

Communicative intentions influence memory for conversations

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Much of what we learn in life comes from communicating with others in conversation. However, existing research discloses a potential asymmetry that might hinder learning from conversation: speakers remember their own utterances better than those of their interlocutors^{1,2}. This speaker advantage is partly explained by two factors: generating words and producing them aloud both have beneficial effects on memory. However, other research shows that the speaker advantage sometimes does not obtain when tests involve naturalistic dialogue³.

This discrepancy could stem from the fact that conversations in experiments and in everyday life have many key differences. One that we explore in the current work is communicative intention. In experiments, people are often limited to simple tasks like describing pictures or giving directions but in everyday life, people often have the conversational goal of providing information or seeking information from others. This is important because when seeking information from someone else that person's speech is put in focus, and existing research shows a memory benefit for focused information⁴. In the present study, we simultaneously manipulate production and communicative intention to discover their effects on memory for conversations.

This experiment uses a study-test paradigm. At study, two participants take turns asking and answering questions about the location of three objects on the screen (see Figure 1 for an example of a trial). Of the three objects, one is used in the question, one is used in the answer, and one is not mentioned at all. Participants play the role of the information-seeker (asking a question) or of the information-giver (giving an answer) based on an instruction screen at the beginning of each trial. In an online Yes/No recognition memory test conducted a day later, participants see the names of all the objects they saw at study intermixed with an equal number of new words (total $n = 384$). Old and new items are rotated across lists.

We expected both production and communicative intention to influence memory. We predicted that participants would remember the words they said themselves better than the words their interlocutors said because of the benefits of producing language on memory. Importantly, we also predicted that participants in the information-seeker role would also have good memory for the objects they did not name when they were answers to their questions. That is because seeking information assigns focus to the answer, thus enhancing the answer's memorability.

Our planned analysis is a logistic mixed-effects regression testing the effects of production (self- vs. other-produced) and communicative intention (information-seeker vs. information-giver) on yes/no responses. A power analysis using simulated data showed that we need 96 participants (in 48 pairs) to have at least 80% power to observe the effects of interest. At the moment, data from 26 participants (13 pairs) have been collected.

Preliminary results confirm our predictions. Self-produced speech was remembered better than other-produced speech ($\beta = -1.32, z = -15.69, p < 0.001, 95\% CI = -1.49, -1.16$). More importantly, production interacted with communicative intention, such that information-seekers remembered the answers to their questions better than information-givers remembered the questions they had been asked ($\beta = 0.93, z = 5.60, p < 0.001, 95\% CI = 0.60, 1.25$). A visualisation of the data can be seen in Figure 2.

This work helps to elucidate further the factors affecting memory for conversations. Generating words and saying them aloud is an important factor in conversational memory. Factors like focus, arising through communicative intentions, also increase memorability for comprehended speech. This shows how properties of conversations influence what we remember from each other.

References:

- [1] Yoon, Benjamin, & Brown-Schmidt. (2016). DOI: 10.1016/j.cognition.2016.05.011
- [2] McKinley, Brown-Schmidt & Benjamin. (2017). DOI: 10.3758/s13421-017-0730-3
- [3] Knutsen & LeBigot. (2014). DOI: 10.3758/s13423-014-0620-7
- [4] Sturt, Sanford, Stewart, & Dawydiak. (2004). DOI: 10.3758/BF03196716

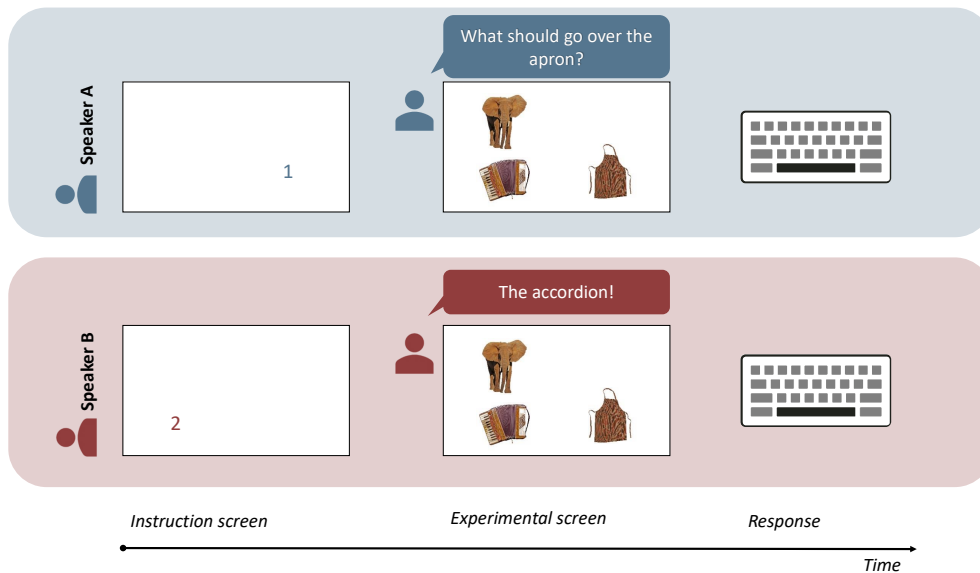


Figure 1: Example of a trial in the study phase.

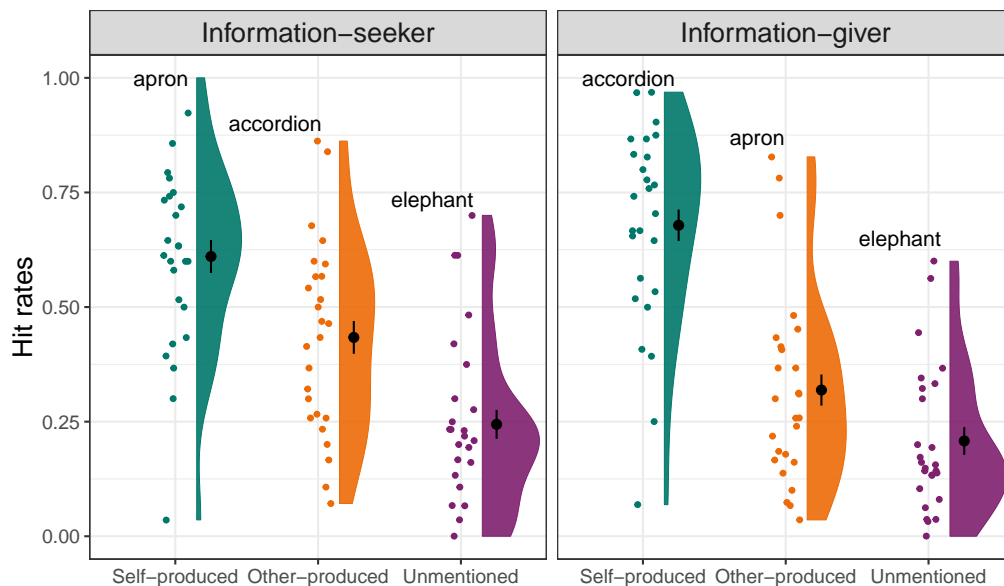


Figure 2: Hit rates in the memory task to each item condition split by the speaker's communicative intention.