

OUR KNOWLEDGE OF *OUR KNOWLEDGE*
REVISITED

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With the new availability of the ms. of *Our Knowledge*, scholars can at last examine Russell's revisions. Some introduced the theory of six-dimensional perspectival space, as hypothesized in 1973 by the author.

Russell made errors in writing about the composition of *Our Knowledge of the External World as a Field for Scientific Method in Philosophy*.¹ One example: on New Year's Day, 1914, "as she [the stenographer] came in at the door, I suddenly saw exactly what I had to say, and proceeded to dictate the whole book without a moment's hesitation."² In fact he had struggled with the writing of the book over the previous autumn. In a brief article many years ago I showed that in this and similar passages he was really describing how he wrote "The Relation of Sense-Data to Physics". He may well have confused the book and article because of the new theory of six-dimensional perspectival space that he set out in the article and incorporated into *Our Knowledge* before it was published. Monk has called the story "mythological" and "an outrageous piece of philosophical autobiography".³ "It would be of both philosophical and literary interest to discover the manuscript", I noted.⁴ It has come to light at Trinity College

¹ First edition: Chicago and London: Open Court, 1914. Reprinted 1915; reprinted 1922 (London: Allen and Unwin). Russell went on to revise *Our Knowledge* separately in 1926 (Allen and Unwin) and 1929 (Norton, with a new preface).

² "How I Write", *PfM*, p. 196; reprinted in *Papers 26* (forthcoming). This aspect of the account does not vary from the 1931 draft of his autobiography (*cf.* 1: 211).

³ *Bertrand Russell: the Spirit of Solitude*, pp. 336, 335. (Monk questions the importance of the discovery of six-dimensional space.) RONALD CLARK thought the mistake was "easy enough to make" (*Life*, p. 219).

⁴ "Our Knowledge of *Our Knowledge*" (1973), p. 13. NICHOLAS GRIFFIN lamented

Library, Cambridge, where I saw it listed in 2017. Trinity Library has since made public a high-resolution scan,⁵ which enables a collation of what Russell wrote in the original manuscript and what he published in the first edition of *Our Knowledge*. I supposed he had made a net addition of several pages, but that wasn't so. However, the main hypothesis proved correct. Russell revised the text of the book before publication to incorporate his new theory—the one that “burst upon me on New Year's Day, 1914” (*MPD*, p. 105). A little later, in a letter posted on 27 January 1914, he told Lady Ottoline Morrell that he had rewritten one of his “popular” (i.e. Lowell) lectures that day. Lecture III, “On Our Knowledge of the External World”, is the one.

The left column in the comparison is the final text in the Trinity manuscript. Russell then had it typed. It must have been the typescript he revised in January 1914 and later, perhaps, the proofs. The right column is the first edition text. Italic text in the left column is unique to the manuscript; bold text in the right column, new text in 1914. Unstylized text in both columns is common to both versions, although there is new vocabulary: “metaphysical space” became “perspective space”; “world” became “perspective”; “appearances” became “aspects”; and “sensations” often became “sense-data”. Despite the apparent gaps, each column is continuous. Page breaks are marked.

COMPARISON OF MANUSCRIPT, FOLIOS 32–40, AND “OKEW”, PAGES 87–93

Let us imagine that each mind looks out upon the world, as in Leibniz's monadology, from a point of view peculiar to itself.... If two men are sitting in a room, two somewhat similar worlds are perceived by them; if a third man enters & sits between them, a third world, intermediate between the two previous worlds, begins to be perceived.

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that “we have only the published book to go on and cannot date the innovations in it in the absence of the manuscript” (*SLBR* 1: 483). Now it is possible to do so.

⁵ At trin-sites-pub.trin.cam.ac.uk/manuscripts/add_ms_a_337/; RA REC. ACQ. 1792. I acknowledge the generous assistance of Jonathan Smith of Trinity Library. The provenance is unknown. However, Russell wrote the ms. at Trinity. Perhaps it was donated when his belongings there were auctioned after he refused to pay a fine levied on his anti-war work. See TURCON, “Russell Sold Up” (1986).

is conditioned by the sense-organs, nerves, and brain of the newly arrived man; but we can reasonably suppose that *some* aspect of the universe existed from that point of view, though no one was perceiving it. The system consisting of all views of the universe perceived and unperceived, I shall call the system of "perspectives"; I shall confine the expression "private worlds" to such views of the universe as are actually perceived. Thus a "private world" is a perceived "perspective"; but there may be any number of unperceived perspectives.

Two men are sometimes found to perceive very similar worlds, so similar that they can use the same words to describe them. They say they see the same table, because the differences between the two tables they see are slight & not practically important. Thus it is possible, sometimes, to establish a correlation by similarity between a great many of the things of one world & a great many of the things of another. In case the similarity is very great, we say the points of view of the two worlds are near together in space; but this space in which they are near together is totally different from the spaces inside the two worlds. It is a relation between the worlds, & is not in either of them; no one can perceive it, & if it is to be known it can be only by inference. Between two perceived worlds which are similar, we can imagine a whole series of other worlds, some at least unperceived, & such that between any two, however similar, there are others still more similar. In this way the space which consists of relations between worlds can be rendered continuous, & (if we choose) three-dimensional.

{33} We can now define the momentary common-sense "thing" as opposed to its momentary appearances. By the similarity of neighbouring worlds, many objects in the one can be correlated with objects in the other, namely with the similar objects. Given an object in one world, form the system of all the objects correlated with it

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in all the worlds; this system may be identified with the momentary common-sense “thing”. Thus an appearance of a “thing” is a member of the system of appearances which is the “thing” at that moment. (The correlation of the times of different worlds raises certain complications, of the kind considered in the theory of relativity; but we may ignore these at present.) All the appearances of a thing are real, whereas the thing is a mere logical construction. It has, however, the merit of being neutral as between different points of view, & of being visible to more than one person, in the only sense in which it can ever be visible, namely in the sense that one of its appearances is seen.

Let us see now whether we can state the fact that the appearance of a thing is affected by the intervening medium. We have always to distinguish, on our present theory, between what intervenes in the sensible space belonging to one point of {34} view, & what intervenes in the non-sensible space expressing relations between worlds. But in addition to these two spaces, we shall now have a third space, composed of the relations between “things”. Two things which both appear in a number of sensible spaces will have a relation constructed out of the spatial relations of their appearances in the various sensible spaces in which both appear. It is such constructed relations that compose the space of physics; we will therefore call the space so constructed “physical” space. When we speak of an appearance being modified by what intervenes, we mean that it is modified by the “things” which intervene in “physical” space between the thing of which it is an appearance & the thing which we call the brain of the percipient, or, more accurately, the thing which occupies the physical place which, to the percipient, is “here”. But this requires an explanation of “here” as a physical place, & as this explanation raises some instructive difficulties, we will now turn our attention to it.

{35} *It will be noticed that we have now three kinds of space to deal with & distinguish.*

(1). *There is private space, the space in which my own sensible objects appear: this space is itself discoverable from what is given.*

correlated with it in all the perspectives; that system may be identified with the momentary common-sense “thing.” Thus an aspect of a “thing” is a member of the system of aspects which is the “thing” at that moment. (The correlation of the times of different perspectives raises certain complications, of the kind considered in the theory of relativity; but we may ignore these at present.) All the aspects of a thing are real, whereas the thing is a mere logical construction. It has, however, the merit of being neutral as between different points of view, and of being visible to more than one person, in the only sense in which it can ever be visible, namely, in the sense that each sees one of its aspects.

It will be observed that, while each perspective contains its own space, there is only one space in which the perspectives themselves are the elements. There are as many private spaces as there are perspectives; there are therefore at least as many as there are percipients, and there may be any number of others which have a merely material existence and are not seen by anyone. But there is only one perspective-space, whose elements are single perspectives, each with its own private space. We have now to explain how the private space of a single perspective is correlated with part of the one all-embracing perspective space.

There are at least as many private spaces as there are percipients; but there may be any number of other private spaces which have a merely material existence & are not seen by any one.

(2). There is metaphysical space. This is the system of “points of view” of private spaces; or, since “points of view” have not been defined, we may say it is the system of the private spaces themselves. These private spaces will each count as one point, or at any rate as one element, in metaphysical space. They are ordered by means of their similarities. Suppose, for example, that we start from one which contains the appearance of a circular disc, such as would be called a penny, & suppose this appearance, in the world in question, is circular, not elliptic. We can then form a whole series of worlds containing a graduated series of circular appearances of varying sizes: for this purpose we only have to move towards the penny or away from it. The worlds in which the penny looks circular will be said to lie on a straight line in metaphysical space, & their order on this line will be that of the sizes of the circular appearances. Moreover—tho’ this statement must be noticed & subsequently examined—the worlds in which the penny looks big will be said to be nearer to the penny than those in which it looks small. It is to be remarked also that any other “thing” than our penny might have been chosen to define the relations of our worlds in metaphysical space, & that experience shows that the same spatial order of worlds would have resulted.

{36} (3). There is physical space. As in the case of the penny, there are connected appearances in many private spaces, & the whole system of such appearances I call a momentary physical “thing”. The spatial relations of a number of appearances in one private space have, as a rule, a great deal in common with the spatial relations of the corresponding appearances in another private space—speaking broadly, of visible objects only, we may say that the projective properties are the same in two different private spaces. The rays of the setting sun converge to a point for all

Perspective space is the system of “points of view” {90} of private spaces (perspectives), or, since “points of view” have not been defined, we may say it is the system of the private spaces themselves. These private spaces will each count as one point, or at any rate as one element, in perspective space. They are ordered by means of their similarities. Suppose, for example, that we start from one which contains the appearance of a circular disc, such as would be called a penny, and suppose this appearance, in the perspective in question, is circular, not elliptic. We can then form a whole series of perspectives containing a graduated series of circular aspects of varying sizes: for this purpose we only have to move (as we say) towards the penny or away from it. The perspectives in which the penny looks circular will be said to lie on a straight line in perspective space, and their order on this line will be that of the sizes of the circular aspects. Moreover—though this statement must be noticed and subsequently examined—the perspectives in which the penny looks big will be said to be nearer to the penny than those in which it looks small. It is to be remarked also that any other “thing” than our penny might have been chosen to define the relations of our perspectives in perspective space, and that experience shows that the same spatial order of perspectives would have resulted.

In order to explain the correlation of private spaces with perspective space, we have first to explain what is meant by “the place (in perspective space) where a thing is.” For this purpose, let us again consider the penny which appears in many perspectives. We formed a straight line of perspectives in which the penny looked circular, and we agreed that those in which it looked larger were to be considered as nearer to the penny. We can form another straight line of perspectives in which the penny is seen

spectators. We can thus construct a space in which the physical "thing", i.e. the system of correlated appearances in different private spaces, is the term of spatial relations, & the common element in the various private space-relations is the new space-relation, or at least determines the new space-relation. The system of these new space-relations is called physical space.

Thus the term of space-relations is:

In private space, a simple sense-datum, which occupies a finite extension.

In metaphysical space, the whole contents of one private space, together with all the thoughts & feelings of the percipient (if any) of this private space; but all this only occupies one element of metaphysical space.

In physical space, a thing, i.e. a system of correlated sensible qualities, one from each private space in which qualities correlated with a given one exist—the qualities being each a datum to one percipient if it belongs to a world which contains a percipient, but a datum to nobody if it belongs to a world which contains no percipient.

{37} We must now explain what is meant by "here". This depends upon the way in which our private space is correlated with physical space & with metaphysical space. So long as we confine ourselves to private visual space, & to one momentary view of the world, no meaning can be given to the word "here". I do not wish to deny that there is a perception of "depth", & that this, at a later stage, can be correlated with distance from ourselves in physical or metaphysical space. What I do wish to deny is that "depth", if given in visual sensation, is at all comparable to the visible distances between two visible objects. We may learn to say "those two objects are each about three feet from me, & also about three feet from each other", but the homogeneity of distances from me & distances from each other is acquired through much elaborate tactile & motor experience, & is by no means to be discovered from the visual data alone. The distances immediately perceived in sight—assuming they exist—are not distances from anything, & are not properly distances at all, but merely qualities which we learn, later, to know as marks of distances. Thus it is not by means of the visual perception of depth that

end-on and looks like a straight line of {91} a certain thickness. These two lines will meet in a certain place in perspective space, i.e. in a certain perspective, which may be defined as "the place (in perspective space) where the penny is." It is true that, in order to prolong our lines until they reach this place, we shall have to make use of other things besides the penny, because, so far as experience goes, the penny ceases to present any appearance after we have come so near to it that it touches the eye. But this raises no real difficulty, because the spatial order of perspectives is found empirically to be independent of the particular "things" chosen for defining the order. We can, for example, remove our penny and prolong each of our two straight lines up to their intersection by placing other pennies further off in such a way that the aspects of the one are circular where those of our original penny were circular, and the aspects of the other are straight where those of our original penny were straight. There will then be just one perspective in which one of the new pennies looks circular and the other straight. This will be, by definition, the place where the original penny was in perspective space.

The above is, of course, only a first rough sketch of the way in which our definition is to be reached. It neglects the size of the penny, and it assumes that we can remove the penny without being disturbed by any simultaneous changes in the positions of other things. But it is plain that such niceties cannot affect the principle, and can only introduce complications in its application.

Having now defined the perspective which is the place where a given thing is, we can understand what is meant by saying that the perspectives in which a thing looks large are nearer to the thing than those in which it looks small: they are, in fact, nearer to the perspective which is the place where the thing is.

{92} We can now also explain the correlation between a private space and parts of perspective space. If there is an

"here" can be defined.

{38} *We can, if we choose, define "here", in a private visual space, as the position of the visual appearance of our own body. There is no logical objection to this definition; all that is to be said against it is that it omits the motive for singling out the body from among other objects, & giving it that intimacy which is connected with the word "here". This may of course be explained by the fact that, when we see something in contact with it, we feel a sensation of touch; whereas when two visual objects not belonging to the body come into visual contact, we feel no sensation of touch. This, with the whole assemblage of organic sensations, no doubt explains the interest we feel in the body, but hardly explains why we feel as if we looked out upon the world from a place somewhere in the head behind the eyes. We feel a sensation of touch when things come in contact with our feet, yet they are less "here" than our head.*

In the case of the different private spaces which all contained circular appearances of a certain penny, & were arranged along a straight line in metaphysical space, we felt inclined to say that this straight line was at right angles to the penny, & that the worlds in which the penny looked larger were nearer to it than those in which it looked smaller. But we cannot interpret such words unless we can find a means of correlating physical space & metaphysical space. If we can do this, then "here" will be that place in physical space which is correlated with the place in metaphysical space occupied by the percipient's private world. We have now to consider how the correlation is to be effected.

{39} *Imagine two people, A & B, of whom B watches, while A moves a penny gradually nearer to & further from his eyes. B, the person watching, can see the eyes, & see the visual distance between them & the penny growing smaller & greater. A, the person holding the penny, sees the penny grow larger & smaller at the same time; he also feels those changes of adjustment by which we judge distance in sight, & he is conscious that a smaller or greater muscular movement would be required to produce the sensation of touching his eye with the penny. Such experiences produce a correlation of (1) distance between two seen*

aspect of a given thing in a certain private space, then we correlate the place where this aspect is in the private space with the place where the thing is in perspective space.

We may define "here" as the place, in perspective space, which is occupied by our private world. Thus we can now understand what is meant by speaking of a thing as near to or far from "here." A thing is near to "here" if the place where it is is near to my private world. We can also understand what is meant by saying that our private world is inside our head; for our private world is a place in perspective space, and may be part of the place where our head is.

*It will be observed that two places in perspective space are associated with every aspect of a thing: namely, the place where the thing is, and the place which is the perspective of which the aspect in question forms part. Every aspect of a thing is a member of two different classes of aspects, namely: (1) the various aspects of the thing, of which at most one appears in any given perspective; (2) the perspective of which the given aspect is a member, i.e. that in which the thing has the given aspect. The physicist naturally classifies aspects in the first way, the psychologist in the second. The two places associated with a single aspect correspond to the two ways of classifying it. We may distinguish the two places as that *at* which, and that *from* which, the aspect appears. The "place at which" is the place of the thing to which the aspect belongs; the "place from which" is the place of the perspective to which the aspect belongs.*

Let us now endeavour to state the fact that the aspect which a thing presents at a given place is affected by the {93} intervening medium. The aspects of a thing in different perspectives are to be conceived as spreading outwards from the place where the thing is, and undergoing various changes as they get further away from this place. The laws according to which they change cannot be stated if we only take account of the

objects—the penny & the eye as they appear to the spectator B, (2) A's immediate sight-sensation of distance, (3) the amount of movement required in A to cause a sensation of touch. Thus we conclude that when a "thing" looks larger it is nearer, in physical space, to the eye as a physical "thing", & when smaller, it is further. My private visible world is wholly in front of my eyes, & my eyes themselves are not part of it; but they may be part of another man's visible world, & so may things behind them, provided they are not inside my head. Thus the physical place of my eyes has a quite peculiar relation to my private visible world. Similarly as regards touch: we can touch outside objects & the surface of the body, but not its inside. In this way, when we have constructed physical space by correlating private spaces, we find that each private space has a special connection with one part of physical space, namely that occupied by the percipient's body, & in the case of sight, hearing, smell & taste, more particularly by the eyes, ears, nose, & mouth. This part of physical space is therefore specially correlated with one private space, & therefore with an element of metaphysical space; & this part of physical space is called "here".

{40} Thus "the place where I am" is a place in physical space. In private visual space, there is no such place, because whatever I see is at a certain distance from my eyes; in metaphysical space, it would be more correct to speak of "the place which I am". The place where I am is that part of physical space which is correlated with the metaphysical place which I am.

We have now constructed a largely hypothetical picture of the world....

aspects that are near the thing, but require that we should also take account of the things that are at the places from which these aspects appear. This empirical fact can, therefore, be interpreted in terms of our construction.

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