

Russell on logical constructions and logical atomism

Jeff Speaks
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[NOTE: Some of the material we will be discussing in this section of the class is from Russell's *Logical Atomism*, and is in the coursepack. I have also included in the coursepack a selection from *Our Knowledge of the External World*, which is also relevant to this material, but is not required reading. Finally, a good and clear discussion of the metaphysics of universals and relations may be found in Russell's *Problems of Philosophy*, which I have not included in the coursepack but is available free online.]

1 Russell's metaphysical program

1.1 *The aims of logical atomism*

Russell says,

“The reason that I call my doctrine *logical atomism* is because the atoms that I wish to arrive at as the last sort of residue in analysis are logical atoms and not physical atoms.” (37)

It is clear from other passages that Russell regards logical atoms as the ultimate constituents of reality. You may ask: given that his aim is this traditional metaphysical one, why does he call his program *logical atomism*? What does it have to do with logic?

1.2 *The correspondence between language and the world*

Russell thought that there was a connection between logic and metaphysics because he thought that we could analyze the nature of reality via an analysis of language.

In support of this thesis, he held the following plausible view about the relationship between language and reality:

For any true sentence S , there is some fact, or set of facts, which makes S true.

Why this is a plausible claim about the relationship between the truth of sentences and which facts exist.

This suggests the following strategy for deciding what facts there are: see which sentences are true, and ask what facts about the world are sufficient to make them true.

But how, you might ask, are facts related to the logical atoms — the ultimate constituents of reality?

1.3 Objects and facts

Russell is clear that facts are distinct from objects:

“I want you to realize that when I speak of a fact I do not mean a particular existing thing, such as Socrates or the rain or the sun. . . . What I call a fact is the sort of thing that is expressed by a whole sentence, not by a single name like ‘Socrates.’ . . . We express a fact, for example, when we say that a certain thing has a certain property, or that it has a certain relation to another thing; but the thing which has the property or the relation is not what I call a ‘fact.’” (41)

We already knew from the principle connecting language and reality that facts were the things that are responsible for the truth of sentences. From this quote we learn something more about them: they are complexes made up out of objects and properties.

This gives us the metaphysical framework of logical atomism: on the one hand we have ‘object’ like material objects, properties, and relations; and on the other hand we have facts, which are complexes made out of these objects.

How we can arrive at this view via a natural analysis of language. Consider, esp, simple subject-predicate sentences.

This suggests that the metaphysician who endorses logical atomism will have two basic questions to answer: what are the ultimate or most basic facts, and what are the ultimate or most basic objects?

2 Facts

2.1 The reality of facts

One might naturally wonder, however, why the metaphysician should bother at all with facts. After all, facts are complex items made out of objects. This seems to indicate that objects are more fundamental than facts; and isn’t it the job of the metaphysician to delineate only the most fundamental aspects of reality — the last things that one arrives at in the process of analysis?

In one sense, objects are more fundamental than facts. But Russell thinks that, nonetheless, an inventory of the basic elements of reality must include facts in addition to objects. Why?

An argument is suggested by the continuation of the above passage:

“I want you to realize that when I speak of a fact I do not mean a particular existing thing, such as Socrates or the rain or the sun. *Socrates himself does not render any statement true or false.*” (41, my emphasis)

The fact that objects do not, by themselves, make any statements true or false indicates that objects are not all that there is to the world. For one thing that we know about the world is that it is such that certain sentences are true — e.g., ‘Snow is white.’ What Russell is pointing out is that if we give a list of the objects that exist — material objects, properties, relations, and so on — we will have a number of items relevant to our sentence on the list: some material instances of snow, the property of being snow, the property of being white. But, just from the fact that these objects exist, can we know whether our sentence is true? Russell thinks not; we also need to know how those objects are combined. In particular, we need to know which objects have which properties. But this is just to say that we need to know not only what objects exist, but also how they are combined into facts.

Given this argument that facts as well as objects are ultimate elements of reality, a natural next question is: what kinds of facts are there?

2.2 *The nature of atomic facts*

Recall Russell’s views about reference: whereas some terms, like definite descriptions, refer to objects only indirectly, other terms, which Russell called *logically proper names*, had a more direct relationship to their referent. In particular, the meanings of such terms *were* their referents.

This is important in the present context because it tells us something about the facts which correspond to sentences of the form

n is F

where ‘ n ’ is a logically proper name, and ‘is F ’ is a predicate which expresses a property of the referent of ‘ n .’ If the meaning of ‘ n ’ in such cases will be its referent, then it is natural to think that the fact corresponding to the sentence will be a complex consisting of two things: the object, whatever it is, which is the referent of ‘ n ’, and the property which is expressed by ‘is F .’

Russell called these sentences *atomic sentences* and the facts corresponding to them *atomic facts*.

He regarded atomic sentences as the most fundamental kind of sentence, and atomic facts as the most fundamental kind of fact.

2.3 *The relationship between atomic and non-atomic facts*

So one claim in Russell’s theory of facts is that atomic facts of the above kind exist. The natural next question is: what other kinds of facts exist?

In trying to answer this question, Russell implicitly employs the following principle: if you can explain the truth of some sentence only in terms of atomic facts, then do

not posit non-atomic facts to explain the truth of the sentence. This is a kind of principle of parsimony: get as far as you can with atomic facts, and only go beyond them where you need to.

2.4 Conjunctions and disjunctions

We can see an example of this strategy in the way that Russell deals with conjunctions (complex sentences formed by joining two simple sentences with ‘and’) and disjunctions (complex sentences formed by joining two simple sentences with ‘or’)

Consider the following sentences:

Snow is white and grass is green.

Snow is white or snow is red.

Both of these sentences are true; do we need to posit special classes of facts — conjunctive facts and disjunctive facts — to explain the truth of these sentences?

Russell thought not. The truth of the first can be explained by the atomic facts corresponding to ‘Snow is white’ and ‘Grass is green’; we do not need an extra, conjunctive fact to explain the truth of the sentence. Analogous remarks go for the second sentence, and disjunctive facts.

This shows that, in a certain sense, the logical operators ‘and’ and ‘or’ do not refer to anything in the world.

2.5 Negative facts

You might think that this line of argument generalizes to all complex sentences which are formed by logical operations from atomic sentences: maybe no such sentences require a special class of facts, since their truth can be explained in terms of the atomic sentences of which they are composed.

As Russell noted, though, negations pose problems which conjunctions and disjunctions do not. Russell thought that, among the basic elements of reality are not only atomic facts, but also *negative facts* corresponding to true negations of atomic sentences.

To see why he held this, consider the sentence

It is not the case that snow is red.

This sentence is true; hence by the principle connecting language and reality, its truth must be explained by some class of facts. But what class of facts can explain its truth? Maybe the atomic fact which corresponds to ‘Snow is red.’ *But this is not a fact.* As Russell says,

“It is obvious that there is not a dualism of true and false facts; there are only just facts.” (43)

An intuition here is that if you listed all the atomic facts in the world, that would not determine whether the above negation is true. But it is true, and it’s truth must be explained in terms of facts; hence it’s truth requires there to be negative facts, as well as atomic facts.

2.6 General facts

A similar argument can be used to show that, in addition to atomic facts, there must be *general facts*. Russell puts the argument as follows:

“...it would be a very great mistake to suppose that you could describe the world completely by means of particular facts alone. Suppose that you had succeeded in chronicling every single particular fact throughout the universe, and that there did not exist a single particular fact of any sort anywhere that you had not chronicled, you would still not have got a complete description of the universe unless you also added: ‘These that I have chronicled are all the particular facts there are.’ So you cannot hope to describe the world completely without having general facts as well as particular facts.” (42)

Application of this argument to more ordinary generalizations, like ‘All ravens are black.’ Why the truth of this sentence requires a general fact, in addition to the atomic facts about the colors of particular ravens.

2.7 Other kinds of facts?

An open question (for now) whether there are any sentences whose truth requires something other than atomic, negative, and general facts.

3 Objects

But of course the metaphysics of facts is only half of the metaphysics of logical atomism; there is also the metaphysics of objects, or the metaphysics of constituents of facts. (Here as elsewhere I am using ‘object’ loosely, to include not only particulars but also universals like the property of redness.)

3.1 *The idea of a logical construction*

As with facts, the main question here is: what are the ultimate, or most fundamental, objects? As in the case of facts, we address this question by finding one basic kind of object, and asking whether there are any phenomena which require us to posit objects beyond this basic type.

In the case of facts, we began with atomic facts, and asked whether any sentences required for their truth other sorts of facts. Some sorts of sentences did — like general sentences — whereas other sorts of sentences — like conjunctions — were merely disguised ways of talking about atomic facts.

We should expect the same result in the case of objects. We begin with one basic class of objects, and ask whether we can understand the contribution made by expressions in terms of the original class of objects, or whether we need to postulate a new class of objects. In some cases we will, but in other cases we will say that the referent of the term in question is only a ‘logical construction’ out of some other class of objects. (Because facts correspond to sentences, and objects are the constituents of facts, here we are looking at the constituents of sentences — words and phrases — rather than at the sentences as a whole.)

This is somewhat similar to saying that conjunctive facts are ‘logical constructions’ out of atomic facts, but it may help to clarify the idea by example. Consider the sentence,

The average Canadian is 39.6 years old.

The surface form of this sentence seems the same as

John is 39 years old.

This latter sentence corresponds to a fact containing an object, John, and the property of being 39 years old. How about the first sentence?

A natural thought is that it does *not* contain an object, the average Canadian, and the property of being 39.6 years old. After all, there is no such object! A natural interpretation is that there are lots of individuals, Canadians, each of which have a certain age property. ‘The average Canadian’ is just a way of generalizing about these individuals. Another way to put this is to say that the average Canadian is a logical construction out of actual individual Canadians.

3.2 *Sense data*

Given Russell’s views of acquaintance and perception, it is natural to think that the kind of object about whose existence we should be most certain is a *sense datum*.

These are the objects with which we are immediately acquainted in perception, after all; and for reasons now familiar from the Argument from Illusion, we should assume that they cannot be explained away in terms of material objects.

So a good starting point for our metaphysics of objects, given Russell's framework, is to accept the existence of sense data, a class of mental particulars, and then to ask what other objects we require as constituents of facts.

3.3 Universals

Russell thought it fairly obvious, however, that sense data cannot be the only constituents of facts. In addition to particulars, we need universals.

3.3.1 Properties

Intuitively, particulars are individuals, which exist in only one place at a time. (Ignore for now complications about whether there is any 'place' where sense data exist.) But then it is pretty clear that there must be objects other than particulars. After all, two different people could both experience red sense data; it seems to follow that their sense data have something in common: redness. But then redness cannot be a particular, since it is, so to speak, in two places at once. Redness must be, not a particular, but something of which different particulars can partake at a time. That's to say that it must be a *universal*, a kind of abstract object.

As Russell puts it in his book *The Problems of Philosophy*,

"The word 'idea' has acquired, in the course of time, many associations which are quite misleading when applied to Plato's 'ideas'. We shall therefore use the word 'universal' instead of the word 'idea', to describe what Plato meant. The essence of the sort of entity that Plato meant is that it is opposed to the particular things that are given in sensation. We speak of whatever is given in sensation, or is of the same nature as things given in sensation, as a particular; by opposition to this, a universal will be anything which may be shared by many particulars, and has those characteristics which, as we saw, distinguish justice and whiteness from just acts and white things." (ch. 9, 'The World of Universals.')

In general, Russell thought that universals were ubiquitous, and that their existence is fairly obvious. At one point he remarks on the irony of the fact that although almost all words in the dictionary stand for universals, only philosophers ever recognize their existence.

Russell thought (at least in 1912, when he published *The Problems of Philosophy*) that all facts must contain at least one universal:

“It will be seen that no sentence can be made up without at least one word which denotes a universal. The nearest approach would be some such statement as ‘I like this’. But even here the word ‘like’ denotes a universal, for I may like other things, and other people may like things. Thus all truths involve universals.”

3.3.2 *Relations*

So far the universals considered have been properties of a single particular; but some universals are relations which hold between two or more particulars. For example: the relation of *resembling* something, or of *being to the left of* something. These are both ‘two-place’ relations: they hold between two objects. There are also relations which hold between more than two things, such as the three-place relation

A persistent question in philosophy has been whether relations are real, or whether they are ‘logical constructions’ from one-place properties. Russell believed in the reality of relations, but we won’t pause here to consider this question.

3.4 *Material objects*

So far we have recognized two classes of objects: sense data, which are mental particulars, and universals (including properties and various sorts of relations).

A natural next question is: are there any other kinds of objects? And a natural answer is: yes; there are, in addition to mental particulars, material particulars, like desks, chairs, and so on. Russell, however, didn’t think share this view. There are two main reasons for this, I think.

3.4.1 *The epistemological problem caused by material objects*

The first is epistemological. Russell, like Moore, opposed skepticism: he thought that we, for example, know that we have hands. But he also thought that the immediate objects of perception were sense data. These two theses gave rise to a dilemma: how can knowledge of the existence of mental particulars give us knowledge of material objects, if those objects are thought of as things independent of or standing behind the mental particulars?

We can further strengthen this argument with the aid of a principle which Russell sometimes seems inclined to accept, to the effect that perceptions of F ’s can only verify claims about F ’s.

3.4.2 *The analytic problem caused by material objects*

A second problem has to do with the meanings of sentences containing words for material objects. Recall from ‘Knowledge by Acquaintance and Knowledge by Description’ Russell’s principle concerning the the meanings of sentences understood by an agent:

“Every proposition which we can understand must be composed wholly of constituents with which we are acquainted.” (p. 219)

We know that, according to Russell, we cannot be acquainted with material objects. But that means that every sentence containing a term for a material object, like ‘that table’, must be analyzed in terms which do not make reference to any material objects. (We will see below how this might be done.)

But if we can analyze every sentence about material objects into one which makes no direct mention of material objects, then are facts containing material objects really required to explain the truth of sentences at all?

3.4.3 *Material objects as ‘logical constructions’*

The first argument above poses a dilemma concerning our knowledge of material objects; the second argues that material objects are dispensable for the explanation of the truth of any sentence that we can understand, and uses a principle about acquaintance to show that every material object sentence must be analyzable in terms which do not mention material objects.

Russell responded to these two problems with the view that *material objects are logical constructions out of sense data*.

Recall the claims made about the age of the average Canadian above. There we concluded that there really was no such thing as the average Canadian, apart from individual Canadians; just so, we can understand Russell as saying that there really are no such things as material objects like tables and chairs, apart from the sense data we experience when we (as we would put it) ‘look at the material objects’ (or hear material objects, or touch them ...).

Here, however, we run into an immediate problem. In the above case, we know what facts the average Canadian is a logical construction out of, and we do not have too much trouble translating talk about the average Canadian into language which makes no reference to this fictional individual. But in the case of material objects, this isn’t so easy to do.

Consider, for example, how we would translate into the language of sense data a simple claim like

I see a table.

(My discussion here follows that in Soames, *Philosophical Analysis in the 20th Century*, v. 1, ch. 7.)

Part of the analysis of this claim would be

I see a table-like sense datum.

This is too vague; but there are deeper problems with it. Even if we accept the view that material objects are logical constructions out of sense data, we want to be able to distinguish between seeing a table and hallucinating a table. This seems to indicate that we need to add to the analysis claims like the following:

If I were to have the experiences which I would call ‘walking toward the table’, then at the same time as I had those experiences I would see steadily larger table-like sense data.

If I were to have the experiences I would call ‘walking around the table’, then my visual sense data would change continuously as follows:

Moreover, ordinarily the claim that I see a table entails the possibility of non-visual sensory experiences, such as touching the table, running into it, etc. So it seems that the analysis of our original statement should also include claims like the following:

If I were to have the experiences I would call ‘walking around the table’, then eventually I would have the following tactile experience:

The idea, then, is that the true analysis of material object statements is given in terms of a very long series of claims about what my sense data are, and what they would be in certain other specifiable circumstances.

This gives the sense in which material objects are, according to Russell, logical constructions out of sense data. If Russell is right, it follows that we do not need to add to our metaphysics of objects the category of material objects: sense data and universals can explain everything that material objects can.

3.4.4 *Ghosts and phantoms*

3.4.5 *Material objects and ‘subjunctive facts’: metaphysics*

Russell’s analysis of material object statements include not only statements about what sense data one is actually seeing at the time that one made the statement, but also statements about what sense data one *would* see under certain circumstances.

How do statements about what would happen were such-and-such the case fit into Russell's categories of facts? Is their truth, for example, explicable in terms of atomic, negative, or general facts?

It seems not; if so, then we need to posit a special class of subjunctive, or counterfactual facts about possibilities rather than actualities. Why this might strike you as bizarre.

3.4.6 Material objects and 'subjunctive facts': epistemology

That's a question about the metaphysics of subjunctive claims; how about their epistemology? How can we know that a claim about what sense data I would perceive in certain circumstances is true? On Russell's view, it looks like our knowledge about tables, chairs, and such is only as good as our knowledge of these kinds of claims.

3.5 Minds

3.5.1 The nature of minds

So far we have been making do with a metaphysics which includes only mental particulars and universals. But, you might think, this leaves out something very important: persons, or minds.

Russell, again, thinks not:

"Therefore we shall say that a person is a certain series of experiences."
(150)

This amounts to the claim that persons are 'logical constructions' out of sense data which stand in certain relations to each other. (Maybe some relation of continuity could be spelled out.)

3.5.2 The argument from analogy

So much for the metaphysics of minds. On Russell's view of what minds are, how can we know that minds other than ourselves exist?

One traditional way of justifying our knowledge of other minds is via the argument from analogy: there is correlation in my body between things that happen to my body and mental events; I observe similar things happening to the bodies of others; therefore I conclude that the same mental events are going on in their case as well (and hence that they have minds).

Problems with this justification:

1. Induction from our case to the case of every other person we know does not seem very secure. Compare: you see one white squirrel, and infer that all squirrels must be black.

2. The argument is even less convincing when we take into account Russell's view that material objects, including bodies, are constructions out of sense data. Since we have yet to establish that anyone other than me exists, they must be constructions out of my sense data (at least for purposes of the argument). But then the argument says that I should conclude from the fact that there are certain correlations between my sense data and my mental events that there are also correlations between *my* sense data and other mental events, which are not my own. It's difficult to see what would justify this inference.

Russell rejects this justification for our belief that others have minds.

3.5.3 *Knowledge that others exist as a 'unifying hypothesis'*

In the end, Russell does not seem to think that our knowledge of other minds is very secure at all. In *Our Knowledge of the External World*, he puts the matter as follows:

“[The hypothesis that other people have minds] is a hypothesis which systematizes a vast body of facts and never leads to any consequences which there is any reason to think false. There is therefore nothing to be said against its truth, and good reason to use it as a working hypothesis.”

Compare: the thesis that there is a green monster in outer space that constantly evades detection but controls the weather systems on earth.

3.5.4 *A connection between our knowledge of material objects and our knowledge of other minds*

(For more on this problem, see Soames, Chapter 7.)

Standardly, if I say

There is a table there.

and you say

There is not a table there.

(pointing to the same place) we take these to be contradictory: it cannot be the case that both of us are correct. This gives us a constraint on our analysis of material

object statements: it must be the case that our analysis explains why both of our claims cannot be true at the same time.

The problem is that this constraint is not met by Russell's analysis. If I say 'I am experiencing table-like sense data' and you say 'I am not experiencing table-like sense data' then what we say is *not* contradictory.

This leads us to modify the analysis of material object statements to include not only one's actual sense data at the time of the statement and hypothetical facts about what sense data one would have were certain other events to occur, but also facts about *the sense data of other people*. Why this is a natural amendment anyway; we want to distinguish between material objects and persistent hallucinations of a single individual.

But this leads to a problem: our knowledge of the existence of material objects is then only as good as our knowledge of the existence of other minds and our knowledge of what those other minds would be experiencing in other possible circumstances. But how can we know all of this? It seems that Russell's project began (in part) with the epistemological aim of securing our knowledge of material objects; but the lengths needed to go to make plausible the sense datum theory of material objects deployed in service of that epistemological program end up making our knowledge of material objects more precarious than ever.