Language variation and change: a 21st century generative perspective

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Introduction

- Generative grammar (1960s onwards)
- Minimalism (1990s onwards)
- Minimalism in the 21st century:
  focus on "good" (cognitively and evolutionarily plausible) design
  (Chomsky 2005)

(1) <u>The classic generative "algorithm"</u>
   Universal Grammar (UG) + Input (PLD) ➔ Adult Grammar (S_s)
   rich UG

(2) <u>The minimalist generative "algorithm"</u>
   UG + PLD + 'third factors'➔ Adult Grammar (S_s)
   impoverished UG

Introduction

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- **Minimalism** (1990s onwards)
- ➤ focus on "good" (cognitively and evolutionarily plausible) design (Chomsky 2005)

(1) The classic generative "algorithm"
   Universal Grammar (UG) + Input (PLD) ➜ Adult Grammar (S_s)
   rich UG

(2) The minimalist generative "algorithm"
   UG + PLD + 'third factors'➜ Adult Grammar (S_s)
   impoverished UG
                                    general-cognitive factors
   - 'principles of data analysis … used in language acquisition and other domains'
   - 'principles of efficient computation' (Chomsky 2005:6)

Introduction

- <u>My focus today:</u> some of the consequences of this 'Minimalist turn'
 for diachronic research conducted in the 21st century.

- **impoverished UG**
  - ➢ no hard-wired parameters
    - \> emergent parameters (?)
    - \> parameter (re/neo)setting)?
  - ➢ no hard-wired functional sequence
    - \> grammaticalisation?
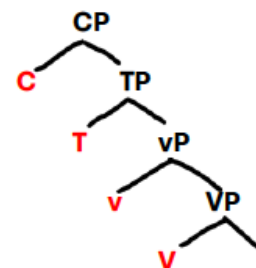
- **'PLD'/input**
  - ➢ Degree Zero learnability (Lightfoot 1989)
  - ➢ intake at different stages of the acquisition process
  - ➢ the difference between monolinguals and bi/multilinguals
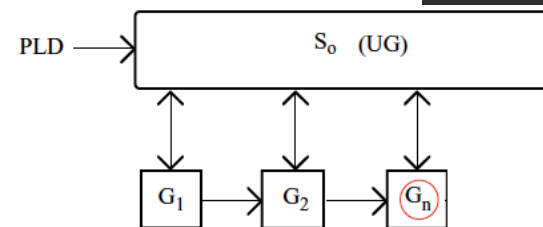
- **mysterious Factor 3**
  - ➢ general-cognitive biases/constraints should be active across the lifespan, albeit modulated by existing knowledge and experience
    - \> new possibilities in the acquisitionism vs (?) adult-driven change debate?
    - \> new foci, e.g. pragmaticalisation (Diewald 2011, Müller & Axel-Tober 2025)
- Grammar as the product of the **interaction between the 3 factors**

Introduction

- On Factor 3:
  - Various existing proposals:
    - Late Merge, Head Preference (van Gelderen 2004, 2013)
    - Feature Economy (van Gelderen 2004, Roberts 2006/2021, Breitbarth 2017)
    - Minimize Structure (Cardinaletti & Starke 1999, Breitbarth 2017)
    - Labelling and Determinacy (van Gelderen 2023)
    - Maximise Minimal Means (Biberauer 2017, 2019, etc.)

Introduction

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    - Minimize Structure (Cardinaletti & Starke 1999, Breitbarth 2017)
    - Labelling and Determinacy (van Gelderen 2023)
      - *These all seem **domain-specific** rather than **domain-general**.*
    - Maximise Minimal Means (Biberauer 2017, 2019, etc.)

Introduction

(2) <u>The minimalist generative "algorithm"</u>

UG + PLD + 'third factors'➜ Adult Grammar (S_s)

impoverished UG

(3) <u>The minimalist generative "algorithm"</u>

UG + PLD + Maximise Minimal Means (MMM) ➜ Adult Grammar (S_s)

impoverished UG

where MMM = **a general-cognitive bias** that is active not only in shaping language acquisition, but also i.a.

- **cognitive heuristics and biases** – e.g. Daniel Kahnemann's 'thinking fast' (Kahnemann 2001; cf. also Gigerenzer & Todd's (2000) 'fast and frugal heuristics' and Simon's (1955) bounded rationality/'satisficing', and Ferreira & Patson's (2007) 'good enough' parsing)
- **concept formation** and **cognitive cascades** more generally (Bornstein & Arterberry 2010, Jaspers 2013, Seuren & Jaspers 2014; Rose et al. 2005, 2008, Campos et al. 2000)
- **human writing systems** (Dehaene 2007, Morin 2018)

(see Biberauer & Bosch 2021, nearly submitted)

Our chief foci today

- **parameters** and change, and the role of children

- **grammaticalisation** without a pre-given functional sequence

- **pragmaticalisation** and the role of adults

I. Parameters

- "classic" (pre-Minimalist) parameters:
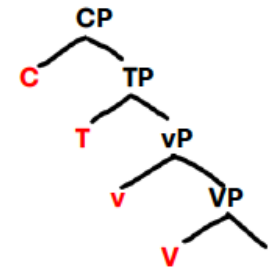
(4) a. **Head Parameter**:

The head (X) of a phrase (XP) PRECEDES/FOLLOWS its complement.
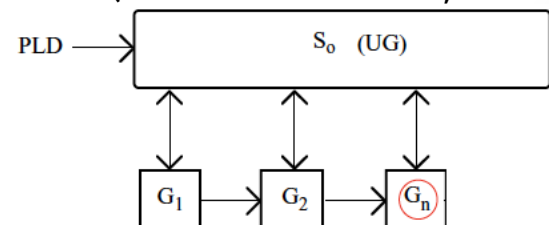
b. **V2 Parameter:**

The finite verb MOVES/DOESN'T MOVE to C, the head of CP.

c. **Null Subject Parameter:**

Pronoun subjects CAN/CANNOT remain unrealised in finite clauses.

- From a diachronic perspective:
  - coarse-grained > catastrophic changes; but change seems gradual

- Subsequent parameters (1980s and 1990s):
  - more specific, but a very great variety > no 'template' for parameters (Gianollo et al. 2008)
  - not evolutionarily plausible
  - also not acquisitionally plausible: the **Linking Problem** (see i.a. Pinker 1984, Gervain & Mehler 2010 and Fasanella & Fortuny 2016)

I. Parameters

LEXICON

Narrow Syntax

PF   LF
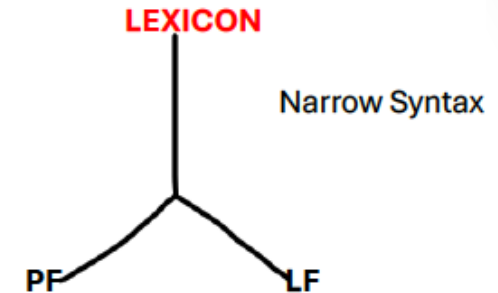
- 21st century Minimalist parameters:
- ▪ a strong focus on **Lexicon-**based parameters

(5)   *Borer-Chomsky Conjecture* (BCC; Baker 2008)

All parameters of variation are attributable to differences in the features of particular items (e.g. the functional heads) in the Lexicon.

- ▪ pre-Minimalist parameters can be readily "translated" into more and less fine-grained BCC-type parameters.
- ▪ This introduces some **constraint on the format of parameters**: differences in featural composition of functional categories.
- ▪ BUT now we have to agree on the inventory of formal features and functional categories …

[Lexically based parameters don't just affect operations (e.g. Merge, Move, Agree) in the syntax; they also have PF (externalisation) and LF consequences (see Biberauer 2008, Ramchand & Svenonius 2008, Berwick & Chomsky 2011, among many others).]

I. Parameters
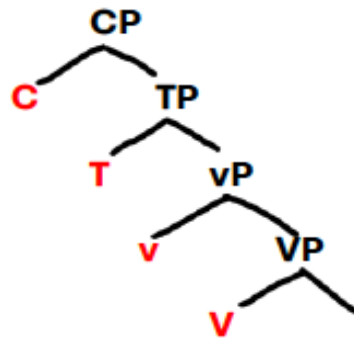
- Minimalists "vs" Cartographers "vs" Nanosyntacticians?
- Can the perspective of the diachronically oriented linguist help?
  - We want to account both for **variation and change** and for **stability** (**continuity**; see much work by Anne Breitbarth and colleagues)
  - If we bring **acquisition** into the picture, there appears to be a **striking correlation** between what is **acquired early** and **what remains stable**.

Mood$_{speech\ act}$
Mood$_{evaluative}$
Mood$_{evidential}$
Mod$_{epistemic}$
Tense$_{past/future}$
Mod$_{necessity}$
Mod$_{possibility}$
Aspect$_{habitual}$
Aspect$_{delayed}$
Aspect$_{predispositional}$
Aspect$_{repetitive}$
Aspect$_{frequentative}$
Mod$_{volition}$
Aspect$_{celerative}$
Tense$_{anterior}$
Aspect$_{terminative}$
Aspect$_{continuative}$
Aspect$_{continuous}$
Aspect$_{retrospective}$
Aspect$_{proximative}$
Aspect$_{durative/progressive}$
Aspect$_{prospective}$
Mod$_{obligation}$
Aspect$_{frustrative}$
Aspect$_{completive}$
Voice$_{passive}$
Verb

I. Parameters

- What we know about early vs late(r) L1 acquisition (see i.a. Wexler 1998, Tsimpli 2014, Dye et al. 2019, Bosch 2023, Bosch & Biberauer 2024, 2025)

  - **Very Early Parameter Setting (VEPS**; Wexler 1998)

    (i) OV vs VO: V PRECEDES/FOLLOWS its complement

      [Contrast the Head Parameter in (4a):

      The head (X) of a phrase (XP) PRECEDES/FOLLOWS its complement.]

    (ii) V2: The finite verb MOVES/DOESN'T MOVE to C, the head of CP.

- What we know about stability:

  - OV vs VO is very stable in "harmonic" head-final/initial languages, i.e. where the early-acquired "basic" pattern is extended to other head-complement pairs (Biberauer & Roberts 2012, 2017, Roberts 2019)

  - OV vs VO is less stable in "disharmonic" systems, where there is a mix of head-initial and head-final (Biberauer & Roberts 2012, 2017, Roberts 2019)

I. Parameters

- What we know about stability (ctd):

  ▪ V2 (understood as systematic movement of the verb into the C-domain) is very stable, even in contact scenarios (Afrikaans, Namibian German, Kroondal German, Cimbrian, and other contact Germanic varieties that are still being acquired as L1s)

(6) a. **Ons het**   Sondag **'n marathon gehardloop**.   [**Subject**]
     us   have Sunday a marathon   run.PRT
     'We ran a marathon on Sunday.'

     b. **'n Marathon het** ons Sondag gehardloop.   [**Object**]

     c. **Sondag het** ons 'n marathon gehardloop.   [**Adverbial**]

     d. **'n Marathon gehardloop het** ons Sondag.   [**VP**]

     e. **Gehardloop het** ons Sondag 'n marathon.   [**Remnant VP**]

I. Parameters

- What does change, though, is fine-tuning:

(7) a. [$_{CP}$ **XP$_1$** **C-Vf** [TP   [VP …]]]

   b. [$_{ForceP}$(**XP$_1$**) Force[$_{TopP}$ (**XP$_1$**) Top [$_{FocP}$ (**XP$_1$**) Foc [$_{FinP}$ (**XP$_1$**) Fin…
       Vf   **Vf**   **Vf**   **Vf**

- V2 languages share the property of verb movement to C.
- They differ in terms of the specific C-head the verb moves to.
- Movement to Force > more "rigid" V2
- Movement to Fin > more "flexible" V2 … with the possibility of change

I. Parameters

- How does all of this fit with a "poor UG" view?

➢ parameters must be **emergent** (Biberauer 2011 *et seq.*,Wiltschko 2014, 2021, Ramchand & Svenonius 2014, Biberauer & Roberts 2017, Roberts 2019)

- The MMM take on **emergent parameters** (Biberauer 2017, 2019, 2024, Bosch 2022)
  - ▪ builds on the Complex Adaptive/Dynamic Systems literature (Gibb et al. 2019)

  - o **sensitivity to initial conditions** (path-dependent development > **structural homology**)
  - o categories (and their associated features) exhibit a coarse > fine-grained development pattern (Biberauer & Roberts 2015, Bosch 2023, Bosch & Biberauer 2024)
    - ❖ not bottom-up, as frequently assumed (Truncated/Minimal/Growing Trees)
    - ❖ V > C > Force, Top, Foc, etc. (Biberauer & Roberts 2015, Bosch 2023)
    - ❖ A basic C is early-acquired
    - ❖ More fine-grained Cs are later-acquired
    - ➢ Change "enters" via later-acquired categories
       e.g. modern Cimbrian looks like a C_{Fin} V2 language, whereas
         Continental German is C_{Force}.
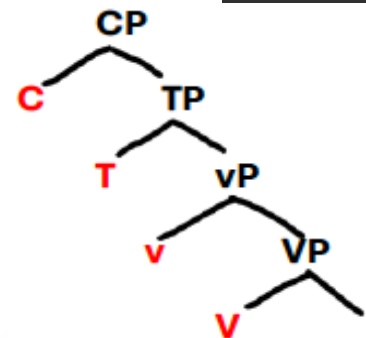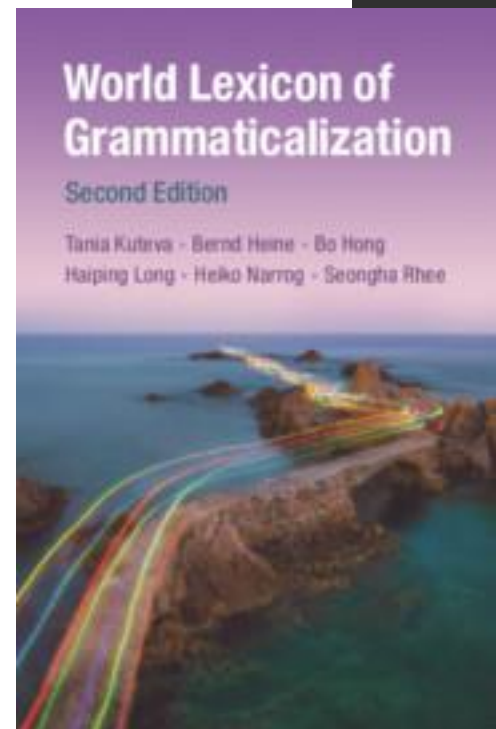
I. Parameters

- The role of UG here?
  - binary Merge
  - [F]-seeking: acquirers encode grammar via formal features, which define syntactic categories and natural classes.

- Some expectations:
  - earliest acquired categories = crosslinguistically more stable (and more similar?)
  - later acquired categories = increasingly language-specific and more vulnerable to change
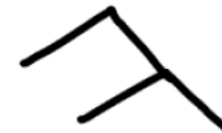
II. Grammaticalisation

- **Grammaticalisation**: creation of grammatical items from (originally) lexical ones.

- Crosslinguistically very robustly attested (Kouteva et al. 2019)

(8) a. *have* ('possess') > perfect marker > past (V > Asp > T)
     b. demonstrative > definite article (Adj > D)
     c. *one* > indefinite article (Num > D)
     d. *man* > indefinite pronoun (N > D)   [*all vastly simplified*]

➢ **upwards** reanalysis

- This "recycling" looks like another instance of grammars (their users/acquirers) making maximal use of available means (MMM)

World Lexicon of Grammaticalization
Second Edition
Tania Kuteva · Bernd Heine · Bo Hong
Haiping Long · Heiko Narrog · Seongha Rhee

II. Grammaticalisation

- Current Minimalist theory facilitates a more fine-grained understanding of grammaticalisation (see also Grestenberger, yesterday).

  ▪ a 'lexical item' or content word like *have*

(9) √HAVE + *v*   = ROOT + verbaliser

  where the verbaliser comprises formal features, e.g. [+V]

  ➢ grammaticalisation can target both **roots** (always the case at the initial stages, where we have lexical > grammatical) and **formal features** (this is feature-recycling, not typically called *grammaticalisation*).
  ➢ root recycling
  ➢ formal feature recycling

II. Grammaticalisation

- Root recycling can:
  - produce a **further exponent of an existing category** – e.g. Afrikaans *gaan* ('go' - V) becoming established as a future marker alongside *sal* ('will'; (10)).
  - result in the **creation of a new category** – e.g. Afrikaans *gaan* ('go') in its perspective-aspectual verb-internal use (10b,c):

(10) Ek **gaan/sal**   blomme koop.

     I   go   shall flower   buy

     'I will buy flowers.'

(11) a. **Gaan haal**   julle   gou   vir ons almal koffie!

     go   fetch you.PL quick for us   all   coffee

     'Go fetch us all coffee!'

   b. Wat **gaan haal** julle   daar?

     what go   fetch you.PL there

     'What are you guys getting there?'

   c. Wat **loop/kom haal** julle daar?

     what walk   come fetch you.PL there

     'What are you guys getting there?'
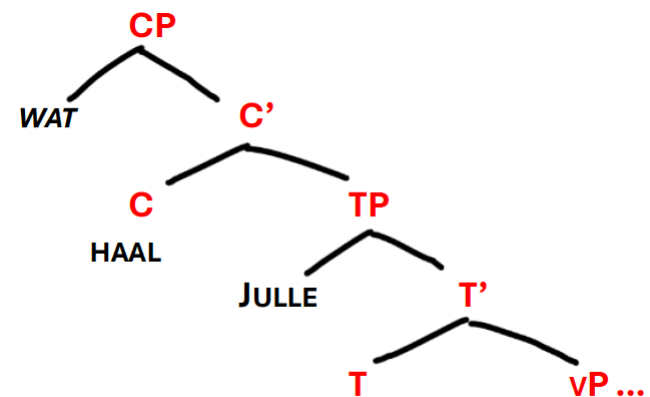
An **edge** development with an **intersubjective function** ...

II. Grammaticalisation

- **Formal feature recycling** is also crosslinguistically widespread.

e.g. **Case** serving not only core grammatical functions, but additionally discourse-related ones:

(12) a. John-**hantʰey** Mary-**ka**   mwusewe.   **Korean**

   John-DAT   Mary-NOM be.afraid

   b. John-**hantʰey**-**ka**   Mary-**ka**   mwusewe.
   John- DAT-   NOM Mary-NOM be.afraid
   'JOHN is afraid of Mary.'

   ➢ **nominative case-stacking > focus**

   ▪ See i.a. N. Richards (2013), Pesetsky (2014), Levin (2017), Lee & Nie (2021), and Caha (2022)

- Formal features already in the system can also be recycled in tandem – e.g. the crosslinguistically common re-use of "singular" ([minimal]) and "plural" ([augmented]) to produce a dual; *The students$_{PL}$ wonders$_{SG}$ what this is* (Harbour 2020).

II. Grammaticalisation

- Honorification always seems to draw on more "basic" features:
  - Many studies just assume a [HON] feature
    (Corbett 2000, Ura 2000, Hasegawa 2006, Niinuma 2003, Boeckx & Niinuma 2004, Potts & Kawahara 2004, Ivana & Sakai 2007, Sakai & Ivana 2009, Volpe 2009, Kishimoto 2010, Thompson 2011, Ackema & Neeleman 2018, Choi & Harley 2019)

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(13) Attested honorification systems

Cateogry	Honorific	Non-honorific
Number	PL	SG
Person	3rd	1st, 2nd
Definiteness	INDEF	DEF

Who would be driving this grammaticalization?

III. Pragmaticalisation

- **pragmaticalisation**: creation of specifically discourse-oriented (≈ speaker-/hearer-related or (inter)subjective) elements.
  [Diewald 2011, Müller & Axel-Tober 2025]

- This often seems (at least initially) adult-driven.
- Recall the intersubjectively-oriented use of *gaan* in Afrikaans:

(14)   **Gaan haal**   julle   gou   vir ons almal koffie!
     go   fetch you.PL quick for us   all   coffee
    'Go fetch us all coffee!'

- natural class including other motion verbs e.g. *kom* ('come') and *loop* ('walk').

III. Pragmaticalisation

- Surely this is adult-driven?

- In Dutch, attributive adjectives inflect in all but one context (Tsimpli & Hulk 2013):

(15) a.   de   grot**e**   muis
      the-COMMON big-COMMON mouse-COMMON
      'the big mouse'

   b.   het   grot**e**   huis
      the-NEUTER big-NEUTER house-NEUTER
      'the big house'

   c.   de   grot**e** muizen / de   grot**e** huizen
      the-PL big- PL mouse- PL   the- PL big- PL house- PL

   d.   grot**e** muizen / grot**e** huizen
      big-PL mouse-PL / big-PL house-PL

(16) a.   een   grot**e**   muis
      a-COMMON big-COMMON mouse-COMMON
      'a big mouse'

   b.   een   **groot**   huis
      a-NEUTER big-NEUTER house-NEUTER
      'a big house'

III. Pragmaticalisation

- In Afrikaans, gender has been lost; the adjectival –*e* ending has been repurposed (Lass 1990, Ponelis 1993)

(17) a.   'n swaar tas / las
       a heavy bag   burden
       'a heavy bag/load'   (lit.)

    b.   'n swar**e** las
       a heavy burden
       'a heavy burden'   (fig.)

(18) a.   Dis   'n mooi dogtertjie.
       that's a pretty girl.DIM
       'That's a pretty little girl.'   (neutral)

    b.   Dis 'n mooi**e**   (ou) dogtertjie.
       that's a pretty.INFL old girl.DIM
       'That's a pretty little girl.'   (affectively marked)

- More pragmatically complex intersubjectively oriented marking ...

III. Pragmaticalisation

- Spoken languages feature a lot of this kind of marking.
- A recurring pattern: it appears to be **peripheral** (an edge phenomenon) recall the case-recycling example:

(19)   John-**hantʰey**-**ka**   Mary-**ka**   mwusewe.
        John- DAT-   NOM Mary-NOM be.afraid
        'JOHN is afraid of Mary.'

e.g. diminutive recycling (Kouteva et al. 2019, Gouskova & Bobaljik 2023)

(20) a. boek ('book')   [Afrikaans]
      b. boek**ie** ('little book')
      c. boek**ietjie** ('pathetic little book' 'sweet little book')

III. Pragmaticalisation

- And it is not always so clear that pragmaticalisation always involves **upwards (re/ne)analysis**.

  e.g. Differential Object Marking (DOM) seems to come "top-down"

(21) Ek LEES **vir** **hierdie boek**!   [Afrikaans]
      I   read for   this   book
      'I am really reading this book!' (real engagement)

- *Vir* ('for') is a preposition, i.e. it starts "outside" the nominal it marks.
- But in Afrikaans there is evidence that it is no longer "outside".

III. Pragmaticalisation

- There are **ditransitive idioms** that don't permit the dative alternation:

(22) a. Give him hell!   [double object construction]
      b. #Give hell to him!   [prepositional dative]

(23) a. Gee (**vir**) hom hel!   [double object dative]
          give for him hell
          'Give him hell!'
      b. #Gee hel **vir** hom!   [prepositional dative]
          (ditto: #Give hell to him! as in (22b))

➢ the DOM-marker "counts" as part of the nominal structure
➢ **pragmaticalisation** can involve tight structural integration, which starts at the edge.
   (recall also our discussion of the Quirky V2 verb-compounds)

III. Pragmaticalisation

- Does the MMM approach have any insight to offer in relation to this **edge orientation**?

- A key property of emergent systems = **the edge of chaos** (Bosch 2022)

(24)

- The edge of chaos = **progress niche** where **progress/creativity** happens.
- But note that **progress/creativity** builds on and **develops already-established structure**
  - ➢ **structural homology**

- **Maximise the available means**
  - 2 means that are always available in a grammatical system with some already-acquired structure (defined by features [F]s in current theory)
  - **(i) the [F]-defined structure** and
  - **(ii) the [F]-defined structure's edge.**
- Both children and adults seem to exploit the edge of chaos (Biberauer 2023, 2024).

Some concluding ideas

- When it comes to UG, Less may be More.
- Current generative theory (= 3 Factors Minimalism) offers various new perspectives on diachronic questions including:
  - stability and change
  - the various natures of change (e.g. the universal vs the language-specific, the internal workings of grammaticalization and pragmaticalisation)
  - the role of child acquirers
  - the role of adults
  - the role of "contact" …

THANK YOU!

BAIE DANKIE!