

Royal Institute of Philosophy, Lecture for "Philosophy at the New Millennium" series.

Cutting Philosophy of Language Down to Size

When invited to contribute to this lecture series, my first thought was to talk about philosophy of biology, a new and increasingly influential field in philosophy, surely destined to have great impact in the coming years. But when a preliminary schedule for the series was circulated, I noticed that no one was speaking on language. Given the hegemony of philosophy of language at mid century, after "the linguistic turn," this seemed to require comment. How did philosophy of language achieve such status at mid-century, and why is it losing it now? Has the Anglo-American tradition really begun to put the philosophy of language in better perspective? I hope so. Indeed, I will end with suggestions for how to keep it more securely in its proper place.

William Alston is one of the most respected and well balanced philosophers of language from the period of its heyday, and we are blessed with a characteristically lucid article of his on philosophy of language written for the 1967 edition of The Encyclopedia of Philosophy in which he explains why this subject is so central (volume 4, pp. 386-90). "Whenever philosophers turn their attention to any subject matter...one thing they try to do is to clarify the concept of that subject matter." Accordingly, he says, a view that many philosophers came to hold was that the primary job of the philosopher is "conceptual analysis." Alston then claims that a "shift in the center of gravity of philosophy" took place with a shift in understanding of what "conceptual analysis" is. Rather than being understood as an attempt directly to analyze the nature of its subject matters, for example, of *causality* or *knowledge*, or as an attempt directly to explore these concepts as psychological phenomena, the conceptual analyst was now understood as "trying to make explicit what it is one is saying when he says..." this or that pertaining to *causality* or *knowledge*. Although Alston doesn't remark on it, that, of course, was how this tradition of philosophy managed to continue to understand itself as an a priori discipline after the demise of rationalism. Otherwise, it was thought unclear why philosophers wouldn't need to turn to data or to experimental work in order to carry out their tasks.

Alston proceeds,

In so far as conceptual analysis takes the center of the stage the pursuit of the philosophy of language receives a powerful impetus....the analytic philosopher will spend a great deal of his time in trying to decide what a given expression means, whether two expressions mean the same thing, how a given expression is used, and so on.

Thus,

...the need arises to develop an explicit theory about what it is for a linguistic expression to have a certain meaning, what it is for two expressions to have the same meaning, and what it is for a sentence to be used in order to do so-and-so....it follows that insofar as philosophy consists of conceptual analysis it always deals with language in one way or another. This might be taken to imply that philosophy of language is the whole of philosophy and one might choose to use the term "philosophy of language" in such a way that this would follow.

Alston does not recommend this usage. But it is clear that the conclusion could easily

be drawn that philosophy of language has something like the status of first philosophy, since in an important way all other philosophy depends on it. Moreover it seems to follow, paradoxically, that by underpinning all of philosophy it also underpins itself. For what is the methodology of the philosophy of language itself to be? Presumably it too will proceed by "trying to make explicit what it is one is saying when he says..." say, that a word has a certain referent or is synonymous with another word.

To appropriate the methodology of conceptual analysis as basic is, I believe, implicitly to make certain very strong assumptions about the nature of language, which assumptions cannot, in principle, be questioned by use of the method. Then it is by begging the question that the philosophy of language promotes itself to become the foundation for the entire philosophical enterprise. These two strong assumptions concern referential or extensional meaning. (I will just say "referential," terminologically counting properties and relations as "referents.") They are assumptions that externalist theories of thought content and direct reference accounts of word meaning have been trying to challenge for some years. But neither of these latter two programs can be carried through, I believe, without a fundamental shift in methodology, a shift that amounts in the end to abandonment of the position that philosophy is always, at root, an a priori discipline.

The first assumption I call the "seed assumption": Unlike the act of knowing an empirical fact, which act can be successfully completed only through cooperation of the external world, the act of referentially meaning something, though perhaps not of actually referring to something (recall Frege's empty descriptions) is completed within the mind itself. The intentional nature of the act of referring has its source or is given its shape by the mind. The mind, or its contents, alone determine the criteria in accordance with which a reference succeeds or fails to be made. The seeds of reference, if not the flower, are always entirely within the mind.

The second assumption I call the "one-to-one assumption": A univocal term in a public language is associated with one psychological state common to all competent users. For referential terms, typically the idea has been that the same seed of reference or criterion for successful reference must be grasped by all of its competent users. The paradigm here is the Fregean view that an unambiguous word or sentence corresponds to a single Sinn that is grasped by all who understand it.

The one-to-one assumption explains why conceptual analysis can be applied to referential terms in a public language. If there is something common to the psychological states of all who grasp the meaning of a public term, then there will be some single correct description that captures this common element, and any competent user should be able to recognize that description. The one-to-one assumption taken with the seed assumption leads to the view that the various types of referring or denoting expressions C proper names, common names, names of properties and relations, definite descriptions, indexicalsC are mirrored in distinct types of mental structures. Then there is a one-to-one relation not only between referential linguistic meanings and inner seeds of meaning, but also between types of referring expressions and types of meaning seeds. These two assumptions are independent. The one-to-one assumption can be held without the seed assumption, for example, by taking linguistic meanings to be stereotypes that don't determine extensions. And the seed assumption

can be held without the one-to-one assumption. There might be such things as inner seeds of referential meaning and yet public communication might characteristically rest only on shared reference. This last position has tempted some, for example, in the case of proper names.

The program of conceptual analysis is most agreeable when coupled with some form of linguistic idealism. If our language determines our concepts and categories and these in turn determine the forms we use to mold and measure our world, then to explore the structure of our concepts and categories will be to explore the structure of our world. To project the same conceptual schemes as one another will be to live in the same world. Thus, for example, the idea that we are the authors of the criteria of identity used to individuate various kinds of objects (that terms such as "apple" and "rabbit" "possess built-in modes, however arbitrary, of dividing their reference" (Quine 1960, p. 91)) clearly entails that the referents of our words and thoughts are determined to fit structures that we project. An examination of our peculiar cognitive ways will reveal the structures that our referents are necessarily determined to have. Assume that these structures are acquired by internalizing the rules of a public language and the result is an extreme form of linguistic idealism. Our language constitutes our world. But then it must also constitute itself within that world since, of course, it is part of the world. Philosophy of language is called on to support itself as well as the rest of philosophy.

Less radically, concepts may be understood to be nodes in a net of response and inference dispositions, their references determined by their positions in the net plus, perhaps, their dispositional causal relations to objects and properties in the world (their "causal roles." (The classical notion that concepts correspond to sets of necessary and sufficient conditions for application and also the view that concepts are organized around prototypical instances are, of course, merely simple variations of this theme.) Then to analyze the position of the concept in the net will be to trace out central requirements on the nature of its referent. Assume, again, that these inference dispositions are acquired by internalizing the rules of a public language, and it again follows that the meanings of referential terms can be traced by conceptual analyses. The principle is the same, of course, if the rules or habits of language are conceived as governing rich "forms of life" and not merely perceptual judgments and inferences. Quine, Wittgenstein, Sellars, and so forth, all look very much alike when considered in these general terms, as do nearly all contemporary psychologists studying concepts. All make both the seed assumption and the one-to-one assumption.

Two important challenges to these assumptions are familiar to us all. First is the effort to evict "meaning" from the "head" along with the defense of "direct reference" views, begun a quarter century ago by Putnam (1975b) and Kripke (1972, 1980). The denial that "meaning is in the head" looks as though it should threaten the assumption that the seed of referential meaning is wholly in the mind. Second is the attack on the analytic-synthetic distinction and on the notion of linguistic meaning spearheaded half a century ago by Quine (1953). These latter moves look as though they should threaten the assumption of a one-to-one relation between public linguistic meanings and psychological states. It looks as though no inseparable inference connections will be learned as one learns one's language. Between them these two challenges have

considerably diminished the influence of runaway conceptual analysis, but neither has succeeded in extracting its roots. I would like to understand the reasons for this failure.

Because the one-to-one assumption is so commonly made, the literature is often unclear about whether it is linguistic meanings that are being examined or merely referential thoughts. I will try to keep these issues entirely separate, discussing, first, only the seed assumption. Later I will discuss the one-to-one assumption.

Putnam (1975b) is credited with launching the "externalist" position that "meaning is not in the head." What Putnam claimed, more exactly, was that knowing the meaning of a natural kind term was not merely a matter of being in a certain psychological state. Putnam's claim, as it bears on the seed assumption, was, for example, that if the psychological state associated, for any one of us, with the term "water" were to be realized in a person living on twinearth, this psychological state would constitute a thought not of water but of twinwater. Putnam contrasted his position with the classical one that the extensions of thoughts of natural kinds are determined via prior thoughts of their defining properties. Instead, thoughts of natural kinds are, he said, "indexical." Facts about the environment of the thinker help to determine the thought's extension. Putnam's position has been considered a kind of "externalism" concerning content for natural kind terms, "externalism" being touted as new and quite radical. Putnam himself compared his position to Kripke's position, also taken to be new and radical. He said that natural kind terms, like Kripke's proper names, were rigid designators, not standing in each possible world for whatever extension certain properties have in that world, but always standing for the same kind, determined by its disposition relative to the thinker in this world. But I'd like to compare Putnam's move with one made much earlier in the century by Bertrand Russell concerning thoughts of individuals.

F.H. Bradley had worried that to make a judgment about a particular individual, one would have to grasp its entire infinitely complex individual nature, so as to distinguish it in thought from all other possible individuals. But Russell said no. All you need is to distinguish the individual from other actual individuals with a true definite description. However, such a description would usually have to begin with a reference to the individual's relation to some prior individual or individuals, for example, to Socrates or to Greece or to this earth, the threatened regress ending with a final reference to oneself. For example, I might end by making references to the causes of various of my current sense data C this one, that oneC thus locating the object of my thought in relation to me in the historical (the causal/spatio-temporal) order. Or I might think of James as whoever bears the relation "same person" to whatever causes the characteristic such and such (Jamesish) looking and such and such (Jamesish) sounding sense data around here.¹

¹ Of course Russell took definite descriptions to express disguised judgments, so that this way of judging about an individual did not involve a thought whose referent was that individual. The judgment really concerned the contents of the world entire C that given the world entire, certain propositional functions were or were not always true. The disagreement between Frege and Russell whether judging about individuals is done with an existence claim or with a truly referential thought but that might not have a

referent is trivial in this context. When we consider thoughts rather than the functions of language forms, what is the difference between a presupposition of existence and a belief in existence? The difference seems merely a matter of what one is psychologically prepared at the moment to bring into question.

The important point is that, on this sort of analysis, you have to be in the same world as the individual you are judging about, historically² related to it in the right way. The possibility of having thoughts of individuals rests on the actual historical relations they bear to you, or, putting this broadly, on the actual-world context of your thinking. To my knowledge, no one after Russell has questioned this view. What individual my thought is about is determined by historical relations external to my mind. Another person in exactly the same psychological state might well be thinking of a different individual.

C Does it follow that meaning has not been thought to be "in the head" in the case of thoughts of individuals for nearly a century?

Surely it was not meaning, but merely extension, that Russell discharged from the head in this way. Whether we separate the meaning from the denotation (Russell's way) or the Sinn from the Bedeutung (Frege's way) or the intension from the extension (Carnap's way) or the meaning from the reference (Quine's way) makes little difference. The division has always been between what was fully determined within or before the mind, and what was partly determined by (in a broad sense) the external context of the mind. Meaning has been whatever is left in the head after you carve off those parts of the completed act of referring that lie outside. And it has always been meaning alone that determines what properties or relations confirm a certain extension as the one referred to. What's inside determines how things must be outside for the reference to be successful. No matter how much external world involvement there is in reference, the seeds of referential meaning remain in the mind. That is the classical position.

² By "historical" I mean within the historical order "Historical relations" are spatial, temporal, or causal relations.

So now Putnam tells us that there are mind-independent natural kinds out in the world waiting to be named by us just as there are individuals. And just as with individuals, you don't have to think of them by knowing their essences. You need not distinguish them in thought from all other logically possible kinds, but only from the other actual kinds in this world. Just as with individuals, you can point to them in thought with descriptions containing indexicals, your thoughts completed through historical relations to them. Water is whatever bears the relation "same liquid" to the stuff in the lakes and streams around here, or whatever bears the relation "same liquid" to the stuff causing such and such (the waterish) surface properties around here. Nothing is new from the standpoint of the philosophy of language and mind. Meaning remains as much in the head as it was. Only the realist ontology is new, the (re)introduction of kinds that are not merely nominal. And even here, Putnam did not argue that the criterion of sameness for "same liquid" is nature-given rather than nominal. The conceptual analysts' move then is perfectly obvious: Treat Putnam's analysis as introducing definite descriptions in place of definitions or graspings of essences. Nor has there been a shortage of variations on this theme.³ Certainly Putnam was never clear on why this obvious move would not be possible, on why meaning needed to be pushed out of the head.

Similarly, Putnam's theory (1975b) of the "Division of Linguistic Labor" reduces to the claim that some people think of some kinds by way of descriptions such as "the substance the chemists have in mind when they say 'molybdenum'." What is threatened here is not the assumption that meanings are in the head, but rather the one-to-one assumption, the assumption that everyone who understands the linguistic meaning of a public referential term must think of its referent in the same way. Burge's claim (1979) that what a person means may depend on the habits of the surrounding language community can be trivialized in a similar manner. Kripke's suggestion on the reference of proper names becomes just (here I am caricaturing) that people not present at Aristotle's baptismal ceremony describe him to themselves as "the person at the beginning of a chain of 'Aristotle' tokens, certain more recent members of which chain are this token and that token."

To clinch this deflationary account, we call attention to the method by which philosophers have arrived at their so called externalist theories of thought content. They have used the method of conceptual analysis. They have brought forward examples and counter examples to be judged for their conformity with our intuitive notions of what the referent of a person's thought would be, given this or that circumstance.

Some externalists have tried trading in descriptions for indexical "characters," in Kaplan's sense. Rather than containing a description of the relation its referent must bear to the thinker, the referential thought is purely indexical. It inarticulately points to that which bears a certain historical relation to it. Compare a token of the word "I." It refers to whoever has produced it, but it does not describe this relation. It does not mean "the person who produced this token." But indexicals are semantic elements too.

³ The very clear essay on this theme is (Fumerton 1989).

They have meaning only by a prior assignment of character. What then gives a mental indexical its character? What determines which particular historical relation its referent must bear to it? The obvious answer is given by Ned Block (1986). The rules determining the values of mental indexicals must be implicit in the cognitive dispositions of the thinker, in what the thinker would ultimately be disposed to identify as her referent given these or those, perhaps unexpected, circumstances. The seed of referential meaning remains in the head.

The boldest externalists are "direct reference" theorists, holding that some or all of our referential thoughts are "Millian." No semantic analysis can be given of a Millian thought beyond saying what referent it brutally names. But then a theory is needed telling what constitutes that one thought brutally has one referent while another thought brutally has another. Various theories of thought content have aspired to this, such as Dretske's informational theory, Fodor's asymmetrical dependency theory, Papineau's or my teleological theories. Each tells its own story about the sort of historical relation that cements a mental representation to its referent. But how do we prove that one of these relations rather than another is the reference relation? If asymmetrical dependency were the reference relation, for example, then of course referential meaning would be fully external. Similarly, if being the last thing you stepped on before that thought occurred to you were the reference relation, again, referential meaning would be fully external. If you think the former more plausible than the latter (marginally!), how can you prove it? Unless, as Putnam (1978b) put it, you can show that the former is more like the "intended" relation of reference. more in accord with what we mean by "reference"? Philosophy of language supports itself again! Putnam called it "internal realism."

Think of the matter this way. How could something be the criterion determining the referent of my own term or thought, if what I actually use is another criterion? Of course, I may have in reserve some more ultimate criteria that would prompt me to readjust my current criterion, for example, if I should find out more about the inner nature of the liquid I call "water," or if I should find out how certain experts distinguish molybdenum. But these adjusted criteria would still be my criteria, set by my criteria for setting criteria. My meaning remains in my head. If the externalist proposes that something is "reference" that we do not recognize by our own lights as reference, then he is just changing the subject. No way, it seems, can we defend any fully externalist view of referential meaning.

How do we exit this loop? This is what I think is needed. First, construct an externalist theory of reference that portrays it playing an indispensable role in the uses of both language and thought. Second, given this theory, make plausible that reasonable people should have come to the reasonable but mistaken conclusion that references/extensions are determined by criteria projected by individual minds. Third, make plausible that, despite their corresponding to different conceptions, the reference described by the theory is the same as the reference of our ordinary term "reference".

These can all be accomplished, I believe, though only the briefest sketch is possible here.

The inner seed assumption, expressed in Putnam's terms, is that the referent of a thought must always be something "intended" by the thinker. Put this a slightly

different way: It must have been a purpose of the thought to grasp that referent. Stated this second way, I believe the assumption is correct. The shift is from a purpose of the thinker, a psychological purpose, to a purpose of the thought, a biological purpose. The purposes of my thought need not be purposes of mine. But it is certainly understandable that classical theories of reference should have confused these two kinds of purposes. This is why thoroughly reasonable people have been lead to adopt the seed assumption.

Consider, for example, the purpose of my breathing. The purpose of my breathing is not a purpose of mine, not determined by an intention of mine. A frog's breathing has exactly the same purpose as mine, determined in the same way (certainly not by the frog's intentions). Similarly, neither the purposes of the frog's vision and hearing nor the purposes of mine are determined by anyone's intentions. Why then should the purpose of my thoughts, in particular, of my referential thoughts, be determined by my intentions? More plausibly, the purposes of all of these are biological, not psychological purposes.

Now, whatever gloss you put on the notion "biological purpose," or "biological function," one thing is clear. Biological purposes are not always achieved. In the biological world, failure in the particular case may even be the rule rather than the exception. The vast majority of individual animals die before reproducing. It would be very surprising if the biological purposes of human thought were invariably achieved. It is plausible that the various mechanisms designed to aid in forming empirical concepts are more successful sometimes than others. However, just as it may be perfectly clear what the goal was of the cat that pounced but missed the mouse, sometimes it may be perfectly clear what the goal of the concept forming mechanisms is, even though they are not currently dead on target.

The central task of empirical concept formation, I have argued, is learning to recognize what is objectively the same through enormous diversity of appearances, a wide variety of proximal stimulations (Millikan 2000). The cognitive systems succeed or fail in the performance of quite specific tasks, such as the task of learning to recognize Mama reliably, or dogs, or orange juice, or doorknobs. These specific tasks get set as goals by the system when it is placed in a certain environment and supplied with a certain history of experience. Just as a dog that is tracking a rabbit is tracking some particular rabbit, though, of course it may sometimes lose the scent, when the cognitive systems attempt reidentification of something, perhaps using certain marks or criteria as a guide, whether they are successful or not, usually there is something entirely definite and real it is their current purpose to be tracking and to be learning better ways to track. Thus reference can remain stable while ways of identifying change, both during individual cognitive development and during the history of science.⁴

So it is possible coherently to question the inner seeds of reference assumption, the first assumption underlying the method of conceptual analysis. The second or one-to-one assumption, that the linguistic meanings of referential terms correspond to

⁴ For much fuller detail, see Millikan (2000).

particular psychological states is seldom discussed, even though numerous difficulties resulting from it are well known.

Starting with Russell, indeed, even with Frege, it was recognized that if proper names abbreviated descriptions, still, nothing seemed to prevent different speakers from using different descriptions to back the same name. Nor is the problem specifically with description theories. Insofar as thinking of an individual depends on a unique historical relation one has to that individual, each of us will think of the same individual in a different way. Suppose, for example, that for each of us *C* by description, or indexically, or causally *C* Aristotle is the man at the beginning of a causal chain issuing finally in this particular token and that particular token having the shape or sound "Aristotle." Still, each of us will begin by confronting different tokens of "Aristotle", or if the same token, then it will be related to us in different ways. If we focus instead on nondescriptive ways of recognizing, the scattering is even more obvious. I can recognize my daughters Aino Millikan and Natasha Millikan in hundreds of different ways. Now that you've heard of them, you can use their names too, but are you able to recognize them any of my ways? True, both of us now know them as my daughters. But many of their acquaintances, who surely mean the same as we do when using their names, have no idea who their mother is. That there must be some inner psychological state common to all who comprehendingly use a proper name seems entirely out of the question.

Turning to names for kinds or properties, the valid conclusion of Putnam's arguments for division of linguistic labor, and also Burge's arguments against "individualism," are not that meaning is not in the head. Meaning-in-the-head can always be saved by putting more complicated descriptions in the head. What these arguments do show is that people who use a natural kind term such as "molybdenum" or "arthritis" think of the same natural kind using different methods, some relying on experts, some not. And difference in method goes much deeper. Suppose in the case of the familiar stuff water, for example, that we all think of it, simply, as the watery liquid around here. Still, why suppose that the property *watery* is recognized in the same way by all speakers of English? Might it be that Helen Keller actually understood the word "water" that Annie Sullivan spelled into her hand? Putnam says that the ways people recognized water prior to discovering that water is H₂O did not determine the extension of their thoughts of water, but were subject to replacement by more accurate measures. Do today's children fail to understand the contemporary term "water" before they have learned chemistry? What in the conception of water has to remain the same to prevent the word "water" from changing its meaning?

If there were, indeed, something in common among the psychological states *C* the methods of recognition, inference patterns or whatever *C* of all who understood a univocal referential term, how would these states be uniformly acquired in the course of language learning? Quine's arguments in Word and Object (1960) quite effectively showed, I believe, that for the most part there could not be such a thing as THE inner rules of a language, THE correct criteria for application or methods of recognition, THE correct entailments, and so forth, that constitute public linguistic meanings. For the most part, everyone has his own private "sentence associations," his own private application and inference procedures. Each follows his own causal pathways. There is

no way to enforce any particular ones of these to be constitutive of the language being learned. Again: Helen Keller both wrote and spoke English.

Wittgenstein suggested that the criterion for meaning the same was agreement in judgments. Why do we think that Helen Keller spoke English? Because of agreement in judgments. Those around her acknowledged, for the most part, the same mundane truths that she did. She merely discovered these truths in a different way. But agreement in judgments gives evidence only of agreement in reference. It tells nothing about the private methods by which those judgments were reached. Yet agreement in judgments, for the most part, is the only evidence we have when trying to coordinate our language use with others. This is not incompatible with there being some judgments you can learn to agree on only by following a specific pattern of recognition. If you are going to manage to agree in judgments about bachelors you must begin by having some way of recognizing incoming information that concerns men as such, and a way of recognizing incoming information that concerns marriage. That this is the only way to manage agreement in the case of judgments about bachelors is not a matter of the rules of English. It is a matter of the constitution of bachelorhood. There just aren't any other reliable signs of this state to go on (Millikan 2000, ' 3.4).

Yet there has been a dogged persistence in the view that a univocal linguistic meaning corresponds to a single psychological state. Thus Quine, rather than conclude that the public meaning of referential terms might be, simply, their referring, proclaimed the "indeterminacy of translation." He trashed linguistic meaning! Putnam's reaction was equally bizarre. After concluding that linguistic meaning is in part a function of reference, he anxiously offered a substitute internal sort of meaning that competent speakers of a language were to be required to share:⁵

Speakers are required to know something about (stereotypical) tigers in order to count as having acquired the word 'tiger'....After all we do not permit people to drive on the highways without first passing some tests to determine that they have a minimum level of competence...English speakers are required by their linguistic community to be able to tell tigers from leopards...this could easily have been different... (1975b, p.168)

A more flimsy fantasy has never been concocted, I submit, by a competent philosopher.

There are, of course, classical arguments Cfour of themC that referential terms must have, besides public reference, also a public sense. One concerns assertions of identity, the second, assertions of existence, the third, interchangeability in intentional contexts, and the fourth, psychological explanation.

First, if only reference is shared by everyone for a referential term, how can an assertion of identity be informative? Peter Strawson provided the answer in 1975. He explained that what an identity sentence, $A=B$, does to your head is, as Michael Lockwood (1971) rephrased it, to merge the contents of two information folders, one of which formerly had been accessed with the word "A," the other with the word "B," so that all the information can now be accessed with either word. Why wasn't this the end

⁵ True, he uneasily speaks here of "acquiring words" rather than of learning their meanings, but the shift in terminology is not material.

of the matter? ⁶

Second, if a referential term, "A," has no univocal public sense, what meaning will the assertion "A exists" have, or the assertion "A doesn't exist"? In the same spirit as Strawson, we answer that what "A doesn't exist" does to your head is remove your mental folder of virtual information about A to an inactive file, such that it does not engage in the normal way with perception or action. "A" will now be treated as only a pretend name. "A exists" reverses this effect.⁷

Third, if "A" and "B" name the same, why is "x believes that A is Φ " not always equivalent to "x believes that B is Φ "? Because, very occasionally, in a context that makes this clear, using a certain word to describe the content of a person's belief carries the implication that the person himself would accept this word as helping to express this belief. But a person might believe that B is Φ without knowing that B is called "B."

Fourth, we describe the contents of people's beliefs and desires using embedded sentences, and having captured their contents in this way, we successfully predict their behaviors. How is this possible if the embedded sentences don't correspond to determinate psychological states? The answer is that this whole image of how behaviors are predicted is quite wrong. Comparative psychologists learned long ago that only the distal and not the proximal behaviors of an animal are predictable. You can predict that the cat will move the correct lever in the right direction to let itself out of the experimental box, but you can't predict whether it will use the left paw or the right, or perhaps lean with its tail. Having learned which way the lever needs to be pushed, it will do this different ways different times. Similarly, you can predict that Sam, who sincerely said he would arrive at seven, probably will, in one way or another C by bus, by subway, by car, on foot or bicycleC arrive around seven. And if he says he will take the 6 o'clock bus, you can predict that he will probably manage to identify the 6 o'clock bus. There is no need for concern with his methods of recognition. True, occasionally it is helpful to know something about the ways a person can or can't identify a certain referent. If you wish to know why Sam didn't even attempt to speak to his favorite author who was at the same party he was, it may help to know that Sam doesn't know what she looks like. But if he does know what she looks like, it is not likely to be useful to know whether it's the line of the nose or the chin that cues him. Similarly, when you order basil with your groceries, you are not concerned whether the grocer recognizes basil by the smell, or the shape of the leaf, or the lable on the box, so long as it's basil that he brings.

Notice that the attempt to understand the meanings of words and the reference of thought in this way, without the seed assumption and without the one-to-one

⁶ See Millikan (1984) chapter 12.

⁷ See Millikan (1984) chapter 12.

assumption, besides requiring development of certain broad aspects of a realist ontology, also implicates broad issues in theoretical cognitive psychology, child development, and, indeed, the history of science. Understanding what reference is is not conceived as a wholly a priori project. The aim is to help create the framework for an empirical theory of human cognition. Indeed, if the nature of reference is at all as I have suggested, then to investigate any of our empirical concepts is to investigate the nature of the world, not merely of what's in our heads. This is consonant, I believe, with the actual role philosophy has always played in relation to the sciences. The philosophies of mind and of language, for example, have provided the foundation for much that has happened in modern empirical psychology and linguistics. Large parts of philosophy have traditionally operated as theoretical empirical sciences. There is also a long tradition, including, for example, Russell, that has explicitly endorsed this kind of role for philosophy.

Dropping the seed assumption and the one-to-one assumption puts a very different face on both the appropriate methods in philosophy of language and its status relative to other parts of philosophy and science. I hope this is the face it will wear in the coming century.⁸

⁸ It will surely have been noticed that this essay has presupposed a heavy duty realist ontology throughout. The ontology is discussed at length in Millikan (1984 chapters 16-17; 2000 chapters 2-3).

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