

Syntactic Resonance in Child-Caretaker Interaction and Children's Peer Talk

He Sun and Clarence Green

KEY IMPLICATIONS

1. Syntactic repetition is not automatic in interaction and children do not seem to be primed by adults.
2. Lexical reuse between speakers is what causes similar grammar use.
3. Lexis should be the focus of any pedagogy that promotes language development through interactional repetition.

BACKGROUND

An examination of children's interaction data revealed, among other things, a remarkable degree of resonance across the child utterance and parent utterance. Relating the degree of syntactic resonance in each child's interaction and their language proficiency would make not only a theoretically intriguing question, but also have potentially useful pedagogical implications, offering potential guidance as how to use language to facilitate language learning, e.g., types of repetition.

One component of resonance is claimed to be abstract structural priming. It refers to the repetition of an interlocutor's syntax. Demonstrations of structural priming in the laboratory have led to claims of its importance to natural language learning, and some have interpreted it as evidence for formal linguistic theories of autonomous syntax. In this project, we aimed to explore the extent of abstract structural priming in child language interactions with adults.

FOCUS OF STUDY

It is a well-known phenomenon that people tend to reuse words (Su, 2016; Sun, de Bot, & Steinkrauss, 2015). But to what extent is grammatical repetition important to language learning? For decades, discourse alignment in the form of syntactic priming has been given much attention in psychology, linguistics and sociology. The idea that interlocutors and children align language behaviour and that alignment is widespread in communication is exciting, particularly in current landscape of educational ideas emphasizing cooperative behaviour, mirror neurons and distributed cognition.

The present project replicates and extends Healey, Purver and Howes (2014), a study which found no tendency between speakers in the British National Corpus (BNC) to reuse each other's syntax, beyond what would be expected by chance, unless speakers were also using the same words. The project attempted to measure syntactic repetition that appears in focal children's interactions in Singapore and larger datasets from the CHILDES corpora.

KEY FINDINGS

All analyses indicated that the repetition of syntactic structure by children with interlocutors was uncommon, and when it did occur, it was because of lexical reuse. We focus here on reporting child-adult interaction. Syntactic and lexical similarity in the local corpus for adult-

directed speech by children and child-directed speech by adults were also examined. A chance baseline was also created for comparison that paired child and adult utterances together randomly. Adults' syntax converged with children's more often than children's with adults'. This trend also held for lexical reuse. What this means in essence is that there is not much reuse of the adults' structures by children during language interaction, unless it is about word repetition.

SIGNIFICANCE OF FINDINGS

The unique and surprising insights relevant to education in Singapore and/or the Singapore education system is that structural priming/grammatical reuse is not a significant feature of language development, unless it is conditioned by lexical repetition. This tells us that the words children and parents use are more important than the grammatical structures, because grammar is not independent of the words. It suggests that grammatical development is conditioned by lexical development. If structural priming of grammar were an important general language learning mechanism within the broader dialogic resonance, one might have expected that child utterances mirrored adult utterances rather than the other way round. If we were to conclude that adults converging on the syntax of children is priming, then it would be the child priming the adult and odd language acquisition mechanism. More reasonable is that the learning mechanism here is that syntactic reuse by the parent of the child's syntax is a feature of "motherese". There is not a strong tendency for children to formulate utterances that reuse the syntax of adult interlocutors. The findings do not support that abstract structural priming has much of a role to play in language behaviour generally, and rather, when alignment does occur it seems attributable to discourse-pragmatic motivations such as lexical reuse.

RESEARCH DESIGN

Five corpora were used in this study. To see if the results of Healy, Purver and Howes (2014) could be replicated, the recently released British National Corpus 2014 spoken component was used, a publicly available dataset containing 11.5 million words of UK English in informal conversations. The corpus represents 672 speakers across 1251 conversations. Two other datasets were used representing natural child-adult interactions. A local Singapore corpus contained 174 transcriptions of 5 (male) children collected longitudinally. The transcripts were taken from part of a broader Conversation Analysis project on child-parent interaction in English amongst bilingual children. Three corpora from the open-access CHILDES database were also used: The MPI-EVA-Manchester Corpus, the Manchester Corpus and the Thomas Corpus. These corpora were chosen as they are related, interactions are naturalistic, e.g. play or conversations, and consisted of dense-sampling longitudinally. Following Healy, Purver and Howes (2014), we adapted the source code of their NLP project "Dialogue Similarity" and computed similarity between peer/parent and child's syntactic and lexical sequences across turns in the corpus.

REFERENCES

- Healey, Purver & Howes (2014). Divergence in dialogue. *PloS one*, 9(6), 1–6. <https://doi.org/10.1371/journal.pone.0098598>
- Su, D. (2016). Grammar emerges through reuse and modification of prior utterances. *Discourse Studies*, 18(3), 330–353. <https://doi.org/10.1177/1461445616634551>
- Sun, H., de Bot, K., & Steinkrauss, R. (2015). A multiple case study on the effects of temperamental traits in Chinese preschoolers learning English. *The International Journal of Bilingualism*, 19(6), 703–725. <https://doi.org/10.1177/1367006914534332>

About the authors

He SUN is with the National Institute of Education, Singapore.

Clarence GREEN is with the Federation University, Australia.

Contact He Sun at he.sun@nie.edu.sg and Clarence Green at cgreen@federation.edu.au for more information about the project.

This brief was based on the project OER 05/17 KYH: Syntactic Resonance in Child-Caretaker Interaction and Children's Peer Talk.

How to cite this publication

Sun, H., & Green, C. (2020). *Syntactic Resonance in Child-Caretaker Interaction and Children's Peer Talk* (NIE Research Brief Series No. 20-027). Singapore: National Institute of Education.

Request for more details

Please approach the Office of Education Research, National Institute of Education, Singapore to obtain a copy of the final report.

>> More information about our research centres and publications can be found at: <http://www.nie.edu.sg>