

Linguistics, Psychology, and the Ontology of Language

Noam Chomsky's well-known claim that linguistics is a "branch of cognitive psychology" (Chomsky 1972, 1) has generated a great deal of dissent, not from linguists or psychologists, but from philosophers. Jerrold Katz, Scott Soames, Michael Devitt and Kim Sterelny have offered a number of arguments, all intended to show that this Chomskian claim is incorrect. In the view of these philosophical critics of Chomsky, there is a significant break between the disciplines of linguistics and psychology.

On both sides of this debate, two distinct issues tend to be treated as equivalent: the issue of whether linguistics is a subfield of psychology and the issue of the ontological status of language. Chomsky's philosophical critics have provided several arguments in support of the idea that the objects in the domain of linguistics—what linguistics studies—are not within the domain of psychology. If these arguments are sound, Chomsky is incorrect to think that the only object of study in linguistics is the I-language, which is "some element of the mind of the person who knows the language" (Chomsky 1986, 22). What both Chomsky and his philosophical critics suggest is that the issue of whether or not linguistics is a subfield of psychology, and the issue of whether or not the only object of study in linguistics is the I-language are one and the same issue.

Two options are open to the theorist who denies theory that holds that the only existent language is the I-language: linguistic nominalism or linguistic platonism¹. The

¹ These characterizations of the positions on the ontology of language are due to Katz (Katz 1981). There are two difficulties with using these terms: (1) They suggest that linguistics is analogous to mathematics, which begs the question in favor of Katz's position, on which linguistics is a formal science, and (2) There is only superficial similarity between Chomsky's position on psychological reality of language and the

former position holds that syntactic, semantic, and phonological properties are properties, not of mental representations, but rather of public language sentence tokens. The latter position holds that linguistic properties are properties of public language sentence types. I will argue that both of these positions are, *pace* Chomsky and his critics, compatible with Chomsky's claim that linguistics is a branch of psychology, and the arguments that have been given for nominalism and platonism do not establish that linguistics and psychology are distinct disciplines. I will contend that even if the Chomskian position on the ontology of language is false, linguistics may still be a subfield of psychology if relevant methods in linguistic theory construction are psychological. It is not my purpose here to argue in favor of any one of these positions on the ontological status of language, but rather to argue that the ontological status of language is besides the point of the issue of the relation between linguistics and psychology.

I will be distinguishing two separate ways of understanding the how to settle whether or not linguistics is a subfield of psychology. The first way, the *ontological thesis*, is the thesis that linguistics is a subfield of psychology if and only if the domain of linguistic objects is contained within the domain of psychological objects. The *methodological thesis* is the thesis that linguistics is a subfield of psychology if and only if psychological methods and evidence do play and ought to play a central role within the development of linguistic theories. It is the latter thesis that I contend is the relevant thesis to consider in determining whether or not linguistics is a subfield of psychology.

picture of mathematical objects produced by intuition one finds in the works of mathematical conceptualists such as Brouwer.

The Conceptualist Ontology of Linguistics: Chomsky

The source of the ontological thesis can be found in the writings of Noam Chomsky. Chomsky makes a distinction between the I-language, the part of the brain of the competent speaker responsible for knowledge of language, and the E-language, an “externalized language’ ...understood independently of the properties of the mind/brain” (Chomsky 1986, 20). This notion of mind-independence is difficult to fully understand in this context, and it seems to leave out certain plausible candidates for what might be thought of as an E-language. It is difficult even to conceive the existence of language, “independently of the properties of the mind-brain.” Does this amount to thinking of what languages would be like in worlds without minds? Philosophical critics of Chomsky have struggled in light of this to clarify Chomsky’s own somewhat murky claims about the E-language. Michael Devitt has claimed that the E-language is “essentially Platonic” (Devitt 2006, 26). This could not be correct, given that Chomsky’s paradigmatic example of a theory that is cast in terms of an E-language is Bloomfieldian linguistic nominalism. Another indication that Chomsky does not think E-languages are essentially Platonic is his coining of a separate term intended to cover Platonic languages, “P-languages” (Chomsky 1986, 33). If the issue of the relation between linguistics and psychology really is an issue over the E-language, a generally accepted definition of this notion is required.

The term E-language is unfortunately defined only in a fairly broad fashion by Chomsky, intended to cover a variety of different notions of language that he rejects. “We can define ‘E-language’ in one way or another or not at all, since the concept appears to play no role in the theory of language” (Chomsky 1986, 26). This

characterization—or lack thereof—of “E-language” is on the face of it not very helpful. However, it suggests that the best way of approaching this notion of E-language is to define E-language as any linguistic object that is not part of the “I-language”—any notion of language outside of what is “in the mind/brain.” Chomsky has written that “there is nothing in the world selected by such terms as ‘Chinese’ and ‘German’” (Chomsky 2000, 155). This is a claim linguistic nominalists and linguistic platonists would likely reject: each can accept the existence of languages, either as collections of concrete objects or collections of abstract objects. On this understanding of the E-language, both the linguistic nominalist and the Platonist are committed to a view on which the E-language does exist.

Chomsky writes as, as I have noted above, if the relevant issue in this debate is the ontological issue: the question is whether or not the E-language actually exists. The reason Chomsky denies the reality of the E-language is that such a notion is purportedly unnecessary in a well-developed linguistic theory. The objects in a theory are taken “to be real insofar as they enter into explanatory theories that provide insight and understanding” (Chomsky 1991, 5). This approach to the question of the reality of the E-language reflects Chomsky’s apparent commitment to a Quinean approach to ontology. There is no need to quantify over E-languages in presenting a theory of linguistics—the only relevant objects in the theory are the I-languages. An exhaustive account can be given of the semantic, syntactic, and phonological properties of all languages *qua* properties of the I-language. The linguistic properties of the E-language are derivative from the properties of the I-language. In this sense, E-languages do not exist in the

domain of the theory, because a discussion of E-languages would be redundant, not providing any insight and understanding.

Linguistic nominalists and linguistic platonists have criticized the claim that E-languages are theoretically superfluous. In the view of linguistic nominalists and linguistic platonists, the E-language is the appropriate object of study in linguistics. From Chomsky's point of view, it would seem that the issue of whether linguistics is a subfield of psychology is equivalent to the ontological issue, and whether or not linguistics is a branch of psychology turns on whether or not the E-language exists. Thus it seems that the issue of whether linguistics is a branch of psychology is this issue of the existence or nonexistence of the E-language.

The Platonist Ontology of Linguistics: Katz

In his many philosophical critiques of Chomsky, the late Jerrold Katz clearly focused on these ontological issues. Katz states a position that would claim that linguistics is not a subfield of psychology, both in terms of the ontological thesis and in terms of the methodological thesis—not only are linguistics and psychology concerned with different domains, psychological evidence does not bear on linguistics at all. According to Katz, “the nature of the objects which constitute the subject-matter of a science determines the nature of a science” (Katz 1996, 282). The natural science of biology, for example, has in its domain only concreta such as humans, frogs, cells, and the golgi apparatus. The formal science of geometry has in its domain abstracta such as squares, lines, and points. These differences in domain mark the distinction between formal sciences such as geometry and natural sciences such as biology. Katz claims that formal sciences, unlike natural sciences, are nonempirical.

According to Katz, the domain of linguistics consists of abstracta, not concreta. Linguists should be concerned only with sentence and word types, not tokens. In several books and articles, Katz has presented a significant number of arguments for this claim. The most recent argument for this claim, which Katz felt is the clearest and most convincing², relies on a well-known fact about natural languages. If the effects of performance limitations are set aside, the rules of natural languages allow for the construction of infinitely many sentences. There are not infinitely many linguistic tokens, so linguistics must be concerned with types. Types are abstract objects, so linguistics is analogous to geometry, not biology—it is a formal science.

Katz contends further that linguists should not be concerned with psychological entities, given that mental states are physical objects, not abstract types. “Given the finiteness and discontinuity of matter, of brain matter in particular, there can’t be an infinity of mental/neural objects” (Katz 1996, 278). A difficulty quickly arises for this claim—the same line of reasoning that Katz uses to argue that linguistics is a formal science could be used to argue that psychology is formal science. Thought is a productive capacity: idealizing away from performance factors, there are infinitely many possible thoughts that a competent person could think³. A so-called “psychological nominalist,” who takes mental events and states to be concreta rather than abstracta, could not account for this infinite number of thoughts, given that there are too few brain states to account for them. So psychologists must become Platonists. This conclusion, if it

² “...My earlier arguments did not make clear the striking fact that the inadequacy which Chomsky exploited to overthrow Bloomfieldian structuralism is also an inadequacy of Chomsky’s position” (Katz 1996, 272).

³ The word ‘thought’ is ambiguous—it is used to refer to the psychological states, and to the propositional objects of those psychological states. I am using the word in the former sense.

were plausible, would collapse Katz's distinction between linguistics and psychology. Psychology would be a formal science, not a natural science, and there is indeed no difficulty for a Chomskian who wishes to claim that linguistics is a subfield of psychology. Surely this line of reasoning regarding psychology thought leads to a reductio of Katz's initial argument for platonist linguistics.

The key mistake in Katz's reasoning is a failure to notice a shift in modal context. Claims regarding the infinite sentences of natural languages and the productivity of thought abstract away from the limitations of human minds in the actual world. In discussing the possibility of infinitely many sentences and thoughts, it is useful to see these appeals as descriptions of other possible worlds. Such descriptions need not, on a plausible view, commit us to an infinite ontology for language or thought within the actual world.

Even if Katz's argument had succeeded in establishing that linguistics are concerned with types, not tokens, it is far from clear that this would establish that linguistics is a nonempirical science. It is not clear that having abstracta in the domain of a science is sufficient to make a science formal and nonempirical. Physics may have to appeal to abstracta in order to explain certain phenomena, but surely physics is nonetheless a natural, empirical science.

What's Ontology Got to Do With It?

While I have contended that Chomsky's position is somewhat obscure, and Katz's arguments do not force us to accept Platonism, I hope to have made it clear how for Chomsky and Katz, there is a focus on the ontology of language as being central to the issue of the relation between linguistics and psychology. There are, in my view,

significant reasons to doubt Katz's claim that the objects in the domain of a science determine the relation among the sciences. These views carry over to give us reason to doubt whether Chomsky's focus on the nonexistence of the E-language is the key issue in the relation between linguistics and psychology. In other scientific fields, there are distinct domains that nonetheless are considered part of the domain of a single science. Consider the relationship between psychology and one of its other subfields, social psychology. The domain of psychology in general includes, roughly, brains, nervous systems, mental events and states, and the behavior of humans and other animals, all of which is sometimes described at a fairly high level of abstraction. The domain of social psychology includes objects outside of this domain—factors regarding specific political systems and historical events, for example. Although the domains of psychology and social psychology differ in this respect, the latter is nevertheless a subfield of the former. Social psychology, though, does not fulfill the requirements of the ontological thesis. It does fulfill the requirements of the methodological thesis. Psychological methods and evidence will bear centrally on theories in social psychology—consider the bearing of psychological evidence demonstrating that homosexuality has a neural basis on approaches to issues of gender identity in social psychology.

A defender of the ontological thesis might want to suggest that all that this shows is that the relevant social phenomena are part of the ontology of psychology. Were a defender of this thesis to do so, other problems would arise. This would entail, by the ontological thesis, that sociology is likely a subfield of psychology. It would also stretch the boundaries of psychology so far as to trivialize any definition of psychology cast in terms of its domain.

The ontological thesis also is too crude to cut the fine distinctions between different subfields. Consider the relation between astronomy and physics. Typically, astronomy is considered a subfield of physics. Why is this the case? The ontological thesis would suggest that it is because the domain of objects studied by astronomers is within the domain of objects studied by physicists. This is, however, fairly trivial. On a reasonably naturalistic approach to the world, the domain of every field is within the domain of objects studied by physics. It would much more interesting and informative to claim that astronomy is a subfield of physics due to the central role that the methods of physics play in the study of astronomy, as the methodological thesis would suggest.

It is also plausible to think that every object that is in the domain of physics is within the domain of chemistry. Given that this is the case, there is no ontological distinction to be made between fields that are subfields of chemistry, and fields that are subfields of physics. This is an implausible result. I would contend that, to distinguish between the fields that are most closely related to physics and those most closely related to chemistry, it would make sense to look more closely at which fields rely primarily on the methods used by physicists, and which fields rely primarily on the methods used by chemists.

If these analogies with other fields hold, it would seem likely that the issue of whether or not linguistics is a subfield of psychology is not the ontological issue. The burden of proof for a linguist or philosopher attempting to show that linguistics and psychology are distinct fields is to show not that the ontological thesis is false, but rather that the methodological thesis is false.

If the methodological issue is the relevant one in this debate over the relation between linguistics and psychology, this suggests that one could take any of the possible positions on the ontology of language while still holding that linguistics is a subfield of psychology. Having already distinguished these positions on ontology, I will distinguish between those who hold that psychological methods and evidence do play and ought to play a central role within the development of linguistic theories, and those who deny these claim. I will dub the linguistic Platonist who holds that psychological methods and evidence plays and should play such a role the “psycho-platonist,” and her nominalist counterpart a “psycho-nominalist.” The Platonist, like Katz, who denies that psychological methods play a central role in linguistics I will call a ‘purist platonist,’ and her nominalist counterpart is the ‘purist nominalist.’ These terms are necessary to distinguish the ontological and methodological issues, which are not always clearly set out and distinguished in the literature.

Why would anyone who is committed to Platonism or nominalism consider being a psycho-platonist or a psycho-nominalist? The clearest reason for this is that contemporary linguistic theory attributes to linguistic entities, however construed, a significant number of properties that are not clearly obvious merely from observation of linguistic tokens or types. Consider the notion of a *trace*. Leaving out a significant amount of data, in the following sentence, certain contemporary linguists would postulate the existence of *traces*, results of constituents moved out of positions, in the following locations:

WF: Whom_j does Susan t_i love t_j?⁴

⁴ This example is simplified from the example in Collins 2008, 185.

If this contemporary work in linguistics is correct, and if the purist does not want to be a revisionist about linguistic practice, the purist owes some non-psychological grounds on which to base the claim that such traces exist. The psycho-platonist or psycho-nominalist is in a stronger position, for she can avail herself of the sort of psychological data and methods that have been used by linguists to postulate the existence of traces. This is a point that generalizes beyond traces, to all of the complex structure attributed by contemporary linguists to sentences.

Conceptual Distinctness: Soames

Scott Soames, in his widely-discussed paper “Linguistics and Psychology,” clearly argues for a distinction in linguistics and psychology based on issues of methodology. Soames argues that the fields of linguistics and psychology are conceptually distinct. Conceptual distinctness is defined as follows: “they are concerned with different domains, make different claims, and are established by different means” (Soames 1984, 155). This definition contains within it both the ontological and the methodological issues: It is an ontological claim that the domains of linguistics and psychology are distinct. It is a methodological claim that evidence in favor of psychological theories does not bear (directly) on linguistic theories. Given his independent commitment to linguistic Platonism, in my taxonomy, Soames is a ‘purist platonist.’ I will argue that such purism is untenable.

Soames attempts to establish the conceptual distinctness of these fields by showing that the linguist and the psychologist are concerned with two different sets of questions. The questions that concern the linguist are the “leading questions.” These leading questions concern linguistic properties that individuate languages:

the linguistically significant properties...grammaticality, ambiguity, synonymy, entailment, analyticity, contradiction, and so on. These properties and relations are characteristics which define languages and serve to identify and distinguish them (ibid., 159).

Such properties are, according to Soames, the concern of linguistics proper, not psychology.

As noted above, Chomsky would contend that these properties are primarily properties of the I-language. If this claim is correct, there is no reason to think that a purely psychological answer to the leading questions cannot be given. In a response to this Chomskian hypothesis, Soames claims that there are two different sets of facts involved—for example, facts regarding grammaticality in linguistics, and facts regarding judgments of grammaticality in psycholinguistics. An exhaustive psychological account can be given of the latter but not the former. In distinguishing these sets of facts, there remains the question of whether Soames is making a distinction without a difference. The important question is whether a representation of syntactic properties is involved in speakers' judgments of grammaticality. If this is so, then Chomsky would be correct, and a wholly psychological theory can provide a complete characterization of both grammaticality and judgments of grammaticality.

Turning to the question of evidence and methodology, Soames contends that psychological evidence that does not provide answers to the leading questions only plays an indirect role as evidence for linguistic theories. At some points, Soames writes as if psychological evidence plays no role whatsoever: "There is a theoretically sound... conception of linguistics...considered in abstraction from the cognitive mechanisms"

(ibid., 157). At other points, Soames makes a weaker claim regarding this evidential relation: he claims that “the relevance of such psycholinguistic data to theories in linguistics is limited to [an] indirect [evidential] role” (ibid., 160).

Does psycholinguistic data play such a limited role? Stephen Laurence has noted “Is Linguistics a Branch of Psychology?” in several examples of psycholinguistic data that does play a direct evidential role. In particular, experiments by Fodor, Bever, and Garrett demonstrated how phrasal boundaries are to be assigned to sentence. Errors resulting from the placement of click sounds revealed the location of constituent breaks: “There was a significantly greater error for location of clicks not objectively placed at the major boundary than for those which objectively occurred at the boundary” (Fodor, Bever, and Garrett 1974, 252). As Laurence points out, these experiments have a clear explanation in the Chomskian theory: “Such data can be made sense of on the assumption that the internalized grammar is one that assigns phrasal boundaries in a way consistent with data from these experiments” (Laurence, 74). Soames’s doubts regarding the methodological thesis are unfounded.

The experiment by Swinney, Ford, Bresnan, and Frauenfelder cited by Laurence (72) provides further support for the subsequent points made within this paper regarding linguistics and psychological methods. In this experiment, a priming effect provides evidence for the existence of traces. Whether traces are thought to be properties primarily of mental representations, linguistic tokens, or linguistic types, the methods used to establish the existence of such traces will be primarily psychological, suggesting that linguistics is best thought of as a subfield of psychology. As has been noted above, it is

not clear what the non-psychological grounds are on which a purist Platonist such as Soames would attribute traces at all to sentences in a language.

A third significant way in which psychological methods are crucial within linguistics is the central role played by psychological intuitions in linguistic theory. As John Collins rightly points out in *Chomsky: A Guide for the Perplexed*, “[a] speaker’s intuitive judgment, therefore, is as direct a data source as one could wish for” (Collins, 37). That intuitions play such a role within linguistics is a well-established fact, further supporting the idea that in virtue of its methodology, linguistics is a subfield of psychology.

The Nominalist Ontology of Language: Devitt and Sterelny

Michael Devitt and Kim Sterelny offer a nominalist position—the linguist is concerned with the semantic, syntactic, and phonological properties of tokens, “datable, placeable, parts of the physical world” in the language, not Platonic abstract types (Devitt and Sterelny 1989, 515). Devitt and Sterelny contend that the prevailing Chomskian views on the relationship between linguistics and psychology rest on a conflation. “The transformational linguists conflate two distinct theoretical tasks: one concerned with linguistic symbols and the other concerned with linguistic competence” (ibid., 499). The linguistic symbols are the output of the competence, the competence itself is a psychological process that leads to those outputs.

On the interpretation of the term “E-language” offered above, Devitt and Sterelny are claiming that there is a theoretical interest in study of the E-language. Not only is this a proper object of study, *pace* Chomsky; The study of the properties of public language tokens is prior to the study of competence in a language. We cannot construct a

psycholinguistic theory without first constructing the separate theory of linguistics proper. In order to understand the competence involved in language use, we must first understand what the syntactic, semantic, and phonological properties of the outputs are. In his book *Ignorance of Language*, particularly in the section concerned with the distinction between linguistics and psychology, Devitt reiterates these points. He makes two methodological claims relevant to the discussion in this paper: the first methodological point that grammar is “true of a linguistic reality” and the fourth methodological point that a “grammar as a theory of a language has a certain epistemic and explanatory priority over” psychological theories. These two methodological points reflect the two different aspects of the dispute over linguistics and psychology I have tried to distinguish in this paper: the ontological and methodological theses. If I am correct, then the ontological thesis is not the relevant issue in the dispute. In light of this, I will focus on Devitt’s claim that theory of language as a non-psychological entity is prior to psychological theory.

The contention that the study of properties of the output of the competence is prior to the study of the competence or psychological theorizing is a position that shares a problem with Soames’s. Namely, if one must characterize the outputs of a competence first, psycholinguistic data concerning the competence cannot bear directly on the characterization of the outputs. This is simply not true—as noted above, the Fodor, Bever, and Garrett click experiments and the Swinney, Ford, Bresnan, and Frauenfelder experiment, among other such studies, use psychological evidence regarding competence in order to establish claims about the nature of the output of the competence. Furthermore, linguists attribute complex properties and structures such as traces to

sentences, and there does not seem to be any purely linguistic, non-psychological grounds on which linguists ought to do so. This suggests that matters are precisely the reverse of how Devitt and Sterelny suggest they are: the study of the competence is prior to the study of the outputs of the competence.

The claim that outputs are prior to competence is an evidential claim, and one that is false. To deny that Devitt and Sterelny have the correct view of the evidential relation is not to deny that their ontological position could be correct. One could still hold that phrasal boundaries and traces, among other linguistic properties, are properties of tokens of the language, although the methods and evidence that reveals the nature of properties such as phrasal boundaries and traces is psychological. Even if linguistic nominalism is true, as Devitt and Sterelny contend, the methodological subfield thesis can also be true, and linguistics ought still to be considered a subfield of psychology⁵.

⁵ I am grateful to Jonathan Cohen, David Pereplyotchik, and Michael Devitt for their comments on an earlier draft of this paper. I am also deeply grateful to Jerry Katz for his example as a scholar and teacher.

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