On the Origin of Grammar

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Two kinds of approaches to reconstruct early language:

a **Integrating approaches**: Combine findings from different scientific disciplines within one general analytic framework.

b **Disciplin-based approaches**: Exploit the methodology of one particular scientific discipline to get access to at least part of language evolution.
Paradigm examples of integrated approaches:


Disciplinary approach:
Grammaticalization theory

Extrapolating from linguistic evolution in modern languages for the reconstruction of early language

Modern languages
a  They consist of the languages spoken today.
b  They are immediately accessible to reconstruction by means of established methods of historical linguistics.
c  They relate to linguistic developments of roughly the last eight millennia.

Early language
a  It is not available today.
b  It is not accessible via orthodox historical methodology.
c  It is clearly older than 8000 years and covers the timespan from the genesis of human language to the beginning of modern languages.
d  Consequently, all we know about it remains of necessity hypothetical.
Observations and assumptions

a. Language evolution is the result of language change. Accordingly, in order to reconstruct this evolution we need to know what a possible linguistic change is and what is not.

b. An important driving force of grammatical change is creativity.

c. Linguistic forms and structures have not necessarily been designed for the functions they presently serve.

d. Context is an important factor determining grammatical change.

e. Grammatical change is directional.


Definition

Grammaticalization is defined as the development from lexical to grammatical forms, and from grammatical to even more grammatical forms. Since the development of grammatical forms is not independent of the constructions to which they belong, the study of grammaticalization is in the same way concerned with constructions, and with even larger discourse segments.

One main motivation for grammaticalization consists in using linguistic forms for meanings that are concrete, easily accessible, and/or clearly delineated to also express less concrete, less easily accessible and less clearly delineated meaning contents.

To this end, lexical or less grammaticalized linguistic expressions are pressed into service for the expression of more grammatical functions.

Grammaticalization thus is a creative process.
The evidence

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>English</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>He <strong>kept</strong> the money.</td>
<td>Verb</td>
</tr>
<tr>
<td>B</td>
<td>He <strong>kept</strong> complaining.</td>
<td>Durative</td>
</tr>
<tr>
<td>A</td>
<td>He <strong>used</strong> all the money.</td>
<td>Verb</td>
</tr>
<tr>
<td>B</td>
<td>He <strong>used</strong> to come.</td>
<td>Habitual</td>
</tr>
<tr>
<td>A</td>
<td>He’s <strong>going to</strong> town.</td>
<td>Verb</td>
</tr>
<tr>
<td>B</td>
<td>He’s <strong>going to</strong> come.</td>
<td>Future</td>
</tr>
</tbody>
</table>

At some earlier stage in the history of English there was A but not B.
French
A Il va à la maison.
   ‘He’s going home.’

B Il va venir bientôt.
   ‘He is going to come soon.’

At some earlier stage in the history of French there was A but not B.
Generalizations

a. There are two homophonous items A and B in language L, where A serves as a lexical verb and B as an auxiliary marking grammatical functions such as tense, aspect, or modality.

b. While A has a noun as the nucleus of its complement, B has a non-finite verb instead.

c. While A is typically (though not necessarily) an action verb, B is an auxiliary expressing concepts of tense, aspect, or modality.

d. B is historically derived from A.

e. The process from A to B is unidirectional; that is, it is unlikely that there is a language where A is derived from B.

f. In accordance with (d) and (e), there was an earlier situation in language L where there was A but not B.
Principle of reconstruction

Past situation: A

Present situation: A B

From modern languages to early language
Layers of grammatical development: VERB > ASP > TNS
A four-stage model of context-induced reinterpretation of meaning in grammaticalization

<table>
<thead>
<tr>
<th>Stage</th>
<th>Context</th>
<th>Resulting meaning</th>
<th>Type of inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Initial Stage</td>
<td>Unconstrained</td>
<td>Source meaning</td>
<td>--</td>
</tr>
<tr>
<td>II Bridging context</td>
<td>A new context triggering a new meaning</td>
<td>Target meaning foregrounded</td>
<td>Invited (cancelable)</td>
</tr>
<tr>
<td>III Switch context</td>
<td>A new context incompatible with the source meaning</td>
<td>Source meaning backgrounded</td>
<td>Usual (typically non-cancelable)</td>
</tr>
<tr>
<td>IV Conventionalization</td>
<td>Target meaning no longer needs to be supported by context that gave rise to it; use in new contexts possible</td>
<td>Target meaning only</td>
<td>--</td>
</tr>
</tbody>
</table>
Open question:
What was the structure of early language like?
Two kinds of evidence

1 Data on language evolution as they are provided by the application of grammaticalization theory

2 Linguistic fossils
Parenthetical categories as linguistic "fossils"

<table>
<thead>
<tr>
<th>Category</th>
<th>English examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptual parentheticals</td>
<td><em>I think, if you will, as it were,</em> etc.</td>
</tr>
<tr>
<td>Formulae of social exchange</td>
<td><em>goodbye, happy birthday, hi, never mind, sorry, watch out!, well done, thank you, yes, no, no way, listen</em></td>
</tr>
<tr>
<td>Vocatives</td>
<td><em>Peter!, Mrs Smith!, Ladies and Gentlemen, my dear friends!</em></td>
</tr>
<tr>
<td>Interjections</td>
<td><em>hey, ouch, whooopee, wow, yo, yuck</em></td>
</tr>
</tbody>
</table>
Parenthetical categories: Linguistic fossils?

Properties of a parenthetical category

a. It is an autonomous information unit that can form an utterance of its own.
b. It forms a separate intonation unit.
c. It is set off from the rest of the utterance by means of pauses.
d. It is used distinctly more often in spoken than in written discourse.
e. Its use is optional.
f. It is positionally highly mobile.
g. It is "universal" in the sense that it is found in languages across the world.
Early language categories: a conjectural reconstruction

- Conceptual grammar
- Formulae of social exchange
- Interjections
- Vocatives
<table>
<thead>
<tr>
<th>External Environment</th>
<th>Organism Internal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecological</td>
<td>Conceptual-intentional system</td>
</tr>
<tr>
<td>Physical</td>
<td>Faculty of language in the broad sense (= FLB)</td>
</tr>
<tr>
<td>Cultural</td>
<td>Recursion</td>
</tr>
<tr>
<td>Social</td>
<td>Faculty of language in the narrow sense (= FLN)</td>
</tr>
</tbody>
</table>

Organism-external and –internal factors related to the faculty of language

Recursion: The act of defining an object in terms of that object itself (Or: A definition that uses itself as part of itself).

a  A  $\rightarrow$  A X (where "X" can be any category)
b  A  $\rightarrow$  A [B]
c  A [B]  $\rightarrow$  A [B [C]]
How does recursion arise in language structure?

A grammaticalization account
The rise of recursion in clause combining

a  S [NP]  >  S1 [S2]  Expansion

b  S1 + S2>  S1 [S2]  Integration

S  \to  S1 [S2]

Integration
From Coordination to embedding recursion: Relative clauses

From \([S1 + S2]\) juxtaposition to \(S1 [S2]\) relativization via integration

*English*

a. There is the car; **that** (one) I like.  
   Demonstrative pronoun

b. There is the car **[that I like]**.  
   Relativizer

Reinterpretation processes in demonstrative-derived relative clauses

a. The demonstrative pronoun of \(S2\) refers anaphorically to some participant of \(S1\).

b. It is grammaticalized to a relative clause marker.

c. \(S2\) is grammaticalized to a relative clause.

d. The two clauses tend to be united under one intonation contour.
Integration
From Coordination to embedding recursion: Complement clauses

From [S1 + S2] juxtaposition to S1 [S2] complementation via integration

**English**

a Ann said *that*: Paul has retired. Demonstrative pronoun

b An said [that Paul has retired]. Complementizer

Reinterpretation processes in demonstrative-derived complement clauses

a The demonstrative pronoun of S1, referring cataphorically to the content of S2, is reinterpreted as (hence grammaticalized to) a marker of S2 as a complement clause.

b Boundary shift: *that* changes from being the final element of S1 to becoming the initial element of S2.

c S2 is grammaticalized to a complement clause.

d The two clauses tend to be united under one intonation contour.
Layers of grammatical evolution:
From demonstrative (DEM) to relative clause marker (REL)
Layers of grammatical evolution:
From demonstrative (DEM) to relative clause marker (REL)
Layers of grammatical evolution:
From demonstrative (DEM) to complement clause marker (CPL)
Layers of grammatical evolution: The rise of recursion

Clausal recursion
Recursion in non-human animals?
Does he have recursion?
Possible language-like abilities of some non-human animals
a to understand salient characteristics of concepts;
b to distinguish form-meaning pairings ("words");
c to acquire form-meaning pairings of more than one hundred items, including items denoting objects, actions, and some numbers;
d to handle functional items for negation and interrogation;
e to have an elementary understanding of the notion of deixis;
f to use an elementary argument structure;
g to acquire some understanding of linear arrangement of form-meaning pairings;
h to conjoin propositions and/or form-meaning pairings;
i to acquire some basics of taxonomic hierarchy as it manifests itself in inclusion and part-whole relations.
Linguistic abilities of non-human animals
Isolated children: Language abilities
"Isolated" children: Language abilities

Feral children
- Kaspar Hauser
- Genie

Homesigns
Twins languages
Properties that appear to be absent in isolated children, homesigns, twins’ languages

a. There are hardly any non-lexical units; communication is achieved overwhelmingly or entirely without functional categories.
b. If there are any functional categories, they are not created by using parameters of grammaticalization.
c. There is essentially no form of clause subordination.
d. There are no phrase structures that are clearly suggestive of recursion.
e. There are no clear indications of grammaticalization.
f. The system is not normally transmitted from one group of speakers to another (or from one generation to the next).
Elementary linguistic systems
Question: Why is there no grammaticalization and, hence, no embedding recursion, in any of the communication systems just surveyed?
A framework of linguistic change 1: The agents

Innovation  Propagation

Retained innovation

Retention across time

T1  T2
Layers of grammatical evolution (conceptual grammar)

I  nouns [→ one-word utterances]

II verbs [→ mono-clausal propositions]

III adjectives, adverbs [→ head-dependent structure]

IV demonstratives, adpositions, aspect markers, negation
  [→ elaboration of phrase structure]

V pronouns, definite (and indefinite) markers, relative clause markers, complementizers, case markers, tense markers
  [→ clause subordination, temporal and spatial displacement]

VI agreement markers, passive markers, adverbial clause subordinators
  [→ obligatory expressions]
Question: What was the motivation for developing all these structures?

Does a language need verbal inflections, case suffixes, or expletive *it* as in *It is raining*?

The answer is theory-dependent and - hence - controversial.

My - very personal - answer is that it essentially does not.

- German has a system of case inflections while English doesn't. Nevertheless, English does not appear to be more deficient as a communication system than German.
- Both English and German have grammatical inflections while Chinese essentially does not.

So ultimately: Why in German but not in English, or why in German and English but not in Chinese???
Early language categories: a conjectural reconstruction

Conceptual grammar

- Formulae of social exchange
- Vocatives
- Interjections
Early language categories:
grammatical evolution

Conceptual

Grammar

Formulae of social exchange

God be with you > Goodbye

Interjections

Vocatives

ma dame > Madam
Early language categories:
a theory-based reconstruction

Conceptual grammar

Interjections
Conclusions

a Grammaticalization theory allows to reconstruct some major lines of grammatical evolution.

b This evolution is hypothesized to have been gradual rather than abrupt, leading from lexical to functional categories.

c Recursive syntactic structures arose fairly late in this evolution, presumably not before layer V.

d A *sine qua non* for grammaticalization and, hence, for the growth of recursive structures can be seen in the transmission of linguistic knowledge from one generation to the next.

e Linguistic abilities of non-human animals are located within the first two layers (I, II) of the scenario of grammatical evolution proposed.
Linguistic abilities of non-human animals
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