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Ryan M. Nefdt: Language, science, and structure. A journey into the philosophy of linguistics
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Recenzió

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Ryan M. Nefdt: Language, science, and structure. A journey into the philosophy of linguistics

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Right at the outset, in the Preface the author clarifies important issues. He emphasizes that he does not consider himself "a mentalist, platonist, nominalist, or a pluralist" (p. ix). This declaration is relevant insofar as current linguistics is burdened with acrimonious discussions among different schools, most of which advocate their own truths while fiercely rejecting any other approach.[1] Moreover, philosophers of linguistics are also inclined to take sides for or against particular linguistic theories. That the author strives for a balanced approach to the philosophy of linguistics is a merit of the book. However, as I will indicate later in this review, his impartiality is fully compatible with the fact that in some of the chapters he puts forward his own solution to crucial foundational problems of linguistic inquiry.

The introductory chapter starts with stating that the author

> treats linguistics as a science and the philosophy of linguistics as a subfield of the philosophy of science" […] Thus, the tools of scientific modelling, debates on scientific progress, realism and structural realism *inter alia* will inform the general methodology going forward. However, in some chapters the lines will inevitably be blurred. […] I will advocate that the study of linguistic structure can illuminate the ontology of structures themselves or rather a particular kind of biological structure. Indeed, the two approaches are not incompatible. Looking to linguistics as a means of illuminating philosophical problems is still possible on my approach in the same ways that the philosophy of biology or chemistry might attempt to shed light on problems in metaphysics. (p. 1–2.)

In order to prepare this programme, the chapter positions the philosophy of linguistics in comparison to the philosophy of language. It makes an elementary distinction between generative linguistics, which is evaluated as the dominant force in theoretical linguistics, and non-generative frameworks. By touching on a second preliminary distinction between structures and structuralisms, Ladyman's (1998) notion of structural realism is introduced, which will become one of the central building blocks of the book's reasoning:

> Since there is […] retention of structure across theory change, structural realism both (a) avoids the force of the pessimistic meta-induction (by not committing us to belief in the theory's description of the furniture of the world), and (b) does not make the success of science […] seem miraculous (by committing us to the

[1] For an overview of absolutist and relativist approaches to linguistic inquiry see Kertész (2024).

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> claim that the theory's structure, over and above its empirical content, describes the world). (Ladyman 1998: 410; quoted on p. 9.)

Thus, this introductory chapter works as both orientation and justification for the rest of the book.

From Chapter 2 on, the author starts his reasoning by putting forward a central claim, which is then elaborated on in the subsequent sections. Chapter 2 is devoted to debates on the ontology of language, putting forward

> Central Insight I: Object-oriented accounts of the ontology of language are nonstarters and any foundational view which endorses them is therefore lacking. (p. 14)

After asking and explaining the foundational question *What is a language?* the author discusses 'object-oriented' views, which assume that natural languages are some kind of individual objects. These views treat languages as ontologically independent of each other. The object-oriented view is attributed to Bloomfieldism and neo-Bloomfieldism. Another approach to the ontology of language is Platonism, which takes languages to be abstract objects ('P-languages').[2] Platonism has been advocated, for example, in Katz (1985) and many other publications of his, as well as in a couple of Postal's papers, such as Postal (2009). The third approach is Devitt's (2006) etc. nominalist position evaluated as a version of the object-oriented view and as such an alternative to both Chomskyan mentalism and Platonism. Then, of course, there is no avoiding a discussion of Chomsky's I-languages, which are assumed to be mental entities. The fourth set of views relates the ontology of language to society, assuming the existence of social facts in Labov's (2001)–(2010) tradition, or norms in Peregrin's (2015) sense or 'public language' as discussed in Dummett's (1993) approach.

The objective of Chapter 3 is to reflect on the ontological status of language by surveying two further positions, namely, anti-realism and pluralism:

> Central Insight II: Although anti-realism and pluralism both point to important explananda in the ontology of language, they fail to provide adequate accounts for addressing them. (p. 34)

In particular, the anti-realist position as represented, for example, in Rey (2006) and Davidson (1986) rejects language as a unified object, treating linguistic constructs as mere conceptual conveniences or social fictions. In contrast, pluralism, exemplified by Santana (2016) and Stainton (2014), argues that there are multiple overlapping 'languages' (dialects, sociolects, mental grammars, etc.), making it pointless to prefer a singular ontology. As a conclusion, Nefdt accepts neither of these stances. Rather, he anticipates his own view to be elaborated on in later chapters, which will make use of the resources of the philosophy of science by reconsidering Dennett's (1991) concept of a 'real pattern'.

Having rejected the stances on the ontology of language mentioned in the previous two chapters, Chapter 4 tries to defend a more positive thesis:

> Central Insight III: Languages are non-redundant real patterns, the structures of which are captured by formal grammar qua compression models. (p. 49)

[2] Just a minor correction: the author attributes the coining of the notion of 'P-language' to Chomsky (1991), but it was introduced earlier (see Chomsky 1986: 33).

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This chapter sets out to define **structure** as it applies to natural language, situating this concept within the philosophical tradition of **structural realism**, while simultaneously leveraging **algorithmic information theory** as a bridge between formal linguistics and philosophy of science. The positive account begins with asking the question of what language is. The author's answer says that languages are non-redundant real patterns in Dennett's (1991) sense and that formal grammars are compression algorithms. The basic idea behind the notion of real pattern, which Nefdt defines in a formally complex way, is that "[i]n order for something to be a linguistically real pattern, i.e., a language, it needs to involve only the sentences of that language and its grammar needs to be a compressed representation of that set as well as identify indispensable structures associated with the patterns of the set" (p. 78). Thus, the chapter positions grammar at the intersection of structural ontology, information theory, and linguistic practice. The idea that grammars compress linguistic behaviour is not only novel, but also **deeply integrative**. It offers a philosophical foundation that resonates with current directions in cognitive science, AI, and linguistic theory. Nefdt contrasts the Chomskyan *faculty of language in the narrow sense* with **systems-biolinguistic** approaches. As a paradigm example of the latter, he discusses Millikan's (2005) approach.

Armed with the insights of Chapter 4, Chapter 5 turns to the question of where such patterns can be found in nature. The answer anticipated is:

> Central Insight IV: Natural languages are emergent phenomena within dynamic complex biological systems comprising networks of internal mechanisms, external conventions, and environmental factors. (p. 80)

Chapter 5 extends Nefdt's **structural-realist** thesis into the biological realm, portraying language as a complex, emergent pattern. He applies the idea that linguistically real patterns should not be taken as parts of an individual organism but rather as parts of materially understood biological systems to language acquisition. Accordingly, language acquisition turns out to be pattern recognition. A systems biological approach seems to be capable of accounting for the structures and the real patterns that are assumed to be behind linguistic reality. Chapter 5 is the cornerstone for a genuinely interdisciplinary biolinguistics that is substantially different from that propagated by the proponents of Chomsky's minimalist programme.

Chapter 6 is devoted to a case study yielding

> Central Insight V: Words, phrases, and rules are on a structural continuum where the roles they play in overarching linguistic structures serve as their primary ontological status. (p. 96)

After the main foundational problem of what language is has been asked and answered, this chapter focuses on the sub-problem of what words are. As expected, the answer says that words can also be characterized as pattern-theoretic structures, and this assumption is not compatible with most contemporary accounts of the nature of words. Basically, the chapter is an application of the more general insights gained in earlier stages of the author's train of thought.

Chapter 7 raises two issues: the intra-theoretical problem of theory change in generative linguistics and the intertheoretical relation among competing grammar formalisms. The author's argumentation aims to support

> Central Insight VI: The primary vehicle of theory change within generative linguistics and theory comparison across frameworks is structure. (p. 116)

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The basic idea eventually yielding the central insight is not that the world is a mathematical structure and not even that linguistics is purely structural. Rather, the author is satisfied with assuming that structure is prior to objects and properties in linguistics. Accordingly, the analyses show that although the shifts within the history of generative linguistics appear to be substantial, this is not the case because the general structure behind them remained relatively constant. Further, there are no expressions beyond the linguistic structure that the grammar is intended to capture. Finally, the chapter also shows that the author's approach reveals structural overlap among dependency grammar, constrained-based grammar and generative linguistics.

Chapter 8 crosses the boundary between syntax, on the one hand, and semantics, phonology and pragmatics, on the other. The chapter's thesis is

> Central Insight VII: Natural language is a complex system containing LRPs [Linguistic Real Patterns] analysable at different 'levels of abstraction', each connected by a nested 'gradient of abstraction'. (p. 147)

The idea motivating the chapter's main insight is that the subdisciplines of linguistics mentioned constitute different levels of abstraction. Accordingly, the author models their interfaces as incremental information growth of patterns that are connected but independent. Such patterns result in more and more fine-grained analysis and measurement at higher levels. The chapter extends structural realism to *informational* structural realism as well as the levels of abstraction as proposed, for example, in Floridi (2008).

The broadening of the author's perspective is carried on in Chapter 9, which goes one decisive step further in that it places linguistics within cognitive science. The outcome of this extension is

> Central Insight VIII: Linguistic theory, viewed structurally, dovetails with some of the modelling practices of the cognitive sciences construed in terms of structural realism. (p. 171)

Thus, the chapter sets out to shed light on linguistic inquiry through the lens of the cognitive sciences. After presenting a brief history of the development of the cognitive sciences in the United States, Nefdt also shows that the impact of linguistics on the study of cognition that was once so important seems to have lost its relevance by now. However, he argues against this trend by showing that his own approach may account for the role which linguistics might play in the future progress of the cognitive sciences.

The book concludes with a final chapter enumerating the Central Insights again and commenting on them from the point of view of the book's aim.

That the volume includes endnotes is less reader-friendly than it would be with footnotes. Nevertheless, the rich list of references as well as the index are useful sources of information for the reader.

The book can be recommended to linguists who are striving to obtain an insight into the foundational problems of their discipline as well as to philosophers of science interested in general principles of scientific inquiry. It can provide both groups with an at least partial understanding of why several decades ago linguistics seemed to be one of the driving forces of scientific progress in the human sciences, the social sciences, the cognitive sciences as well as the computer sciences; why this impact eroded over the years; and why the author's approach might be evaluated as an attempt to assign linguistics a substantive role in shaping our knowledge of language, the mind and the formal tools describing them.

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