

How do learners extract statistical information about word-meaning distributions from linguistic input? A research plan

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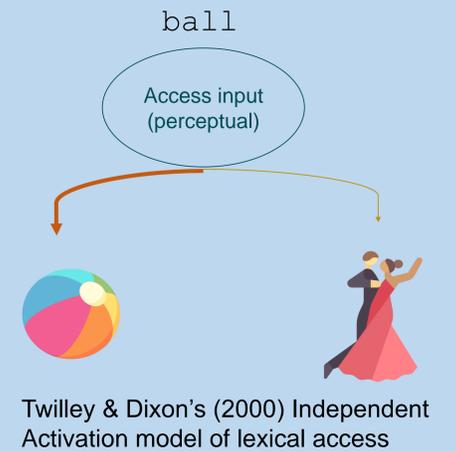
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BACKGROUND

- *Statistical learning* = ability to discover patterns in the input based on its statistical properties
- Proposed as a central mechanism in language learning and processing (e.g. Gerken et al., 2005; Gomez & Lakusta, 2004; Pacton et al., 2001; Saffran, 2003; Saffran et al., 1996), including the learning of word meanings (Yu & Smith, 2011)
- Not only word form, but also word *meaning* frequency influences processing (see Rodd, 2020 for a review)
- Statistical information about word-meaning distributions in the input is used a heuristic: encounters with each meaning shift activation weights so one meaning may over time become dominant, and thus more readily accessible (Twillley & Dixon, 2000; Rodd, 2020)
- These dominance-based heuristics play a role in adult processing of ambiguous words, but it is less clear how they develop:



How do learners extract statistical information about the distribution of word meanings from linguistic input?

METHODS

Participants

Adults aged 18-40
Monolingual English

bilo



Materials

10 disyllabic pseudowords

Associated with either a single meaning (**unambiguous** words) or two semantically unrelated meanings (homonyms), e.g. "bilo" = train/tree

Training

Pseudowords embedded in high-cloze sentences with a fixed word-meaning frequency distribution across the item set (**dominant** : **subordinate** meaning)

- Different distribution per experiment (e.g. 50:50, 80:20), depending on piloting

He ran down the platform as quickly as he could but he still missed his **bilo**.

The squirrels hurried through the forest to find the tallest **bilo** to climb on.

Tests

- Acceptability judgement (implicit)
- Speeded semantic relatedness (implicit)
- Neutral context meaning definition (explicit)
- Multiple-choice meaning selection (explicit)

As he had forgotten to buy a ticket, he wasn't allowed to get on the **bilo** in the end.

accept

don't accept



Look at the **bilo**

Which meaning matches the word: **bilo**
train cat mug

HYPOTHESES AND EXPECTED RESULTS

If learners are sensitive to ambiguity in the words they learn, they should experience *competition* between meaning representations:

- **unambiguous** words > *ambiguous* words

If learners are sensitive to statistical information about word meanings, they should be able to *access dominant meanings more readily* compared to subordinate meanings:

- **dominant** meanings > **subordinate** meanings

