English Mirative Strategies
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Research Questions: i. Can the contribution of discourse particles and intonation be unified by reference to speaker expectation? ii. How are the meanings of discourse particle and prosodic contours composed?

1. A starting point
Discourse particles and intonation

Discourse particles signal a change in a speaker’s knowledge state, and help participants navigate a discourse (Sivin, 1987). They can, for example, mark acknowledgment, confusion, or signal a change in topic. The performance of a discourse particle bears heavily on its interpretation. We ask: How does the pragmatic interpretation of discourse particles interact with intonation?

1.1 Restricting the Space
Three discourse particles:

- **Oh** — signals acknowledgement, speaker undergoes a “change-of-state” (Aijmer, 2002, Gunlogson 2008)
- **Huh** — speaker experiences something unexpected
- **What** — wh-word with dual use, registering expectation violation

Overlapping distributions:

(1) A: The server is down.
   B: Oh. / Huh. / What. No it isn’t.
(2) Looks outside to see that it has started to rain. Says to herself:
   A: #Oh? / #Huh? / #What? It’s raining?
   B: Julie just got a puppy.
   C: Oh! / Huh! / #What! She must be so happy!

1.2 Sentence-Level Prosodic Contours

**Claim:** Contours contribute not-at-issue commentary on how the speaker feels the discourse should be navigated:

- Neutral, falling H*L%: high expectation that the contribution is true
- Excited, High-falling H*L%: high expectation that the contribution is true with added pragmatic effect of excitement or surprise
- Surprise-Redundancy (SRC), falling (H-)*H*L% (Ladd, 1980): speaker is surprised/believes the listener “should have known” a salient proposition

**SUMMARY/UPSHOT:** Impressionistically, differences in discourse particle usage or prosodic tune can be the difference between a discourse-incoherent utterance and a felicitous sentence. The experiment presented below attempts to outline a methodology for testing prosodic judgements, as well as test the felicity of three discourse particles in English in varying prosodic environments.

3. Experiment I
Stimuli and Design

**Question:** Can listeners reliably perceive distinct speaker propositional attitudes from particle and contour combinations?

3 x 3 x 3 design, crossing factors:

<table>
<thead>
<tr>
<th>PARTICLE</th>
<th>PARTICLE CONTOUR</th>
<th>SENTENCE CONTOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>[oh, huh, what]</td>
<td>[neutral, excited, SRC]</td>
<td>[neutral, excited, SRC]</td>
</tr>
</tbody>
</table>

A sample item set with oh, presented only auditorily*:

a. **Oh/Oh/Oh?** Another pile of papers to grade. [neutral]

b. **Oh/Oh/Oh?** A package arrived for you! [excited]

c. **Oh/Oh/Oh?** You don’t know how to tango? [SRC]

- 670 English native speakers, recruited via Mechanical Turk. Each heard 2 non-identical clips, and answered 4 questions per recording, including how natural the clips sounded, and the perceived emotion of the speaker.
- Stimuli were produced by a single speaker & controlled for similar acoustic properties (pitch, height, contour)

3.1 Results, cont.
Emotions categorizations

**3.3 Conclusions**

- Participants identify the three prosodic contours as distinct.
- Lack of an interaction between PARTICLE and PARTICLE CONTOUR suggests that these effects may be additive.
- SRC and excited contours shift the likelihood for the emotion rating toward a Surprise categorization.

4. Future Work
Experiments In Progress

**Experiment II:** Controlling for Context

The pilot study looked at the effects these contours had in neutral contexts; this study presents the same contours and particles, but controls for cases of direct and indirect contradiction.

**Hypothesis:** huh will be rated lower than oh when paired with a neutral or excited contours.

**Experiment III:** Pulling apart Surprise & Redundancy

This experiment tests the hypothesis that pitch distinguishes the pragmatic effects of the SRC: higher pitch (relative to a single speaker) yields an effect of surprise, lower pitch leads a listener to interpret the redundancy or “should have known” reading.

**References:**


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