Multiple That: A strategy for reducing integration costs
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Abstract
Sentences with multiple complementizers like I told him that for sure that I would come are universally regarded as ‘ungrammatical’ by grammarians, though they often appear in speech, and even in writing. Do these examples reflect a disfluency? Are they actually grammatical? Or are they motivated by processing difficulty? If the repetition of that is a production strategy used to reduce integration costs in the complement clause (CC), it should decrease reading times on the subject of the complement clause compared to sentences with only one that. To test this prediction, we conducted a self-paced reading study of Multiple That sentences. Results showed that when integration costs were high, reading times were faster on the embedded subject in Multiple That sentences compared to those with only one that, suggesting that the extra that helps readers understand hard-to-process CCs. If Multiple That is not generated by the grammar, then it is an interesting example of an “acceptable ungrammatical” sentence type (Langendoen and Bever 1973).

The Question
Can processing difficulty motivate the “acceptable ungrammatical”?

In naturally occurring examples like (1) and (2), a second occurrence of the complementizer that appears before the subject of the complement clause: (1) They were so cold that if they were sitting on the launch pad in this aluminum tank that they would form sheets of ice on the outside. (2) I truly wish that something like that would happen that my children would do something like that for me. (Switchboard Corpus 1973).

This ‘extra’ complementizer does not provide any new information, sounds unacceptable to many people, and is not an option made available by any grammar (formal, pedagogical, etc.) of English, yet it appears frequently, and it often doesn’t bear any of the phonetic hallmarks of a disfluency (Shinberg 1995). Is it an unusual disfluency? Is it a fluent performance error? Or is it a production strategy for dealing with processing difficulty?

Design
In a masked, self-paced reading study with 28 participants, we measured reading times on the head noun of the subject of the complement clause (always the second word in the subject NP). Each sentence contained an adverbial between the complementizer and the beginning of the complement clause that was either short (one word long) or long (seven words long); in addition, each sentence contained one that (before the adverbial) or two that (before and after the adverbial).

Results and Discussion
Reading times showed that the subject of the CC was read faster after an extra that when the adverbial was long, but not when it was short. This interaction was significant both by subjects (F(1,127)=6.50, p=0.025) and by items (F(2,19)=7.00, p=0.016). A disfluency analysis of Multiple That examples cannot account for this difference between the adverbial length conditions. Ungrammaticality could account for a similar interaction: obvious grammaticality violations make structures harder to process, and when the two thats are far apart, the violation of the grammar may be less obvious, producing less difficulty. However, ungrammaticality alone can’t predict that the embedded subject in the extra-that version should ever be read faster than the single-that version; an effect of distances between dependents and their links is necessary to account for this result.

Conclusions
Despite violating grammatical constraints, repetition of that helps readers process difficult complement clauses. Processing difficulty can motivate “acceptable ungrammatical” utterances.