Glowing lecture: Discussion.

Focusing on aspects of children's grammatical creativity and other unexpected forms of their linguistic behaviors

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One crucial question directly related to the ‘limits’

- A crucial inspiring lesson from about 70 years of generative grammar:

  What we do not find in the linguistic data is equally crucial and revealing as what we do find

- Within the language acquisition dimension this amounts to claiming:

  What children do not do during their development is equally crucial and revealing as is what they do, during the same time span.

Two briefly developed lists

- With this in mind,

- First: A brief list of what children appear not to do during their linguistic development, also directly related, in part, to various points of Athulya's talk.

- Then: A brief personal illustration of what they happen to do and which is unexpected from the adult perspective, i.e. the target grammar.

  - Grammatical creativity, not (directly) induced by input considerations, at least of a simple-minded nature. But most likely by complexity considerations (of various sorts).
  - This aspect of language development remind us of an important warning: what we need to explain in order to better understand our human language capacity is not a finite domain; children's creative linguistic behavior is a constant source of inspiration for new research questions, both on the descriptive and on the theoretical side.

(Brief) List 1: What we do not find(/have not found)

- During their linguistic development young children do not manifest linguistic behaviors that go against the **hierarchical organization of syntax**.

- **Classical insightful finding 1.**:
- They do not go linearly. E.g.

- Subj-Aux-inversion in English >> once process is mastered, in case of presence of more than one auxiliary that could potentially be considered in the process, the one selected is the highest not the linearly first one. A well-known classical argument for structure dependence also discussed in Athulya's presentation (Crain & Nakayama 1987; Crain & Thornton 1998; textbook, Cook 1994).

- More generally, children have never been described as going through some stage in which they formulate non-target sentences applying some (internal) rule based on linear instructions (as simply illustrated by e.g. Moro's and collaborators impossible rules - Moro et al. 2001).

Structure dependence

Is the man who is tall __ in the other room?

vs

*Is the man who __ tall is in the other room?

- Critiques to the original arguments/experiments do not in fact put into question the crucial insight that the original argument clearly put forth: **syntax is hierarchically organized** (e.g. Ambridge et al. 2008,…)
- This holds language after language. I.e. speakers look at the structure when they manipulate the word sequence, not at the sequence itself.
- Something revealed in an original way also looking at selections made by L2 speakers (as I repeatedly found in my personal teaching experience).

An impossible rule

Put the negation as the third element of the string

i. John is not tired
ii. John did not understand
iii. Children do not play golf

i. John's friend is not tired
ii. John's friend from England did not understand
iii. Small children do not play golf

An impossible rule

i. **John's friend not is tired
ii. **John's friend not from England did understand
iii. **Small children not do play golf

i. The head of the department is not tired
ii. **The head not of the department is tired

(Brief) List 1: What we do not find(/have not found)

❖ **More recent finding 2.**:

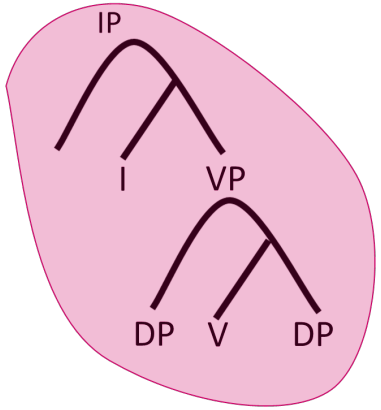
Children don't typically produce structures that belong to high stages (i.e. higher portions of the syntactic tree) if lower stages (i.e. lower portions of the syntactic tree) are not mastered, according to the *Growing Tree* logic (Friedmann, Belletti and Rizzi 2021).

The syntactic tree develops through stages, bottom-up.

❖ Originally studied with special focus on the acquisition of the Left Periphery, analyzed with the fine tools of syntactic cartography (Rizzi 1997 and much subsequent work, Rizzi & Bocci 2017, Cinque & Rizzi 2010 for overview)

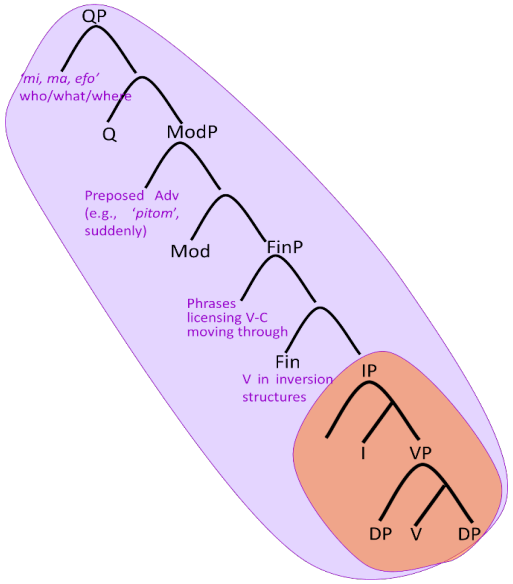
❖ (First language investigated in detail, Hebrew in FBR 2021 original paper, more languages investigated and under investigation). In a nutshell:

The stages.
Stage 1: VP and IP/TP
Stage 2: The lower field of the Left Periphery
Stage 3. The higher field of the Left Periphery



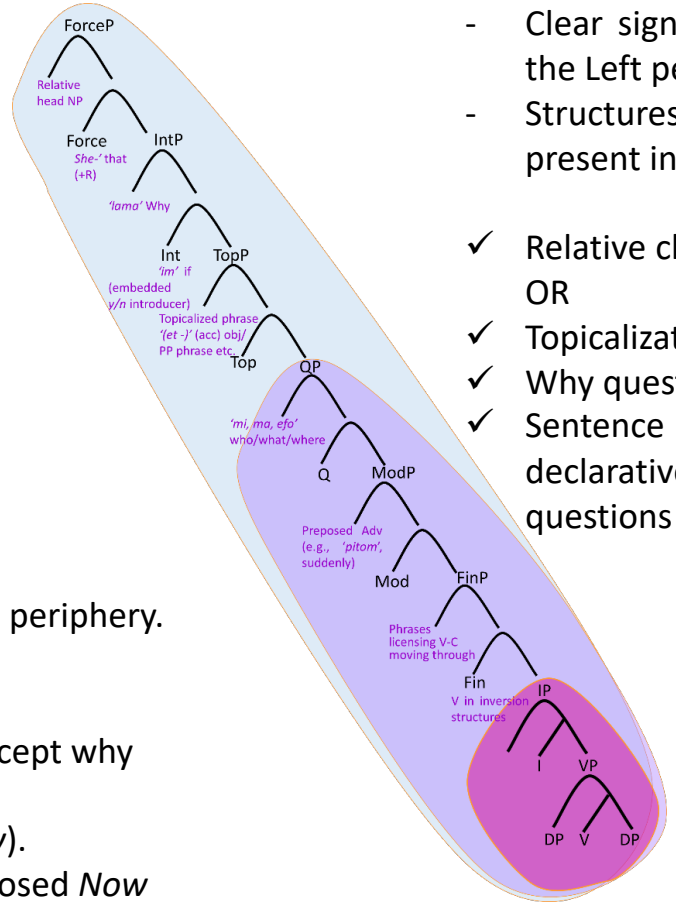
- No sign of presence of Left peripheral area in this stage.
- Only simple declaratives present (SV with transitives/unergatives and unaccusatives, VS with unacccusatives)

Number agreement generally preserved and well produced, indicating a tree that has grown up to IP/TP. No further investigation in the FBR 2021 paper on possible/likely to exist substages. (Ongoing work addresses this dimension)



- Clear signs of presence of the Left periphery.
- Structures present in this stage:

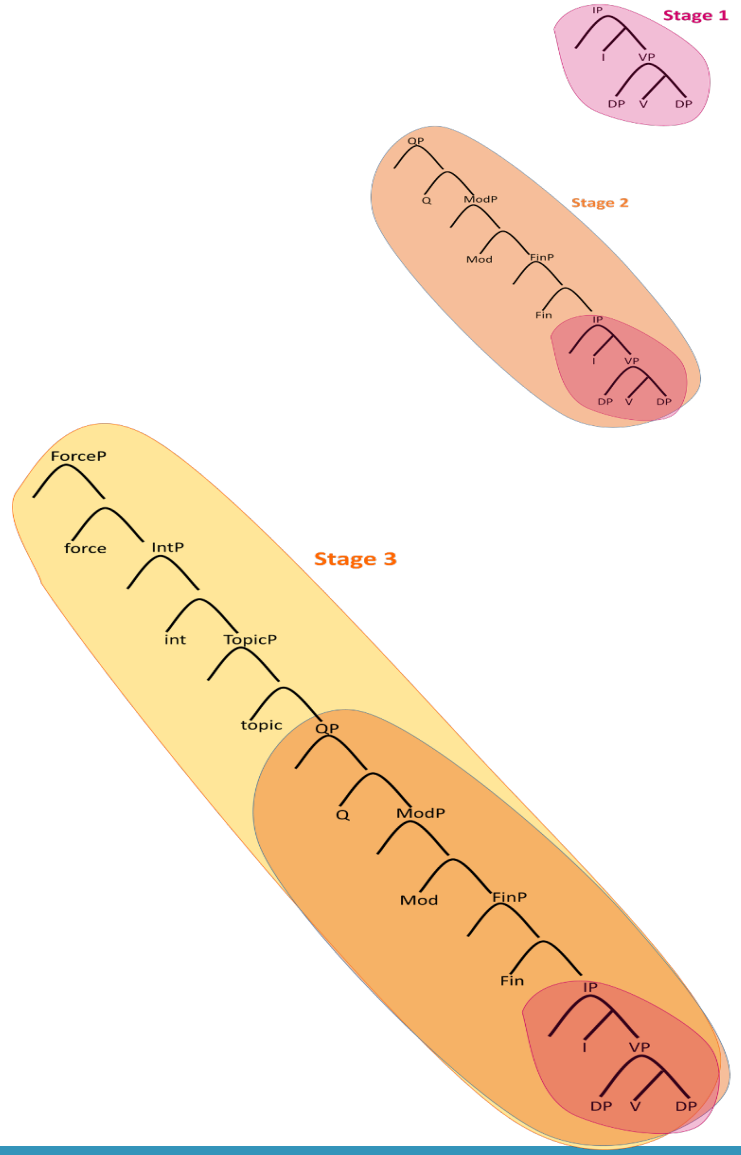
✓ Wh questions of various kinds (except why questions) and Yes/No questions
✓ Some preposed adverbs (e.g. *Now*).
✓ No Topic in this stage, hence preposed *Now* indicates of presence of independent Mod head.

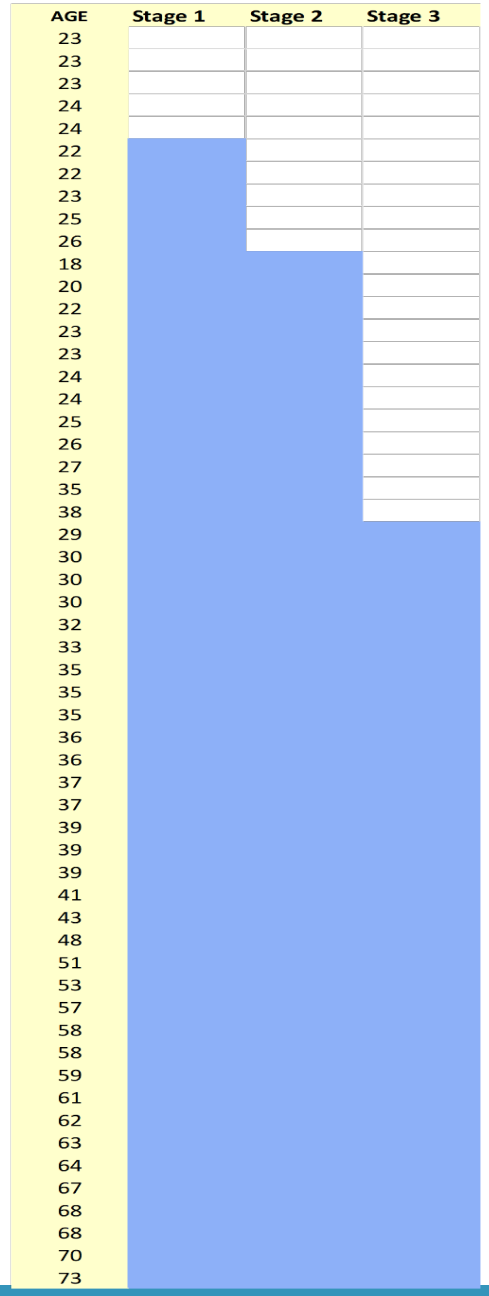


- Clear signs of full presence of the Left periphery.
- Structures that start being present in this stage:

✓ Relative clauses - both SR and OR
✓ Topicalization
✓ Why questions
✓ Sentence embedding - both declarative and indirect questions

The stages of the growing trees



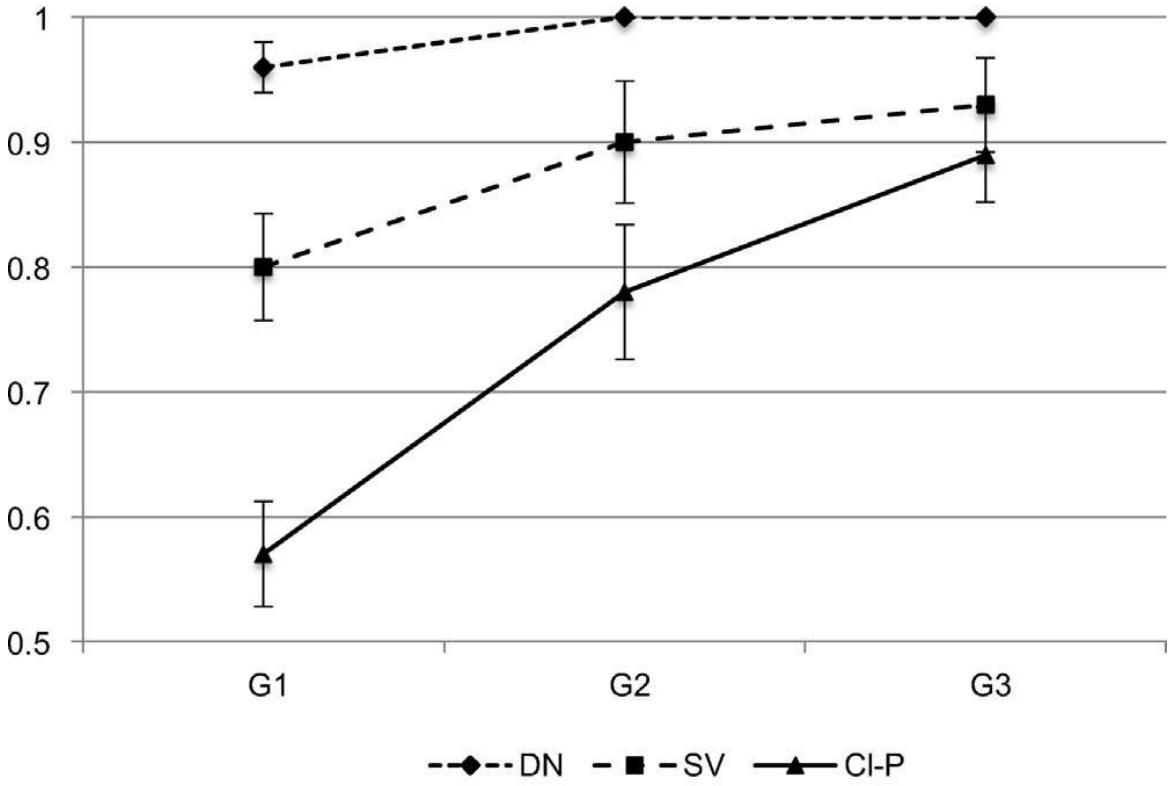


The corresponding Guttman scales

- The stages are characterized by the availability of **sets of structures**.
- The scales make it clear the **implicational logic intrinsic to the stagewise growth**: structures belonging to higher stages will start being present once structures belonging to lower stages are consistently present.
- The opposite is not found.

A further consistent insight from the perspective of Agreement 'errors' during development

Athulya's presentation:
aspects of grammar grow
'….according to an internally driven timetable' (slide 45)
See also: Humboldt (1836/1999, quoted in Chomsky 1966, *Cartesian Linguistics,*p.101/2009 edition) '…**language … can only be awakened in the mind …it develops on its own account….Language learning of children is….a growth in linguistic capacity with age and practice'.**



Error bars = S.E.

Fig. 2. Overall proportion of correct answers in each experimental condition
55 children aged 2;11 and 5;10

1.

D [NP . . . N . . .]

2.

…. ___ Subj …. [$_{vP}$ DP ….]

3. …. ___ Cl …. [___ Asp … [$_{vP}$ V DP ….]]

1. Il libro / La palla/ I Libri / Le palle
   the book(s) /the ball(s)
2. Il bambino corre/I bambini corrono
   the kid runs/the kids run
3. (La candela) la nonna l(a) ha spenta
   (the candle) grandma it.Cl$_{fem}$ turned off

From Moscati, V. & L. Rizzi 2014, *Lingua 140 (2014) 67—82*
'Agreement configurations in language development:
A movement-based complexity metric'

(Brief) List 2: What we do find (and do not expect)

- This is a personal illustration of some unexpected linguistic behaviors that young children have manifested in some experimental studies that I have run with different collaborators over the last ten to fifteen years or so.

- Just a sketchy presentation. Details in the published work cited throughout and in the discussion, if needed.

(Also relevant the recent presentation in the *Reflections* series: https://www.youtube.com/watch?v=SqchNz05gRI; https://artsandsciences.csuohio.edu/linguistics/reflections-foundations-and-developments-generative-grammar)

What we do find (and do not expect)

Again, in direct relation with parts of Athulya's talk, here considering different empirical domains.
'… when child grammars deviate from target, those deviations often take the form of typologically attested patterns.' (Slide 74)

- What the cases all have in common:
- Young children react in (a) different 'grammatical way(s)' than adults, in the very same experimental conditions
- Young children's reactions **overextend** in an unexpected way limited grammatical options of the target language (Italian)
- They do so by 'creatively' utilizing grammatical ingredients and pieces of computations in a non-(completely) adult manner.
- They typically do so under the pressure of (kinds of) computational complexity, i.e. when they are not yet ready for the adults' most typical selection in the same conditions.
- Young children's grammatical choices are not at random but **are found with the same properties in some other (more or less closely related) language(s).**
- Hence, in their acquisition process they exploit a **possible variation space** (Crain & Thornton 1997 and much related literature).
- Concluding with with a partly independent, but in fact related consideration on the non-banal status of what (computational) complexity may amount to in some cases, as experimental results from linguistic development reveal in an original way.

The unexpected findings:
1. ‘Reflexive passive’

in early (elicited) productions and comprehension by young Italian speaking children
Route to passive (Belletti 2020)

❖ Use of reflexive (middle, impersonal…) *si*, to describe a non-reflexive action/event:

- Interpreted as cases of Reflexive passive.

Use of reflexive morphology in ‘passive’ is an option productively found in various languages – and in the more constrained ‘middle’ *si*-construction in Italian as well.

In both

- *Production*

Q: Che cosa succede al mio amico l’elefante?

what is happening to my friend the elephant

A: Si lava

it washes itself (Olmo, 4;1 y.o.)

Belletti & Manetti 2019

Most typical answer by adults: passive (copula/*venire*)

The unexpected findings:
1. ‘Reflexive passive’

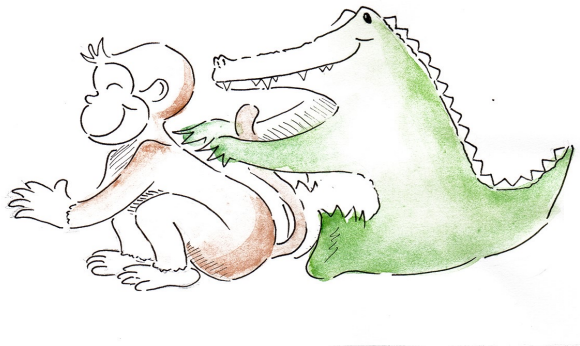
in early (elicited) productions and comprehension by young Italian speaking children

and

- *Comprehension*

Chi c’è qua? Una scimmia e un coccodrillo: la scimmia si gratta»
Who is in there? A monkey and a crocodile: the monkey si-*Cl scratches*

Raminelli, L. & A. Belletti, 2021



The unexpected findings:
2. *Si*-causative passive

in early, later (elicited) productions and comprehension by young Italian speaking children
Route to passive (Belletti 2020)

Si-causative passive (then):

Q: Che cosa succede al mio amico il cane?
what is happening to my friend the dog

A: Il cane si fa lavare (dal gatto)
the dog - makes itself - wash - by the cat
(Neri, 5 y.o.)

Belletti & Manetti 2019

Forms of causative passives found cross-linguistically (Romance: same in French). See also *get*-passive in English, a first preferred option as well in early access to the passive 'construction', Crain et. al. 2009.

- A 'preference' also found in comprehension (in older children as well, up to 8), Contemori & Belletti 2014.

The unexpected findings: 3. a-Topics

❖ In some syntactic conditions young Italian speaking developing children tend to mark the left dislocated direct object topic in a Clitic Left Dislocation structure/CLLD, with preposition **a**. A limited possibility in standard Italian.

a-Marking of object topics is a widely attested option cross-linguistically (Leonetti 2004, Escandell-Vidal 2009a.o., Belletti 2022 for overview)

❖ The conditions in the developmental data are those in which a lexical subject intervenes in the establishment of the relation between the left peripheral dislocated topic and its Th-position internal to the clause.

Q: What happens to my friends, the dog and the bear?

Expected CLLD in standard Italian:
*Il **cane** **il gatto** lo bagna __, e **l'orso** **il coniglio** lo veste __*
The **dog** the cat him.CL washes, the **bear** the rabbit him.CL dresses

a-Topic:

(1) All'orso il coniglio lo sta vestendo __

O S Cl V (Davide, 5)
to the bear the rabbit it-Cl is dressing

(2) Il coniglio all'orso lo veste __

S O Cl V (Adele, 4)
the rabbit the bear it-Cl is dressing

- When the object is preposed/left dislocated and the subject is lexical and preverbal:

in **88%** of children's CLLDs the left dislocated object is realized as an a-Topic (and not as a Simple Topic (no 'a')

- This 'intervention' structure is expected to be the hardest one to compute under featural Relativized Minimality/fRM: Rizzi 1990, 2004, Starke 2001, following Friedmann, Belletti, Rizzi 2009 (and much subsequent related work).

Concluding with a different type of unexpected developmental finding: Shorter vs Longer//Types of (clausal) reduction

- Making a very long (classical) story short:
  - ORs in situation of intervention (Lexical relative head – Lexical subject) are not mastered by children until late in development. Both in production and comprehension.
  - In (elicited) production these ORs are grammatically 'avoided', also by adults.

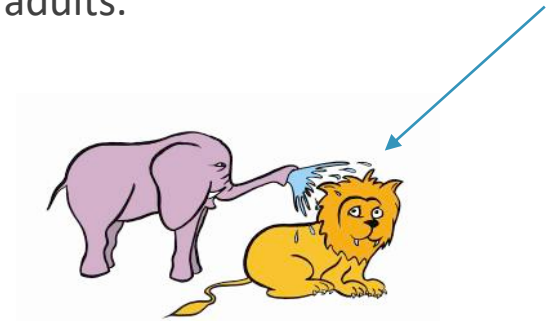
E.g.:

Instead of the expected (active) OR:

Il leone [che **l'elefante** bagna __]

The lion that the elephant wets

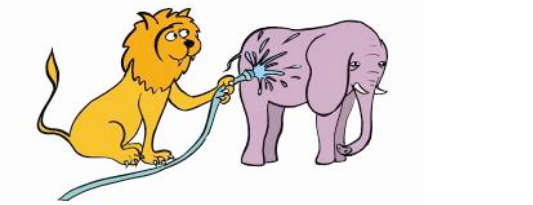
(results from Italian, Contemori & Belletti 2014)



Passive, Passive Object Relatives (PORs)

Adults, overwhelmingly opt for a reduced type of POR:

Reduced Relative Clause/RRC as in



Il leone [che è/viene bagnato __dall'elefante]

The lion (that is/comes) wet by the elephant

Shorter vs Longer//Types of (clausal) reduction

- To the extent that young children use passive (later, older ones): **NO RRC**
- **Children's PORs, when present, tend to have the passive in the form of a *si*-causative passive**
- **Il leone** che si fa bagnare __ dall'elefante

  the lion that *si*-makes wash by the elephant

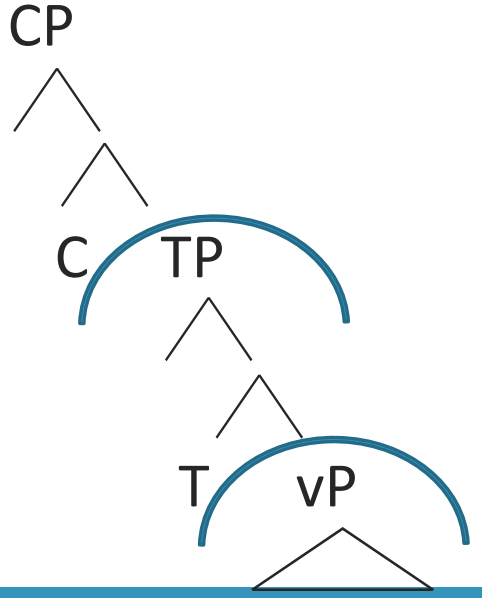
- Several insights from the shape of these results. Focusing on two:

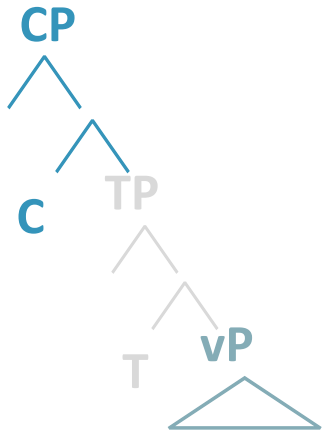
Shorter vs Longer//Types of (clausal) reduction

1. Shorter (= fewer words) **NOT simpler** (**RRCs vs longer full POR** with *si*-causative passive, favored by young children)

2. Reduction internal to the regular syntactic tree is hard.

❖ Harder than reduction at the **edge** of the clause structure (as in e.g. ***truncation*** in development Root Infinitives RI-Rizzi 1993/94 /optional infinitives Wexler 1994; ***pruning*** in aphasia, Friedmann 2002).





Summarizing and concluding

- There are principled, ultimately **biologically determined** reasons for what **we do not find** in linguistic data, crucially including developmental ones, which are able to highlight properties of our language faculty in a special kind of 'decanted' way (**List 1**: structure-dependence, impossible rules, *growing trees*).

- During their development **we do find** linguistic behaviors showing that children are **grammatically creative**, often selecting grammatical options that are unexpected as they are present either in a limited or in a partly different way in the target language; but they are present in other (more or less closely related) languages with the same properties (**List2**: Reflexive passive, *Si*-causative passive, a-Topics).

- The grammatical option(s) that developing children may select in a privileged way in a given condition may **NOT** be the intuitively, pretheoretically **simpler** one(s). E.g., it is not necessarily a **short(er)** option (than the one mostly adopted by adults in the same conditions).

- Hence, we very much need theoretically refined and detailed analytical tools to be able to appreciate the invaluable insights into the functioning of our human language faculty that developmental data can offer, in a fruitful dialogue between **theory, description and experimentation**.

- …. In the same spirit as in the presentation offered to us by Athulya.

Thanks!