

Russell on Indexicals and Scientific Knowledge

One major theme of Russell's treatment of indexicals in PLA¹ and HK is their indispensability to human knowledge. In IMT, apparently influenced by Carnap, Russell provides an analysis that claims to eliminate what he calls "egocentric particulars" ("I," "this," "here," "now"), and he concludes that they are "not needed in any part of the description of the world, whether physical or psychological" (IMT, 108).² In HK Russell still wishes to replace indexicals by objective space-time coordinate descriptions. But he explicitly argues that this program can proceed only up to a certain point and that indexicals are not completely eliminable. They are indispensable, he claims, in stating the basis of empirical knowledge in immediate experience. Russell therefore finally rejects Carnap's claim in the *Aufbau* (1928) that "within any object domain a unique system of definite descriptions is in principle possible, even without the aid of ostensive definitions. . . . Any intersubjective, rational science presupposes this possibility."

A second major theme in Russell's treatment of indexicals in HK is their interdefinability, an attempt to reduce them to one basic type for inclusion in a "minimum vocabulary." All terms in a scientific language, on Russell's view, have either a nominal definition or an ostensive definition. A minimum vocabulary must meet these two conditions: (a) every other word used in science has a nominal definition in terms of the words of the minimum vocabulary, and (b) no one of the words in the minimum vocabulary has a nominal definition in terms of another within that vocabulary. In an empirical science, definitions of theoretical terms must ultimately be based upon ostensive definitions that utilize indexicals. Hence indexicals must be retained in a minimum vocabulary to express the "sensible origin" of knowledge.

In this essay I first sketch how Russell's epistemological and scientific views motivate his treatment of indexicals. Second, I examine Russell's arguments, contra Carnap, for the thesis that indexicals are indispensable. Third, I analyse Russell's thesis that indexicals are interdefinable, specifically that "I" is replaceable

with “the person attending to this.” I consider some criticisms lodged by Bar-Hillel, then examine some aspects of the interdefinability thesis that are relevant to current work in philosophy of language and pragmatics. I conclude that although the indispensability thesis seems justified, Russell’s attempt to establish interdefinability suffers from serious problems.

Following Bar-Hillel (1970), I use the term “indexical expression” to include the demonstratives “this” and “that,” place-time indicator words such as “here,” “now,” and the first and second person pronouns “I” and “you.” By the abbreviated term “indexical” used alone I will mean “indexical expression.” The terms “indexical definite description” and “indexical sentence” mean, respectively, a definite description containing an indexical (“The person attending to this”) and a sentence containing an indexical (“This is red”).³

Russell maintains that each indexical expression “depends upon the relation of the user of the word to the object with which the word is concerned” (IMT, p. 120) and that the designatum of such an expression changes with each occasion of use. We normally assume that what is designated is directly sensed by the user of the word, in contemporary terms, the speaker. Indexical expressions are neither proper names (“Socrates,” “Wales”) nor words for qualities or relations (“hot,” “is next to”) nor logical words (“and,” “or”). They appear to “escape the usual logical and semantical categories.”⁴ They are, rather, a species of what Russell calls “strict names,” names that have no descriptive element in them.

I

Russell appears to have attributed the following five features to indexicals, from the logical atomist period of PLA (1918–19) to that of HK (1948).

(i) *The designatum of indexicals constantly changes according to speaker, time, place, and location* (PLA, p. 200; HK, p. 85). Because the designatum of “this” is continually changing it is not strictly classifiable as an ordinary proper name, such as “Socrates” (HK, p. 85). Ordinary proper names on Russell’s view may be “ambiguous.” Thus, the name “John Jones” simultaneously designates different men. In contrast, “this” is unambiguous when speaker, time, and location are specified. According to Russell, no other linguistic expression is context dependent in this manner and at the same time unambiguous in its designation.

(ii) *Indexicals designate without description.* The contrast between designation by a strict name and designation by a description holds constant in Russell’s thought from OD (1905a) to HK (1948). Most ordinary proper names contain descriptions, a fact that “makes it difficult to get any instance of a name at all in the proper strict sense of the word” (PLA, p. 201). Russell takes “this” and “that” as “strict names” in PLA. These indexicals designate without descriptive content both in PLA and HK. Indexicals, in contrast to descriptions, do not depend on any internal structure or on any prior symbols for their designation.⁵

(iii) *The designatum of an indexical can be christened with a strict name.* Strict

names can be stipulated to play a purely designating role that remains stable over several occasions of utterance. These names need not even be taken from ordinary expressions within natural language, but can be fabricated for the purpose at hand. Russell's "christening ceremony," described in PLA and mentioned again in HK, explains the method. The expression "this," used in the sentence "This is white" to designate a piece of chalk,

will do very well while we are all here and can see it, but if I wanted to talk about it tomorrow it would be convenient to have christened it and called it "John." There is no other way in which you can mention it. You cannot really mention *it* itself except by means of a name. (PLA, p. 200)

In HK Russell says that once adopted, the fabricated "name" can function over multiple occasions of utterance. We say "*That* is the smell of a skunk" and "*that* is disagreeable", but

Instead of "that," we might use a name, say "pfui," and should do so if we often wished to speak of the smell without mentioning skunks. But to anyone who had not had the requisite experience, the name would be an abbreviated description and not a name. (HK, p. 81)

In each of these cases, the "christening" name is devoid of description. In contrast, descriptive phrases draw upon the already fixed extensions of predicates embedded in them. Like strict naming, indexical designation does not depend on such prior fixed extensions of any internal terms.

(iv) *The designatum of an indexical is directly sensed.* Russell affirms in both PLA and HK that the designatum of an indexical or a strict name must be or have been directly sensed:

It is only when you use the word "this" quite strictly, to stand for an object of sense, that it is really a proper name. (PLA, p. 201)

As noted above in HK, the expression "that" or "pfui" would be an "abbreviated description and not a name" to anyone who had not had the requisite experience.⁶

(v) *Indexicals designate particulars.* The role of indexicals in Russell's early and later work is to designate particulars. In the logical atomist period, "this" and "that" are defined as logical atoms or "words for particulars" (PLA, p. 200). In AMa (1927b), when Russell adopted a causal theory of perception and the theory that an event was a bundle of qualities, his notion of a particular changed. The particular is no longer a metaphysical absolute but something "relative to our knowledge" and capable of analysis. For example, electrons can be regarded as classes of events, and hence need not be taken as "ultimate particulars" (AMa, pp. 278, 319). Furthermore, the impossibility of unique designation of a particular changes from a logical to an empirical one. In AMa "this" or "here-now" designates a group of qualities simultaneously present ("compresent") with awareness.

When this “complex” of qualities is completely filled out so that nothing I experience is missing from it, Russell calls it a “complete complex of compresence” (HK, p. 294). Its exact recurrence in my experience is not *logically* impossible; it is merely “*empirically* so exceedingly improbable that we assume its non-occurrence” (HK, p. 295).⁷

Russell concerns himself with the characteristics of indexicals because they play an important role in his theory of knowledge and later philosophy of science. He held that a central task for theory of knowledge, including scientific knowledge, is to answer the foundational question: How is knowledge based on experience? In answer Russell offers the principle of acquaintance: “Every proposition we can understand must be composed of constituents with which we are acquainted”; and in HK he argues that the definition of scientific concepts must ultimately terminate in ostensive definitions.⁸ In his early period, the expression “this” designates an object of acquaintance, namely, that of which we are directly aware by sensory (or other) faculties. In his later period indexical sentences such as “This is red” or “redness here” tie the corpus of scientific knowledge to direct sensory experience.

Another central task of Russell’s philosophy is to construct a “map of the physical world.” In order to do this he must be able to proceed from the private subjective components of sensory experience to the public, intersubjective descriptions of knowledge (both common sense and scientific) that go beyond what we know in our immediate experience. How can this be done? Russell’s solution involved a distinction between private, perceived space-time (here, now), and public, inferred space-time described by means of objective coordinate systems (Greenwich time, latitude and longitude). He then postulated that private space-time and public space-time are approximately correlated by means of “twofold locations.”

We construct a space containing both percipients and physical objects; but percipients have a twofold location in this space, namely that of the percipient and that of the physical object. Keeping one half of this location fixed, we obtain the view of the world from a given place; keeping the other half of this location fixed, we obtain the views of a given physical object from different places. . . . The physical world, I suggest, considered as perceptible, consists of occurrences having this twofold location. (AMa, p. 258)

Russell solves the problem of transition from private to public space-time by having indexicals represent the location of objects in these two space-times. He does not mean that an indexical represents two different locations, but that it represents the content of subjective experience in space-time, which is then correlated with a location in objectively constructed space-time. These correlations are made in the order of causation, not the order of knowledge. The percept is last in the order of causation, although first in the order of knowledge. The objective causal order contains the percept as an element of a causal chain.⁹ Russell is thus able to distin-

guish proximate indexicals (“here”) as representing a “minimal causal chain” and distal indexicals (“there”) as representing a “longer” or “indirect” causal chain.¹⁰

Russell views scientific knowledge as knowledge of structure: “Wherever we infer from perception, it is only structure that we can validly infer; and structure is what can be expressed by mathematical logic, which includes mathematics” (AMa, p. 254). Space-time structures in scientific description “correspond with [perceptual structures] in a manner which preserves the logical (mathematical) properties” (AMa, p. 275). Indexicals are involved in these structural correlations. For example, Russell illustrates the transition from subjective experience to objective knowledge by replacing “Here I am” (called out to a friend in the night) with “At t_1 , GMT, on date D_1 , B.R. was at longitude n_1n_2 and at latitude n_3n_4 .” Indexicals are the focal point of these correlations: at first, they signify the subjective sensory experiences of the percipient; then they are replaced with coordinate descriptions. Of course they do not in themselves yield an explanation of how these correlations are made or why they can be made.

The four basic theses under scrutiny here are based on what Russell says in HK. They are:

1. *Coordinate replacement*: Indexicals, as well as strict names can be progressively replaced by coordinate descriptions, but only up to a certain point.
2. *Indispensability*. Indexical expressions cannot be entirely eliminated. They are indispensable to human discourse, including any science that requires human observation.
3. *Interdefinability*. Each indexical expression can be defined in terms of another (or combination of others).
4. *Reducibility*. All indexical expressions can be reduced to one basic type, although this basic type need not be one in particular.

Thus (1) and (2) are treated in section II; (3) and (4) in section III.

II

The coordinate replacement thesis, (1), takes its inspiration from Carnap’s proposal in the *Logical Syntax of Language* (1937) to replace “name-languages” with “coordinate languages” (HK, p. 74). On this proposal, indexicals are eliminated in favor of descriptions by Carnap’s method of uniquely designating structural descriptions, outlined in the *Aufbau* (1928, section 16). Carnap suggests in *Logical Syntax* that “the method of designation by proper names is the primitive one; that of positional designation corresponds to a more advanced stage of science and has considerable methodological advantages over the former” (p. 12). Designation by coordinates shows the place of objects in the system and in relation to one another by means of four real numbers signifying space-time coordinates. For example, in “Blue (a),” meaning “the object a is blue,” we replace

the name a with coordinates x_1, x_2, x_3, x_4 . The result is “Blue(x_1, x_2, x_3, x_4),” meaning “the position (x_1, x_2, x_3, x_4) is blue.” Names that designate a region of space-time are thus replaced by coordinates that eliminate any element of subjective reference.

Russell argued in HK that although Carnap’s replacement of names, including indexicals, by coordinate descriptions was a useful and worthy goal, it could succeed only up to a certain point. Indexicals, he claimed, could never be completely dispensed with. In the following arguments Russell uses the term “names.” What he claimed to be indispensable, however, were not ordinary proper names but names of the peculiar sort he called egocentric, i.e., indexicals. “This” and “that” are his prime examples.¹¹

(i) Coordinates describe a point in space-time. They locate it by means of reference to axes and distance from the origin of axes. But, Russell asks, how do we designate the axes and the origin? We cannot go on indefinitely giving a description of the origin of each system in terms of another system. Ultimately we must be able to say, “*This* is the origin.” In other words, we must be able to name the origin, in contrast to merely describing it. Names, as Russell points out, designate directly without depending on other terms in the language. They are in that sense rather arbitrary, whereas descriptions draw upon meaningful systems of predicates or numbers. “It is because coordinates are not arbitrary that they are not names.” So, if we do not have a way of “knowing *some* places otherwise than by latitude and longitude, latitude and longitude become unmeaning” (HK, p. 77). Assignments of a finite number of coordinates might be done haphazardly; if so, these assignments would themselves be based on descriptions. But the origin and axes of a system themselves cannot be descriptively assigned or we will have a regress lacking an empirical basis. “We must have some method of identifying a place without mentioning the coordinates” (HK, p. 78). Indexicals can prevent such a regress by providing a nondescriptive means of identifying the origin of a system. Hence, Russell concludes, “We cannot wholly dispense with proper names [indexicals] by means of coordinates” (HK, p. 78).

(ii) Russell’s second argument, in the chapter in HK on “Egocentric Particulars,” maintains that some indexical element is necessary in a minimum vocabulary. He first questions whether names must be included in a minimum vocabulary that expresses our empirical knowledge (HK, p. 79). Ordinary proper names such as “Napoleon” may be replaced, following Carnap, with coordinate descriptions designating space-time regions. Then, since the assignment of coordinates requires assigning an origin and axes, the question arises as to whether the origin can be defined. He answers that it must be defined by reference to something observable. Theoretical constructs like the sun obviously will not do. Will the qualities and space-time relations used to define such constructs serve the purpose? Although these qualities are initially definable in purely physical terms not dependent on observation or needing immediate experience (e.g., color is defined

in terms of wavelengths), eventually *some* quality or relation must be observed. To be observed is for someone to say, "So *that* is *Q*" where, e.g., "*Q*" is "blue." "That" is in some sense a name, though of the peculiar sort Russell calls egocentric. Hence, names of an egocentric sort (what we here call indexicals) are necessary in a minimum vocabulary.

(iii) Russell's third argument deals with the question of whether, by substituting descriptions for names, description will suffice in every instance instead of names, thus dispensing with the need for names (including indexicals) altogether. He considers replacing first and second person pronouns ("I," "you") with ordinary proper names ("Bertrand Russell"), which are then replaced by definite descriptions. But these latter descriptions ("The person identified by the passport as Bertrand Russell") are "known only through the sensible impressions of individuals, no two of which are exactly alike." When considering competing replacing descriptions ("the red-faced tramp," "the benign old gentleman in evening dress") we can secure "sets of closely similar occurrences." But in order to secure the precise and unique referent we must at some point revert to "*This* is his name." Hence we do not wholly escape from "this." Naming (in the sense of strict names or indexical designation) is at some point required (HK, p. 87).

(iv) In considering the attempt to replace all names with descriptions, Russell argues that every description or name that we can understand must ultimately be reducible to "something definable in terms of your experience," by which he means direct experience.

For every word that you can understand must either have a nominal definition in terms of words having ostensive definitions, or must itself have an ostensive definition; and ostensive definitions, as appears from the process by which they are effected, are only possible in relation to events that have occurred to you. (HK, p. 87)

This principle, obviously a later version of the principle of acquaintance (OD, p. 56) stated in terms of ostensive definition, affirms the indispensability of indexicals as the designators of such direct experiences.

Bar-Hillel has raised an objection to Russell's indispensability arguments that will allow us, after analyzing it, to state Russell's position more clearly. While agreeing that indexicals are indispensable, Bar-Hillel nevertheless thinks that Russell's main argument in support of this thesis is wrong. Bar-Hillel interprets this argument as claiming that replacing "here" and "now" by coordinate descriptions does not eliminate indexicals because the origin of the system "can be taught and learned only with the help of indexical . . . signs." (Cf. arguments (i) and (ii).) Bar-Hillel calls this argument an obvious non-sequitur, "based on a confusion between using language and learning how to use language" (1979, p. 83).

In assessing this objection it is important to note first that Russell would have agreed with one major point Bar-Hillel makes on language use. Once learned, the

use of a word such as “red” does not require the use of indexicals; its reference can be understood independently of the context of its production. He also would have agreed with Bar-Hillel’s point that a token of the sentence, “The book at location l_1 and time t_1 is red,” will be understood in exactly the same way as a token of the sentence, “This book is red” by “anybody having a certain knowledge.” In fact, Russell made a point very much like this. From a practical point of view, he said, two competent persons (i.e., who have already learned the language in question) will both accept or reject a statement of the form “At time t , A was at longitude B and latitude C ,” as a replacement for “Here I am.” The procedures for determining such coordinates lead “different people to the same result,” and are important in legal as well as scientific contexts. These points of agreement, however, do not render arguments (i) and (ii) immune from Bar-Hillel’s criticism.

To say that Russell confuses language use with language acquisition, however, misrepresents Russell’s arguments and passes over some key epistemic and linguistic distinctions underlying his arguments. Arguments (i) and (ii) are misconstrued if interpreted as claiming that the origin of a coordinate system can only be taught and learned only with the help of indexicals. Russell did argue that indexicals were indispensable in language acquisition, but that is not his point in the preceding arguments.

To capture Russell’s position we must distinguish: (a) direct sensory awareness (being aware of “this”); (b) the process of ostension (the linguistic or gestural process of pointing, signified by the word “this”); (c) the process of ostensive definition (“*This* is red” or “*That* is blue”). (a) can occur without (b) or (c). But (b) and (c) require (a). Furthermore, ostensive definition can be employed for various purposes, e.g., for language acquisition, or for tying down general concepts to a foundation in experience. Russell’s argument (ii) points out that direct sensory awareness is required to tie general concepts to experience, and hence forms the basis of empirical knowledge. His point deals not with language acquisition but rather with the empirical basis, the foundation, of an entire language system. Argument (ii) thus deals with the epistemic foundation, or justification of language, not with its acquisition. Bar-Hillel fails to understand this, and misreads the argument.

Furthermore, Bar-Hillel’s criticism conflates ostension for the purpose of identification with ostension for the purpose of ostensive definition and language acquisition. Ostension, or pointing, is one function of the indexical “this.” To say that one has employed “this” in ostension or pointing (e.g., on what Kaplan (1979) has called “the demonstrative use of a demonstrative”) is not to say that one has employed “this” in an ostensive definition for the purpose of language acquisition. One can use “this” for the purpose of identifying instances of terms one has already acquired (e.g., “*This* is the origin” as identifying the “center or origin of a coordinate system,” or “*this* is 14 carat gold” and “*this* is electroplated gold”).

Russell’s argument (i) rests on the identifying function of “this” in defining the

origin of coordinate systems, not on ostensive definition for the purpose of language acquisition. He assumes that the notion of a coordinate system is already established in the language, and then asks: "How is a certain coordinate system fixed?" His argument is that unless we already have some nondescriptive way of fixing this framework, i. e., some way of "naming" its origin, we face a regress that detaches scientific knowledge from its empirical basis. This, I take it, is what he means by saying that we must have a way of knowing "some places otherwise than by latitude and longitude or latitude and longitude become unmeaning" (HK, p. 77).

In arguments (i) and (ii) Russell hypothesizes an identification of designata in language akin to the physicist's choice of a certain coordinate system.¹² Acquiring the language of a coordinate system and fixing the origin of the system are theoretically distinct processes, even if in certain cases they are empirically coextensive (for example, in saying "This is the origin" to students learning the mathematical language of physics). Where the origin is fixed by the private sense experience of one individual speaker, the two processes indeed overlap. Failure to distinguish them has led to the misreading exemplified by Bar-Hillel.

What is indistinct at the level of subjective awareness, however, may be more clearly separated at the social level. The distinction between (a) acquiring a term (e.g., "gold") and (b) acquiring a method of recognizing its denotation is made quite sharply by Hilary Putnam's "sociolinguistic hypothesis" on the "division of linguistic labor" (Putnam, 1979). Ordinarily, lay people can do (a) without doing (b), at least without doing (b) in a technical scientific sense. But when a surefire method of recognizing gold is required, we enlist a special class of scientific speakers (goldsmiths, chemists). Whereas (a) requires an ostensive definition of "gold," (b) requires only the identification of gold. It is the identification requirement that figures in Russell's arguments (i) and (ii). Viewed from the standpoint of the solitary speaker of language, (a) and (b) may appear simultaneous and synonymous. But from the vantage point of the linguistic community they are distinct functions that make different uses of indexicals, when they use them at all.

Russell's argument for the indispensability of indexicals comes down to the indispensability of the sort of "naming" performed by indexicals. It is not only that such naming is accomplished nondescriptively. The indexical also expresses the relation between speaker and object. According to Russell, indexicals name complexes of compresence. A complex of compresence is a peculiar sort of construction, unlike a class.

It is to be conceived . . . as something which can be known and named without having to know all its constituent qualities . . . in a way not reducible to all of its constituents. It is in fact the sort of object that is a "this" and that can have a proper name. (HK, p. 307)

(Presumably Russell uses "proper name" in the PLA sense of "strict name.") Since we normally do not know all the constituents of a complex of compresence, a

uniquely referring description of the complex is normally not possible. It is in some sense our ignorance of the entire list of qualities “which makes names for complexes necessary” (HK, p. 308). If we can perceive it, we can name the complex—even if we do not know exactly *how* we know it. Since “we need a name for the complex to express what it is that we have discovered,” and only a non-descriptive name will suffice in most instances, indexical designation is indispensable. “I-now” and “this” count as names (not *ordinary* names) by virtue of being “given to the whole or part of what the speaker is at the moment experiencing.”

When our verbal inventiveness fails, we fall back on “this” for the part of our total momentary experience to which we are specially attending, and upon “I-now” for the total momentary experience. (HK, p. 302)

“Private compresence” is Russell’s term for the relation between those elements to which we are specially attending.

The quality of centrality, for example, has “private compresence” with the color which is now occupying the center of my visual field. (HK, p. 305)

Indexicals do more than denote the compresent qualities, or even the privately compresent qualities. They express the momentary relation of awareness. They have a twofold semantic role of expressing the speaker’s awareness of qualities and of designating the qualities. I suggest that this is part of what Russell means when he says that “the subjectivity which we sought to avoid [through scientific description] has not been wholly banished” (HK, p. 86). Russell’s metaphor of the scientist in his “private world” may be most accurately grasped by exploring the role of indexicals in expressing relations of awareness. These relations cannot be *merely* denoted or designated because then the observer would have to be aware of the designatum, and so on, into a regress.

What precisely does Russell mean by his claim that indexicals are indispensable? Russell, like Frege, was not always clear about the level of language presupposed in his discussion.¹³ His examples are taken from everyday usage in natural language, but his points are applied to scientific language as well. Surely, however, he is not to be taken as asserting literally that “this” or “here” is necessary to identify the origin of a coordinate system. This claim would sound preposterous to many practicing scientists. He may be claiming that some use of some indexical is required in the rational reconstruction of scientific and natural language. If so, his position still clearly diverges from that of Carnap, who explicitly excluded indexicals from his rationally reconstructed language.¹⁴

III

The theses of interdefinability, (3), and of reducibility, (4), are closely connected. For the indexicals under consideration (“I,” “this,” “here,” “now”) to be interdefinable on Russell’s view means that each indexical can be replaced by an-

other, or group of others. For the indexicals to be reducible means apparently that one indexical or combination thereof may be chosen as primitive and the others defined in terms of it. Russell does not assert that there is one indexical that is basic. He emphasizes, for example, that “here-now” would serve as the primitive just as well as “this,” which is his usual choice for the defining indexical. Accordingly, on Russell’s theory the first person “I” neither is necessarily primitive nor has special status. In this respect his view contrasts sharply with that of recent writers, such as John Perry (1980) and Roderick Chisholm (1982).¹⁵

In the chapter on “Egocentric Particulars” in HK, Russell gives an indication of how to use “this” as the primitive:

“This” might be taken as the only egocentric word not having a nominal definition. We could say that “I” means “the person experiencing this,” “now” means “the time of this,” and “here” means “the place of this.” (HK, p. 85)

Later in the chapter, he makes it clear that other reductions are possible:

“This” denotes whatever, at the moment when the word is used, occupies the center of attention. . . . We may define “I” as “the person attending to this,” and “here” as “the place of attending to this.” We could equally well take “here-now” as fundamental: then “this” would be defined as “what is here-now,” and “I” as “what experiences this.” (HK, p. 92).

That these other reductions are possible implies that all the reductions are merely linguistic, not ontological. They make it possible to streamline language by adopting a relatively small “minimum vocabulary.” Consequently, they make it easier to convert sentences containing indexicals into scientific language by replacing them with coordinate descriptions.¹⁶

The theses of interdefinability and reducibility of indexicals that are common to IMT and HK can be interpreted to mean that indexical expressions can be replaced one by another while preserving the epistemic import of the replaced expressions, that is, universally replaced without loss of information.¹⁷ Although Russell does not explicitly endorse this interpretation, his strategies in IMT and HK suggest it. Let us examine whether Russell can consistently maintain his theses under this interpretation.

Bar-Hillel (1970) criticizes Russell for failing to recognize that the expression “this” has a variety of uses in natural language, and that replacing it with “I” results in a sentence that is ambiguous in a way that the original is not:

Russell’s statement, understood in the sense that “I” can always and without loss of information be replaced by “the person experiencing this,” is false . . . because it is simply not the case that “given the speaker and the time, the meaning of ‘this’ is unambiguous.” (p. 82)

He continues:

Knowing *only* the speaker and the time of utterance of "The person experiencing this is hungry," we would not yet be justified in understanding that the speaker was hungry at the time of utterance of this token . . . whereas we could do so unhesitatingly on hearing "I am hungry" and knowing once again the speaker and the time of utterance only. (ibid.)

Bar-Hillel's point is that if Russell is correct, then "the person attending to this" should be replaceable with "I" and conversely without loss of information. For example, we should be able to replace

(1) I am hungry

with

(2) The person attending to (experiencing) this is hungry,

and conversely, without loss of information. But we cannot, since (2) is ambiguous in a way (1) is not. (1) clearly refers to me, but (2) may be referring to me or to someone else.

It might be supposed that the ambiguity in the preceding case can be eliminated by employing Russell's stipulation that "this" denotes "whatever, at the moment when the word is used, occupies the center of attention" (HK, p. 93), and taking the stipulation to mean that "this" designates whatever at that moment occupies the center of attention of *whoever (individually) understands the replacing sentence*. But even on this fortified interpretation, sentence (2) can still be read in two different ways. On reading A, "the person attending to this" is understood as designating whoever happens to fulfill the conditions of attending to "this" and being hungry. On reading B, the indexical definite description "the person attending to this" is understood to designate the speaker, regardless of whether the other conditions are satisfied. The ambiguity is located not in the lone indexical "this" but in the indexical definite description "the person attending to this." On reading A whoever satisfies the sentence (2) is the referent of the description; since it might not be me the speaker, replacement of (2) by (1) is not justified. On reading B "this" is taken to designate the speaker's awareness; consequently, replacement of (1) by (2) is justified. I conclude that (2) is indeed ambiguous and cannot replace (1) without loss of information.¹⁸

Several explanations can be given of the ambiguity in (2). The use of "the person attending to this" on reading A resembles what Donnellan (1966) calls the attributive use of a definite description. Its use on reading B resembles what he calls the referential use. In referential uses the internal structure of the definite description is less a factor than the intention of the speaker in securing reference. In this vein, we can say that on reading B the speaker's intention (or internal "christening ceremony") secures reference to *his or her* awareness.

Alternatively, we might regard reading B as rigid (Kripke) or *de re* (Putnam) designation. Kripke has argued that such ambiguities are best analyzed as ambiguities of scope, with “the ‘rigid’ reading equivalent to Russellian primary occurrence, the non-rigid to innermost scope.”¹⁹ Advantages of Kripke’s approach include the possibility of using a set of technical devices (scope indicators) provided by Russell’s own logical theory. It should be noted, however, that none of these explanations removes the ambiguity; they merely give us a way of understanding it.

The ambiguity in (2) appears to depend on the possibility that “this” has intersubjective reference. Russell considers the possibility when he raises the question whether “this” can have public meaning. He concludes that “two people are more likely to have the same ‘this’ if it is somewhat abstract rather than fully concrete,” because of perspectival differences in concrete percepts (HK, p. 92). If “this” has some intersubjective reference, then a speaker could individually understand the replacing sentence (2) as true of him- or herself, or of others.²⁰ Thus, (2) would be ambiguous.

A close reading of Russell shows that he does not admit the possibility that “this” has intersubjective reference to concrete entities: he takes its concrete referent to be private, immediate experience. (In fact, he considers intersubjective reference of “this” only very briefly at the end of his chapter on “Egocentric Particulars” [HK].) So the preceding ambiguity requires an assumption that Russell does not make. If we deny the assumption, it does not make sense to give an attributive interpretation to the description “the person attending to this,” because “this” does not then designate something that any person other than myself could attend to.

Further, the alleged ambiguity does not correspond exactly to the ambiguity produced by attributive and referential uses for definite descriptions. In “The person who stole my car is hungry,” it makes sense on the attributive use to add “and I do not know who it is.” But if “this” designates something private to the speaker, it makes no sense for the speaker to say “The person attending to this is hungry” and then add, “and I do not know who it is.” If “this” is private then each person has his/her own experience of “this.” It is absurd to call something private “this,” and then to designate with the same word someone else’s “this.” Hence, the distinction between readings A and B collapses on the private interpretation of “this,” and (2) is capable of replacing (1) without difficulty.

But if we adopt this solution, then the first person “I” or “my” is surreptitiously reintroduced into the replacing indexical definite description, “the person attending to this.” In other words, (2) must implicitly be read as:

(2') The person attending to the center of my awareness of this is hungry.

If the purpose of replacing sentences containing “I” and “my” with sentences containing “this” is to reduce the multiplicity of indexicals to one, for inclusion in

a minimum vocabulary, then (2') does not accomplish the goal, since it contains "my." As a definition of sentences containing "my" and its cognates, (2') is circular.²¹ (Russell does not, as noted earlier, claim that "this" must serve as the primitive indexical to which all others are reduced. He could revert to his alternative proposal to define "this" in terms of "I-now" and carry out another reduction.)

The interdefinability thesis as Russell first states it, defining "I" in terms of "the person attending to this," is thus open to objection on grounds of either ambiguity or circularity. A sympathetic critic might take these objections merely as evidence of the interrelated character of indexical expressions, a phenomenon Russell never denied but may in fact have (unwittingly) revealed in his attempt to make indexicals interdefinable. Such an interpretation would require taking Russell's interdefinability thesis in a weaker sense than he intended it.

Russell's problem, however, goes deeper than the difficulties noted so far. The root of these difficulties is the private-public split incorporated in the "two-fold meaning" of indexicals. The ambiguity in (2) is not an isolated counterexample but an indication of a dilemma in Russell's epistemological-scientific program.

Suppose Russell tries to avoid the ambiguity in indexical definite descriptions by restricting the designata of indexicals to private experience. He can then give an account of the role of subjective experience and direct awareness in the acquisition of empirical knowledge by means of indexicals. But then he faces enormous problems in explaining how connections between private and public objects can be made in the order of knowledge. That is, he faces great difficulty in bridging the gap between the two poles of "two-fold meaning." If, on the other hand, he does not restrict the designation of indexicals to private experience, he can then explain the correlations between perceptual space-time order and nonperspectival, public space-time order. But on this strategy he weakens and risks abandoning a central tenet of his empirical method, namely, that sensible experience is the basis of observational data.

Even if (1) and (2) can be understood only by a single individual (the speaker), Russell's dilemma persists. For the fact that an expression can be understood to refer to a single individual does not entail that its designatum is private. Solitary understanding need not presuppose private designata. Indeed, some philosophers argue that it presupposes the opposite, public designata (Frege, 1892; Wittgenstein, 1958, par. 38-47).

What is involved in being aware of something red is not only awareness of intrinsic qualities such as red, but awareness of structural properties involving space-time location, e. g., awareness that "this" is to my left, about a foot away from me, occurs now at a time two seconds later than when I first noticed it, etc. Awareness of these structural properties is required to understand such sentences as "The ball is red." But how is my awareness of the red ball correlated with its

description in nonperspectival public coordinates? We may clarify the correlation as follows:

- | | |
|---|---|
| (a) Direct subjective awareness
("egocentric particulars") | (b) Event-structure in objective
space-time within which
consciousness occurs. |
| (a') Designations of (a) (Indexical
expressions) (Perspectival
description in subjective
space-time) | (b') Description of (b) (Coordinate
descriptions in nonperspectival
public terms) |

Russell's dilemma arises from locating expressions that designate private entities in (a'), the description of perspectival space-time. Whereas his coordinate replacement thesis requires a transition from (a') and (b') at the linguistic level, his epistemology requires a diagonal transition from (a) at the ontological level to (b') at the linguistic level. If Russell stipulates the designatum of "this" in (a') as private, he faces the problem of bridging the gap between private and public entities. If he stipulates in advance that the structure in (a) or (a') is correlative with (b'), he bridges the gap, but renders empirical discovery circular or vacuous.²² He could have avoided the dilemma by allowing indexicals in (a') to have an intersubjective designatum. In this way he could accommodate both the fact that the expressions of (a') can be understood by single speakers, and for the fact that they can be correlated with nonperspectival public descriptions.

IV

Let us summarize our investigation into Russell's theses. The interdefinability thesis in its strong form, which holds that any indexical can be replaced by others without loss of information, must be regarded as doubtful. The thesis that indexicals can be reduced to a single primitive, for purposes of a minimum vocabulary, must therefore also be called into question. Partial replacement of indexicals by coordinate descriptions is possible, though this replacement faces difficulties on grounds not discussed here.

An assessment of Russell's indispensability thesis must be more complicated, since the role of indexicals changed with Russell's philosophical development. Indexicals become empirically more important in his later philosophy because they acquire a more refined role in designating the compresence of qualities in perceptual awareness. Logically speaking, they are just as important as they were in PLA, but in a different role. They do not designate "logical simples"; rather they correlate subjective space-time with objective space-time structure.

The difficulties in Russell's later philosophy elaborated in this essay were even more severe in his earlier philosophy. For the logical simples of PLA, though not defined as private, were known only through private sense-data. And the problems of transition from private awareness to public scientific description were

more formidable prior to Russell's adoption of a causal theory of perception and a theory of twofold access to an ontology of event-structures.

Russell, throughout his career, took a position distinctive in twentieth century philosophy. He attempted both to recognize intersubjective scientific description and to connect with it an apparently ineliminable element of subjectivity. Unlike Frege, who starts with the notion that thoughts are public, communicable, objective entities, Russell begins the order of knowledge with the notion of a private sensory core. Yet both philosophers arrive at the position that there is an ineliminable core of "private" sense or meaning to indexical expressions and that this meaning cannot be conveyed in nonindexical description. Russell's "two-fold meaning" of indexicals bears some resemblance to Frege's dual senses of "I." Frege makes a fundamental distinction between the "primitive self-presentation" of "I" and its communicable, public use.²³ He tries without success to find a replacing description for the primitive self-representing use of "I." His affirmation of this use parallels Russell's arguments against Carnap's replacement program, namely that ultimately indexicals fail to be completely replaceable by descriptions.

Russell's problem derives from his conflation of the epistemological relation between perceiver and perceived with the linguistic relation between indexical expressions and their designata. To preserve the element of subjectivity in perspectival awareness, Russell emphasized its private nature. But if the designatum is private, then how is intersubjective understanding of indexicals possible? To avoid this problem, Russell could have taken the designata of indexicals as intersubjective or public, while simultaneously insisting on a unique, subjective, direct awareness of the compresent qualities in the perceived object. Russell does not adopt this solution, though it would be consistent with his insistence that indexicals are indispensable and that subjectivity "could not be wholly banished." Finally, Russell conflated an epistemic relation with the nature of what is designated. He tried to pack subjectivity (an epistemic relation between consciousness and the material of direct awareness) into "private meaning" (what is designated). But this was not necessary, especially in his later theory.

In answer to the question of whether indexicals are indispensable, then, one can answer: indexicals are not necessary from an ontological point of view because, in Russell's late philosophy, there are no simple particulars to designate. Indexicals are not necessary from a logical point of view because description can accomplish unique reference. Yet because they express the unique relation of awareness of sensory experience from an epistemological point of view, they are necessary to human discourse and communication.²⁴

Notes

1. Abbreviations for the works by Russell cited in this essay are as follows: AMa, *Analysis of Matter* (1954 ed.), HK, *Human Knowledge*, IMT, *Inquiry into Meaning and Truth*, OD, "On Denoting," PLA, "Philosophy of Logical Atomism" (1956a ed.).

2. Russell's arguments in IMT for dispensing with "egocentric particulars" are not discussed here. David Kaplan criticizes these arguments in his "Demonstratives" (mimeograph, Dept. of Philosophy, UCLA 1977). Kaplan argues that Russell's replacement of indexicals by proper names (e.g., "I saw a table" is replaced by "Otto saw a table") is inadequate because (a) indexicals retain a kind of epistemic priority, and (b) for any prior collection of proper names, there will be things without a name (p. 91). Russell takes position (a) in HK, refuting his own former views. His arguments for the position are analyzed here in section II. See also David Kaplan, "Dthat" and "On the Logic of Demonstratives" both in *Contemporary Perspectives in the Philosophy of Language*, ed. P. French (Minneapolis: University of Minnesota Press, 1979).

3. The term "indexical" derives from Peirce, who classified signs as icons, indices, or symbols (see Burks "Icon, Index and Symbol," *Philosophy and Phenomenological Research*, 9(1949). The terms "indexical expression" and "indexical sentence" are used here in the sense defined by Bar-Hillel ("Indexical Expressions," in *Aspects of Language* [Jerusalem: Magnes Press, 1970], 1975).

4. Chisholm, "Russell on the Foundations of Empirical Knowledge," in *The Philosophy of Bertrand Russell*, ed. P. Schlipp (LaSalle, IL: Open Court, 1944), p. 438. The classification of indexicals is problematic, as Russell recognizes in IMT, 102-5.

5. Technically speaking, on Russell's theory, definite descriptions do not denote. For convenience of exposition I will speak here as if they do.

6. Russell is aware of how difficult it is to identify primitive noninferred, sensory material which is free of all interpretation. Nevertheless, Russell says we can progressively strip away interpretation from perception, and "approach asymptotically to the pure datum" (IMT, p. 155). The "pure" sensory datum is therefore a limit. See E. Nagel's discussion in "Russell's Philosophy of Science," in *The Philosophy of Bertrand Russell*, ed. P. Schlipp, pp. 334-35.

7. In IMT Russell attempts to abolish all particulars, including egocentric particulars: "Whatever is dated and located is complex and the notion of simple particulars is a mistake" (p. 303). "A complex of compresence which does not recur takes the place traditionally occupied by 'particulars'" (p. 307). In HK he reinterprets the notion of a particular, while still rejecting "ultimate" or "simple particulars."

8. See Russell's argument (iv) summarized in section II. Russell says, "For every word that you can understand must either have a nominal definition in terms of words having ostensive definitions, or must itself have an ostensive definition" (HK, p. 87).

9. The notion of "twofold location" of percepts in AMA becomes the "twofold meaning" (of "here") in HK. It is very difficult to give a precise exposition of the "twofold meaning" view that I criticize in section III. Russell is saying, roughly, that by their "twofold meaning" indexicals represent the "twofold location" he describes in *Analysis of Matter*. The terminology of "twofold location" or "twofold meaning" designates two different ways of naming (or describing) what is, ultimately, one and the same objective order. ("There is one public time, in which not only physical events, but mental events, also have their place" (HK, p. 91).)

10. See John Lyons's discussion of spatial deixis in *Semantics*, vol. 2 (Cambridge: Cambridge University Press, 1977), pp. 648ff., 669). Lyons suggests that "this" is roughly equivalent to 'the one near me' " (p. 648).

11. Russell is not arguing for the indispensability of ordinary proper names such as "Napoleon," because, as he notes, these can for the most part be replaced by words for qualities and complexes of competent qualities. Proper names in the ordinary sense, he says, "are misleading and embody a false metaphysics," namely, that of substance (HK, p. 84).

12. The choice of a particular coordinate system has a pragmatic, i.e., context-dependent, element. Likewise, identification of designata generally has a pragmatic element. Russell affirms this pragmatic element by saying that indexicals are indispensable for identification both in natural and empirical scientific language. Identification may occur in, but is not identical with, language acquisition. Some identification is prior to language acquisition in the sense that language learning (e.g., within a culture) could not proceed without its having already been done. It is posterior to language acquisition in the sense that the identification of axes and origin of a particular coordinate system could not be accomplished without prior mastery of a mathematical language. The exact location of the origin might not matter, e.g., if we merely wanted to track motion of a particle through a system and we wanted simply to compare coordinates (x^1, y^1, z^1) with $(x^2, y^2, z^2), \dots, (x^n, y^n, z^n)$. But the point

is that the physicist *chooses* a certain coordinate system for a certain purpose or because it is the most convenient, and that this choice has a pragmatic element that is expressed linguistically by indexicals. (My thanks to D. C. Carey and Stephen E. Smith for consultation on physics questions.)

13. See J. van Heijenoort, "Frege on Vagueness," *Synthese*, (1982) for a discussion of Frege, Russell, and Quine on this issue. The problem is compounded in Russell's case because he holds that in a logical language there are no names. Hence it is unclear how (or whether) indexical expressions would appear in a logical language, since they are names in one sense, i.e., "strict names."

14. Carnap explicitly restricted his discussion in *Logical Syntax* to nonindexical languages: "We shall deal only with languages which contain no expressions dependent upon extra-linguistic factors" (*The Logical Syntax of Language* [London: Routledge & Kegan Paul, 1937], p. 168). See discussion by Bar-Hillel in "Indexical Expressions," p. 75. Carnap also warned that his constructions in the *Aufbau* were intended to preserve only the logical, not the epistemological, value of the terms defined. He explicitly stated, as Nelson Goodman remarks, that "his system is not to be regarded as a portrayal of the process of acquiring knowledge. Nevertheless he considered the system to be a 'rational reconstruction' of that process, a demonstration of how the ideas dealt with 'could have been' derived from the original given." "The Significance of *Der logische Aufbau der Welt*," in *The Philosophy of Rudolf Carnap*, ed. P. Schilpp (LaSalle, IL: Open Court, 1963), p. 548. Russell's dissatisfaction may have to do with the latter claim.

15. On this topic see G. E. M. Anscombe, "The First Person," in *Mind and Language*, ed. S. Guttenplan (Oxford, 1975), and H. Casteneda, *Thinking and Doing* (Dordrecht: Reidel, 1875) and "On the Philosophical Foundations of a Theory of Communications: Reference," in *Midwest Studies in Philosophy*, vol. 2 (Minneapolis: University of Minnesota Press, 1977), pp. 166–86.

16. Russell's analysis of "This is red" as "redness here" in IMT (p. 92) resembles Quine's later treatment in *Word and Object*, where demonstrative singular terms ("This river" are eliminated in a regimented language in favor of "indicator words" or indexical predicates (e.g. "x is a river and x is here") Quine, *Word and Object* [Cambridge, MA: MIT Press, 1960], pp. 162ff., 185). See my discussion in "Quine's Elimination of Demonstratives," unpublished paper.

17. The notion of interdefinability used here employs a relation of "informational equivalence" as suggested by A. W. Burks "Icon, Index and Symbol," and applied by John Perry in "Frege on Demonstratives," *Philosophical Review*, 86(1977), pp. 474–98.

18. Russell recognized a similar problem in the attempt to classify "this" as either a name or a concealed description. "If we treat it as a mere name, it cannot have in any sense a constant meaning, for a name means merely what it designates, and the designatum of 'this' is continually changing. If, on the other hand, we treat 'this' as a concealed description, e.g., 'the object of attention,' it will then *always apply to everything that is ever a 'this'*, whereas in fact it never applies to more than one thing at a time. Any attempt to avoid this undesired generality will involve a *surreptitious reintroduction of 'this' into the definiens*" (IMT, p. 103; emphasis added).

19. See Putnam (1977, p. 128). Kripke criticizes the *de re* interpretation in "Speaker's Reference and Semantic Reference," in *Contemporary Perspectives in the Philosophy of Language*, ed. P. French (Minneapolis: University of Minnesota Press, 1979), pp. 6–27; and *Naming and Necessity* (Cambridge, MA: Harvard University Press, 1980), pp. 7ff. and 10–14.

20. Further, the ambiguity can be taken to reside in sentence-tokens of (2) and not in the sentence-type, if we assume that all participants individually entertain (without uttering) the sentence-token "the person attending to this is hungry."

21. Roderick Chisholm suggested in conversation the following version of the circularity criticism: Taking "this" as Russell defines it to designate "whatever at the moment when the word is used, occupies the center of attention," what in Russell's theory prevents *my* center of attention from being *your* center of attention? To make it clear that I designate not your but my center of attention, we must add "my" as follows: "This" designates "whatever, at the moment when the word is used, occupies [my] center of attention." If we do not add "my" then the awareness and the object are indistinguishable, and solipsism follows. If we do add "my" then we presuppose, as Chisholm has argued (in *The First Person* [Minneapolis: University of Minnesota Press, 1981]), that the primary form of intentional reference is the first person. The present essay does not argue this latter position, but merely that the attempt to avoid the ambiguity between (2a) and (2b) by limiting designation of "this" to the speaker's private experience results in circularity.

22. See William Demopoulos and Michael Friedman, "The Concept of Structure in *The Analysis of Matter*," in this volume for a technical explanation of the problem.

23. John Perry, "Frege on Demonstratives," argues that the former, incommunicable sense, will not help Frege out of the problem he faces in accounting for indexical reference.

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