**Introduction**

- The distribution of syntactic boundaries and intonational boundaries are correlated (Cooper & Paccia-Cooper, 1980; Ferreira, 1993; Watson & Gibson, 2004).
- Listeners use boundaries to decipher the linguistic structure of a message (e.g. Snedeker & Trueswell, 2003).
- However, prosody has its own representation that must be parsed. What types of information affect how prosodic information is structured?
- Recent research has shown that syntactic context (not acoustic cues) is the best predictor of whether a boundary is perceived in a speech corpus (Cole, Mo, & Baek, 2010).
- We investigate whether expectations about likely locations for boundaries influence listeners’ perception.

**Hypotheses**

**Hypothesis 1**
- Perception of boundaries is based on acoustic cues alone.

**Hypothesis 2**
- Perception of boundaries is influenced by sentences’ syntactic structure.

**Experiment 1**

**Participants**
- 18 monolingual American English speakers from Amazon Mechanical Turk.

**Conditions**
- Boundary Spectrum: 1-9
- Boundary Position: Natural vs. Unnatural

**Materials**
- Recorded 28 sentences:
  - Put the big bowl on the tray.
  - Put the bowl that’s big on the tray.
- Each was produced once with a boundary at a syntactically expected location, and once with a boundary at a syntactically unexpected location:
  - Natural: Put the big bowl | on the tray.
  - Unnatural: Put the big | bowl on the tray.
- We used the average word duration, pause duration, and F0 contours from these sentences as the endpoints of a spectrum that varied in f’s cues to a boundary.
- 272 recordings in total.

**Methods**
- Survey posted on Amazon Mechanical Turk.
- Subjects heard examples of naturally produced boundaries during instruction phase.
- For each trial, participants heard a recording and were asked after what words they heard boundaries (Mo, Cole, & Lee, 2008).
- Every subject made judgements on all 272 recordings in random order.
- Not a forced choice task.

**Results**

**Conclusions**

- Listeners’ perception of intonational boundaries is guided by their expectations about where boundaries should occur.
- Whereas boundaries are often thought of as cues that aid syntactic parsing, the data suggest that this relationship is bidirectional.
- These results have important implications for human labeling as a tool for coding prosody: when labelers mark a boundary, is the label driven by the acoustic input or is it driven by the labelers’ expectations?

**References**


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