Grammatical Conservatism, and the Child's Role in Language Change

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Main Points:

- A growing body of evidence supports the claim that children are “Grammatically Conservative” during normal first-language acquisition.

- If this is correct, it has interesting implications for the likely roles of children in language change.

- Grammatical reanalysis of a surface form in child-directed speech should be quite rare, at least in normal, generation-to-generation transmission of an existing natural language.

- On the other hand, simple loss of a structural option over time becomes more likely, if the conservative learner insists on robust evidence in the input.

- The hope in this talk will be to generate discussion of specific predictions and relevant historical data.

1. Grammatical Conservatism (GC)


Children do not make productive, spontaneous use of a new syntactic structure until they have both determined that the structure is permitted in the adult language, and identified the adults’ grammatical basis for it.

(2) The overwhelming majority of children's spontaneous errors involve omission, not “co-mission.” (cf. Maratsos 1998 on "underground acquisition")

(3) The co-mission errors that do occur with any frequency are limited to a tiny subset of the logical possibilities.

(4) Note: This pattern is limited to spontaneous speech, as opposed to elicited production or tests of comprehension.

(5) Yet, even if GC is limited to spontaneous speech, the phenomenon has dramatic implications for both the nature of syntactic knowledge and the process by which it is acquired.

(6) Subsequent Sections of Handout:

Section 2. Scarcity of Co-mission Errors
Verb-Particle constructions
Other recent studies of spontaneous speech

Section 3. Interim Discussion
Why the evidence in Section 2 points to GC
Exceptions to GC
Broad implications of GC
Could it be "Superficial" Conservatism?

Section 4. Evidence for an Abstract Parameter
The Compounding Parameter
Evidence from comparative syntax
Evidence from child language acquisition

Section 5. Compatible Models of Syntactic Knowledge
Constructive Parameters
Abstract Treelets

Section 6. Implications and discussions
2. Scarcity of Co-mission Errors
   2.1 English Verb-Particle constructions

(7) Mary stood up / lifted the box up / lifted it up / lifted up the box.

(8) * Mary lifted up it / lifted up the box out / lift up+ed the box / etc.

(9) Snyder (2007, Chapter 4): A near-exhaustive search for errors with
     the English verb-particle construction in the longitudinal corpus
     for Sarah (Brown 1973; corpus downloaded from CHILDES in July
     2004).

(10) Sarah’s particle constructions:
     Box = Correct. Triangle = Possible Co-mission Error

(11) Errors almost always took the form of omission, not co-mission:
     - From the beginning of her corpus through age 2;10 (34 months), Sarah
       produced 102 examples of verb-particle constructions, of which 32
       contained an error.
     - Yet, at least 29 of these errors (90.6%) were errors of omission.

(12) Of the other three, only one (<3%) was unambiguously a
     grammatical error:

     I [...] go down+ed. [Transcript 34, line 569, age 2;10,20]

(13) Conclusion: Sarah made a rapid transition, from never using the
     construction to using it in an adult-like fashion, with almost no
     errors of co-mission.
2.2 Other studies searching for co-mission errors

(14) Rodríguez-Mondoñedo (2008), on Differential Object Marking in children's spontaneous Spanish:

a. Buscamos (*a) una clase.
look.for-1pl.Pres (DOM) a class
'We're looking for a class.'

b. Buscamos (*a) una profesora.
look.for-1pl.Pres (DOM) a teacher-Fem
'We're looking for a teacher.' [DOM ↔ specific]

c. No buscamos *(a) nadie.
not look.for-1pl.Pres (DOM) nobody
'We aren't looking for anyone.'

d. "[C]hildren do not use the A-marker when they should not, and in addition, they do not fail to use it when they should." (p.138)

(15) Westergaard (2009), on word order in the spontaneous Norwegian (Tromsø dialect) of three children (1:09-2;11).

Tromsø dialect has V2 word order in matrix clauses, except (p.2):

a. Kor rart han snakke! [exclamative]
how strange he speaks
How strangely he speaks!

b. Kanskje vi skal snakke engelsk. [initial element is kanskje]
maybe we shall speak English
'Maybe we should speak English.'

c. Ka du sir? [monosyllabic wh-word, and subject is given information]
what you say
'What did you say?'

d. "[M]ost of the children's non-target-consistent production constitutes errors of omission rather than commission ..." (p.2)

e. "In all cases ... the children have the target-consistent word order in place as soon as relevant utterances appear in the child data ..." (p.183)

(16) Villa-García (2008), on overt subjects in children's spontaneous Spanish:

a. Nunca (*Pedro) fue (Pedro) a Londres (Pedro).
never (Peter) go-3SgPret (Peter) to London (Peter)
'Peter has never been to London.'

b. Qué (*tú) compraste?
what (you) buy-2SgPret
'What did you buy?'

c. "[W]e did not find one single error regarding subject placement... nor did we find any pragmatic oddities regarding aspects such as information structure either in the transcripts or in the videotapes analyzed." (p.51)

(17) Tieu (2010), on Negative Polarity Items in (26) children's spontaneous English:

a. *(Only) Sue has any cookies. [Downward-entailing contexts]

b. Does Sue have any cookies? [Polar questions]

c. "The mean [co-mission] error rate was only 3.16%." (p.19)

(18) Xu & Snyder (2010), on negative wh- and yes-no questions in children's spontaneous English:

a. What didn't he move?

b. What did he not move?

c. Didn't he move it?

d. *What did he didn't move? [common error in EP studies]

e. "Out of 111 negative questions, only two (<2%) contained an extra Aux..." (handout, p.5)
(19) Sugisaki & Snyder (2003), on P-questions in children's spontaneous English and Spanish:

a. What is he talking [PP about t] ? (P-stranding)

b. ?* [PP About what] is he talking t ?

c. [PP De qué] habla t ? (Pied-piping)
   about what speak-3SgPres
   'What is he talking about?'

d. *Qué habla [PP de t]
   what speak-3SgPres about

e. "[T]he parameter of P-stranding does not have a default setting. Neither pied-piping nor P-stranding is employed until the child determines the correct setting for her target grammar." (p.229)

(20) Additionally, four of 10 children learning English went through an extended period of actively avoiding P-questions.

(21) Sugisaki & Snyder (2010), on fragment answers to P-questions in children's spontaneous English (N=5) and Spanish (N=5)

   a. Who is he talking with?
      i. Mary.
      ii. ? With Mary.

   b. Con quién habla?
      with whom is-he-talking
      'Who is he talking with?'
      i. *María.
      ii. Con María.

c. For Spanish: "Beginning at the child’s first fragment answer to a [P-question], the next five transcripts contained an average of 93.1% P+DP answers to the [P-questions] ... answered with a fragment." (p.10)

3. Interim Discussion
3.1 Strong Support for GC

(22) Each of the studies above examined a different surface construction, but in every case the child made a rapid transition from never using the construction, to using it in an adult-like fashion, with remarkably few (<10%) errors of co-mission.

(23) Therefore, the learner (A) must be able to change the grammar in a way that adds only a few new constructions to her repertoire at a time (not everything at once); and (B) must be able to be certain of the grammatical basis for these constructions in the target language, before she adds them.

(24) As far as I can tell, anything less would yield numerous, easily detectable co-mission errors in the child's spontaneous speech.


(27) If the child makes use of "interim" grammars with at least a few incorrectly set, non-subset parameters, then we ought to see co-mission errors fairly routinely in children's spontaneous speech (Sugisaki & Snyder 2006).
3.2 Exceptions to GC

(28) While most of the logically possible errors of co-mission are rare to non-existent in children’s spontaneous speech, a few specific error types do occur much more frequently. These include:

- Morphological overregularization (e.g. go-ed for ‘went’)
- Root infinitives (e.g. Him fall down; Schütze & Wexler 1996)

(29) In these two cases, the explanation is probably *not* that the child has made an incorrect hypothesis about the target grammar.

- Marcus et al. (1992): Overregularization results from a memory-retrieval delay.
- Wexler (1998), Rizzi (2007): RI’s result from a maturational effect (on either grammar or language processing)

(30) More generally, exceptions to GC demand an explanation as such: The explanation must account for why a co-mission error occurs there, and not elsewhere.

3.3 Broader implications of GC for linguistic theory

(31) The big question is how GC is even possible:

How can the child’s language faculty even function, if she does not make temporary commitments to potentially incorrect grammatical choices?

(32) And how can the child keep track of what she does not yet know?

3.4. A non-option: "Superficial" Conservatism (SC)

(33) In principle, the child could avoid co-mission errors simply by staying extremely close to the specific phrases that she has encountered in the input. (cf. MacWhinney & Bates 1990, Tomasello 2003).

(34) Such an explanation faces a number of severe empirical problems. (35) Here I will discuss just one: a consistent pattern of concurrent acquisition across constructions that are superficially unrelated.

4. Evidence for an Abstract Parameter

(36) Languages differ sharply in whether they allow endocentric, bare-root compounding as a fully “creative” process, where creation of novel compounds is automatic in the same way as creating new sentences.

(37) a. English: university lab space committee
   b. Spanish: * comité espacio laboratorio universidad

(38) Certain syntactic structures are permitted only in languages with this type of “creative” compounding.

(39) Verb-NP-Particle constructions
   a. English: Mary pulled the top off.
   b. Spanish: María tiró el tapón (*de).

(40) Adjectival resultative constructions:
   a. English: John beat the iron flat.
   b. Spanish: Juan golpeó el hierro (*plano).

(41) Cross-linguistic survey:

<table>
<thead>
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<th>Separable particles?</th>
<th>Adjectival resultatives?</th>
<th>Creative N-N compounding?</th>
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American Sign Language | No | Yes | Yes
Basque | No | No | No?
(Afroasiatic) Egyptian Arabic | No | No | No
(Austronesian) Javanese | No | No | No
(Romance) Spanish | No | No | No
(Slavic) Serbo-Croatian | No | No | No

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(42) Longitudinal study of English acquisition (Snyder 1995, 2001):

In the spontaneous production data for ten children from the CHILDES database (MacWhinney 2000), age of first clear use of the V-NP-Particle construction (in years) was compared with age of first clear use of a novel (non-lexical) N-N compound.

(43) Notes on methodology

- Age of acquisition was taken as age of first clear use, followed shortly afterwards by regular use (cf. Stromswold 1996, Snyder 2007).
- Imitations, repetitions, and formulaic expressions were excluded.

(44) Correlation is exceptionally strong: $r=98, t(8)=12.9, p<.0001$

[Note: Findings are much the same with N=12 in (Snyder 2007).]

(45) Partial correlations, removing the contributions of various control measures, remain extremely strong. Partialling out...

a. The age at which MLU reached 2.5 words: $r=.94, p=.0001$

b. The age of child’s first lexical N-N compound: $r=.95, p=.0001$

c. The age of child’s first A-N combination: $r=.95, p=.0001$

(47) Creative compounding seems to be the "limiting" factor for the V-NP-Particle construction, but this was not logically necessary, because this type of compounding is only one of the prerequisites for the construction (cf. Japanese, with creative compounding but no separable-particle construction).

(48) Interpretation: Children learning English get creative compounding as a by-product, when they acquire the English verb-particle construction.
(49) **The Compounding Parameter (TCP)**
The language (does / does not) permit Generalized Modification.

(50) **Generalized Modification (GM)**

If $\alpha$ and $\beta$ are syntactic sisters under $\gamma$, where $\alpha$ is a word-level category and the head of $\gamma$, then interpret $\gamma$ semantically as an instance of the kind $\alpha$, and as standing in some pragmatically suitable relation to the kind $\beta$.


(51)  || *frog man*  || = man of a type related to frogs

(52)  || *wipe the table clean*  ||

= a table-wiping event of a type related to the table being clean
= an accomplishment event, whose development consists of
wiping the table, and whose culmination consists of the
the table being clean

(53) **Interim Conclusion:**
When children acquire the English V-NP-Particle construction (Section 2.1), the information that they acquire is necessarily more abstract than the surface form of that construction: It has rapid effects on superficially unrelated aspects of the grammar (i.e., endocentric compounding). Therefore, **SC is not the explanation**.

5. **Compatible Models of Syntactic Knowledge**

(54) **Proposal:** Parameters of syntax are "constructive" parameters – they take the form of adding new structure-building operations. (cf. Rizzi 2010)

(55) **TCP** is a constructive parameter, in the sense that its positive setting provides a semantic composition rule for syntactic combinations that would otherwise be uninterpretable.


(57) **Treelet:** An annotated fragment of a phrase-structure tree, corresponding to syntactic material at the point of spell-out

(58) On Fodor’s approach, parametric choices might take the form of including or excluding a particular treelet (or perhaps set of treelets) as an option in the language.

(59) Fodor’s idea of ‘parsing to learn’ involves a parser that operates in terms of treelets. If an input can be parsed using a particular combination of treelets, and there was no point of ambiguity in the parse, then these treelets must be permitted in the target language.

(60) **Proposal for GC:** Let the child’s parser analyze the input using all possible treelets. **BUT** in production, the child can only use the treelets that are definitely permitted in the target language.

(61) **Question:** Do ‘treelets’ allow us to capture TCP?

(62) **A few ideas:**
   a. Perhaps a treelet can include not only morphosyntactic information, but also semantic information – how the constituents are to be composed semantically.
   b. Maybe treelets can also be abstract (e.g. with syntactic categories left unspecified – though such a treelet could not, without further specification, be pronounced).

(63) **The TCP Treelet**

\[
\begin{array}{c}
\gamma \\
\alpha & \sim & GM \\
\beta
\end{array}
\]

(LR-order open)
(64) Option: Allow treelets to be "superimposed," in order to obtain a fully specified (and pronounceable) treelet.

(65) Open question: How to build a compatible parser.

6. Implications and Discussion

(66) GC greatly increases the utility of spontaneous speech data: When a child abruptly goes from never using a particular construction, to using it frequently and correctly, we are entitled to conclude that she has genuinely acquired one of the grammatical or lexical properties of the target language.

(67) Therefore, longitudinal records of children’s spontaneous speech are an extremely valuable testing ground for theories of cross-linguistic variation (cf. Snyder 2007).

(68) To the extent that children exhibit GC, this increases the burden of the Logical Problem of Language Acquisition:

For explanatory adequacy, a theory now needs to account for success by a grammatically conservative learner.

(69) The existence of GC imposes considerable constraints on the possible architecture of the human language faculty.

(70) GC is crucially not “superficial” conservatism, as evidenced by children’s acquisition of particle constructions and compounding in English.

(71) Grammar acquisition might take the form of adding new structure-building operations, perhaps in the form of treelets.

Possible implications for the role of children in language change:

(72) Grammatical reanalysis of a surface form in child-directed speech should be quite rare, at least in normal, generation-to-generation transmission of an existing natural language.

(73) On the other hand, simple loss of a structural option over time becomes more likely, if the conservative learner insists on robust evidence in the input.

(74) Questions: Specific predictions? Relevant historical data?

Selected Bibliography


