Cognitive Systems RESEARCH

Book review

Review of Language, Mind and Brain: Some Psychological and Neurological Constraints on Theories of Grammar, Ewa Dabrowska; Edinburgh: Edinburgh University Press, 2004; ISBN 0-7486-1475-3

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This book presents a comprehensive survey of the various subfields of linguistics, as envisaged from a cognitive grammar perspective. It is divided into two parts; the first half is the "basic specifications": issues related to psycholinguistics, acquisition, language and the brain, and evolution of language. The second part elaborates on the "building blocks" of language, namely words, sentences, meaning, et cetera ending finally with "a crash course in cognitive grammar". Broadly, the book provides some critical insights into the existing rationalist trend in linguistics – the generative approach – and suggests alternatives to developing "psychologically realistic" grammatical models.

One underlying theme of the book is the relevance of interdisciplinary research and its benefits for linguistic theorizing. As the author notes in her introduction, that though linguistics is often defined as 'the branch of cognitive science dealing with language', "most linguists hasten to add, it is an 'independent branch', by which they mean that language can, and should, be studied in its own terms, without reference to psychological or neurological concepts and theories" (p. 1). This problem, as the author laments, becomes more telling with generativist linguists' obsession with linguistic competence rather than performance. This lopsidedness begets linguistic theories which are neither psychologically nor biologically real, thus endangering the (apparently) more desirable course of the discipline toward becoming an empirical science – a science whose theories base on actual usage of language, rather than being motivated by formal elegance.

The latter criticism against the generativists' is however not justified. The tension between empirical evidence and formal elegance is still as prevalent within generative circles, as in the initial days of the enterprise (cf. Chomsky, 1957, 1965, 2000 among others). Questions pertaining to empirical/descriptive versus explanatory adequacy of the models for natural language – i.e., whether they sufficiently describe the empirical facts and/or if they appear too cumbersome to provide a rationale for effortless language acquisition processes – lie at the core of the research agenda even today. The age-old issue is now reposed on the methodological level – where the program seeks to highlight the various points of discord between "minimalist" expectations for a simple theory of natural language and the available empirical evidence. As far as these contentious points are resolved, the desired pursuit for formal elegance proceeds unhindered, with radical departures from simple and most principled theoretical accounts permitted only when we fail to find any point of agreement (between the two).

The confusion on this issue among the non-generativists' arises from their partial knowledge of the entire trajectory of the development of the generative project with its innumerable instances of sometimes unyielding struggles between data-description and model-building efforts. Indeed, to the best of my understanding, generative linguists have often paid more emphasis on linguistic data than what is needed for constructing scientific theories of natural language. This has sometimes led to unwarranted scruples over empirical judgments – judgments that cannot be verified even against infinitely large corpuses of data – and which needless to mention, do not provide any far-reaching and deep insights into the nature of human

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language. Perhaps, in criticizing the generativists, Ewa Dabrowska, along with her colleagues in the cognitive grammar framework, ends up giving them more credit than they actually deserve.

It is by far a truism now, that human babies come biologically endowed with a language organ (alias Universal Grammar) that allows them to easily grasp the underlying principles of their languages (aka mental grammars, see Jackendoff, 1994). This is one of the core ideological premises behind all prevalent generative linguistic theories. But do such theories completely preclude individual differences among language-acquiring children? Dabrowska is convinced that they do: "The language learning system is able to adapt flexibly to a wide range of very different circumstances.... This kind of flexibility is incompatible with an acquisition sequence whose exact course is predetermined genetically" (p. 39). Flexible learning argues against positing uniform stages in language acquisition, contra what has been proposed by the generativists. To cite a case at hand, different children are observed acquiring language at different speeds, either starting with single words (the so-called 'analytic' or 'referential' children) or initiating with larger chunks of structure ('holistic' or 'expressive' children). The disparity presumably comes from the variant linguistic and non-linguistic input available to any given child at any given moment. Genetic endowment apparently does not allow such variation.

Obviously, this is yet another point which the author chooses to ignore. The concept of Universal Grammar simply states that there is an initial yet untampered state of the human language. Available linguistic data play a pioneering role in helping the initial state to converge onto the final or (particular) adult language states: a child exposed to Chinese does not end up with a final state for English or vice versa. Moreover, the path connecting these two extreme points is strewn with probabilities, evidenced by the non-adult, 'anomalous' structures often produced by children. As for instance, it has been widely observed in the generative acquisition literature that not all children learning English produce root-infinitives like 'mummy go' (cf. Rizzi, 1994; Hoekstra & Hyams, 1998). So the issue of whether innate structures undermine the importance of input and (dis)allow variation in language learning is after all not as controversial, as first presented by the author. The more relevant and interesting question to ask – and definitely the most contentious one – concerns the range of structural options allowed to children. Do child languages fail to show any kind of systematicity, and do they completely obviate all known principles of their adult counterparts? For after all, if there are no language-specific constraints, children should come up with unlimited varieties of structures, with similarities reduced to unpredictable and sporadic instances. If, on the other hand, one finds that irrespective of whether children start with structural chunks or lexical items, they converge on a child language that displays a number of patterns and importantly does

not show some others, then there must be underlying systems that we linguists are obliged to decipher.

Undeniably, one can choose to ignore these regularities (in adult as well as child languages) and likewise the constraints dictating these regularities. As Dabrowska herself contends: "...modern linguistics has tended to overemphasize regularity. There is in fact, a great deal of irregularity in language: very few rules are completely exceptionless" (p. 226). However, the crucial point is not whether languages are completely systematic, permitting no irregularities and idiosyncrasies, but rather if they do display some regularities, why do they do so and how does one best explain the system. By ignoring regularities and postulating 'mini-grammars' for each individual verbal unit, the present work misses out on all the generalizations and in the process ends up with a very coarse view of language with 'constructional schemas' that fail to say anything substantial about natural language and, even reduce its interactions with other cognitive components (for which they allegedly have the best theories) to very superficial mappings. What disconcerts the reader even more is their lack of conviction on this matter: "...it is undeniable that there are many high-level regularities in all human languages, and these require an explanation". The explanations provided are imbued in vagueness: "grammars are to some degree shaped by external discourse pressures and processing constraints: some utterances are preferred by language users because they are easier to process". Further, "there are also pressures for systematicity. Systems in which there are several competing patterns are inherently unstable, as it is virtually inevitable that speakers will occasionally overgeneralize some of them, sometimes because of memory failure, and sometimes to achieve a special effect.... However, once a particular variant gains a clear advantage over the other(s), whether by chance or as a result of a language fad, it will tend to spread" (p. 227).

One cannot help wondering if there is after all any advantage of choosing the 'unstable' systems of the cognitive grammarians over the so-called 'psychologically' and 'biologically' 'unreal' models of the generativists. Not only that, these observations also lead to abysmal predictions for the properties of natural language: it predicts, for instance, that the lack of matrix infinitives in English is either a chance creation (owing to the sudden memory lapse of some ancient speaker) or merely a consequence of processing or discourse constraints. It also suggests that any ("higher-level") regularity across language-boundaries must be the result of momentary memory loss of (at least) one speaker in each of these linguistic communities. I think, however, that this is hardly an explanation for the serious phenomenon at hand.

The idea of irregularities in languages correlates with the idea that languages are very flexible and lack any (independent) system whatsoever. The 'flexibility' hypothesis (if we may term it so), Dabrowska claims, is further substantiated by studies showing that the brain has no specialized parts

for language; Broca's area and Wernicke's area are not dedicated to language per se. Since language is not 'localized' in the brain, any study emphasizing on its independent, systematic nature must be misleading. However, this approach towards the notion of 'localization' is flawed to start with. Fuzzy and probabilistic conceptions of the human brain atlases in recent years have definitely stressed the complexity of brain architecture, but they do not at all make the issue of localization trivial. The history of sciences in the twentieth century has shown that the elements of probability, variability, flexibility and fuzziness do not in themselves deny any scientific phenomena the status of a coherent system. A probabilistic and statistical modeling of the brain allows taking into account variability while simultaneously locating its components and sub-systems. Moreover, the dispersal of the components of the language faculty does not in itself negate its identification as a coherent and independent system. Therefore, "even if it were to turn out that there are no specific areas of the brain in which language function is localized, still there are surely specific mechanisms involved in the representation of language knowledge and the capacity to use this knowledge…. Hence, the question of localization, while an interesting one, does not seem to me to have overriding importance" (Chomsky, 1980).

The climax finally sets in with the issue of the evolution of human language. Dabrowska mentions at least four preadaptations for human language – the proto-phonological capacities, the proto-semantic capacities, the capacity to form cross-modal associations and the ability to store and retrieve sound-meaning pairs when required. However, what is crucial in the author's paradigm for the evolution of human language is the capacity for cultural learning, which enables the transmission of cultural innovations facilitating cumulative cultural evolution – "a process in which later generations do not have to reinvent everything from scratch, but can build on accomplishments of preceding generations" (p. 62). This trait is restricted to humans and relies exclusively on another uniquely 'human form of learning': imitation. In imitation – which we are told, must not be confused with 'emulation' or 'ontogenic ritualization' found in closely related apes – the method and the results are produced by observation. Imitating humans focus on the model's (i.e., the observed's) behavior and goals, attempting to reproduce them faithfully. Faithful imitation ensures that all individuals in a community more or less acquire the same signs. Along with 'cultural learning', our 'mind-reading' skills guarantee that these signs get associated with the same meanings. Both of these abilities form the necessary prerequisites for language.

This reproduction of the Lockean concept of 'tabula rasa' characteristically views the biological existence of humans as skeletal, which acquires flesh and color only in the process of cultural evolution, which in turn is reduced to imitation. It has been the specific feature of the empiricist methodology that in its insistence to be

descriptively adequate, to be true to the appearances, various levels in the structure of a scientific phenomenon are reduced to the same level, rearranging them in a one-dimensional manner. Dabrowska refuses to take note of the specificities and internality of the human biology, which in no way directly corresponds to the environmental and discursive/cultural surroundings. The latter at the most may motivate the former to choose one of the various possible courses of mutation, whose characteristics are internally determined. In the author's framework, biology and culture are merged mechanically.

Chomsky and his collaborators, on the contrary, recently in their efforts to preclude any such reductionist merger distinguish between the 'faculty of language in the broad sense' (FLB) and the 'faculty of language in the narrow sense' (FLN) (Hauser, Chomsky, & Fitch, 2002; Fitch, Hauser, & Chomsky, 2005). FLB includes an internal computational system (FLN), combined with at least two other organism-internal systems (Conceptual-Intentional and Sensory-Motor/Perceptual-Articulatory). FLN, on the other hand, is the abstract linguistic computational system that generates internal representations that are accessible to the interacting systems. Its core property is recursion or narrow syntax. It is hypothesized that FLN is "the only uniquely human component of the faculty of language", which "may have evolved for reasons other than language, hence comparative studies might look for evidence of such computations outside of the domain of communication (for example, number, navigation, and social relations)" (Hauser et al., 2002). As is clear that by making such divisions, Chomsky has been able to indicate and identify different levels of determinations that constitute the linguistic capacity of human beings – its characteristics 'shared' with other living organisms and those that are unique to humans, and their mutual over-determinations, without reducing one to the other.

The author's reductionist approach and her inability to grasp the basic difference between language ability and performance ("proficiency") time and again lead her to borrow and generalize elitist conclusions from sociolinguistic researches about the linguistic behavior of the marginalized communities. For example, she finds "accumulating evidence that individuals with little formal schooling have considerable difficulty processing complex syntactic structures" (p. 70). In this regard, the universalist aspect of the generative approaches to language is a formidable guard against such culturalist reductionism and elitist ideological biases.

In the end, I recommend this book to everyone desiring to know about the various theoretical debates going on within the field. The struggle between rationalism and empiricism is long-standing in every scientific endeavor, and linguistics is no exception. Ewa Dabrowska's book – in suggesting the cognitive grammar perspective to language – forces us to revisit some of these age-old methodological issues. The real contribution of the book

however lies elsewhere: it implicitly warns the reader against too much indulgence with immediate empirical facts and against the fear for the abstract. As s/he flips through the pages of the book, it is advisable for the reader to make consistent reference to the history of science and mathematics and keep pondering on what would have happened if the scientists – in the course of their scientific practice – did not realize what Hegel called the "process of abstraction". In this process, there are two stages – the analytic and the synthetic. The former requires us, firstly, to recognize the immediate concrete phenomenon as "differentiated within itself", as a "unity of determinations" of various levels, and secondly, to isolate these determinations. In the second stage, we synthesize these determinations to reproduce the phenomenon in our thought in all its richness (Hegel, 1969). Abortion at any stage in this process of abstraction acts as a prelude to a series of theoretical miscarriages – overemphasis on either abstract principles or empirics, leading to explanatory inadequacies and formal inelegance.

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