

Common Ground and Redundancy in Communicative Interaction

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Background

Proposed Experiment

Pilot Data

- Communicative signals tend to simplify through repeated interaction through the mechanism of common ground—the shared body of beliefs between speakers.
- Complexity is inversely related to common ground and is further modulated by noise and time pressures, suggesting that it arises as an optimization between production and perception costs.
- Gricean pragmatics proposes that interlocutors behave as if signals are maximally informative. Thus, conversationalists should be sensitive to complexity and potentially treat signal complexity as meaningful.
- We designed an experiment to investigate this.

Research Question

How is a sudden increase in complexity of communication interpreted?

- Pictionary-style game**
- One participant will draw (**Drawer**) and the other will match the drawing to a referent (**Matcher**). Drawer and matcher pairs switch after each round (Figure 1).

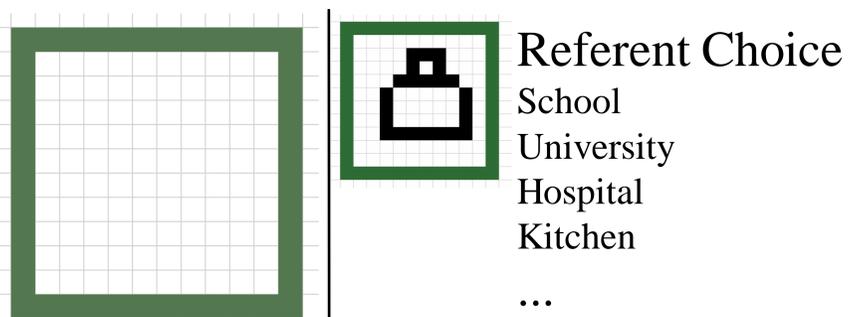
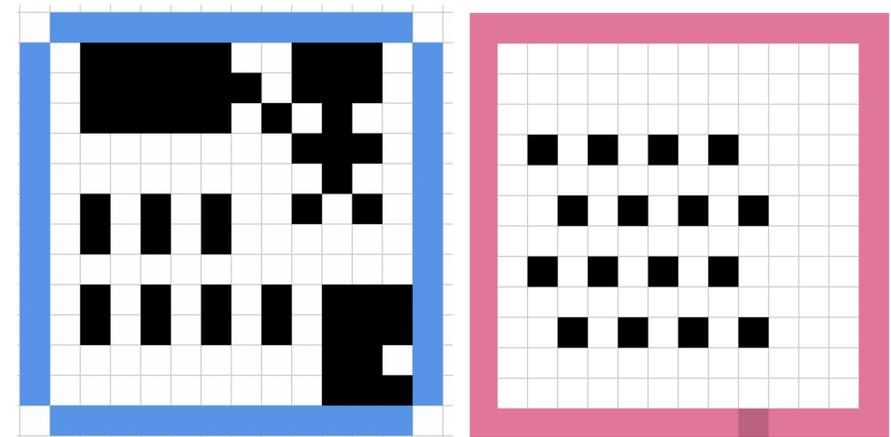


Figure 1—Blank grid that drawer edits and transmits (left). An example of a matcher's screen (right).

- The set of possible referent choices contains structured sets of hypernyms and hyponyms.
- Complexity substitution:** In the late game, the Drawer's image will be replaced with one of their earlier, more complex, images.
- Noise condition:** with some probability, filled in cells will not be transmitted

- Four trials pilots, ranging from 16-44 rounds, have been conducted. The first three trials were done with lab members and the fourth trial was done with unrelated participants, each trial lasting anywhere from 16 to 44 rounds.



- Figure 2—Taken from pilot #3, round 9 (left) and round 42 (right). Round 42 is the third occurrence of referent. Drawings depict the referent **classroom** and are representative of the type and level of simplification observed.

Measures

- Which referents do people choose after substitution?
- Is there a choice difference between noise/no noise condition?
- Across all conditions, is there a difference in reaction time?