Children's syntax: a parametric approach

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Abstract

Here I present some reasons to take a "parametric" approach to children's acquisition of syntax. I briefly review findings from three case studies which, in my view, offer important insights into what happens when a child's syntax undergoes a change. Each of the case studies is based on longitudinal corpora of spontaneous-speech samples from children acquiring English or Spanish, and each one examines the initial emergence of syntactic structures that are subject to cross-linguistic variation. My principal claims are that changes in a child's syntax are *decisive, additive,* and *interconnected.*

Keywords: child language acquisition, syntax, principles and parameters

Introduction

In the study of child language acquisition, there is a long tradition of focusing on children's errors, a tradition that has unfortunately led to some widespread misconceptions. This tendency may have resulted from a natural sampling bias: whenever a child makes an error of "commission" (i.e., combining morphemes in a way that is disallowed in the target language), alarm bells go off in the mind of any adult observer. Whether it is a child's parent keeping a language diary, or a scientist examining a transcript of a child's speech, the adult's attention will naturally be drawn to the child's errors.

In contrast, when a child assembles morphemes in a way that is actually possible in the target language, there are no mental alarm bells. An adult observer may go for some time without even noticing that a new grammatical structure has begun to occur in the child's speech, if it is something used routinely by adults. Thus, it is quite easy to get the impression that children's acquisition of grammar is a prolonged process of gradual changes, plagued by persistent commission errors along the way.

Yet, when longitudinal transcripts of a child's spontaneous speech are examined quantitatively, a very different picture emerges. In the remainder of this paper I will very briefly present several parts of this picture: the observation that a change in the child's syntax is normally abrupt (or "decisive"); that changes are almost always "additive," in the sense of enlarging the child's existing syntactic repertoire, which is composed entirely of structures (or portions of structures) that are permitted in the target language; and finally that changes can be "interconnected," in the sense that sometimes, certain (seemingly) unrelated structures in a given language are acquired by every child as a package.

Case study I: verb-particle combinations

The first case study (drawn from Snyder 2007, Chapter 4) examines *error patterns* in the speech of a child known as Sarah (Brown 1973), when she was first beginning to use English verb-particle constructions (e.g., rip the lid off). The corpus of recorded conversations between Sarah and her various interlocutors (her friends and family, plus members of Roger Brown's research team at Harvard) was chosen because it was the densest corpus available for a child acquiring English, with a mean of just 7.4 days between recordings that cover an age range from 2 years 3 months (2;03) to 5;01. The English verb-particle construction was chosen as the focus because it is used with high frequency both by adults, and by children once they acquire it; and at the beginning of her corpus, Sarah was not yet using it.

The case study began with a systematic enumeration of the logically possible error-types that a child might make, prior to mastering the adult structure; and the next step was the design of a computer-assisted search that would locate as many as possible of these error-types, if they ever occurred in Sarah's corpus. The list of possible error-types included errors expected from a child who was using analogical reasoning (e.g., * She picked up it, on analogy with sentences like She picked [the book] up, She picked [it] up, and She picked up [the book]). It also included errors expected from a child who was considering possible grammars that are close to (but distinct from) the actual grammar of English, such as the grammars of languages that are typologically similar (and historically related) to English. Errors of this type would include, for example, She has the book up-lifted, on the model of the word-for-word counterparts that are possible in Dutch and German.

The main finding was that Sarah made an abrupt, *"decisive"* change (at the age of 2;06) from producing extremely few (if any) genuine verb-particle combinations, to suddenly producing verb-particle combinations comparable to those of adult English. Moreover, right from the outset, Sarah's verb-particle combinations were overwhelmingly correct, from the perspective of the adult's grammar for English. Almost all the errors that did occur were errors of *omission, not commission;* and these errors did not begin to occur until the same point when the correct forms had also begun to occur.

Case study II: prepositional questions

The second case study (from Sugisaki & Snyder 2006) concerns acquisition of prepositional questions ('P-questions') in English and Spanish. In English, the P is normally "stranded" (e.g., *What* was Peter talking *about*?), while in Spanish the P is "pied-piped" along with the wh-expression (e.g. *De qué* hablaba Pedro?, lit. "[About what] was-talking Peter?"). What if a child wants to ask a P-question and does not yet know how? Is there a "default" way? (The English way? Spanish? Something else?) To find out, we examined ten longitudinal corpora for English, and four for Spanish. Our computer-assisted searches located

every child utterance that contained both a P and a word or phrase capable of serving as a wh-expression.

What we discovered was that children *never used a "default" option*. When children acquiring English first began producing P-questions, they used P-stranding, just like adults. When children acquiring Spanish first began producing P-questions, they used pied-piping, just like adults.

What was even more striking was that four of the children had a quite sizable gap (range: 2.0-9.0 months; mean 5.2) between the point when they were producing both direct-object (DO) questions and the declarative counterparts to P-questions; and the point when they began producing P-questions. In other words, these children went for up to *9 months* without asking P-questions, even though they produced numerous DO-questions (range: 11-48; mean: 29.8) during the gap.

Moreover, once the children began producing P-questions, the P-questions were immediately used almost as frequently as DO-questions. Hence, it appears that a child who does not yet know how to produce a P-question correctly in her target language actually refrains from even attempting to ask such questions in spontaneous speech. This suggests the child temporarily has a grammar providing the correct structure for DO-questions but providing no structure at all for P-questions; and that a subsequent syntactic change *"adds"* P-questions to the grammar.

Case study III: compounds and complex predicates

The final case study (from Snyder 2007, Chapter 5) shows that acquisition can be *"interconnected."* In (Snyder 1995) I proposed the existence of the "Compounding Parameter," a point of cross-linguistic variation that affects both compound words and complex predicates. The key idea is that certain languages (the ones with the positive setting of the parameter, such as English) freely allow the creation of novel, bare-stem, compound words (e.g., animal cup, for a cup with pictures of animals on it; or animal cup catalog, for a catalog offering different types of animal cup), whenever the context is sufficient to make the intended meaning clear. Languages with this setting include all the Germanic languages, plus Hungarian, Mandarin, Japanese, and Thai. Languages with the negative setting include all the major languages of the Romance and Slavic families. In such languages the ideas that are normally expressed with a compound word in English generally have to be expressed in phrasal syntax, using something like a preposition or an oblique case to create a modifier.

Moreover, several types of complex predicate seem to be found only in languages with the positive setting of the Compounding Parameter. One example is the separable verb-particle construction examined in Case Study I; this is a complex predicate in the sense that the verb and the particle jointly determine the event type (Aktionsart) of the verb phrase. For example, a simple activity like carrying a box – John carried the box (?? in thirty seconds) – can be

converted to an accomplishment through the addition of a particle – John carried the box out in thirty seconds – even with the particle is separated from the verb by a full-DP direct object.

Proposing an explanation in terms of an abstract grammatical parameter, within a Principles-and-Parameters framework, leads to a very strong prediction for child language acquisition: in children acquiring a language like English, with the positive setting, the point in time when any given child acquires the verb-particle construction should be tightly correlated with the point in time when the same child acquires bare-stem compounding. In (Snyder 2007) I reported the results from a case study that tested this prediction directly, using 19 high-quality longitudinal corpora from the CHILDES database (MacWhinney 2000). Age of acquisition was measured as age of the first clear use, provided that use was soon followed by additional uses with different lexical items. The children varied considerably in the ages at which they acquired verb-particle combinations, and they also varied considerably in the ages of acquisition for bare-stem compounding. Yet, for any single child, the ages of onset for verb-particle constructions and novel N-N compounding were nearly identical; this yielded a highly robust statistical correlation ($r=0.937$, $t(17)=11.1$, $p<.0001$). Hence, the findings provided striking support for a parametric approach.

Discussion and conclusions

Taken together, the observations that syntactic changes are decisive, additive, and interconnected support a view of language acquisition in which the child is collecting evidence about the target language, and determining the values of grammatical parameters, with extraordinary precision.

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