



Acquiring the left periphery, and topics

Three independent questions regarding the acquisition of the left periphery, and functional categories more broadly:

- How, and in which order, are functional categories acquired?
- Are there crosslinguistically *universal* developmental stages? Which stages are *language-variant*, and what conditions this variation?
- What is the contribution of UG in (1-2)?
 - Functional categories? Formal features?
 - ...And universal developmental pathways (viz. maturation below)?

Traditional split in theories of acquisition of functional categories:

- Bottom-up Maturation** → universally *late* CP (Radford, 1990; Rizzi, 1993; Friedmann et al., 2021).
 - Continuity** → functional category availability from the start. (Some) CP structures *early-acquired* (Boser et al. 1992; Poeppel & Wexler, 1993; Westergaard, 2009).
- Both groups largely theories of **developmental universals**: capturing (often *hard-wiring*) universal acquisition pathways.

Our contributions Zooming in on *developmental universals* and *developmental variation* by studying (i) ‘earliness’ of CP elements, (ii) crosslinguistic variation in topic acquisition.

The puzzle and our proposal

- Systematic **evidence for early CP** in the data.
- Crosslinguistically **flexible, L1-specific** timings of acquisition of **topics** (early/late).

Unclear: How do we predict (1-2) with the above (universals-centred) toolkit?

→ **New proposed generalization:** **formal complexity** of topics (A/A', operator/non-operator), *not* syntactic maturation, conditions their emergence.

→ A **neo-emergentist** perspective on acquisition **predicts** this developmental variation (Biberauer & Roberts, 2015; Biberauer, 2019).

A corpus study: Germanic-Romance bilinguals

Study with **seven bilingual children**, focus on **two** here:

- Heleen, Italian-Dutch** (Amsterdam corpus); **Simon, Spanish-German** (PhonBLA corpus).
- Both *strongly balanced* (per criteria in Hager & Müller, 2015).

Study 1 Left-peripheral structures

V-to-C (Germanic only) • Wh-Qs • Y/N-Qs (Germanic) • Top/Foc
• Illocutionary complementizers (Romance) • Finite embedding

Study 2 Production of object/reflexive clitics relative to CLLD

Results

Study 1 CP is early, topic-emergence is L1-dependent

- Romance:** *very early* wh-Qs, illocutionary comp., some ambiguous left-dislocations. *Late* CLLD.
- Germanic:** *almost all* CP-structures emerge *early*, including topics.

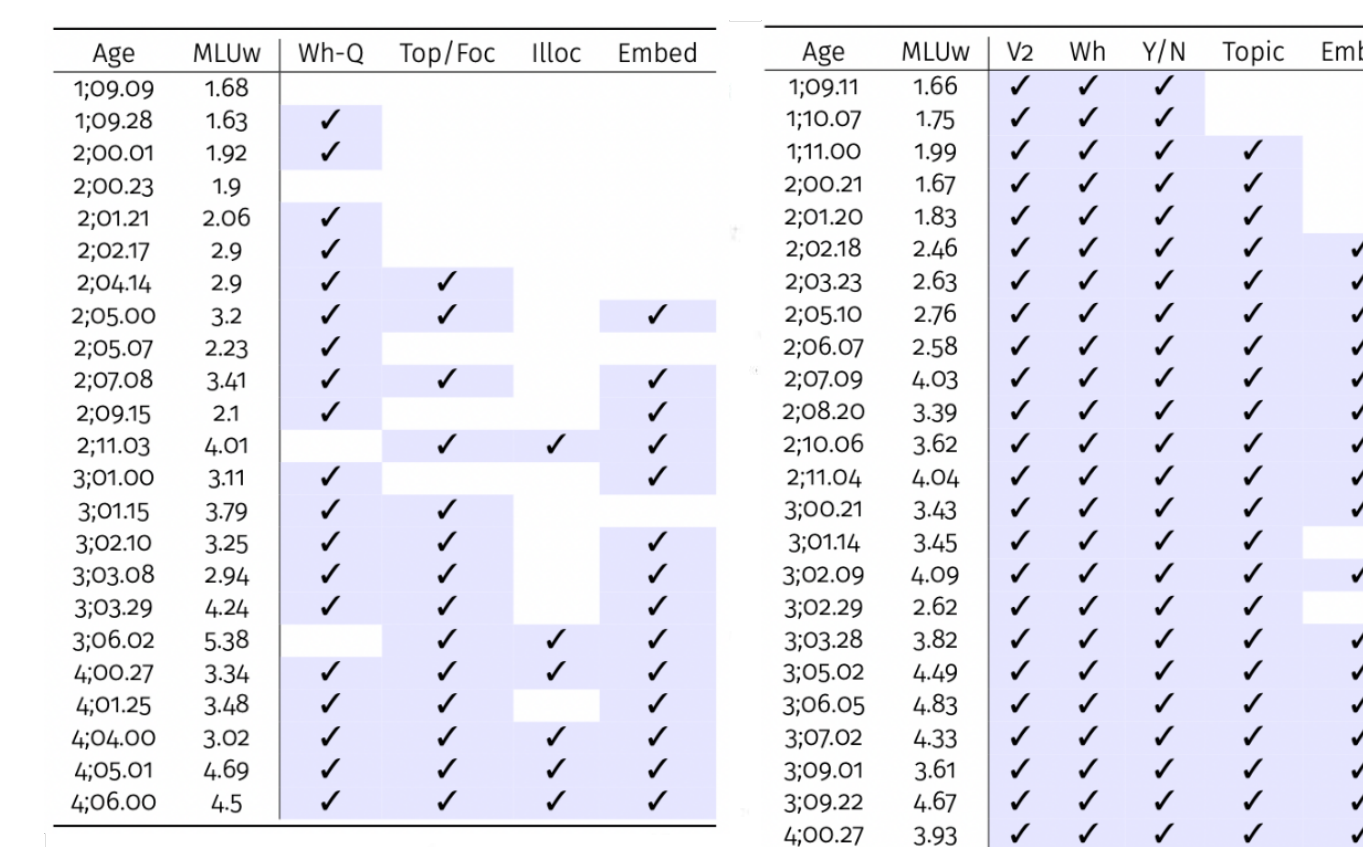


Figure 1. Heleen's Italian and Dutch

Table 1. Emergence of all CP-structures for both children

	V2	Wh-Q	Y/N-Q	Top/Foc	CLLD	Illoc	Embed
H's Italian		1;09.28		2;05.00	2;07.08	2;11.03	2;05.00
H's Dutch	1;09.11	1;09.11	1;09.11	1;11.00			2;02.18
S's Spanish		2;05.24		2;08.06	3;03.12	2;05.24	3;00.10
S's German	2;02.11	2;03.11	2;03.25	2;03.11			3;01.03

Study 2 Late CLLD development *not* due to late clitic development, it *inheres* in CLLD: object/reflexive clitics are produced well before CLLD.

Table 2. Emergence of foci, clitics and CLLD

	Focalization	Reflexive clitics	Object clitics	CLLD
Heleen (It.)	2;05.00 file 8	1;09.09 file 1	2;00.01 file 3	2;07.08 file 10
Simon (Sp.)	2;08.06 file 27	1;11.09 file 15	2;03.17 file 19	3;03.12 file 33

The data vs existing theoretical approaches

- Early CP:** ✗ bottom-up maturation. ✓ Continuity, inward maturation (i.a., Boser et al., 1992; Heim & Wiltschko, 2021).
 - Early and late topics:** ✗ bottom-up maturation, esp. cartographic Growing Trees (Friedmann et al., 2021).
- Compatible with continuity and inward maturation, *but insufficiently predictive*; elaboration required re L1 variation.

Needed: a **theory also predicting developmental variation**

Our suggestion: leveraging a *neo-emergentist* generative approach (Biberauer & Roberts, 2015; Biberauer, 2019).

- Minimal UG, importance of third-factors (Maximize Minimal Means): e.g., minimize $[F]$ s, maximize already-existing $[F]$ s.
- CP macroparametric, hence early (see also Wexler, 1998).
- Emergent, *non-hard-wired* acquisition pathways: L1-specific variation anticipated, and expected to correlate with variables such as *formal/parametric complexity*.

Next: formal, Kolmogorov complexity is the explanans, *not* syntactic maturation.

A solution: formal complexity, not maturation

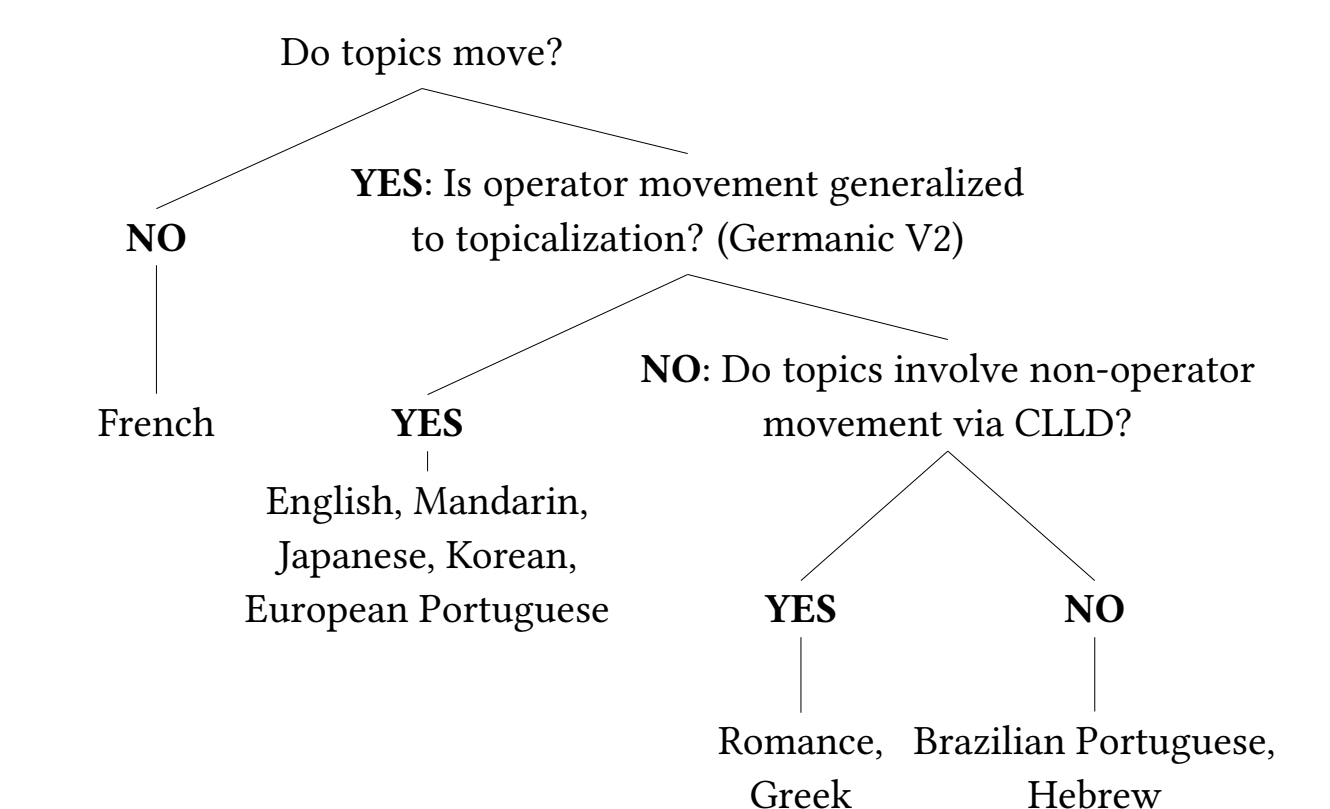
- We posit a novel correlation with **parametric complexity**, esp. $[A/A']$ and **operator/non-operator** properties (i.a., Koster, 1978; Cinque, 1999; van Urk, 2015).
- Germanic:** generalized, **pure A'**, **operator** V-to-C; few (no?) formal distinctions in its left periphery → **acquired early**.
- Romance:** **mixed A/A'** properties, **non-operator** → requires **higher description length**, an additional featural distinction between kinds of $[A']$ (see also Bhatt & Keine, 2023; Chierchia, 2024) → **acquired late**.

↔ **Does this generalize crosslinguistically? ... Yes!**

Table 3. Crosslinguistic topicalization strategies, acquisition, formal complexity

Language	Acquisition	Formal characteristics of topicalization	Parametric complexity
French	Very early	Adjoined or base-generated	Macroparametric
Germanic V2	Very early	Generalized V2	Mesoparametric
Mandarin, Japanese, Korean	Early (?)	Operator movement or base-generation	Mesoparametric
European Portuguese (non-CLLD only)	Early	Operator movement	Mesoparametric
Catalan, Spanish	Late	Non-operator movement with CLLD	Microparametric
Greek	Late	Non-operator movement with CLLD	Microparametric
Hebrew	Late	Non-operator movement without CLLD	Microparametric
Brazilian Portuguese	Late	Non-operator movement without CLLD	Microparametric

- ! ‘Late’ topics in maturational work **epiphenomena** of L1s studied, *not* result of universal maturational constraints on CP.
- (1) Topics in a crosslinguistic acquisition hierarchy



Empirical generalizations

Data corroborates generalizations in Bosch (2023) and Bosch & Biberauer (2024) – (i) **Early Acquisition of CP**, (ii) **Structural Height and Acquisition Mismatch**.

Plus brings forth a novel one...

L1-dependent Topic Development (new!). The timing of acquisition of topics (early/late) systematically correlates with the *formal, parametric complexity* of the topicalization strategies in each L1.

Implications: theorizing developmental variation

Two key results: (1) **(some) CP structure is early**, (2) **‘flexible’ topic acquisition crosslinguistically**. These are *predicted* under neo-emergentism:

- CP emerges early (supporting, i.a., Boser et al., 1992; Tsimpli, 2005; van Kampen, 2010; Heim & Wiltschko, 2021).
- No biological constraints on topic-development → **appears to ‘track’ formal complexity** crosslinguistically.
- ↳ Bolsters importance of *theorizing* L1-specific developmental pathways and of a **comparative** approach to acquisition.
- Question: can this analysis be extended to other structures with mixed $[A/A']$ properties? (scrambling, Austronesian pivots, etc.)
- Question: What’s the role of the input and/or frequency?