

New Experimental approaches to the Maxim of quantity

Introduction One of the goals of our project is to examine whether the use of *by-phrase* can be predicted the second Quantity Maxim and/or Manner Maxim of Grice. Consider the two situations described below. In the first context, there are two potential agents, and, hence, if we use the passive construction to describe the girl, the use of *by-phrase* is obligatory. In the second context, on the other hand, the use of *by-phrase* is not obligatory, because there is only one potential agent. According to the Manner Maxim (*Be Brief!*), speakers are predicted to use short passive (the passive without *by-phrase*) in the second context.

- Full passive context: There are two potential agents (father and grandpa), two patients (two girls), and one possible action (kiss). Task: describe the girl (with a relative clause)
 - (1) a. the girl that the grandpa kisses
 - b. the girl that is kissed by the grandpa (Full Passive)
 - c. #the girl that is kissed (Short Passive)
- Short passive context: There are two potential agents (two fathers), two patients (two girls), and two possible actions (kiss and hug). Task describe the girl (with a relative clause)
 - (2) a. the girl that the grandpa kisses
 - b. the girl that is kissed by the grandpa
 - c. the girl that is kissed

A previous study (Yatsushiro & Sauerland, submitted) found that both adults and children produce *by-phrase* when the omission of it causes the relative clause to be ambiguous. When the *by-phrase* is optional, as in the second scenario, the adults produced *by-phrase* at a much higher percentage than children did, contrary to the prediction. Following are possible reasons why this may be the case:

- (3) a. Memory
- b. Methodology
- c. Priming effect

Experiment We have conducted an online survey study to examine whether the use of passives is found (i) in English, and (ii) with a slightly different methodology. There were two versions of the experiment, one with an additional task (Digit Recall) and one without, to examine whether *memory* is the reason for the difference between children and adults.

Participants 100 participants (First language English, currently living in the UK or the USA), recruited from the online-survey platform, *Prolific*, participated in this study. The experiment was conducted, using *Qualtrics* website. In total, 39 people participated in the version without the memory task, and 61 people participated in the version with the memory task.

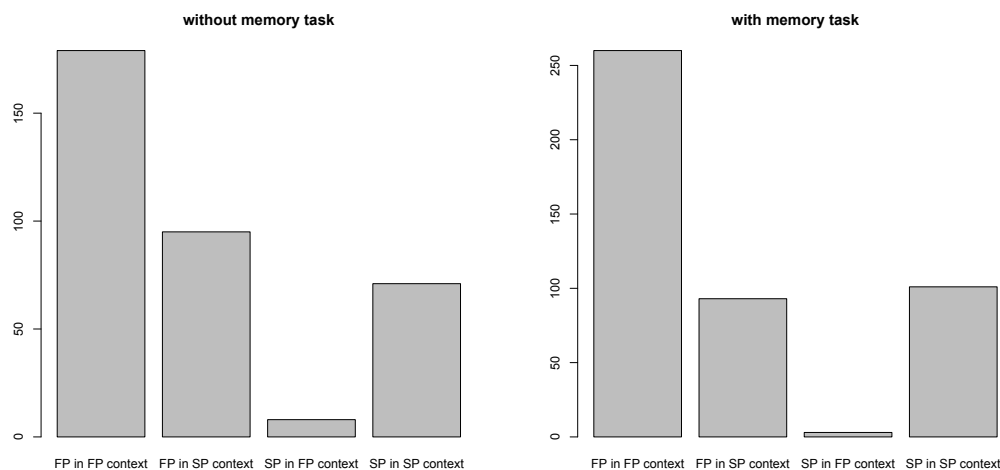
Task 1: Without memory task In this task, the participants read the description of two men/women (depending on the gender of the participant). The participants' task was to indicate which man/woman they would rather be, by completing the sentence. An example is shown below.

- (4) *There are two men. A movie frightens one man, and a movie uplifts the other man. Which man would you rather be? Please start the response with "I'd rather be the man".*

There were 24 items in this survey, 12 to elicit a Relative Clause with a gap in the subject position (Subject Relatives; henceforth SR), 12 to elicit a Relative Clause with a gap in the object position (Object Relatives; henceforth OR). Six of the 12 OR eliciting items had two different subjects (agents), and the other six had two different verbs (as in (4)), to provide the equal number of items where short and full passives can be produced.

Task 2: With the memory recall task The relative clause production part of the experiment was identical to Task 1. In addition, the participant was given 2 to 5 digit numbers to memorize before each item, and after completing the relative clause, they were asked to type in the memorized digit backwards.

Result As can be seen, the participants for the Task 1 elicited more full passives overall, and more importantly, more Full passives in the context where short passives are expected. When the Memory task is added to the experiment, on the other hand, the participants are more likely to produce the short passives in the same context. The ratios between full and short passives in two tasks are not statistically different, however (Fisher's Exact Test: $p=0.09051$).



Discussion The ratios of the expected responses (Full passives full passive contexts, short passives in short passive contexts) did not change (Fisher's Exact Test: $p=0.9273$), which means that what changed, when the memory task was added, was the use of full passives in the short passive contexts. This, we find, to be promising direction and explanation.

Further Plans We plan to change the tasks in the following fashion:

- (5) a. longer referring expressions (e.g., rather than *grandfather*, a *scruffy/blond grandfather*)
 b. the stimuli be given in audio format (to better mirror the original study by Yatsushiro & Sauerland)