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A Semiotic Theory of Language – Book Review

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A Semiotic Theory of Language by Sebastian Shaumyan

Review by: James Hearne

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Sebastian Shaumyan, *A semiotic theory of language*. Bloomington: Indiana University Press, 1987. Pp. xv + 352.

The expression 'functional' when applied to language has two distinct meanings. It can refer to natural PURPOSES of language, i.e. its function in the common sense and biological meaning of the term. It can also refer to the linguistic tradition, beginning with Bar-Hillel and continued by Richard Montague and others, which tries to construe natural languages as systems of mathematical functions, i.e. deterministic and total mappings from some well-defined domain to some other well-defined domain. In the latter, mathematical sense, a functional construal of language interprets syntactic (and even semantic) coherence as a special case of mathematical type consistency. This construal also guarantees – indeed, forces – a purely compositional rendering of any linguistic subsystem to which it is applied.

In spite of these attractions, the functional, or 'applicative', approach to language has a suspiciously *a priori* character. Type consistency and compositionality are notions borrowed from requirements for contrived, artificial languages. In spite of the philosophical and aesthetic appeal of type consistency, it is not obvious why evolved systems – ones honed by purpose – ought to exhibit them. And, in practice, in better hands than those of Professor Shaumyan, it has proven difficult to accommodate the applicative view even to highly sanitized linguistic data.

A semiotic theory of language seems to offer a reconciliation, even a convergence, of the two senses of the adjective 'functional' as applied to conceptions of language. For, he implies, language is functional in the mathematical sense owing to its function in the biological sense. Its function is to effect, or serve as a vehicle for, semiotic contrasts. In consequence, attention to universal semiotic laws governing the behaviour of sign systems will reveal non-arbitrary universals of world languages. The author, in providing semiotic foundations for the study of language, seems to be trying to articulate a framework for linguistic science that is not burdened by the arbitrary stipulations that the author finds in the tradition of transformational grammar. Transformationalists, on Shaumyan's understanding, are mistakenly content to propose as a theory nearly any formal mechanism that yields the strings of a highly selective presentation of linguistic data. Shaumyan wants to show that a particular mathematicalization finds independent justification in purely semiotic considerations.

The main line of argument, as I reconstruct it, is as follows. We begin with a collection of principles which effectively constrain the allowable abstractions and distinctions a proper linguistic theory may assume, first amongst which, and repeatedly invoked, is the Principle of Semiotic Relevance. This principle forces the condition that distinctions between MEANINGS must correlate with distinctions between SIGNS. Such a principle, if consistently applied, immediately yields a functional view of language, giving

Shaumyan what he apparently wants: if the notion of semiotic CONTRAST is taken as primitive, then the notion that language consists of deterministic mappings – functions – immediately follows.

Since the fact of homonymity – two meanings for a single sign – seems obviously to conflict with this principle, it falls to Shaumyan to redefine ‘sign’, ‘meaning’ or both. Unfortunately, he explicitly redefines neither term, offering instead a simple, unhelpful diagram. In consequence, we very early lose track of what the major primitives of the theory – i.e. meaning and sign – amount to. The monograph never recovers from this foundational occlusion. Indeed, because the foundations crumble at the start, throughout the book the rate at which technical terms are introduced well exceeds the rate at which they are used to support helpful insights. This failure to produce a systematic theory is devastating to Shaumyan’s apparent purposes. Since he fails to motivate theoretically an applicational conception of language, he is open to precisely the same charge that he lays against transformationalists, namely, that of explaining language through an arbitrarily chosen mathematical contrivance.

Since the book does not hang together as a coherent theory, we must read it as a collection of isolated contributions to the applicational view of language. Read in this way, for what the book gives us rather than what we may have wished from it, it offers many fascinating ideas, discussions and suggestions. These include a fascinating consideration of ergativity – coloured, unfortunately by the lack of foundations described above – and some clever reinterpretations of classic phonetic phenomena. The reader, however, pays a dear price for these islands of interest and insight, for as a whole the book is a mass of faults. It is so badly written, being both bombastic and condescending to the reader, that one wonders how the editors at the University of Indiana Press could tolerate it. It distorts the applicational view of language, entirely disregarding recent work in categorial grammar, and it betrays a shaky understanding of the formalism that Shaumyan is at such pains to promote. The author has a strangely proprietary attitude to the applicative view of language, reminding us that his first book on the topic preceded Richard Montague’s publications by several years. He acknowledges none of Montague’s predecessors (though he cited Ajdukiewicz and Bar-Hillel in his *Structural linguistics*, originally published in Russian). He seems also entirely unaware of the intense level of current activity in this area. In the last decade, numerous articles in well-known journals and a number of books in the applicational tradition have been published, yet he cites none of these sources.

In spite of his sense of ownership towards the applicational perspective and over twenty years of research, he is still uncomfortable with the formalism, is unaware of technical problems it raises and is ignorant of its relation to other research in the same tradition. For example, one of the few

new developments in Shaumyan's applicational formalism – though it has been explored elsewhere in the literature – is the use of functional combinators to explain movement phenomena. His system, he claims, uses nine 'basic combinators' C, I, W, B, S, K, C*, Φ , Ψ . Since it is known that three combinators are sufficient, it presumably falls to him to explain the relation between the truly basic ones and those that are definable in terms of them and why the nine he has borrowed from combinatorial logic happen to make an appearance at the linguistic surface. This he does not do and may not be able to do since their use at places is at odds with combinatorial theory.

Another newcomer to Shaumyan's arsenal of formal devices reveals the degree to which he may be repeating the supposed sins of transformationalism. Sentences like *John proposed our immediately leaving the office* arouse problems for type-oriented analyses of language since the modification of *leaving* both by the possessive *our* and the adverb *immediately* implies two distinct type assignments. In order to enable a consistent type analysis Shaumyan introduces the notion of a SUPERPOSER. Superposers permit a term to be given several type assignments simultaneously in the middle of an analysis/derivation. Leaving aside the well-known problems with typed combinatory calculi, of which the author seems unaware, this topic is problematic for applicationalists because the formal device which solves the type consistency problem apparently introduces so much arbitrary power into the notation as to permit almost anything. Shaumyan does not merely decline to address the problems associated with type superposition; he evidences no knowledge of them.

His uneasiness with technical details colours the book in other ways. For example, he gives the same weight and rhetorical emphasis to explanations of mundane elements of predicate logic as he does to his own substantive hypothesizing. Again and again, the reader is treated to elaborate explanations of such notions as n-term predicate and converse, frequently under new names, just as though they were Shaumyan's own inventions. This suggests that either Shaumyan has no sense of his audience or that he cannot distinguish between notation and insight. His unsureness is most conspicuous when he ventures outside linguistics proper. His enthusiasm for the applicational point of view provokes him to a review of functional programming languages which is very amateurish, misleading and is based on a single, already popularized treatment.

Ironically, in spite of the book's defects, I predict that it will be extremely influential, not for what it accomplishes but for what it attempts, and for the creative, though undisciplined, energy it displays. The applicational approach to natural language, though benefiting from a strong mathematical tradition, is not buttressed by empirically plausible foundations of any sort. It is only moderately supported by philosophical considerations. Shaumyan's attempt

to bring insights from semiotics to bear upon problems in linguistics (reversing the traditional direction of influence) is laudable but insufficient to the task.

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Igor' Aleksandrovic Mel'cuk, *Dependency syntax: theory and practice*. Albany, NY: State University of New York Press, 1988. Pp. xx + 428.

Dependency syntax contains much of value to linguists working on dependency theory, grammatical relations and ergativity. Equally, there is much that is unremarkable and much to provoke disagreement. The title is misleading. Of the eleven chapters, two deal with dependencies; one presents a sketch of the meaning-text model – henceforth MTM – developed by the author and others in the Soviet Union over a number of years; five discuss ergativity and whether or not languages such as Dyirbal and Lezgian are to be recognized as possessing an ergative construction; one is on the problem of whether zero lexemes are to be employed in syntactic analyses; and three look at various problems in Russian syntax.

In spite of Mel'cuk's explanations (8–10), the chapters do not cohere. The discussion of ergativity could have been published quite separately from dependency theory and the MTM; the chapters on zero lexemes and on topics in Russian syntax could be set in any framework. These weaknesses make the book disappointing. Mel'cuk himself emphasizes the need to defend and develop dependency syntax, but misplays his hand. He sets his discussion in the framework of the MTM, which is not in itself a bad move, but the sparse account of that model is a major obstacle. Most of the potential readers of the book do not know of the MTM and a thorough presentation is essential. Dependency syntax is also inadequately dealt with. The authors does indeed provide rigorous definitions of notions such as 'head': the problem is that the real difficulties arise when definitions are applied to data, because there are frequently competing analyses of one and the same construction. Furthermore, his discussion of dependencies is influenced by ideas on grammatical functions which are open to doubt. A thorough application of dependency syntax to areas of different languages would have been invaluable. Unfortunately, the chapters on ergativity, etc. contribute nothing to the theoretical core.

Since the central theoretical chapters are those on dependencies and the meaning-text model, I will sketch the latter and provide further information by directing questions both at the MTM and at Mel'cuk's account of dependencies. An MTM of a language L is 'a finite set of rules specifying the