How Do Children Acquire Possessive Recursion?

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Background

• Recursion:
  • “The ability to iterate syntactic constituents inside constituents” (Pérez-Leroux et al. 2012).

• Two subtypes of recursion (Hollebrandse & Roeper 2014):
  • Conjoined recursion: the father and son and friend came
  • Embedded recursion: the father’s son’s friend came

• If recursion is a fundamental property of FL (Hauser et al. 2002), why do children appear to have difficulties in acquiring recursive self-embedding? (Roeper & Snyder 2005; Roeper 2011).
  • The relations expressed do not appear to be the source of the difficulty (Bloom et al. 1975).
Background

• Note that children do have to learn that certain elements allow for embedded recursion, while others do not.
  • For example, the English –’s is (potentially infinitely) recursive:
    • Mary’s mother’s computer’s hard drive’s write speed
  • But in German, the genitive –s is not (Hollebrandse & Roeper 2014):
    • Marias Haus (*Maria’s house)
    • *Marias Hunds Haus (intended: Maria’s dog’s house)

• This means that an example of single-embedding cannot be sufficient to trigger recursion.

• While the ability to do recursion comes with FL, we need a story of how it gets triggered for certain structures in certain languages during acquisition.
Background

• Previous work has shown that English-speaking children generally acquire possessive recursion by 5-6 (Gentile 2003, Limbach & Adone 2010).

• Japanese 5 year olds interpreted 50-75% of 4-level possessives correctly (out of 6 choices).

• Dutch 4-5 year olds do fairly well on pre- and postnominal possessives up to two levels of embedding, but worse at 3-4 levels of embedding (Merx 2016).

• When children misinterpret recursive structures, they often do so by imposing a conjunctive interpretation:
  • *John’s father’s hat* → *John’s and (his) father’s hat*
An example (Limbach and Adone 2010):

• “Jane has a nice blue bike and Jane’s father Gordon has a racing bike. When they do a tour together, they have another bike which they can ride together.”

• “Can you show me Jane’s father’s bike?”
The Present Study

• What is the acquisition path of possessive recursion in English?
  • Example of pre-nominal: “John’s brother’s friend’s hat”
  • Example of post-nominal: “a hat of a friend of a brother of John’s”

• What is the trigger for possessive recursion?
  • There are two types of possessive recursion in adult English—DP and NP:
    • *Bloomingdale’s men’s clothing*
    • DP-interpretation: The clothing of the men of Bloomingdale’s (e.g., the clothing that the men working at Bloomingdale’s wear)
    • NP-interpretation: The clothing for men sold at Bloomingdale’s
  • Fully self-embedding recursion is only forced at three+ levels. Otherwise, children have the option of treating it like DP + NP recursion (Hollebrandse & Roeper 2014).
The Present Study

• We should also keep in mind that –’s doesn’t only express possession. It has many functions:
  • Argument of an inherently relational noun: John’s friend
  • Part-whole relationships: The car’s wheel
  • Attribute: The desk’s color
  • “Free” readings (Vikner & Jensen 2002): The girl’s teacher
    • The teacher the girl has married
    • The teacher the girl is going to interview
    • The teacher the girl is blackmailling
    • The teacher the girl is dreaming of
    • Etc.

• How can we test for children’s knowledge of each of these possibilities?
Can you give a bear to the boy?  
Can you give a bear to the girl?
Can you give a bone to the dog's dog?
Can you give a hat to the cookie of the cupcake's?
Can you give an apple to the cow's bird's cat?
Can you give an egg to the frog of the chicken of the snake's?
Can you give a strawberry to the monkey's monster's bunny's ghost? Can you give a strawberry to the monster of the bunny's?
Can you give a book to the turtle of the pig of the horse of the lion's?
Can you give a book to the pig's horse?
Can you give a bone to the boy's sister's dog?
Can you give a toy to the chicken of the witch and the monster's?
Can you give a cookie to the alien's robot's cow?
Can you give a balloon to the computer of the friend of the scientist's?
Can you give a leaf to the alien's brother's friend's ball?
Can you give a leaf to the ball of the alien and the friend of his brother's?
Can you give an umbrella to the plant of the monster of the witch of the ghost's? Can you give an umbrella to the ghost's witch's and her monster's plant?
Can you pull down two (three, four, etc.) and put them together with the leashes?
Can you tell me what we can call each of these?