

# Exclusive 'Or': what matters?

Our goal is to get insights into the factors that determine the strength/availability of exclusive readings of 'or'. Textbook accounts (Gricean, neo-Gricean or grammatical) see a role for relevance, and Gricean accounts would also predict that presumptions about the speaker's competence matter. Another possibility is that exclusive readings arise from exhaustifying each individual disjunct. Integrative or holistic approaches (that could be built on top of Gricean, grammaticalist or exhaustification-based accounts) would also acknowledge a role of prior expectations.

Much theoretical work tacitly assumes that exclusive readings of 'or' are scalar implicatures, arising from comparison of 'or' with 'and' and that exclusive readings are readily available. We want to put this received wisdom to the test. Our working hypothesis, to be tested here, is that various contextual factors matter to the availability of exclusive readings.

Previous experimental work on exclusive 'or' has almost entirely (check this) focused on recording truth-judgements of disjunctive sentences with critical conditions comprised of situations in which a corresponding conjunctive sentence would be true. This is an arguably unnaturally artificial test of disjunctive sentences, as they usually suggest some form of speaker uncertainty. We would therefore like to present short contexts for utterances of disjunction so as to manipulate different factors that different theoretical positions would emphasize as more or less relevant:

1. **relevance** : how likely is it that the listener is interested in whether both disjuncts are true
2. **competence** : how likely is it that the speaker knows whether both disjuncts are true
3. **prior** : how likely is it *a priori* (from the point of view of the interpreter/observer of a dialogue) that given that one disjunct is true, the other is also true
4. **exhaustivity** : how strongly would an utterance of just one disjunct convey that the other disjunct is not true

## Experiment 1: testing items and dependent measures

### How does the material look like?

We consider 16 different items, as given in XOR\_items.js. An **item** consists of 7 different pieces of important information:

1. a **name**
2. a **pre-classification** into high/low relevance/competence/prior
3. a **background story**
4. three types of **utterances**:
  1. "or"

2. "1st disjunct only"
3. "2nd disjunct only"
5. four **factor questions**:
  1. relevance
  2. competence
  3. prior base rate
  4. exhaustive reading of single disjuncts
    - prior and exhaustive conditions come in pairs: one for each disjunct
6. two **xor questions**:
  1. whether xor state is likely given utterance
  2. whether xor reading is likely intended by utterance
7. three **control questions** with different expected answers:
  1. true
  2. false
  3. uncertain

To begin with, we are interested only in "or" utterances and ignore factor question "exhaustivity". We also ignore, the second XOR question (about intended meaning) for the time being. There are then 16 **items**, each with 4 **relevant questions** (three factor questions, one xor question), making a total of  $16 \times 4 = 64$  different **conditions** that we would like to test in Experiment 1.

## Displays in single trials

A **trial** consists of an item from our list of 16, together with one random control question and one relevant question ('relevance', 'prior', 'competence' or 'xor') for that item.

**TODO: make sure all control questions are also intelligible without utterance!**

Concretely: on each trial subjects see the following pieces of information, all center screen, horizontally arranged and set apart from each other:

1. background story
2. 'or' utterance (unless the relevant question is a prior question)
3. a block consisting of
  1. a question to answer
  2. a horizontal slider with labels *disagree* and *agree*
  3. a button "next" (that only works if the slider has been used, as usual)

The first question to be displayed is a random control question (for the relevant item). If that is answered, it disappears and a random test question appears (relevance, competence, prior or 'xor').

In case the trial involves a 'prior' question (that must therefore be determined at the outset!), we show no 'or' utterance, and simply leave the space blank, where that would normally appear.

Moreover, 'prior' questions come in pairs, and we want to ask both 'prior' questions, one after another. So, all trials contain 2 questions (control and test), except the 'prior' trials, which contain 3 subsequent questions (control, one prior, another prior).

## Procedure

All 16 items also have a **type** in XOR\_items.js, which is just coding our expectations about the answers to the factor questions. There are 8 different item types, and 2 exemplars per item type.

Each subject sees 8 items, each one of a different type. (Random sample of each type.)

Each subject answers each relevant question (relevance, competence, prior, xor) for exactly two of the 8 items, but never twice in immediate succession (bogo fun).

## Participants

We want to test 160 subjects, and we will pay them X.

## Coding of results

All slider-bar ratings will be coded as reals in  $[0;1]$ , as usual.

Recording of reaction times is nice, but not necessary if painful to implement.

Please output all relevant information about each item (name, type, relevance, competence, prior) for convenience.