RUSSELL ON MATTER AND OUR KNOWLEDGE OF THE EXTERNAL WORLD [1*]

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Bertrand Russell's philosophy around 1914 is often interpreted as phenomenalism, the view that sensations are not caused by but rather constitute ordinary objects. Indeed, *prima facie*, his 1914 *Our Knowledge of the External World* reduces objects to sense-data. However, Russell did not think his view was phenomenalist, and he said that he never gave up either the causal theory of perception or a realist understanding of objects.[2] In this paper I offer an explanation of why Russell might have undertaken the constructionist project of his 1914 work while not considering the resulting position that objects can be constructed out of sense-data to be phenomenalist.

In *Our Knowledge of the External World*, Russell calls all the sense-data of a given subject at a given time a *perspective*. At any point of view which is not occupied by a subject, there still is a perspective such that had some subject been there, she would have been given that aspect of the world. A momentary state of a common sense thing is a similarity class of sensibilia belonging to different perspectives. Russell tells us that although these sensibilia are real, the momentary object they are supposed to constitute is *just a logical construction*. (Russell 1914a, pp. 95-96)

Space, on this view, comes in two kinds. Each perspective has its own *private space*. There is also one all-embracing *perspective space* where each perspective is

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[2] Elisabeth Eames (1967) describes her interview with Russell, where he told Eames that he never gave up realism or the causal theory of perception.

located in a configuration determined by the similarities between perspectives. A momentary thing is likewise located in perspective space, at the intersection of different similarity-series of perspectives. A penny, for example, looks like a thick line in some perspectives, and it looks circular in others. These two kinds of perspectives form two distinct similarity-series. Where these two series intersect in perspective space is the place where the penny is. (Russell 1914a, p. 98)

We are familiar with the sense in which a penny appears circular in some perspective. In Russell's terms, a particular circular appearance of a penny in a particular perspective is an *aspect* of the penny. For every aspect of a thing, two places in perspective space are salient: the place *at* which the aspect appears (the place of the thing in perspective space), and the place *from* which it appears (the place of the perspective of which the aspect is a part). (Russell 1914a, p. 100) Each aspect is a member of two classes: the various aspects of the thing it is an aspect of, and the perspective it belongs to. Physics is occupied with the first kind of classification of aspects, and psychology is occupied with the second kind. Physics and psychology do not have different substances as their subjects, but different organizations of the same substance. (Russell 1914a, p. 100)

Persistence and change are treated in a manner similar to contemporary four-dimensionalist views. A persisting thing is defined as "a certain series of appearances, connected with each other by continuity and by certain causal laws." (Russell 1914a, p. 111)

Soon after the publication of *Problems of Philosophy*, in May 1912, Russell delivered a paper titled "On Matter". "On Matter" is concerned with the question of

whether (and how) we can know the existence of matter even though we are not acquainted with it. (Russell 1912a, p. 81) The view Russell defends in this paper is strikingly similar to his view in *Our Knowledge of the External World*.

Matter is to be understood as that which physics is about. So, matter must be such that the physicist can know its existence. In other words, what physical science is concerned with and makes discoveries about must be a function of the physicist's sense-data. What could that function be? There are only two ways in which we can know the existence of something. "(1) immediate acquaintance, which assures us of the existence of our thoughts, feelings, and sense-data,… (2) general principles according to which the existence of one thing can be inferred from that of another." (Russell 1912a, p. 80) The bridge which relates the physicist's sense-data to matter must correspond to one of these ways of knowing that something exists. If our knowledge of matter can be reduced to what we know by acquaintance, then matter should be understood as a logical construction out of sense-data. Otherwise, it must be by inference that we know the existence of matter. So, according to Russell, the bridge between sense-data and matter is either inference or logical construction. (Russell 1912a, pp. 84-85)

Russell thinks that there is a fact of the matter here, as to what type of bridge really exists between sense-data and matter, and that we can discover what that bridge is. In order to discover what kind of function relates sense-data to the matter of physics, we must examine the ontological commitments of physics, i.e. the entities or values physics endorses as real. If some those entities or values are not given in our experience, but nevertheless are necessary for the truth of physical hypotheses, then we cannot know the existence of matter by acquaintance alone, and so, inference must be the function that

relates physics to matter. If physics is not committed to anything beyond what we are acquainted with, then matter can be constructed from sense-data, and no inference is needed.

Russell explains that physics *does* attribute to matter qualities which are not given in our experience, for example, the distance of a star from the observer. Since the visual sense-datum as of observing a star in the sky does not contain an element corresponding to a distance, distance is not a sensible coordinate. (Russell 1912a, pp. 88-89)

What then is the self-evident principle based on which this coordinate is postulated? Russell thinks that, vaguely put, that principle seems to be *different effects, different causes*. Suppose the physicist were to observe two discs, one red and one yellow, moving on a straight line backwards and forwards from each other, with periodically changing velocities. When they reach the same line of sight, sometimes the red disc disappears and sometimes the yellow one does. The physicist would most likely hypothesize that these sense-data are of two spheres moving in ellipses about their common center of gravity, in the same plane as the observer. The observable difference between the case where the red disc disappears and the case where the yellow one does is explained by an unobserved difference in their causes. Russell thinks that a precise version of the *different effects, different causes* principle may just be the principle which justifies the inference from sense-data to matter. (Russell 1912a, pp. 90-91)

All this entails that matter cannot be logically constructed out of our sense-data in a way which would make physics true. “Matter, if it is to be known to exist at all, must be known through some a priori principle assuring us that our sensations in some way “correspond” with things which can exist without our sensations.” (Russell 1912a, p. 92)

This means that the gap between sense-data and physics is bridged by inference. But we still need a theory which explains the sense in which our sensations "correspond" with things independent from them. This requires a certain kind of understanding about sense-data.

The first question for Russell is: Can sense-data exist when they are not perceived? Russell never held that for sense-data, to be is to be perceived. In his 1910 essay "On the Nature of Truth and Falsehood" he states that there is logical room to regard sense-data as mind-independent entities. If a sense-datum is perceived, necessarily it exists, but if a sense-datum exists, it is not necessarily perceived. In his 1911 essay "Analytic Realism", he holds that, *as a matter of fact*, sense-data never exist when they are not perceived, because their existence seems to require them to be in a causal relationship of acquaintance with a subject. Finally, in "On Matter" he considers a sense-datum to be an existent in its own right, as an entity that, at a given time, may or may not be causally related to a subject. To become data, they need to be causally related to a subject; but to exist, they need not. (Russell 1912a, p. 85)

Since sense-data give conflicting information about objects, matter cannot be simply identified with sense-data. Neither can we hope to infer the existence of matter as the cause of our sense-data by appeal to the simplicity argument of *Problems of Philosophy*, which relied on the fact that realism is the simplest explanation of the coherence and unity of our sense-data. Russell now thinks that since the principle that simpler hypotheses are more likely to be true is not self-evident or *a priori*, the simplicity argument has no force against skepticism. (Russell 1912a, p. 86)

Next, to understand how our sensations "correspond" with things independent of them, Russell considers naïve realism, which is the direct realist theory of perception. According to this view, experience puts us in direct contact with the external world, instead of providing us with 'representations' which mediate between the external world and our knowledge of it. Most epistemology literature identifies naïve realism as the denouncement of "sense-data", where sense-data are commonly understood as being mental and subjective representations of a mind-independent reality. A very clear indication that Russell does not think of sense-data as mind-dependent is the way in which he describes naïve realism.

Both in "Analytic Realism" and here in "On Matter" Russell says that naïve realism is *the view which identifies matter with collections of sense-data*. Now, no naïve realist would describe her view in this way. The view which identifies matter with collections of mind-dependent sense-data is phenomenalism, which is as far from naïve realism as any position can be. But Russell did not confuse naïve realism with phenomenalism, because by 'sense-data' he does not mean necessarily mind-dependent things. Russellian sense-data are the real qualities of real things which we directly know.

> Sensation appears to be a relation between a subject and a sense-datum, which is the same thing as a "quality"; we know that the subject can exist at times when it is not sensating the particular quality in question, and we naturally assume that the quality can exist at times when the subject is not sensating it. This is the essential axiom of naïve realism. Its difficulties come chiefly, I think, from an assumption which is *not* essential to it,

> namely that two qualities of the same kind--e.g. two colours cannot coexist in the same thing at the same time. (Russell 1912a, p. 94)

So a tenable naïve realism would be one which affirms both that sense-data are mind-independent qualities of objects, and that conflicting qualities may be at the same place at the same time. (Russell 1912a, p. 93) Such a naïve realism would be "a theory which regards a piece of matter as consisting entirely of constituents of the *nature* of sense-data, by including everything that could be a sense-datum to any possible observer." (Russell 1912a, p. 85-86)

The similarities to the *Our Knowledge of the External World* are obvious. Although many have regarded the position in *Our Knowledge of the External World* as a form of phenomenalism, surely its precursor, "On Matter", defends a realist, in fact a naïve realist position. In "On Matter", matter is constituted by sense-data and unsensed sensibilia, which are not mind-dependent phenomenal entities. That is, even though Russell reduces the objects of common sense and science to entities like sense-data, he does that not by phenomenalizing the objects, but by objectifying the phenomena. Furthermore, matter is not understood as a mere logical fiction constructed out of sense-data and unsensed sensibilia, but rather is composed of and constituted by them. The mind-independent existence of matter is known by inference, and perception relates us to matter directly.

Before writing his posthumously published 1913 manuscript *Theory of Knowledge*, Russell continued his work on the "problem of matter." Some of the extant manuscripts of this brief period describe logical constructions very similar to the ones in *Our Knowledge of the External World*. In these manuscripts though, his account of our

knowledge of the things of common sense and the matter of physics involve both constructions and inferences.

Letters Russell wrote after he finished "On Matter" show that he worked on the subject for a while, but eventually decided to first work on theory of knowledge. He thought that an adequate treatment of matter requires the treatment of knowledge. Russell might have planned *Theory of Knowledge* to ground the amended naïve realism of "On Matter", the inference of physical objects from sense-data. On the other hand, he also wanted to construct the physical world out of sense-data in order to make physical hypotheses verifiable. The problem of matter had become two-fold: that of explaining how sense-data give us knowledge of mind-independent objects, and that of defining 'matter' as a function of sense-data so that physical hypotheses would be verifiable. Inference is more suitable for the first, and constructions are more suitable for the second.

This hypothesis, that Russell wanted to employ the technique of inference to explain *our* knowledge of the external world and the technique of construction to explain the *physicist's* ability to verify her hypotheses, fits Russell's descriptions of the *Theory of Knowledge* project. Originally, the book was supposed to have two sections, an analytic section on acquaintance, judgment, and inference; and a constructive section where Russell would explain the construction of the world of physics. Shortly after he described the book project in this way, he decided that *Theory of Knowledge* would consist only of the analytic section. However, after he wrote the sections on acquaintance and judgment, and before he began the section on inference, Russell dropped the project because of the criticisms of his theory of judgment made by Ludwig Wittgenstein. He published the chapters about acquaintance in various journals, he never published the chapters on

judgment, and he never wrote the chapters about inference. It is most likely that in the face of the failure of his theory of judgment, Russell was unable to give an account of inference.[3]

It is generally held that the constructionist view which Russell originally planned *Theory of Knowledge* to include later became *Our Knowledge of the External World.* The failure of *Theory of Knowledge* to explain judgment, and thus inference, did not pose a threat to his project of constructing the "world of physics" out of sensed and unsensed particulars, simply because constructions are not inferences. These constructions were originally meant only to be substitutes for the hypothetical objects of physics, so that the hypotheses about these objects would be translated into propositions which are in principle verifiable. When he had to give up the project of showing how we can infer the existence of matter, the constructions had to also take the place of the inferences. That is, the constructions had to explain not just the verifiability of the physicist's hypotheses but also our knowledge of the external world.

In *Our Knowledge of the External World*, Russell says

> [C]an we know that other objects, inferable from objects of sense but not necessarily resembling them, exist either when we are perceiving the objects of sense or at any other time? This latter problem arises in philosophy as the problem of the "thing in itself," and in science as the problem of matter as assumed in physics. (Russell 1914a, pp. 82-83)

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3 For a detailed description of the *Theory of Knowledge* project and its collapse, see E.R. Eames' "Introduction" to *The Collected Papers of Bertrand Russell, Vol*. 7.

He has now come to identify the problem of "thing in itself" with the problem of what physics is committed to when it puts forth hypotheses about matter. The thing-in-itself (if there is such a thing) is "something quite unlike [the sensible object we perceive], something which, together with us, and our sense-organs, causes our sensations, but is never itself given in sensation." (Russell 1914a, p. 92) Identifying the reasons for believing in the existence of a thing-in-itself thus described would fall under the project of providing an explanation for our knowledge of the external world. The *inferred* naïve realism Russell defended in "On Matter" was a candidate for such an explanation. But in *Our Knowledge of the External World*, the problems of matter and thing-in-itself are addressed all at once, with the method of logical construction. "The supreme maxim in scientific philosophizing" is born: "Wherever possible, logical constructions are to be substituted for inferred entities." (Russell 1914b, p. 155)

This new dual role for constructions gives rise to the phenomenalist feel of *Our Knowledge of the External World*, stemming from the reduction of physical objects into sensed and unsensed sensibilia which, in parts of the text, appear to be merely phenomenal. But in the book, Russell also says that although we must admit that the existence of sense-data depend upon the physiology of their subject, and the colored surfaces we see cease to exist when we close our eyes, we should not jump to the conclusion that sense-data are mind-dependent. (Russell 1914a, p. 71) Again, in writings of the same period Russell says that sense-data are not only mind-independent, but also physical. (Russell 1914b, p. 151) They are among the constituents of the external world of which we happen to be immediately aware. They are not mental except in the sense that we are aware of them. (Russell 1915, p. 143) In "The Relation of Sense-Data to

Physics" Russell states that because sense-data are data, they are important to epistemology. But from the point of metaphysics, sensed and unsensed particulars are all on a par with each other. (Russell 1914b, p. 148)

Our Knowledge of the External World contains a passage where Russell says that there is a sense in which unsensed appearances are merely ideal. (Russell 1914a, p. 117) This claim would seem to entail that a large part of the constructed world is ideal and mind-dependent, and Russell here seems to paint a phenomenalist picture of the world. However, "ideal" turns out not to mean mind-dependent or even mental. Unsensed appearances are "ideal" only in the sense that they are calculated as functions of the sensed appearances. Russell grants this only to secure the verifiability of physics, that is, to show that knowing causal laws does not require knowledge of anything but sense-data. But the world which those laws are about, the world they describe truly need not contain anything ideal. (Russell 1914b, p. 157)

My thesis explains why Russell goes back and forth, calling the logical constructions fictional on one page and talking about them as real entities on another. The pieces of matter that science needed in order to be verifiable could afford to be fictional, in the sense that they were only *logically* constructed, because the objects for which they were substitutes were also going to be inferred, in the manner suggested in "On Matter". When the inferences could not be provided, the constructions were left in a limbo between the real world and the logical space. *Our Knowledge of the External World* is Russell's attempt to have the constructions do the job of both the inference-based project of "On Matter" and the constructionist project that was originally designed only to supply physics with knowable objects. Rereading *Our Knowledge of the External World*

with this mind, we should be able to dispel the thesis that when Russell wrote it, he was trying on phenomenalism.

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