that both languages have the same purpose. Surely this is not the case, and thus an attempt to compare these languages fails. Hence, even granted its revised purpose the language of physics cannot be shown to be objectively and absolutely privileged over

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[37] I will come back to this issue in 3.2.3.

the language of economics. Sider could still claim that the language of physics is the best for the purpose of mapping the most fundamental joints of reality. However, this claim is far from being sufficient for saving knee-jerk realism since it is no longer true that the language of physics is objectively privileged simpliciter.[38] I conclude that knee-jerk realism cannot be maintained.

However, it is important to note that this doesn't mean that we lose an intuitively realist picture of reality. Even if Sider's knee-jerk realism is wrong, we still preserve the realist view expressed in theses (1) and (2) above, according to which there are objective differences and similarities in the world, and we, as humans, are trying to wrap our minds around it to represent the world truthfully, not to construct it, or make it in some way. We can say that different languages and descriptions are supposed to mark different sorts of objective similarities and differences in nature. The physical description obviously aims to discern the physical structure, whereas the language of economics tries to discern economical differences and similarities at both the individual and societal level. I will say more on this metaphysical picture in 3.2.2.

3.2. Purpose-relativity and metaontological realism

I argued in 3.1. that realism about fundamental languages and particularly knee-jerk realism ignore purpose-relativity of comparative evaluation of candidate meanings, terms and languages, and thus should be abandoned. However, even if I am right it seems far from obvious that Sider's metaontological realism, understood as the view that contemporary first-order ontological debates are substantive, goes with it.

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[38] A similar move for Ontologese seems to be possible for Sider. I will come back to this question below when I talk about the prospects of saving serious ontology by means of the Ontologese move.

In this section I first argue that metaontological realism, in so far as it relies on realism about fundamental languages and particularly on knee-jerk realism, fails to save serious ontology. Secondly, I will argue that once purpose-relativity for different languages is accepted, there is a good reason to accept a form of pluralism about the kinds of similarities and differences in the world. Thirdly, I will revisit the question whether metaontological realism must rely on the truth of knee-jerk realism and try to see, on behalf of the metaontological realist, if there is a way to preserve metaontological realism in the face of the purpose-relativity of terms, candidate meanings, and languages. We will see that the metaontological realist might avoid some of my objections by introducing a new language that is best for certain purposes. I will examine different alternatives for such a language including Ontologese, which, I will argue below, should be carefully distinguished from the perfectly fundamental language, to recast the ontological debates. In this discussion, the purpose of introducing a new language will play a crucial role. I will look at two proposals for avoiding my objections. The first one, which, I think, would be Sider's preferred formulation, fails to preserve metaontological realism. The second formulation seems to be immune to my arguments. However, I argue that what follows will not be a defense of contemporary serious ontology but rather a proposal for a new direction for ontology.

3.2.1. Metaontological realism and the fundamental language

Recall that metaontological realism is the view on which ontological questions are substantive as there is an objectively privileged language in which the question can be recast using perfectly joint carving terms. Formulated in this way, metaontological realism seems to rely on the truth of realism about fundamental languages; the view that

there is an objectively privileged way of "writing the book of the world". If my arguments against realism about fundamental languages are successful, then metaontological realism is in trouble. For if there is no language that can be identified as the fundamental language that is objectively and absolutely privileged, then it follows that the substantivity of ontological questions cannot be guaranteed. In other words, ontological questions can be asked/answered in different ways in different languages. It might be that none of those questions/answers is objectively and absolutely better than any other: they are better or worse with respect to the particular set of purposes that the languages in question are introduced or used for. Similarly, the introduction of the fundamental language does not seem to solve the problem for metaontological realism. The claim that the fundamental language is objectively and absolutely better than natural language to ask/answer ontological questions is a nothing but a comparative claim about these languages. However, the fundamental language and natural language do not share the same purposes. It is difficult to identify the purposes that the fundamental language is supposed to serve, but for now let us say that its purpose is to carve perfectly at the joints. Natural language seems to have different objectives, which are very diverse and difficult to identify. But we can say that those objectives include but are not restricted to expressing/communicating our beliefs, emotions, feelings, describing our perceptual experience, giving commands, stating rules, asking questions, etc. However, it seems clear that the main purpose of natural language is not mapping the most fundamental structure of reality. It is true that one of its purposes is to help us describe, explain, and predict various aspects of reality that we encounter. But the goal here is typically not to uncover the most fundamental features of the world. Rather, there are various levels of

similarities and differences in the world, which can be prioritized in so many different ways (pragmatically, aesthetically, politically, biologically, etc.) that natural language enables us to track. Besides, it is a mistake to confine the purposes of natural language only to the descriptive ones. We use natural language to write poems, novels, ask questions, give commands, etc. So it seems that the fundamental language and natural language do not purport to serve the same purposes. Therefore, comparative evaluation of these different languages cannot even begin. I conclude that metaontological realism formulated in a way that relies on realism about fundamental languages cannot save the substantivity of ontological debates.

I will come back to the question whether metaontological realism must rely on realism about fundamental languages in 3.2.3. In the next section I want to see if the purpose-relativity of different languages has metaphysical consequences about structure. Doing so is crucial to support my arguments against metaontological realism, particularly my claim that there is a plurality of languages that could do equally well to track the relevant similarities and differences in the world.

3.2.2. Pluralism about joints in nature

In 2.2. I argued that Sider is committed to the metaphysical view on which there are only physical and logical joints in nature. I argued that three main characteristics of Sider's notion of "structure"—i.e. completeness, purity and absoluteness—are responsible for this particular commitment. Against Sider's pure and parsimonious realist metaphysical picture, I propose a pluralist and permissive realist metaphysical view about the nature and the diversity of similarities and differences one could find in reality. These similarities and differences are not restricted to physical and logical ones; rather there is a

plurality of similarities and differences in the world, or, to put in Sider's own terminology, there are various kinds of joints in nature. Physical, chemical, sociological, economic, biological, geographical, linguistic, psychological languages and descriptions all aim at sorting the relevant similarities and differences. If we accept the purpose-relativity of languages, then the following argument will give a good reason to accept pluralism about joints in nature.

I have been arguing that different languages are introduced for different purposes. In order to give some examples for the kind of purposes that different languages might have, we can, for the sake of simplicity, cheat a bit and claim that, say, physical language aims at discerning physical similarities and differences; chemical language tracks chemical joints in nature; the language of economics tries to carve at economic joints, and so and so forth.[39] But some languages are not introduced or used to track/carve/map similarities and differences. Consider a poetic use of a language or a language that is introduced to state rules, algorithms, or to tell fictional stories. These languages or said uses are not trying to describe reality in any way. The kind of pluralism I defend, therefore, is not only a pluralism about different languages' abilities to discern structure, but, more importantly, it is a pluralism about the kinds of purposes that different languages might have. Given pluralism about the purposes of different languages, I concluded that their comparative evaluation requires the sameness of their respective purposes. If some of these languages successfully track the kind of similarities and differences in nature that they are introduced for, then there are those similarities and differences. A similar claim seems to be something that Sider has in mind for the relation between the fundamental language (or joint carving notions) and structure, but of course he is driven by the

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[39] I discuss in some detail what kind of purposes these and other languages have in 3.1.3.

principle of parsimony that motivates him to argue that only the fundamental language

discerns joints in nature. If we do not hold a uniform expressivism on which none of

these languages have descriptive purposes at all, then it seems that some of the languages

I mention above do discern the kind of similarities and differences they aim to. A form of

such expressivism about, say, the language of sociology, would claim that assertions in

this language are not attempting to state facts or describe a certain state affairs that hold

in the world, rather they are trying to do something completely different; for example

they are trying to express a certain kind of evaluative attitude towards a particular social

phenomena. So similarly the language of sociology, on this view, is not aiming to track

similarities and differences in the world, but, say, finding an apt linguistic apparatus for

expressing our attitudes. Even though such expressivism might be attractive for certain

languages such as moral language it is not easy to see whether anyone in this debate

would like to hold global expressivism about the purposes of various languages. Sider

seems to agree that that using some of these languages one could provide true

descriptions of reality. The following passages demonstrate that he is very careful to state

that he is not committed to a dismissive attitude towards everyday ordinary language and

the languages of special sciences:

> Linguistics, psychology, economics, and other special sciences may be
> carried out in their own languages—largely natural languages, enhanced
> here and there with special-purpose vocabulary. Sentences of special-
> science languages have metaphysical truth-conditions, but these are of no
> more concern to the special scientist than the underpinnings of her
> discipline in fundamental physics. (…)
>   The advantage of this approach is that it allows linguists, psychologists,
> and economists to be guided by considerations internal to linguistics,
> psychology, and economics. It would be inappropriate to complain to an
> economist that economies don't really exist, or to insist that an engineer
> rewrite her book on repairing potholes to reflect the fact that holes do not
> really exist. (Sider 2011, 123).

Since we can successfully describe different aspects of the world using various languages with different purposes, which aim to track different similarities and differences I conclude, *pace* Sider, that there are actually many different kinds of similarities and differences in nature.

It is important to notice that this permissive pluralist metaphysical picture still retains realism about structure, namely the claim that there are objective similarities and differences in the world that we all trying to wrap our minds around. The main difference with Sider's metaontological realism is, then, the rejection of realism about fundamental languages.

3.2.3. Ontologese and the promise of metaontological realism

As a last attempt to save realism about the fundamental language Sider could argue that a language is objectively and absolutely better than others regardless of their purposes if and only if one involves more perfectly joint carving terms than the rest. I argued above that such comparison is groundless; betterness is a three-place relation where x is better than y for the purpose P.[40] To put it differently, one thing could be better than another only with respect to a certain purpose.

The question we must ask now is whether metaontological realism requires realism about fundamental languages. The answer, I will argue, depends on what metaontological realism is supposed to do for contemporary ontological debates. If metaontological realism is supposed to be a defense of serious ontology as it has been practiced for the last few decades then it requires the truth of realism about fundamental languages as I

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[40] I leave aside moral comparisons as it seems the notion 'better' in moral contexts operate rather differently which I take it to be a good reason to think, though I have no argument for, that that the expression 'better' in moral discourses has a different meaning which is derived from the moral 'good'.

argued in 3.2.1. If, on the other hand, metaontological realism is supposed to be an articulation, and a defense of a new proposal for the methods, the scope, the main questions, etc. of ontology, then it is not required for the metaontological realist to accept realism about fundamental languages.

In this section I will first consider whether Sider, if he rejected the idea that there are fundamental languages, could propose a language that (i) is best for certain purposes, (ii) looks and feels like a fundamental language—in terms of its predicates and logical connectives—, and (iii) saves the substantivity of standing ontological debates. I argue that even though it is possible to come up with a new language that satisfies (i) and (ii), metaontological realism, under these new proposals, will fail to achieve (iii). Secondly, I will consider Ontologese, the language with the perfectly joint carving quantifiers, which need not be a fundamental language, and yet has a better claim to satisfy (iii). I argue that even though Ontologese, as a proposed language to conduct ontology, does a better job than the previous alternatives, it fails to make good on the promise of metaontological realism: preserving the idea that ontological debates of the last few decades are serious, theoretical, substantive debates about the constituents of the world.

Let me begin by putting the question about whether metaontological realism requires realism about fundamental languages in a different way. Why can Sider not just concede the purpose-relativity of languages, and thus give up on realism about fundamental languages, but still argue that we can introduce a new language, call it Language_o, that is objectively better than any other language that has the purpose of carving at the joints? Language_o will look and feel like Sider's fundamental language, for example, its predicates will mostly be the fundamental terms of physics, yet Language_o will not be a

fundamental language, that is, it is not a language, which is objectively and absolutely better than any language whatsoever (without any reference to purpose).[41] Language$_o$ will be objectively better than any other language relative to the purpose of carving at the joints. Thus it may be that a poetic language is objectively better than Language$_o$ with respect to a certain aesthetic goal, but if the evaluation is based on which one is better in terms of carving at the joints, Language$_o$ is objectively better. Given that there is such a language as Language$_o$ serious ontology can safely mind its own business, the metaontological realist might continue, since the debates can always be recast in this new language, and thus are guaranteed to be substantive. The comparative evaluation of Language$_o$ and other languages with the same purpose is now possible. If the purpose is precise enough to pick out Language$_o$ as the best, then it seems metaontological realism successfully saves serious ontology. There is a caveat, though. If there are only certain kinds of joints in nature, then this purpose—i.e. carving at the joints—might be specific enough to pick out Language$_o$ as the best language. For example, if there are only physical and logical joints, then Language$_o$ will be the best language for carving nature at its joints. I argued in 2.2. that this is in fact Sider's metaphysical view about nature, and it seems it fits very well with the above line of response. In the previous section, however, I argued that if one accepts (i) purpose-relativity of languages, and (ii) grants that one could use different languages to provide true descriptions of reality, then it follows that there are various kinds of joints in nature, which cannot be confined to physical and logical ones. We assumed on the above response on behalf of metaontological realist that

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[41] It would be a mistake to identify Language$_o$ with Ontologese. Even though Language$_o$ is not a fundamental language, it is still a pure language that consists of terms that carve perfectly at the joints. Ontologese, however, does not need to be pure. What is distinctive about Ontologese is that only its quantifiers must be perfectly fundamental. Predicates in Ontologese might fail to carve at the joints. I will come back to what Ontologese can do to save serious ontology below.

he accepts (i). It is clear that Sider accepts (ii) as well.[42] Accepting (ii) is actually one of the strengths of Sider's metaontological realism: the serious ontologist does not need to reject the truth of ordinary existence claims, or the existential claims made in special sciences and thus is not forced to provide an error theory for such languages.

If I am right, and there are various kinds of joints in nature (physical, chemical, biological, economic, etc.), then it follows that $Language_o$ cannot be the best language with the purpose of carving at the joints. Here is why. All the languages that are trying to track objective similarities and differences in nature can be very generally said to have the purpose of carving at the joints. That is, we can say that the language of chemistry has the purpose carving at the joints, and so does the language of physics, or the language of sociology, and so on. The purpose in question—carving at the joints—is too broad, and as a result one can attribute it to any language that aims tracking a certain aspect of the world in some way. So it might be that many languages are just as good at carving at the joints. That is, many languages (including $Language_o$) might do equally well given that their purpose is to carve at the joints. None of these languages, then, would be objectively privileged. Therefore, the proposed purpose of carving at the joints fails to pick out $Language_o$ as the best language. This failure has a significant consequence for metaontological realism. The metaontological realist can no longer claim that contemporary ontological debates are substantive, since there is no objectively privileged language in which these debates can be recast—even if we appeal to a shared purpose like carving at the joints.

Metaontological realists could argue that we can think of a language, call it $Language_u$, that unifies the special languages of economics, sociology, physics, etc. Can

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[42] See 3.2.2.

we not, then, say that Language$_u$ is the best language that carves nature at the joints? It is, of course, possible to unify the special languages that aim to track various kinds of similarities and differences in the world, and have a single comprehensive language that is sensitive to different kinds of joints in nature. I agree that Language$_u$ would be better, in a certain sense, than the language of, say, economics. However, its betterness would not be about how well these languages carve at the joints. The right thing to say would be, though both Language$_u$ and the language of economics might carve equally well at the joints, the former carves more kinds of joints than the latter.

Sider argues that the fundamental language (which is, according to him, mostly the language of physics plus some logical connectives) is absolutely and objectively the best language. However, he does not deny that we make true existential claims using, say, the language of chemistry. Even if we can truly describe the world using either language, the description made using the fundamental language is objectively better since it is cast in perfectly joint carving terms. Ontologists, on this view, need not reject the existential claims made using non-fundamental languages. This does not, however, mean that there is no job left for ontologists. They could insist on writing the book of the world using the fundamental language. Their description will be superior to the ones made using non-fundamental languages, as only the fundamental language consists purely of perfectly joint carving terms. Now, if it turns out that the fundamental language is not as parsimonious in terms of its predicates as Sider argues, but rather it is this unified language which is composed of various (special) languages, then the question will be if there is anything distinctive left for ontologists to do. The book of the world written using

the unified language will be more like an encyclopedia written with different (special) languages that are adopted for different purposes.

If the problem with the first proposal above is that the purpose is too broad, then perhaps the metaontological realist could provide a more specific purpose for Language$_o$ to maintain serious ontology. One obvious way of doing so is to argue that the purpose of Language$_o$ is to carve *the most fundamental joints* in nature. So even though there may be many kinds of joints in nature, Language$_o$ is trying to track the most fundamental ones. It seems that the new proposal gets its way around the problem I raised above. Given this particular purpose Language$_o$ might actually be objectively the best language, and thus metaontological realism could guarantee the substantivity of contemporary ontological debates. I have two responses against this optimism; one concerning the right interpretation of Sider's metaphysical views, the other concerning what metaontological realism can legitimately claim to be doing under this new proposal.

Let me begin with the first response. It seems that taking the purpose of Language$_o$ as carving at the most fundamental joints requires that structure is ordered in such a way that it makes sense to talk about degrees of fundamental joints. If so, this proposal creates some interpretive problems for Sider. He emphasizes that the fundamental is absolute; it does not come in degrees. In other words, structure is flat; it is not ordered. So this direction demands some changes to Sider's metaphysical views about structure. It seems that he needs to acknowledge that structure is comparative and thus should give up on the

absolute notion of structure.[43] How big of a cost is this for his overall account? I do not know. This is an important question that has to wait for another occasion.[44]

Even if we ignore the interpretative difficulties with this proposal, there is a significant concern that I think metaontological realists should have if the goal is to save the substantivity of extant ontological debates. Sider characterizes metaontological realism as the view on which ontological questions are deep, theoretical, substantive (in the sense explained in 2.4.) questions about reality's structure (Sider, 168). We saw that on the latest proposal on behalf of the metaontological realist that ontological debates are substantive since the ontological questions can be posed in Language$_o$. One might think that this does not mean that ontological debates should actually be recast in Language$_o$; what matters is, he might continue, that the debates *can* be recast in Language$_o$. Therefore, if we can provide a language that we all can identify as Language$_o$, the substantivity of ontological questions is secured, and we don't actually need to construct the whole debate in Language$_o$. If, however, my arguments are successful this is no longer the case: serious ontologists do have to adopt Language$_o$ to have a debate about (philosophically interesting) existence questions. Let me explain. In contemporary ontological debates, as I will argue in the next chapter, different ontological views are often accompanied by a proposal for a new language, or a defense of an already existing one to talk about the constituents of reality. I argued that these debates, in so far as they are debates about which language is objectively better, cannot even get off the ground, since the comparative evaluation of the proposed languages requires the sameness of their

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[43] See section 2.2 for a detailed discussion on Sider's views on absolute and comparative notions of structure.

[44] See Schaffer (2014) for a discussion of the tension between Sider's use of comparative and absolute notions of structure.

purposes, and this requirement typically is not satisfied.[45] As a response to my argument we saw that Sider could claim that serious ontological debates are possible since we can introduce an objectively privileged language, Language$_o$, with the purpose of carving at the most fundamental joints. Different parties to the debate can adopt Language$_o$, and recast the whole debate in this new language. Since, the response continues, it is no longer the case that the debate is between those who use different languages with different purposes, but within a language that has a unique purpose, my arguments simply fail to apply in this new formulation of metaontological realism. But now, notice that the metaontological realist claims that in order to have a debate between serious ontologists they need to adopt this new language, i.e. Language$_o$. Therefore, on metaontological realism ontological debates are deep, theoretical, substantive debates about reality's structure in so far as they are taken to the metaphysics room where all opposing parties speak Language$_o$.

I agree that under this new proposal, my arguments might be rendered idle; they do not seem to pose any threat to the debates that are conducted in Language$_o$. However, this proposal brings about a different, and very important problem for the metaontological realist. If one looks at the kind of purposes serious ontologists seem to have in mind when they introduce a new language, or defend an existing one, one will see that "carving at the most fundamental joints", or "tracking the most fundamental similarities and differences in nature" is not often among those purposes. For example, as I will argue in the next chapter in much more detail, among the purposes behind Trenton Merricks's proposed language are the following: providing a minimal ontology and compliance with

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[45] In the next chapter I present an example where the requirement is not fulfilled.

plausible metaphysical principles, such as the principle of causal adequacy.[46] Similarly, Merricks's opponent, Lynne Rudder Baker's defense of ordinary language or the languages of special sciences seems to suggest that the kind of language she is proposing for doing ontology has different purposes. Such a language, for example, aims to guarantee the rationality of human practices and attitudes towards the things that we talk about, encounter and interact with in our everyday life. It also has the purpose of helping us to provide the most straightforward explanation of existential claims we make in moral, political, social, and legal discourses. The point, I think, generalizes to many contemporary ontological debates about whether there are, for example, ordinary objects, mereological sums, abstract objects such as numbers, propositions, musical works or fictional objects, and so on. In these debates, serious ontologists of different persuasions will have very different purposes in mind as they propose a language to provide an ontological description of reality, and yet it is difficult to see their having something like "carving at the most fundamental joints" in mind. But if this is true, then metaontological realism under this new proposal fails to save the substantivity of these debates. In order to have substantive debates, according to metaontological realism under the new proposal, serious ontologists must adopt Language$_o$. Metaontological realism cannot guarantee the substantivity of ontological debates that are not conducted in Language$_o$. It is very difficult to see that serious ontologists, especially the ones that argue for some form of common sense ontology, would be willing to dispose of their preferred languages, and adopt Language$_o$ instead. Even if I am wrong, and Merricks and Baker speak ordinary English in their ontological debates, this point still stands, as ordinary English is not

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[46] Trenton Merricks and Lynne Bakes do not take themselves to be proposing new languages to speak about what there is. They rather think that they are making existence claims in ordinary English. In the next chapter I will argue that they do, in fact, suggest different languages to state their respective ontologies.

identical with Language$_o$. Since parties to different ontological debates have not been speaking Language$_o$ to conduct their debates, this new proposal on behalf of the metaontological realist fails to save the substantivity of many extant ontological debates.[47] Ontology in its new designated room conducted in its new designated language, Language$_o$, will not look like the discipline of ontology we are familiar with from decades of past debate, even though its main question "What is there?" seems to remain the same. First of all, rival ontologists will have to speak a completely different language in the ontology room. But even before that ontologists have to agree on Language$_o$, its predicates, logical connectives, sentential operators, etc. Secondly, if Language$_o$ is quite parsimonious with respect to its predicates, that is if the only predicates Language$_o$ could have are the most fundamental predicates of modern physics, then it seems that many prevalent questions of ontology, such as whether there are ordinary objects or abstract entities like fictional characters, cannot be asked, and debated about in the ontology room. Therefore, under this new interpretation metaontological realism seems to come down to a new proposal for doing ontology.

There is actually a better theoretical route that the metaontological realist can take against the kind of worries that I have been raising for Language$_o$. Instead of proposing a perfectly joint carving language like Language$_o$, the metaontological realist could suggest that serious ontologists adopt a language that is objectively better for the purpose of doing ontology. Such a language does not need to have all its predicates carve perfectly at the joints. What is required for conducting serious ontology, this line of response goes, is that the existential quantifier carves perfectly at the logical joints. This is actually Sider's

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[47] Note that this doesn't mean that the debate between Merricks and Baker is not substantive, but only that metaontological realism supported with this proposal fails to account for the substantivity of their debate.

Plan B: If natural language quantifiers fail to carve at the logical joints, switch to Ontologese, the language with a perfectly fundamental existential quantifier, to do serious ontology. Ontologese is not a fundamental language; it need not be pure—consisting all and only of perfectly joint carving terms. What distinguishes Ontologese and natural language, or the languages of special sciences, etc. is the way in which the meanings of Ontologese quantifiers are determined:

> Ontologese quantifiers are to have meanings that carve at the joints, but are otherwise as similar as possible (in inferential role, for instance, as well as in extension), and similar enough, to the meanings of the ordinary quantifiers (Sider, 172).

Let me explain what follows with a typical example from recent ontological debates. Take the question whether there are tables. When phrased in ordinary English, according to Sider's Plan B, the philosophical existence question "Are there tables?" might have an easy affirmative answer since the ordinary English existential quantifier might not carve perfectly at the joints and so it might be defined by use that makes the inference from "There are particles arranged tablewise" to "There is a table" come out true as valid and trivial.[48] If that is the case, serious ontologists should switch to Ontologese, and ask the question using the most fundamental sense of the existential quantifier (I will italicize the Ontologese quantifier to distinguish it from the ordinary English quantifier): "*Are there* tables?". The Ontologese question cannot be easily answered by appeal to use as before. If rival ontologists, following the Plan B, agree on entering the ontology room and adopting Ontologese to debate over the question "*Are there* tables?", my objections against metaontological realism are rendered irrelevant as they no longer propose different languages that are supposed to serve different purposes.

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[48] See Thomasson (2007) for a defense of such trivial inferences.

I concede that the argument from purpose-relativity of languages do not apply to Sider's Plan B. However, this does not mean that metaontological realism pursued in this way successfully saves the substantivity of extant ontological debates. The problem with the Plan B is quite similar to the problem we saw above with Language$_o$. It is true that Ontologese, unlike Language$_o$, lets us borrow most, if not all, of ordinary language predicates. That means adopting Ontologese should not be as worrying as adopting Language$_o$ for different serious ontologists, especially common sense ontologists who defend the existence of ordinary objects. However, adopting Ontologese does not come as cheaply as one might hope. It requires using the quantifiers in its most fundamental sense. So existence questions, returning to the example above, become questions of the following sort: Are there tables, in the most fundamental sense of "there is"? An obvious worry, which is raised by Thomasson (forthcoming b), is whether there is such a sense not only for quantifiers but for any logical expression at all. Unlike certain predicates, logical expressions seem to lack content; they are purely formal or do not aim to describe the world (Thomasson, 11).

> If our logical terms, including the quantifier, are not aiming to map structure—if they are not terms with that function at all—then we can reject the Ontologese quantifier without pronouncing on what the actual structure of the world does or does not include. This is fundamentally a thesis about the role of logical terms in our discourse, not about what sort of metaphysical structure the world has or lacks. […] And so we can reject the claim that the quantifier is joint-carving (or that there is a joint-carving quantifier to retreat to on Plan B) without making a new and substantive metaphysical commitment (Sider 2011, 13).

If we reject the idea that quantifiers could have joint carving meanings, then Ontologese as Sider conceives it is not a possible language at all, since the distinctive characteristic of Ontologese is its joint carving quantifiers.

Even if we accept that quantifiers might have perfectly joint carving meanings, and thus that it is possible to introduce and adopt Ontologese, there is a serious problem that persists for the metaontological realist if the point of metaontological realism is to save the substantivity of extant ontological debates rather than changing the subject, or proposing a new direction for ontological inquiry. If one looks at the debates over the existence questions such as whether there are ordinary objects, temporal parts, mereological sums, or abstract entities, one will see that the parties to these debates typically take themselves to speak ordinary English. I will argue in the next chapter by looking at the ontology of ordinary objects that serious ontologists often propose a novel language, an alternative to ordinary English, to fulfill the kind of purposes they have in mind. Regardless of whether I am right or not, it is clear that disputants are not speaking Ontologese. The debates are not over whether there are ordinary objects in the most fundamental sense of "there is", or *there are* ordinary objects but rather whether there are ordinary objects or not. What is more, some serious ontologists explicitly reject the idea that the existential quantifier might have different meanings in different languages. Peter van Inwagen (2009) is one of the foremost examples of those philosophers. According to van Inwagen "existence", or "there is", or "∃**,** the existential quantifier of the first-order logic, (which is the translation of "there is" in the formal language of first-order logic) is univocal. In his arguments against Putnam's quantifier variance van Inwagen clearly states that "there is" has a single meaning:

> A single, "fixed in advance" meaning for "there is" (Putnam in several places describes the thesis he opposes as the thesis that there is a single, "fixed in advance" meaning for "there is") seems to be a presupposition of any attempt to extend the meaning of any term by convention (van Inwagen 2009, 491).

Van Inwagen explicitly argues that "∃" is the regimented version of the ordinary English quantifier "there is". Since Sider's metaontological realism, and particularly his Plan B, which is based on the assumption that ordinary English quantifiers fail to carve at the joints, requires that quantifier meanings might vary in different languages, it would not be wrong to claim that serious ontologists who reject quantifier variance (i.e. the view that quantifiers might have different meanings in different languages) such as Peter van Inwagen, might not be even willing to accept that Ontologese is a possible language, let alone to agree on adopting it as the language for ontological inquiry. So if the disputants in the ontological debates of the last few decades have not been speaking Ontologese, then metaontological realism supplemented with Sider's Plan B cannot save the substantivity of those debates. The only prospect that remains for metaontological realism seems to conceive it as a proposal to change the topic in ontological debates. Serious ontologists, under this new proposal, should ask existence questions in the following form: Are there Xs, in the most fundamental sense of "there is"? This, of course, assumes that the existential quantifier does have a perfectly joint carving meaning, a controversial claim that is in need of a better defense. My point here is not that this new direction that metaontological realism proposes for ontology, assuming that it successfully defends the idea of joint carving quantifier meanings, is somehow mistaken or not worth pursuing, or not possible to pursue, but that metaontological realism fails to provide what it is promised or advertised for; namely justifying the claim that the extant ontological debates are deep, theoretical, substantive debates about the constituents of reality.

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Let me summarize what I argued above by drawing attention to the relations among the following theses that Sider defends in his work:

   (1)   There is a best, fundamental language in which one can write the book of the world.

   (2)   We can introduce a novel language, Ontologese, whose quantifiers carve perfectly at the joints.

   (3)   Ontological debates are substantive.

(1) is realism about fundamental languages. I argued that (1) is false. This is because languages are introduced or used to serve certain purposes, and betterness is only relative to a purpose. Therefore, there is no fundamental language understood as the language that is objectively and unqualifiedly the best language. This means that (3) cannot be defended on the basis of (1). Even though there are places in Sider's book where it seems he argues that metaontological realism relies on realism about fundamental languages, his defense of serious ontology does not necessarily require maintaining that there is a fundamental language. As I discussed above Sider's alternative route for defending serious ontology only requires a possibility of a language with perfectly joint carving quantifiers. Therefore, we should focus on whether (3) can be defended on the basis of (2). But before we should ask the question whether the falsity of (1) undermines (2). It seems not. Ontologese should not be taken as a fundamental language; all that is required for its introduction is the availability of joint carving quantifiers. If it is plausible to think that logical notions carve perfectly at the joints, then there is no reason to object to Ontologese. My arguments against (1) are not relevant to the possibility of Ontologese. Therefore, the rejection of (1) gives us no reason to reject (2). But the main reason behind

Sider's insistence on the possibility of Ontologese is to guarantee the truth of (3), the substantivity of ontological debates.

Whether (2) supports (3) depends on what we mean by ontological debates. If "ontological debates" refers to the extant ontological debates then (2) cannot guarantee the truth of (3). The substantivity of extant ontological debates, I argued, requires that the rivals actually adopt Ontologese and continue their debate in the metaphysics room. However, a quick review of some of the contemporary ontological debates shows that the rivals are not using (or not even willing to use) Ontologese. In most cases they take themselves to be speaking ordinary English.[49] Therefore, the mere possibility of Ontologese cannot guarantee the substantivity of extant ontological debates. The best one can hope to get from (2), I argued, is to take it to account for the substantivity of a new kind of ontological debate; a debate over the question "What is there, in the most fundamental sense of "there is"?". The prospects for such a debate, as I noted above, depend on whether or not the existential quantifier has a joint carving meaning. I leave this question for another occasion. My main concern here has been if Sider's metaontological realism can defend the substantivity of extant ontological debates. I hope my arguments have shown that Sider fails to provide a robust theoretical ground that he promised for serious ontology as it has been practiced in the last few decades.

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[49] I will say more on this in the next chapter concerning the debate over the existence of ordinary objects.

Chapter Four

Purpose-Relativity and the Ontology of Ordinary Objects

Sider claims that the ultimate goal of metaphysics is to discover the structure of reality; what the world is really like. Inquiries about necessity, essence, concepts or ontology might help us to achieve this goal but one should not forget what all these investigations are for, namely an insight to the structure of reality (Sider 2011, 1). So if Sider is right about the structure of nature, and the idea that there is a single privileged way of describing it, a very strong form of realism for the status of first-order ontological debates follows. On this realism, ontological debates turn out to be quasi-scientific debates about fundamental structure and the constituents of reality. I argued that there is no single privileged way of describing the world; there is plurality of ways that could describe reality equally well. I concluded that Sider's metaontological realism fails to save the substantivity of extant ontological debates.

In this chapter I will take the debate over the existence of ordinary objects, which is one of the most prominent ontological debates of last few decades, and see how Sider would argue for its substantivity. My aim here is *not* to deflate the ontological question about ordinary objects, or to show that the debate is merely verbal, or to prove that it is not serious, or not possible. There is already a number of skeptical/deflationary metaontologies that aim to do exactly that.[50] Rather my arguments are directed at one of the most comprehensive, compelling, well-argued, and robust defenses of the debate over the existence of ordinary objects: Sider's metaontological realism. If successful, my arguments show that this particular metaontology cannot establish the substantivity of the debates about the existence of ordinary objects in the face of recent deflationary and skeptical attacks. Therefore, I conclude, the debates about the ontology of ordinary objects as they have been conducted in the last few decades are still in need of defense.

In what follows, I first briefly describe the debate over the existence of ordinary objects. I take a representative figure from each side; Lynne Rudder Baker for the positive, and Trenton Merricks for the negative answer to the question whether there are ordinary objects. I provide two interpretations for Sider's defense of substantivity of the debate. The first interpretation requires taking the alleged rivals to be speaking different languages. I argue that this particular account fails to save the debate due to the purpose-relativity of the languages in question. The second interpretation does not rely on the idea that opposing parties are using/proposing different languages. The arguments from the purpose-relativity are moot for this interpretation. However, this is still not good news for Sider since, I argue, this new interpretation of metaontological realism cannot provide a

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[50] For such deflationary and skeptical views on the ontology of ordinary objects see Thomasson (2007), Hirsch (2002a; 2002b), Sidelle (2000), Chalmers (2009), and Bennett (2009).

defense for the view that the debate is substantive, but instead proposes a new direction,

and a new question for the ontology of ordinary objects: "Are there ordinary objects in

the most fundamental sense of "there is"?"

4.1. Are there ordinary objects?

The question whether there are ordinary inanimate objects like tables, chairs or

mountains is an old question in ontology. One useful way to carve the debate is to

determine how permissive the proposed ontologies are.[51] For the purposes of this chapter,

however, we can simply take "yes" or "no" as the alleged rival positions. I will look at

two contemporary views. Lynne Rudder Baker (2007) gives an affirmative answer:

> If I am correct, then the ordinary things that we commonly talk about are
> irreducibly real, and a complete inventory of what exists will have to
> include persons, artifacts, artworks, and other medium-sized objects along
> with physical particles (Baker 2007, 4).

She thinks that we need to take ordinary language and its commitment to ordinary

objects seriously, because otherwise it would be really hard to think that our attitudes and

practices are rational (Baker, 6). Trenton Merricks (2001), on the other hand, argues for

an eliminativist view in which "there are no inanimate macrophysical objects such as

statues or baseballs or rocks or stars (Merricks 2001, vii)." Instead, there are, assuming

that matter is not infinitely divisible, simples arranged in certain ways, for instance

tablewise (Merricks, 3). Yet on Merricks' view there is no further entity, i.e., a table, over

and above atoms that are arranged in a certain way. This account, then, eliminates

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[51] See for example Korman (2011). On his classification there are three conceptions of objects: ordinary, eliminative, and permissive conceptions. On the ordinary conception of objects there are only objects that we recognize in our everyday life (Korman 2010; Elder 2004). Eliminativist conception might have different versions depending on how restrictive the ontology is. Nihilism, for example, allows only simples (Dorr 2005), whereas organicism argues that there are only simples and living beings (van Inwagen 1990). Permissivism recognizes more than what we ordinarily take to exist (Lewis 1986; van Cleve 1986).

ordinary macrophysical objects from the inventory of existing things.[52] The dispute

between Baker's and Merricks' rival ontologies is ostensibly a dispute about whether we

should take our ordinary language (ontologically) seriously; that is, whether we should

accept the existence of ordinary objects, which our everyday language quantifies over.

A deflationist like Eli Hirsch might respond that this debate is merely verbal because

each disputant states truth in their own languages. Take the following as one of the

existential claims that Merricks and Baker seem to disagree on:

S: There are tables.

Baker claims that S is true, whereas Merricks denies it.[53] According to Hirsch, the

debate is merely verbal because both parties can agree that the opposite side is saying

something true with respect to S in their own language. The variation in Baker and

Merricks' languages is mostly due to the variation in the meanings of the existential

quantifier. So Hirsch argues that the existential quantifier in Baker's language has a

different meaning than the quantifier Merricks uses in his language. Let's say that Baker

is speaking B-English, and call its existential quantifier quantifier$_B$, and Merricks is

speaking M-English with quantifier$_M$. Hirsch's claim is that if S is uttered in B-English,

where the quantifier is quantifier$_B$, S is true. If, however, S is uttered in M-English with

quantifier$_M$, then S comes out false. So quantifier variance, according to Hirsch, implies

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[52] Merricks argues that humans exist, but this is not important for our discussion because the question here is about the existence of (inanimate) ordinary objects of everyday life.

[53] Merricks' attitude towards S is a bit complicated. Even though, he argues, S is false; it is 'nearly good as true':

> 'Statues exist' is false but nearly as good as true. 'Unicorns exist' is merely false. The nearly as good as true, (…), are better than the merely false with respect to a cluster of epistemic norms. [N]early as good as true are also better than the merely false with respect to certain practical issues (Merricks, 175).
>
> Eliminativism is true. And when the folk say 'there are statues' they ordinarily mean that there are statues. Thus the folk often say, and often believe, *falsehoods*. But false folk beliefs are *nearly as good as true*. Their being nearly as good as true makes them better, with respect to a number of epistemic norms, than the beliefs like 'there are unicorns (190).

that there is an interpretation for "there exists something" or "there is" such that S comes out true, and a different interpretation on which S is false. But still it is not yet clear why the debate is supposed to be merely verbal. In order for the dispute between Merricks and Baker to be merely a verbal dispute it must be, on Hirsch's view, that the disputants each must be able to translate the claims of the other to something true in their own languages. That is, it must be the case that Baker is able to provide an interpretation for S in B-English such that when Merricks says "S is false" he is expressing truth in his language. Likewise, Merricks must be in a position to give an interpretation for S in M-English such that when Baker says "S is true" she says something true in her language. Baker could provide an interpretation for S in her language, B-English, by restricting quantifier$_B$ to simples and human persons, whereby Merrikcs' judgment about S, namely "S is false", comes out true. Merricks could provide the following interpretation for S in his language so that Baker says something true when she affirms S:

S*: There are simples arranged tablewise.[54]

Hirsch concludes that since both Baker and Merricks are able to provide plausible interpretations for S under which what the opposite party says comes out true in their language, the ontological debate on whether S is true is merely verbal.

4.2. Two routes for metaontological realism

I argue that that there are two interpretations for Sider's response against Hirsch's quantifier variantism. I also argue that these interpretations have crucial implications for what metaontological realism can legitimately claim to achieve. Only the first

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[54] More precisely "There are simples arranged tablewise only if, if there were tables, then those simples would compose a table". This is so since, Merricks argues, knowing that there are simples arranged tablewise requires having the (empty) concept of *table* (Merricks, 188).

interpretation, if successful, could save the substantivity of the debate between Baker and Merricks. I argue that metaontological realism on this interpretation is not successful as it overlooks the purpose-relativity of different languages. The second interpretation, as I argued in the previous chapter and reproduce here using the particular debate at hand, fails to restore the substantivity of their debate. Instead, I conclude, metaontological realism under this interpretation proposes a new question, and a novel language for ontological inquiry.

4.2.1. Route #1: B-English vs. M-English

The first interpretation, call it metaontological realism$_1$, grants Hirsch that the alleged rivals are speaking different languages, and stating truths in their respective languages, whereas the second interpretation, metaontological realism$_2$, need not assume variance in languages, but only in quantifiers. That is, on metaontological realism$_2$ although the alleged rivals might be speaking the same language, they use the existential quantifier with different meanings.

Before going any further, let me clarify the sense in which I use, or better inherit, the notion "language", as it might strike the reader somewhat odd. I borrow this particular use from Sider, and he seems to take it from Hirsch's formulation of Quantifier Variantism. Consider Merricks and Baker's seemingly inconsistent existential claims about alleged inanimate composite objects. According to Hirsch, the principle of charity commands that both sides to the debate ought to interpret the other party as saying something true in their own language, if, of course, such interpretation is possible.[55] Leaving aside the questions about whether quantifier meanings could actually vary in a

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[55] The details of his account can be found in Chapters 1 and 2.

non-trivial manner, on Hirsch's view the source of the difference between Baker and

Merricks' languages is the variance in the meanings of their quantificational terms. More

particularly on Hirsch's view languages, at least in so far as the purpose of his discussion

goes, are individuated by their interpretation. Different languages do not have the same

interpretation. An interpretation of a language is a function that assigns each sentence of

the language certain truth-conditions:

> I'll follow Lewis in taking a "proposition" to be a set of possible worlds. And I'll follow Kaplan in taking a sentence's "character" to be a function that assigns to the sentence, relative to a context of utterance, a proposition (the proposition being the set of worlds in which the sentence holds true). The character can also be said to give the sentence's "truth conditions" (relative to a context of utterance). By the "interpretation" of a language I'll mean a function that assigns to each sentence of the language a character. Note that interpretation in this sense is defined in terms of the characters of sentences, not in terms of the reference of expressions. I assume that, at least for our present purposes, a language is individuated by an interpretation; that is, distinct languages do not have the same interpretation (Hirsch 2011, 223-224).

Variance in quantifier meanings leads to variance in interpretations, and hence

variance in languages.

It is important to note that both Hirsch and Sider think that the variance in quantifier

meanings affects the whole language:

> When we vary what the quantifiers mean, we thereby also vary the meanings of all other expressions that are tied up with the "idea of a thing": names, predicates, function symbols. Indeed, the meanings of these categories, construed as semantic categories, must vary. For the notions of name, predicate, function symbol, and quantifier are interconnected (Sider 2011, 182).

This idea also plays an important role in Sider's introduction of Ontologese as the

language that ontologists could safely adopt just in case ordinary English quantifiers fail

to carve at the logical joints. Notice that the source of the difference between Ontologese and ordinary English is the variance in quantifier meanings.

In our discussion here I will follow Sider and Hirsch, and take a variance in interpretation or variance in quantifier meaning (assuming, again, that such variance is possible) as a sufficient condition to distinguish one language from another.

In order to see whether Merricks proposes a different interpretation, on Hirsch's sense of the term, we first need to resolve certain complications that come with Merricks' insistence on saying things like "There are statues" and claiming that the statement is true:

> I recently remarked to my 5-year-old daughter, while at a museum, "there is a statue of a Roman emperor". Was I lying? Did I say something false? No and no. For, I —unlike the folk—do not speak falsely when saying things like "there are statues" in the ordinary business of life (Merricks, 186).

But when he utters the sentence "There is a statue of a Roman emperor" in an ordinary context like above what he means is there are simples arranged statuewise. It must, however, be noted that on Merricks' view "There is a statue" does *not* mean "There are simples arranged statuewise". Because if the two sentences have the same meaning, then it seems that a certain kind of inconsistency follows for eliminativism. Let me explain. If "There is a statue" in an ordinary context just means that there are simples arranged statuewise, then it cannot be false –in an ordinary context—that there is a statue, since it is true on Merricks' eliminativism that there are simples arranged statuewise. However, eliminativism is the claim that there are no inanimate composite objects such as statues. Hence, a contradiction. Merricks avoids the contradiction by claiming that in ordinary contexts he uses "there is" deviantly:

> When I say "there is a statue of a Roman emperor", I mean that there are things arranged statue-of-a-Romanemperorwise. Generally, when I say "there is an F", when alleged Fs are supposed to be non-living macroscopica, I mean that there are things arranged F-wise. In such contexts, I am using "there is" in a misleading or loose or even wrong way. I am using "there is" deviantly (Merricks, 186).

So in an ordinary context where Merricks and a non-eliminativist English speaker affirm a sentence like S above ("There are tables"), they in fact affirm different propositions. The English speaker mistakenly affirms the proposition "There are tables" whereas Merricks affirms the true proposition "There are simples arranged tablewise". This variance in what Merricks and an ordinary English speaker mean by their utterances of sentences like S is systematic. That is, the domain of variance in meaning is not merely restricted to existence claims about alleged macroscopic objects, but any sentence that employs a term that purports to refer to a complex inanimate object. Merricks argues that systematic variance in what we mean by the same sentences does not necessarily mean that the parties to this conversation, the eliminativist and the ordinary English speaker, are using different languages.

> Suppose that you travel to the land of the Absolute Ptolemaists. (Recall that Absolute Ptolemaists believe the earth is absolutely fixed and the sun moves around it.) Although they speak English, you express a different proposition with "the sun moved behind the elms" than do they. You say something true; they say something false. But when they say "meet us at the lagoon when the sun moves behind the elms", you have no trouble meeting them at the appointed time. The way you differ from them poses no practical difficulties whatsoever. Neither does the way the eliminativist differs from the folk (Merricks, 186-187).

But what Merricks overlooks is that a successful communication of certain propositions does not require speakers' using the same language. Speakers of different languages could successfully communicate without actually using the same language. What is required for successful communication in cases where speakers do not use the

same language is that they understand the statements that are made by their interlocutors. Therefore, even though the eliminativist and the ordinary English speaker seem to use the same language (they utter the same-looking sentences), they in fact express different propositions with their respective sentences. Since this difference is not confined to a limited set of sentences, but instead it is, unlike the example Merricks gives above about the Absolute Ptolemaists, systematic and very widespread, one can conclude that the eliminativist does not speak ordinary English but proposes an alternative interpretation, and thus speaks a different language in the sense employed here.

In contexts where ontology is at stake, Merricks argues, when the eliminativist says, "There are no tables" what he means is that there are no tables (Merricks, 187). So in ontological contexts the eliminativist uses "there is" in its "literal and straightforward" sense (Merricks, 19).[56] One might think even though the eliminativist does not speak English in ordinary contexts, he switches back to English when he enters the ontology room. So, one might continue, Merricks does not offer a novel language to talk about ontology. But notice that, as I argued above, positive existential claims or any claim that purports to refer to inanimate macroscopica must be revised radically and systematically. The required revision is so pervasive that it is justified to take the eliminativist to be proposing a novel language.

If the Quantifier Variantist is right that the quantifiers that Baker and Merricks use have different meanings, then it seems that the above discussion is not even necessary to establish the claim that Baker and Merricks are using different languages.

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[56] I will come back to Merricks' discussion about 'straightforward and literal' use of the existential quantifier on the one hand, and its deviant use on the other, when I talk about the second route for metaontological realist.

The deflationist might be right, Sider would argue, that both Baker and Merricks state truths in their own language given the meanings of their terms, however the substantivity of the debate depends on whether one of the candidate languages carves at the joints better. The candidate languages —i.e. M-English, Merricks' eliminativist language, and B-English, Baker's (ontological) language of everyday life— do not carve equally well. On Sider's view one of them must be better.[57] For, between the two true descriptions of reality, the one that is cast in joint-carving terms matches the structure better than the other. Hence, the dispute is substantive.

I argued that evaluating different languages, and determining if one of them is better requires sameness of purpose. Let us see what the purposes of these languages are. One might argue that both Baker's and Merricks' languages, in so far as they are languages of different ontologies, share the same purpose: doing ontology, helping us to give an inventory of what there is. If the only common purpose of these languages is to let us tell what there is, then both languages seem to perform equally well. After all both B-English and M-English could successfully enable us to give an inventory of what there is. In order to conclude that one is objectively better, we need more specific purposes that these languages have in common. Suppose you ask "What are the purposes of British Petrol or Greenpeace?". The answer, say, "Making the world a better place" would not be helpful at all to understand their purposes or comparatively evaluate them. In order to answer the question one should say more about general practical concerns and worries that they have. What are their main considerations and concerns for, say, an oil spill in the gulf?

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[57] Notice that there could be another language that is better than the two. What matters for Sider's conclusion is the rejection of the parity claim, that these languages carve nature equally well.

What are their priorities? Similarly, we should ask what the main practical concerns that Merricks' and Baker's languages have. What constitutes a virtue for a given language?

According to Baker taking ordinary language ontologically seriously "allows us to understand the everyday world without reinterpreting ordinary experience in alien ways" (Baker 2007, 6). The everyday world with ordinary objects in it is what our everyday interests and concerns are directed at. The primary purpose of taking ordinary language ontologically seriously, and thus pursuing a coherent and comprehensive metaphysics of everyday life, is to guarantee the rationality of human practices and attitudes towards the things that we talk about, encounter and interact with (Baker, 10). More specifically maintaining such a metaphysical view will provide "the most straightforward explanation of experience and its probative value". Furthermore, "if we want to have rational debate about moral, political, social, and legal issues, we have reason to pursue the metaphysics of ordinary things" (Baker, 7). Metaphysics is to be responsive to all human inquiry and all successful cognitive practices, scientific and nonscientific, which requires taking our ordinary language ontologically seriously, for the objects of everyday life figure ineliminably in successful common causal explanation of everyday phenomena (Baker, 8).

> For example: Use of stamps with too little postage caused a letter to be returned to the sender. A slump in automobile sales caused the automakers to lose money. The riots caused a conservative reaction. All these are legitimate causal explanations: They are instances of counterfactual-supporting generalizations. They could well be cited in research papers in economics, political science, or sociology. And they all appeal to ordinary things and ordinary properties as being causally efficacious (Baker, 8).

Therefore, ordinary language with its commitments to ordinary objects is required especially for the social sciences and that gives us a good reason to accept it.

On the other hand, Merricks' eliminativist language has different purposes. Merricks' ontology has the purposes of keeping the inventory of what there is as minimal as possible, and avoiding causal redundancy. Eliminativism offers a more parsimonious ontology than Baker's everyday metaphysics. Merricks argues that the claim that there are tables in addition to the atoms that are arranged tablewise is a needless multiplication of physical entities. The existence of such ordinary objects seems to require co-location of a table and the atoms arranged tablewise, and "co-location implies—as far as causal explanations are concerned—"a needless multiplication" of physical objects (Merricks, 83)." So providing linguistic tools such as "tablewise", "baseballwise", etc. to express a very parsimonious ontology is one of the purposes of Merricks' eliminativist language. Merricks argues further that the existence of ordinary objects violates the metaphysical principle known as Alexander's dictum, which says that to be is to have causal powers (Merricks, 65).[58] According to Merricks, then, the eliminativist language has the purpose of helping us to state a minimal ontology, which is in compliance with plausible metaphysical principles, such as the principle of causal adequacy, etc. Baker's language is not driven by these kinds of ontological concerns: it clearly has other, prior purposes in everyday life such as to express/communicate our beliefs, emotions, feelings, describe our perceptual experience, give commands, ask questions, and so on and so forth. The language that Merricks proposes is novel (i.e. the talk of particles arranged K-wise where K is an alleged object of everyday life is completely new) and designed explicitly to serve the purposes explained above.

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[58] Merricks' argument is in fact stronger than the claim that ordinary objects are causally redundant. He argues that the very existence of these objects is inconsistent. See Merricks (2001).

Now that we know that Merricks's and Baker's languages have different purposes, I conclude that Sider cannot compare them and say one of them is absolutely better. Sider's metaontological realism$_1$-the claim that the dispute between Baker and Merricks is substantive- requires one of the language's being objectively and absolutely better than the other. However, the evaluation cannot even get off the ground, for as we just saw Merricks and Baker's languages are to serve different set of purposes without any significant overlap. Therefore, Sider's attempt to save the substantivity of this debate fails.

4.2.2. Route #2: Ontologese

The alternative interpretation of metaontological realism does not rely on the idea that Baker and Merricks use different languages. So on metaontological realism$_2$ there is no harm agreeing with Baker and Merricks that they speak English. However, the worry is now that ordinary English might not be appropriate for pursuing ontological inquiry. The source of this worry is not merely that ordinary language is often vague or imprecise as Peter van Inwagen (2009) complains. This may well be true. Rather, the worry is about the implications of a very parsimonious ontology both for ordinary and philosophically interesting existence questions. If Merricks is right about what there is, then it seems to follow that ordinary English quantifiers do not carve at the joints. Remember that Sider, *pace* Merricks, is against a systematic and a radical revision on truth-values of ordinary existence claims.

> Suppose that, fundamentally, there are very few things. (…) Given such a sparse ontology, the most plausible view about natural language quantifiers might be that they do not carve at the joints. The best metaphysical semantics of an ordinary sentence like 'There is a table' might not be a strict semantics that interprets it as making the false claim that there exists, in the fundamental sense, a table, but rather a tolerant

semantics, which interprets it as making the true claim that there exist subatomic particles appropriately arranged. The English "there is", according to such a semantics, would not express fundamental quantification (Sider 2011, 172).

Instead, Sider proposes adopting a new set of quantifier expressions that are stipulated to carve at the joints. But it is not enough to adopt joint-carving quantifiers to continue serious ontology; one needs to shift to a new language that can secure the substantivity of the debates on philosophically interesting existence questions:

> The question of whether ordinary quantifiers express joint-carving quantification is a difficult one. At what point in the following series should a metaphysical semantics start counting the sentences as false?: "There are hydrogen atoms", "There are dogs", "There are tables", "There are economies", "There are events", "There are smirks", "There are holes", "There are fictional characters", "There are gods"? To avoid getting embroiled in this question —which is after all metasemantic, not metaphysical—ontological realists might conduct their ontological debates in the metaphysics room rather than the marketplace. They might introduce a new language—"Ontologese"—whose quantifiers are stipulated to carve at the joints. Ontological questions in Ontologese are substantive, even if those in ordinary language are not. Moreover, Ontologese is a better language, since its structure better matches reality's structure (Sider, 173).

So metaontological realism$_2$ becomes the thesis that ontological questions are substantive where "the best way to secure this substantivity is to hold that ontological questions can be posed in perfectly joint-carving terms (Sider, 169)".

I argued in Chapter 3 at length that Ontologese should not be construed as a fundamental language.[59] If my arguments against realism about fundamental languages are correct than there are no fundamental languages, and thus Ontologese cannot be a fundamental language. What is necessary for Ontologese in order to play its role in Sider's account is that its quantifiers must carve perfectly at the joints. The rest of Ontologese such as its predicates and names, however, should not be restricted to

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[59] See the section 3.2.3.

perfectly joint-carving expressions. Otherwise, it would not be possible to frame certain ontological questions in which there are terms that fail to carve perfectly at the joints: i.e. "Are there fictional characters?".

Can metaontological realism$_2$ save the substantivity of the debate between Baker and Merricks? The answer is no. In order to secure the substantivity of the debate, the metaontological realist proposes to take the dispute to the ontology room, and recast the debate in Ontologese. So the question about the existence of tables in Ontologese will be

Q: "*Are there* tables?"

The Ontologese quantifier in italics is stipulated to carve nature perfectly at the joints. The meaning of the Ontologese existential quantifier is supposed to be the most fundamental candidate meaning for "there is", which carves perfectly at logical joints. Even if the English question "Are there tables?" turns out to be easily answered, the question in Ontologese is guaranteed to be substantive in Sider's sense. Therefore, when conducted in the ontology room where rivals are speaking Ontologese, the debate over Q is substantive. My arguments from purpose-relativity are rendered irrelevant once it is settled that the disputants use the same language. But the problem for the metaontological realist is that Q is not what Baker and Merricks are actually trying to answer. Their disagreement is over S, whether there are tables, not whether "*There are* tables" is true. Baker is clear that the aim of her ontology is to take everyday human life and language at face value.

> I take everyday discourse about ordinary things not only to be largely true, but also to mean what speakers think it means. Unless there is some reason to do otherwise, I take what we commonly say (e.g., ''It's time to get your passport renewed,'' or ''The fish today is fresh'') at face value. I do not systematically reinterpret ordinary discourse in unfamiliar terms, nor do I suppose that ordinary discourse is defective or inferior to some other

(imagined) regimented language. Sentences about ordinary things mean what ordinary speakers think they mean, and such sentences are often true. If I am correct, then the ordinary things that we commonly talk about are irreducibly real, and a complete inventory of what exists will have to include persons, artifacts, artworks, and other medium-sized objects along with physical particles (Baker 2007, 4).

So Baker is interested in existential claims and questions like S that are formulated in ordinary English. Q is not the question that she undertakes when she is doing ontology. It is not only that Baker is not interested in different senses of the existential quantifier, she, just like van Inwagen, thinks that the existential quantifier is univocal. In her discussion about the ontology of time it is explicit that she takes, as does van Inwagen, the existential quantifier as a translation of English "there is" or "exist":

> Since the unrestricted existential quantifier is univocal and since the (atemporal) Domain includes nontemporal objects as well as temporal objects, our English rendering of existential quantification as ''There exists'' is not a present-tense occurrence of ''exists''; ''exists'' is tenseless (Baker 2007, 227).

The case with Merricks is a bit complicated. For the purposes of the discussion here I leave aside my arguments above where I try to show that Merricks is proposing a novel language to talk about the constituents of the world. My goal here is to see whether Merricks would be willing to enter the ontology room, and recast his debate with Baker in Ontologese, using "there is" in its most fundamental sense. Merricks seems to be open to the possibility of variance in meaning for the quantifier terms.

> I assume that there is an objective fact of the matter about what exists. And I think we use the apparatus of existential quantification—expressions like "there is", "there are", and "exists"—to say what (we believe) objectively exists. But there is nothing magical about "there is", "there are", or "exists". We control them; they do not control us. So we can use these bits of language however we choose. Thus we could use them "deviantly", to do something other than describe what (we believe) exists. For example, we could use "there is an F" to mean we wish there were an F (Merricks, 18).

He indeed claims to be using the existential quantifier deviantly, as we have seen above, when he affirms the truth of statements like "There is a statue of a Roman emperor". But it would be wrong, I think, to interpret Merricks' talk of different uses of "there is" as a form of quantifier variance. The point above seems to be this rather trivial claim that we can use certain terms in very different ways, and it is obviously possible to use "there is" in a way that makes the above statement about a statue of a Roman emperor true.[60] Merricks argues that there is a single literal and straightforward meaning of the existential quantifier, and that is the meaning "there is" has in ordinary English.

> I think there is but a single literal and straightforward sense of "exist" (Merricks, 170).

So note that eliminativists should reject the following:

> "Exist" has one literal and straightforward meaning in folk uses of "chairs exist", which uses express a true proposition and a true belief. "Exist" has a distinct, but equally literal and straightforward meaning, when the eliminativist speaks truly by saying "chairs do not exist" and "humans exist" (Merricks, 169).

It is quite clear why Merricks is compelled to reject the idea that there could be equally literal and straightforward but different meanings for quantifier terms. This seems nothing but a clear rejection of Hirsch's Quantifier Variantism:

> More importantly, if that position (that there are equally literal and straightforward meanings for "there is" or "exist"—NI) were correct, eliminativism would not be an interesting philosophical thesis. It would be, instead, a silly fixation with one out of many equally weighty kinds of existence, a fixation with the kind of existence humans have but chairs lack (Merricks, 170).

It is already established, I think, that the single meaning for the existential quantifier,

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[60] Yet I do think that if the correct interpretation of Merricks' emphasis on the claim that we control the meanings of terms for existential quantifier, they do not control us is that there is no constraint imposed by nature on the meanings of such terms, then it is really difficult to see Merricks being onboard with Sider on the idea that there are perfectly natural meanings for quantifier terms.

according to Merricks, is the ordinary English meaning. Furthermore, this literal and straightforward meaning of the quantifier is the meaning that Merricks claims to be using in contexts where ontology is at stake. Remember that in ontological contexts, unlike ordinary contexts, the eliminativist argues that the statement "there is a statue" is false.

> Eliminativism claims only that "there is a statue" is false when "there is" is being used as a legitimate and straightforward existential quantifier (Merricks, 19).

This shows that Merricks is not trying to answer the Ontologese question Q: "*Are there* tables?".

If I am right, neither Merricks nor Baker proposes to enter the ontology room and adopt Ontologese as the language of their debate over S. Notice that the possibility of the debate depends on *both* parties entering the ontology room and adopting Ontologese. So the metaontological realist$_2$ is obliged to show that all parties to any given ontological debate are speaking or ready to adopt Ontologese. Therefore, I conclude that Sider's metaontological realism$_2$ fails to save the substantivity of the dispute between Baker and Merricks.

Even though metaontological realism$_2$ fails to save the substantivity of the ontological debates in the last few decades, it is still possible to conceive it as a proposal to change the topic of ontology. Under this new proposal, ontologists should ask and try to answer existence questions in the following form: Are there Xs, in the most fundamental sense of "there is"? This question primarily requires an investigation into the nature of quantificational expressions and whether fundamental quantification makes sense. Assuming that it is possible to have quantifiers that (attempt to) carve at the joints, it may be that metaontological realism$_2$ points at a different and legitimate way of doing serious

ontology. I do not mean to argue against metaontological realism$_2$. My point here, rather,

is that Sider's project taken as a defense of extant ontological debates fails. It is clear in

his recent work on metaontology that Sider thinks that his account could save the

substantivity of extant ontological debates:

> I think that questions about the existence of composite objects are
> substantive, just as substantive as the question of whether there are extra-
> terrestrials; and I think that the contemporary ontologists are approaching
> these questions in essentially the right way (Sider 2009, 386).
>
> Recent work on ontology nearly always relies on the Quinean
> methodology. Nowhere is this more explicit than in Lewis's On the
> Plurality of Worlds, which argues that the best systematic theory of a
> range of philosophical and linguistic phenomena requires an ontology of
> possible worlds. Another pillar is Peter van Inwagen's *Material
> Beings*, which argues that there exist no nonliving material objects with
> proper parts. Although there exist subatomic particles
> "arranged tablewise" and "arranged chairwise", as van Inwagen puts it,
> there do not exist any tables or chairs. […] Since the Quinean
> methodology is appropriate only given [meta]ontological realism,
> [meta]ontological realism seems to be an unacknowledged presupposition
> of recent ontology (Sider 2011, 170-171).

Sider's metaontological realism cannot keep its promises: it fails in its promise to

justify the claim that the extant ontological debates are deep, theoretical, substantive

debates about the constituents of reality. It is at best a new proposal to change the topic of

ontology.

Chapter Five

What's an Ontologist to Do?

Contemporary debates in ontology focus mainly on existence questions. Participants in

these debates take existence questions as theoretically deep, quasi-scientific, significant

debates about the constituents of reality. I call this view serious ontology. Serious

ontology has faced various criticisms. Ted Sider's metaontological realism is an

important attempt to defend serious ontology in the face of recent criticisms, especially

Eli Hirsch's Quantifier Variantism. According to metaontological realism, there is a

single best fundamental language that carves perfectly at the joints, and thus "there is an

objectively correct way to 'write the book of the world'" (Sider 2011, vii). On Sider's

view ontology and metaphysics in general are, in a way, investigations about what this

fundamental language might look like. Ontologists, on metaontological realism, need not

worry about the existential claims made in ordinary discourse where speakers use natural

language, since they are interested in structure, which can only be tracked using the

fundamental language.

In the present work I reject the possibility of a fundamental language. I argue that languages, as human artifacts, are introduced for specific purposes. Comparative evaluation of different languages requires that they share the same purpose. Betterness of a language is only relative to a purpose. Therefore, there is no language that is the best regardless of purpose. I argue that there are many different ways and languages that one can write the book of the world, and hence there are many different books of the same world. Given that these different books are written for different purposes, they cannot be compared, as Sider maintains. What we need, perhaps, is not a book of the world, but an ever-growing encyclopedia, to serve our ever-expanding purposes.

The refutation of the possibility of a fundamental language, however, is not enough to defeat Sider's attempt to save the substantivity of serious ontology. Metaontological realism has a Plan B. Sider argues that the debates about existence questions are substantive as there is a perfectly natural meaning for the existential quantifier. Even if ordinary language quantifiers fail to carve at the joints, we can always introduce a new language, Ontologese, whose quantifiers are stipulated to carve nature at its logical joints. Serious ontologists, according to Sider, should adopt Ontologese and continue their debate using the Ontologese existential quantifier. My arguments from the purpose-relativity of languages are moot against the Ontologese move, as alleged rivals are supposed to use the same language to continue their debate. I do, however, argue that metaontological realism under this interpretation fails to save the substantivity of extant ontological debates. A quick look at parties to these debates reveals that they are not using or willing to use Ontologese. In most cases they take themselves to be speaking ordinary English. Therefore, the Ontologese move cannot guarantee the substantivity of

extant ontological debates. The most charitable interpretation of the Ontologese move, then, is to take it to account for the substantivity of a new kind of ontological debate; a debate over the question "What is there, in the most fundamental sense of 'there is'?". The viability of such a debate, however, depends on whether or not the existential quantifier has a joint carving meaning. Even though it is quite controversial whether the existential quantifier could have a perfectly joint carving meaning, assuming that we can introduce Ontologese quantifiers possibility of substantive debates in ontology remains open for Sider. These debates, however, will be significantly different than extant ontological debates about existence questions. On this reading of metaontological realism, ontologists should all adopt Ontologese and continue their debates in the ontology room. The substantivity ontological debates in Ontologese is not threatened by the arguments I present in this dissertation.

I conclude that Sider's metaontological realism fails as a defense of the substantivity of extant debates on existence questions. Its failure does not by itself imply that extant debates on existence questions are not substantive. However, given the current state of metaontological debates we have good reasons to remain skeptical, if not dismissive, about serious ontology. Let me explain by referring back to the taxonomy I provided in Chapter 1. I argued that serious ontologists are divided into two in their defense against Quantifier Variantism. Philosophers like Peter van Inwagen, Trenton Merricks, and Lynne Rudder Baker argue that there is no variance in quantifier meaning; the existential quantifier is univocal, and so Quantifier Variantism is a non-starter. On the other hand, Ted Sider, Ross Cameron, and Cian Dorr are ready to accept quantifier variance, and yet argue that serious ontology can still be defended. I argued that the second route fails as an

attempt to save extant ontological debates. My arguments do no speak to the first route (rejecting quantifier variance) that serious ontologists might take. However, there are already a number of significant challenges to this version of serious ontology, such as easy ontology, Moorean arguments, and epistemic pessimism. I conclude that in the absence of a successful defense of serious ontology we have a good reason to abandon it, or, at least, not to take serious ontology seriously.

Given the failure to defend serious ontology, I do not, however, conclude, nor do my arguments imply, that ontology as a discipline in philosophy should be abandoned altogether. What follows from the arguments reproduced, or submitted here in this dissertation is that serious ontology understood as the view that the debates about existence questions are theoretically deep, significant, quasi-scientific debates about the constituents of reality should be abandoned. This is the kind of ontological enquiry that has dominated the literature for the last half century. This is the kind of ontological enquiry that revolves around the questions of the following sort: "Are there ordinary objects?", "Are there mereological sums?", "Are there numbers, sets, fictional characters, functions, or any other kind of abstracta?". There are, however, a number of ways in which metaphysical enquiry can be furthered as a legitimate field of study. I will briefly discuss two of them: questions about fundamentality and questions about the nature of a given object of a certain kind. It should be noted that these two ways of doing ontology are compatible. One can think of them as specific questions that should be explored in ontology. I will start with fundamentality and grounding, and then move on to the latter.

5.1. Fundamentality and ontology

There is a growing interest and a fairly good amount of work done on fundamentality and surrounding issues in the literature. This growing interest arises at least in part from the sense that existence questions, as pursued by serious ontology, are problematic and are not the place to focus. I discuss a certain understanding of this pervasive notion throughout the dissertation as it pertains to various interpretations of Sider's metaontological realism. Here I want to look at the way the notions of fundamentality and grounding explored in the works of Jonathan Schaffer and Kit Fine. It is important to notice that both Schaffer and Fine seem to agree that existence questions can be answered easily—though they favor different reasons as to why this is so—, and they seem to suggest that some of the issues that ontologists should alternatively think about are questions about fundamentality and grounding (Schaffer (2009), Fine (2001; 2009; 2012)). I will begin with Fine's view, which, I have to admit, is somewhat obscure to me. I will then continue with a new proposal that is clearly and rigorously articulated and defended by Jonathan Schaffer.

Fine agrees with the general deflationist idea that the number discourse in mathematics, or in our everyday life provides enough to get trivial answers to the existence questions about numbers. The questions "Are there numbers?" or "Are there ordinary objects?" do not seem to be philosophically interesting as he suggests that they might be answered trivially:

> (G)iven the evident fact that there is a prime number greater than 2, it trivially follows that there is a number (an x such that x is a number); and, similarly, given the evident fact that I am sitting on a chair, it trivially follows that there is a chair (an x such that x is a chair) (Fine 2009, 158).

So we should be able to agree with the mathematician when she asserts "There are prime numbers between 17 and 28, and therefore, there are numbers" but also be able to ask the ontological question, which should be carefully distinguished from the question above, if, of course, we agree that there is something substantial about the kind of questions ontologists (intend to) ask. Fine thinks that there is something important to ontological questions but he insists that we should think more on the questions themselves before exploring their answers.

Fine suggests that we should dismiss the Queinean idea that ontological questions are quantificational in nature, and instead we should find another way of asking the ontological question. He looks at various proposals to ask the ontological question, one of which is to use "exist" as a predicate, not as a quantifier:

> I would like to suggest that we give up on the account of ontological claims in terms of existential quantification. The commitment to integers is not an existential but a universal commitment; it is a commitment to each of the integers not to some integer or other. And in expressing this commitment in the words "integers exist", we are not thereby claiming that there is an integer but that every integer exists. (…)

> If this is right, then contemporary ontology has been dominated by the failure to recognize the most elementary logical form of its claims. They have been taken to be existential rather than universal. Of course, the mistake is understandable. For the most natural reading of "electrons exist" is that there are electrons while, on our own view, the proper reading, for philosophical purposes, should be modeled on the reading of "electrons spin" in which it is taken to mean that every electron spins. The term "exists" should be treated as a predicate rather than a quantifier (Fine 2009, 167).

But what exactly does Fine mean by using "exist" as a predicate? Fine argues that we cannot understand the existence predicate in terms of the existential quantifier as follows: for x to exist is for there to be a y that is identical to x. If that is all for something to exist, then as we saw above the existence of numbers, chairs, etc. will be a trivial matter (168).

So what we need is to claim that "exist" is being used "in the "thick" ontologically loaded sense". When we say numbers exist we are not saying that there is something identical to them, but instead we are saying something about their being real constituents of the world. Given such a thick sense of "exist" the ontological questions can be asked in terms of it, and be answered non-trivially.

According to Fine, the trouble with this account is that "exist" is used in ordinary language mostly as the existential quantifier. So Fine prefers the predicate "real" instead. Realists about numbers, then, would say "Numbers are real" rather than "Numbers exist". And anti-realists quite happily agree with ordinary people that chairs or numbers exist but they would deny that they are real (Fine, 168).

On this proposal, then, ontological questions are distinct from quantificational or existential questions:

> The critical and distinctive aspect of ontological claims lies not in the use of the quantifier but in the appeal to a certain concept of what is real; and it is only by focusing on this concept, rather than on our understanding of quantification, that further clarification is to be achieved or disquiet over the debate is ultimately to be vindicated (Fine, 171).

How should we understand this crucial metaphysical concept "real"? We can, according to Fine, understand the predicate "real" as relating it to the concept of reality. What is real is what is to be constitutive of reality. What is to be constitutive of reality, in turn, can be understood in terms of the notion "being nothing more than": "Something can be said to be constitutive of reality if it would be part of the complement "…" in any true claim of the from the "world consists of nothing more than …" (Fine 2009, 175)." When we have a relation of the following form between propositions X, Y, and Z, where it is being the case that X consists nothing more than its being the case that Y and Z, we

should conclude that Y and Z collectively ground X (Fine 2001, 15). What can be said of the notion "ground"? On Fine's view, the notion does not accept any definition; it should be taken to be primitive (16). This brings a difficulty for settling questions of ground. Fine argues that there are at least two sources of evidence that would make answering questions about grounding possible: The first is our intuitions. Fine believes that we have strong intuitions about what grounds what. For example, the truth of a disjunction is grounded by the truth of its true disjuncts, or the occurrence of a compound event is grounded by the occurrence of its component events, etc. (21).

The second source of evidence comes from the nature of the grounding relation. Grounding is characteristically an explanatory relation:

> (T)he relationship of ground is a form of explanation; in providing the ground for a given proposition, one is explaining, in the most metaphysically satisfying manner, what it is that makes it true. Thus a system of grounds may be appraised, in much the same way as any other explanatory scheme, on the basis of such considerations as simplicity, breadth, coherence, or non-circularity. Perhaps the most important virtue in this regard is explanatory strength, the capacity to explain that which stands in need of explanation and would otherwise be left unexplained. And here it is not simply relevant that one grounds and hence accounts for certain truths but also that, in so doing, one may account for the presence or absence of a certain necessary connection between the propositions that are so grounded (Fine 2012, 22).

In one of his very recent articles, Fine underlines the importance of the questions concerning grounding by claiming that the debate between the realist and anti-realist (about numbers, moral facts, fictional entities, etc.) should be construed in terms of what grounds what: "We must attempt to understand what grounds what; and it will be largely on this basis that we will be in a position to determine the viability of a realist or anti-realist stand on any given issue (Fine 2012, 42)."

Even though Fine's insistence of employing an esoteric term, borrowing Hofweber's terminology, such as "real" is a bit concerning, I find his proposal to understand realism-anti-realism debates in terms of grounding relation very important. Leaving aside the question whether grounded entities, such as artifacts, do not deserve to be labeled as "real", I think reconstructing or reorienting ontological questions as questions about ontological dependence is a step forward for metaphysics. I will discuss a similar project next: Jonathan Schaffer's Neo-Aristotelian metaphysics.

Jonathan Schaffer rejects what he calls the Quinenan task of metaphysics, namely, the view that the task of metaphysics is to ask what exists or what there is. Contrary to the Quinean view of metaphysics he proposes neo-Aristotelian method: the method of metaphysics is to find out what is fundamental, and what grounds what:

> I will argue for the revival of a more traditional Aristotelian view, on which metaphysics is about what grounds what. Metaphysics so revived does not bother asking whether properties, meanings, and numbers exist. Of course they do! The question is whether or not they are fundamental (Schaffer 2009, 347).

I will explain how Schaffer understands the grounding relation. But first I want to see why Schaffer thinks that existence questions have easy answers. Schaffer defends a permissive attitude towards existence questions. He agrees with easy arguments for affirmative answers to certain existence questions. He offers trivial arguments for the existence of numbers, properties, mereological sums and fictional characters (357-359). The arguments are pretty straightforward, so I will take his arguments for numbers and mereological composites.

Here is his argument for the existence numbers.

> 1. There are prime numbers.

> 2. There are numbers.

1 is a mathematical truism. Schaffer argues that by Moorean certainty it is more credible than any argument that philosophers might come up with to the contrary. Thus any metaphysician who denies it falls into a reductio for her position. 2 follows directly by dropping the adjective. Therefore, numbers exist. (Schaffer, 357).

Here is an argument for the existence of mereological sums (objects that have proper parts), or an argument against nihilism (the view according to which there are no composite objects):

> 3. My body has proper parts (e.g., my hands).

> 4. Therefore there are things with proper parts.

The truth of 3, by appealing to Moorean certainty, is obvious. 4 follows from 3. Therefore, there are things with proper parts. Hence nihilism is false. Notice that this argument is not for mereological universalism where composition always takes place. Although Schaffer is ready to accept universalism, he thinks that the argument for the truth of mereological universalism is less obvious than the argument above (358-359).

The fact that existence questions can be answered easily does not mean, on Schaffer's view, that they have no significance at all in neo-Aristotelian metaphysics. Positive answers to existence questions give us what there is, which, then, can be divided into three main categories: grounds (fundamental objects that which ground any other object), grounded entities (derivative objects that are grounded in basic objects), and grounding relations (ontological dependence relation that relates fundamental objects to derivative

objects). Once we answer the existence questions, we still have a further and more important task, namely to distinguish grounds, grounded entities, and grounding relations.

According to Schaffer, we can define grounds and grounded entities via the grounding relation in the following way.

> x is a fundamental entity iff nothing grounds x.
>
> x is a derivative entity iff something grounds x.
>
> x is existent iff x is fundamental or x is derivative (Schaffer, 373-374).

Of course, this metaphysical picture only works if we can understand the grounding relation itself. Schaffer leaves the grounding relation unexplained: it is a primitive notion that cannot be further analyzed in terms of other metaphysical categories or notions (364). However, we can clarify the notion of grounding by appeal to its paradigm examples and formal features. There are, according to Schaffer, clear examples of grounding: the entity and its singleton; the cheese and its holes; natural features and moral properties; sparse properties and abundant properties; truth-makers and truth. In each of these examples the latter is grounded in the former (375).

Schaffer takes grounding to be a two-place predicate that can accept entities of various ontological categories such as individuals or propositions (Ibid.) As for the formal constraints on grounding relation, Schaffer argues that it is irreflexive, asymmetric, and transitive. In this sense, it is similar to causation or proper parthood (376).

Schaffer concludes that even if grounding is left unanalyzed we can and should work with the concept: "So I say that grounding passes every test for being a metaphysical

primitive worth positing. It is unanalyzable. It is useful. And it is clear what we mean

(Schaffer, 376)."

The distinction between fundamental and derivative entities gives us a different

metaphysical picture than classical Quinean ontology. Quine offers what Schaffer calls a

flat structure. There is no structure, no hierarchy in the domain of what exists:

> For the Quinean, the target is flat. The task is to solve for E = the set (or class, or plurality) of entities. There is no structure to E. For any alleged entity, the flat conception offers two classificatory options: either the entity is in E, or not (Schaffer, 354).

The Neo-Aristotelian, on the other hand, offers an ordered structure. On the

fundamental level there are grounds. Grounding relations generate grounded, or

derivative objects. The task of metaphysics is to discern grounds, grounding relations and

grounded objects.

> For the neo-Aristotelian, the target is ordered. The task is to solve for the pair <F, G> of fundamental entities and grounding relations, which generate the hierarchy of being. For any alleged entity, the ordered conception offers not two but four major classificatory options: either the entity is in F, in G, in neither but generated from F through G, or else in the rubbish bin of the non-existent. (If the entity is in the third class, then there will be further sub-options as to how the entity is grounded) (Ibid.).

Permissive ontology at the level of grounded entities is not a threat for the principle

of parsimony, according to Schaffer. For parsimony applies only to grounds or

fundamental objects. As long as we have a sparse fundamental basis, our overall ontology

cannot be charged for violating the principle of ontological parsimony:

> So do not be alarmed. Permissivism only concerns the shallow question of what exists. One can and should still be restrictive about the deep question of what is fundamental, and one still owes an account of how these very many things exist in virtue of what little is fundamental (Schaffer, 361).

I think Schaffer's proposal for shifting the central questions of ontology is quite convincing and promising. I completely agree with his following remark about the main questions of metaphysics, which also perfectly summarizes the main point of this chapter: "These central metaphysical questions are not questions about *whether* entities exist, but only about *how* they do (p.363, italics are in the original)."

<center>***</center>

The arguments against serious ontology that I presented above are moot with respect to Fine and Schaffer's new proposals. Not only my arguments but most of the skeptical worries about ontology are rendered irrelevant, should ontologists be willing to take one of these new courses of philosophical inquiry. I will not discuss here whether ontology understood in one of these ways could be a deep, theoretical, substantive investigation on the nature of reality. Indeed if what I have said above about the problems facing the major defense of serious ontology against the most central objection is true, we have additional reason to shift our metaphysical inquiries to a new project such as determining what is fundamental or what grounds what. I do, however, want to raise some questions below that should be answered to evaluate whether this is a suitable replacement project.

The debates over the concepts of "fundamentality" and "grounding" have significant implications for various contemporary debates in metaphysics, moral theory, aesthetics, modality, etc. There is a growing interest in questions of the form "What grounds x?" where x is, for example, some moral, aesthetic, or modal claim. It is interesting to see different ways and roles in which the concepts of fundamentality and grounding are being used. In the recent literature there are several accounts for how the meanings of these concepts should be understood. This is especially important since most philosophers,

including Fine and Schaffer, who make use of these concepts in their accounts insist that they should be taken to be unanalyzable or primitive concepts. So part of the debate over fundamentality and grounding is about how we should fix the meanings of these concepts. One idea is to take various different relations and argue that they actually are instances of the same concept in question. Take the concept of grounding. People like Jonathan Schaffer (2009) and Gideon Rosen (2010) argue that the relations between the following pairs are an example of grounding relation: the entity and its singleton, natural properties and moral properties, truth of a certain claim and its truth-maker, the Swiss cheese and its holes, etc. One of the worries with this approach is whether the relations in question can all fall under a single concept like grounding.[61,62] Instead, might there be various concepts in the vicinity that are supposed to stand for different dependence relations such as constitution, realization, truth-making, set-membership, etc.?

Karen Bennett argues that what she calls "building relations" (i.e. composition, constitution, emergence, realization, truth-making, grounding, set membership, etc.) are conceptually intertwined; so much so that there is actually a core notion of building that unifies these various relations (Bennett 2011). So her discussion is not particularly about how we should understand the term "grounding", which is just one of the candidates for building relations on her list above, or whether there is a single concept of grounding that refers to the kind of relations the examples of which are given in the previous paragraph. However, I think the way she answers questions about building relations is informative, and provides a way that would contribute to settling the kind of concerns about whether

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[61] For a very brief survey of such worries see Clark and Liggins (2012). For a different kind of skeptic worry about grounding see Daly (2012).
[62] Schaffer addresses a similar worry on his (2009, 376-377)

grounding is a single concept or a kind of umbrella term that attempts to cover different relations.

In looking at relations among building relations, Bennett distinguishes two sets of questions: conceptual and metaphysical questions. Questions about whether these relations are conceptually unified enough to deserve an inclusive label, and if so what unities them are conceptual questions. Whereas, questions concerning whether any building relation reduces to others, or how many building relations there are, or how they should be counted, or, finally, whether these relations (if any) are fundamental, etc. are metaphysical questions (Bennett 2011, 87). Bennett argues that metaphysical and conceptual questions are independent, and therefore, answering one does not by itself settle the other:

> Not every story about why a certain group of relations should all be called "building relations" will by itself settle the question of how many fundamental relations that group contains. Some such stories will be compatible with there being several relatively fundamental relations that bear a family resemblance to each other, as well as with there only being one most fundamental relation. Similarly, not every answer to the metaphysical question will by itself settle the conceptual questions. (Bennett, 89).

I will not go into the details of Bennett's proposed answers to conceptual and metaphysical questions. Rather my point is we can, and should, ask similar questions about grounding. For conceptual concerns about grounding we can ask, for example, whether the kind of particular relations (i.e. the entity and its singleton, natural properties and moral properties, truth of a certain claim and its truth-maker, the Swiss cheese and its holes) are conceptually related in such a way that they should be unified under the concept of grounding. For metaphysical concerns we can ask whether grounding is a

fundamental relation, or whether there are more fundamental relations than grounding to which grounding can be reduced.

The views that I defend in my dissertation, particularly the purpose-relativity thesis for individual terms, might have some bearing to conceptual questions about grounding. Both grounding and fundamentality are new theoretical terms that we wish to introduce to our language. So as new terms that we are trying to introduce to our language, we should think more about what kind of purposes we have for the introduction of "grounding" or "fundamentality". It seems that part of the purpose behind the introduction of "grounding" is to refer to a certain kind of ontological dependence relation. There is a difficulty of specifying the features of this particular dependence relation since the defenders of grounding tend to take it as a primitive notion. People have suggested various formal constraints such as being irreflexive, asymmetric, and transitive that the grounding relation is supposed to have. We can use these constraints to narrow down the candidate meanings for "grounding". If there is a single candidate meaning for "grounding" given its referential purpose, then its meaning can be fixed in a straightforward manner. If, on the other hand, there are two or more candidate meanings, then the question will be whether or not one of those meanings is better for the term given the referential purpose we have in mind. I don't have a particular view on "grounding", its referential purpose, or its formal features. I do, however, believe that in order to further metaphysical debates about grounding and fundamentality we should be able to answer these questions. Once we have clear answers to questions like these, it is possible to investigate the candidate meanings for both grounding and fundamentality. Then we can choose among various candidate meanings, and argue that the one we

choose should be taken as the meaning of the term in question. These questions, of course, cannot be settled here, and demand an investigation of their own.

5.2. Questions about the nature of things

When emphasizing the importance of the questions about the grounding relation, Kit Fine argues that there are two branches of metaphysics. The first one is concerned about what is real. Is tense real? Are moral or aesthetic values real? Are numbers real?[63] The second branch of metaphysics is concerned with questions about the nature of things. When asking such questions, according to Fine, we do not need to answer first whether or not the things in question are real.

> We might ask, for example, whether material things exist in time in the same way as they exist in space (with the four-dimensionalists thinking they do and the three-dimensionalists thinking they do not) or we might ask whether fictional characters are genuinely created by their authors (…) (Fine 2012, 41).

Leaving aside whether the first branch of metaphysics, as Fine understands it, is a viable enterprise for metaphysics, I think the questions about the nature of things, Fine's second branch of metaphysics, open an important way metaphysical enquiry can be furthered.

Even if we accept the easy approach to existence questions it does not mean that there is nothing left to dispute that pertains to ontology. Once we accept the existence of a certain object, further questions arise about its nature. For example: "Under what conditions an object of that kind comes into existence or ceases to be", or "How does it persist", or "What are its identity conditions", or "On what other objects does its existence depend?". We can ask these questions in a given language, say ordinary

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[63] Reality, of course, should be understood in the particular sense Fine explains in his work (Fine 2001; 2009).

English, and by looking at the relevant linguistic and other social practices and norms with respect to the object in question, we can expect a meaningful debate about their nature. The substantivity of this debate is in no way threatened by my arguments, as we are debating within a language, not between different languages.

Examples of this approach to ontology can already be found in Amie Thomasson (1999; 2007). In the appendix chapter I follow this approach and ask the above questions for software.

Chapter Six

Ontology of Software

In this chapter, my goal is to present a way of doing ontology, which is immune to the kind of objections others, and myself, have raised against Neo-Quinean ontology. The main question of this study is not an existence question. I take the existence of software as a given.[64] Rather, I want to discuss the nature of computer programs. By nature I mean the conditions under which computer programs come to existence or cease to exist; how, or if, they persist through change; whether they are in time and/or space, etc. In order to answer these questions and more, I look at the common beliefs and practices of computer programmers, software users, or any competent speaker who uses the related concepts. So throughout this chapter I ignore the kind of ontology that requires serious revisions in our common beliefs and natural language regarding the objects in question. I suggest that an adequate and successful ontology of software and musical works is a theory that takes

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[64] Although I prefer to remain neutral about how to answer existence questions, I am sympathetic to the methodology Amie Thomasson provides in her recent work (Thomasson 2007; 2008). But the arguments here do not rely on such methodology. One might arrive at the same positive existential claims regarding computer programs, or artifacts in general, through Moorean arguments I mentioned in the first chapter.

seriously the common beliefs, and practices of listeners, composers, programmers, computer users, or any competent speaker who uses the related concepts. Our theory of software must be coherent with the way people talk about them, with the things they believe about them, with their practices that involve those objects. The desiderata for such theory are to be based on those beliefs and practices. The ontology of software we need is not a kind of ontology in which one searches for the facts about musical works and software, which are independent of human practices and beliefs. Ordinary beliefs and common practices guide our understanding of the existence and persistence conditions of the objects in question. However, those beliefs and practices are sometimes not as clear, or as precise as we would like them to be, and the ontology that underlies them may be implicit; making it explicit requires philosophical work such as is here undertaken.[65]

6.1. Overview

Software has become one of the most important parts of our everyday life. For most of us our personal computers are indispensable. For many people it is hard to imagine how their lives would be without them. We use e-mail for communication, pay our taxes using tax software, pay our bills online, we even do the grocery shopping online. It is not only computers that work with software, phones, cars, fridges, cameras, etc., that is, every electronic device uses software. Assuming that that an object is an artifact if and only if it is an intentional product of human activity[66], it follows that software is an artifact.[67]

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[65] For a comprehensive account of this approach to the kind of questions I ask here see Thomasson (2004; 2005).

[66] This is a widely accepted definition of artifacts. For further discussion on what artifact is see Hilpinen (2004).

[67] This is not free from controversy, of course. According to some people software is not necessarily a product of human activity. See Suber (1998). More on this will follow.

In this chapter I offer a novel account of the nature of software. I will argue that although it is an artifact, software cannot be identified with any concrete object, that is, any object having spatio-temporal location. I shall argue that software is a kind of abstract artifact, which fails to fit the classical Platonic picture of abstract objects. The kind of abstract object defended here is not Platonic because it is not an eternal and mind-independent entity but is created by human beings with certain intentions. Things that are created (or are/can be destroyed), whether concrete or abstract, have temporal properties; that is, they begin (or cease) to exist at a certain time. I take the category of abstract objects to cover all non-spatial entities, which may or may not have some temporal properties. Platonic entities, in this view, fall under this ontological category as they lack spatio-temporal properties.

The chapter has three parts. In 6.2 I will very briefly argue that most of the proposals offered in the philosophy of computer science fail to capture the nature of software as an artifact. It is important to distinguish, or so I will argue, different concepts that are closely related to software such as algorithm, text, copy and execution of software, since (a) people have tried to identify software with one or the other and (b) the differences between them and software and the differences among them may help us to understand the nature of software. I argue that all of them are distinct objects and none of them can be identified with software. In 6.3 I will draw attention to certain similarities between software and musical works. Granting the similarities, I shall argue that the discussions regarding the nature of the musical work can and do help us to understand what software is. I will briefly discuss one of the most plausible views about musical works and see the consequences for software. After addressing the main problems with it I shall argue for

an improved approach to musical works and software. In 6.4 I lay out my positive account of software. I explain in what conditions software comes into existence; how it persists; how and on which entities its existence depends.

6.2. Ontology of software

Many philosophers and computer scientists share the intuition that software has a dual nature (Moor 1978; Colburn 2000). It appears that software is *both* an algorithm, a set of instructions, *and* a concrete object or a physical causal process. On the symbolical level software is some sort of abstract mathematical object that can be implemented in a machine. Many take an algorithm to be a kind of recipe, that is, a finite sequence of instructions intended to achieve a goal. I will follow that view and use "algorithm" in that sense. On the physical level software involves a realization of the algorithm in the hardware; in the central processor, memory elements, input/output devices, etc. The idea is that it would be a mistake to reduce software to an entity that belongs exclusively to one or the other levels described above. Timothy Colburn argues that the duality can be explained by distinguishing the medium of description from the medium of execution. The medium of description is a text that is constructed by one of the many possible levels of formal language, whereas the medium of execution consists of concrete computer parts like circuits, semiconductors, etc. Though helpful, this doesn't address the question of what the nature of software is. Trying to save the above intuition, Colburn claims that software is a concrete abstraction. It is something that is "at once concrete and abstract (Colburn, 205)." It is far from clear what a concrete abstraction means, however, and Colburn doesn't attempt to explain it (Colburn, 205 & 208-209).

The dual nature view is quite confusing. The idea of concrete abstraction needs serious philosophical work, and in the absence of such work it doesn't seem to be an acceptable characterization. However it would be unfair to dismiss the dual nature view for that reason. Perhaps what it means for software to have a dual nature is just that it has concreteness and abstractness as its essential properties. But if concreteness is being in space and time, and abstractness is being non-spatio-temporal, then having both as the essential properties is amount to saying that software has contradictory essential properties. In any case, in due course I will provide arguments against the idea that software can be identified with a concrete or spatio-temporal object, and thus it can't have concreteness as one side of this "dual nature", so I will postpone this issue until then.

I want to discuss briefly another view, which is a bit extreme. It is extreme simply because on this view everything turns out to be software. Peter Suber (1998) argues that software is nothing but a pattern *per se.* What he means by pattern is important for his account. "A pattern," he writes, "is taken in a broad sense to signify any definite structure, not in the narrow sense that requires some recurrence, regularity, or symmetry" (Suber 1998, 90). In this view, anything that has a pattern qualifies to be software. All the questions and concerns about whether a computer program exists only when it is being executed, or if it is also present when it is being stored, copied, erased, or advertised (Turner & Eden 2008), as well as the dispute over the distinction between hardware and software is rendered trivial (Moor 1978; Colburn 2000). "Hardware is also software," Suber concludes, "but only because everything is" (Suber, 102).

But it is one thing to *have* a pattern and another thing to *be* a pattern. It appears that Suber doesn't make such a distinction. So he is unable to distinguish the truth that clouds have patterns from the falsehood that they *are* patterns. Even if we ignore that distinction, Suber's account fails for another serious reason. His account of software is too broad, and thus it misses the artifactual nature of software. We still need a description of how clouds, rocks, and trees are different from Microsoft Word, or MacOs X, or Windows 7. If he is right then what follows is that Microsoft Word, a skin of a coral snake, the flag of Angola, behaviors of the Zodiac Killer are all of the same kind; namely they are all software just because they are or have a certain pattern. It seems Suber takes "software" to be a very broad category, which applies to anything that has a definite structure. But what we need to explain is the nature of software, and what makes it different from other kinds of things like human beings or mountains. Software as pattern *per se* fails to explain all the distinctions we make among those different kinds of things.

In fact, we demand or should demand of a theory of software that accounts for not only the differences between software and, say, tables and buildings, but also the differences between a particular piece of software (say Windows 7), its algorithm, its text or code, its copies and its executions. Let us put aside the question what software is for a moment, and see if we can understand the rest of the list. The *algorithm*, as I have explained above, is a sequence of instructions to the computer in order to accomplish a certain goal. It is a kind of recipe for computer, a kind of to-do list. Many take it to be a kind of mathematical language-independent object, and I agree. Therefore, (assuming we accept a Platonistic view of mathematical entities) an algorithm should be understood as an abstract object in the platonic sense. That is, it lacks spatio-temporal properties and

thus, unlike software, cannot be created. The fact that algorithm is this abstract object devoid of spatio-temporal properties doesn't entail that it cannot have concrete particular instances. The type/token distinction might help us to understand the relation between an algorithm and its particular instance. The distinction is typically taken to be a distinction between a general kind of thing and its particular concrete instance. Type is abstract whereas token is concrete or has spatio-temporal properties.[68] So the distinction between an algorithm and its concrete instance, say, on a piece of paper is a distinction between a type and its token.

The *text* or *code* of software is a text written in a particular programming language. It is also abstract, but unlike algorithm, it is language-dependent. The type/token distinction can also be drawn for the text of software. A text as a type or a text type is abstract whereas its token copies are concrete objects. Consider very simple software that adds two values you enter and displays the sum. Here is a possible text of that software written in the programming language C++:

```
copy          a, reg1
add           b, reg1
copy          reg1, c.
```

A *copy* of software involves certain physical dispositions of particular components in a computer to do certain things. In this sense, having a copy of, say, Windows 7 in a computer is having a computer some of whose components (like hard drive) have certain dispositions to do certain things. Physical copies of a computer program like the one above on CD-ROMs, flash disks, etc. are tokens of the text of the program.

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[68] Nothing crucial in this chapter hinges on what kind of things types are. One common view is that types are universals. I will follow the crowd and assume that types are universals. See Wetzel (2008) for different theories about the nature of types.

What hasn't been explained yet is the *execution* of software (i.e. running a program), which is a kind of physical process, a kind of event. It is the physical manifestation of those dispositions in a computer.

I hope the differences between some of the things or stages I have listed and explained above (algorithm, text, copy and execution) are clear already. I do not think any of the things in that list can be identified with software. I will start with concrete things or stages and move on to abstract ones. Let me start with the question whether a piece of software is identical with an execution or set of such executions of a certain program. I think it is clear that they are not the same thing since they have different persistence conditions, or, if you like, different modal properties. When I terminate the execution of Windows 7 by, say, turning the computer off, the execution of Windows 7 ceases to exist whereas nobody would accept the claim that by terminating an execution of certain software you destroy software itself. For similar reasons a particular copy of a piece of software is not identical with the software itself. Assume that I destroy a copy of Windows 7, say by breaking a particular Windows 7 DVD-ROM into the pieces. In doing so, it is obvious that I destroy a copy of Windows 7, but I cannot destroy the program by merely destroying a particular copy of it. Identifying software with its particular copy is similar to a confusion caused by overlooking the type/token distinction. A text type is not identical to its text token. Even though they have an intimate relation, they still are distinct entities. Thus destroying a particular text token (a Windows 7 DVD-ROM) you do not thereby destroy the corresponding text type (the text of Windows 7). The existence of a type does not depend on its particular token. In other words, types survive the destruction of their particular tokens. In order to avoid repetition the discussion below on

whether software is identical with its text or algorithm is merely concerned with algorithm and text types unless stated otherwise.

The text is not identical with software, because the same software might have different texts. You may write the same software with different programming languages and get different software texts. A good example would be software, which is written with certain programming language that is compatible with a particular operating system (OS) and then translated into other languages so that other operating systems can run that very software. Think of a web browser, say Firefox 3, we use all the time. It can run both in Windows OSs and Mac OSs, but it has different texts for Windows and Mac.

The only possibility left on the list and probably the best candidate for being identical with software is the algorithm. I think the question whether software can be identified with an algorithm deserves a more detailed and careful answer. There are at least two reasons why a piece of software and the algorithm it employs are two different things. First, they are different because you can have two algorithms that are exactly the same but this doesn't guarantee that they are the algorithms of the same software. Second, you may have the same software containing different algorithms. I will start with the first one. One might argue that software doesn't have attributes that are over and above the properties of the algorithm that it contains, and thus if you have the same algorithm then you will have the same software. Suppose two different programmers, x and y independently of each other come up with exactly the same algorithm at exactly the same time. Further, assume that x works for a big software company whereas y is just a computer science student. I think it would be reasonable to claim that the program that x wrote will be installed by millions of people, whereas the program that y wrote will have

just one instance which is installed in his personal computer. *x*'s program will have many social, cultural and economical attributes that *y*'s program will lack. For instance the former will have properties like being expensive, user friendly, popular among young people, pretentious, cool etc., whereas the latter, not being a commodity, lacks all those properties. Or suppose that the same algorithm, say the algorithm that Windows 7 contains now, were used in the mid 1950's. Would it be the same software as the one we are using now? Not really. First of all there were no computers that could run the software back then. All the properties that we attribute to Windows 7 right now, like it is more stable than Windows Vista or it has a better user-interface than Windows XP couldn't be attributed to the algorithm that was indicated in the mid 1950's. If true, this difference between software and algorithm shows that unlike algorithm identity, software identity requires a historical continuity or sameness in origin.

The other reason that software is not algorithm is that the same software might have different algorithms. Consider Windows 7 again. Almost every day the software installs new updates, and its algorithm changes with every update. We normally say that it is the same software that survives all the changes. Furthermore, we want to be able to say that the same program could have a different algorithm than it actually has. In fact there are cases in which the same software written for different operating systems has different algorithms. For instance, Microsoft Word's algorithms for PC and for Macintosh are different and yet it seems we think that they are the same software.

But perhaps, the claim that software survives changes in its algorithm is too quick. One might, for example, argue that the same software couldn't have different algorithms just as the same musical works couldn't contain different sound structures. So, according

to this view, any change in the algorithm results in a numerically distinct piece of software. In fact this might not be as implausible as it seems. Consider the Microsoft Word example again. One could insist that the Microsoft Word for Mac and the Microsoft Word for PC are two different programs, and that is why they have different names. Take, for example, Microsoft Word 2010 for PC and Microsoft Word for Mac 2011. In order to understand and clarify this problem a distinction between a piece of software and its versions is to be made. This particular distinction has also important consequences for the proper understanding of the identity and persistence conditions of software. A version of a piece of software denotes one of its unique states. For instance, the version of the Microsoft Word processor that I use for typing this paper is called Microsoft Word 2011. There is no single method for software versioning. Different software companies, software engineers use different methods.[69] The decision to use a particular version numbering scheme is almost entirely a pragmatic decision; it is a matter of convenience (both for programmers and end-users). To illustrate the importance of software versioning for our discussion about the identity of software I will use "Semantic Versioning"[70], which provides a clear guideline for version numbering. Here are two important rules from that guideline:

- A normal version number must take the form X.Y.Z where X, Y, and Z are integers. X is the major version, Y is the minor version, and Z is the patch version. Each element must increase numerically. For instance: 1.9.0 < 1.10.0 < 1.11.0.

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[69] For a list of some versioning methods see: http://en.wikipedia.org/wiki/Software_versioning (Retrieved September 2011).

[70] http://semver.org/ (Retrieved September 2011).

- Once a versioned package has been released, the contents of that version must not be modified. Any modifications must be released as a new version.

The order of numbering system is determined by the significance of the change made on the algorithm of a piece of software. Therefore, a change in the major version implies an important change in the computer program. Whereas, a change in the patch version mostly indicates fixing some bugs. Every change in software version, even a change in the patch version requires a change in the algorithm. This means that if software is identical with algorithm, then every version with a different number (including the minor and the patch number) is itself a different piece of software and not a different version of the same software. This conclusion is at odds with the common practice of software engineers, companies and end-users. Even if one might hesitate to claim that, say Firefox 2.2.2 is the same software as Firefox 6.0.2 due to the major changes in its algorithm, text and user-interface (the medium where users communicate with software or more generally the way software looks and feels to users) there is no doubt that Firefox 6.0.1 is the same software as Firefox 6.0.2; in the later release only two bugs are fixed.[71] Think of more complex and massive computer programs like operating systems available today. Take Windows 7, for instance. Almost every day the program installs updates altering its text and algorithm yet Windows 7 survives those changes. A quick look on the information about your PC will confirm this.

A different argument against the view that software is identical with its algorithm is motivated by the literature on the digital rights management. When one looks at the

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[71] See http://www.mozilla.org/en-US/firefox/6.0.2/releasenotes/ (Retrieved September 2011).

copyright infringement lawsuits for software, leaving the legal and moral issues aside it seems clear that computer programs are not taken to be identical to their algorithms by the courts. One interesting example is *Lotus vs. Paperback.* In June 1990, the federal district court of Boston, Massachusetts decided that the user-interface (or the look and the feel) of Paperback Software's spreadsheet software VP-Planner infringed copyrights of the user-interface of the Lotus 1-2-3. The court held that the copyright protection extends beyond the literal source of the computer program, namely its algorithm and text.[72] It also covers to some extent the way software looks and feels. U.S courts gave similar decisions about extending the scope of software copyright so that it covers certain non-literal elements of computer programs.[73] One of the main issues in all those trials was to decide what counts as substantial similarity for the user-interface of computer programs. This is a hard question and fortunately we don't need to settle the issue here. The importance of these court decisions for our purpose, namely deciding whether software is identical with its algorithm, is that they show that the identity of software is not only about its algorithm but also, for instance, about its interface; the way it looks and feels to end-users. The underlying idea here is that software survives changes in its algorithm to a certain extent so that we can trace copyright infringements. I conclude that identifying software with its algorithm contradicts with our practices and beliefs about software, therefore it should be denied.

To sum up what I have done so far, I first assumed that software is a kind of artifact, and committed to a methodology of some sort of common sense ontology**.** Second, I have briefly argued that none of the accounts that have been given so far successfully captures

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[72] See *Lotus v. Paperback (1990).*
[73] See, for instance, *Computer Associates v. Altai (1992), Lotus v. Borland International (1996).*

the artifactual nature of software. Third, I have distinguished four different sorts of entity that are closely connected with software, and argued that none of them can be identified with it. Now I want to conclude from the discussion so far that any successful ontology of software

(1) has to do justice to the artifactual nature of software (that it is created, and is a production human activity with appropriate intentions),

(2) must be able to distinguish software from its algorithm, its text, its copies and its execution,

(3) must account for the fact that software identity requires historical continuity or the sameness of origin, and

(4) must account for the identity of software over change in its algorithm or its text.

In the rest of the chapter I shall argue that we can find traces for a successful theory of software in the ontology of music. I will briefly examine one of the most popular theories of musical works that are proposed by Jerrold Levinson (1980). I shall argue that although it suffers from serious problems it is a reasonable view and is on the right track. After applying the view to the subject matter of the present paper, I will argue that the view in question is problematic because it fails to satisfy (4) above; one of the desiderata for any successful ontology of software. Finally, I will provide my own view in which software is a kind of historical abstract entity that is created by computer programmers with certain intentions.

6.3. Software and musical works

The reason why I want to look more closely at the ontology of music is that it seems software is very much like musical works in many respects. First of all both are historical

abstract entities that are human creations. Second, we see a set of concepts that are closely related yet not identical to musical works as we have seen with software. In the case of software, there were closely related entities including the algorithm, text, copy and execution, whereas for musical works the concepts that are deeply connected and yet are difficult to identify with it are sound structure, score, copy of score and performance.

I will not discuss in details why musical works shouldn't be identified with any of the entities named above.[74] Instead I will make a few remarks that might motivate this view.[75] A musical work has many instances, none of which, it seems, can be identified with the work itself. The instances of a musical work are performances, which are physical processes or events. A musical work can also not be identified with the original score written by its composer, since, as Jerrold Levinson argues (Levinson, 5), many listeners may be familiar with a work who have no idea about or no contact with the original score. It seems that the musical work has a deep relation, if not identity, with its sound structure. A sound structure (like an algorithm) is an abstract object; "a structure, sequence, or pattern of sounds, pure and simple (Levinson, 6)."

The classical view about the nature of musical works is a kind platonism according to which musical works are abstract objects; namely sound structures or types. In this view, the relationship between a musical work and its performance is a relation between a type and its token (Kivy, 92; Deutsch, 209; Dodd, 424). Performances, then, are tokens of a musical work, which is itself a structural type or a sound structure.

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[74] See Roman Ingarden (1989) for such discussion.
[75] For a detailed discussion on this question see Levinson (1980), Kivy (1983), Deutsch (1991), and Dodd (2000).

This classical view, however, meets serious objections. The decisive one, as Jerrold Levinson argues, is that the classical view fails to satisfy a criterion that any adequate theory of musical works should meet called creatability:

> Musical works must be such that they do *not* exist prior to the composer's compositional activity, but are *brought into* existence *by* that activity (Levinson, 9).

The Platonic theory roughly sketched above fails, because according to standard Platonism abstract objects are eternal or atemporal[76] entities and thus cannot be created. Levinson gives two more requirements but for the purpose of this paper let's assume that the creatability requirement gives us enough grounds to reject the classical Platonism. What he proposes, instead, is a view in which musical works are still abstract objects, but unlike the classical Platonic view, he argues that those abstract entities can be created. Levinson argues that a musical work is a sound structure indicated by a composer at a certain time. According to him, a composer *x* by indicating a pre-existing sound structure *Ψ*, at time *t* creates a new object called an "indicated structure." For instance, Beethoven's Symphony No. 7 in A Major is not to be identified with the sound structure *Ψ*, but instead, Levinson claims, it is *Ψ-as-indicated-by-Beethoven-in-1811-12*.

Let us look at how Levinson's theory could be applied to software. Let us assume that *x* is all the engineers who worked on coding the Windows 7 and *Ψ* is the algorithm *x* wrote for Windows 7. Then, Windows 7 is *Ψ-as-indicated-by-x-in-2009*. As an indicated type, Windows 7 was created in 2009 and thus it didn't exist, say, before the invention of the first computer. Software as an indicated algorithm satisfies the creatability

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[76] Being eternal and being atemporal are two different things. x might be eternal but it is still in time, it just always was and always will be. On the other hand if x is atemporal it is not placed in temporal dimension and thus it would be a mistake to say that x always will be, since x has no temporal properties.

requirement and so is in accordance with the assumptions I made before that software is a kind of artifact.

I find Levinson's view quite plausible. The application of his theory to software seems to satisfy most of the requirements that I set above; namely (1), (2) and (3). However, I think it fails to satisfy (4): the identity of software through change. Similarly I don't think that the theory can allow a change or a revision on a musical work once composed. If a musical work is a sound structure indicated by a composer at a certain time then changing the indicated sound structure (say by revising the score) would bring a distinct musical work into existence. But we ought rather to say that, assuming that changes are not radical and extensive, it is the same musical work that has survived the changes. Levinson might respond by saying that the sound structure that is indicated by the composer is somewhat vague and thus it might accept a revision and retain its identity. But this doesn't solve the problem for the following reason. Let us say there are two sound structures, S_1 and S_2, the former is the one that the composer indicated first and then he revised it and got S_2. In order to say that we have the same musical work, Levinson might suggest that it is vague that which sound structure is indicated by the composer. So the musical work is a vague indicated sound structure S instead of a precise indicated structure S_1 or S_2. This seems to solve the problem of identity but it does so with the cost of denying that musical works can change. That is, S hasn't been revised or changed; it was already there in the first place, so nothing was changed.

When it comes to software the problem of change gets even more serious. I have already discussed above the differences between an algorithm and software and argued that identifying the software with the algorithm will not work since the software may

retain its identity even when it comes to employ a different algorithm. Changes in software happen all the time; programs are updated (meaning their text and algorithm are changed) quite often due to the security reasons, or cleaning the bugs in the program, or adding new features and tools, etc. Therefore, although software installs new updates, and its algorithm changes with every update, we want to be able to say that it is still the same software.

The objection above indicates that Levinson's theory of musical works and its application to software, though on the right track, fails to provide successful answers to the demands that we have set so far.

6.4. Software as an abstract artifact

Let us return to the question what kind of objects pieces of software and musical works are. I think that both software and musical works are abstract artifacts, which are created by software engineers or composers with certain intentions. As I have argued above they cannot be identified with any physical object like copies of scores, CD-ROMs, circuits, etc. or with any event such as or musical performances and software executions. The obvious reason for this is that they have different identity and persistence conditions. Furthermore, I have argued that they are abstract objects in the sense that they can be created and destroyed, but not platonic abstract objects, which are eternal non-spatio-temporal objects. It seems to me that the idea that software and musical works are created is so central to our beliefs that we cannot consistently hold those beliefs and also believe the claim that they are eternal and mind-independent entities just like sound structures or algorithms.

If we agree that software is not a platonic entity; it is created and can be destroyed, and that software survives changes in its algorithm or text, then it would be wrong to claim that software falls under the general ontological category of type. Type is usually taken to be a species of universals. Given that it is true, type is not the appropriate ontological kind for software as universals are not usually treated as entities that survive change or can be destroyed. However, I do not have a particular view on the nature of types. If there is a plausible theory of types in which they can change or be created or cease to exist, then I don't see any problem to take software as falling under the category of types on that theory. In the absence of such theory I conclude that computer programs are not types, and thus the relation between computer programs and their physical copies cannot be understood in terms of type/token distinction.

Both software and musical work come into existence when an author or a group of authors indicate a certain algorithm or a sound structure with the right kind of intentions; intentions to create those sorts of things. This act of creation is an act of coming up with the score or the algorithm and by writing them down creating the original copy of it. The existence of software and musical work does not solely depend on this particular copy; even if the original copy is destroyed right after its creation, the software or the musical work does not thereby cease to exist, because the author(s) might create another copy of the same artifact. The existence of these artifacts depends on their authors, copies, performances or executions and memories. The existence of software and musical work depends on the above entities, processes, events, etc. in the sense that necessarily whenever one of them exists at time t software or musical work exist at t. The existence of software depends on the existence of its author(s) at some time; just like any other

artifact musical work and software come into existence by some human being's act of creation. If there are copies of a piece of musical work or software at certain times, then that musical work or software exists at those times even if their creators ceased to exist, or they are not performed or executed, or no one remembers them, etc. Similarly, if a piece of software is executed at some time, it exists at those times even if there are no remaining copies of it, or no one remembers it, etc. If there were no remaining copies, no performances (or executions), but someone remembers the algorithm (or the score) of a piece of software (or a musical work) at some time then they exist at that time. Both musical works and software persist through time by having one of the things on the above list (i.e. copy, the author(s), execution or performance, memory) existing. However, they are not eternal entities. Although they do not have a spatial location, they are created in time and can be destroyed if and only if all of the following conditions are met:

(1) Their authors ceased to exist.

(2) All of their copies are destroyed.

(3) They are not performed or executed ever again.

(4) There are no memories of them.

Think of a very old computer program, like NIM, a very old computer game created in 1951 by Ferranti Inc., which was played on a computer called NIMROD that was exclusively designed to play NIM. A replica of NIMROD has been built for, and exhibited in Computerspielemuseum Berlin. Let's assume that every copy, including the one in the replica, which is exhibited in the museum in Berlin has been destroyed, and further assume that by some historical accident no one, even the engineers of Ferranti Inc., a UK electricity company, who created it, remembers the NIM or the NIMROD; it

has completely been vanished from the memories of people who have seen it displayed at the Festival of Britain in 1951. In that case, I argue that the NIM would cease to exist; it would be destroyed. Perhaps, it is easier to imagine similar scenarios today. There are thousands of new computer programs created every minute today, and most likely some of them have never been made public, forgotten by very people who created them. It is not hard to assume for some of those programs that all of their copies are lost, and memories of them are vanished. If I am right, then we should say that those computer programs ceased to exist, and thus computer programs are not eternal or atemporal entities such as numbers, mathematical formulas etc. One might argue that simple algorithms, like the algorithm of NIM, could be indicated by a different author at some later time, for instance, after every copy of it is destroyed and no memory of it remains. One might continue to claim that if the same algorithm is indicated at some other time, then why not say that it is the same software, NIM. I argued above that different software might have the same algorithm, and if I am right, then when the same algorithm is indicated again (after the destruction of all the copies of and memories of software that has that algorithm) in a different historical context, by different author(s), with different purposes, etc. a new software is created even if the same name, say NIM, is given to it.

I conclude that unlike platonic entities, software and musical works depend for their existence on humans. A further conclusion is that they can be destroyed if all their copies, performances, executions, and memories about them are destroyed. They are, therefore, abstract only by virtue of lacking spatial location.

6.5. Conclusion

Although software is ubiquitous and a quite indispensible part of human life not much has been done to understand its metaphysical nature. In this chapter, I argued that the proposed accounts of the nature of software are inaccurate and wrongheaded. I offer a novel account of software according to which software is an abstract artifact. In this new account I greatly benefited from the discussion on the nature of musical works. Looking at the ontology of musical works is motivated by remarkable similarities between musical works and software. I argued that like musical works, software is an abstract artifact. Both software and musical works are created by an act of human being(s) with the right sort of intentions. One difference between software and musical works might be that there are different kinds of intentions behind the creation of these artifacts. Musical works and works of art in general are not created in order to serve a practical purpose or to have a practical use. However, what is typical about software like a piece of software that is developed for airline flight booking and reservation system is that it is a technical artifact. A technical artifact is an artifact that is intentionally made to serve a given purpose; an object that is designed for achieving practical goals. However, there are many computer programs that seem to lack any practical goal. Some computer games, digital audio and video files might be good examples of such software. A further problem for drawing such a distinction between software and musical works or works of art in general is that there are pieces of software that are intended to be works of art.[77] It seems that the issue of ontological differences between software and musical works is more complicated than it looks and requires a careful discussion. I, therefore, leave the discussion for future investigations.

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[77] For interesting examples of software art see: http://www.runme.org/ and http://www.year01.com/code/.

The existence of software depends on certain other things, processes, and mental states such as physical copies, executions and memories. Software could be destroyed if all the things that its existence depends on are destroyed. Therefore, unlike other abstract objects, like numbers, propositions, concepts, etc. software is creatable and destructible, and thus it is not an eternal or atemporal entity. The purpose of this chapter is to introduce a novel account of software and to contrast it with the accounts proposed so far. Nevertheless, there is still much to say about the ontology of software. For instance more should be said about the kind of dependence relations[78] that hold between software and copies, memories, executions, and so on. Moreover, work still needs to be done on questions such as how software changes, what the identity conditions for software are, and more. However, answering all those questions would require a separate work.

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[78] For different kinds of dependence relations see Thomasson (1999).

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