

# Not all topics are equal

## Syntactic complexity and its effect on the acquisition of left-peripheral structures\*

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### 1 Introduction: acquiring the left periphery

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

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

**Traditional split** in theories of functional category acquisition.

- **Continuity:** re (1), functional categories are available from the start. Re (2), universally, early evidence for functional structure. Syntactic categories are provided by UG (3).
  - **Maturation:** re (1), *gradual*, (typically) bottom-up development of functional categories, e.g., universally *late* CP. Re (2), order of acquisition of functional categories is universal (e.g., VP → TP → CP). This (bottom-up) developmental pathway, and the associated categories, are *hard-wired* by UG (3).
- ↔ Emphasis on theorising **developmental universals** → (parts of) learning paths are crosslinguistically universal (empirical generalisations), because UG specifies so (theoretical explanation).
- ? ... **And developmental variation?**
- **Emerging tension:** we need a comprehensive, crosslinguistically applicable model of syntactic development that is *constrained* enough to account for crosslinguistically universal orders of acquisition, but *flexible* and *explicit* enough to *predict* any language-specific variation therein.

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## 1.1 Today

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

↪ Brings novel insights on the *biologisation issue* above, and on the empirical consequences of assuming very rigid, crosslinguistically ‘fixed’ developmental pathways.

### The puzzle and our proposal

(1) Systematic **evidence for early CP** in the data.

(2) 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 generalisation: formal complexity** of topics (A/A’, operator/non-operator), *not* syntactic maturation, conditions their emergence.

! ‘Late’ topics in maturational work merely a *language-specific effect*.

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

## 2 Acquiring the left periphery: theoretical approaches

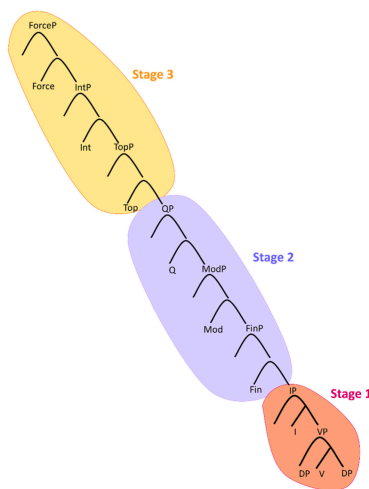
### 2.1 Maturation

**Delayed** acquisition of functional categories. Proposal: operationalise this delay in terms of **syntactic maturation** → biological endowment dictates a universal functional spine, *and* its order of development.

**Two** instantiations of this approach: *bottom-up* and *inward* maturation.

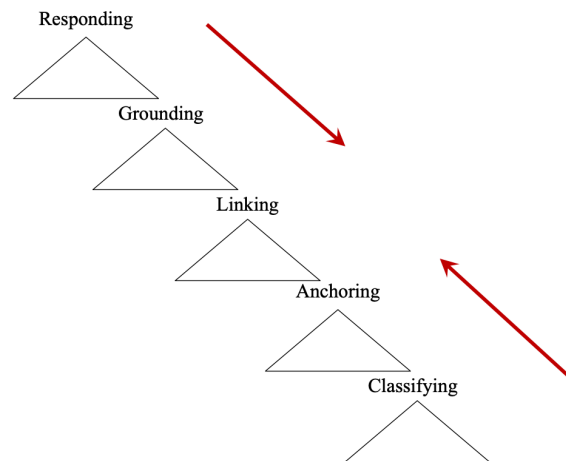
- **Bottom-up maturation:** (arguably) dominant approach so far. Top of the tree ( $\approx$  CP) acquired **last** (Radford, 1990; Rizzi, 1993; Friedmann et al., 2021).

→ Recent, left periphery-centred proposal: **Growing Trees Hypothesis**, two-stage development of LP, supported by Hebrew and Brazilian Portuguese data (Friedmann et al., 2021; Meira & Grolla, 2023).



**Figure 1:** Stages in the Growing Trees Hypothesis (Friedmann et al., 2021: p. 12)

- **Inward maturation:** CP emerges early.
  - Galasso (2003)’s ‘Empty Middle’ approach:  $CP > \emptyset > VP$  to  $CP > IP > VP$ .
  - Heim & Wiltschko (2021)’s **Inward Growing Spine Hypothesis**: interactional and universal spine matures inwardly (Figure 2).



**Figure 2:** Inward Growing Spine Hypothesis (from Wiltschko, 2023, BCGL 16 invited talk)

- Another, overlapping approach – Tsimpli (2005): maturation in terms of **interpretable** vs **uninterpretable** features, the latter (e.g., uninterpretable tense and discourse  $[F]$ s) being maturationally delayed.

**Overall:** theoretical emphasis on **universality**: hard-coded universal acquisition orderings.

## 2.2 Continuity

Children’s initial state  $\simeq$  adult’s functional inventory. The extent to which this overlap is an isomorphism varies:

- Strong Continuity (i.a., Poeppel & Wexler, 1993; Boser et al., 1992; Hyams, 1992)
- Weak Continuity (Underspecification of features, Lexical Learning, etc.) (i.a., Hyams, 1996; Clahsen et al., 1994).
- Westergaard (2009)’s micro-cues approach: sensitivity to cartographic structures early on.

**Overall:** theoretical emphasis on **universality** (again): functional structure universally available from the start<sup>1</sup>.

## 2.3 Interim summary: on the need for a theory of (language-specific) developmental variation

- **Analytical focus** of maturational and continuity approaches: **developmental universals**.
- Predicting **crosslinguistic variation** in acquisition orderings?
  - No explicit proposals for possible ‘corners’ of variation in Friedmann et al. (2021) and precedents.
  - Underspecification of features (e.g., Hyams, 1996; Schütze, 2010): which features are more/less likely to be underspecified?
  - Lexical Learning (Clahsen et al., 1994, 1996): which structures/lexical items have to be learned before we can consider CP acquired?

<sup>1</sup>Possible underspecification of features notwithstanding.

- Continuity: complex task remains acquiring an L1-specific grammar (Lust, 1999, 2012), how does the child do it?
- **Two-factors-centred approaches** (UG and input): No explicit theory about which general cognitive strategies the child harnesses in the task of learning an L1-specific and UG-guided grammar.
- **Maturational and continuity approaches leave room for some variation, but *do not theorise it*.**

- **Our data today:** systematic corners of developmental variation in the acquisition of topicalisation crosslinguistically.
- **Needed:** a theory that explicitly predicts both developmental universals and variation observed.
- We argue for the explanatory potential of **neo-emergentism** in this domain (§4-5).

### 3 Two corpus studies

#### 3.1 Methodology

Study with **seven bilingual children**. **Two** of them reported here:

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

**Table 1:** Children studied and summary information (Hulk, 1997; Lleó et al., 2003)

Corpus	Child	Language	Files analysed	Age range	MLUw range
Amsterdam	Heleen	Italian	23	1;09-4;06	1.63-5.38
		Dutch	29	1;09-4;06	1.67-5.59
PhonBLA	Simon	Spanish	42	1;02-5;10	1.0-5.0
		German	39	1;01-5;10	1.0-4.26

**Study 1**: Left-peripheral structures quantified

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

↔ When is CP knowledge apparent in the data? Is there L1-variation or universality in the acquisition of some CP-structures?

**Study 2**: analysis of production of clitics relative to CLLD; this included object clitics and also clitics mandated by reflexive or impersonal verbs.

↔ To probe the extent to which the timing of emergence of topicalisation, notably CLLD, in Romance is closely linked with the emergence of cliticisation: emergence of CLLD directly tied to acquisition of cliticisation, or partly independent developments?

#### 3.2 Results

We describe first the results of their Romance languages, and then their Germanic languages, before contrasting them at the end.

### 3.2.1 Study 1: left-peripheral structures

#### Romance

Production of CP-structures across Heleen and Simon's Romance languages is summarised below.

**Table 2:** Production of CP-structures in Heleen's Italian

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	✓	✓	✓	✓

**Table 3:** Production of CP-structures in Simon's Spanish (shortened)

Age	MLU	Wh-Q	Top/Foc	Illoc	Embed
1;08.08	1.04				
1;08.22	1.06				
1;09.09	1.68				
1;09.28	1.63				
1;10.17	1.13				
1;10.22	1.4				
1;11.09	1.08	✓			
1;11.26	1.22				
2;00.10	1.27				
2;03.04	1.83				
2;03.17	1.85				
2;04.01	2.03				
2;05.24	2.95			✓	
2;05.26	2.17	✓		✓	
2;06.09	2.45	✓			
2;06.23	1.95	✓		✓	
2;07.09	2.29				
2;07.23	2.05				
2;08.06	2.41		✓		
2;08.20	2.84	✓	✓	✓	
2;10.02	2.48	✓	✓		
3;00.10	2.62			✓	
3;00.24	3.18	✓			✓
3;01.24	2.78	✓	✓	✓	✓
3;03.12	3.53	✓	✓		✓
3;04.16	3.55	✓		✓	✓
3;05.25	3.33	✓	✓		✓
4;01.03	5.0				✓
4;03.04	2.0				
4;08.14	3.0				

Unpacking these results, qualitatively and quantitatively:

👉 **Very early structures:** wh-questions and illocutionary complementisers.

- First structures produced: **wh-questions**, used frequently and with various wh-words/verbs from 1;09 in Heleen and around 2;05 for Simon.

(4) a. Italian, Heleen (1;09.28, MLUw 1.63)

Ecco Maria cosa hai fatto?  
here Maria what AUX.HAVE.2SG do.PTCP

'Here (you have it), Maria, what have you done?'

b. Heleen (2;01.21, MLUw 2.06)

Dov' è l'altro?  
where be.3SG the-other

'Where's the other one?'

c. Heleen (2;02.17, MLUw 2.9)

Come si chiama tuo gatto?  
how CL.REFL= be.called.3SG your cat

'What your cat's name?'

(5) a. Simon (2;05.26, MLUw 2.17)

Qué es esto?  
what be.3SG this

'What is this?'

b. Simon (2;05.26, MLUw 2.17)

Qué hay aquí?  
what there.be.3SG here

'What's here?'

c. Simon (2;05.26, MLUw 2.17)

Dónde está mi locomotora?  
where be.3SG my train

'Where's my train?'

- At this same point (2;05), we also observe emergence of **illocutionary complementisers** in Simon → aligns with (preliminary) generalisation in Bosch (2023b).

(6) a. Spanish, Simon (2;05.24, MLUw 2.95)

**Que** llueve  
that.EXCL rain.3SG

‘It’s raining!’

b. Simon (2;05.24, MLUw 2.95)

**Que** sube, sube, sube  
that.EXCL go.up.3SG go.up.3SG go.up.3SG

‘It’s going up, up and up!’

c. Simon (2;05.26, MLUw 2.17)

**Que** se ha acabado, era de noche  
that.CONJ CL.REFL= AUX.HAVE.3SG finish.PTCP be.PST.3SG of night

‘It has finished, it was late at night.’

### 👉 Late topics

- **Ambiguous** left-dislocations, possibly **focalisations**, start emerging for Simon before clear topics (Heleen produces topics/foci later).

(7) a. Spanish, Simon (2;08.06, MLUw 2.41)

Y este pinta tú.  
and this paint.IMP you

‘This one, paint it.’

b. Simon (2;08.06, MLUw 2.41)

Este 0he pintado rosa.  
this AUX.HAVE.1SG paint.PTCP pink

‘This one, I (have) painted it pink.’

c. Simon (2;08.20, MLUw 2.84)

De navidad quiero.  
of Christmas want.1SG

‘I want some OF CHRISTMAS.’

- **Unambiguous topics**, in the form of **CLLD**, emerge systematically **late**: 2;07 for Heleen and 3;03 for Simon.

(8) a. Italian, Heleen (2;07.08, MLUw 3.41)

A me mi piace questo qua.  
to me CL.IO= like.3SG this here

‘I like this one here.’

b. Heleen (2;11.03, MLUw 4.01)

Questo lo devi portare.  
this CL.DO= must.2SG bring.INF

‘This one, you have to bring it.’

c. Spanish, Simon (3;03.12, MLUw 3.53)

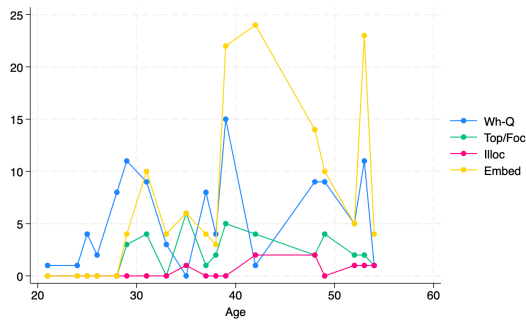
Eso no lo sé.  
 this not CL.DO= know.1SG

‘This one, I don’t know it.’

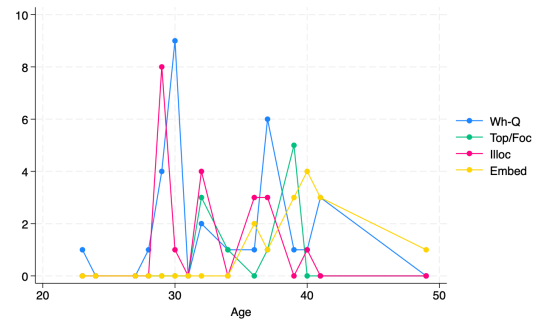
- CLLD appears to be genuinely late in this data: it appear *after* other ‘yardsticks’ for late phenomena in both children, notably finite embedding markers, and also co-occurring topics and wh-elements (see Bosch, 2023a).
- Finite embedding markers appear at 2;05 for Heleen’s Italian and 3;00 for Simon’s Spanish.

**Table 4:** Emergence of CP-structures in their Romance languages and all quantitative data obtained

	<b>Wh-Q</b>	<b>Top/Foc</b>	<b>Illoc</b>	<b>Embed</b>	
Heleen	1;09.28	2;05.00	2;11.03	2;05.00	<b>Emergence</b>
Simon	2;05.24	2;08.06	2;05.24	3;00.10	
Heleen	102 (55)	37	8	133	<b>Quantitative data</b>
Simon	30 (18)	10	19	14	



**Figure 3:** Development of CP-structures in Heleen’s Italian



**Figure 4:** Development of CP-structures in Simon’s Spanish

## German

**Table 5:** Production of CP-structures in Heleen's Dutch

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	✓	✓	✓		✓

**Table 6:** Production of CP-structures in Simon's German (shortened)

Age	MLU	V2	Wh	Y/N	Topic	Embed
2;01.03	1.46					
2;02.11	1.43					
2;02.25	1.82					
2;03.11	2.02	✓	✓			✓
2;03.25	2;29	✓		✓		
2;04.22	-					
2;06.04	2.01	✓			✓	
2;07.01	3.18	✓	✓	✓	✓	✓
2;08.15	2.26	✓		✓	✓	
2;09.17	2.82	✓	✓	✓	✓	
2;09.28	3.05	✓	✓	✓	✓	
2;11.18	2.0					
3;00.04	3.56	✓	✓	✓	✓	
3;00.18	3.26	✓	✓	✓	✓	
3;01.03	3.52	✓	✓	✓	✓	✓
3;02.01	3.09	✓	✓	✓	✓	✓
3;05.07	4.12	✓	✓	✓	✓	✓
3;06.25	3.79	✓	✓	✓	✓	✓
3;10.04	-					
4;01.16	4.26	✓	✓	✓	✓	✓
4;09.25	4.05	✓	✓	✓	✓	✓
5;03.17	3.69	✓	✓	✓	✓	✓
5;10.01	4.08	✓	✓	✓	✓	✓

Unpacking the results again:

👉 **Early emergence of almost all CP structures**

- Knowledge of the **V2 system** in Germanic: distributional distinction between finite vs non-finite verbs (1;09, Heleen; 2;02, Simon).

(9) a. Dutch, Heleen (1;09.11, MLUw 1.66)

Tomaat geven, papa mij.  
tomato give.INF dad me

'Tomato give dad me.'

b. Heleen (1;09.11, MLUw 1.66)

Ik wil deze hebbe, pakken.  
I want.1SG this have.INF grab.INF

'I want to have this one, to grab it.'

c. Heleen (1;10.07, MLUw 1.75)

En Heleen heeft blote voeten.  
and Heleen have.3SG bare feet

'And Heleen has bare feet.'

d. Heleen (1;10.07, MLUw 1.75)

Kom eens met [?] Heleen.  
come.IMP once with Heleen

'Come here with Heleen.'

(10) a. German, Simon (2;03.11, MLUw 2.02)

Karussell fahren.  
carrousel drive.INF

'Ride (a) carrousel.'

b. Simon (2;03.11, MLUw 2.02)

Kommt da Dampflokomotive.  
come.3SG there steam.train

'There comes the steam train.'

c. Simon (2;03.11, MLUw 2.02)

Ja, weiß ich.  
yes know.1SG I

'Yes, I know (that).'

d. Simon (2;03.11, MLUw 2.02)

Ich komme gleich wieder.  
I come.3SG right again

'I will be right back.'

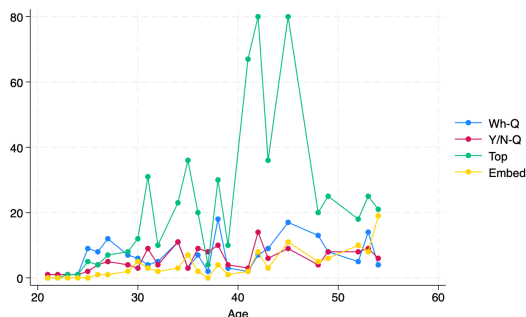


- Almost simultaneously with V2: the **entire range of CP-structures emerges**, bar subordination. **Wh-questions, yes/no questions and topics**.

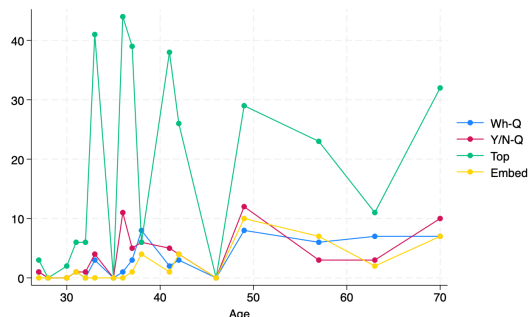
- (11) a. Dutch, Heleen (1;09.11, MLUw 1.66)                      (12) a. German, Simon (2;03.11, MLUw 2.02)
- Hoe bedoel je?  
how mean.2SG you  
‘What do you mean?’
- b. Heleen (1;10.07, MLUw 1.75)                                      b. Simon (2;03.25, MLUw 2.29)
- Wil Lalla ook latte@s?  
want.3SG Lalla also lattes  
‘Does Lalla also want lattes?’
- c. Heleen (1;11.00, MLUw 1.99)                                      c. Simon (2;03.11, MLUw 2.63)
- Lamp wille niet pakken.  
lamp want.1SG not grab.INF  
‘The lamp, (I) don’t want to grab it.’
- d. Heleen (2;01.20, MLUw 1.83)                                      d. Simon (2;03.11, MLUw 2.63)
- Dan zegt [: zeg] ik au!  
then say.3SG say.1SG I au  
‘Then I say au!’
- Wie heißt das Schiff?  
how be.called.3SG the boat  
‘How is the boat called?’
- Geht das?  
go.3SG it  
‘Does it work?’
- Da fahren Autos.  
then drive.3PL cars  
‘There cars drive.’
- Und da ist Alexander.  
and there be.3SG Alexander  
‘And there is Alexander.’

**Table 7:** Emergence of CP-structures in their Germanic languages and quantitative data obtained

	V2	Wh-Q	Y/N-Q	Top/Foc	Embed	
Heleen	1;09.11	1;09.11	1;09.11	1;11.00	2;02.18	<b>Emergence</b>
Simon	2;02.11	2;03.11	2;03.25	2;03.11	3;01.03	
Heleen	✓	176 (91)	147	574	103	<b>Quantitative data</b>
Simon	✓	59 (35)	66	306	37	



**Figure 5:** Development of CP-structures in Heleen's Dutch



**Figure 6:** Development of CP-structures in Simon's German

**Overall:**

- CP is **acquired early** in some form, with **shared** but also **crosslinguistically varied patterns**.
- The emergence of CP-structures furthermore **does not appear to depend on structural height** in a cartographic left periphery (cf. [Friedmann et al., 2021](#)) → viz. topics, illocutionary complementisers, and Germanic structures like Y/N-Qs (see, i.a., [Rizzi, 1997](#); [Corr, 2016](#): for data and cartographic analyses).
- Crosslinguistic orders of acquisition of left-peripheral structures are **more flexible** than often acknowledged.

Early CP development is particularly apparent in their Germanic languages, but is also visible in Romance via wh-questions, especially, and also illocutionary complementisers.

**Table 8:** Emergence of all CP-structures for both children

	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		2;05.24		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

A further condensed break-down of Table 8 summarising the stages and acquisition orderings observed is given in Table 9:

**Table 9:** Relative of emergence of diagnostics studied

Child	Order of emergence
Heleen (It.)	Wh > Top/Foc/Embed > CLLD > Illoc
Heleen (Dutch)	V2/Wh-Q/YN-Q > Top > Embed
Simon (Sp.)	Wh-Q > Illoc > Top/Foc > Embed > CLLD
Simon (Ger.)	V2 > Wh-Q/YN-Q/Top > Embed

### 3.2.2 Study 2: the development of clitics

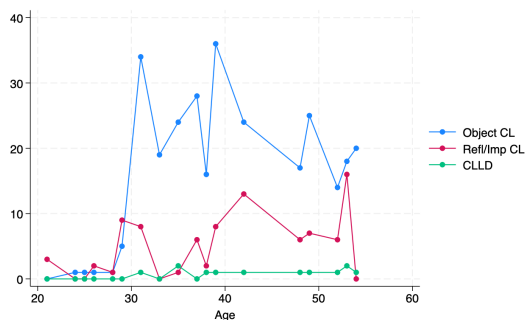
Apparent ‘discrepancy’ in acquisition of topics in Germanic vs Romance: does this represent an inherent difficulty with Romance topics? Study 2 asks: **is the development of clitics responsible for this delay?**

→ **No, at least not entirely.** Clitics can emerge well before CLLD (see [Marinis, 2000](#); [Tsimpili, 2005](#); [Babyonyshev & Marin, 2006](#): for other supporting data); **delay with CLLD thus inheres in CLLD.**

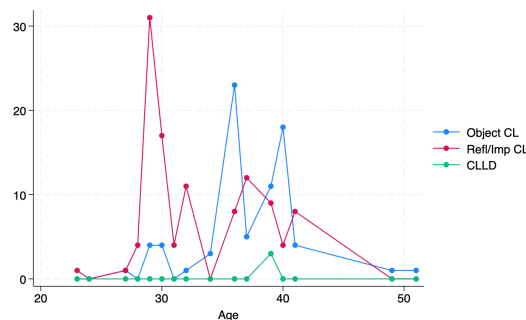
- Case particularly strong for Simon’s development (see below).

**Table 10:** Emergence of Foci, clitics, CLLD and Top > Wh structures

	Focalisation	Reflexive clitics	Object clitics	CLLD	Top > Wh
Heleen (It.)	2;05.00 file 8	1;09.09 file 1	2;00.01 file 3	2;07.08 file 10	2;05.00 file 8
Simon (Sp.)	2;08.06 file 27	1;11.09 file 15	2;03.17 file 19	3;03.12 file 33	3;00.10 file 30



**Figure 7:** Development of object and reflexive/impersonal clitics and CLLD in Heleen’s Italian



**Figure 8:** Development of object and reflexive/impersonal clitics and CLLD in Simon’s Spanish

## 4 Discussion and proposed analysis

Data presented supports **two (existing) generalisations** (from Bosch, 2023a; Bosch & Biberauer, to appear) and **corroborates existing data showing topic-acquisition discrepancies** in Germanic vs Romance<sup>2</sup> (the latter to be expanded with comparative data into a broader generalisation in §5).

### Empirical generalisations

**Early Acquisition of CP.** (Some) CP-structures emerge early on in the developmental data.

**Structural Height and Acquisition Mismatch.** There is a dissociation between structural height and order of emergence. Acquisition does not proceed successively upwards; some syntactically very high elements emerge early.

**L1-dependent Topic Development** (first version; *not* new). Topics are not acquired universally late crosslinguistically. Germanic topics have a clear advantage over Romance topics.

### Why the data is consequential for theoretical approaches to acquisition

- **Bottom-up maturation**

- ! **Problem:** early CP-structures (of any kind) unexpected in earlier bottom-up maturational approaches (e.g., Radford, 1990).

- ! **Problem:** early topics and other structurally high elements (illocutionary complementisers) unexpected in Friedmann et al. (2021).

- ! **Problem:** *systematic* patterns of crosslinguistic developmental variation (see, particularly, §5) are (i) incompatible, and (ii) unaddressed.

- **Continuity** (e.g., Boser et al., 1992; Poeppel & Wexler, 1993) and **Inward maturation** (e.g., Heim & Wiltschko, 2021)

- Supported by early evidence for CP, BUT:

- ! **Problem:** no explicit theory of developmental variation; hence, *without further elaboration*, systematicities w.r.t topic-development crosslinguistically are *accidental*.

- Must be expanded/supplemented, or another theory altogether may be preferable.

→ **Our proposal** (further corroborated in §5): *leveraging neo-emergentist approaches to acquisition/variation*.

### 4.1 A and A' signatures of topics and a neo-emergentist analysis

→ Neo-emergentism provides a theory that predicts *both* developmental universals and systematic developmental variation.

#### Neo-emergentism in a nutshell

- *Emergentist generative approach* (Biberauer, 2011; Biberauer & Roberts, 2015; Biberauer, 2019): **minimal UG**, no innate categories.

- Development accounted for by the interaction of the **three factors** (Chomsky, 2005; Biberauer, 2019) → UG, intake and principles of data analysis/general cognition (e.g., Maximise Minimal Means).

- **Maximise Minimal Means** (Biberauer, 2019): one general-cognitive bias, two (of several) language-specific manifestations.

1. **Feature Economy** (FE; generalised from Roberts & Roussou, 2003)

- Postulate as few [*F*]s as possible to account for the PLD.

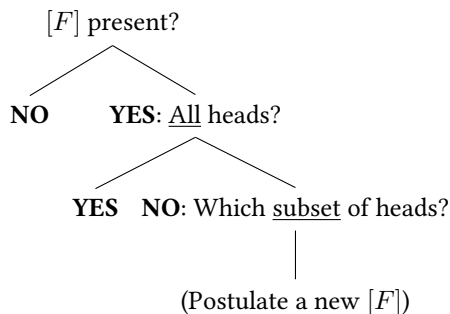
<sup>2</sup>See, i.a., Boser et al. (1992); Poeppel & Wexler (1993); Guasti (1993); Tsimpli (2005); Westergaard (2009); van Kampen (2010); Grinstead (2004).

2. **Input Generalisation** (IG; adapted from Roberts, 2007; termed *Feature* Generalisation in Biberauer, 2020)

Maximise available  $[F]$ s.

- **Minimax nature** → be conservative when positing  $[F]$ s, but liberal in generalising already-existing ones – NO>ALL>SOME learning path.

(13) The NO>ALL>SOME learning path



↔ Macro-parametric properties of a language (= featurally-simpler ones) access *before* micro-parametric ones.

- This predicts the two broad patterns observed w.r.t. universals and variation.
  - **Early CP**: ‘coarser-grained’ categories acquired first, e.g., ‘phasal’ categories, Core Functional Categories (Biberauer & Roberts, 2015) → early CP, *developmental universals*.
  - **L1-specific Topic Development**: MMM-driven system and sensitivity to initial conditions → *L1-specific developmental variation* correlating with the *parametric form or ‘size’* of a given structure/operation in the relevant L1.
- **Which ‘parametric’ form?** Topics show distinct A/A’ featural properties crosslinguistically.

### A and A’ properties in Germanic and Romance topicalisation

**Table 11:**  $\bar{A}$ - vs. A-movement (van Urk, 2015: 23)

A-properties	$\bar{A}$ -properties
Local, restricted to nominals	Long-distance, not restricted to nominals
No reconstruction for Condition C	Reconstruction for Condition C
No Weak Cross-over, new antecedents for anaphors	Weak Cross-over, no new antecedents for anaphors
No parasitic gap licensing	Parasitic gap licensing

- **Germanic**: XP-movement of topic in V2, treated as *pure A’*, *operator movement* on a par with wh-questions/foci, like English topicalisation (Koster, 1978; Haegeman, 1996, 2012), because it displays *A’-movement* properties
  - ‘**A’-properties**’: (i) no anaphoric binding, (ii) obligatory reconstruction for Condition C, (iii) it is subject to locality restrictions, and (iv) it licenses parasitic gaps (for exemplification, see Grewendorf, 2005).
- **Romance**: CLLD shows a *mix of A and A’ properties*, (traditionally) treated *non-operator*, *non-quantificational A’-movement* (e.g., Cinque, 1999), unlike focus movement (see also Bhatt & Keine, 2023; Chierchia, to appear).
  - ‘**A’-properties**’ Sensitivity to strong islands.
  - ‘**A-properties**’ and **base-generation properties**: (i) lack of WCO effects, (ii) inability to license parasitic gaps, (iii) insensitivity to weak islands.

- **How this gets the patterns:**

- Topicalisation as two distinctly-manifested movement dependencies in Germanic and Romance → **CLLD requires a two-way distinction** between *operator* and *non-operator* topics in the system (or ‘pure’ A’ vs ‘mixed’ A/A’ topics), which is not made in other languages → **featurally more complex system in Romance**.
- Per above, ‘**minimal description length**’ preferred (i.e., minimal feature postulation), so **finer-grained featural distinction are acquisitionally harder**.

Note:

- Continuity and Inward Growing proposals are compatible with this explanation, similarly also approaches advocating for a UG-given functional *template* (e.g., Ramchand & Svenonius, 2014; Wiltschko, 2014).
- Our case for neo-emergentism is then *broader*: neo-emergentism can be used to account for the entire data patterns (our approach here), or, alternatively, it should be leveraged as a way to supplement other existing approaches.
- Our emphasis here is **on the need for a theory of development that explicitly predicts the crosslinguistic variation observed the way neo-emergentism does**.

## 5 Extension to crosslinguistic monolingual data

What we have shown so far:

- There is evidence for early CP-structures across the children/languages studied (this extends to the other 5 children not presented in this paper, which remain ongoing work).
- A significant contrast in individual bilingual children: Germanic topics are early acquired, Romance topics (CLLD) are late acquired → plausibly due to typological differences in topicalisation in these L1s, namely operator vs non-operator properties of topics (§4).

→ Question: how do other languages pattern?

**This section:** this analysis plausibly **extends to a significant number of typologically-diverse languages**, beyond Germanic and Romance.

**Analysis of monolingual acquisition data from 10+ languages:** French, European Portuguese, Mandarin Chinese, Japanese, Korean, Catalan, Greek, Hebrew, Brazilian Portuguese and, briefly, English<sup>3</sup>.

→ **The key upshot: ‘late’ topics reported in maturational work turn out to be *epiphenomena* of L1s studied, not a result of maturational constraints on the left periphery.**

→ **Novel (refined) generalisation about crosslinguistic topic-development**

We consider first languages where topics have been argued to be **base-generated** or **adjoined**, and then move to those with **operator movement**:

- **French**

- French dislocation displays **absence of movement effects** (de Cat, 2007b): no parasitic gap licensing, lack of Condition C effects, island insensitivity.
- Adjunction account in de Cat (2007b). Base-generation account in Wolfe (2021) → no movement-triggering [*F*].
- de Cat (2000, 2007a) shows **very early acquisition** of French dislocation.

<sup>3</sup>If you know of data on topic acquisition in other languages, please let us know! ☺

- (14) a. Max 2;0.14 (MLUw 1.83)  
 lui@d, ça va là  
 him it goes there  
 ‘That one goes there.’
- b. Anne, 1;10.12 (MLUw 1.84)  
 Mimi, elle va toutoutou@s toutoutoutou@s  
 mimi she goes tootootoo tootootoo  
 ‘Mimi goes tootoot.’ (Imitating a train)
- c. Tom 2;1.11 (MLUw 2.28)  
 0 est pas une fille, isabelle  
 is not a girl Isabelle  
 ‘Isabelle’s not a girl.’

(de Cat, 2002: 259, 260, 265)

↔ **Adjunction** independently known to **play important role early on** in acquisition (Lebeaux, 1988; de Villiers, 1991; Hoekstra & Jordens, 1996; Roeper, 1992; Biberauer, 2018).

- This is as expected under our account → no need for  $[F]$ -posulation for French topics, implying system with lower Kolmogorov complexity, whence early acquisition anticipated.

#### • European Portuguese

- EP permits both CLLD and (clitic-less) topicalisation (Kato & Raposo, 2007).
- Soares (2003b,a, 2006) examines acquisition of the CP in EP → topicalisation among the first CP-structures acquired, but crucially only *clitic-less* topicalisation (not CLLD) is reported as early.

- (15) *European Portuguese*, Marta 1;8.18 (MLUw 1.5)
- a. Marta: N(ã)o (es)tão dodot.  
 not are dodots  
 ‘Dodots are not here’  
 Marta: **Dodot** não há!  
 Dodot not have  
 ‘There are no dodots’ (she is talking about a baby towel’s empty box.)
- b. Marta: Este!  
 this  
 ‘This one!’ (she takes a part of a puzzle.)  
 Mother: ah # ainda não é daqui.  
 INTJ belong not this here  
 ‘This one does not belong here’  
 Marta: **Este** pôr.  
 this put  
 ‘I am going to put this one here’

(Soares, 2003a: 133)

- This contrast is significant → **topics** analysed as involving **operator movement** (Duarte, 1987; Raposo, 1997); it licenses parasitic gaps, shows WCO effects, among others. **CLLD** behaves as **non-operator movement**, as in Romance CLLD more generally.

↔ From the above, we expect topicalisation to be acquisitionally earlier than CLLD. This is what we find<sup>4</sup>.

#### • Mandarin Chinese, Japanese and Korean

- [Zhu & Gavarró \(2019\)](#): production of **null topics in Mandarin** is **adult-like very early on** (before 1;8, MLUw ~2.0), with later development showing little to no changes in distribution<sup>5</sup>.
- [Hu et al. \(2018\)](#): acquisition of **topic markers** in Mandarin proceeds **first via base-generation**, then entertain a movement analysis.
- In **Japanese**, **early acquisition of null topics** (subjects and objects) and **topic markers** is reported in [Kurumada \(2009\)](#), at 2;0 (though cf. [Hirakawa, 1993](#), for data indicating later acquisition in other children).
- **Early topic and focus markers** in **Korean** infants from 1;07 ([Lee, 2001](#)).
- **All three languages**: topicalisation generally treated as operator movement or base-generation ([Hoji, 1990](#); [Park, 1998](#); [Kizu, 2005](#); [Miyagawa, 2017a,b](#)) → early emergence predicted.

Commonality in languages thus far: parametrically simpler ‘settings’ (adjunction, base-generation, operator movement). **All acquired early**.

We now present data with languages displaying **non-operator movement**, both with and without CLLD (Catalan, Greek, Hebrew and Brazilian Portuguese), and show for each in turn that their acquisition is **late**.

#### • Catalan

- As with Sp. and It. here, CLLD language, thus with topics with non-operator properties.
- Laura and Gisela ([Bosch, 2023a](#))
  - \* First CP-structures emerge at 1;10 and 2;04 (MLUw 1.15 and 1.58), respectively.
  - \* CLLD at 2;08 for both (MLUw 1.88 and 2.61, respectively).

#### • Greek

- Another CLLD language.
- Alexia and Elli ([Tsimpli, 2005](#))
  - \* Wh-questions and focusing emerge earlier, at 1;11 and 1;9, respectively.
  - \* CLLD at 2;1 and 2;0.
- Janna, Maria and Mairi ([Marinis, 2000](#))
  - \* Single clitics emerge first 1;11 for Janna, 2;03 for Maria, and 1;09 for Mairi.
  - \* CLLD emerges at 2;09 for Janna and Maria, and 2;03 for Mairi (no focusing data reported).

The two final languages we consider are Hebrew and Brazilian Portuguese.

! At first sight, **apparent counterexamples** to the above.

→ We show they actually further **strengthen** a formal complexity account of topic-acquisition.

#### • Hebrew

- **Why apparent counterexample?** Lacks CLLD, displays no formal difference between left-peripheral topicalisation and focalisation → often indicator of operator properties (viz. English).
- ! Acquired late in [Friedmann et al. \(2021\)](#) (2;6 at the earliest)!
- **This is merely superficial: Hebrew topics share several of the distributional properties of non-operator movement**, like CLLD.

<sup>4</sup>This is plausible for EP topics, given the lack of data for early CLLD in [Soares \(2003a\)](#). Note, however, that for EP CLLD this is an argument based on *absence* of attestation in the data reported. More data collection on both EP non-CLLD and CLLD topics is needed to establish this with more certainty.

<sup>5</sup>Though NB limitations involved in generalising from null elements.

- \* No WCO effects (**A-property**), ability to co-occur with operators like wh-questions and focalisation, as well as imperatives and interrogatives (Borer, 1995; Shlonsky, 2014).
- \* They license parasitic gaps and reconstruct for anaphor/pronominal binding, both **A'-properties**.

↔ Non-operator/non-quantificational, A'-movement.

#### • Brazilian Portuguese

- **Why apparent counterexample?** Non-resumptive topicalisation, like Hebrew, following the loss of 3rd person clitics.

! Late acquisition reported in Meira & Grolla (2023), consistent with Friedmann et al. (2021): topicalisation emerges considerably after wh-questions (2;2 vs 1;7)<sup>6</sup>.

- Closer inspection reveals again that **Brazilian Portuguese topics display non-operator, mixed A/A' properties:**

- \* Topics can co-occur with Wh, and do not present WCO effects (Modesto, 2015; Lacerda, 2020: 73-75).
- \* Interactions between A- and A'-properties in BP's CP: Kobayashi (2020): topicalisation (among other CP-structures) displays 'interleaved movement' (an improper chain of A- and A'-steps of movement).
- \* Lohninger (2021): TopicP in BP with mixed [A/A'] featural properties (see also Lohninger et al., 2022).
- \* Dias (2024): canonical overt subjects in BP display mixed A/A' behaviour, following Bošković's (2024) A/AP projection.

→ Both languages' acquisition timelines (late) follow from the proposal outlined.

→ In turn, this reveals **one significant result:**

- The **minimal pair** with European and Brazilian Portuguese indicates **lack of clitic dependencies** in topicalisation **does not** always **correlate** with **early** acquisition (recall also §3.2.2), suggesting a more nuanced account, e.g. based on the A/A', operator/non-operator distinction, is to be favoured.

#### Learnability side-question:

What cues the distinction between, e.g., operator and non-operator topics for the child?

- A/A'-diagnostics like WCO effects, Superiority, parasitic gap licensing, will *not* be in the input (Pearl & Sprouse, 2013).
- One possibility: **lack of intervention effects** with other operators (see also Biberauer & Roberts, 2015; Cournane & Klævik-Pettersen, 2023).

↔ Topic > Wh orders or Topic > Foc sanctioned in the languages with non-operator topics surveyed, and at least the former may be expected to be reasonably frequent in the input<sup>a</sup> → these signal that topics can co-occur with operators, so must be featurally (partly) distinct.

↔ Compare operator topics: impossibility of (hence, lack of positive evidence for) co-occurrence of topics and other operators → will never trigger a distributional contrast between topics and other operators (i.e., a 'departure from Saussurean arbitrariness'; Biberauer, 2019) → all things equal, postulation of a formally distinct, non-operator feature should only ensue in the former scenario.

<sup>a</sup>An impressionistic analysis of parent data in CHILDES for languages like Catalan and Spanish suggests the expectation above is not implausible.

<sup>6</sup>One could contest whether 2;2 is an age associated with 'late' developments. Nonetheless, wh-questions do emerge significantly earlier (at 1;7), well before topics, and subordination emerges relatively early (2;04), compared to other children discussed here. The child is, plausibly, an early-talker. We will follow Meira & Grolla in treating the BP topics in this child as genuinely 'late'. More data collection may be desirable to disambiguate their development in other children.



**But could this be all about input frequency?**

- Some evidence to think frequency is not likely to be the main driver behind these patterns. Much more crosslinguistic data needed, however.
- [de Andrade \(2015\)](#) reports European Portuguese Topicalisation and CLLD roughly *equally frequent* in recent diachronic corpora → suggestive, **same frequency but different acquisition timings**. EP topicalisation produced early, CLLD (in Romance generally) late-acquired.
- [Devlin et al. \(2015\)](#) report a case of an English-Italian-Scottish Gaelic, whose English is influenced by Italian CLRD constructions, which are very frequent, just like CLLD → must be frequent/salient enough to impact another L1.
- [Crocco \(2010\)](#) reports frequencies of CLRD that are high as 0.5 per minute in some dialects (from Catanzaro and Genova). [Hidalgo \(2000\)](#) notes Italian CLRD and CLLD is equally frequent.
- [Slabakova & García Mayo \(2015: 214\)](#): ‘CLLD may be 1000 times more frequent in Spanish than Topicalization is in English’.
- [Pontes \(1987\)](#) describes Brazilian Portuguese topics as ‘very frequent’ (impressionistically, requires further confirmation).

## 6 A novel generalisation on topic-development: implications for theories of acquisition

### Summary of points so far

- **Acquisition timings** of topics across all languages studies is **variable**: both *early* and *late* topics observed, *within a single (bilingual) individual*. Important role of the L1 in shaping developmental trends (‘sensitivity to initial conditions’).
- ↔ **Key implication**: topic-development cannot *cannot* be subject to rigid biological constraints as in bottom-up maturation. Endorses central insight of continuity and inward maturation (early CP).
- Importantly, our results appear to concern rather *abstract* formal properties of the topics in question:
  - The patterns do not directly concern clitic development:
    - \* Clitics can be acquired before CLLD (Study 2).
    - \* Contrasts/pairs like European vs Brazilian Portuguese: superficially ‘identical’ topicalisation strategy (left-dislocation of an XP without clitic resumption), but *distinct* acquisition timings.
  - Neither do they concern (just) *moved vs non-moved* topics; or V2 topics in Germanic only, the patterns generalise crosslinguistically.
  - Possibly also not (exclusively) frequency-driven, though this requires additional corroboration.
- Instead, we proposed topic-development systematically ‘tracks’ **L1-complexity**, including those languages which had been argued to support maturational proposals.

[Table 12](#) takes stock of the conclusions extracted from the comparative data on the development of topicalisation.

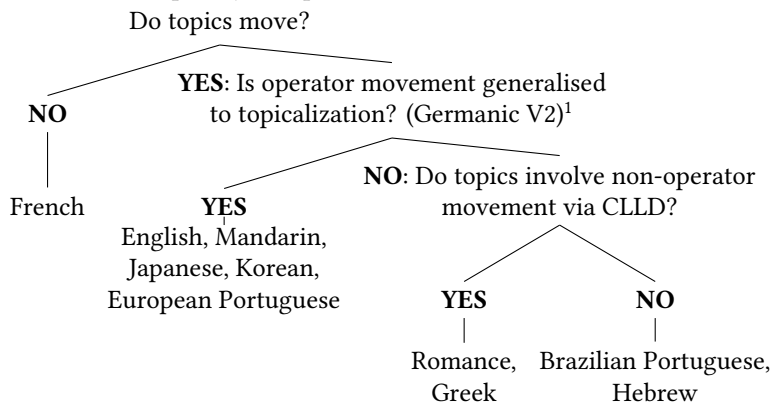
**Table 12:** Topicalisation strategies, their acquisition and their formal complexity

Language	Acquisition	Formal characteristics of topicalisation	Parametric complexity
French	Very early	Adjoined or base-generated	Macroparametric
Germanic V2	Very early	Generalised V2 diacritic	Mesoparametric
Mandarin Japanese Korean	(Possibly) early	Operator movement or base-generation <sup>7</sup>	Mesoparameter
European Portuguese <sup>8</sup>	Early	Operator movement	Mesoparametric
Spanish Italian Catalan	Late	Non-operator movement with CLLD	Microparametric
Greek	Late	Non-operator movement with CLLD	Microparameter
Hebrew Brazilian Portuguese	Late	Non-operator movement without CLLD	Microparametric

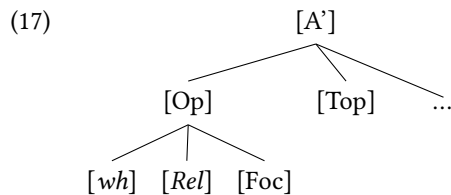
We schematise the patterns in terms of a crosslinguistic acquisition hierarchy of topics, as below.

↪ This hierarchy **follows from the acquisitional pathways predicted by neo-emergentism** as outlined in §4, notably [Biberauer & Roberts \(2015\)](#) and earlier references therein, and so gives a rationale for its empirical existence: featurally-simpler hypotheses are easier to acquire.

(16) Parametric complexity in topicalisation structures considered



- Note how the acquisition path proposed bears resemblance to feature geometries in the A' domain ([Starke, 2001](#); [Rizzi, 2004](#); [Abels & Neeleman, 2012](#)):



<sup>7</sup>Depending on theoretical analysis

<sup>8</sup>Non-CLLD topics only.

<sup>8</sup>In Germanic, operator topics fall out from its generalised V2 system, unlike the other languages considered, hence its parenthetical placement.

- We can now restate the conclusion in §4 in terms of a **broader generalisation**, which pends further empirical corroboration.

#### L1-dependent Topic Development (final version; new!)

Topics are not acquired universally late crosslinguistically. The timing of acquisition of topics systematically correlates with the *formal, parametric complexity* of the topicalisation strategies in each L1: formally, featurally simpler topics (adjoined, operator, etc.) are acquired earlier than more complex topics (e.g., non-operator).

#### Future extensions

- Question: Can our 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** in these and other languages? (more data needed) And is there **crosslinguistic influence** in bilinguals?
  - Preliminary evidence from **English monolinguals and bilinguals**.
    - \* English left-dislocations **very restricted** in distribution (in Snider & Zaenen, 2006, 1% of their spoken data).
    - \* **Operator movement** (Haegeman, 2012), but **very infrequent** in PLD → should have acquisitional consequences.
    - \* Initial evidence for this → **late** acquisition of **English topics in monolinguals**, relative to French infants, but **earlier emergence** in **English/French bilinguals**, due to crosslinguistic transfer (Notley, 2004; Notley et al., 2007; van der Linden & Sleeman, 2007).
    - \* See also Devlin et al. (2015) on English-Italian-Scottish Gaelic trilinguals and right-dislocation/*it-doubling*.
- More broadly, do **other structures**, beyond topicalisation, show systematic crosslinguistic variation in acquisition and, if so, can neo-emergentism explain this variation?

## 7 Conclusion and implications

New (ongoing) corpus study on 7 bilinguals, two presented here.

- Inherent 'vulnerability' of (part of) the CP (Radford, 1990; Rizzi, 1993; Friedmann et al., 2021; Hulk & Müller, 2000)? We argued 'no' regarding its *syntax* and *representation* → **early development of CP structure**.
- Theoretical **significance** of 'flexible' or '**variable**' **acquisition timings** of CP-structures, beyond universals – focus on **topicalisation** here.
  - 'Late' topics *not* a developmental universal, their development is *L1-dependent*.
- Critical theoretical requirement: predictive power for *both* developmental universals and variation.
- ↔ We argued for the explanatory potential of **neo-emergentism** in this domain, and applied it to the development of topics.
- Significant insights to be gained from a **comparative** approach to acquisition: bilingual and multilingual data sheds important light on the *biologisation issue*.

## References

- Abels, Klaus & Ad Neeleman. 2012. Linear asymmetries and the LCA. *Syntax* 15(1). 25–74.
- de Andrade, Aroldo. 2015. On the emergence of topicalisation in european portuguese: a study at the syntax-information structure interface. *Estudos Linguísticos* 12. 13–34.

- Babyonyshev, M. & S. Marin. 2006. Acquisition of Romanian pronominal clitics. *Catalan Journal of Linguistics* 5. 17–44.
- Bhatt, Rajesh & Stefan Keine. 2023. Crossover asymmetries. Ms., University of California, Los Angeles and University of Massachusetts Amherst.
- Biberauer, Theresa. 2011. In defence of lexico-centric parametric variation: two 3rd factor-constrained case studies. Paper presented at the *Workshop on Formal Grammar and Syntactic Variation: Rethinking Parameters* (Madrid).
- Biberauer, Theresa. 2018. Peripheral significance: a phasal perspective on the grammaticalisation of speaker perspective. Talk presented at *DiGS 20* (York), June. [https://www.york.ac.uk/media/languageandlinguistics/documents/conferences/digs20/Biberauer\\_handout\\_DiGS20.pdf](https://www.york.ac.uk/media/languageandlinguistics/documents/conferences/digs20/Biberauer_handout_DiGS20.pdf).
- Biberauer, Theresa. 2019. Factors 2 and 3: Towards a principled approach. *Catalan Journal of Linguistics (Special Issue)* 45–88.
- Biberauer, Theresa. 2020. Emergent variation from a minimalist perspective: on the significance of imperatives. Talk presented at *Abralin ao Vivo - Linguists Online* (online), 22 July.
- Biberauer, Theresa & Ian Roberts. 2015. Rethinking formal hierarchies: A proposed unification. *Cambridge Occasional Papers in Linguistics* 7. 1–31.
- Borer, Hagit. 1995. The Ups and Downs of Hebrew Verb Movement. *Natural Language & Linguistic Theory* 13. 527–606.
- Bosch, Núria. 2023a. *Emergent Syntax and Maturation: a neo-emergentist approach to syntactic development*: University of Cambridge MPhil thesis.
- Bosch, Núria. 2023b. Not all complementisers are late: a first look at the acquisition of illocutionary complementisers in Catalan and Spanish. *Isogloss. Open Journal of Romance Linguistics* 9. 1–39.
- Bosch, Núria & Theresa Biberauer. to appear. Emergent Syntactic Categories and Increasing Granularity: Evidence from a Multilingual Corpus Study. In *Proceedings of the 48th Boston University Conference on Language Development (BUCLD)*, Cascadilla Proceedings Project.
- Boser, Katherine, Barbara Lust, Lynn Santelmann & John Whitman. 1992. The Syntax of CP and V-2 in Early Child German (ECG): The Strong Continuity Hypothesis. In *Proceedings of the Northeast Linguistic Society (NELS) 22*, 51–66. University of Massachusetts, Amherst.
- Bošković, Zeljko. 2024. On wh and subject positions, the EPP, and contextuality of syntax. *The Linguistic Review* 41(1). 7–58. doi:10.1515/tlr-2024-2002. <https://doi.org/10.1515/tlr-2024-2002>.
- de Cat, Cécile. 2000. Structure Building and the Acquisition of Dislocations in Child French. In S. C. Howell, S. A. Fish & T. Keith-Lucas (eds.), *Proceedings of the 24th Annual Boston University Conference on Language Development*, 242–252. Somerville, MA: Cascadilla Press.
- de Cat, Cécile. 2002. *French dislocation*. York, UK: University of York dissertation.
- de Cat, Cécile. 2007a. *French Dislocation: Interpretation, Syntax, Acquisition*. Oxford: Oxford University Press.
- de Cat, Cécile. 2007b. French Dislocation without Movement. *Natural Language & Linguistic Theory* 25. 485–534. doi:10.1007/s11049-007-9023-z.
- Chierchia, Gennaro. to appear. Movement and crossover in three languages. *Natural Language and Linguistic Theory*.
- Chomsky, Noam. 2005. Three factors in language design. *Linguistic Inquiry* 36(1). 1–22.
- Cinque, Guglielmo. 1999. *Adverbs and Functional Heads: A Cross-Linguistic Perspective*. Oxford: Oxford University Press.

- Clahsen, Harald, Sonja Eisenbeiss & Anne Vainikka. 1994. The Seeds of Structure: A Syntactic Analysis of the Acquisition of Case Marking. In T. Hoekstra & B. Schwartz (eds.), *Language Acquisition Studies in Generative Grammar*, 85–118. Amsterdam: John Benjamins.
- Clahsen, Harald, Claudia Kursawe & Martina Penke. 1996. Introducing CP: Wh-Questions and Subordinate Clauses in German Child Language. In C. Koster & F. Wijnen (eds.), *Proceedings of the Groningen Assembly on Language Acquisition*, 5–22. Groningen: Center for Language and Cognition.
- Corr, Alice. 2016. *Illocutionary complementisers and utterance syntax*: University of Cambridge dissertation.
- Cournane, Ailis & Espen Klævik-Pettersen. 2023. The role of the conservative learner in the rise and fall of verb-second. *Journal of Historical Syntax* 7(6-19). 1–48.
- Crocco, Claudia. 2010. La dislocazione a destra tra italiano comune e variazione regionale, vol. I, 191–210. Università degli studi di Napoli l'Orientale.
- Devlin, Megan, Raffaella Folli, Alison Henry & Christina Sevdali. 2015. Clitic right dislocation in English: Cross-linguistic influence in multilingual acquisition. *Lingua* 161. 101–124.
- Dias, Tarcisio. 2024. Slippery subjects in Brazilian Portuguese. Talk presented at the 49° *Incontro di Grammatica Generativa* (IGG49, IUSS Pavia).
- Duarte, Inês. 1987. *A Construção de Topicalização na Gramática do Português: Regência, Ligação e Condições sobre Movimento*: Universidade de Lisboa dissertation.
- Friedmann, Naama, Adriana Belletti & Luigi Rizzi. 2021. Growing Trees: The acquisition of the left periphery. *Glossa: a journal of general linguistics* 6(1). 131.
- Galasso, Joseph. 2003. *The Acquisition of Functional Categories: A Case Study*. Indiana University: IUCL Publications.
- Grewendorf, Günther. 2005. The asymmetry of short and long wh-extraction in German. *Recherches linguistiques de Vincennes* 33. 35–54.
- Grinstead, John. 2004. Subjects and Interface Delay in Child Spanish and Catalan. *Language* 80(1). 40–72.
- Guasti, Maria Teresa. 1993. Verb Syntax in Italian Child Grammar: Finite and Nonfinite Verbs. *Language Acquisition* 3(1). 1–40.
- Haegeman, Liliane. 1996. Verb second, the split CP and null subjects in early Dutch finite clauses. *Generative Grammar in Geneva Papers* 4(2). 135–175. <http://ling.auf.net/lingBuzz/001059>.
- Haegeman, Liliane. 2012. *Adverbial Clauses, Main Clause Phenomena, and the Composition of the Left Periphery: The Cartography of Syntactic Structures, Volume 8*. Oxford University Press.
- Hager, Malin & Natascha Müller. 2015. Ultimate attainment in bilingual first language acquisition. *Lingua* 164. 289–308.
- Heim, Johannes & Martina Wiltschko. 2021. Acquiring the form and function of interaction: a comparison of the acquisition of sentence-final particles and tag questions in the Brown corpus. Talk presented at *LAGB Annual Meeting 2021* (online), 8 September.
- Hidalgo, R. 2000. Establishing topic in conversation: a contrastive study of left-dislocation in english and spanish. *Talk and Text: Studies on Spoken and Written Discourse* 83. 137–158.
- Hirakawa, Makiko. 1993. Null Subjects Versus Null Objects in an Early Grammar of Japanese. *McGill Working Papers in Linguistics* 9. 30–45.
- Hoekstra, Teun & Peter Jordens. 1996. From adjunct to head. In T. Hoekstra & B. Schwartz (eds.), *Language Acquisition Studies in Generative Grammar*, 119–149. John Benjamins.
- Hoji, Hajime. 1990. Theories of anaphora and aspects of Japanese syntax. Ms, USC, Los Angeles.

- Hu, Shenai, Maria Teresa Guasti & Anna Gavarró. 2018. Chinese Children's Knowledge of Topicalization: Experimental Evidence from a Comprehension Study. *Journal of Psycholinguistic Research* 47. 1279–1300. doi: 10.1007/s10936-018-9575-6. <https://doi.org/10.1007/s10936-018-9575-6>.
- Hulk, Aafke. 1997. The Acquisition of French Object Pronouns by a French/Dutch Bilingual Child. In *Proceedings of GALA*, Edinburgh.
- Hulk, Aafke & Natascha Müller. 2000. Bilingual First Language Acquisition at the Interface between Syntax and Pragmatics. *Bilingualism: Language and Cognition* 3(3). 227–244. doi:10.1017/S1366728900000353.
- Hyams, Nina. 1992. Morphosyntactic development in Italian and its relevance to parameter-setting models: Comments on the paper by Pizzuto and Casselli. *Journal of Child Language* 19(3). 695–709.
- Hyams, Nina. 1996. The Underspecification of Functional Categories in Early Grammar. In H. Clahsen (ed.), *Generative Perspectives on Language Acquisition: Empirical findings, theoretical considerations and crosslinguistic comparisons*, 91–127. Amsterdam: John Benjamins.
- Kato, Mary Aizawa & Eduardo Raposo. 2007. Topicalization in European and Brazilian Portuguese. In J. Camacho, N. Flores-Ferrán, L. Sánchez, V. Déprez & M. J. Cabrera (eds.), *Romance Linguistics 2006: Selected papers from the 36th Linguistic Symposium on Romance Languages (LSRL), New Brunswick, March-April 2006*, 199. Amsterdam: John Benjamins.
- Kizu, Mika. 2005. Topicalization and Cleft Constructions. In M. Kizu (ed.), *Cleft Constructions in Japanese Syntax*, 9–56. London: Palgrave Macmillan UK.
- Kobayashi, Filipe Hisao. 2020. Proper Interleaving of A- & A'-movement: a Brazilian Portuguese Case Study. Ms., MIT. Available at <https://lingbuzz.net/lingbuzz/005609>.
- Koster, Jan. 1978. *Locality principles in syntax*. Dordrecht: Foris.
- Kurumada, Chigusa. 2009. The acquisition and development of the topic marker wa in L1 Japanese: The role of NP-wa? in child-mother interaction. In R. Corrigan, E. A. Moravcsik, H. Ouali & K. Wheatley (eds.), *Formulaic Language: Acquisition, loss, psychological reality, and functional explanations*, vol. 2, 347. Amsterdam: John Benjamins.
- Lacerda, Renato. 2020. *Middle-field Syntax and Information Structure in Brazilian Portuguese*: University of Connecticut dissertation.
- Lebeaux, David. 1988. *Language acquisition and the form of the grammar*: University of Massachusetts dissertation.
- Lee, Chungmin. 2001. Acquisition of Topic and Subject Markers in Korean. In M. Nakayama (ed.), *Issues in East Asian Language Acquisition*, vol. 7 Kurocio Linguistics Workshop, Tokyo: Kurocio Publishers.
- van der Linden, Elisabeth & Petra Sleeman. 2007. Clitic Dislocation: Evidence for a Low Topic Position. In B. Los & M. van Koppen (eds.), *Linguistics in the Netherlands 2007*, 173–187. Amsterdam: John Benjamins.
- Lleó, Conxita, Ilona Kuchenbrandt, Margaret Kehoe & Cristina Trujillo. 2003. Syllable Final Consonants in Spanish and German Monolingual and Bilingual Acquisition. In N. Müller (ed.), *(In)Vulnerable Domains in Multilingualism*, 191–220. Amsterdam, Philadelphia: John Benjamins.
- Lohninger, Magdalena. 2021. Focus on Topic! An A-percolation account to multiple WH-questions and cross-clausal A-dependencies. Talk at NWLC 37.
- Lohninger, Magdalena, Iva Kovač & Susanne Wurmbrand. 2022. From Prolepsis to Hyperraising. *Philosophies* 7(2).
- Lust, Barbara. 1999. Universal grammar: The strong continuity hypothesis in first language acquisition. In T. K. Bhatia & W. C. Ritchie (eds.), *Handbook of child language acquisition*, 111–155. San Diego, CA: Academic Press.
- Lust, Barbara. 2012. Tracking universals requires grammatical mapping. In K. K. Grohmann & A. Shelkova (eds.), *Linguists of Tomorrow: Selected Papers from the 1st Cyprus Postgraduate Student Conference in Theoretical and Applied Linguistics*, 105. Newcastle upon Tyne: Cambridge Scholars Publishing (CSP).

- Marinis, Theodore. 2000. The acquisition of clitic objects in Modern Greek : single clitics, clitic doubling, clitic left dislocation. *ZAS Papers in Linguistics* 15. 259–281.
- Meira, Miguel & Elaine Grolla. 2023. The Underlying Structure of Interrogatives in Brazilian Portuguese: Evidence from Acquisition Data. In P. Gappmayr & J. Kellogg (eds.), *Proceedings of the 47th Annual Boston University Conference on Language Development*, 562–575. Somerville, MA: Cascadilla Press.
- Miyagawa, Shigeru. 2017a. *Agreement Beyond Phi*. Cambridge, MA: MIT Press.
- Miyagawa, Shigeru. 2017b. Topicalization. *Gengo Kenkyu* 152. 1–29.
- Modesto, Marcello. 2015. Focus movement as PF movement and other peripheral positions in BP. *Estudos Linguísticos (Lisboa)* 11. 83–109.
- Notley, Anne. 2004. The acquisition of topicalisation structures in French–English bilinguals: Testing models of cross-linguistic influence. Unpublished manuscript.
- Notley, Anne, Elisabeth H. van der Linden & Aafke C. J. Hulk. 2007. Cross-linguistic influence in bilingual children: The case of dislocation. In S. Baauw, F. Drijkoningen & M. Pinto (eds.), *Romance language and linguistic theory: Selected papers from 'going romance'*, 229–259. Amsterdam: John Benjamins.
- Park, Y-M. 1998. *Zur Theorie der A'-Bewegung*. Tübingen: Maz Niemeyer.
- Pearl, Lisa & Jon Sprouse. 2013. Syntactic Islands and Learning Biases: Combining Experimental Syntax and Computational Modeling to Investigate the Language Acquisition Problem. *Language Acquisition* 20(1). 23–68.
- Poeppel, David & Ken Wexler. 1993. The Full Competence Hypothesis of Clause Structure in Early German. *Language* 69(1). 1–33.
- Pontes, E. 1987. *O tópico no português do brasil*. Pontes Editores.
- Radford, Andrew. 1990. *Syntactic theory and the acquisition of English syntax: The nature of early child grammars of English*. Oxford: Wiley Blackwell.
- Ramchand, Gillian & Peter Svenonius. 2014. Deriving the functional hierarchy. *Language sciences* 46. 152–174.
- Raposo, Eduardo. 1997. Definite/Zero Alternations in Portuguese: Towards a Unified Theory of Topic Constructions. In A. Schwegler, B. Tranel & M. Uribe-Etxebarria (eds.), *Romance Linguistics: Theoretical Perspectives*, 197–212. Amsterdam: John Benjamins.
- Rizzi, Luigi. 1993. Some notes on linguistic theory and language development: The case of root infinitives. *Language Acquisition* 3(4). 371–393.
- Rizzi, Luigi. 1997. The fine structure of the left periphery. In L. Haegeman (ed.), *Elements of grammar*, 281–337. Dordrecht: Kluwer.
- Rizzi, Luigi. 2004. Locality and left periphery. In A. Belletti (ed.), *Structures and beyond: The cartography of syntactic structures*, 223–251. Oxford: Oxford University Press.
- Roberts, Ian. 2007. *Diachronic Syntax*. Oxford: Oxford University Press 1st edn.
- Roberts, Ian & Anna Roussou. 2003. *Syntactic change: A minimalist approach to grammaticalization*. Cambridge: Cambridge University Press.
- Roeper, Tom. 1992. From the initial state to V2: Acquisition principles in action. In J. Meisel (ed.), *The Acquisition of Verb Placement: Functional Categories and V2 Phenomena in Language Acquisition*, 333–370. Dordrecht: Kluwer.
- Schütze, Carson T. 2010. The Status of Nonagreeing Don't and Theories of Root Infinitives. *Language Acquisition* 17(4). 235–271.
- Shlonsky, Ur. 2014. Topicalization and focalization: a preliminary exploration of the Hebrew left periphery. In A. Cardinaletti, G. Cinque & Y. Endo (eds.), *Peripheries*, 327–341. Tokyo: H. Syobo.

- Slabakova, Roumyana & María del Pilar García Mayo. 2015. The I3 syntax–discourse interface. *Bilingualism: Language and Cognition* 18(2). 208–226. doi:10.1017/S1366728913000369.
- Snider, Neal & Annie Zaenen. 2006. Animacy and syntactic structure: Fronted NPs in English. In M. Butt, M. Dalrymple & T. H. King (eds.), *Intelligent linguistic architectures: Variations on themes by Ronald M. Kaplan*, Stanford: CSLI Publications.
- Soares, Carla. 2003a. Computational complexity and the acquisition of the CP field in European Portuguese. In *Proceedings of ConSOLE*, 125–140.
- Soares, Carla. 2003b. The C-domain and the acquisition of European Portuguese: The case of wh-questions. *Probus: International Journal of Romance Linguistics* 15. 147–176.
- Soares, Catarina. 2006. *La syntaxe de la périphérie gauche en portugais européen et son acquisition*. Paris: University of Paris 8 dissertation.
- Starke, Michal. 2001. *Move dissolves into merge: A theory of locality*: University of Geneva Doctoral dissertation.
- Tsimpli, Ianthi Maria. 2005. Peripheral positions in early Greek. In M. Stavrou & A. Terzi (eds.), *Advances in greek generative syntax: In honor of dimitra theophanopoulou-kontou*, 179–216. Amsterdam: John Benjamins.
- van Urk, Coppe. 2015. *A uniform syntax for phrasal movement: A case study of Dinka Bor*: Massachusetts Institute of Technology, Department of Linguistics and Philosophy dissertation.
- van Kampen, Jacqueline. 2010. Typological guidance in the acquisition of V2 Dutch. *Lingua* 120(2). 264–283.
- de Villiers, J. 1991. Why questions? In T. Maxfield & B. Plunkett (eds.), *Papers in the acquisition of WH*, 155–173. University of Massachusetts, Amherst: UMOP.
- Westergaard, Marit. 2009. *The Acquisition of Word Order*. Amsterdam: John Benjamins.
- Wiltschko, Martina. 2014. *The Universal Structure of Categories: Towards a Formal Typology*. Cambridge: Cambridge University Press.
- Wolfe, Sam. 2021. *Syntactic Change in French*. Oxford: Oxford University Press.
- Zhu, Jingtao & Anna Gavarró. 2019. Testing language acquisition models: null and overt topics in Mandarin. *Journal of Child Language* 46(4). 707–732. doi:10.1017/S0305000919000114.