

CONCEPTUAL RELATIVITY MEETS REALISM IN METAPHYSICS*

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ABSTRACT

The paper addresses the relationship between ontological realism and Putnam's thesis of conceptual relativity. The paper divides into three parts. The first part aims to reconstruct the notion of conceptual relativity, focusing on Putnam's example involving mereological principles of individuation of objects. The second part points to some major shortcomings of the mereological example of conceptual relativity and then moves to a different version of conceptual relativity, which targets objects posited by mature scientific theories. I claim that the mereological and the scientific version of conceptual relativity are different in important respects and that two main types of conceptual relativity therefore need to be distinguished. In the third part, I show that conceptual relativity is not in tension with realism. More specifically, conceptual relativity is not in tension with "realism in metaphysics" that Putnam adopted in the last decade before his death.

Keywords: *Hilary Putnam, conceptual relativity, realism, optional languages*

1. Conceptual relativity: The Case of Mereology

Although Putnam never ceased to be an ontological realist, believing in the realm of mind-independently constituted objects, he was relentlessly pointing out unclarities of realistic metaphysics. In this section, I will introduce the curious phenomenon of "conceptual relativity" (Putnam's coinage), which calls into question one of the assumptions of an uncritical form of realism.

First, *un peu d'histoire*. In the period from mid seventies to late eighties,

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Putnam was advocating “internal realism”, which was in opposition to “Metaphysical Realism” (based on the presumption of unique correspondence relation between words and a fixed “ready-made” world of external things and properties).¹ Apart from the emphasis on the epistemic notion of truth and its concomitant idea of idealized rational acceptability, internal realism had a distinctly constructivist flavour. Internal realist holds that we, human beings, “cut up the world into objects when we introduce one or another scheme of description” (Putnam 1981, 52). Objects thus conceived are scheme-dependent. They are logically mind-dependent: their existence implies existence of a mind using one or another conceptual scheme. Putnam later recanted these verificationist and constructivist notions and came to adopt a more traditional realist position. That is, he accepted that there can be truths that outstrip all our means of verifying them and rejected all constructivist talk about the mind “making” the world. After adopting “direct realism” in the philosophy of perception from the early nineties onwards (Putnam 1994a), he eventually embraced “realism in metaphysics” in his most recent writings on realism, starting with the lecture *From Quantum Mechanics to Ethics and Back Again* (delivered in 2007; reprinted in Putnam 2012; see also Putnam 2016a, 24–27). There is, however, one assumption of Metaphysical Realism that Putnam never accepted. It’s the idea that there is only one correct and complete description of reality. Putnam’s late brand of realism embraces the possibility to describe the world correctly in different ways; in a word, it embraces conceptual relativity.

Conceptual relativity, “the heart of internal realism” (Putnam 1991, 404) thus survived the collapse of other ingredients of internal realism. It reappears in Putnam’s more recent writings such as Putnam (2004) or Putnam (2012). Conceptual relativity is to be distinguished from conceptual *pluralism*, another tenet adopted by Putnam. Conceptual pluralist draws attention to cases in which two quite distinct schemes, such as the scheme of particle physics and the ordinary language of chairs and tables, describe the same portion of reality – say, the furniture in a study. On this view, the talk of chairs and tables truly describes what is out there and should not be seen as inferior to the physical description of the same portion of reality; science is not the only discourse which states “the facts” (Putnam 1994b, 243; Putnam 2004, 48). Putnam, of course, admits that chairs and tables are composed of particles described by physics. These different schemes, however, deal with different “levels of reality”. For this reason, everyday claims are not reducible to the statements of physics. In most radical cases of conceptual plurality, we cannot even conceive how we would go about reducing one description into another: think of physical theory and literary criticism. Conceptual

¹ Throughout the text, I use “Metaphysical Realism” with capitalized letters as a name for the position Putnam was critical of.

plurality thus involves irreducible but compatible descriptions of the same states of affairs. The reverse is true of conceptual relativity.

The doctrine of conceptual relativity most centrally consists in the claim that “in certain cases what exists may depend on which of various conventions we adopt” (Putnam 2004, 39). Sometimes we can describe the same state of affairs in two different ways and it’s not possible to conjoin the two descriptions, because the result would be incoherent. In these cases, there is no fact of the matter as to which of the descriptions is *really right* and nothing is necessitating the choice of one of the descriptions over the other. These non-conjoinable but correct descriptions, though, are only “incompatible at face value”. There is no genuine incompatibility between them, for the statements can be converted into each other. Yet, they do not preserve the same “ontology”: they do not see the world as composed of exactly the same objects. Thus, conceptual relativity encroaches on basic ontological notions such as “object”.

The best way to get a grip on Putnam’s idea is to look at his examples of conceptual relativity. The one most frequently used by Putnam, to be found in his (1987) and various other writings, in various variants, concerns mereology and its way of individuating objects – a way that contrasts with more familiar individuating strategies. Imagine a mini world – “Carnapian world” in Putnam’s terms – consisting of just three individuals, x_1 , x_2 and x_3 . According to most of us, I guess, the Carnapian world consists of precisely three objects. However, suppose that “Polish Logician”, a champion of mereology, looks at the same world.² In his view, it consists of *seven*, not three objects. These are, respectively:

$$x_1, x_2, x_3, x_1 + x_2, x_1 + x_3, x_2 + x_3, x_1 + x_2 + x_3.$$

Who is right, then? How many objects *really are there* in the Carnapian world? Putnam insists that these questions have no sense. We cannot determine the number of objects in the world before it is established which conceptual apparatus we are drawing on in counting the objects. Once the apparatus is fixed, the question concerning the number of objects acquires a clear meaning and can be answered. Whether we talk “atomistically” or mereologically is a matter of choice. The Carnapian world doesn’t dictate to us in which scheme it should be described.

Now, the two statements concerning the number of objects certainly aren’t mutual *translations* of each other in the ordinary sense in which “There are three objects in the Carnapian world” and “Il y a trois objets

² Mereology is the calculus of parts and wholes based on the principle that for every two particulars there is an object which is their sum. The “Polish Logician” is Putnam’s allusion to Stanisław Leśniewski, the author of the first formal part-whole theory. See Putnam (1990, 96).

dans le monde carnapéen” are mutual translations. But the two sentences from the alternative conceptual schemes are “in deep mutual relation” (Putnam 1987, 20). To begin with, there is a simple procedure of converting the number of atomistic objects into the number of mereological objects: if the number of atomistic objects is n , then the number of mereological objects is $2^n - 1$. The existence of such a method of “translation” is an essential feature of conceptual relativity: Putnam rejects the picture of two correct but not convertible descriptions of the world (Putnam 1983, 40). Consider another mereological variant of conceptual relativity featuring alternative *predicates*, viz. the colours of objects (Putnam 1990, 98f.). Suppose that x_1 is red and x_2 black. The mereologist will claim that the Carnapian world contains an object which is partly red and partly black (i. e., $x_1 + x_2$). The atomist will deny this (provided, that is, that x_3 is not partly red and partly black). There is, though, a method of interpreting the Polish Logician’s sentence “There is an object which is partly red and partly black” in the atomistic scheme: „There is an object which is red and a different object which is black“. Both sentences correctly describe the same state of affairs. In this manner, we could reinterpret all colour attributions of one scheme in the other one. This reinterpretability of alternative descriptions generalizes across the board to all cases of conceptual relativity, whatever their subject matter.

Technically put, the two alternative descriptions of the Carnapian world are “mutually relatively interpretable”. Theory T_1 is relatively interpretable in T_2 if there are formal definitions of the terms of T_1 in the language of T_2 with the property that, if we “translate” the sentences of T_1 into the language of T_2 by means of those definitions, then all theorems of T_1 become theorems of T_2 . Two theories are mutually relatively interpretable if each is relatively interpretable in the other (Putnam 1983, 38). Mutual relative interpretation, though, as is clear from the above definition, concerns only the formal properties of two conceptual frameworks. In this formal fashion, two frameworks might be relatively mutually interpretable even if they deal with completely disparate domains – say, one is an axiomatic system of genetics while the other an axiomatic system of number theory (Putnam 1983, 38). This is not the case in Putnam’s mereological example. The atomistic statement and the mereological statement both describe the same domain, viz. the Carnapian world. The two descriptions are thus “cognitively equivalent” in the following sense: they are describing the same state of affairs and all their predictive and explanatory powers are equal.

The notion of the shared domain of the two descriptions is a prerequisite of the superficial, “at face value” incompatibility of the descriptions. If the descriptions described different portions of reality, they would not be incompatible in any way and could be conjoined into a single true description of the overarching WORLD (Lynch 1998, 29–30). But how to

secure the same domain for the superficially incompatible schemes of description?

Putnam is clearly aware of the need for a common domain of the two descriptions (see Putnam 1991, 406, and Putnam 1992, 185). At the same time, he occasionally qualifies the claim about the shared domain with scare quotes: he talks about “the ‘same’ world” (Putnam 1987, 20) and “(in some way) the ‘same facts’” (Putnam 1987, 29). But this can’t be right. The underlying reality common to both descriptions must *really* be the same, not just “as if” the same. Without this, the descriptions could not be incompatible, not even in the superficial sense Putnam has in mind. If the sentences “There are three objects” and “There are seven objects” describe domains that are in any respect different, they cease to be superficially incompatible.³

But how can we flesh out the idea of the common domain? There cannot be a third, neutral description of the Carnapian world which would incorporate the two competing accounts, for this would dissolve conceptual relativity. Yet, if we fail to provide some scheme-independent route to common underlying reality, how can we claim that the two descriptions capture the same facts? All that has been produced are just two different renderings of what is – without ground – claimed to be the same state of affairs. Could sensory perception help us with this problem? It could, but it doesn’t seem to be necessary to fix the underlying state of affairs. In fact, I introduced the mereological example without drawing on sensory perception.⁴ Therefore, I suggest that we grasp the fact that the two descriptions describe the same domain – that we just “get it” – even if the descriptions themselves not only do not state that they share a domain but they even appear to be incompatible. This is an important result. It shows that there are things we can say on the basis of the competing descriptions even if they are not explicitly contained in the descriptions themselves.⁵

As to the idea of the incompatibility at face value, one could try to unpack it in the following way: the two sentences, “There are three objects in the Carnapian world” and “There are seven objects in the Carnapian world”, are incompatible only at first blush, because there is

³ In more recent texts, Putnam dropped the qualifications and spoke simply of the same facts or the same state of affairs. See, e. g., Putnam (2016, 153–154).

⁴ Moreover, perception would be of no use in the case of unobservable scientific entities, which figure prominently in some of Putnam’s conceptual relativity arguments. We will get to these entities in the following section.

⁵ In defending the common domain of the two descriptions, Putnam wants to avoid a more extravagant metaphysics according to which both “versions” of the Carnapian world literally describe two different worlds, as was famously claimed by Nelson Goodman (1978). See Putnam (1992, 122).

no such thing as “a ‘proposition’ which one of these sentences affirms and the other denies” (Putnam 1991, 404). When we look more closely, we realize that the word “object” doesn’t have the same meaning in both descriptions. Rather, its meaning is determined with the help of the relevant contextual parameter, viz. the framework adopted (atomistic vs. mereological). Relative to the atomistic scheme, “object” means something else than what the same word, syntactically speaking, means relative to the mereological scheme. The tension between the two descriptions vanishes into thin air. Both can be true at the same time.

However, Putnam is adamant that this explanation is incorrect. It is wrong, he believes, to view the shift between the two descriptions as a shift in meaning. Rather, he suggests, what is involved is a difference in *use* of the term “object”. “The ordinary notion of ‘meaning’ was simply not invented for *this* kind of case” (Putnam 1991, 405). The two uses of the word “object” do not deserve two separate dictionary entries (Putnam 1994a, 451f.). Putnam’s favorite example of this occasion-sensitivity of discourse involves coffee: think about the sentence “There is too much coffee on the table” used on occasions when there is (1) a number of mugs full of coffee on the table, (2) a lot of spilled coffee on the table and (3) a lot of bags of coffee beans on the table (Putnam 1999, 87–88). The extension of “coffee” is somewhat different in these three instances of “There is too much coffee on the table”, yet the core meaning of “coffee” is preserved in all of them. Thanks to this occasion-sensitivity, some concepts are semantically “extendable”. We need these “broad-spectrum notions” when we lack more precise terms and when we try to intelligibly explain those more precise terms while introducing them (Putnam 2012, 68). According to Putnam, the notion of object is extendable in this sense. The atomist and the mereologist do not use different concepts of objects; they use the same concept in somewhat different ways.⁶

2. Beyond Mereology: Scientific Objects

The argument for conceptual relativity from mereology will only work if we accept mereological scheme as a full-blown ontological alternative to atomism. But should we? There are reasons which count against such ontological tolerance. To begin with, Putnam himself notes that mereological ontology is *profligate*. It accepts all the objects accepted by the atomistic description and adds to them a couple of weird ones. This lavishness leads to unwelcome consequences. Suppose, to use Putnam’s example, that object *a* is a body of a lamp (including the bulb) and object

⁶ Putnam claims that the notion of existence is extendable, too. He thinks that mathematical and physical entities exist in different senses and that this is also true of the mereological and atomistic objects. See Putnam (2004, 240).

b its detachable shade. Then, according to the mereological way of counting, the room contains the objects *a*, *b* and *a + b*. But since “*a + b*” stands for “bulb-containing body of a lamp plus its detachable shade”, the mereologist in fact claims that there are *two* lamps in the room – a claim that can be empirically disproven. Few of us are attracted to accepting such a realm of shadowy *Doppelgängers*.⁷

Another complaint against mereological criteria of objecthood is due to Peter van Inwagen. It concerns the role of convention in ontology. Putnam’s claim that what there is is in some cases partly a matter of convention sounds just incredible to van Inwagen. To postulate, by fiat, that mereological sums exist is, in his eyes, equal to postulating that Golden Mountain exists. Thus van Inwagen firmly denies mereological ontology of the Polish Logician’s stripe: there just *aren’t* such objects as a mereological sum of a cat and a dog, he insists (van Inwagen 2002, 192). But even if we decided to include mereological sums into our inventory of what exists, they will still be in two respects importantly different from ordinary individuals. In the first place, *sums* can hardly be imagined to exist independently of a mind that assembles them. They thus violate Putnam’s requirement of logical independence, which, he claims, belongs to objects as conceived by realists. Sums do not exist in the same mind-independent way as ordinary objects. Secondly, if I read Putnam correctly, the existence of mereological sums is based on ontological convention, but the existence of ordinary objects is not. In fact, I am not sure what would be the ontological convention for ordinary objects. To call an object object? I don’t believe it would occur to anyone to call this a convention. The mereological ontological convention, on the other hand, is clear enough: *for every x and every y there is their mereological sum z = x + y* (Raatikainen 2001, 172). Ontological convention thus concerns only what Jennifer Case calls “optional languages” (Case 1997). A natural language such as English can harbour any number of optional languages which are (temporarily) adopted for specific purposes. Optional language is an extension of some more basic language. In the case at hand, mereological description is a consciously adopted extension of the more basic atomistic description. Putnam endorses this view in (Putnam 1994a, 451n13); in (Putnam 2012, 57f.) he adds that the existence of mereological sums is conventional in the sense that all facts can be expressed with or without them.

Consider now yet another objection to mereological ontology, due to Smith (2004, 79): mereological sums (Smith calls them “junk particulars”), such as the sum of my nose and of the Eiffel Tower, do not instantiate universals standing to other universals in relations captured by scientific laws. Therefore, they are not in all respects equal to atomistic

⁷ As Varzi (2000, 287) argues, a well crafted inventory must be, on the one hand, complete, but shouldn’t be, on the other hand, redundant.

objects, which do instantiate universals standing to other universals in relations captured by scientific laws. Again: mereological sums are importantly different from ordinary objects and if Putnam's arguments for conceptual relativity were based solely on them, we would have good grounds to question their relevance for ontology. But mereological sums are only the most well-known example of conceptual relativity. Putnam has other examples to offer. Take geometrical points. These, Putnam tells us, can either be seen as concrete particulars occupying a portion of space-time, or as "mere limits" (for technical details, see Putnam 1992, 217n14). Similarly, a theory which represents the physical interactions between bodies in terms of action at a distance and a physical theory which represents them in terms of fields may both be right (Putnam 1990, 40); or: relative to one conceptual framework of fundamental physics, reality consist of physical particles, relative to a different framework it consists of fields (Putnam 1992, 121). In his most recent writings, Putnam favored yet another example of conceptual relativity taken from scientific practice: statements about bosons and statements about fermions can be taken as two equivalent representations of the same quantum mechanical system – the physicists call this phenomenon "duality". Informally put, there are known ways to convert statements talking about fermions into statements about bosons, and vice versa.

Putnam claims that examples of conceptual relativity are ubiquitous in mathematical physics (2012, 63). I will stick with bosons and fermions. A quantum field model constructed with fermions is "bosonized" (in a specified number of spacetime dimensions) when it is reformulated in terms of a model which is equivalent but constructed exclusively from bosons. By the same token, a system consisting solely of bosons can be "fermionized". From the mid seventies a number of different mathematical techniques emerged that allow for such transformations. This is surprising, given that bosons and fermions have very different properties. They, crucially, differ in their spin quantum numbers. Fermions such as neutrons and quarks have half-integer spins, while bosons (pi mesons, photons etc.) have integral spins. As a consequence of this, systems containing fermions behave in different ways than systems containing bosons. E. g., bosons can all be in the same quantum state. Fermions can't: Pauli exclusion holds for them, and if this were not so, periodic table of elements would look very different. Fermions are matter particles while bosons are force carriers. And so on.

Despite all these differences in their ontologies and "ideologies" (i.e., the predicates used), bosonic and fermionic schemes of description preserve all observations and can account for them in fully equivalent ways. Now, as we have observed, from the possibility of construing new schemes of individuation à la Polish Logician it just does not follow that they are equally good representations of the external states of affairs as any old vocabulary. But the case of peculiar objects populating quantum physical

theories is different. Undeniably, cases such as fermion to boson conversion do exist in science. Fermions and bosons do not fall prey to Smith's objection, for they do instantiate universals standing to other universals in relations captured by scientific laws. And we cannot just dismiss either fermions or bosons in the way that van Inwagen dismissed mereological sums.

The differences between the two examples of conceptual relativity, mereological and quantum mechanical, are not accidental, but reflect a deeper, systematic dissimilarity. I submit that we need to distinguish two types of conceptual relativity. In the CR₁ type, one of the alternative languages is optional, in Case's sense. Mereological example is of this type, because the individuating scheme of mereology is adopted via a special ontological convention. In CR₂ cases, neither of the languages is optional. Bosons and fermions, together with other concepts used in physics and elsewhere, fall under this second type of conceptual relativity. Bosons and fermions are both fully self-standing, ontologically speaking. None of them is an optional extension of some other, more basic notion. Bosons are not just variants of fermions, or vice versa.⁸

There are other divergences between the two types of conceptual relativity. Most importantly, the fermion–boson duality does not conform to the *relativity-of-use* template characteristic of the mereology example (and possibly other cases of CR₁). This is the schematization of the use relativity in the mereological example: relative to the relativizer Γ (atomistic scheme of individuation), the word “object” is used in a way α ; relative to Δ (Polish Logician's scheme of individuation), the same word is used in a way β . The word “object” preserves its core meaning on both occasions of use, although Γ -objects and Δ -objects somewhat differ. In contrast with this, “boson” and “fermion” are two words with distinct meanings, fixed by the physical theory. No “extendability” of concepts and no “incompatibility at face value” is at work here.

3. Conceptual Relativity and Realism

Despite the differences between the two types of conceptual relativity, CR₁ and CR₂, statements of physical theory about bosons and statements about fermions are “mutually relatively interpretable”; they are two different ways of describing the same situations. This is the core of conceptual relativity, as conceived by Putnam. We should, therefore, accept Putnam's quantum mechanical example and other cases of CR₂ as bona fide instances of conceptual relativity, even if they do not conform to the relativity-of-use template and even if there is nothing conventional

⁸ It is possible – though I don't know how to argue for this in a principled way – that all instances of CR₂ concern scientific objects and that there are no CR₂ examples of commonsense objects.

about the existence of fermions or bosons. We have a genuine choice whether to describe the same quantum mechanical system either as composed of fermions or as composed of bosons.

This fact, on the face of it, is more disconcerting than the suggestion that objects can be individuated atomistically or mereologically – that there is no philosophically privileged sense of “object”, as Putnam put it (Putnam 1995, 303). Is it not deeply puzzling that we can swap two quite different objects for each other while describing the very same part of external reality? Isn’t the physical reality itself to a certain extent *indeterminate* because of this? Not according to Putnam. He points out that according to the physicists, the possibility of boson-for-fermion exchange shows that the ontology of the quantum mechanical theory of a particular system is not the “load-bearing aspect” of the quantum mechanical scheme (Putnam 2012, 57). The quantum mechanical scheme has alternative “representations”, including the fermionic and the bosonic representation. The conclusion that Putnam and the physicists draw from this is that bosons and fermions are “simply artifacts of the representation used” (Putnam 2012, 64). So the picture is this. There is an underlying quantum reality. It is constituted independently of all our observations, schemes of descriptions etc. We devise concepts in order to variously describe this independent reality. This is a constructive activity, but it does not affect what is described (Putnam 2012, 62). The concepts devised are of such a nature that in certain cases we can swap one for another while not disturbing the equivalence of the alternative descriptions and the fact that the same state of affairs is described by both of them.

What justifies Putnam in holding that *the same* quantum mechanical system is described by bosonic and fermionic scheme? This is the same worry that the mereological example of the CR₁ variety had to face. But in the case of the fermions and bosons it is, I believe, more difficult to come up with a satisfactory answer to the question concerning the sameness of domain of both quantum mechanical descriptions. The reason is that the behavior of a bosonic system is so different from the behavior of a fermionic system. Putnam didn’t see this as a challenge. According to him, we just *know* that nothing in physical reality is changed when we move from one quantum mechanical description to another; all that changes pertains to the representation of the system. But do we know this? The fact of mutual interpretability of the descriptions is not a decisive argument for the sameness of their domain, for this interpretability could be purely formal: both descriptions could, in fact, describe different portions of physical reality. I don’t know how to answer the common-domain worry in the case of fermions and bosons. Note, however, that since the two descriptions are not incompatible in any respect, even if the assumption of the shared domain was threatened, this would not undermine the scientific realism Putnam espouses. That is, even if we are unable to fix the common domain, this is only a problem

for conceptual relativity itself (for it needs the common domain as one of its prerequisites). It is therefore incumbent on the defenders of conceptual relativity to find a way of securing the common domain of alternative scientific descriptions.

I conclude that instances of CR₂, exemplified in this paper by bosons and fermions, do not constitute a genuine challenge to realistic metaphysics of independently constituted objects and states of affairs. We do not choose *what exists*, we only choose *how to describe* what exists anyway. This is good news for advocates of realism. We can disentangle conceptual relativity from ontological constructivism with which it was aligned when it was formulated in the eighties in Putnam's writings. Later Putnam firmly rejects the "*Internal Realist General Ontological Thesis: The world consists of theory-dependent objects*" (Gardiner 2000, 146). In one of the many retrospective summaries of his changing conceptions of realism, Putnam writes that there are aspects of reality unaffected by human interests and constructions, such as the fact that there are thousands different species of ants in the world. These aspects would have remained unaffected even if humans didn't devise the label "ant", and indeed even if no humans with their concepts ever came into existence (Putnam 1994a, 448n7). The same holds with respect to the concepts of mature science such as "fermions" and "bosons".

Putnam's conceptual relativity is thus fully compatible with the principles of realistic metaphysics.⁹ This annihilates the appeal of conceptual relativity for genuine ontological relativists. In a nutshell, genuine ontological relativists argue that „Soandso's exist“ are to be understood as a claim that „Soando's exist relative to a particular conceptual scheme“, as Nicholas Wolterstorff put it (Wolterstorff 1987, 239). From the epistemological point of view, Putnam's claim is not that we cannot ever get to the objects themselves; the claim is that sometimes we can get to them in different ways. This element of choice does not usher in constructivism: external physical reality is not an amorphous blob waiting to be cut up by us in various ways. It is ready-made, consisting of self-demarcated objects, properties and relations. Our perceptions, together with the very fact of the perfect mutual interpretability of the rival descriptions of the same states of affairs and events, confirm this inherent structuredness of reality.

We could express the same point by saying that nature dramatically limits, or controls, our ways of describing it. But wait, wasn't Putnam *criticizing* the idea of One True Description of the world? Indeed he was. However, his examples of conceptual relativity dislodge One True Description only when this idea is taken literally – as a description permitting no alternative expression whatsoever. In fact, probably no one

⁹ Some of Putnam's perceptive readers were pointing this out for some time now: see Horgan and Timmons (2002).

is prepared to commit to such an extreme idea. Even staunch realists like John Searle (1995) and Robert Kirk (1999) admit that there might be variations in the correct descriptions of the world underlying all descriptions. A more liberal understanding of One True Description is therefore to be preferred. There is just one such description, but some portions of it can be expressed in alternative, though mutually convertible, ways.

As to whether Putnam's arguments dislodge the idea of a *complete* description of the world, which was a part and parcel of Metaphysical Realism he was rejecting, the following observation is in order. Leaving aside the worry that the idea of a complete description of anything, let alone of all reality, is meaningless (Hacking 1983, 93), what is incomplete about, say, the atomistic description of the Carnapian world? Shall we say it is incomplete because it leaves out the mereological sums of objects? This would be confused. In its own way, the atomistic description captures all there is to the Carnapian world. According to the mereologist, the same world can be captured in a different way, but that doesn't mean that the atomistic description is incomplete, that it leaves anything out while specifying the number of objects in the Carnapian world. The same holds for the fermion/boson duality and other instances of CR₂. There might be another sense in which the descriptions are incomplete, but Putnam never specified it. I thus submit that conceptual relativity *per se* does not undermine the possibility of completeness of One True Description of reality (liberally understood).

4. Conclusion

Symbolically, Putnam's last published paper deals with the subject of realism (Putnam 2016b). I say symbolically because realism was one of Putnam's philosophical preoccupations for decades. He was unique in thinking through aspects of realism that other philosophers (and scientists) were taking for granted. His writings on conceptual relativity are a prime example of this. The central insight of these writings – that we can describe the same state of affairs in somewhat different ways – is important, although both actual and imagined instances of conceptual relativity are confined to special contexts, leaving most of both commonsense and scientific discourse untouched.

Putnam's grapplings with realism are instructive: after experimenting with various forms of realism, he finally settled on straightforward metaphysical realism, albeit one that is compatible with various forms of conceptual relativity. In closing, I will quote the words of David Lewis who, it seem to me, captured the fruits of Putnam's tenacious rethinking of realism:

It is the profession of philosophers to question platitudes that others

accept without thinking twice. A dangerous profession, since philosophers are more easily discredited than platitudes, but a useful one. For when a good philosopher challenges a platitude, it usually turns out that the platitude was essentially right; but the philosopher has noticed trouble that one who did not think twice could not have met. In the end the challenge is answered and the platitude survives, more often than not. But the philosopher has done the adherents of the platitude a service: he has made them think twice (Lewis 1969, 1).

In Putnam's case, the platitude in question was the view that external things out there really exist independently of all our perceptual and cognitive contributions. Over decades and even centuries, this platitude proved surprisingly difficult to defend, with many clever thinkers advocating its exact opposite. In the thesis of conceptual relativity, Putnam put his finger on what is worthwhile in the complaints of some of the critics of straightforward realism, while cutting off the philosophical deadwood.¹⁰

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