

# **First verbs**

## **A case study of early grammatical development**

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# 1

## Introduction

In 1922 Ludwig Wittgenstein published *Tractatus Logico-Philosophicus*, a formal analysis of language in terms of logical propositions. He promptly quit philosophy. Seven years later when he returned to academic life Wittgenstein had a completely different view of language; he now began talking about “language games,” “forms of life,” “family resemblances,” and other ethnographic sounding phenomena. What happened in the intervening years is well known. He worked with children! And in particular he attempted to construct for the children he was teaching a dictionary that defined words in terms of the atomic propositions of predicate calculus. His utter failure in this attempt quickly convinced Wittgenstein that, whatever its other merits, formal logic was not the stuff of human language use (Fann, 1969).

In the 1960s linguistics came to be dominated by formalistic theories not unlike Wittgenstein’s *Tractatus*. Theories such as Transformational Generative Grammar (Chomsky, 1957, 1965) were designed to abstract language away from its use in meaningful communicative contexts and to describe and explain it in terms of disembodied algorithms. This approach was immediately transported to the study of early child language, but with no more success than Wittgenstein had in transporting his formal theory to children’s language. Researchers such as Brown (1973), Bowerman (1973), and Braine (1976) all concluded that young children do not operate with the formal apparatus of Transformational Generative Grammar. This failure caused a brief hiatus in the writing of formal grammars for early child language, but now the enterprise is back – and with a vengeance. Formal theories of “learnability” are positing structures even more abstract than those that previous researchers concluded were inappropriate for the analysis of early child language (e.g., Lightfoot, 1989; Pinker, 1984; see the papers in Roeper & Williams, 1987). Moreover, many researchers who are convinced that young children do not operate with the abstract paraphernalia of Generative Grammar continue to believe that older children and adults do operate in this

way, and therefore that our developmental theories must find a way to bridge the gap.

Developmental psychologists who study other areas of human cognition do not know what to make of these new theories – full of complex tree structures and arcane acronyms – that have been created, for the most part, by linguists unconcerned with other aspects of human development. The problem is that until recently a thorough and explicit alternative to Generative Grammar has not been available. The situation is beginning to change, however, with the work of researchers and theorists such as Lakoff (1987, 1990) and Langacker (1987, 1990), who speak of what they do as Cognitive Linguistics, and Bates and MacWhinney (1979, 1982, 1987, 1989) Givón (1979, 1989), and van Valin (in press), who speak of what they do as Functional Linguistics. One coherent paradigm incorporating both of these perspectives is only now beginning to emerge, its most common appellation being Cognitive Linguistics (see, e.g., the papers in Rudzka-Ostyn, 1988, and the new journal *Cognitive Linguistics*). In this new view, human languages are best thought of not as formal theories, but as cultural products that embody in basic ways both the cognition of which they are composed and the social–communicative ends that they have evolved to serve. Research within such a paradigm is thus aimed not at constructing more elegant formalisms but at uncovering the cognitive structures and communicative strategies that underlie human language use. It is not totally misleading to say that the move from Generative Grammar to Cognitive Linguistics is analogous to Wittgenstein’s move from his earlier to his later philosophy of language.

### **1.1. Cognitive Linguistics and the developmental approach**

In this analysis of one child’s early language development I employ a Cognitive Linguistics framework. There are a number of reasons for this choice, most of which emanate from the fact that I am a developmental psychologist, not a linguist. Two are of central importance for current concerns: (1) Cognitive Linguistics describes language structure in terms of basic psychological (cognitive, social–cognitive) processes, and (2) Cognitive Linguistics is congenial to developmental analyses. Neither of these claims may be made of more formalistic approaches.

First, it is important to me as a psychologist that descriptions of children’s language fit with descriptions of their cognition and social cognition. Generative Grammar and its variants have worked very hard to make sure that their descriptions of human linguistic abilities, especially syntax, do *not* fit with more general cognitive and social–cognitive descriptions – what Bates (1984) has called their “scorched earth” policy.

Generative grammarians have made special attempts to argue, for example, that nouns and verbs have nothing whatsoever to do with objects and actions; that the subject of a sentence has nothing whatsoever to do with topic of conversation or focus of visual attention; and that the construction of a sentence from individual words has nothing whatsoever to do with the manual construction of hierarchically organized objects out of simpler objects. Instead, generative grammarians have chosen to focus exclusively on the supposedly autonomous aspects of formal syntax (changing the definition of syntax where necessary to preserve this autonomy; Lakoff, 1980), and then to describe these aspects in terms of “rules” of grammaticality that have nothing to do with human competencies or the way they are described in other cognitive domains. In all, for most psychologists there is a clear psychological reality to such things as symbols, concepts, and communicative intentions, but we are not so sure about such things as predicate raising, *wh*-movement, and empty categories.

Cognitive Linguistics is a much more psychologically based approach to linguistic competence. At its core is the cognitive commitment, which enjoins linguists to take advantage of, and to attempt to relate their findings to, research in the other cognitive sciences (Lakoff, 1990). Most radically, many cognitive linguists believe that languages are best described and explained *exclusively* in terms of more basic processes of human cognition and communication. Langacker (1987), for example, grounds his entire theory in symbols and cognitive processes for operating with symbols. On the basis of their shared experience and cognition and for purposes of communication, a group of human beings creates a “structured inventory of symbolic devices” – of which there are many types, serving many different functions including syntactic functions (cf. Wittgenstein’s, 1953, analogy of a toolbox). To construct communicative messages, human beings take items from this inventory (and from their inventory of nonlinguistic means of communication) and integrate them into larger symbolic wholes. There is nothing else in human language other than the symbolic inventory and general cognitive processes for using it; that is to say, there are no hidden rules, principles, parameters, linguistic constraints, or deep structures – just as there are none of these things in other human skills.

Putting together novel [linguistic] expressions is something that speakers do, not grammars. It is a problem-solving activity that demands a constructive effort and occurs when linguistic convention is put to use in specific circumstances. Creating a novel expression is not necessarily different in fundamental character from problem-solving activity in general, and the speaker’s knowledge of linguistic convention is but one of the many resources he brings to bear in finding a solution. (Langacker, 1987, p. 65)

A major piece of evidence for this point of view comes from recent linguistic analyses (e.g., Lakoff, 1987; Taylor, 1989) and research in experimental psycholinguistics (e.g., the studies reported in Bates & MacWhinney, 1989, and Corrigan, Eckman, & Noonan, 1989). These analyses and findings strongly suggest that linguistic categories of all types – from words to syntactic categories such as “sentence subject” – display prototypical structure. This is the same structure displayed by other types of human categories: graded structure with more central and more peripheral properties, no one of which is essential. The fact that linguistic categories are structured prototypically indicates that they are formed via general cognitive processes and accounts quite naturally for the fact that many, if not most, of the linguistic structures with which human beings operate involve figurative extensions of more basic cognitive categories (Lakoff, 1987). Prototypical structure is fundamentally incompatible with the essentialistic categories (defined in terms of necessary and sufficient conditions) required by formal grammars.

The second reason for my choice of a Cognitive Linguistics framework is that it is much more congenial to developmental analyses. Because it uses essentialistic categories and rules, Generative Linguistics is not only not congenial to development analyses, it is fundamentally hostile. Chomsky (1986) makes this very clear in his claim that Generative Grammar *requires* an assumption of instantaneous learning:

Irrespective of questions of maturation, order of presentation, or selective availability of evidence, the result of language acquisition is as if it were instantaneous: In particular, intermediate states attained do not change the principles available for interpretation of data at later states in a way that affects the state attained. (pp. 53–54)

Learnability theorists claim something very similar. The Logical Problem of Language Acquisition is basically how children can acquire the unique and abstract structures of Generative Grammar from “unordered strings” of linguistic data. Their solution is the “continuity assumption,” that is, the assumption (following Chomsky) that indeed children cannot acquire these abstract structures in any direct way and, as a result, they must be innately given and unchanging (continuous) throughout development (e.g., Pinker, 1984). To save the formalism, Learnability theorists must attribute to children’s earliest language precisely the kinds of structures it would seem to be lacking.

To developmental psychologists this whole approach is, in a word, backward. The developmental approach, as employed by most developmental psychologists, begins with an attempt to describe children’s language, or any other of their skills, in terms of concepts and structures that are (*ex hypothesi*) a part of their, not our, experience. Developmentalists then try to determine each of the steps in the development

of this skill, from origins to full maturity. *Contra* Chomsky, the intermediate steps in the process are absolutely crucial because some steps cannot be taken until others have been completed (e.g., Gottlieb, 1983, 1990). Thus, for example, by the time children are ready to learn the embedded clauses that Learnability theorists are so fond of, they are not faced with an unordered string of symbols. Their linguistic systems by this point in their preschool years allow for the formulation of a variety of sophisticated linguistic structures. The new skill of embedded clauses then requires not a huge logical leap but only a small empirical step beyond existing linguistic skills. Through a complex of developmental processes, the structure of language changes in fundamental ways during human ontogeny (cf. Bamberg, Budwig, & Kaplan, 1991; Bloom, 1991).

Cognitive Linguistics is much better suited to the developmental approach. First, it relies on general cognitive structures and processes that allow investigators to consult research in other domains of cognitive development. This approach helps to determine the nature of the child's competencies at particular development levels and provides an additional "constraint," if you will, on children's early language. Second, and moreover, the prototypically organized concepts and categories of Cognitive Linguistics are much more open to the possibility of true developmental change. Categories that do not have essential properties can evolve naturally and gradually, sometimes into very different entities. This provides researchers with the possibility of reconstructing the many intermediate steps required in the acquisition skills as complex as those involved in linguistic communication.

None of this is to deny, of course, the existence of biological prerequisites for language acquisition. It is just that in the Cognitive Linguistics view, this does not include an innate, specifically linguistic module. Infants come into the world prepared to act on objects and form concepts of them and their properties, and to form concepts of the actions themselves and their properties (Piaget, 1954). They come into the world prepared to learn and use conventional symbols, and to construct categories of these symbols (Bates, 1979). They come into the world prepared to use the vocal-auditory channel for communication (Kuhl, 1979). They come into the world prepared to interact with, to attend jointly with, and to imitate other human beings (Trevathan, 1979). They are prepared in other ways as well. The point is that children then bring this preparedness to their social encounters with other human beings, who interact with them using a system of symbolic communication that has evolved over thousands of years of cultural evolution. They learn their linguistic skills in and from these interactions, with what they learn at any particular time both depending on and helping to change their current developmental level. The quarrel between Cognitive Linguistics

and Learnability approaches is thus not whether there is a biological preparedness for language acquisition, but the nature of this preparedness. Cognitive Linguistics would claim that the structure in children's language comes not directly from their genes but rather from the structure of adult language, from the structure of children's cognitive and social-cognitive skills, and from the constraints on communication inherent in expressing nonlinear cognition into the linear channel provided by the human vocal-auditory apparatus (Bates, Thal, & Marchman, 1991).

Everyone is agreed that we cannot hope to understand the acquisition of language until we understand something of the structure of language. But just as developmental psychologists have come to recognize that the Piagetian formalization of cognition in terms of mathematical group theory is a hindrance rather than a help (Overton, 1990), it may now be time to recognize that the formalizations of Generative Grammar/Learnability theory are not so helpful either. Cognitive Linguistics would seem to be a much more promising approach for researchers interested in the *psychology* of language and its development.

## 1.2. The importance of verbs

A key to the Cognitive Linguistics approach to language development is the child's acquisition of verbs. Verbs are linguistic symbols used to designate events that in many cases are highly complex: one or more entities undergoing one or more changes of state. The verb *give*, for example, is used to designate an event involving at least three entities with well-defined roles – giver, thing given, and person given to – each of which undergoes a specific change of state. Because conceptual roles such as these are an integral part of verb meaning, the conceptual situations underlying verbs can be seen as providing a kind of "frame" for structuring larger linguistic expressions such as sentences. The semantic structure of verbs thus contains what have been called "grammatical valences," and verbs are therefore responsible for much of the grammatical structure of a language. This obviates the need in many cases for more abstract syntactic principles and rules (e.g., Fillmore, 1982; Langacker, 1987; and even Bresnan, 1982; cf. Boland, Tannenhaus, & Garnsey, 1990, for experiments demonstrating the point).

The other key element of grammatical structure is of course syntactic devices for linguistically marking the conceptual roles that verbs create (e.g., word order and case markings). These may be seen as basically second-order symbols because they indicate how the first-order symbols are to be construed (e.g., *John* is the initiator of the action or the recipient of the action). This is typically a small, closed class of items designating

a highly constrained set of syntagmatic relations. In Talmy's (1978) formulation, contentives such as nouns and verbs specify the elements of a "cognitive scene," whereas syntactic devices operate on these to specify its structure. It is important also that syntactic devices may in many cases come to operate "schematically" – that is, they may operate not on individual linguistic symbols (e.g., *John*) but on linguistic categories of various sorts (e.g., agent, subject). Together, verb-argument structure and the syntactic marking of arguments and argument categories form the backbone of human grammatical competence.

In the study of child language acquisition, the importance of verbs is becoming more widely recognized. Bloom has been most prescient in this regard (see 1981 for an early review, 1991 for a later review). She and her colleagues have investigated a number of ways in which verbs structure early grammars, most especially their role in leading children to the acquisition of complement clauses and other elements of complex sentences (e.g., Bloom, Lifter, & Hafitz, 1980; Bloom, Rispoli, Gartner, & Hafitz, 1989). From a very different theoretical point of view, Pinker (1989) has more recently investigated a number of interesting phenomena involving the predicate-argument structure of early verbs, and constraints on how these are generalized to novel verbs. And in a recent study of early grammatical development, Bates, Bretherton, and Snyder (1988) have argued and presented evidence that children's initial verb vocabularies are very good predictors of other aspects of their early grammatical competence.

The specific idea of most importance for current purposes – implied by all of these researchers but fully explicated by none of them – is that the acquisition of verbs as single-word lexical items during the 2nd year of life is the major turning point in children's transition to adultlike grammatical competence. The grammatical valences contained in children's first verbs simply "beg" to be completed into sentences. The important theoretical point is that a focus on the role of verbs as conceptually complex lexical items is essential if we are to account for children's early grammatical competence in terms of basic cognitive and social-cognitive skills, without resorting to adultlike linguistic categories and rules.

### **1.3. Plan of the monograph**

The study reported in this monograph is an attempt to explore more fully the idea that children's first verbs are key organizing elements in their early grammars – using a Cognitive Linguistics approach. The data come from a diary of my daughter's earliest verbs and sentences during her 2nd year of life. I will attempt to provide analyses of these data that

illuminate the way my daughter acquired her early verbs, the cognitive structures that might have underlain her early verbs, and the role verbs played in structuring her early sentences and grammar. The first three chapters, including this one, provide the theoretical and methodological background for formulating these questions more precisely. The middle three chapters present the basic data of the study, in a discursive diarylike format. The last three chapters provide analyses that directly address specific hypotheses about the child's early verbs and their role in early grammars, and, in so doing, they try to point the way to a model of early language development in which linguistic communication is seen as a fundamentally cognitive and social–cognitive activity.

One final point. Although I have contrasted in this brief introduction Generative Grammar and Cognitive Linguistic approaches to language acquisition, the current study is not designed in any way to decide the issue. It cannot do this most importantly because the analyses stop at 2 years of age – just when the syntactic action is beginning for Learnability theorists. But I do hope that the study will contribute to the debate. Because the Cognitive Linguistics approach I employ relies explicitly and exclusively on cognitive structures known to be possessed by children of this age, the issue in the end will be whether these analyses leave anything out of account in the 2-year-old child's linguistic competence. Insofar as they are sufficient and do not leave anything out of account, one of three conclusions may be drawn: First, like adults, 2-year-olds operate with Universal (Generative) Grammar, but the observable linguistic forms they produce do not reflect this for various reasons of “performance”; second, 2-year-olds operate with a cognitively based system of language, but this is transformed by various epigenetic processes into something closer to Generative Grammar later in development; or third, 2-year-olds do not operate with the innate apparatus of Universal (Generative) Grammar and so it is probable that no one else does either. If my analyses are sufficient to account for the 2-year-old child's language, my own inclination is to draw the last of these conclusions and to pursue in future investigations how Cognitive Linguistics might be used to ground the more complex linguistic structures of older children and adults in their more general cognitive and social–cognitive capacities.