Not all topics are equal: syntactic complexity and its effect on the acquisition of left-peripheral structures

Approaches to the acquisition of functional categories, particularly maturational approaches, typically focus on theorising putatively universal aspects of development, e.g., *universally* 'delayed' development of CP-structures (Radford 1990; Rizzi 1993/4; Friedmann et al. 2021). Here, we highlight the empirical reality and theoretical significance of systematic *crosslinguistically variable* acquisition orders of CP-structures. We present a two-part empirical argument against rigidly pre-wired developmental pathways, predicting, i.a. *universally* late maturation of topics. We draw in particular on bilingual and monolingual acquisition of topicalization structures.

Our empirical contribution is two-fold: ***I.*** summarising two corpus studies on two bilinguals acquiring Italian/Dutch and Spanish/German, and ***II.*** testing our predictions against monolingual topic-acquisition data from more than 10 typologically-diverse languages. We emphasize how closer examination of the formal complexity of topicalization strategies crosslinguistically reveals that late acquisition of topics is *not* a universal; instead, we establish, for the first time, that emergence timings of topics (early vs late) systematically 'track' their *formal complexity* in each L1.

I. **Study 1** examines the relative order of emergence of the following CP-structures: wh-questions; yes/no questions (Germanic only); V-to-C/V2 (Germanic); topics and foci; illocutionary complementizers (Romance); and finite embedding markers.

The data reveals 4 theoretically consequential patterns: (i) CP-structures emerge early across all children and languages; (ii) some structures assumed to recruit left-peripherally high heads emerge early (e.g. Germanic topics, illocutionary complementizers in Simon's Spanish; **Tables 1-2** illustrate one child); (iii) topic-development varies across languages, with Germanic topics consistently emerging well before Romance ones (e.g. CLLD) within individual acquirers (**Table 3**); and (iv) late development of CLLD in Romance is *not* due to generally late development of clitics, but inheres in CLLD; **Study 2** shows that both object and reflexive/impersonal clitics appear considerably earlier.

Age	MLU	Wh-Q	Top/Foc	Illoc	Embed
1;09.09	1.68				
1;09.28	1.63	✓			
2;00.01	1.92	✓			
2;00.23	1.9				
2;01.21	2.06	✓			
2;02.17	2.9	✓			
2;04.14	2.9	✓	✓		
2;05.00	3.2	✓	✓		✓
2;05.07	2.23	✓			
2;07.08	3.41	✓	✓		✓
2;09.15	2.1	✓			✓
2;11.03	4.01		✓	✓	✓
3;01.00	3.11	✓			✓
3;01.15	3.79	✓	✓		
3;02.10	3.25	✓	✓		✓
3;03.08	2.94	✓	✓		✓
3;03.29	4.24	✓	✓		✓
3;06.02	5.38		✓	✓	✓
4;00.27	3.34	✓	✓	✓	✓
4;01.25	3.48	✓	✓		✓
4;04.00	3.02	✓	✓	✓	✓
4;05.01	4.69	✓	✓	✓	✓
4;06.00	4.5	✓	✓	✓	✓

Age	MLU	V2	Wh	Y/N	Topic	Embed
1;09.11	1.66	✓	✓	✓		
1;10.07	1.75	✓	✓	✓		
1;11.00	1.99	✓	✓	✓	✓	
2;00.21	1.67	✓	✓	✓	✓	
2;01.20	1.83	✓	✓	✓	✓	
2;02.18	2.46	✓	✓	✓	✓	✓
2;03.23	2.63	✓	✓	✓	✓	✓
2;05.10	2.76	✓	✓	✓	✓	✓
2;06.07	2.58	✓	✓	✓	✓	✓
2;07.09	4.03	✓	✓	✓	✓	✓
2;08.20	3.39	✓	✓	✓	✓	✓
2;10.06	3.62	✓	✓	✓	✓	✓
2;11.04	4.04	✓	✓	✓	✓	✓
3;00.21	3.43	✓	✓	✓	✓	✓
3;01.14	3.45	✓	✓	✓	✓	
3;02.09	4.09	✓	✓	✓	✓	✓
3;02.29	2.62	✓	✓	✓	✓	
3;03.28	3.82	✓	✓	✓	✓	✓
3;05.02	4.49	✓	✓	✓	✓	✓
3;06.05	4.83	✓	✓	✓	✓	✓
3;07.02	4.33	✓	✓	✓	✓	✓
3;09.01	3.61	✓	✓	✓	✓	✓
3;09.22	4.67	✓	✓	✓	✓	✓
4;00.27	3.93	✓	✓	✓	✓	✓
4;01.25	3.9	✓	✓	✓	✓	✓
4;04.00	3.55	✓	✓	✓	✓	✓
4;05.02	4.72	✓	✓	✓	✓	✓
4;06.00	4.12	✓	✓	✓	✓	✓
4;06.01	5.59	✓	✓	✓	✓	✓

Tables 1-2. Production of CP-structures in Heleen's Italian (left) and Dutch (right) [Amsterdam corpus].

	V2	Wh-Q	Y/N-Q	Top/Foc	CLLD	Illoc	Embed
Heleen Italian		1;09.28		2;05.00	2;07.08	2;11.03	2;05.00
Heleen Dutch	1;09.11	1;09.11	1;09.11	1;11.00			2;02.18
Simon Spanish		1;11.09		2:08.06	3;03.12	2;05.24	3;00.10
Simon German	2;02.11	2;03.11	2;03.25	2;03.11			3;01.03

Table 3. Timing of emergence of all CP-structures [Amsterdam and PhonBLA corpora].

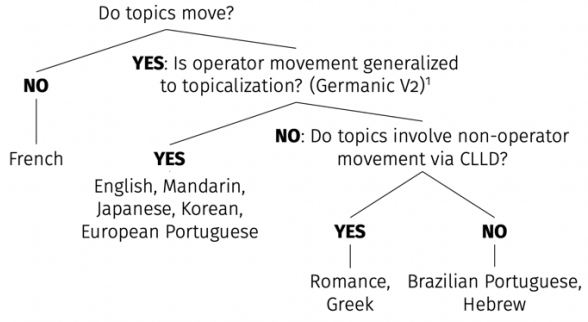
These generalizations are incompatible with bottom-up maturation, which predicts universally late CP-development. They are also inconsistent with the Growing Trees Hypothesis (Friedmann et al. 2021): some structurally high elements emerge early, *contra* the proposed cartographic pathway, and, crucially, L1-specific discrepancies in the development of topicalization are also unexpected.

While continuity and other maturational approaches (e.g., Heim & Wiltschko 2021) can potentially *accommodate* these crosslinguistic differences, they seem *insufficiently predictive*, as L1-dependent acquisition of topics is not theorized. We propose instead that a *neo-emergentist generative* approach to development (Biberauer & Roberts 2015) readily predicts both the crosslinguistically *shared* and *variable* patterns: the logic is that acquirers first access core 'macroparametric' structural properties, before considering increasingly complex, 'microparametric' aspects of the input. This anticipates the two broad patterns observed: as a featurally-simpler, more language-general property, a projection encoding discourse-information (CP) emerges early. Secondly, acquisition timings are emergent (non-hard-wired) and predicted to correlate with parametric complexity (in the sense of Biberauer & Roberts 2015, *et seq.*): we propose a correlation with the *operator* vs *non-operator* nature of topicalization in Germanic and Romance, respectively.

II. Our predictions are tested against data on monolingual acquisition of topics from a range of 10+ typologically-diverse languages. We show that the development of topics (early vs late) systematically varies as a function of the formal complexity (e.g., operator/non-operator) of each L1's topicalization strategies (**Table 5**). We schematize these patterns as a crosslinguistic acquisition hierarchy of topics; **Figure 1** shows how formally more intricate divisions correlate, without exception, to late acquisition as in **Table 5**. These results are suggestive: the 'late' topics reported in bottom-up maturation are *epiphenomena* of the L1s studied, *not* a result of universal maturational constraints upon the left periphery.

Language	Acquisition	Source	Formal characteristics	Parametric complexity
French	Very Early	De Cat (2000, *et seq*.)	Adjoined or base-generated	Macroparametric
Germanic V2	Early	Boser et al (1992); Poeppel & Wexler (1993); Wexler (1998); this paper.	Generalized V2	Mesoparametric
Mandarin Japanese Korean	Early	Zhu & Gavarró (2019) Kurumada (2009) Lee (2001)	Operator movement or base-generation	Mesoparametric
European Portuguese	Early (non-CLLD topics only)	Soares (2003)	Operator movement	Mesoparametric
Catalan Spanish/Italian Greek	Late	Grinstead (2004), Bosch (2023) Grinstead (2004); this paper. Marinis (2001), Tsimpli (2005)	Non-operator movement with CLLD	Microparametric
Hebrew Brazilian Portuguese	Late	Friedmann et al. (2021) Meira & Grolla (2023)	Non-operator movement without CLLD	Microparametric
English	Late, due to input frequency	Notley et al., (2007), a.o.	Operator movement	Mesoparametric

Table 5. Topicalization strategies: languages studied, earliness vs lateness of acquisition, and formal complexity.



[1] In Germanic, operator topics fall out from its generalized V2 system, unlike the other languages considered, hence its parenthetical placement.

Figure 1. Formal complexity of topicalization structures.

Overall, our work has ramifications for requirements on theories of functional-category acquisition, the role of formal complexity in development, and the crosslinguistic 'flexibility' of learning paths more broadly. A comprehensive account of syntactic development must be *constrained* enough to account for crosslinguistically universal acquisition orders, but *flexible* and *explicit* enough to *predict* systematic developmental variation. In this context, we argue for the explanatory potential of neo-emergentism, which meets both desiderata.

References (selected): Biberauer & Roberts (2015) Rethinking formal hierarchies: a proposed unification. *Cambridge Occasional Papers in Linguistics*; **Friedmann, Belletti & Rizzi (2021)** Growing Trees: The acquisition of the left periphery. *Glossa*; **Radford (1990)**. *Syntactic theory and the acquisition of English syntax: The nature of early child grammars of English*. Wiley.