Design for a ‘Where the truth lies” experiment

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Background

This is a replication attempt of Experiment 1 by Ransom et al. (2019). We are interested in how communication works, how interlocutors interact and respond to each other. Many research projects such as this one from Ransom et. al, “Sampling Assumptions in Inductive Generalization”, Navarro et al. (2012), “How do people learn from negative evidence...?, Voorspoels et. al (2015) and “Strategies of Deception...” Franke et. al (2020) try to understand communication, how reasoning works and how it is developed. Efficient communication leads to gaps between the message itself and the meaning of it, if you try to understand how the person you are communicating with thinks you will probably fill these gaps which is also called meta-inferential reasoning. Every person reasons differently, which means there are different patterns of behaviour and therefore different assumptions about the communicative intent of the sender of a message. We are curious about how people reason in cases where the sender and receiver of a message don’t have the same goal and therefore, how deception influences communication and which models of reasoning people use, if they take the sender's intent fully into account or if they mostly reason based on their prior world-knowledge.

Hypotheses

We are concerned with some predictions from the theory of deceptive communications as a receiver. To show this, we are going to address these hypotheses:

Our Hypotheses are:
General Hypothesis:

- We assume that participants reason differently depending on the condition (“teammate”, “opponent”) and the shown evidence maps (“helpful”, “misleading”, “uninformative”)

Specific Hypotheses:

- Given the misleading evidence participants choose the Lure map more often in the opponent than in the teammate condition.
- Given the uninformative evidence participants choose the Lure map more often in the opponent than in the teammate condition.

Design

Materials. We will use pictures that we have created ourselves, that are altered versions of the pictures shown in Ransom et al. (2019). There are 42 images. 24 of

those images are the shown map, and the remaining 18 are evidence maps. The images consist of a 18x18 grid, in which points or areas are marked. In the shown maps, this grid is filled with yellow squares indicating the map space. In the evidence maps, blue dots are placed on the grid. The blue dots on the evidence map are then used by the viewer to choose a shown map. There are three types of evidence maps, uninformative, misleading and helpful maps. They always are true for the “true” shown map. Also, there are three types of shown maps: decoy, lure and truth. The decoy maps are randomly chosen, but they still fit the uninformative evidence map. The lure maps work together with the misleading evidence map to deceive the participant. The truth map is the map, which is the right option for all the evidence maps, as it is the only one that fits all the different evidence maps. The uninformative maps show dots in a pattern which could be fitting for all maps. The misleading maps are leading to “lure” shown maps, which are used to deceive the participant. The helpful maps are only true for the true shown map. They do not fit on the others. The row labels indicate the percentage of shown maps ruled out by the misleading evidence map.
The readers can access our materials by sending us an e-mail and we will forward the experimental materials.

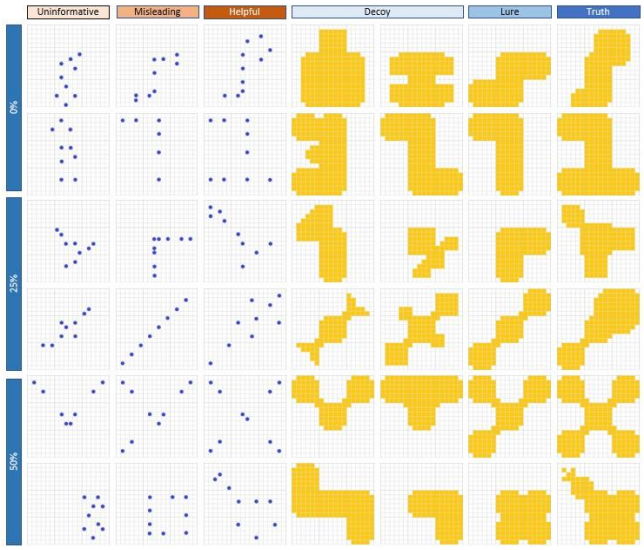

Fig 1: Full set of experimental stimuli , labelled

Procedure. The Experiment consist of ten parts:

1. General instructions for the experiment

2. Instructions for the practice trials of the first condition, which is chosen randomly by a coin flip to be either teammate or opponent
3. The practice trial for the first condition.
4. Instructions for the practice trials of the opposite condition, so if the first condition was teammate, this condition is opponent and vice versa
5. The practice trial for the opposite condition
6. Instructions for the main trials of the opposite condition
7. The main trial for the opposite condition
8. Instructions for the main trial of the first condition
9. The main trial for the first condition
10. The post-experiment questionnaire

We start by showing the participants the general instructions for this experiment. A condition is chosen via a coin flip, we will refer to this as the chosen condition. Then we show them the instructions for the chosen condition practice trial. This includes the explanation of both condition groups and the statement, that no false information will be provided. This is followed by the chosen condition practice trials. These consist of one evidence map and 4 shown maps that depict the common hypothesis space. Now, the practice instructions for the other condition are shown. These are basically the same as for the chosen condition. They only differ in the condition shown. After this, the instructions for the first main trial block are presented. This is followed by 18 stimuli presented for the first main trial. Now, the instructions for the second part of the trials are shown. The last part of the experiment is the second main block, which also consists of 18 stimuli presented for the other condition. We follow this by a quick survey on the participants and the final results.