

"Let's lie down **because** I'm tired of
Apple **because** I'm poorly **(be)cause** I
need to lie down":
the influence of pragmatics on children's
acquisition of complex causal sentences

Heather Lemen, Anna Theakston, Elena Lieven
School of Health Sciences, University of Manchester

Complex adverbial sentences

- Like all complex sentences, listeners must interpret the relationship between propositions of clauses (Diessel, 2004)
- Semantic variation in use leads to complexity
 - Variation in relationships expressed by different connectives
 - You can go out **because** you ate all your dinner” vs. “You can go out **after** you eat all your dinner.”
 - Same connective can have different meanings (Quirk et al., 1985)
 - “**Since** he has been back, he has been grumpy” (**temporal**) vs. “**Since** it is broken, I don’t want it” (**causal**)
- Can vary clause order to express iconic/non-iconic order and for functional reasons (Chafe, 1984)

The production-comprehension disconnect in complex *because*-sentences

Complex sentences connected by *because* are interesting because:

- Early productions around 2 (Diessel, 2004) and typically accurate (e.g. Hood & Bloom, 1979)
- Most produced and most heard complex adverbial connective (Diessel, 2004)
- Almost always appear in main-sub order (Diessel, 2004; De Ruiter et al., 2016)
- Poor performance on comprehension tests (e.g. Emerson, 1979), particularly in comparison with tests of other connectives (De Ruiter et al., submitted)

So, what makes *because*-sentences more difficult?

Three pragmatic categories

I'm feeling hungry because
I haven't eaten yet



Content:

Explains the real-world
cause of a state or
event.

She must be planning to
feed me because it's noon
and I haven't eaten yet



Epistemic:

The **sub-clause** justifies
a conclusion made in
the **main-clause**.

FEED ME because I haven't
eaten



Speech Act:

The **sub-clause** justifies
a speech act main in
the **main clause**.

Based on Sweetser (1990)

Variation in pragmatic function of *because* sentences

How context impacts interpretation

Consider the following sentence:

“That report must be finished now because it is due tonight”.

“The specific reason that the report must be finished now is that it is due tonight”
(Explanation)

Content-level Causal

“I conclude that the report must be finished, because I know it is due tonight and I know he would want to hand it in on time”
(Conclusion)

Epistemic-level Causal

I command that the report be finished ! And the reason that I make this command is that it is due tonight”
(Directive Speech Act)

Speech Act -level Causal

Variation in pragmatic function in children's *because*-sentences

- Young children primarily produce **Speech Act** causals, although this trend still holds for older children.
- **Epistemic** causals are acquired later and used infrequently.
- Frequency of types produced in different domains are impacted by context.
- These trends appear in English, Dutch and French data.

Kyrtziz et al., 1990; Evers-Vermeul & Sanders, 2011; Sekali, 2012

What is produced versus what is tested

Children are primarily producing **Speech Act** sentences like:

- you not nice because you won't get off my pool (Thomas 4;01;00)
- don't touch it (be)cause it might hurt (Gina 3;08;05)

BUT: Experimental conditions test comprehension real-world causality (**Content**), such as:

- X moved because Y moved (French, 1988)
- Woodstock fell out of his nest because he was jumping up and down (Emerson & Gekoski, 1980)
- **So, do children really not understand *because* or do they just have difficulty with it when it is expressing particular relationships?**

The relevance of input

- Diessel (2004): frequency with which a mother uses a connective largely correlates with the order in which it appears in the child's speech.
- One-to-one form-function mapping is easier (e.g. Slobin, 1982).
- Children store **meaningful** utterances (e.g. Slobin, 1985)/"perhaps children interpret only structures which fit their notion of the language" (Slobin, 1982, p. 167) .

As such, functional variation, frequency of input and children's interpretations can be expected to interact to impact children's abstract representations of these terms.

So, what are children hearing?

Caregivers:

- justify opposition utterances, although rarely using *parce que* (Veneziano, 2001)
- use causals “acausally” (McCabe & Peterson, 1988)
- used more **Speech Act** (“preliminary finding”) (Kyratzis et al., 1990)

BUT: a detailed examination of the relationship between input and production with regard to pragmatic variation in *because*-sentences has been largely overlooked.

Theoretical approach

Given the potential for pragmatic variation in the input, insight into what children hear and how this compares to production may provide information about:

- children's pragmatic awareness;
- children's ability to adapt to variation in form-function mapping; and
- the production-comprehension studies disconnect.

Research questions and predictions

Research Questions:

- What pragmatic trends exist with regard to mother's use of *because*-sentences and how do these relate to children's productions?
- Are there functional differences in the types of Speech Acts mothers and children are performing in their Speech Act *because*-sentences?

Predictions:

- Both mothers and children will produce more Speech Act sentences.
- Mothers will use *because* in a **directive** Speech Act capacity, whereas children will use it in an **assertive** capacity

Corpus study - Data

- Data from two Mother-Child dyads was taken from the CHILDES Corpus (MacWhinney, 2000).
- Thomas and Gina's (children) data was analysed from age 2;10;21 – 4;11;20.
- The Mother's data was taken from the time the children were 3;00;00 – 3;00;14.
- Resulted in 1263 utterances for the mothers and 2211 utterances for the children.

Corpus study - Procedure

- Data was coded for complex structure.
 - Due to overlap with structural analysis, only structurally and pragmatically interpretable were analysed.
 - Uninterpretable/incomplete lines: fewer than 8% of Mothers' sentences; 13% of children's
- Remaining complex sentences were coded for pragmatic function and speech act type (where applicable).
- Reliability: 15% of the data.
- Counts were obtained for pragmatic type and speech act type for each speaker.

Coding

Pragmatic function:

All complex *because*-sentences were coded for the pragmatic function based Sweetser (1990)

Speech Act Type:

All Speech Act *because*-sentences were coded for the speech act they performed based on the following:



Assertive:

main clause performs an assertive speech act, e.g.
making claims and predictions.



Commissive:

main clause performs a commissive speech act, e.g.
making promises and commitments



Directive:

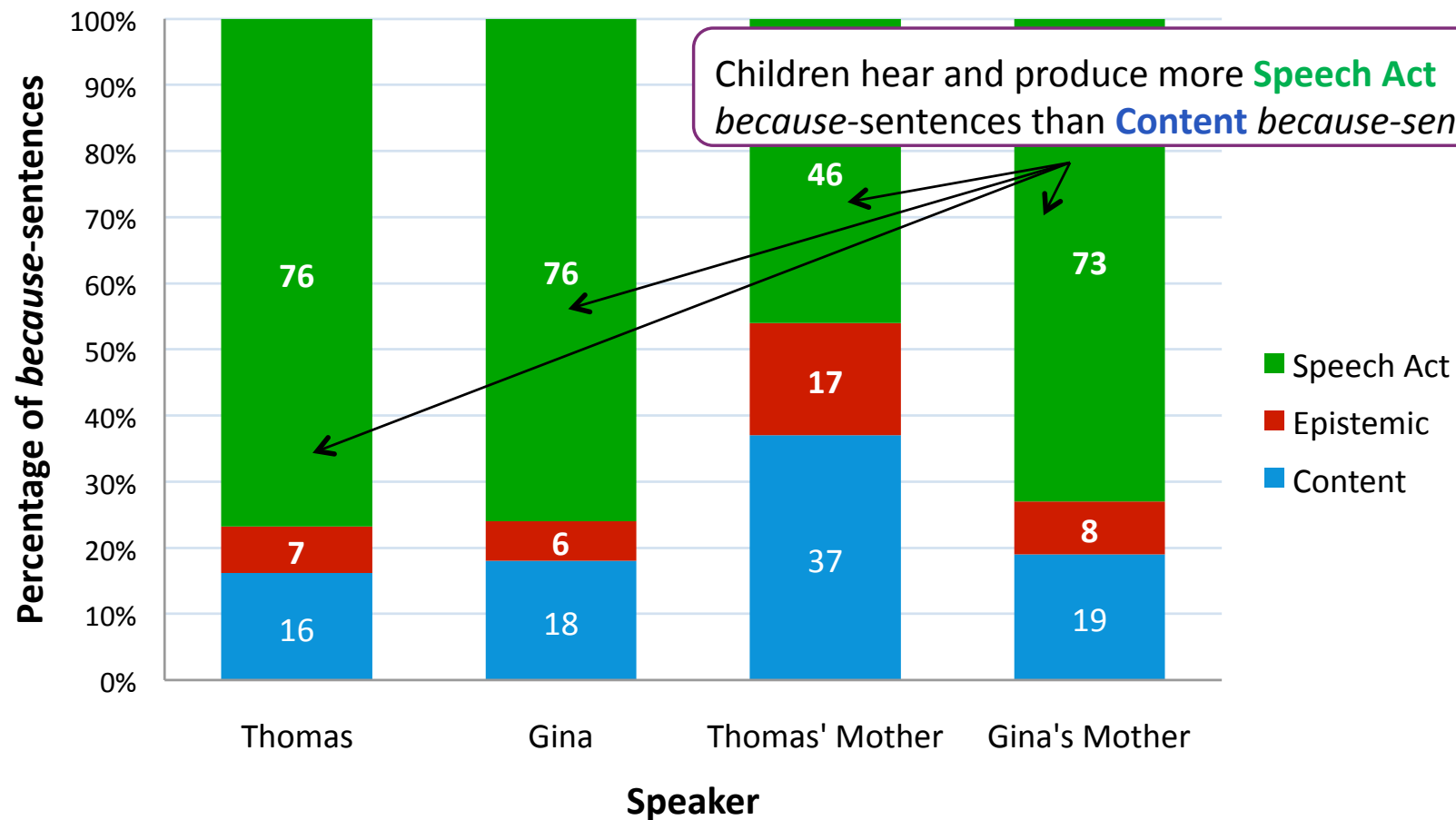
main clause performs a directive speech act, e.g.
ordering and forbidding.



Question:

main clause asks a question.

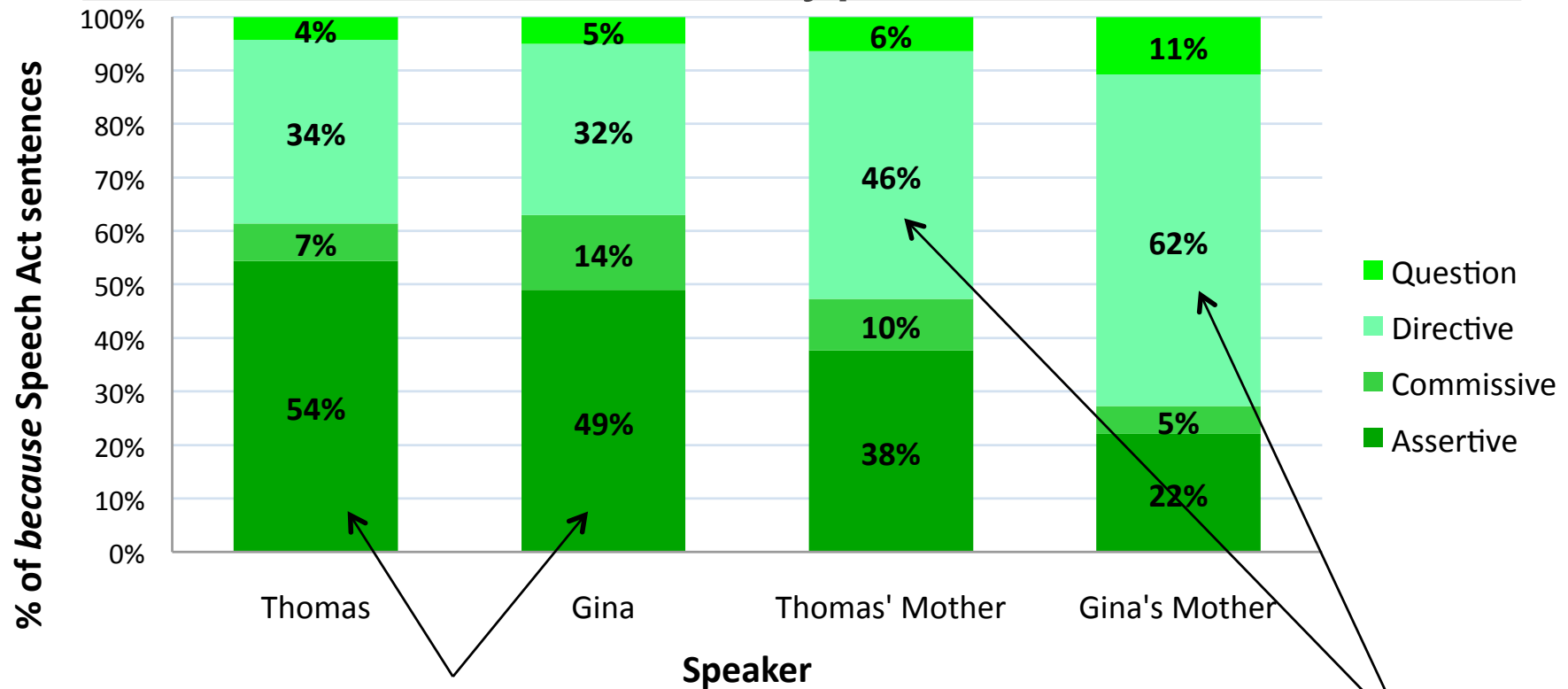
Child and Mother *Because*-sentences by Pragmatic Type



Children hear and produce more **Speech Act** *because*-sentences than **Content** *because*-sentences

Although Thomas' mother does not use Speech Act *because*-sentences as much as Gina's mother does

Child and Mother *because*-sentence Speech Act Types



Children produce more assertive speech acts with their *because*-sentences

... while mothers vary with their proportions, but generally use more directives.

Discussion

- Children hear significant functional variation with regard to *because* input.
- The most commonly heard type of input does not actually express **Content** causality, which is the type generally tested in experimental settings.
- If more **Speech Act** type in input means that children develop an understanding that *because*-sentences function more as a tool to justify ones' utterances, confusion may result when asked to interpret real-world causality from these structures.
- Children heard different patterns, but their production was similar to one another.
 - Learning the functions through input (more **Speech Act**), but using them for a specific function?

Beneficial functions of Speech Act *because-sentences*?

- Listener-focused Speech Acts?:
 - **Content** and **Epistemic** utterances– arguably, these typically do not really require the listener to do anything but listen.
 - **Speech Act** causals often require a response, change in behaviour/ opinion, etc.
 - Is it possible that these become more salient than utterances that simply require passive listening (e.g. Reading study by Ewers & Brownson, 1999)?
- Veneziano (2001) found that both mother and child were more likely to give in to each other's statements of opposition when they were justified.
 - Although many of these utterances were without *parce que*, this suggests that children learn that justifying their utterances is a useful tool in discourse management from an early age.

Future directions

This study:

- Comparing with *if*-sentences (corpus)
 - *if* is also frequent in input (Diesel, 2004) yet children perform poorly with it (e.g. De Ruiter et al, submitted)
 - same pragmatic categories apply, but *if* represents a different semantic relationship between clauses.
- Further coding (*because* and *if*) for more specific speech acts (threats, promises, permission, suggestions, commands, etc.), and child-focus on sentence (the degree to which the child must engage in the sentence)

Next study:

- Investigating children's comprehension of both *because*- and *if*-sentences that reflect the three different pragmatic functions.

References

- Chafe, W. (1984, October). How people use adverbial clauses. In C. Brugman & M. Macaulay (Eds.) *Proceedings of the Tenth Annual Meeting of the Berkeley Linguistics Society* (pp. 437-449). Berkeley: Berkeley Linguistics Society.
- De Ruiter, L.E., Theakston, A.L., Brandt, S., and Lieven, E.V. (submitted). Iconicity affects children's comprehension of complex sentences: the role of semantics, clause order, input and individual differences.
- De Ruiter, L., Theakston, A., Brandt, S. & Lieven, E. (2016). Additional complexity in complex sentences in child-directed speech. In T. Tenbrink (Ed.) *Proceedings of the UK Cognitive Linguistics Conference*, p.29. <http://ukclc2016.bangor.ac.uk/documents/proceedings-bangor.pdf>
- Diessel, H. (2004). *The acquisition of complex sentences*. Cambridge: Cambridge University Press
- Emerson, H. F. (1979). Children's comprehension of 'because' in reversible and non-reversible sentences. *Journal of Child Language*, 6(02), 279-300.
- Emerson, H. F., & Gekoski, W. L. (1980). Development of comprehension of sentences with "because" or "if". *Journal of Experimental Child Psychology*, 29(2), 202-224.
- Evers-Vermeul, J., & Sanders, T. (2011). Discovering domains – On the acquisition of causal connectives. *Journal of Pragmatics*, 43(6), 1645-1662.
- Ewers, C. A., & Brownson, S. M. (1999). Kindergarten's vocabulary acquisition as a function of active vs. passive storybook reading, prior vocabulary and working memory. *Reading Psychology*, 20(1), 11-20.
- French, L. A. (1988). The development of children's understanding of "because" and "so". *Journal of Experimental Child Psychology*, 45(2), 262-279.
- Hood, L. & Bloom, L. (1979). What, when, and how about why: A longitudinal study of early expressions of causality. *Monographs of the Society for Research in Child Development*, 1-47.
- Kyrtziz, A., Guo, J., & Ervin-Tripp, S. (1990, August). Pragmatic conventions influencing children's use of causal constructions in natural discourse. In D.J. Costa (Ed.) *Proceedings of the Sixteenth Annual Meeting of the Berkeley Linguistics Society* (pp. 205-214). Berkeley: Berkeley Linguistics Society.
- MacWhinney, B. (2000). *The CHILDES Project: Tools for analyzing talk. Third Edition*. Mahwah, NJ: Lawrence Erlbaum Associates.
- McCabe, A., & Peterson, C. (1988). A comparison of adult's versus children's spontaneous use of because and so. *The Journal of Genetic Psychology*, 149(2), 257-268.
- Quirk, R., Greenbaum, S., Leech, G. & Svartvik, J. (1985). *Comprehensive grammar of the English language*. Essex: Addison Wesley Longman Ltd.
- Searle, J. R. (1976). A classification of illocutionary acts1. *Language in society*, 5(1), 1-23.
- Sekali, M. (2012). The emergence of complex sentences in a French child's language from 0; 10 to 4; 01: Causal adverbial clauses and the concertina effect. *Journal of French Language Studies*, 22(01), 115-141.
- Slobin, D. I. (1982). Universal and particular in acquisition. *Language acquisition: The state of the art*, 128-70.
- Slobin, D. I. (1985). Crosslinguistic evidence for the language-making capacity. *The crosslinguistic study of language acquisition*, 2, 1157-1256.
- Sweetser, E. (1990). *From Etymology to Pragmatics: Metaphorical and Cultural Aspects of Semantic Structure* (Cambridge Studies in Linguistics). Cambridge: Cambridge University Press.
- Veneziano, E. (2001). Interactional processes in the origins of the explaining capacity. In K. Nelson, A. Aksu-Koc and C. Johnson (Eds.), *Children's Language*, Vol. 10: Developing Narrative and Discourse competence (pp.113-141). Mahwah, N.J.: L. Erlbaum.

Thanks and Acknowledgements

Professor Anna Theakston (supervisor)

Professor Elena Lieven (supervisor)

Laura de Ruiter

Kimberley Bell

ESRC grant number: ES/L008955/1