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Usage-based models in linguistics: an interview with Joan Bybee

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In this special issue of Linguística, a number of linguistic analyses are presented to the reader. Despite focusing on different phenomena in different languages, all of them share a common analytical approach: the usage-based one. In this electronic interview, Joan Bybee, distinguished professor at the University of New Mexico and one of the most prominent researchers on Usage-Based Linguistics, discusses the foundations of usage-based models, the arguments in favor of adopting them and their relation to other theories of language, mainly Cognitive Linguistics and Construction Grammar.

EntreviSta: The coinage of the term "usage-based model" is attributed to Langacker (1987). On that occasion, he wrote that, in such a model, "substantial importance is given to the actual use of the linguistic system and a speaker's knowledge of this use; the grammar is held responsible for a speaker's knowledge of the full range of linguistic conventions, regardless of whether these conventions can be subsumed under more general statements." In your opinion, does this definition still cover the main theoretical and methodological commitments of usage-based analyses, a quarter of century after the term first appeared?

Joan Bybee: Langacker's first use of this term is in a context where he is emphasizing the very specific knowledge that language users have about idioms and constructions, which they learn from experience. He says that they do not throw away this knowledge when they make higher level generalizations or schemas. Today, the term covers a broader range of questions and methods and now constitutes a linguistic theory that can compete well with other theories that have been proposed throughout the last centuries. Langacker's characterization in his 1987 book certainly focuses on the essential point about usage-based approaches, which is that a language-user's experience with language interacts with his cognitive apparatus to form the mental representations that make further productive language use possible, but since 1987 the application of usage-based notions to the study of grammaticalization, discourse structure, phonology, language acquisition and sociolinguistics has broadened the original concept, while the availability of large electronic corpora has made it possible to trace more directly the relationship between distributional patterns in experience and cognitive representations. Thus today's usage-based linguist broaches topics and uses methods that go far beyond the applications that Langacker proposed.

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EntreviSta: Which are the major arguments in favor of adopting a usage-based approach to the study of language?

JB: A general argument would be that usage-based models are cognitively more plausible than models that try to divorce structure from usage. They recognize the plasticity of the brain and how it responds to experience and treat language in a way that is congruent with what is known about other cognitive processes, such as memory.

Another important argument is that characterizations in such models treat language as variable on a synchronic level and changeable on the diachronic dimension. The variation found in experience is represented at the deepest levels of representation and not treated as something that is tacked on the end of the grammar. Because variation is inherent to the grammar, gradual change is to be expected. In contrast, structuralist models in which the system is thought to be balanced and cohesive have to describe change as lurching along from one fixed state to the next.

On a more specific level, the effects of repetition in the form of both token and type frequency in determining the shape of linguistic structures means that language use must be taken into account in understanding the general architecture of grammar.

The fact that grammar can be shown to serve certain communicative purposes in discourse rather than being a strictly logical system also bolsters the argument for taking usage into account.
The strongest argument is that usage factors provide an avenue that leads to real explanations of linguistic phenomena.

EntreviSta: Usage-based models tend to bring together contributions from both Cognitive and Functional Linguistics, Historical Linguistics included. Do you see border conflicts (or alignment issues) in such convergence?

JB: The relationships with these three areas are different. Usage-based theory is an extension of the approaches developed in Cognitive and Functional Linguistics, as practiced for the last forty or more years, but Historical Linguistics is a much older and very traditional field that has been approached in many different ways in the last century and a half. The theoretical notions relied on in Historical Linguistics often make structuralist assumptions and for researchers trained on these notions, the acceptance of usage-based ideas may be difficult, even if they are revealing. The more recent field of language variation and change is more likely to incorporate usage-based methods and ideas because it is more attuned to the study of language in context and the inherent variability of language.

EntreviSta: In your last book (Bybee, 2010), you state that the goal of a usage-based theory of language is "to seek explanations in terms of domain-general cognitive processes". Could you elaborate further on that statement?

JB: The goal of any theory of language is to explain the properties of human languages. Generative theory assumed that language is a very special cognitive system that does not necessarily share properties with other cognitive systems. But of course this is a rather improbable assumption to make, especially given what is currently known about the brain. It seems likely instead that some of the cognitive mechanisms and abilities that lead to the creation of linguistic units and structures may apply in other domains as well, for instance, in general memory, in visual perception, in motor activities. So it would be beneficial to be able to discover what aspects of language are created by domain-general cognitive processes and which are specific to language. If we start with the assumption that language operates only with mechanisms specific to language, we are not going to discover how domain-general processes contribute to language. On the other hand, if we take the broader view that domain-general processes might contribute to language, and we work through a series of cognitive mechanisms searching for ways that they may apply in other domains, we can identify how domain-general mechanism work in language, but we might in the end also find that there are some cognitive abilities that are specific to language. In my 2010 book I focused on the domain-general processes of cross-modal association (which gives us form-meaning relations), categorization, chunking, neuro-motor automatization, rich memory, inference and analogy.

EntreviSta: Analogy is present in many works on Historical Linguistics since the very early stages of this theory, and refers to a proportion in which, given three forms, the language user can come up with a fourth through comparison. However, according to your book, this is not how you use the term. Could you explain that point?

JB: The term 'analogy' has also long been used to describe the way speakers construct new utterances, especially in pre-Chomskyan traditions. Its specific use in Historical Linguistics to refer to a proportional analogy of the sort, A:B::a:b, is not based on any psycho-linguistic testing. We showed in Bybee & Moder, 1983 that this procedure cannot accurately describe the way new morphological forms are created. In our example, the class of verbs exemplified by string, strung, has several analogical creations for which there were not three forms to use in the formula. Examples are strike, struck; stick, stuck; dig, dug; and drag, drug. The original members of this verb class all ended in nasals or in nasals plus a voiced consonant: sing, run, find. As there were no existing verbs with final /k/ and /g/ (with no preceding nasal), there were no forms to represent the first part of the analogical formula. Moreover, the vowels of drag and strike do not match the [I] vowel found in all the original present tense forms of the verb class. Therefore, we argue that there is a schema formed over the past tense forms of the existing verbs and new verbs are fit into this formula, without reference to the present form.

For morpho-syntactic constructions, the broader use of the term 'analogy' is appropriate. Constructions are used productively by adding new lexical items to an open slot. This productive use could also be called 'analogy', though what is really involved is fitting a new item into an existing category and thereby expanding that category. See my answer to the last question for examples.

EntreviSta: You have long argued in favor of considering both synchrony and diachrony as an integrated whole in linguistic analyses. Could you provide us with an example of how the integration of these two analytical dimensions enhances both the descriptive and the explanatory adequacy of a linguistic theory?

JB: Some of the best examples of the interaction of synchrony and diachrony can be found where two or more constructions are competing, or are layered, to use Hopper's term (Hopper, 1991) creating exceptions or distributions that aren't easy to describe or explain in synchronic terms alone. Many European languages have more than one future tense marker and their distributions are difficult to analyze and understand without access to their histories. For example, English has shall, will and be going to and they are not just interchangeable in many cases. But their historical source constructions provide important clues to how they are used today and what meanings they can convey. First, research on grammaticalization shows that despite different sources (e.g. volition, obligation and movement towards a goal), all future markers go through a stage of indicating the intention of the subject. This diachronic fact helps us explain why all three of these markers have intention uses. In addition, restrictions on shall are best understood in a diachronic perspective. It is used infrequently in American English but is still viable in British dialects, but it has future and intention uses only in first person (Coates, 1983). Coming from a verb that expressed a strong sense of obligation, the obligation senses remained in second and third person, while the inferences necessary to derive the intention and future uses applied only in the more frequent first person. The split between first person and second and third has no real synchronic explanation; it is just a usage pattern that speakers learn from their experience. It does, however, have a diachronic source and an explanation can be developed from an understanding of the diachronic processes involved in grammaticalization. As will came from a volition source, it is more general, being used for future and intention for first, second and third person, though shall is still preferred in first person in conservative speech. Of course, the speakers are not affected by knowledge of the history of these forms, but this knowledge can help linguists decide what kind of synchronic description would be most useful for their purposes. The history helps linguists consider whether to look for explanations in the meaning, the form, or the function.

At the same time, knowledge of diachronic processes such as grammaticalization gives us insight into why and how changes take place and allows us to identify ongoing changes and even predict the direction of future changes.

EntreviSta: Construction Grammars play an important role in usage-based approaches to language. Despite sharing the notion of construction as a learned pairing of form and function, Construction Grammars may vary with respect to their focus: some focus on the psycholinguistic plausibility of constructions (cf. Goldberg, 2006); some on a non-redundant representation of the generalizations present in all the constructions in a language (Fillmore & Kay, 1999, p. 2). In your opinion, how would a constructionist approach which takes into consideration both synchrony and diachrony be different from other construction grammars?

JB: Understanding how constructions come into being and change over time helps us identify the cognitive processes that are operative in the use of constructions and therefore informs our general theory of grammar. In particular, as we understand how constructions develop and change we can

have a better theory of the gradience of the compositionality of the semantics and analyzability of the morpho-syntax. The extension of constructions over time reveals changes in the category structure of their open slots from which we can develop a relevant theory of categorization. The use of diachronic evidence dovetails nicely with Goldberg's approach which uses first language acquisition and experimental evidence. In contrast, Fillmore and colleagues continue to rely on structural arguments, without checking to see if they match the cognitive structures that language users might have established through their experience with language. I believe that we need to examine all sources of evidence before coming up with an analysis or theory.

EntreviSta: How do constructions emerge in a language?

JB: This topic has not been studied well enough to provide a definitive answer, but there are certain things that we know. A construction is conventionalized, so we know that repetition in experience is important for the establishment of a construction, whether it is a word, a phrase or a sequence that has some open categories. Repetition in context is also necessary for the chunk to be assigned a meaning that is partially independent of its component parts (in other words, for it to lose some compositionality). The few cases that have been studied of a construction from its very beginning show it expanding from a specific, semi-fixed expression or prefab (Israel, 1996; Wilson, 2009). Wilson 2009 shows that the very productive construction of the verb quedarse with an adjective or other expression in Spanish, meaning 'to become' was first documented with the adjective solo 'alone' and expanded to include expressions such as sin padre 'without a father' among others. Over the centuries this construction has spread to many semantic types of adjectives (Bybee & Eddington, 2006). Constructions that have to do with other syntactic features, such as word order, also require repetition to be conventionalized and repetition in context to establish their functions and meaning. This is an important topic that deserves much more research. As we understand how constructions develop, we will also understand more clearly why languages have grammar.

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