

# WHAT DO WE DO WHEN WE DO METAPHYSICS?

**METHODS, LIMITATIONS,  
AND CONSEQUENCES**

**PROGRAMME AND  
ABSTRACTS**



# *Programme*

## Thursday, 30/08/2018

Venue: Haus der Universität (Schadowplatz 14, 40212 Düsseldorf)

- 9:30 – 9:45 Official Welcome
- 9:45 – 11:00 **How To Choose Between Competing Metaphysical Theories? What Are the Correct Meta-Theoretical Criteria for Evaluating Them?**  
Dr. Jiri Benovsky (Fribourg)  
*Invited Talk*
- 11:00 – 11:15 Coffee Break
- 11:15 – 12:00 **Is our Concept of Existence Inconsistent?**  
Sofia Bocos (Cologne)
- 12:00 – 12:45 **Carnap's *Empiricism, Semantics, and Ontology* and its Ramifications**  
Jonas Raab (Manchester)
- 12:45 – 14:00 Lunch Break
- 14:00 – 14:45 **Substantivity and Merely Verbal Dispute**  
Viktoria Knoll (Hamburg)
- 14:45 – 15:30 **Metaphysics as (Assessment-Relative) Explanation**  
John M. Bunke (Toronto)
- 15:30 – 15:45 Coffee Break
- 15:45 – 17:00 **The World Doesn't Care**  
Dr. Richard Woodward (Hamburg)  
*Invited Talk*
- 17:00 – 17:15 Coffee Break
- 17:15 – 18:00 **Towards a Metametaphysical Constitution? Three Turns in Global Philosophy and a Proposal for Five Directives**  
Otávio Souza e Rocha Dias Maciel (Brasília)
- 18:00 – 18:45 **Structural vs. Non-Structural Explanations in Metaphysics**  
Dr. Thomas Raleigh (Bochum)
- 19:30 Conference Dinner  
*Bistro Zicke ([www.bistro-zicke.de](http://www.bistro-zicke.de))*  
*Bäckerstraße 5a, 40213 Düsseldorf*

**Friday, 31/08/2018**

Venue: Haus der Universität (Schadowplatz 14, 40212 Düsseldorf)

- 9:30 – 10:45      **Can Structuralism Solve the Plurality Problem? What Is Metaphysical Realism To Do About Functionally Equivalent Theories?**  
Dr. Sophie R. Allen (Keele)  
*Invited Talk*
- 10:45 – 11:00      Coffee Break
- 11:05 – 11:45      **Concept Formation in Mathematics: a Case for Quasi-Empirical Metaphysical Research**  
Deniz Sarikaya (Hamburg)
- 11:45 – 12:30      **Undeniable Metaphysical Claims, Subtle Violence and Personhood**  
Felipe G. A. Moreira (Miami)
- 12:30 – 12:45      Coffee Break
- 12:45 – 13:30      **Category-Mistakes in Contemporary Metaphysics**  
Rouyu Zhang (Durham)
- 13:30                Lunch

The workshop is organised jointly by Till Gallasch, Paul Hasselkuß, Sara Ipakchi and Jessica Struchhold (Düsseldorf). We wish to thank our supporters without whom this event would not have been possible: the Heinrich Heine University's *Faculty of Arts and Humanities*, the *German Society for Analytic Philosophy* (GAP), and especially *Professor Markus Schrenk* (Düsseldorf) of the DFG Group *Inductive Metaphysics* (FOR2495).

## *Invited Talks*

## **Can Structuralism Solve the Plurality Problem? What Is Metaphysical Realism To Do About Functionally Equivalent Theories?**

Dr. Sophie R. Allen (Keele)

Metaphysics has a problem with plurality: in many areas of discourse, there are too many good theories, rather than just one. This embarrassment of riches is a particular problem for metaphysical realists who want metaphysics to tell us the way the world is and for whom one theory is the correct one. A recent suggestion is that we can treat the different theories as being functionally or explanatorily equivalent to each other, even though they differ in content. Locally, this seems a plausible thesis, although there is little agreement about how it should be interpreted. The aim of this paper is to explore whether the notion of functionally equivalent theories can be extended and utilised in the defence of metaphysical realism, drawing upon themes from structuralism in the philosophies of mathematics and science in which the specifics of ontological theories do not matter as long as the relations in which they stand to other theories are maintained. This strategy has the potential to offer a solution for the realist to be a realist about metaphysical structure rather than specific ontological categories and dependency relations of first-order metaphysical theories, and thereby to resolve the plurality problem. However, I argue that despite its initial attractiveness, there are significant difficulties with this proposal: the distinction between function and content cannot be maintained as the scope of theoretical equivalence is widened, revealing a holistic aspect to metaphysical systems not present in mathematical structures, and there are important disanalogies between the two. Discovering these obstacles (most probably) thwarts the realist structuralist project, but reveals more about how metaphysical systems work.

## **How To Choose Between Competing Metaphysical Theories? What Are the Correct Meta-Theoretical Criteria for Evaluating Them?**

Dr. Jiri Benovsky (Fribourg)

In this paper, I will address this question by going through three steps: in Part I, I will take an example of what I think is a typical case of a metaphysical debate where a sort of a dead-end has been reached; in Part II, I will examine several meta-theoretical criteria for the evaluation of theories such as explanatory power, simplicity, compatibility with current science, and others, only to find that they do not allow us to make a definite choice; finally, in Part III I will discuss a meta-theoretical view based on the claim that metaphysical theories possess aesthetic properties and that these are highly relevant when selecting one theory over its competitors. I will try to elaborate this view, discuss it in detail, and examine some of its implications.



## **The World Doesn't Care**

Dr. Richard Woodward (Hamburg)

It is increasingly popular to think that notions such as naturalness and structure are not only metaphysically significant but normatively significant too. That is, in some sense or other, we ought to theorize in metaphysically significant terms. However, despite its increasing popularity, it is far from clear how the normative significance of the metaphysically significant is to be understood, especially since the most obvious ways of interpreting the proposal render it deeply problematic if not downright bizarre. We will explore some different theses concerning the normative significance of metaphysics, before arriving at a view according to metaphysically significant notions have a normative role that is much more limited than one might think. Metaphorically put, the idea will be that whilst the world has a structure that it wants us to latch onto, the world doesn't care how we latch onto that structure. In this way, we articulate a sensible but limited version of metaphysical realism that acknowledges that there is something right about deflationist ways of thinking.

## *Contributed Talks*

## Is our Concept of Existence Inconsistent?

Sofia Bokros (Cologne)

Many metaphysicians share the intuition that there is something wrong with ontological debates. Recent years has seen a surge of new interest and research into neo-Carnapian and deflationary approaches to ontology; it has become increasingly viable to maintain that ontological debates are merely verbal (Hirsch 2011), thoroughly trivial or metalinguistic (Thomasson 2015; 2017), or have no objective or determinate answers (Chalmers 2009). The deflationary stance is in stark opposition to the self-conception of ambitious ontologists, who envision ontological inquiry as the attempt to uncover the fundamental structure of reality (Sider 2009; 2011). The nature and value of ontological questions and debates is thus highly contested. In this paper I argue that the widespread disagreement about the nature of ontology can be better made sense of on the hypothesis that our ordinary concept of existence is defective. Drawing on Kevin Scharp's theory of inconsistent concepts (Scharp 2013), I propose that our pre-theoretical concept of existence is, in fact, inconsistent: its application conditions are such that in some cases, we can correctly intuitively judge that the concept both applies and disapplies to a given object. This has the implication that our ordinary concept of existence fails to reliably track a unified and specific property or structure in the world, as there is no corresponding property or structure which can be both instantiated and uninstantiated at the same time. Consequently, ontological debates are frequently defective as they fail to be about a determinate or non-linguistic subject matter. However, instead of deflating ontological debates, I argue that the insight that the concept of existence is inconsistent does not undermine the possibility of doing ontology or the potential for ontological debates to be substantive: We can simply use conceptual engineering to replace our pre-theoretical concept of existence with consistent and precise concepts, and then re-formulate the ontological questions of interest. Accordingly, I defend a realist, revisionist and pluralist conception of how ontology in particular, and metaphysics more broadly, ought to proceed.

### References

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## **Metaphysics as (Assessment-Relative) Explanation**

John M. Bunke (Toronto)

Recently, some philosophers have endorsed the idea that metaphysics takes place in a special context—the so-called “metaphysics room” (e.g. Sider 2011; Van Inwagen 2014)—in which practitioners evaluate alternative metaphysical theories—such as endurantism and perdurantism about ordinary objects—that are expressed in a privileged language that “carves at the joints” of reality (e.g. Fine 2001; Schaffer 2009; Sider 2011). According to this picture of metaphysics, which I call extraordinary realism, at most one theory from among a set of alternatives—such as theories about how ordinary objects persist—can be correct.

I think this view is overly impressed by the structure of truth and knowledge as paradigms of epistemic achievement. At most one of a set of inconsistent propositions on some subject matter (i.e.  $p$ , not- $p$ ) can be (known to be) true, and these philosophers have presumed that metaphysics, in considering alternative theories, must likewise have this “exclusionary” logical structure. (Some philosophers of an anti-realist persuasion have also shared this assumption: e.g., Sidelle (2002).)

In contrast, philosophers who endorse a deflationary account of metaphysics have sometimes argued that we should instead understand metaphysical theses like endurantism and perdurantism not as alternative theories but as alternative languages (Hirsch 2009), of which none is better than any alternative, as long as each language has sufficient expressive resources to characterize the phenomena in question. On this sort of account, metaphysical disagreements turn out to be little more than verbal disputes (e.g. Chalmers 2011).

So, we seem to be caught between a view on which at most one of, e.g., endurantism and perdurantism is correct, and a view on which neither is correct because the issue of “correctness” doesn’t really arise.

In this paper I propose an alternative, moderate realist account of metaphysics on which multiple metaphysical theses might be correct because metaphysics has a “non-exclusionary” logical structure. The idea is to construe endurantism and perdurantism, for instance, not as alternative and incompatible theories, nor as alternative languages, but as alternative explanations of phenomena related to the persistence of ordinary objects.

In this paper, I argue that multiple different explanations of one range of phenomena might all be correct, especially in the light of different styles of explanation, different explanatory interests, and different contexts in which explanations are called for. Nonetheless, it does seem that there can be genuine disagreements (not merely verbal ones) over which explanation or explanations are correct. In the paper, I liken this to no-fault disagreements about, for example, “predicates of personal taste” such as ‘fun’ or ‘tasty’, and I show how to use the resources of recent work in linguistics and philosophy of language (Kölbel 2002; Laser-

sohn 2005; MacFarlane 2014) to model the assessment-relativity of statements providing metaphysical explanations.

## References

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## Substantivity and Merely Verbal Dispute

Viktoria Knoll (Hamburg)

Seemingly, some questions are defective in an interesting way: They are nonsubstantive. To see how one could make sense of the somehow woolly, but nonetheless often used concept of substantivity, Ted Sider's account (2011) can be of help. According to Sider's theory, (lack of) substantivity is a property of linguistic expressions. "Is the pope a bachelor?" is a nonsubstantive question on his account, since "bachelor" has different, equally good candidate meanings; but depending on which one of these equally good candidates is adopted, the question is to be answered differently. So there is, in a sense, no *fact of the matter* which of the two opposing answers to "Is the pope a bachelor?"—"yes, he is" or "no, he isn't"—is true. The question therefore is nonsubstantive. Metaphysical questions like "Do the pope's nose and my desk compose an object?", "Do desks exist?" or "Is the pope the same person as the person shown in this picture here?" are sometimes taken to be of exactly the same kind; philosophers take them to be nonsubstantive.

As there are defective questions, there also are disputes that are defective and supposed to occur in metaphysics: merely verbal disputes. A dispute is, roughly said, merely verbal iff the disputants do not disagree over the subject matter of their dispute, but use one of its key terms with different speaker's meaning.

Now, one could suspect that both kinds of defects are two sides of the same coin—and the writings of many philosophers suggest that they do take them at least to stand in really close connection to each other (cf. Hirsch (2005), Sidelle (2007) or Jenkins (2014)). However, as I will argue, that is not the case, given a refined understanding of substantivity and merely verbal disputes. Even if some metaphysical questions are nonsubstantive, that does not mean that all disputes concerning them are merely verbal—and therefore not worth having.

In my talk I will present an account of merely verbal disputes in the spirit of Carrie Jenkins (2014) and Inga Vermeulen (2018). Being equipped with that, one can see that nonsubstantive as well as substantive questions can give rise to defective disputes of this kind. That is because, roughly said, the existence of a merely verbal dispute depends on the speaker's meanings of the expressions uttered, but, following Sider's account, (a lack of) substantivity should be attributed to linguistic expressions. At best a lack of substantivity should therefore be taken as weak evidence for the existence of a merely verbal dispute.

## **Towards a Metametaphysical Constitution? Three Turns in Global Philosophy and a Proposal for Five Directives.**

Otávio Souza e Rocha Dias Maciel (Brasília)

How can one answer questions about the questions of metaphysical inquiry? If metaphysical research is challenging enough, metametaphysical questions may seem daunting at first, but we can analyse some of our possibilities. An attractive way to respond could be by trying to reach out to other fields of research. This could help us to operate a cognitive openness to inputs from other disciplines and methods to see if we can learn something from them. Another way would be to look to our past, to great names and schools that operated these or similar questions, and perhaps previous philosophical traditions could show us something. There is even another way, which is to flatly deny its possibility or perhaps only to refrain from asking such questions in a resolute agnosticism. However, how can one modulate a more sophisticated way to settle (or at least to properly channel) these questions? Better yet, how can we conceive of a complex way of framing the possibilities of these and all subsequent metaphysical questions?

One way to think about metaphysics is to claim that it is some kind of science. Mainstream 20<sup>th</sup> century philosophy considered this claim to be long surpassed, for reasons from Hume to the Vienna Circle and many more. I, too, endorse that such a claim is surpassed, but for different reasons that brings my approach closer to Husserl's: being a science would be too little for metaphysics and all other philosophical investigations. To clarify, I defend that we need to assert the difference between metaphysics and other fields of inquiry outside philosophy not to attain a hollow purism or an ivory tower-like erudition. Only by reaffirming difference of structuration and operationalization that we can begin to co-operate. For that, an openness to science and other fields of study, such as law, religions and art, must begin with an internal evaluation of what metaphysics is and what it can do.

To attain some level of operational closure that enables cognitive openness with the possibility of structural couplings and hetero-reference, I will propose that we think of a way to give metaphysics a systemic aspect. This may not sound exactly a new move, but there is a twist. It is not located on the metaphysical level—for example, in conceiving the world a system, or placing the criteria of objectivity on a metaphysics of (inter)subjectivity. We place it on the metametaphysical level in providing some directives on how to operationalize a metaphysics on the grounds of new turns in global philosophy, such as important re-evaluations from gender, race and post-colonial studies and new forms of realisms. The result is a metaphysics that does not isolate itself from the world, but has a sophisticated complex way to research and to propose theses. Not only we can invite physics, biogeography or anthropology in, but also we can modulate their inputs and outputs in a responsible way. To operationalize such an audacious system, I will propose five directives that can constitutionalize this incoming sophisticated project.

## Undeniable Metaphysical Claims, Subtle Violence and Personhood

Felipe G. A. Moreira (Miami)

Let us assume that three features are individually necessary and conjunctly sufficient for a claim to be qualified as an undeniable metaphysical claim. First, the claim is a response to a dispute (e.g., an ontological one) that has been traditionally associated with metaphysics or metametaphysics. Second, an undeniable metaphysical claim is one that no rational entity (henceforth, person) can rationally contradict. Third, this kind of claim points to the end of the dispute it is supposed to respond to. Although most philosophers (e.g., Aristotle, Anselm, Hume, Kant, Marx, Wittgenstein and Eli Hirsch) indicated that there are undeniable metaphysical claims, Robert Nozick, David Lewis, and Peter van Inwagen suggested otherwise.

According to Nozick, Lewis and van Inwagen, philosophers who take their own work to attest to the existence of undeniable metaphysical claims have expressed a subtle kind of violence: that of arguing for one's view by means of a coercive vocabulary characterized by expressions, such as "my argument is a *knock-down* one". I am sympathetic to Nozick, Lewis and van Inwagen. Accordingly, I would like to contribute to their efforts in pursuing an aim that lacks in their works, and in the philosophical literature in general, despite of the recent discussions on knock-down argument of Nathan Ballantyne and John A. Keller.

The aim is to explicitly deal with the dispute on whether there are undeniable metaphysical claims, while identifying a properly metaphysical violence expressed by the works of philosophers who claim so, and explicitly articulating an argument according to which this violence exists, but there are no undeniable metaphysical claims. The properly metaphysical violence I attribute to those who believe in undeniable metaphysical claims is the conjunction of two kinds of violence: the subtle violence of suggesting that one's opponent is not exactly a person or, at least is not thinking and/or acting rationally in rejecting a particular metaphysical or metametaphysical claim; *and* the subtle violence of acting as if one's opponent (insofar as a person who disagrees with one's metaphysical or metametaphysical claim) did not even existed. The argument I propose is the following two-premise one. P.1: If there is no properly metaphysical violence expressed by the very works of philosophers who suggest that there are undeniable metaphysical claims or such claims exist, there is a narrow condition for personhood. P.2: However, there is no narrow condition for personhood. Hence, by *modus tollens* from P.1 and P.2, there is a properly metaphysical violence expressed by the very works of philosophers who suggest that there are undeniable metaphysical claims, but no such claim exist. I assume that a narrow condition for personhood is a necessary, but not sufficient condition according to which to be a person, one must endorse a particular metaphysical or metametaphysical claim. Otherwise, one is not exactly a person or, if one is a person, one is at least not thinking and/or acting rationally in contradicting the metaphysical or metametaphysical claim at stake.



## **Carnap's *Empiricism, Semantics, and Ontology* and its Ramifications**

Jonas Raab (Manchester)

In this paper, I consider Carnap's seminal (1950) *Empiricism, Semantics, and Ontology* (ESO) and its metametaphysical ramifications. I first argue that Carnap's Principle of Tolerance is key in understanding Carnap's position in ESO which, nonetheless, is self-undermining. Nevertheless, the Principle of Tolerance is a key step in a metametaphysical position that dismisses linguistic considerations as the proper method for metaphysics; this is the focus of the second part of the paper.

The main question in the first part is from "where" exactly Carnap is making his claims, viz., from within a framework or from outside all such. Carnap famously argues in ESO that we have to distinguish between internal and external questions. The former are asked from within a framework (and the answers are trivial) whereas the latter are not. If these are the available options, Carnap's claims have likewise to be understood as from within a framework or from outside all of them.

I argue that both options are untenable for Carnap. For, in case he is working from within a framework, there is absolutely no need to take his claims to even apply to other frameworks. On the other hand, if Carnap is not speaking from within a framework, it is rather unclear how to assess what he is saying on his own analysis. Central to the argument of ESO is the claim that on some reading, external questions, i.e., questions not asked from within a framework, are meaningless as they lack 'cognitive content'. But this is hardly a tenable interpretation of Carnap's own claims. Therefore, another reading is asked for. Carnap himself provides one, viz., he suggests that external questions might be understood as 'practical' questions. Such practical questions concern "whether or not to accept and use the forms of expression for the framework in question" (ESO: 23). But this interpretation conflicts with his Principle of Tolerance that demands us to be "tolerant in permitting linguistic forms" (ESO: 40).

If the arguments of the first part are correct, Carnap's position is self-defeating. However, I argue that the main motivation of ESO is to provide a basis for doing, e.g., semantics without incurring ontological commitment to the 'entities' invoked in the semantics—and this is exactly what his Principle of Tolerance encodes. Contemporary analytic philosophy, on the other hand, regularly proceeds by looking at language to more or less read off the ontology and the structure of reality; a tight correspondence is (at least implicitly) assumed. Many contemporary metaphysicians pay lip service to rejecting such a position. However, there is no systematic evaluation of this claim and its ramifications (nor is an alternative methodology provided). The obvious problem is that any position has to be formulated using a language, and so the position comes close to be self-undermining; one has to be careful not to reject too much. I want to suggest that Carnap's Principle of Tolerance can at least partially provide a foundation of such a new method and thereby preserve Carnap's initial motivation of ESO.

## Structural vs. Non-Structural Explanations in Metaphysics

Dr. Thomas Raleigh (Bochum)

Towards the end of *Der logische Aufbau der Welt* (1928), Carnap endorsed the possibility of a *purely structural* account of the world.<sup>1</sup> Similarly austere structuralist visions have been offered more recently by ontic structural realists such as Ladyman & French (2003, 2011) and also by the prominent physicist Max Tegmark (2014). Throughout his *Constructing The World*, Chalmers (2012) explores how such purely structural accounts may need to be supplemented by adding various possible candidate kinds of non-structural truths to the ‘scrutability base’, from which all other truths can supposedly be recovered. For example, in addition to purely logical/relational truths we might add: phenomenal truths, quiddistic truths, truths about fundamentality, truths about spatio-temporal properties, truths about laws of nature, etc. We have a contrast then between purely structural explanations and putative extra *non-structural* ingredients. Chalmers is primarily concerned with perhaps the *maximally general* version of this structural vs. non-structural contrast: the question of whether *everything* (every truth) can be explained/determined by structural truths, or if not, what further non-structural factors need to be added in order to account for absolutely everything?

I argue that the opposition we find here between structural vs. non-structural explanations is a dialectical pattern that runs throughout a very wide range of familiar debates in metaphysics and throughout philosophy. In each case there is a *prima facie* worry that the network of relations in question cannot by itself do all the explanatory work we want—often, though not always, relying on the relational structure alone would allegedly lead us either into circularity or regress. One common form of response then is to appeal to a different, non-structural kind of factor to provide the missing explanation or grounding. A different common kind of response insists that the relations are after all explanatorily sufficient by themselves. Given a (putative) contrast between relational structure and some non-relational factor, I identify 4 possible options one can take in response:

- OPTION 1: The non-structural side of the contrast has explanatory priority.
- OPTION 2: The relational structure is explanatorily sufficient by itself.
- OPTION 3: Both sides of the contrast are real and genuinely distinct, but there is *no explanatory priority* in either direction.
- OPTION 4: Deny or deflate the contrast—the structural vs. non-structural contrast is illusory, ill-defined, irrelevant, merely linguistic etc.

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<sup>1</sup> Put in terms of Chalmers notion of a ‘scrutability base’, Carnap endorsed the thesis that all truths can in principle be known on the basis of some limited class of truths that use only logical expressions to describe purely logical relations.

Perhaps the oldest philosophical dialectic of this form is epistemological:<sup>2</sup> if the justification for one belief comes via its inferential relation to some other belief, then we are bound to ask where the justification for this further belief comes from. And so we are apparently set on the path either to a circular structure of inferential relations or to an infinite regress. The traditional foundationalist response is an instance of option 1: we need a different kind of *non-inferred* justifier. In contrast, coherentism and infinitism are instances of option 2, insisting that inferential relations can by themselves create justification and that the threat of regress/circularity is illusory.<sup>3</sup> This epistemological dialectic is very closely mirrored by recent debates about metaphysical grounding: must there be a most fundamental ‘level’ to reality (i.e. must the grounding relation be ‘well-founded’)? Or might relations of metaphysical grounding form an infinite chain? The foundationalist idea that some beliefs might be self-justifying is paralleled by the suggestion that some facts might ground themselves. And the idea that relations of mutual coherence amongst beliefs can create justification is paralleled by the idea that some facts might stand in symmetrical grounding relations.

I go on to illustrate how the four schematic options, above, can be used to taxonomise rival positions in a very wide range of familiar metaphysical debates—in some cases revealing as-yet unexplored options ‘in logical space’. I finish with some meta-metaphysical reflections on two different kinds of reaction one might have to the existence of such a ubiquitous dialectical pattern.

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<sup>2</sup> It dates back at least to the Pyrrhonian sceptics and to what is sometimes known as ‘Agrippa’s Trilemma’.

<sup>3</sup> An example of Option 3 in this specific debate would be a position which held that inferential and non-inferential justification are both equally basic/fundamental—e.g. Susan Haack’s (1993) ‘Foundherentism’. What an example of Option 4 would be in this context is less clear, but we might think of the kind of ‘pure reliabilist’ for whom the question of whether a belief-forming mechanism should count as inferential or non-inferential is theoretically unimportant or ill-defined.

## Concept Formation in Mathematics: a Case for Quasi-Empirical Metaphysical Research

Deniz Sarikaya (Hamburg)

While the metaphysical status of mathematical object is highly debatable it is often claimed that mathematicians adapt a Platonist position.<sup>4</sup> In this talk we want to argue that the practical work of mathematicians offers quasi-empirical techniques, which might be the archetype of our access to abstract objects.

The *activity* to axiomatize a field is not a purely mathematical one, which cannot be solved by *proof* but by *philosophical reflection*. This insight is reflected in many debates in mathematical logic, most prominently in (philosophy of) set theory. Mathematical research is a human activity. This might sound trivial but is often neglected due to an over simplified aprioristic picture of mathematical research. But mathematics is not, as it might seem *prima facie*, a pure activity of deducing from somehow given axioms but we must craft our formal counterparts in mathematics by our intuitions of the abstract concepts/objects. While we normally think of a mathematical argument as the prototype of deductive reasoning, there are inductive elements in at least three senses:

1. In the heuristic of developing
2. In the process of axiomatization, while
  - a. we test the adequacy of an axiomatization
  - b. we are looking for new axioms to extend a current axiomatic system.

We want to focus at the latter. Kurt Gödel for instance, who classified himself mostly as a Platonist, wanted to justify new axioms (partly) by inductive arguments, i.e. their “success”.<sup>5</sup> Apparently, there is no contradiction in the logical sense between two different formal theories, if our first axiomatization of arithmetic proves that the Goldbach’s conjecture is true and the second one disproves it. We can simply add an index to see what happens. But if we think there is one adequate notion some of these axiomatizations are better than others and in fact mathematicians tend to find a consensus. This is done by our intuitions on one hand, but partly also by our experience with suggested systems.<sup>6</sup>

We want to give some case studies of such quasi-empirical arguments within the discourse of mathematicians and argue that the success of mathematics indicates the fruitfulness of such arguments in metaphysical debates in general.

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<sup>4</sup> See fi. David and Hersh (1998, 39).

<sup>5</sup> See Gödel (1947, 182) Gödel did also debate intrinsic consideration in contrast to these “extrinsic” factors in length.

<sup>6</sup> See fi. Hamkins (2012, 2) who argues against the Gödelian program to settle to Continuum Hypotheses by extensions of the axiom system ZFC due to our “decades of experience and study, set-theorists now have a profound understanding of how to achieve the continuum hypothesis or its negation in diverse models of set theory”.

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## Category-Mistakes in Contemporary Metaphysics

Ruoyu Zhang (Durham)

I argue that if reality is *categorized* into certain categories, then it will be wrong to *put extra constraints* such as spacetime, causation or modality on these categories because the categories are *all there we have*. Meaningful questions can still be asked *within* these categories. But seriousness about categories will make many metaphysical problems turn out to be mistaken, or non-metaphysical at all.

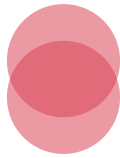
Categories are the most general kinds of being (Lowe 2006). For convenience, I assume a widely-held two-category ontology (Heil 2012): substances and properties. To say reality has certain categories, we mean these (two) categories are the only two kinds of things there are, and *everything in reality must be subject to this categorization*, namely, everything is either a substance or a property. Anything *else* will not be real or metaphysical. In other words, introducing something which is *neither a substance nor a property*, hence, would be literally a category-mistake.

One example of category-mistake in metaphysics is locating properties. If properties and substances are two categories, then asking *where properties are located*, would be a category mistake, this is because in asking this question, the arguer needs to assume there is an *extra space-time* besides substances and properties in the background, upon which properties or substances are located. However, for instance, if being spatiotemporal itself is a property, then asking *where the property (like being red) is*, is like asking whether being red is edible or not, which makes no sense. Rather, being red, being located, and being edible, are all ontologically on a par. They are all properties of, say, a tomato (if it is a substance at all). A tomato has location as a property, but being red is not located in any sense. No matter we believe Armstrongian immanent universals or not, the very idea to locate properties is a category-mistake.

Another example is some modal questions. It is common to ask the following: if a tomato has the property being red, is it necessarily so? In asking this question, we seem to have to introduce *an extra space of possibilities* where there are various unrealized possibilities, in which some tomato is still red and some tomato is not. However, again, if we assume all we have is two categories *from the beginning*, then, properties cannot be subject to *modalization*: rather, we should say, of many properties, one of them should be “being-possibly-F” or “being-necessarily-G”. These modal properties are not *constructed from* some basic F or G, and arguably, they can be structureless. (See the debate between Tugby (2017) and Ingram (2016))

Generally, if we are not “transcendent” enough to carve nature at its joints with *no remainder*, and if we begin with a common sense object, then it is natural to *modify* this object *from outset* with intuitive considerations: thinking about its spacetime, its causal power, or its necessity and contingency. But if we begin with a readily divided system of categories, then nothing will be left but these categories.





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