# THE ROUTLEDGE COMPANION TO PHILOSOPHY OF LANGUAGE

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# 4.1

# THE ROLE OF EXPERIMENT

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In this chapter, we argue that philosophers of language should emulate linguists, who are increasingly replacing the traditional informal reliance on their own and their colleagues' intuitions with systematic experimental surveys of ordinary speakers' intuitions. This experimental turn has enabled linguists to alleviate some significant concerns about their methodology, and a similar experimental turn in the philosophy of language would, we believe, enable philosophers to alleviate similar concerns about *their* methodology.

Here is how we will proceed. In Section 1, we will describe the experimental turn in generative linguistics, and argue that a similar methodological shift is called for in the philosophy of language. In Section 2, we review some of the burgeoning experimental work in the philosophy of language, which illustrates both the need for an experimental approach in the philosophy of language and the benefits to be gained. In the remainder of the chapter, we focus on the most well-known experimental work in the philosophy of language: the cross-cultural studies of intuitions about the reference of proper names. In Section 3, we address an influential objection against this work. In Section 4, we argue that an experimental turn in the philosophy of language is bound to have some significant philosophical implications, illustrating this claim with the implications of the cross-cultural work on intuitions about reference.

## 1 Emulating the Experimental Turn in Generative Linguistics

### 1.1 The Experimental Turn in Generative Linguistics

Following Chomsky (1957), most syntacticians in the generative tradition rely on a familiar methodology: develop theories that accommodate judgments about linguistically significant properties of sentences and their parts. While various sorts of judgments have been used, judgments about the acceptability of sentences have played a central role in generative syntax. Because the judgments that serve as evidence for syntactic theories are typically made quickly without being consciously inferred (they spring to mind, as it were), they are often called "intuitions." Syntactic theories in generative

linguistics are evaluated on the basis of their consistency with these intuitions: they are supported if they entail that an intuitively acceptable construction is grammatical or that an intuitively unacceptable construction is not grammatical, and they are undermined if they entail that an intuitively unacceptable construction is grammatical or that an intuitively acceptable construction is not grammatical. Theories are also challenged if they entail that some sentence can be read in two different ways while it is intuitively judged to have a single reading, and in a variety of other ways. Naturally, just as scientists sometimes discard some empirical findings, generative syntacticians also recognize that inconsistencies between a theory and some judgments can be explained away by assuming that for various reasons the judgments are erroneous; these discounted judgments are often called "performance errors." For instance, one might fail to notice one of the readings of a genuinely ambiguous sentence or one might find a grammatical construction (for example, a garden-path sentence) unacceptable because one fails to parse it in the right way.

Until the 1990s, linguists studying a particular syntactic phenomenon typically relied on their own intuitions and on the intuitions of other linguists. For instance, in *The Logical Structure of Linguistic Theory*, Chomsky argues that in English the position of verb particles is determined not by the length of the sentential constituents, but by their complexity. He writes (1975: 477):

> While . . . both "the detective brought in the suspect" and "the detective brought the suspect in" are grammatical, in general the separability of the preposition is determined by the complexity of the NP object. Thus we could scarcely have "the detective brought the man who was accused of having stolen the automobile in." It is interesting to note that it is apparently not the length in words of the object that determines the naturalness of the transformation, but, rather, in some sense, its complexity. Thus "they brought all the leaders of the riot in" seems more natural than "they brought the man I saw in." The latter, though shorter, is more complex.

For present purposes, the important point is that Chomsky supports his hypothesis by appealing to his own intuitions, assuming that these are representative of the intuitions of lay competent speakers of English. (For empirical evidence that this assumption is not entirely correct, see Wasow & Arnold 2005).

In recent years, this feature of the methodology of generative linguistics has been extensively criticized. Schütze, in his landmark study of the methods of generative linguistics, *The Empirical Base of Linguistics* (1996), made a powerful case that relying on syntacticians' intuitions is methodologically inappropriate. Although eliciting the intuitions of ordinary competent speakers can be fraught with difficulties (e.g., Schütze 2005; Fanselow 2007), experimental work on linguists' and ordinary competent speakers' intuitions has not shown that the former are more reliable than the latter, provided that ordinary speakers understand the nature of the task (Schütze 1996; Culbertson & Gross 2009). Thus, syntacticians' reliance on their own intuitions and those of their colleagues cannot be justified on the grounds that their expertise make these intuitions more reliable. At best, this long-standing feature of their methodology could be justified on pragmatic grounds since it is easier for syntacticians to consult their own and their colleagues' intuitions than to survey the intuitions of ordinary competent speakers. This would be entirely reasonable if syntactians' reliance on

their own and on their colleagues' intuitions did not have important drawbacks. But that is not the case. First, and most obviously, syntacticians' theoretical commitments risk influencing their intuitions, undermining the evidential role of these intuitions. Several examples discussed by Schütze show that this worry is not merely speculative (see also Labov 1975). Lasnik and Saito (1984) assert that sentences such as "Why do you think that he left?" are ambiguous; Aoun et al. (1987) claim that they are not. Unsurprisingly, the ambiguity of this type of sentence follows from Lasnik and Saito's theory, but not from Aoun et al.'s theory! Second, and equally important, syntacticians' appeal to their own and to their colleagues' intuitions can blind them to the dialectical variation within a given language and biases their understanding of the variation in syntactic properties. Thus, for example, some linguists (for example, Chomsky 1976) have held that the contraction "wanna" is unacceptable in sentences such as (1) because "who" leaves an unpronounced trace after "want" when it is fronted from its position in (2):

(1) Who did you wanna meet your parents?
(2) You wanted who to meet your parents?

However, some ordinary speakers find sentences such as (1) perfectly acceptable, suggesting that in this respect the grammar of English may vary across individuals (Labov 1996; Wasow & Arnold 2005; but see Phillips 2009 for discussion). Worse, syntactians' intuitions might be entirely unrepresentative of the language they speak. For instance, a number of claims made about idioms have been shown to be inaccurate (Nunberg et al. 1994; Riehemann 2001; for a review of the intricate debate about the "wanna" contraction, see Goodall 2006; see Featherston 2007 and Riemer 2009 for other examples). Though Jackendoff (1997) claimed that the idiom "raise hell" is syntactically inflexible and cannot be turned into a passive construction, Riehemann (2001) showed that passive versions of "raise hell" are actually often used (discussed in Wasow and Arnold 2005: 1487–8). Finally, Wasow and Arnold (2005: 1485–6; see also Sampson 2005) suggest that syntacticians' reliance on their own and their colleagues' intuitions prevents them from paying attention to easily available counterevidence, perhaps because of a confirmation bias of some sort.

Linguists and philosophers have not only criticized syntacticians' reliance on their own and their colleagues' intuitions, they also have put forward an alternative methodology: the careful survey of the intuitions of ordinary competent speakers (Bard et al. 1996; Schütze 1996; Cowart 1997; Marantz 2005; Sorace & Keller 2005; Featherson 2007). Such intuitions are not contaminated by linguistic theories. By surveying them linguistics avoid relying on intuitions which may be unrepresentative and they are more likely to detect dialectical variation within a linguistic community. Furthermore, as even critics of this alternative methodology have acknowledged (Phillips 2009), surveying a large number of ordinary speakers has a number of methodological advantages (for discussion of some of these, see Featherston 2007; Myers 2009). For instance, aggregating a large number of acceptability ratings is likely to be the only reliable way to identify subtle differences in acceptability (Bard et al. 1996; Sorace & Keller 2005; Sprouse 2007).

For these and other reasons, Schütze issues the following recommendation (1996: 212):

Linguistics has much to gain and nothing to lose by taking data collection, and particularly judgment collection, much more seriously, both with regard to the insights that will be gained and the theoretical issues that will be clarified, and with regard to the standing of the field as a scientific endeavor in the larger academic setting. The realization seems to be growing that the psychology of grammaticality judgments can no longer be ignored.

This methodological recommendation has been positively received among generative syntacticians, who rely increasingly on experimental surveys of people's intuitions (Schütze 2005; Myers 2009). Semanticists also have started using experimental methods (Schütze 2005; for an example, see Pietroski et al. 2009), while the field of experimental pragmatics is burgeoning (Noveck & Reboul 2008).

   Work on Picture Noun Phrases (PNPs) provides a good illustration (Keller & Asudeh 2001; see also Featherson (2005) and Haider (2007) on *that*-traces in German). While binding theory originally predicted that anaphors can be bound when pronouns can't, and vice versa (Chomsky 1981), PNPs such as (3) and (4) appear to show that this is not the case:

   (3)  Hanna$_i$ found a picture of her$_i$.
   (4)  Hanna$_i$ found a picture of herself$_i$.

To deal with this type of PNP, various modifications of binding theory have been proposed, including the hypothesis that coreference in some constructions (particularly, some PNPs) is governed by pragmatic considerations rather than by syntactic or structural features. Attempting to decide between the proposed hypotheses, Keller and Asudeh (2001) found that the acceptability judgments made by lay speakers of English were at odds with *all* the approaches to coreference in PNPs. Contrary to the contention of pragmatic theories, coreference in PNPs turns out to be influenced by structural features, but in an entirely unexpected manner. Keller and Asudeh conclude (2001: 488) that "contrary to all that has been written in the syntactic literature, anaphors can be bound by the subject even in PNPs with possessors."

### 1.2  Moral for Philosophers of Language

The similarities between the typical methods in the philosophy of language and in generative linguistics are striking. In both fields, intuitions are an important source of evidence, and philosophers overwhelmingly rely on their own intuitions and those of their colleagues much as generative syntacticians did until the 1990s. We believe that the three reasons we have discussed that have led a growing number of syntactians to replace reliance on their own and their colleagues' intuitions with carefully designed experimental surveys of the intuitions of ordinary competent speakers carry over to the philosophy of language straightforwardly.

   (1)  Despite pronouncements about the superiority of the intuitions of philosophers of language over those of ordinary people (Ludwig 2007; Devitt 2011), there is in fact no empirical evidence supporting this claim.
   (2)  Philosophers' theoretical commitments risk influencing their intuitions.
   (3)  Philosophers' reliance on their own intuitions risk blinding them to the

diversity of the relevant intuitions (see next section for some robust evidence supporting this claim) or to the fact that their own intuitions are unrepresentative.

(Stich 2010)

Thus there is a strong case to be made for philosophers of language to follow the lead of generative syntacticians and to replace the appeal to their own and their colleagues' intuitions with systematic empirical studies of ordinary speakers' intuitions. In the next section, we review some work that has done just that.

## 2 Empirical Research in the Philosophy of Language

In this section, we review the burgeoning experimental work in the philosophy of language. We believe that this work vindicates our concerns about traditionalists' methods in the philosophy of language, and illustrates the need for an experimental turn in this field too.

### 2.1 Cross-Cultural Variation in Intuitions about Reference

As noted in Section 1, syntacticians are replacing the reliance on their own and on their colleagues' intuitions with systematic surveys of the intuitions of competent speakers in part on the grounds that, by relying on the intuitions of a small segment of humanity, they might be led to ignore the diversity of people's intuitions and what that diversity reveals about the language they speak. As we now show, much the same concern applies to the philosophy of language.

Philosophers of language have long been interested in explaining how words (proper names, natural kind terms, etc.) refer, and existing theories of reference can be usefully classified into two distinct types: descriptivist theories and causal-historical theories. Focusing on proper names, descriptivist theories propose that a name refers to whatever individual best satisfies the description competent speakers associate with this name (Searle 1958; Jackson 1998). Causal-historical theories propose that a proper name refers to the individual the proper name was introduced to refer to, provided that there is an appropriate causal chain connecting the introduction of the term with current users of the term. This is the case, causal-historical theories maintain, whether or not the individual satisfies the description competent speakers associate with the name (Kripke 1972/1980; Devitt 1981).

To decide between competing theories of reference, philosophers of language have relied on what Machery et al.(2004) have called the method of cases (for discussion, see Deutsch 2010 and Devitt 2011). The method of cases appeals to the fact that people—philosophers, linguists, and ordinary speakers alike—appear to have intuitions about what words refer to in actual and possible situations. Appealing to these intuitions, the method of cases proposes that the correct theory of reference for words of type T is the one which is best supported by competent speakers' intuitions about the reference of words of type T in actual and possible situations.

To see more concretely how the method of cases works, we briefly review one of Kripke's most widely discussed cases. In this case ("the Gödel case"), a name is widely associated with a description that is false of the original bearer of that name, $a$, but true of some other person, $b$. Because descriptivist theories of reference hold that a name

refers to the individual that best satisfies the description competent speakers associate with it, descriptivist theories entail that the name in Kripke's example refers to *b*, the satisfier of the description. But, Kripke maintains, this is just wrong.

> Suppose that Gödel was not in fact the author of [Gödel's] theorem. A man called "Schmidt," whose body was found in Vienna under mysterious circumstances many years ago, actually did the work in question. His friend Gödel somehow got hold of the manuscript and it was thereafter attributed to Gödel.

Now Kripke asks us to consider an "ordinary man" who is well educated in mathematics and can give an account of the incompleteness theorem. But, like many other people, practically the only thing he has heard about Gödel is that he discovered the incompleteness of arithmetic.

> On the [descriptivist] view . . . when our ordinary man uses the name "Gödel," he really means to refer to Schmidt, because Schmidt is the unique person satisfying the description "the man who discovered the incompleteness of arithmetic." . . . But it seems we are not. We simply are not.
> (Kripke 1972/1980: 83–4)

In contrast, causal-historical theories of reference are consistent with the intuition that "Gödel" continues to refer to its original bearer, *a*, because *a* is the person causally-historically linked with contemporary uses of the name. It is clear that most philosophers share Kripke's intuition about this case (and other cases), and even contemporary descriptivists acknowledge that these intuitions have falsified traditional forms of descriptivism (Evans 1973; Jackson 1998).

But how widely shared are these intuitions by competent speakers who are not professional philosophers? On the basis of Nisbett and colleagues' findings about the variation of cognitive styles across cultures (Nisbett 2003), Machery and colleagues (2004) hypothesized that the intuition elicited by the Gödel case might differ between Eastern and Western cultures. To test this hypothesis, they constructed two vignettes, "the Gödel vignette" and "the Tsu Ch'ung Chih vignette." The Gödel vignette closely followed Kripke's own wording of the case:

> Suppose that John has learned in college that Gödel is the man who proved an important mathematical theorem, called the incompleteness of arithmetic. John is quite good at mathematics and he can give an accurate statement of the incompleteness theorem, which he attributes to Gödel as the discoverer. But this is the only thing that he has heard about Gödel. Now suppose that Gödel was not the author of this theorem. A man called "Schmidt," whose body was found in Vienna under mysterious circumstances many years ago, actually did the work in question. His friend Gödel somehow got hold of the manuscript and claimed credit for the work, which was thereafter attributed to Gödel. Thus, he has been known as the man who proved the incompleteness of arithmetic. Most people who have heard the name "Gödel" are like John; the claim that Gödel discovered the incompleteness theorem is the only thing they have ever heard about Gödel. When John uses the name "Gödel," is he talking about:

(A) the person who really discovered the incompleteness of arithmetic? or

(B) the person who got hold of the manuscript and claimed credit for the work?

The Tsu Ch'ung Chih vignette had the same structure, but it used names of Chinese individuals (Machery et al., 2004: B9–10). Participants were undergraduates at Rutgers (U.S.A.) and at the University of Hong-Kong, an English-speaking university (for more detail, see Machery et al. 2004).

As Machery and colleagues had predicted, Chinese participants were significantly more likely than American participants to have descriptivist intuitions—that is, intuitions in line with what descriptivist theories of reference say the relevant proper names refer to (see Figure 4.1.1). In fact, most Chinese turned out to have descriptivist intuitions, while most Americans turned out to have causal-historical intuitions—intuitions in line with what causal-historical theories of reference say the relevant proper names refer to. Machery and colleagues also found a surprising amount of within-culture variation. For instance, while a majority of American participants had causal-historical intuitions, about 40 percent had descriptivist intuitions. Machery et al. (forthcoming) have replicated these findings, while Machery et al. (2010) have shown that Chinese participants have similar intuitions when the vignette is written in English and when it is written in Cantonese.

## 2.2 Intuitions about Truth-Value

Following Kripke's own wording of the Gödel case and the standard practice among philosophers working on reference (for example., Evans 1973), Machery et al. (2004) examined people's intuitions about the reference of a proper name—namely intuitions expressed by sentences such as "When $x$ uses the name $y$, he is talking about . . ." or "$y$ refers to . . .". Other intuitions, such as intuitions about the truth-value of sentences containing names, are also relevant for theories of reference (for discussion, see, for
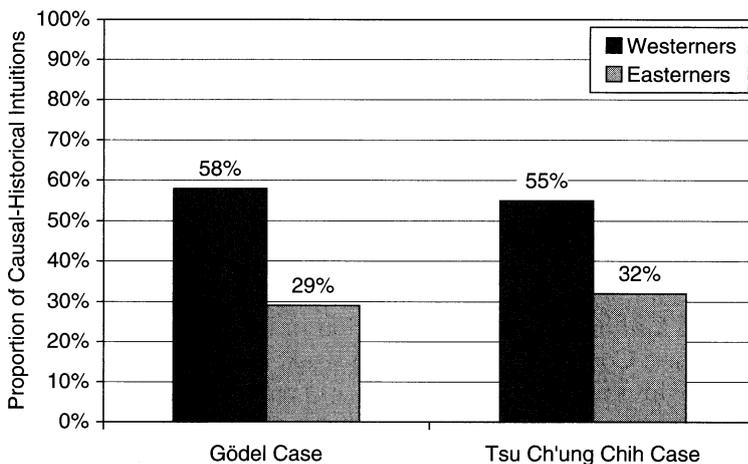


Figure 4.1.1 Results from Machery et al. (2004)

example, Martí 2009 and Machery 2011). Machery et al. (2009) examined whether intuitions about the truth-value of sentences containing names and intuitions about the reference of these names diverge or, rather, whether they are congruent. They presented participants from three countries (Mongolia, India, France) with one of the following two vignettes, and Machery and Olivola have recently done the same thing with American participants (unpublished data):

> Ivy is a high school student in Hong Kong. In her astronomy class, she was taught that Tsu Ch'ung Chih was the man who first determined the precise time of the summer and winter solstices. But, like all her classmates, this is the only thing she has heard about Tsu Ch'ung Chih. Now suppose that Tsu Ch'ung Chih did not really make this discovery. He stole it from an astronomer who died soon after making the discovery. But the theft remained entirely undetected and Tsu Ch'ung Chih became famous for the discovery of the precise times of the solstices. Everybody is like Ivy in this respect; the claim that Tsu Ch'ung Chih determined the solstice times is the only thing people have heard about him. Having read the above story and accepting that it is true, when Ivy says, "Tsu Ch'ung Chih was a great astronomer," do you think that her claim is: (A) true or (B) false?

The second vignette was identical except for the question, which was:

> Having read the above story and accepting that it is true, when Ivy uses the name "Tsu Ch'ung Chih," who do you think she is actually talking about:
>
> (A) the person who (unbeknownst to Ivy) really determined the solstice times?
>
> or
>
> (B) the person who is widely believed to have discovered the solstice times, but actually stole this discovery and claimed credit for it?

Both vignettes are inspired by Kripke's Gödel case, and they are similar to the Tsu Ch'ung Chih vignette used in Machery et al. (2004).

Two findings emerge from this study (see Figure 4.1.2). First, in four different countries, which vary tremendously in terms of culture, the proportion of causal-historical intuitions is similar when participants are asked about the truth-value of a sentence containing a proper name or about the reference of this name, suggesting that people's intuitions about the truth-value of sentences containing proper names track their intuitions about the reference of proper names. When someone judges that a proper name $x$ refers to a particular individual $y$ in a fictional case, her intuition about the truth of a sentence containing $x$ in this case seems to depend on what is said about $y$. Second, the study found further cross-cultural variation in the intuitions that are relevant for studying reference. Consistent with previous work, Americans are more likely to have causal-historical intuitions about the reference of proper names than people from Mongolia, India, and France when asked about what a proper name refers to, and they were more likely than French people to have causal-historical intuitions when asked about the truth-value of a sentence containing proper names.
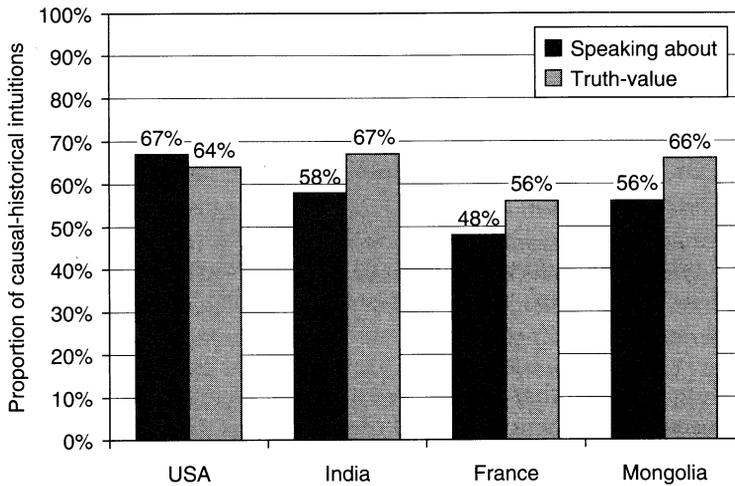
*Figure 4.1.2* Results from Machery et al. (2009)

## 2.3 Externalist Intuitions

Empirical work on intuitions relevant to the philosophy of language is not restricted to intuitions about proper names. Jylkkä et al. (2009) have examined whether lay speakers have externalist intuitions (see also Genone and Lombrozo forthcoming; for relevant work in psychology, see Braisby et al.1996; Hampton et al. 2007). Externalism about natural kind terms is, roughly, the view that the reference of natural kind terms (for example, "gold" and "cat") is determined by facts about substances and kinds about which speakers might have no knowledge (such as the essence of chemical kinds), while internalism is, roughly, the view that the reference of natural kind terms is determined by the descriptions speakers associate with these terms (Putnam 1975; for review, see Wikforss 2008). Furthermore, some externalists hold that externalism is true in virtue of the way competent speakers use natural kind terms: A natural kind term $t$ refers in an externalist manner if and only if competent speakers intend $t$ to refer to a class of entities that share some fundamental properties that may be unknown to the speakers (for example, a particular genetic structure for the entities in the extension of "cat").

To examine whether people have externalist or internalist intuitions, Finnish participants were presented with vignettes like the following:

A yellowish, bitter-smelling, fragile mineral called zircaum occurs widely in Mid-Siberian soil. Scientists generally believe that zircaum is the compound ACB. In Northern Norway, a deposit of a substance just like zircaum is found— it is yellowish, bitter-smelling, fragile, etc. When scientists examine its deep structure, they conclude that it is ACB, just like zircaum is believed to be.

At this point, participants were asked whether the novel substance is zircaum on a 7-point scale (question 1). Then, participants were presented with the following passage:

A few weeks after the discovery in Northern Norway, scientists examine the Mid-Siberian substance more closely. Using methods and instruments more

exact than previously available, they find out that they were wrong about the deep structure of the substance: the substance is KML instead of ACB. However, the substance found in Northern Norway was indeed ACB, just as the scientists thought it was.

Participants were then asked whether they considered their earlier judgment justified (question 2) and correct (question 3):

> When in the earlier situation you judged that 'the substance found in Northern Norway is/is not zircaum', was your answer a) justified b) strictly speaking correct?

Jylkkä and colleagues found that on average Finnish participants harbored externalist intuitions (a second experiment replicated these findings). Concerning question 1, when a novel substance had the chemical structure of a known element (for example, zircaum), participants tended to judge that it was a sample of this element, while when the novel substance did not have the chemical structure of a known element, they tended to judge that it was not a sample of this element (*mutatis mutandis* for species). Concerning question 3, two thirds of participants said that their answer to question 1 was mistaken after having been told that the beliefs about the constitution of the known substance (for example, zircaum in the story above) were mistaken. Thus, most Finnish participants reported externalist intuitions. However, consistent with our hypothesis that philosophers of language might be led to ignore the variation in intuitions when they appeal only to their own intuitions, Jylkkä and colleagues also found that intuitions about natural kind terms vary substantially among Finnish people. Indeed, Jylkkä and colleagues also report that people were rarely consistently externalist or internalist.

## 2.4 Conclusion

The findings reviewed in Section 2 provide support for our claim that philosophers of language would be wise to emulate the experimental turn in generative linguistics since some of the intuitions that are of most interest to philosophers of language appear indeed to vary across and within cultures. Philosophers of language exclusive reliance on their own and their colleagues' intuitions obscures much of this variation and makes it more likely that they will develop and embrace philosophical theories that are unable to account for the variation of these intuitions across and within cultures.

## 3 Responding to Some Criticisms of Recent Empirical Research in the Philosophy of Language

In the remainder of this chapter, we focus on the most developed body of experimental evidence bearing on the philosophy of language—namely the cross-cultural research on intuitions about the reference of proper names. The findings reviewed above have been criticized on various grounds (Ludwig 2007; Martí 2009; Deutsch 2009, 2010; Jackman 2009; Lam 2010; Devitt 2011; Sytsma & Livengood 2011 Ichikawa et al., forthcoming). We will focus on the most frequently raised criticism (Ludwig 2007; Deutsch 2009). Because the question participants were asked in Machery et al. (2004) failed to distinguish between speaker's reference and semantic reference, the critics argue, it is unclear

whether the cross-cultural data bear on theories of reference and should be of interest to philosophers of language. In this section, we first spell out the objection in greater detail, and then offer two distinct replies.

## 3.1 Speaker's Reference and Semantic Reference

The vignettes used in Machery et al. (2004) and in several other articles ask participants whom a speaker is talking about when he uses a proper name ("Gödel" or "Tsu Ch'ung Chih"). Ludwig (2007) and Deutsch (2009) have complained that this question is ambiguous since it could be interpreted as asking either (i) What is the speaker's reference of a given token of "Gödel"? or (ii) What is the semantic reference of "Gödel"? The semantic reference of a proper name is the reference it has in virtue of the conventional rules of the natural language this name belongs to (Kripke 1977). Thus, "Barack Hussein Obama" refers to Barack Obama in virtue of the rules of English. But in some contexts a speaker may use a given proper name to refer to an individual who is not the semantic reference of this name. For instance, suppose that in 2006 John sees on TV an individual in Baghdad who looks like Dick Cheney and that John says, "Cheney is wearing a nice suit." In reality, Cheney, who is hiding in his ultra-secret bunker, has sent a look-alike to Baghdad. Because John intends to refer to the individual he sees on TV, the speaker's reference of his utterance of "Cheney" is the look-alike in Baghdad, even though the semantic reference of "Cheney" is the former vice-president. Furthermore, Ludwig and Deutsch hold that only intuitions about semantic reference are relevant in determining how the reference of proper names is fixed. While philosophers of language are likely to understand that the question in the Gödel vignette is meant to bear only on semantic reference, lay competent speakers might not be aware of the distinction between these two ways of referring or, if they are aware of this distinction, they might not realize that the question is meant to elicit intuitions about semantic reference. It is thus unclear whether their answers express a judgment about the semantic reference of "Gödel" or "Tsu Ch'ung Chih" in the vignettes used in past research. Deutsch and Ludwig conclude that the experiments conducted by Machery and colleagues fail to provide any evidence that the relevant intuitions about reference vary across cultures.

## 3.2 Is This A Plausible Objection?

Let's begin with a few uncontroversial points. It makes sense to ask about speaker's reference only for the occurrences of a proper name, and not for a proper name *qua* type. In addition, to identify the speaker's reference of the occurrence of a proper name, one needs to know the communicative intention of the speaker. Thus, in the example given above, we can determine that the speaker's reference of "Cheney" is the look-alike in Baghdad because the cover story and the sentence in which the proper name "Cheney" is embedded provide enough information about John's communicative intention: He intends to talk about the suit of the individual he is seeing on TV. If no information were presented—for instance, if we were just asked who "Cheney" refers to when John uses it—we would focus on the semantic reference of "Cheney" because the question would seem to bear on the reference of this proper name *qua* type and because no contextual information would be provided that would allow us to identify the speaker's communicative intention.

Now consider the Gödel **vignette** in Machery et al. (2004). At the end of the vignette, participants are asked who **John** is talking about "when he uses the name 'Gödel'." Since no specific utterance is mentioned and no contextual information is provided that would enable participants to determine John's communicative intention, it is hard to see how participants could understand the question to be about the speaker's reference of John's utterance of "Gödel." Rather, we submit, on the only plausible interpretation of the question, it is asking about the reference of "Gödel" *qua* type—that is, it is asking about the semantic reference of the term in John's language. If this is right, then, *pace* Ludwig and Deutsch, the question in the probes is *not* ambiguous.

### 3.3 *Some Preliminary Empirical Evidence*

Though we doubt that the question posed to participants in the Machery et al. (2004) study is ambiguous, others may not be convinced. This motivated Machery et al. (forthcoming) to design a further study in which they attempt to eliminate the ambiguity between speaker's reference and semantic reference in various ways. Their findings tentatively confirm that Chinese tend to have genuine descriptivist intuitions about the reference of proper names, while Americans tend to have causal-historical intuitions. Here we report only one of their manipulations.

Suppose that Americans and Chinese alike tend to have causal-historical intuitions about the reference of proper names. Suppose also that the minority of American participants and the majority of Chinese participants in Machery et al. (2004) who answered that John is talking about the man who discovered the incompleteness of arithmetic when he uses "Gödel" did so because they reported an intuition about whom John intends to be talking about. That is, their answer expressed an intuition about speaker's reference, not semantic reference. Then, if Chinese and American participants were given a version of the Gödel case in which John has the intention to refer to the man who stole the theorem, a very large majority of participants should say that John is talking about the man who stole the theorem: Participants whose answer expresses an intuition about semantic reference should answer that John is talking about the theorem stealer since by hypothesis they have causal-historical intuitions, while participants whose answer expresses an intuition about speaker's reference should also answer that John is talking about the theorem stealer because in the vignette John has the intention to talk about the theorem stealer.

To test this prediction, Deutsch and colleagues designed a vignette that began with the original Gödel story, and then continued,

> One night, John is sitting in his room, revising for his mathematics exam by going over the proof of the incompleteness theorem. After a while, he says to his roommate, "Gödel probably got a huge number of awards from mathematical societies!"
> When John utters that sentence, he is talking about:
>
> **(A)** the person who got hold of the manuscript and claimed credit for the work.
> **(B)** the person who really discovered the incompleteness of arithmetic.

In this vignette, it is clear that John intends to talk about the man who in fact stole the theorem. Naturally, John does not intend to talk about the man who stole the

theorem under the description "the man who stole the theorem," but it remains true that he intends to talk about this individual since, given that the discoverer of the proof died right after having discovered the proof, only the theorem stealer is likely to have won numerous awards from mathematical societies. So, proponents of the speaker's reference / semantic reference objection should expect a very large majority of participants to answer A. However, Deutsch and colleagues found that, when presented with this vignette, about 75 percent of American participants but only 50 percent of Chinese participants, answered that the speaker is talking about the man who stole the theorem. Because 50 percent of Chinese participants and 25 percent of American participants answered B, one can conclude that it is not the case that everybody has causal-historical intuitions about the semantic reference of proper names and that Americans or Chinese who give answers in line with descriptivist theories of reference are not merely reporting their intuitions about speaker's reference. At the very least, these findings show that genuine intuitions about semantic reference vary among Americans and among Chinese. Furthermore, they undermine the criticisms of the cross-cultural work on intuitions that appeal to the distinction between speaker's and semantic reference to defend the idea that across cultures people tend to have causal-historical intuitions.

We conclude, first, that the findings concerning the intuitions about the reference of proper names cannot be explained away by appealing to the distinction between speaker's reference and semantic reference. Second, and most important for our purposes in this chapter, far from undermining our call for an experimental turn in the philosophy of language, this objection can best be evaluated experimentally: it calls for more and more subtle experiments.

## 4 Implications of the Experimental Turn

In this final section, we examine the implications the experimental turn might have for the philosophy of language. For the sake of simplicity, we focus on the implications of the findings about variation in intuitions about the reference of proper names, and we argue that philosophers of language face a dilemma: If they acknowledge that ordinary speakers have genuine intuitions about semantic reference that are typically reliable, then in light of the findings discussed in the two previous sections, they need to revise their theories of reference dramatically. However, if they deny that ordinary speakers have such intuitions and reject our call for an experimental turn in the philosophy of language, they then open the door to a challenge about the reality of semantic reference. We further hypothesize that an experimental turn in the philosophy of language will have equally significant implications for other philosophical issues.

Do ordinary speakers of (say) English have genuine intuitions about semantic reference? That is, are they able to identify the semantic reference of proper names in actual and hypothetical situations without confusing it with the speaker's reference of these names in these situations?

Suppose, first, that ordinary speakers of English do have genuine intuitions about semantic reference that are usually reliable. We have reviewed a growing body of experimental evidence that hypothetical situations elicit different answers both within and across cultures, and we have argued that participants' answers in these experiments do reflect their intuitions about semantic reference. This suggests that the reference

of proper names might be determined differently for different competent speakers of a given language (English in the current case) and that descriptivist reference determination might be more common in some cultures than in others. If this is correct, theories of reference should then be modified to account for such variation in reference determination. Reimer (2009) is a pioneering example of a theory of the reference of proper names that is responsive to the variation in intuitions about the reference of proper names—both within and across cultures—illustrated in Sections 2 and 3.

Suppose however that philosophers of language dismiss the arguments presented in Section 3 and maintain that lay people do not have intuitions about semantic reference, perhaps because they do not distinguish between speaker's reference and semantic reference. In this case, ordinary speakers' intuitions can't be used to decide among competing theories of reference proposed by philosophers of language, and surveying them would be a waste of time. But if this is the case, philosophers of language need to clarify the grounds for positing that proper names actually have a semantic reference in addition to the reference that occurrences of names have as a result of speakers' communicative intentions, much as scientists do when they introduce a theoretical distinction between two kinds of properties (for example, *mass* and *weight*). Philosophers of language must tell us what phenomena are best explained by postulating that proper names refer in virtue of the rules of the language they belong to.

We suspect that many philosophers of language would reply that philosophers of language's own intuitions justify positing this distinction: by virtue of their acquired expertise, they might reply, philosophers of language have acquired new intuitions about the reference of proper names, and these intuitions suggest that proper names can have two distinct kinds of reference, speaker's reference and semantic reference (Ludwig 2007; Devitt 2011). Philosophers of language might go on to note that experts (e.g., radiologists) typically acquire new, reliable intuitions by virtue of their acquired expertise (Devitt 2006; Devitt 2011).

We are prepared to concede that many philosophers of language probably do have intuitions consistent with a distinction between speaker's reference and semantic reference. However, for three distinct reasons, we doubt that if ordinary competent speakers do not have genuine intuitions about semantic reference, philosophers' intuitions can justify the hypothesis that proper names have a semantic reference in addition to the reference their occurrences have as a result of speakers' communicative intentions. First, this appeal to the intuitions of experts stands in stark contrast to the growing skepticism in generative linguistics about intuitions that are shared only by linguists. It is curious to see philosophers embrace a methodology (relying on theoreticians' intuitions while discarding lay speakers' intuitions) that linguists are now increasingly questioning. Second, in many fields, experts' intuitions (for example, radiologists' judgments about x-rays) can be validated by objective criteria, and our confidence in the reliability of their intuitions largely depends on such validation (for review, see Weinberg et al. 2010). Since it is (to put it mildly) less than clear what could validate the intuitions of philosophers of language about the reference of proper names, one wonders why these intuitions should be trusted. Third, the broader the consensus among experts, the more credible their intuitions. In this respect, philosophers' intuitions about reference are also on shaky grounds. Some influential linguists and philosophers of language have denied that names *have* a semantic reference, and it is hardly likely that these experts share the intuitions that support postulating that proper names have a semantic reference in addition to speaker's reference (for example, Strawson 1950; Chomsky 1995, 2000; Pietroski 2003). It is

particularly notable that skepticism about referential semantics has long been a key theme in Chomsky's work. In *New Horizons in the Study of Language* he writes (2000: 17):

> In general, a word, even of the simplest kind, does not pick out an entity of the world, or of our "belief space". Conventional assumptions about these matters seem to me very dubious.

Further on in the book Chomsky elaborates on his skepticism:

> A good part of contemporary philosophy of language is concerned with analyzing alleged relations between expressions and things, often exploring intuitions about the technical notions "denote," "refer," "true of," etc. said to hold between expressions and something else. But 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. . . . If we rerun the thought experiments with ordinary terms, judgments seem to collapse or, rather, to become so interest-relative as to yield no meaningful results. . . . [I]t is not at all clear that the theory of natural language and its use involves relations of "denotation," "true of," etc. in anything like the sense of the technical theory of meaning.
> (Chomsky 2000: 130)

Thus, not only is the reliance of philosophers of language on their own intuitions a departure from the methodological developments in linguistics, there is also little reason to trust philosophers' intuitions since they are not externally validated and they are unlikely to be shared by some of the most prominent linguists.

To recap, if philosophers of language dismiss the type of cross-cultural studies surveyed earlier on the grounds that ordinary speakers don't have genuine intuitions about semantic reference, it is then unclear how they can justify positing the distinction between speaker's reference and semantic reference. But then why should we believe that names in English (and, *mutatis mutandis*, other kinds of words) have a reference in virtue of the rules of English, in addition to the reference their occurrences have as a result of speakers' communicative intentions? On grounds of parsimony, it would seem that one should follow Chomsky's lead and construct our theory of natural language without invoking semantic reference.

Thus, philosophers of language are faced with a dilemma. If they acknowledge that ordinary speakers have intuitions about semantic reference, then theories of reference need to be substantially modified to accommodate the variation in reference determination, as Reimer (2009) has proposed to do. If they deny that ordinary speakers have intuitions about semantic reference, then since philosophers' intuitions do not seem sufficient to justify the assumption that proper names have a semantic reference, it becomes unclear why we should hold that names, instead of people, refer.

## Conclusion

It is time for philosophers of language to emulate linguists in taking an experimental turn. The objections against linguists' appeal to their own intuitions carry over to

the methods currently dominant in the philosophy of language, and the burgeoning research in experimental philosophy has made the limits of these methods increasingly clear. Philosophers of language who cling to traditional methods are depriving themselves of a rich source of evidence about how language actually works.

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