Instrumentalism About Structured Propositions*

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Abstract

Theories deploy various theoretical representations of their explananda and one question we can ask about those representations is whether to regard them under a realist attitude, i.e. as revealing the nature of what they represent, or whether to regard them under an instrumentalist attitude instead, i.e. as serving particular explanatory ends without the further revelatory aspect. I consider structured propositions as theoretical representations within a particular explanatory setting – the metaphysics of what is said – and argue that a realist attitude towards them is unwarranted. I offer various considerations against the widespread tendency to regard structured propositions as revealing the nature of what is said and conclude that they should be regarded under an instrumentalist attitude instead.

1   Introduction

Metaphysics is a theoretical enterprise. When considering various doctrines in metaphysics, it is useful to regard them as theoretical endeavors and ask how they compare with theoretical endeavors elsewhere. Theories deploy theoretical representations of their explananda. We might represent gold as a transition metal or as the element with atomic number 79 in physical chemistry. Being the element with atomic number 79 is a theoretical capture of gold – it is how gold is represented within our physical chemistry. Or we might represent gold as the standard for pre-20th century monetary systems in economics. Being the monetary standard is a theoretical capture of gold within a very different theoretical setting, a social-scientific one. For present purposes we regard theoretical representations as means for portraying explananda within various theories without dwelling on what those means themselves are exactly

and how they achieve their portrayal. In other words, we set aside questions pertaining to the metaphysics of theoretical representation itself. A pertinent question to ask about theoretical representations is whether to regard them as disclosing the nature of what they represent individually, or whether to regard them as serving other explanatory ends without the additional revelatory aspect instead. I will call the first way of regarding a theoretical representation *realist* and the second way *instrumentalist*. This is a stipulation about how the terms 'realist' and 'instrumentalist' and their cognates are to be used in this chapter, applying in the first instance to attitudes towards theoretical representations.

It is common to regard the representation of gold as a transition metal or as the element with atomic number 79 within physical chemistry under a realist attitude. Being a transition metal is part of what it is to *be* gold. Being the element with atomic number 79 is what gold turns out to be in the most demanding sense. Such talk of is not meant to invoke some worked out doctrine in the metaphysics of essence. The attitude I am characterizing as realist need not be, and often isn't, doctrinally informed this way. I take it that some theoretical representations are commonly and pre-theoretically regarded as telling us what the things they represent individually really are, regardless of our more sophisticated opinions on such matters as whether essences are real or nominal.

On the other hand, it is common to regard the representation of gold as the standard for pre-20th century monetary systems in economics under an instrumentalist attitude: being the standard for pre-20th century monetary systems is not itself presumed to reveal what it is to be gold, but is rather instrumental to the explanation of gold's wider economic significance. Such talk of the representation "itself" revealing the nature of the represented (or not) is clearly an idealization. Theoretical representations generally require an extensive theoretical background to represent what they do. But it is a useful idealization, as we are about to see.

The question of realist vs. instrumentalist attitude towards theoretical representations can be raised for theoretical representations wielded within metaphysical explanation to fruitful effect. Consider, for example, the possible world capture of the *de re* modal fact that Nixon might have lost the 1968 US presidential election. We might ask whether Nixon in a possible world where he loses is what the fact of Nixon's possible loss amounts to upon closer theoretical scrutiny (as per realist attitude), or whether Nixon in a possible world where he loses merely represents Nixon's possible loss for some other explanatory purpose (as per instrumentalist attitude).[1]

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[1]A realist attitude is clearly exhibited in what Plantinga (1976) calls "the canonical conception of possible worlds". An instrumentalist attitude is clearly exhibited throughout Kripke's (1980). I discuss this choice point of a realist vs. instrumentalist attitude, alongside analogous choice points

In this chapter I consider structured propositions as theoretical representations deployed within a particular theoretical enterprise – the metaphysics of what is said – and argue that a realist towards these representations is unwarranted. On the whole, I aim to avoid the grand topic of realism as traditionally construed. The traditional question of realism is not one that we can reasonably hope to resolve via some hitherto unnoticed *a priori* considerations, or so it seems to me. We can, however, consider cases where a realist attitude towards a theoretical representation is clearly warranted – cases of theoretical identification in natural science, for example – and ask whether central features of such cases are present in a given case. I will argue that they are not present in the case of structured propositions as theoretical representations of what is said. I will further argue that an instrumentalist attitude towards structured propositions is recommended by other considerations as well, and conclude that we should treat them as representations serving various explanatory ends that do not include disclosing the nature of what they represent, namely, what is said.

2   Propositions as Representations

The first order of business is to understand the theoretical roles played by structured propositions. (Henceforth I leave the qualification 'structured' implicit.) The literature here is vast and I cannot possibly do it justice within the scope of this discussion. In a nutshell, propositions are presumed to act as semantic contents for sentences in context, as bearers of truth and falsity, as objects of the so-called propositional attitudes, and as operands for modal operators. As is customary, we abbreviate all these roles under a single rubric: what is said. Propositions thus theoretically represent what is said. And here the tendency to treat the representations realistically as revealing the nature of the phenomena drives much of the current discussion and gives rise to special difficulties. In everything that follows I consider the metaphysics of what is said as a special case of metaphysical explanation. After briefly outlining the doctrine of propositions in its bare form I will proceed to offer general reasons for not regarding propositions under a realist attitude, reasons emerging from comparing the case at hand with cases of theoretical identification in natural science such as water being hydrogen hydroxide or gold being the element with atomic number 79. This will be followed by a discussion of a special reason, emerging from a problem raised

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pertaining to the Fregean representation of natural numbers as equivalence classes of first-level concepts under equinumerosity and the Fregean representation of cognitive attitudes as relations to Fregean thoughts, in my (2019).

by the originator of the doctrine of propositions, Russell, to refrain from treating propositions realistically.

Propositions are purported to be structurally akin to the sentences expressing them and to be constituted by whatever the significant sub-sentential expressions stand for, held together in some kind of structure. It has been a matter of dispute whether there are such things that perform all the tasks included under the rubric of what is said – semantic content, bearer of truth-value, object of attitude, and modal operand. But work in the area typically proceeds by arguing for the existence of some suitable entity performing at least one of those tasks and subsequently arguing for the entity's suitability for performing the other tasks as well. The historical precedent to contemporary discussions of propositions is Russell's early doctrine of *The Principles of Mathematics* (1903). According to Russell's original position there is no principled distinction between true propositions – what is truly said to be the case – and their truthmakers – what is the case. Given the lack of distinction here, it is hardly surprising that there should be no distinction between constituents of propositions and what they are about. The Russellian default is that propositions are generally constituted by what they are about, except in cases for which denoting concepts are summoned.[2]

A principal issue that bedevils the doctrine of propositions is the problem known as *the unity of the proposition*. The problem in a nutshell is that if we regard propositions as constituted by semantic contributions of sub-sentential expressions to the significance of whole sentences, it is difficult to see how the propositions themselves are anything beyond itemizations of propositional constituents. And yet when we speak of the significance of a sentence we speak in the singular. Take the sentence 'Amy loves Mary'. What is said by it, let us suppose, is constituted by Amy, the LOVE relation, and Mary. But Amy, LOVE, and Mary do not themselves provide a unified something to act as what is said by the entire sentence. What might otherwise confer such unity? It is hard to know what to say here. Regarding 'A is different from B' Russell (1903) writes: "[T]he difference which occurs in the proposition actually relates A and B, whereas the difference after analysis is a notion which has no connection with A and B" (49). And after contemplating the unhelpful suggestion that what is contributed to the proposition by 'is' and 'from' provides the

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[2]Denoting concepts are introduced and discussed in Russell (1903: Ch. V) before being subjected to criticism in the Gray's Elegy passage in Russell (1905), where they are misleadingly identified with Fregean senses. Importantly, denoting concepts allow the early Russell to introduce generality into propositions. For 'I met a man', e.g., there *is* a distinction between the proposition expressed, one that contains the *a-man* denoting concept, and whatever makes it true, my having met Jones, say. See my (2010) for further discussion of this early and lesser known Russellian theory.

requisite glue between A and DIFFERENCE, and between DIFFERENCE and B, Russell concludes:

> [A] proposition, in fact, is essentially a unity, and when analysis has destroyed the unity, no enumeration of constituents will restore the proposition... The verb, when used as a verb, embodies the unity of the proposition, and is thus distinguishable from the verb considered as a term, though I do not know how to give a clear account of the precise nature of the distinction. (50)

Thus goes the problem of the unity of the proposition.

A second problem often raised for the doctrine of propositions is a problem of indeterminacy that can be traced back to Benacerraf's (1965) familiar discussion of set-theoretical reductions of numbers. There are two familiar equally workable and mutually incompatible total reductions of numbers to pure sets, one due to Zermelo and the other due to von Neumann. What determines which is to stand for the number two, say, Zermelo's $\{\{\varnothing\}\}$ or von Neumann's $\{\varnothing, \{\varnothing\}\}$? While these are distinct sets, each does just as well as the other as the set-theoretical representation of the number two. An analogous worry can be raised for propositions. Propositions, we assume, are structures of propositional constituents. What determines that what is said by 'Amy loves Mary' is represented by the structure $\langle\langle \text{Amy, Mary}\rangle, \text{LOVE}\rangle$, say, as opposed to $\langle \text{LOVE}, \langle \text{Amy, Mary}\rangle\rangle$? While these are distinct structures of propositional constituents, each does just as well as the other in representing what is said by the sentence.

A third familiar problem often raised for the doctrine of propositions is the suitability of propositions for semantic evaluation. If propositions are structures of propositional constituents, such as the individuals Amy and Mary and the LOVE relation, how is such a structure supposed to be suitable for truth or falsity? What is said by the sentence 'Amy loves Mary' is plausibly associated with a truth-condition, the condition of Amy loving Mary – if the condition is met, then what is said by the sentence is true, and vice versa. Yet even if we set the indeterminacy problem of the previous paragraph aside and assume there to be a unique structure of propositional constituents representing what is said by 'Amy loves Mary', what sense can be made of the idea that that very item, the structure, might be true? The structure is just an arrangement of the individuals Amy and Mary and the LOVE relation, much like the arrangement of a fork, a plate, and a knife in a place setting. It can thus seem unsuitable for truth or falsity. We think it categorically inapt to associate the fork being to the left of the plate and the knife being to the right with being true or false. From such a mindset it can also seem categorically inapt to associate the structure

of propositional constituents Amy, Mary, and LOVE, with being true or false.

Now, without prejudging whether to regard propositions under a realist or an instrumentalist attitude, let us register how the three problems just outlined fare under an instrumentalist attitude towards propositions. Consider again the proposition representing what is said by the sentence 'Amy loves Mary'. The propositional constituents Amy, LOVE, and Mary, are to be held together in a structure that represents the unified semantic significance of the sentence while attesting to the semantic contributions of sub-sentential components. Any representational means for capturing what is said by our sentence would work here as long as the individual contributions of significant sub-sentential components are discernible in the resulting representation. There may of course be other explananda for the overall account that might favor one theoretical representation over a potential competitor. But all else being equal, under an instrumentalist attitude nothing of significance to the nature of what is said turns on the choice of representational means. Structures represented by iterated sequencing are a natural choice, but syntactic trees with semantic values assigned to terminal nodes are another, and there are other options as well. The specter of the unity of the proposition is laid to rest by treating propositions instrumentally as performing certain explanatory tasks without the further demand that they reveal the nature of what is said. The problem is deflated by attending to how we casually regard a structure of elements as a single thing despite the plurality of its elements. To treat this problem as a deep worry about what is said is to regard the unity of a sequence over a plurality of elements (let us say) as revealing the nature of what is said. From an instrumentalist standpoint this is a mistake.

A similar instrumentalist treatment extends to the Benacerraf-style worry about propositions, and to the same deflationary effect. Here is the Benacerraf-style worry again: What determines that the proposition expressed by 'Amy loves Mary' has the structure $\langle\langle\text{Amy, Mary}\rangle, \text{LOVE}\rangle$ rather than the structure $\langle\text{LOVE}, \langle\text{Amy, Mary}\rangle\rangle$? The instrumentalist answer is that propositions are meant to play certain explanatory roles and that either structure works for our explanatory purposes as long as we adhere to a single choice throughout the explanation. The representational suitability of either option (all else equal) should not occasion any deep anxiety about indeterminacy for what is said.

An instrumentalist deflation extends to the problem of suitability for truth or falsity as well: What renders a structure of propositional constituents, all by itself, a suitable bearer of truth or falsity? It can seem categorically inapt to attribute truth-values to such a thing, and so, inapt to associate it with truth-conditions. The instrumentalist response is that the structure is meant to represent what is said for certain explanatory purposes. It is part of the nature of what is said that what is said

is capable of semantic evaluation. But to demand of the theoretical representation of what is said, the proposition, to be intrinsically true or false in the relevant sense is to treat the representation as revealing the nature of what is said.[3] By contrast, under an instrumentalist attitude we *stipulate* that such a structure is associated with a truth-condition.

As with other explanatory endeavors, the question of representational adequacy assumes at the very least consistency for the representational means at issue. This requirement will eventually lead us to consider a specific and to my mind decisive consideration against adopting a realist attitude towards propositions. But first, having noted how instrumentalism handles the three problems outlined above, we approach the question of realist vs. instrumentalist attitude towards propositions in more general terms.

3 Realist vs. Instrumentalist Attitude

Is a realist attitude towards propositions justified? The traditional question of realism per domain of facts or things is fraught with controversy. We can, however, approach the larger issue indirectly by comparing the case of propositions with cases where a realist attitude towards theoretical representations seems clearly justified.[4] Here cases of theoretical identification (TID, for short) come prominently to mind. We represent water within physical chemistry as hydrogen hydroxide, for example, under a widespread realist attitude. Being hydrogen hydroxide, it is widely assumed, reveals the nature of the substance. It isn't merely a representation of water within some wider explanatory setting – it is also what water itself turns out to *be* upon close theoretical scrutiny. Now, instead of seeking some ur-consideration that might decide the question of realism vs. instrumentalism in general and then apply it to specific cases, we take for granted the aptness of a realist attitude towards physical-chemical representations of substances, say, and ask whether such an attitude might also be warranted towards propositions as theoretical representations of what is said. This requires identifying salient features of theoretical identifications and using them as conjectured necessary conditions for when a realist attitude is justified, which would then be utilized for the case at hand.

The present strategy will seem of limited reach from a more traditional mindset on the question of realism, given that the question whether there *really are* propo-

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[3]There is another sense in which the representation may be true or false – by adequately or inadequately capturing what is said, namely, by being true or false *to* what is said – but this is a very different matter from the one discussed in the text concerning truth or falsity *of* what is said.

[4]This general methodology is pursued for other cases of philosophical explanation in my (2019).

sitions is not directly addressed. For example, a traditionalist might insist that the fact that there is widespread agreement on a realist attitude when it comes to the representation of water as hydrogen hydroxide is by itself inconsequential when it comes to the question whether water *really does* have the molecular structure alleged by physical chemistry. From the present point of view, however, the fact that being hydrogen hydroxide is revelatory of the true nature of water is on a surer footing than the doubts of the traditionalist on the question of realism. We do well to ask after characteristics present in a theoretical identification such as water being hydrogen hydroxide and use them as a measure for explanations proffered in philosophy. This is what I propose to do here.

A related doubt about the present methodology is the thought that strictly speaking warrant for a realist attitude towards a theoretical representation ultimately rests on the representation *getting the facts straight*. All other considerations, such as various commonalities across cases we tend to regard under a realist attitude, are beside the point. This concern betrays a basic misunderstanding of the question being pursued here, namely, whether a realist attitude towards propositions is justified. The question is raised from a "deliberative" epistemic standpoint. It is addressed to a deliberating doxastic agent. On the present approach, the warrant for adopting a realist attitude towards a theoretical representation is compatible with bad epistemic luck – that despite conducting ourselves impeccably as would-be knowers, it turns out, for example, that water just isn't hydrogen hydroxide after all. Asking whether a realist attitude towards a philosophical theoretical representation is justified is likewise undertaken from a deliberative standpoint. To short-circuit the issue by suggesting that such an attitude is justified just in case the representation gets the facts about whatever is represented straight is to misunderstand the proposed methodology. We are looking to cases where a realist attitude towards theoretical representations seems clearly justified to see if we can identify central features as markers for such warrant, which we can then deploy as guidelines for which attitude we should take towards propositions as theoretical representations of what is said.

Considering TIDs as uncontroversial cases where a realist attitude towards theoretical representations seems clearly justified, we can identify three central features – there are likely others. First and foremost, TIDs exhibit *realist purport*. Representing the material composition of a certain currency as 94% steel, 1.5% nickel, and 4.5% copper for the purpose of metallurgical or physical-chemical analysis is associated with a clear pretension to identify the underlying nature of the items in question, saying what those things are at bottom. Such a case is quite unlike representing the selfsame currency as one exhibiting a certain ratio of nominal to commodity value

in formulating Gresham's law in economics.[5] In the latter case there is no realist purport to identify the underlying nature of the represented items. The explanatory purpose behind the representation in formulating the economic generalization is quite different. Revealing the underlying nature of physical coins is no part of it.

Second, TIDs are formulated against an overall background of *conservatism as to subject matter*: general conservation of pre-theoretical subject matter for basic everyday claims unless radical revision is called for by genuine theoretical progress.[6] Even in the advent of physical chemistry we consider the subject matter of basic pre-theoretical water-claims to be water. The identification of water as H_2O does not require us to say that those water-claims are really about something other than what we pre-theoretically take them to be about. Of course some revisions regarding subject matter of basic pre-theoretical claims are required by certain theoretical advances. Familiarly, our pre-theoretical jade claims turned out to be about two sorts of substance, jadeite and nephrite, rather than one.[7] Equally familiarly, our pre-theoretical thunder and lightning discourse turned out to be about one kind of event, electrical discharge, rather than two. Such revisions as to subject matter of basic pre-theoretical claims are mandated by genuine theoretical progress, but in general conservation of pre-theoretical subject matter is the rule.[8]

Third, and finally, how the theoretical representations deployed in TIDs are supposed to represent whatever they do is presumed to fall within the purview of the surrounding theory. The facts of theoretical representation are themselves made intelligible by the theory. Given how we track water and gold pre-theoretically via macro-features, and given our overall understanding of how micro-structure is related

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[5]This widely cited law says that between two forms of currency for the same nominal value, the currency whose commodity value is higher will tend to get pushed out of circulation by the one whose commodity value is lower (presumably because the first will get hoarded for its higher commodity value).

[6]I am using 'subject matter' here and elsewhere in a non-technical sense to denote the facts our claims are about without partisan commitment to a particular theoretical capture of the pre-theoretical notion. Differences among extant accounts of subject matter are irrelevant here.

[7]This famous example is due to Putnam (1975). For a recent discussion of the example, see Hacking (2007).

[8]Here is how Quine (1957) puts the larger point:

> We imbibe an archaic natural philosophy with our mother's milk. In the fullness of time, what with catching up on current literature and making some supplementary observations of our own, we become clearer on things. But the process is one of growth and gradual change: we do not break with the past, nor do we attain to standards of evidence and reality different in kind from the vague standards of children and laymen. Science is not a substitute for common sense, but an extension of it. (2)

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to macro-features, it is relatively well understood how being H_2O represents water or how being the element with atomic number 79 represents gold for physical-chemical analysis. The representation of water as H_2O or of gold as the element with atomic number 79 do not raise further perplexity as to how it is that water or gold should be so represented theoretically. That they are so represented is made intelligible by the surrounding theory.

We have, then, three salient features of TIDs and we put them forward as conjectured necessary conditions for when a realist attitude towards theoretical representations is warranted: (1) realist purport, (2) conservatism as to subject matter, and (3) intelligibility of representation in light of surrounding theory. Let us now turn to propositions as deployed within the metaphysics of what is said and examine how they fare when considered against them.

When it comes to condition 1, there can hardly be any doubt that propositions are put forward as revealing the nature of what is said. The proposition theorist engaged in the metaphysics of what is said is typically concerned to reveal the nature of what is said in particular cases. At the closing of a recent book on propositions (King et. al. 2014), Soames, one of the book's co-authors, describes the combined efforts of the three co-authors as follows:

> As I see it, success in our common enterprise will be success in identifying what agents have been referring to all along when speaking of propositions, and what properties they have ascribed to these entities when characterizing them as having been asserted or believed, or as having truth conditions – even if little of the theoretical detail about what these entities are, or how precisely we or they manage to represent the world, is something we are in a position to know without careful theory construction. (244)

Here propositions are identified as the pre-theoretical subject matter for the proposition theorist (as opposed to what is said), but adapting Soames' passage to our terminology we paraphrase: Even if there are multiple extant theories of what is said – the co-authors' theories are all very different – such a theory ("our common enterprise") is expected to tell us what we've been referring to all along in speaking of what is said. Going by such anecdotal evidence, the condition of realist purport is clearly met in the present case.

But when it comes to condition 2 – the conservation of pre-theoretical subject matter unless revision is demanded by clear theoretical benefits – the situation is far from clear. Even granting that pre-theoretical claims about what is said are less firmly rooted in common opinion than pre-theoretical claims about water or

gold, it is highly doubtful that basic claims about what is said are claims about any structure of propositional constituents. What happens in the advent of any of the proposed theories of propositions is pretty clearly a departure from whatever we pre-theoretically take ourselves to be talking about, however dimly, when making claims about what is said. Recall, for example, that what is said provides objects for the attitudes. The idea that in believing that p we bear a cognitive relation to something that has the content of the complement clause p is not a pre-theoretical idea. So whether or not condition 2 is met in this case depends on whether or not revisionism as to subject matter is demanded by genuine theoretical progress. And here we must admit that the evidence for such progress is scant. It surely does not remotely compare with whatever warrants revision as to subject matter in the natural sciences.

Turning to condition 3 – intelligibility of how propositions represent what is said in light of the surrounding theory – we clearly come up short. Even putting aside other worries mentioned in Section 2, it remains unclear why a certain structure of the constituents Amy, Mary, and LOVE, should represent what is said by 'Amy loves Mary'. Again, what is said covers the significance of the sentence, the bearer of truth and falsity, the object of the attitudes, and the modal operand. How the proposition is supposed to represent all that does not follow from facts articulated by the surrounding theory.[9] Propositional structure seems to *encode* what is said as covering these various roles. There is an unmistakable feel of stipulation here, which bespeaks an instrumentalist attitude towards the representation.

In short, judging by cases where a realist attitude towards theoretical representations is clearly warranted, the case for a realist attitude towards propositions seems weak. The weakness is compounded by a special problem afflicting propositions, a problem first presented and discussed by Russell, the chief architect of the doctrine of propositions in its original formulation. The rest of the chapter will be devoted to this problem and its ramifications for the issue at hand.

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[9]This is plainly the case for theories that identify propositions with ordered n-tuples of propositional constituents, but it includes more recent views as well. Consider a position such as the one articulated in King (2007), according to which the proposition expressed by 'Amy loves Mary' is roughly the fact that Amy, LOVE, and Mary are the semantic values at the terminal nodes of the relevant syntactic structure. How this is supposed to capture what is believed in believing that Amy loves Mary – one of the hallmarks of what is said – is left officially unaccounted for by such a view. One might perhaps couch the theory in some language of thought account, but arguably this only delays the complaint: it is no clearer by the lights of the surrounding extended theory how the relevant structure per mentalese is supposed to capture what is believed in believing that Amy loves Mary.

4 The Russell-Myhill Paradox

In a review of King's (2007) theory of propositions Deutsch (2008) admonishes the contemporary literature surrounding propositions quite generally for its failure to engage with the paradox of propositions presented in Appendix B of Russell (1903), a problem known as the Russell-Myhill paradox. I would like to channel some of Deutsch's sentiment as a further pitch for adopting an instrumentalist attitude towards propositions.

The paradox of propositions is originally formulated as follows:

> If m be a class of propositions, the proposition 'every m is true' may or may not be itself an m. But there is a one-one relation of this proposition to m: if n be different from m, 'every n is true' is not the same proposition as 'every m is true'. Consider now the whole class of propositions of the form 'every m is true', and having the property of not being members of their respective ms. Let this class be w, and let p be the proposition 'every w is true'. If p is a w, it must possess the defining property of w; but this property demands that p should not be a w. On the other hand, if p be not a w, then p does possess the defining property of w, and therefore is a w. Thus the contradiction appears unavoidable. (Russell 1903: 527)

We reconstruct the argument. First, the claim that "there is a one-one relation of this proposition to m: if n be different from m, 'every n is true' is not the same proposition as 'every m is true'" can be generalized to the uncontroversial claim that a difference in propositional constituent implies a difference in proposition. We formulate this as a benign necessary condition on propositional identity: where P and P' range over propositions,

$(P^=)$ if $P = P'$, then for any o, o' where o occupies the same position in P
that o' occupies in P, $o = o'$.

Next, for any class of propositions m, the proposition $\forall q(q \in m \rightarrow q)$ is taken as the claim that every proposition in m is true.[10] Such a proposition may or may not be a member of m. Consider the class w of propositions each saying with respect to

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[10]We can represent this as a complex consisting of the property of universality for propositional functions ALL_{pf}, the truth-function IF-THEN, and the relational property MEMBER relating things to the classes that include them. The proposition can then be taken as $\langle \text{ALL}_{\text{pf}}, h \rangle$ where h is a propositional function that takes proposition q to $\langle \text{IF-THEN}, \langle \langle \text{MEMBER}, \langle q, m \rangle \rangle, q \rangle \rangle$. I set this type of representation aside for the rest of the discussion for the sake of readability.

some class m of propositions that all the propositions in m are true, but which do not themselves belong to m: $w = \{r \mid \exists m(r = \forall q(q \in m \to q) \land r \notin m\}$. Let p be the proposition that says that every member of w is true: $p = \forall q(q \in w \to q)$. It turns out that $p \in w$ just in case $p \notin w$. For suppose that $p \in w$. Then for some class of propositions m, $p = \forall q(q \in m \to q)$ and $p \notin m$. But given that $p = \forall q(q \in w \to q)$ and given condition $P^=$, $m = w$. So from $p \notin m$ we get that $p \notin w$. Other way, if $p \notin w$, then, given that $p = \forall q(q \in w \to q)$, it follows that for some m or other, $p = \forall q(q \in m \to q)$ and $p \notin m$. So by the definition of w, $p \in w$. Contradiction.[11]

When facing paradox, we naturally tinker with our extant theories and the representations they deploy in search of better theories and representations that would be immune to the problem. When naïve set theory saddles us with Russell's paradox, we conclude that our naïve set-theoretical capture of sets, with its principle of unrestricted comprehension, is faulty. We do not conclude as per realism about naïve sets that somehow sets or collections *themselves* are revealed upon closer theoretical scrutiny to have a paradoxical nature. Otherwise it would make little sense to search for a theory of sets such as ZF to supplant the naïve theory. We look for a different theoretical capture of an extra-theoretical subject matter, a theoretical capture of sets or collections that is paradox-free.

Or consider the Liar paradox in a metamathematical setting. Tarski's Theorem says that no language sufficiently rich (that is, in which the diagonal function is definable) may contain its own truth predicate. The proof of the theorem is a formalization of the Liar. But the metamathematical limitative result concerns a particular formal capture, a truth predicate, that is a formal representation of the property of sentential truth. It is not generally maintained that sentential truth *itself* is paradoxical – otherwise the various proposed formal captures of sentential truth in the wake of Tarksi's limitative result would not have been proposed as alternative formal captures of sentential truth. When a paradox-free theoretical capture of a pre-theoretical subject matter is proposed, there is a perfectly understandable tendency to regard the new representation under a realist attitude as revealing the nature of whatever it purports to represent. Here, however, we must exercise caution. The proposed theoretical capture must not introduce elements that are *prima facie* too alien to the represented subject matter to be plausibly regarded under a realist attitude as revealing its nature. As we are about to witness, this requirement can be overlooked.

Russell himself eventually evades the paradox with his ramified theory of types, disallowing such propositions that include quantification over all propositions, themselves included, and more generally prohibiting impredicative definitions (definitions

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[11]For further discussion, see Urquhart (2003).

that include quantification over a universe containing the defined entity). This puts to rest the paradox for propositions as representations of what is said. But when it comes to what is said *itself*, ramification seems mysterious and unmotivated. Let S be a sentence that says something I take to be the cleverest. Why in the world would there not be anything said by the sentence 'Of all things said, what is said by S is the cleverest'? Even if we accept some prohibition on quantifying over all propositions à la Russell to block the paradox, our acceptance does not easily extend from the specific theoretical means for representing what is said – propositions – to what is said by our sentences.[12] Under a realist attitude that considers propositions to reveal the nature of what is said, to deny the existence of certain propositional complexes is to withhold significance from sentences that appear for all the world to be significant in their apparent form. Suppose I say 'Anything said is either grasped by someone or could be grasped by someone time and energy permitting'. The realist about propositions who seeks to block the paradox by disallowing quantification over all propositions will maintain either that nothing is literally said here, or else that the sentence says something rather different from what it appears to say. Neither option is attractive. What I said seems to make perfectly good sense as it stands – it seems for all the world to speak of anything said without qualification. Indeed, it might even be true. It is a very tall order to deny significance for natural language locutions that seem perfectly meaningful as they stand. On the other hand, revisionism with respect to what such sentences appear to say in light of their apparent form is unmotivated given our current understanding of their syntax and semantics. In this respect the situation here is unlike parallel situations with attempted solutions to neighboring paradoxes. Consider again Russell's more familiar paradox of the class of non-self-membered classes. To block the latter, we typically either enter a provision into the transformation rules of a proposed formal system by swapping one axiom schema (unrestricted comprehension) for another (separation), as in ZF; or else we enter a provision into the formation rules of a proposed formal language that disallows certain syntactic constructions, as in the theory of types. But in neither case need it be maintained that the ordinary phrase 'is non-self-membered' is literally insignificant or has significance other than its apparent one.[13]

I repeat the upshot of the present discussion regarding another suggested response

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[12]There may be other reasons, which need not concern us, to dislike the ramified theory of types. Logicians have tended to dislike the theory's attendant axiom of reducibility, which is difficult to accept as a logical principle. For further discussion of the issue, see Goldfarb (1989).

[13]Russell himself assumes otherwise for reasons discussed in van Heijenoort (1967) and which would take us too far afield. Suffice it to say that Russell's predilection to the contrary is based on a conception of logic and language that is markedly different from our own.

to the paradox of propositions. According to Deutsch's (2014) recently proposed Morse-Kelley-based solution to the paradox, we would recast my sentence as saying that any proposition *that is a member of some class* is either grasped by someone or could be grasped by someone time and energy permitting. While such revisionism may be warranted as a stipulation about propositions as representations of what is said, it should not, I submit, be taken to reveal what the original English sentence says. Nothing in the original sentence bespeaks class membership. The sentence says what it says, and what it says would be represented – assuming Deutsch's solution to the paradox is preferred over others – by a proposition that includes the condition of class membership.

This final consideration offers, I believe, a compelling reason to regard propositions under the auspices of an instrumentalist attitude even beyond the general guidelines discussed in the previous section. Accordingly, I propose not to regard these representations of what is said under a realist attitude. Propositions, we may suppose, have some explanatory utility. But we should not treat them realistically lest we be saddled with an empirically unmotivated revisionism regarding apparently significant sentences, or worse, the radical idea that those lack significance altogether. Together with the instrumentalist deflation noted in Section 2 of worries about propositional unity, Benacerraf-style indeterminacy, and suitability for truth and falsity, I conclude that we have an overriding reason to regard propositions as representations wielded for explanatory purposes that do not include revealing the nature of what is said. Instrumentalism is the right attitude to adopt towards them.[14]

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[14]In a number of recent writings on the topic Soames objects to traditional conceptions that identify propositions as formal structures of propositional constituents on the grounds that such structures are not inherently representational. As against a proponent of the traditional view, Soames (2010a, 2010b) insists that structures of constituents do not have representational properties intrinsically, so it is incumbent on their advocate (Soames's opponent) to explain how those properties emerge from cognitive relations cognizers bear to those structures – an undischarged explanatory burden. The key here is that propositions are presumed to reveal the nature of what is said. If propositions are identified as structures of constituents as per Soames's opponent, then those structures are to reveal the nature of what is said. But then we are owed some explanation of how the representational properties of those structures of constituents, specifically their having truth-conditions, emerge from our cognitive relations to them. On the present way of looking at things, by contrast, propositions are theoretical representations that are not to be regarded as revealing the nature of what is said to begin with, *pace* both Soames's target and Soames's complaint. We associate propositions with truth-conditions by stipulation. Thanks to Chris Tillman for discussion here.

Perhaps an analogy is in order. Consider Frege's (1953) claim that the number n is the extension of the second-level concept *equinumerous with F̲*, where F is a first-level concept with an n-membered extension. Setting paradox aside, a critic might object that this cannot be right because the Fregean construction – the extension of the second-level concept – is not intrinsically

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applicable to quantities. And so, we are owed some explanation of how the applicability of the construction to quantities emerges from our interactions with the number, our counting practices or whatnot. Frege and this critic share the assumption that whatever theoretical representation is being offered here, it is to be regarded as revealing the nature of the number. But an instrumentalist about Frege's construction would demur: Frege's construction represents n for certain theoretical purposes – say the purpose of showing that arithmetic need not avail itself of any logical means beyond second-order logic. But the construction should not be expected to reveal the nature of the number it represents as per realist attitude. The applicability of the construction to quantities can be stipulated.

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