

Does deciding what to say involve deciding how to say it?

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Answering a question involves conceptualisation (i.e., message preparation), formulation (i.e., linguistic encoding), and articulation [1], and selecting an answer is an aspect of conceptualisation. The answer then has to be formulated – the words have to be retrieved from the lexicon, assigned to a grammatical structure, and converted into phonological representations. But how are these processes related?

One possibility is that speakers select a single answer before formulating it, thus they make a final decision about the message without converting that message into words (selection-before-formulation). If this is the case, then selection should be unaffected by linguistic properties of unselected, but plausible, answers because they are not formulated. Alternatively, speakers could select a single answer only after they have formulated different potential answers (selection-after-formulation). Thus, speakers consider how they will produce their answer before settling on what they will produce. If this is the case, selection should be affected by linguistic properties of unselected answers because multiple answers are formulated.

We tested between these two possibilities in two question-answering experiments that exploited the fact that to-be-expressed answers vary in their linguistic complexity (e.g., *Harry Potter and the Philosopher's Stone*, *Dracula*). We manipulated the ease of selecting an answer by manipulating whether the questions were constraining (with most participants providing a particular answer concept) or unconstraining (with participants providing different answer concepts; see Table 1, all stimuli were pre-tested). We also manipulated the length of answers, so that they were short and linguistically simple, or long and linguistically complex.

If answer selection occurs before formulation, then there should be an interaction between question constraint and answer length. In particular, we expect stronger effects of answer length when the question is unconstraining compared to constraining because speakers will tend to activate and formulate a larger set of linguistically complex items. In contrast, if answer selection occurs after formulation, then participants should be equally slower to answer unconstraining than constraining questions regardless of whether the set of potential answers is long or short, because they will formulate only one answer.

In Experiment 1, native English monolinguals (N=40) answered more quickly when questions were constraining ($M=647$ ms) rather than unconstraining ($M=1279$ ms; $t=-7.26$), suggesting they found it easier to answer when they did not have to extensively search through a number of potential answers during retrieval. Consistent with previous research [2], participants also answered more quickly when answers were shorter rather than longer ($t=3.73$). Importantly, there was no interaction between these two predictors ($t=-0.09$; Bayes Factor=0.88), suggesting that speakers were not affected by the complexity of unselected, but plausible, answers.

We replicated these findings in Experiment 2, in which we increased the cognitive load of the task by recruiting L2 English speakers (N=41), who are likely to have more difficulty accessing concepts and preparing answers, particularly if they consider the complexity of unselected concepts. Participants answered more quickly when questions were constraining ($M=1177$ ms) rather than unconstraining ($M=1816$ ms; $t=-5.49$) and when answers were shorter rather than longer ($t=-3.20$). Consistent with Experiment 1, there was no interaction between question constraint and answer length ($t=-1.02$, Bayes factor=0.78).

We conclude that speakers decide what to say early, during pre-linguistic planning, so that only a single answer is processed further during formulation. These findings suggest that speakers can decide what they want to produce without considering the complexity of how they are going to produce it.

References

- [1] Levelt, W. J. M. (1989). *Speaking: From intention to articulation*. Cambridge, MA: MIT Press.
[2] Ferreira, F. (1991). Effects of length and syntactic complexity on initiation times for prepared utterances. *Journal of Memory and Language*, 30, 210-233.

Table 1. Example stimuli for the four conditions in both experiments.

Question Constraint	Answer Length	Question
Constraining	Short	What is the capital of France?
	Long	How did The Titanic sink?
Unconstraining	Short	What is your favourite city?
	Long	What is your favourite book?