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INTUITIONS

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1. Introduction

Intuition mongering seems to be essential to the characteristic method of "armchair" philosophy. Intuitions are consulted in "thought experiments" to test philosophical hypotheses. Is this way of proceeding appropriate? Many think it is because they take the intuitions to be known a priori. But this is not something that I, and other Quinean naturalists, can accept because we think that there is no a priori knowledge.[1] So, is it in order for naturalistic philosophers to consult intuitions?

Consider the philosophy of language in particular, an area of philosophy with a heavy reliance on intuitions. It is common to think that the task of, for example, the theory of reference is simply to systematize our ordinary intuitions about reference. Stephen Stich sums this view up as follows: "the theory of reference is attempting to capture the details of a commonsense theory about the link between words and the world" where that theory involves, at least, a generalization of the intuitions. Stich thinks that this view is "favored, albeit tacitly, by most philosophers" (1996: 6. The view is not endorsed by Stich). I think he is right about that. Still, this common view is puzzling.

It is puzzling because the obvious way to describe the task of the theory of reference is that it is to explain the nature of reference, to explain the nature of a certain word-world relation. If we start from this view, surely as good a starting place as one could have, why take the task to be to capture the folk theory of this relation? That would seem to be appropriate only if we assume that the folk must be right about reference. But why assume that? Why think that the folk have infallible insight into the nature of this particular word-world relation? We don't suppose that they are authorities on physics, biology, or economics, why suppose that they are on semantics?

Stich has a neat suggestion (p. 40). Folk semantics might be viewed the way linguists standardly view folk linguistics. Their standard view is that speakers derive their grammatical intuitions about their language from a representation of the grammatical principles of the language; the intuitions are, as I put it, "the voice of competence."[2] We might then take a similar view of

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[1] The best reason for rejecting a priori knowledge, I have argued (1996, 1998), is that we do not have even the beginnings of an account of what it is. We are simply told what it isn't, namely empirical knowledge. Bealer (1998) and BonJour (1998) are vigorous defenders of rational intuitions; see also Sosa 1998. For an exchange on the subject, see BonJour 2004a,b,c and Devitt 2004a,b.

[2] Consider the following passages, for example:

referential intuitions: speakers derive them from a representation of referential principles. So, just as, according to the linguists, the true grammar that they seek to discover is already stored in the mind of every speaker, so too, according to this view, is the true theory of reference. Linguistic intuitions, whether about syntax or reference, are not the result of the sort of empirical investigation that judgments of the world usually require. Rather, we might say, speakers have a "Cartesian access" to facts about their language simply in virtue of being competent in it and thus embodying representations of its principles.

Someone who took the standard linguists' view of linguistic intuitions might well be tempted to this analogous view of referential intuitions. So, it is interesting to note that Noam Chomsky is not tempted. He expresses skepticism about "contemporary philosophy of language" and its practice of "exploring intuitions about the technical notions 'denote', 'refer', 'true of', etc." He claims that

> there can be no intuitions about these notions, just as there can be none about 'angular velocity' or 'protein'. These are technical terms of philosophical discourse with a stipulated sense that has no counterpart in ordinary language. (1995: 24)

So Chomsky is skeptical about the use philosophers make of referential intuitions. But he is not, of course, similarly skeptical about the use linguists make of linguistic intuitions. Why the difference? If skepticism about referential intuitions is appropriate, then surely just the same skepticism is appropriate about the linguistic ones, and for just the same reason. All the terms in linguistic theory are, in the relevant sense, technical and theory-laden. A few like 'grammatical' and 'sentence' may have counterparts in ordinary language but this need not give intuitions deploying those counterparts the privileged status that would arise from their being the voice of competence. Those intuitions could simply be the result of years of empirical folk linguistics. And that is what I shall argue that they are.

In the next section, I shall present a view of intuitions in general. In the final section I shall apply this to intuitions in linguistics, philosophy of language, and philosophy generally.[3]

2. Intuitions in General

On my view, the intuitions that concern us are judgments that are empirical theory-laden central-processor responses to phenomena, differing from many other such judgments only in being immediate and unreflective, not based on any conscious reasoning. These intuitions are surely partly

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> it seems reasonably clear, both in principle and in many specific cases, how unconscious knowledge issues in conscious knowledge...it follows by computations similar to straight deduction. (Chomsky 1986: 270; see also Dwyer and Pietroski 1996: 342)
> we cognize the system of mentally-represented rules from which [linguistic] facts follow. (Chomsky 1980: 9; the facts are expressed in intuitive judgments.)
> Our ability to make linguistic judgments clearly follows from our knowing the languages that we know. (Larson and Segal 1995: 10; see also Pylyshyn 1984: 122; Baker 1995: 20)

[3] I draw on earlier works (1994; 1996: 48-86). See also Kornblith 1998. A much more thorough treatment of linguistic intuitions will appear in my 2006 (ch. 7).

innate in origin[4] but are usually and largely the result of past reflection on a lifetime of worldly experience.[5]

A clarification. It may be that there are many unreflective empirical judgments that we would not ordinarily call intuitions: one thinks immediately of perceptual judgments like 'That grass is brown' made on observing some scorched grass, or 'That person is angry' made on observing someone exhibiting many signs of rage. Perhaps we count something as an intuitive judgment only if it is <u>not really obvious</u>. I shall not be concerned with this. My claim is that intuitions are empirical unreflective judgments, <u>at least</u>. Should more be required to be an intuition, so be it.

In considering intuitions and their role in science, it is helpful to distinguish the most basic intuitions from richer ones. Suppose that we are investigating the nature of a kind <u>F</u> - for example, the kind <u>gene</u>, <u>pain</u> or <u>echidna</u>. The most basic intuitions are ones that <u>identify</u> <u>F</u>s and non-<u>F</u>s; for example, "This is an echidna but that isn't." The richer ones go on to tell us something about <u>F</u>s already identified; for example, "Echidnas are monotremes that look like porcupines." The richer ones may be much less dependable than the basic ones: a person may be good at recognizing <u>F</u>'s without having much reliable to say about them; this is very likely the situation of the folk with pains.

Identifying uncontroversial cases of <u>F</u>s and non-<u>F</u>s is only the first stage of an investigation into the nature of <u>F</u>s: the second stage is to examine those cases to see what is common and peculiar to <u>F</u>s. Sometimes we have a well-established theory to help with the first stage; thus we had Mendelian genetics to identify the genes that were examined by molecular genetics in the second stage. But sometimes we do not have such help: we start pretty much from scratch; we are at the stage of <u>proto</u>-science. At that stage, the most basic intuitions are particularly important. In the absence of reliable theory, we must start by consulting the people who are most expert about <u>F</u>'s to see what <u>they</u> identify as <u>F</u>'s and non-<u>F</u>'s: we elicit their most basic intuitions about <u>being an F</u> in "identification experiments." We are then in a position to begin our investigation. Until recently, at least, this was our position with pains.

When we are starting from scratch, we need the basic intuitions, but we do not need the richer ones. This is not to say that we should not use them. They may well be a useful guide to what our investigation will discover about <u>F</u>s; they are "a source of empirical hypotheses" (Gopnik and Schwitzgebel 1998: 78).

We should trust a person's intuitions, whether basic ones or richer ones, to the degree that we have confidence in her empirically based expertise about the kinds under investigation. Sometimes the folk may be as expert as anyone: intuitions laden with "folk theory" are the best we

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[4]In calling the intuitions "empirical" I am claiming simply that they must be <u>justified</u> "by experience". Should any justified belief be entirely innate, which I doubt, then beliefs of that sort must have been justified somehow by the experiences (broadly construed) of our distant ancestors, and we must have inherited that justification via natural selection.

[5] "intuition is the condensation of vast prior analytic experience; it is analysis compressed and crystallized…. It is the product of analytic processes being condensed to such a degree that its internal structure may elude even the person benefiting from it…" (Goldberg 2005: 150)

have to go on. Perhaps this is the case for a range of psychological kinds. For most kinds, it clearly is not: we should trust intuitions laden with established scientific theories. Consider, for example, a paleontologist in the field searching for fossils. She sees what seems to be a bit of white stone sticking through grey rock, and thinks "a pig's jawbone". This intuitive judgment is quick and unreflective. She may be quite sure but unable to explain just how she knows.[6] We trust her judgment in a way that we would not trust folk judgments because we know that it is the result of years of study and experience of old bones; she has become a <u>reliable indicator</u> of the properties of fossils. Similarly we trust the intuitions of the physicist over those of the folk about many aspects of the physical world where the folk have proved notoriously unreliable. And recent experiments have shown that we should have a similar attitude to many psychological intuitions. Thus, the cognitive psychologist, Edward Wisniewski, points out that "researchers who study behavior and thought within an experimental framework develop <u>better</u> intuitions about these phenomena than those of intuition researchers or lay people who do not study these phenomena within such a framework. The intuitions are better in the sense that they are more likely to be correct when subjected to experimental testing." (1998: 45).

Even where we are right to trust an intuition in the short run, nothing rests on it in the long run. We can look for more direct evidence in scientific tests. In such a scientific test we examine the reality the intuition is <u>about</u>; for example, we examine the paleontologist's white stone. These scientific examinations of reality, not intuitions about reality, are the primary source of evidence. The examinations may lead us to revise some of our initial intuitions. They will surely show us that the intuitions are far from a complete account of the relevant bit of reality.

Intuitions often play a role in "thought experiments." Instead of real experiments that confront the expert with phenomena and ask her whether they are <u>F</u>'s, we confront her with <u>descriptions</u> of phenomena and ask her whether she <u>would say</u> that they were <u>F</u>'s.[7] These thought experiments provide valuable clues to what the expert would identify as an <u>F</u> or a non-<u>F</u>. They can do more: the descriptions that elicit the expert's response indicate the richer intuitions that, as we have already noted, can be a useful guide to the nature of <u>F</u>s. Some experiments may be difficult, perhaps impossible, to perform other than in thought. Valuable and useful as thought experiments may be in practice, they are dispensable in principle: we can make do with real experiments. And thought experiments call on the same empirically-based beliefs about the world as real experiments, and their results have the same empirical status.

The view I have presented of the limited and theory-laden role of intuitions does not need to be modified because of the special situation in the philosophy of language and linguistics, a situation where what we are investigating are the products of a human skill or competence. This situation arises elsewhere; for example, if we are (for whatever reason) investigating the nature of horseshoes, chess moves, touch typing, or thinking. Someone who has the relevant competence has ready access to a great deal of data that are to be explained. She does not have to go out and look for

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[6]I owe this nice example to Kim Sterelny. Gladwell 2005 has other nice examples: of art experts correctly judging an allegedly sixth-century Greek marble statue to be a fake; of the tennis coach, Vic Braden, correctly judging a serve to be a fault before the ball hits the ground.

[7] There are other things we might ask - for example, "What would happen?" – but these are beside out concerns. Gendler 2003 is a nice summary of views about thought experiments.

data because her competence produces them. Not only that, she is surrounded by similarly competent people who also produce them. As a result, she is in a good position to go in for some central-processor reflection upon the data produced by herself and her associates. This reflection, often aided by appropriate education, can yield concepts and a theory about the data. And it can yield the capacity for sound intuitions, basic and richer, about the data. In brief, she can become an expert. But this is not to say that she <u>will</u> become an expert. A person can be competent and yet reflect little on the output of that competence. Or she can reflect a lot but make little progress. Bicycle riders typically fall into one of these two categories. It is a truism in sport that great players do not always make great coaches. The fact that they possess a competence to a superlative degree does not imply that they can articulate and communicate the elements of that competence. Knowledge-how may not lead to knowledge-that.[8] Even if a competent person does become an expert, we should not assume that her opinions carry special authority simply because she is competent; her competence does not give her Cartesian access to <u>the truth</u>. She is privileged in <u>her ready access to</u> data, not in <u>the conclusions she draws from</u> the data; conclusions of the competent, just like those of the incompetent, are empirical responses to the phenomena and open to question; they arise from the empirical observation of data.

Touch typing provides a nice example of reflecting on the output of one's own competence. Ask a touch typist whether a 'k' should be typed with a middle finger and, very likely, he will think to himself, "How would I type a 'k'?" He will attend as he goes through the actual or mental motions of doing so and respond immediately, "Yes." Consider also this report:

> If a skilled typist is asked to type the alphabet, he can do so in a few seconds and with very low probability of error. If, however, he is given a diagram of his keyboard and asked to fill in the letters in alphabet order, he finds the task difficult. It requires several minutes to perform and the likelihood of error is high. Moreover, the typist often reports that he can only obtain the visual location of some letters by trying to type the letter and then determining where his finger would be. (Posner 1973: 25)[9]

The only privilege enjoyed by the typist's judgment about which finger should be used to type a 'k', or about where a letter is placed on the keyboard diagram, is the privilege of being based on what is surely a good datum: on how he, a good touch typist, types.

Although these typist's judgments are slow relative to his typing, they would probably be

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[8] "Highly skilled performers are often unable to reflect on or talk about how they achieve their skilled performance." (Carlson 2003: 38)

[9] And consider this report (Sun <u>et al</u> 2001). Subjects were placed in front of a computer with the task of navigating a submarine through a minefield using sonar. After some episodes, "subjects were asked to step through slow replays of selected episodes and to verbalize what they were thinking during the episode" (p. 219). The experimenters sum up the results as follows: "The subject at first performed the task on an "instinctual" basis, without conscious awareness of any particular rules or strategies. Gradually, through "doing it" and then looking at the results, the subject was able to figure out the action rules explicitly. The segment suggested implicit procedural learning at the bottom level and the gradual explication of implicitly learned knowledge" (p. 226). (I discuss implicit learning in section 11.5.)

fast enough for us to count them as intuitive. And they are likely to be sound, for it is fairly easy to think about typing. Contrast this with reflecting upon the outputs of another, much more important, human competence, the competence to think. We all have this competence to some degree or other: we can move in a somewhat rational way from one thought to another. Most of us reflect a bit on this and have some intuitions about what follows from what. Still, these intuitions are likely to be sparse and many of them are surely not sound. Thinking about thinking is so hard.

Now it is, of course, possible that the typist has somewhere in his mind a prior representation of the keyboard which controls his typing and leads to his sound judgment about how to type a 'k'. <u>But why believe this</u>? Set aside whether we need to posit this representation to explain his typing. We surely do not need the posit to explain his judgment. The much more modest explanation I have just given, making do with cognitive states and processes that we are <u>already</u> committed to, seems perfectly adequate for the job. Positing the prior representation is explanatorily unnecessary. Finally, when we turn to the case of thinkers, such positing would seem worse than unnecessary. The idea would have to be that the thinker's mind contains a representation of the "laws of thought" which controls her thinking and which leads her to, say, the intuition that '<u>q</u>' follows from 'if <u>p</u> then <u>q</u>' and '<u>p</u>'. But, as Lewis Carroll's famous example of Achilles and the Tortoise demonstrates, this view of thinking would lead to an infinite regress. The modest explanation is the only plausible one: a person's thinking is governed by rules that she does not represent and her few intuitive judgements about thinking are the result of reflecting on the performances of herself and others.

On the modest picture of intuitions I am presenting, what should we make of philosophical and linguistic intuitions? And whose intuitions should we most trust?

3. Philosophical and Linguistic Intuitions

Let us start with philosophical intuitions in general and the characteristic "armchair" method of philosophy. The traditional explanation of this method is that philosophers are conducting thought experiments that probe their <u>concepts</u> to yield a priori <u>rational</u> intuitions; they are doing "conceptual analysis." The naturalistic explanation accepts that philosophers are conducting thought experiments but construes these differently. The philosophers are not probing concepts but rather <u>intuitions about kinds</u>. This is just as well because knowledge of concepts, being a species of semantic knowledge, is very hard to come by. In contrast, philosophers have acquired considerable knowledge of many kinds over a lifetime of acquaintance with them. The philosophers' intuitions that draw on this knowledge are not a priori but empirical. The philosophers are conducting thought experiments of the sort described earlier, counting themselves as experts about the kind in question. Thus, in a famous example of the method, "the analysis of knowledge," the philosopher, as expert as anyone in identifying cases of knowledge, confronts descriptions of epistemic situations and considers whether the situations are cases of knowledge. On the basis of these empirical intuitions about cases she constructs an empirical theory about the nature of knowledge. The naturalist does not deny armchair intuitions a role in philosophy but does deny that their role has to be seen as a priori: the intuitions reflect an empirically based expertise in the identification of kinds.

Turn next to linguistics and the philosophy of language. The competent speaker has ready access to a great deal of linguistic data just as the competent typist has to a great deal of typing data

and the competent thinker has to a great deal of thinking data: the competent speaker and her competent fellows produce linguistic data day in and day out.[10] So she is surrounded by tokens that may, <u>as a matter of fact</u>, be grammatical, be ambiguous, have to corefer with a certain noun phrase, and so on.[11] So she is in a position to have well-based opinions about language by reflecting on these tokens. This is not to say that she will reflect. Indeed, a totally uneducated person may reflect very little and hence have few if any intuitive judgments about her language. Still it is clear that the normal competent speaker with even a little education <u>does</u> reflect on linguistic reality just as she reflects on many other striking aspects of the world she lives in. And this education will usually provide the terms and concepts of folk linguistics, at least. As a result she is likely to be able to judge in a fairly immediate and unreflective way that a token <u>is</u> grammatical, <u>is</u> ambiguous, <u>does</u> have to corefer with a certain noun phrase, and so on. Such intuitive opinions are empirical central-processor responses to linguistic phenomena. They have no special authority: although the speaker's competence gives her ready access to data it does not give her Cartesian access to the truth about the data.[12]

Still, are these intuitive judgments likely to be right? Are the folk expert enough? They surely are if we stick to the simplest intuitions involving vocabulary, particularly syntactic and semantic vocabulary, that we suppose the folk have mastered well enough. So we can usually be confident about judgments that a string of words is or is not "acceptable" and that a pronoun might "refer" to <u>x</u> or to <u>y</u>. We can often be confident about judgments that one expression does or does not "mean the same" as another, and perhaps even that a string is or is not "grammatical." And we can be very confident of judgments in "minimal-pair" experiments where ordinary speakers are asked to say simply which of two word strings, differing only in that one fails a certain hypothesized syntactic constraint, is "worse."[13] In sum, we have good reason to suppose that the core judgments of folk linguistics, reflecting the "linguistic wisdom of the ages," are good evidence for linguistic theories.

This having been said, the intuitions that linguistics, at least, should mostly rely on are those of the linguists themselves because the linguists are the most expert. This is particularly so when we get beyond the simple cases to theoretically interesting ones like 'The horse raced past the barn fell' and 'Who do you wanna kiss you this time?' The linguists' skill at identifying items with and

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[10]As Chomsky says, competent speakers "can easily construct masses of relevant data and in fact are immersed in such data" (1988: 46).

[11] This presupposes a realism about the linguistic entities that, according to my 2003, are the subject matter of linguistics. This realism is curiously denied by some. I think that this denial is a mistaken reaction to two facts: first, that the properties in virtue of which something is a linguistic token are all relational; second, that tokens of the one linguistic expression can appear in a variety of physical forms, a variety of sounds, a variety of inscriptions, and so on. Yet something can really have a certain linguistic property just as something can really have a certain nationality even though neither have these properties intrinsically and even though other things that have them can differ greatly in their physical forms.

[12] I emphasize that this is a modest explanation of the origins of a speaker's intuitions about her language. It is emphatically not an explanation of the origins of her linguistic competence and is neutral about the extent to which that competence is innate.

[13] See Crain and Thornton 1998 for a helpful discussion of experiments of this sort.

without a syntactic property like, say, the biologist's skill at identifying items with and without a biological property, is likely to be better than the folk's because their theories are better. Thus linguists have firm, and surely correct, intuitions about the acceptability of many sentences, and about some matters of co-reference, that the folk do not.[14] Linguistic theory is, as linguists are fond of pointing out, in good shape, far better shape than semantic theory. As a result of their incessant observation of language, guided by a good theory, linguists are reliable indicators of syntactic reality; analogously, biologists are reliable indicators of biological reality.

To say that intuitions, whether those of the linguists or the folk, are good evidence is not to say that they are the only, or even the primary, evidence. Indeed, we can look for more direct less theory-laden evidence by studying what the intuitions are about, the linguistic reality itself. In fact, despite what the literature often suggests,[15] there are many other sources of evidence. Still, linguistic intuitions, particularly those of the linguists, are often good evidence. So, they should be used. Intuitions are often a very convenient shortcut in theorizing.

In light of this modest explanation of intuitions and their reliability, I think that we should reject the standard view of linguistic intuitions and Stich's analogous suggestion (which he does not endorse) for referential intuitions. It is of course possible that the competent speaker's intuitions are reliable because they are derived from her mental representations of linguistic and referential principles. It has been argued, mistakenly in my view (2006), that we need to posit such representations to explain language acquisition and use. In any case, I urge now that we surely do not need the posit to explain the reliability of linguistic and referential intuitions. Consider the analogous phenomena for typing and thinking. We can explain the reliability of intuitions about those processes without positing representations of the rules that govern the processes. Our explanations of these intuitions make do with cognitive states and processes that we are already committed to. These modest explanations seemed perfectly adequate for the job and, indeed, much more plausible than their representational rivals. So do the similarly modest explanations in the linguistics case. Language is a very striking and important part of the human environment. It is not surprising that empirical reflection on linguistic data, aided by some education, should make people fairly reliable detectors of the most obvious facts about language. We are surely similarly reliable about other striking and important parts of the environment, for example, the physical, biological, and psychological parts.

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[14] Subjects in an experiment (Spencer 1973) considered 150 sentences that linguists had categorized as clearly acceptable or unacceptable. The subjects disagreed with the linguists over 73 of these, either finding them unclear or giving them an opposite categorization. In another experiment (Gordon and Hendrick 1997), naïve subjects found co-reference between a name and a pronoun that preceded it unacceptable even where the pronoun did not c-command the name. This is one of several experiments where folk intuitions were discovered to be at odds with the linguists' and with Binding Theory.

[15] Liliane Haegeman claims that "all the linguist has to go by ...is the native speaker's intuitions" (1994: 8) but two pages later she allows, somewhat grudgingly, an evidential role for usage. Andrew Radford opens his book (1988) with an extensive discussion of the evidential role of intuitions. The first mention of the use of the "corpus of utterances" as data does not come until p. 24. Robert Fiengo starts an interesting paper on linguistic intuitions: "Intuitions, with the contents that they have, are the data of Linguistics" (2003: 253).

Conclusion: Philosophers typically take ordinary intuitions to be good evidence for a theory because they think that they are the result of a priori insight into concepts. Linguists typically take ordinary intuitions to be good evidence for a grammar because they think that they are derived by a rational process from a representation of linguistic principles. I have argued for a different view that has the great advantage of being theoretically modest: it treats these intuitions like intuitions in general as empirical central-processor responses to phenomena. The view accommodates the evidential role that intuitions play in philosophy and linguistics without resort to the a priori or the mental representation of linguistic principles.

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