# The Adaptation of Predictive Processing to Speaker Reliability

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#### **Research Question**

Does the rate of prediction drop when listeners' predictions are frequently disconfirmed by an unreliable speaker?

#### Background

#### Semantic prediction based on sentential constraint:

- Sentence frames that highly constrain the final target noun
- Reliable speaker: produces highly expected target noun
- Unreliable speaker: produces unexpected but still semantically plausible target noun
- Mixed results [1-5]

#### **Prosodic / pragmatic prediction:**

- Provides a context that favors certain stress patterns or the use of (over)informative adjectives
- Reliable speaker: Felicitous stress / Informative adjective
- Unreliable speaker: Unfelicitous prosody / Overinformative
- Generally found adaptation effects [6-8]

#### A methodological caveat:

- All studies above manipulated speaker reliability between subjects or sometimes between blocks (except [6])
- When listeners adapt, are they adapting to the speaker or the stimuli? Needs an **interleaved** design!

#### **Hypotheses**

#### Hypothesis 0:

• Listeners do not adapt to speaker reliability

#### Hypothesis 1a:

• Listeners "dial down" prediction for speakers that they consider unreliable

#### Hypothesis 1b:

• Listeners adapt to the predictability of linguistic input (1a and 1b are not mutually exclusive.)

#### Method

### Visual world eye-tracking experiment with a withinparticipants Speaker Reliability manipulation:

- Reliable speaker: 100% expected sentences
- Unreliable speaker: 0% expected sentences

80 trials, 40 from each speaker, interleaved in Exp 1 and 2

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[5] van Wonderen & Nieuwland 2023 JML
[6] Roettger & Rimland 2020 Cognition
[7] Grodner & Sedivy 2011
[8] Nakamura et al. 2022 LCN