Recursion Restricts Point of View Variation in Children

There are considerable efforts in current theoretical work to state how interfaces can connect to syntax. The Split CP on the left-periphery (Rizzi,1997) is a step toward accommodating that goal. Rizzi and Cinque (2014) argue for the "syntactization" of pragmatic and semantic factors. Nevertheless, many factors are not precisely projected onto the syntax---and it is not always clear that they should be. In other approaches, the pragmatic component—projection of QUD (Nouen (2010), Common Ground (Romero and Han (2004), Implicatures (Cherchia, among others), and possibly Speech Acts (Krifka, 2014) are assumed to be on an independent level. Our work on acquisition of LD-wh-movement provides a unique argument that semantic/pragmatic options should be sharply constrained by syntactic complexity, in particular cyclic movement.

Point of View (PoV) is a semantic property that arises for personal pronouns, space and time deixis, article use, and opaque complements. The failure to take the right Point of View can be seen in the answer of a four-year-old to a question like:

1) What did the Mom say she bought?

Many children answer <u>what</u> the Mom really bought, omitting to take account of what Mom <u>said</u>. Adults take the matrix subject's PoV into account when answering (what Mom said), though all interrogatives seek to elicit the Addressee (Hearer) PoV. How can that be explained technically? If we follow Rizzi and Cinque (2016) and others who attempt to give a syntactic representation of semantic phenomena, we can argue that the topmost CP has a Force node that conveys interrogative and it subsumes all subsequent CP's. However, the child seems to admit a separate Force node at the first subordinate CP. We first found this in acquisition, when children answered the medial <u>what</u> question in:

2) How did the mother say what she bought? ["a cake"]

as if the language were Romani or Hindi, permitting partial movement. In the young child's grammar, Force and PoV can get projected onto the lower clause. The child's eventual restructuring of this alternative grammar coincides with their achievement of false belief reasoning, suggesting a form of linguistic scaffolding for false beliefs. This has been found in children with autism (Josephs & Tager-Flusberg, 2005) as well as in typical development (de Villiers & de Villiers, 2000).

However, we must ask: Why should complements allow an extra pragmatic option? Evidence mounts that there are linguistic phenomena that are unique to *single* embeddings (known as "main clause phenomena in subordination"), including parentheticals, embedded inversion [John wondered could he do it].," Indireckte Rede" and so forth. These generally disappear under recursion with multiple clauses, especially where wh-movement occurs, such as:

1) When did Mom <u>think</u> that Dad <u>said</u> that Billy <u>got</u> his train?

We propose that Cyclic movement creates a syntactic chain (wh…t….t…t] that moves through each CP and blocks a Split-CP, a Root-only phenomenon in Rizzi's system, where the Root is open to pragmatic information. A single ForceP in the top CP then c-commands and governs unbounded recursive complementation.   The interrogative Force requires the Hearer's Point of View which requires integration of the PoVs of the two subjects (Mom and Dad in the scenario below). Under recursion, we argue that UG guarantees through the topmost ForceP that the Subject POV/QUD must be entered into the Common Ground of Speaker and Hearer uniformly across all clauses.

To test this, 28 children aged 3;5 to 5;7 and 16 monolingual English adults heard 6 stories followed by a three clause wh question like 5). (See Figure 1). The stories were designed to

contain 6 potential, salient answers to adjunct wh-questions that could originate in any clause. These potential answers were systematically varied in their position or recency in the story relative to the final question.

 Figure 1 to accompany story and question.

Story: Billy got a train set when he went to see his Grandma in the summer. One night, Dad said to Mom, "I really like that train Billy got on his first birthday." Mom was a bit sleepy, so she didn't listen very well. The next morning when she was taking a shower, she laughed about it. She thought Dad was talking in his sleep and said that Billy got the train when he was first born!
Question: When did Mom think that Dad said Billy got his train?

In our analysis, if cyclic wh-movement is necessary, then it blocks any other Force-POV in a lower clause, consequently "reality" answers are blocked. This is exactly what the results reveal: The last clause answer (when he was born), with scope inclusive of every verb, is the preferred answer at every age, as for adults. There is a massive reduction in "reality" answers (<20%) compared to the two clause case on which the children were also tested (>40%) (F (1,27) =28, p<.001). We thus have striking acquisition evidence that the "reality" answer found under single complements weakens under recursion. This follows if the topmost ForceP must dominate all complements when a recursive wh-chain is built. It is a paradoxical result on any ordinary theory of independent semantic or pragmatic components.

Point of View is manifest elsewhere in child grammar at earlier stages: in the non-egocentric use of determiners, in personal pronouns, and in spatial deixis. Language requires Point of view features, but these other cases do not transparently allow the representation of others' beliefs: complements do that conspicuously. A linguistic POV feature, and the mechanisms that allow it to be attached to the Force node in a CP, appear to be evident in recursive structures before they are available in single embeddings, which remain ambiguous for longer. We argue that cyclic movement across wh-chains are purely syntactic representations that a child can recognize without lexical and idiosyncratic information. The fact that children can recognize cyclic movement very early fits the notion that a wh-module (move-alpha) has an independent mental representation. This view can explain why the imposition of a uniform PoV across clauses appears at an early age before single lexically-sensitive embeddings show the same wh-chain properties.

While typically developing children show surprising awareness of these constraints, we do not yet know if autistic children do the same. If syntax imposes this discipline on their complex sentences, it would block the oft-assumed pragmatic freedom that has been attributed to autistic children who fail to adhere to the Common Ground of the Speaker.