Deriving (uni)directionality

Paul Kiparsky
Outline

1. Grammaticalization
2. Formal grammaticalization
3. Non-convergence
4. Anaphora
5. Aspect to tense
What is grammaticalization?

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2. **DEF:** “The change whereby lexical items and constructions come in certain contexts to serve grammatical functions, and, once grammaticalized, continue to develop new grammatical functions”

3. **DEF:** a change which gives rise to a new grammatical category [a category previously unexpressed in the language]. (Meillet 1912)
Jerzy Kuryłowicz

Antoine Meillet
Grammaticalization puzzles

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5. What accounts for the exceptions to unidirectionality?
The (apparent) heterogeneity of grammaticalization

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We’ll look at a representative case of each type and propose a way to unify them theoretically.
Origin of a case ending

postpositions > case clitics > case suffixes

1 *käte pälV-k (Finno-Ugric)
  hand inside-Lative
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3. *pälV-k > *belV-j > *-belé > *-bele > *-be
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This preference drives formal grammaticalization.
Minimalist morphology

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   - FAITHFULNESS: Express the meaning of the input.
   - MARKEDNESS: Avoid complexity.
A toy example: why \textit{best} is best

Assume that the input (or other constraints) specify that \texttt{-est} is a suffix which denotes the maximal degree of a property and that \textit{most} is a word with the same meaning.

<table>
<thead>
<tr>
<th>Input: \textit{Max(good)}</th>
<th>FAITHFULNESS</th>
<th>MARKEDNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. good</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>2. best</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. good-est</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>4. most good</td>
<td></td>
<td>**</td>
</tr>
</tbody>
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Analogy from reduced input

If *best* is not a candidate, *goodest* wins:

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<th>Input: $\text{Max}(\text{good})$</th>
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<td>1. good</td>
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<td>4. most good</td>
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Logically, it would be equally possible for the complex (synthetic) form to block the simple (analytic) form. But this never seems to happen: the distributional generalizations are always most perspicuously stated on the simple form.
Suppose a learner detects no evidence for the category and morphological composition of *bele*-i. She will consider two structures of *kéz belei*: as a noun plus postposition, or as a noun plus a case affix.

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<tr>
<td>1. [kéz]ω[bele-i]ω</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>2. [kéz-belei]ω</td>
<td></td>
<td></td>
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MARKEDNESS, under any ranking, guarantees a preference for “stronger internal dependencies”, which drives grammaticalization.
Grammaticalization respects language-specific constraints

Grammaticalization of *most* as a prefix in English is not likely to happen because English inflects only with suffixes.

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<th>RT-HEAD</th>
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<tr>
<td>1. ✗ [most]ω [good]ω</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>2. ✗ [most-good]ω</td>
<td></td>
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Unidirectionality

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- Thus we derive the *origin* of the innovations from the same principles that determine the direction of their *spread*.
- Moreover, these principles also organize synchronic morphological systems.
- Contrast evolutionary theories, which are only about selection between existing variants.
But . . . what about real cases of upgrading?! 

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Specific constraints trump general constraints.

- Apparent degrammaticalizations always turn out to eliminate language-specific complications (Plank 1995: response to “Systemstörung”). They are *analogue changes*. 
The loss of case inflections left English with the genitive as sole case suffix. Such systems are highly marked (no instances in Arkadiev’s 2006 survey of minimal case systems). So genitive case inflection was eliminated.
Upgrading as system-internal regularization

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Grammaticalization as optimization

- Analogical change (optimization)
  - Exemplar-based
    - Proportional analogy
    - Non-proportional analogy
  - Non-exemplar-based (grammaticalization)
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Why grammaticalization causes no convergence

The original structure is eventually renewed from other resources. Language is a STABLE DYNAMIC SYSTEM: i.e., linguistic change is not linguistic evolution.

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- Superlong cycles: e.g. agglutination > fusion > isolation > agglutination . . .
Otto Jespersen
"the original negative ad-verb is first weakened, then found insufficient and therefore strengthened, generally through some additional word, and this in its turn may be felt as the negative proper and may then in the course of time be subject to the same development as the original word." (Jespersen 1917:4)
Jespersen’s cycle in English

<table>
<thead>
<tr>
<th>Plain</th>
<th>Strengthening</th>
<th>Weakening</th>
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<td>I. ne</td>
<td>ne ā ‘not ever’</td>
<td>nā ‘not’</td>
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<tr>
<td>II. ne</td>
<td>ne … nā ‘not ever’</td>
<td>ne … nā ‘not’</td>
</tr>
<tr>
<td>III. ne … nā</td>
<td>ne … nā wiht ‘not a creature’</td>
<td>(ne) … naught ‘not’</td>
</tr>
<tr>
<td>IV. not</td>
<td>not a bit</td>
<td></td>
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Strengthening and weakening

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- Semantic weakening can be followed by phonological reduction or loss of the original head.
What drives the cycle?

Functions of emphatic negation

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Assumption: All languages distinguish emphatic negation from plain negation.

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- UG hypothesis (generative grammar, OT): learner’s search space = the typological space.

(Details: Kiparsky 2002, Gast 2006)
Referential dependence

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- *It’s *it*!
- *It which does not kill you makes you stronger.*
How far can referentially dependent pronouns go for their antecedent?

The discourse topic (non-reflexive referentially dependent pronouns, e.g. *it*, German *er, sie* (for inanimates), Greek *o idhios*, Turkish *kendisi*, Marathi *aapan*).
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- First accessible subject (local reflexives, e.g. *himself*, German *sich*)
The antecedent domain hierarchy

locally bound  bound  reflex.  ref.dep.  ref.indep.
Obviation

Some pronouns can’t be coreferential with a coargument (except for certain predicates like “shave”, “wash”). Swedish *sig* in an obviative long-distance reflexive.

**Generalen** j *tvingade översten* j *att be lötntanten* k *att hjälpa sig* i,j,k

general-the forced colonel-the to ask lieutenant-the to help self

‘The general forced the colonel to ask the lieutenant to help him.’

- For the local domain, obviation means subject-orientation.
The antecedent domain hierarchy for obviative pronouns

- German *sich*
- Sw. *sig*
- Icel. *sig*
- Gk. *o idhios*
- him
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Finno-Ugric

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Finno-Ugric
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(Viinikka-Kallinen & Trosterud 1999)
Referentially independent > referentially independent

- Indo-European $k'e$- (demonstrative) > OE he (referentially dependent)
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- Indo-European $k'e$- (demonstrative) $>$ OE *he* (referentially dependent)
- Indo-European *ey-, -i* (demonstrative) $>$ Latin *is, ea, id* (referentially dependent), also Avestan *a-*
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- Indo-European *ke- (demonstrative) > OE *he (referentially dependent)
- Indo-European *ey-, -i (demonstrative) > Latin is, ea, id (referentially dependent), also Avestan a-
- Indo-European *swe- (pronominal adjective meaning "own") has been recruited as an reflexive in many branches. The predicted intermediate stage, a referentially dependent pronoun, is attested in Rigvedic (with logophoric function).
Nonreflexive $>$ reflexive

Classical Greek *ho*- was a referentially dependent pronoun in Homeric, only a (long-distance) reflexive in later Greek.
Nonreflexive > reflexive

- Classical Greek *ho-* was a referentially dependent pronoun in Homeric, only a (long-distance) reflexive in later Greek.

- Old Chinese *jǐ, zìjiā* (apparently a referentially dependent pronoun) has developed into the modern Chinese reflexive *zìjī*. 
Long-distance reflexive > local reflexive

- Middle High German to Modern German

\[ \text{... } \text{bat } \text{er}_i \text{ sih}_i \text{ ketrencan daz uuip}_j \]
\[ \text{... asked he self let-drink the woman} \]
\[ \text{‘... he asked the woman to give him something to drink’} \]
\[ \text{... bat er}_i \text{ das Weib}_j \text{ ihn}_j \text{ zu “tränken” (Modern German)} \]
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  \(\ldots\) bat er\(_i\) das Weib\(_j\) ihn\(_i\) zu “tränken” (Modern German)

- Latin to Romance

  Ariovistus\(_i\) respondit omnes Galliae civitates ad

  Ariovistus answered all-A Gaul’s states-A to

  se\(_i\) oppugnandum venisse

  self-A attack-Grnd come-Prf-Inf

  ‘Ariovistus answered that all the states of Gaul had come to attack him’
Non-obviative > obviative

- Swedish *sig*
Non-obviative > obviative

- Swedish *sig*
- Marathi *aapañ* (from Sanskrit *ātman*, non-obviative)
Non-obviative > obviative

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- Marathi *aapan* (from Sanskrit *ātman*, non-obviative)
- Rise of subject-orientation (Dogon, data from C. Culy)
Explaining the unidirectionality

- The binding constraint system includes
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  - Constraints on binding domains, which form a stringency hierarchy, and an OBVIATION constraint.
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  - A FAITHFULNESS constraint that dictates retention of arbitrary input binding relations.
- Particular anaphors are characterized by a specific ranking of these constraints. FAITHFULNESS represents a cutoff-point such that constraints above it are strictly obeyed and constraints below it are violable.
Swedish vs. Icelandic

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<tr>
<th>Input</th>
<th>DISCOURSE</th>
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<td>([\ldots A_i \ldots [\ldots B_i \ldots]<em>{CP}]</em>{CP})</td>
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This learning bias explains the unidirectionality of change in binding systems.

- Because the changes produce no overt change in the output, speaker-based accounts are problematic.
Expressiveness

The maximally unrestricted values of each parameter must be instantiated: every language must have at least a referentially independent pronoun, and a non-obviative pronoun. This ensures the possibility of marking coreference and non-coreference in any domain.
Expressiveness forces upgrading

- Old English, the personal pronouns were referentially dependent. They are not used deictically and cannot head restrictive relative clauses. They were recruited for reflexive uses when the Germanic reflexive pronoun was lost.
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- When the Old English masc. and fem. demonstratives *sē, sēo* were lost, *he, she* became referentially independent again (upgrading).

- The reflexive function was taken over by the pronoun+*self*. 
then she would last of all bathe and wash herself’ [having first washed the others]  

(Bede 4 19.318.20)
1. ponne wolde heo ealra nyhst hy bæjan & þwean
   then would she of all latest her bathe and wash
   ‘then she would last of all bathe and wash herself’
   [having first washed the others]  (Bede 4 19.318.20)

2. ac mid inneweardre heortan monic mid hine
   and with inmost heart often with him
   sprecede smeade
   speaking reflected-3Sg
   ‘in his innermost heart he often argued with himself’
   (Bede 2 8.124.22)
1. þonne wolde heo ealra nyhst hy baþian & þwean
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‘then she would last of all bathe and wash herself’
[having first washed the others] (Bede 4 19.318.20)

2. ac mid inneweardre heortan monic mid hine
and with inmost heart often with him
sprecende smeade
speaking reflected-3Sg
‘in his innermost heart he often argued with himself’
(Bede 2 8.124.22)

3. þætte nænig biscopa hine oðrum forbære
that no bishop him others-DAT advance-SUBJ3P
‘that no bishop shall put himself above others’ (Bede 4 5.278.27)
Because the neuter demonstrative *þæt* was retained, *it* remains referentially dependent.
Two consequences

- Because the neuter demonstrative *þæt* was retained, *it* remains referentially dependent.
- Because *him, her* became obviative, *him+self, her+self* became non-compositional, and the complex reflexives were reanalyzed as morphological units.
Outline

1. Grammaticalization
2. Formal grammaticalization
3. Non-convergence
4. Anaphora
5. Aspect to tense
Unidirectional grammaticalization paths

- RESULTATIVE $>$ PERFECT $>$ PERFECTIVE/PAST
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- Kru, Chinese, Ewe, French, Italian, German (Dahl 1985, 2000; Bybee et al 1994)
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- (LOCATIVE) > FOCALIZED PROGRESSIVE > PROGRESSIVE > IMPERFECTIVE/PRESENT
  - Yoruba, Scots Gaelic, Turkish, Maa, Margi, Kui (Comrie 1976; Bybee et al. 1994)

On focalized progressives, see Bertinetto 2000.
The focalized progressive yields the set of points in the run-time of the event.
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Ol-i-n luke-ma-ssa kirja-a (*2 tunti-a)
be-1Sg read-Ptc-Iness book-Part (2-Acc hour-Part)
‘I was reading the/a book (for 2 hours)’ (Finnish)
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\[
\tau(e)
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A focalized progressive denotes a point of time, therefore does not allow phrases denoting extent of time.
Focalized progressive

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- A focalized progressive denotes a point of time, therefore does not allow phrases denoting extent of time.

- The Focalized Progressive in Finnish is formed with the Inessive (internal locative) case of the Second Infinitive \(-ma\) (roughly ‘in \(-ing\)’).
Incompatibility with stative predicates

*Pyyikki o-n 
loju-ma-ssa lattia-lla

laundry  be-3Sg lie-Ptc-Iness  floor-Adess

‘The laundry is lying on the floor’  (Finnish)
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- Stative predicates (whether episodic or non-episodic) do not denote points of time, therefore do not allow focalized progressives.
Stativity and episodicity

- **predicates**
  - **stative**
  - non-statative episodic
    - non-episodic episodic

**Stative predicates** (whether episodic or non-episodic) do not denote points of time.
Stativity and episodicity

- Stative predicates (whether episodic or non-episodic) do not denote points of time.
- Non-episodic stative predicates are not located in time.
The durative progressive yields the set of intervals in the run-time of the event.
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- The imperfective yields the closure of the set of intervals in the run-time of the event under the superinterval relation.
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Ashwini Deo, *Tense and Aspect in Indo-Aryan languages: variation and diachrony* (Stanford Diss. 2006)
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- Aspect/Tense morphemes lose their idiosyncratic properties.
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| locative | focalized progr. | durative progr. | imperfect |
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Diagram:

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- It is non-exemplar-based analogical change.