The *eel was on the Table:
Revisiting the Role of Subsequent Context in Spoken Word Recognition
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1. Introduction
- Ambiguities frequently occur in speech, as when extraneous noise (*) masks a phoneme in a word (e.g., noise covers "w" in "wing.")
- Subsequent context can resolve the ambiguity (Warren & Warren, 1970)
  
  The *ing had feathers.
- Contextual influences weaken as the distance between the ambiguity and the disambiguating context increases (Connine et al., 1991; Samuel, 1990).
- What causes contextual influences to weaken as distance increases?
  - Time between wing and feathers
  - Number of syllables between wing and feathers

2. Experiment 1 – Replication of Samuel (1990)

Distance manipulation
- Near condition = The *ing had feathers.
- Far condition = The *ing had an exquisite set of feathers.

Context manipulation
- Congruent condition = The wing had feathers.
- Incongruent condition = The wing had diamonds.

Phonemic Restoration Paradigm

Participants made forced-choice ("added" or "replaced") decisions after hearing sentence.

If context influences ambiguity resolution, there should be more added responses when the context is congruent than incongruent (i.e., greater restoration), regardless if the phoneme (e.g., w) is present.

3. Experiment 1 Results
- Large effect of congruency (.30). More hits to congruent than incongruent sentences shows context biased responding.
- Very small (.03) but reliable effect of distance. More hits to near than far context.
- No reliable variation in false alarms
- Is the distance effect due to duration or number of syllables?

4. Experiment 2 – Duration Varied

Short condition (609 ms; underlined region time compressed): The *ing had an exquisite set of feathers.

Long condition (1113 ms): The *ing had an exquisite set of feathers.
- No effect of duration
- Effect of congruency (.20)
- Use of a longer duration (1900 ms) yielded the same outcome

5. Experiment 3 – Number of Syllables Varied

One-syllable condition (underlined region time expanded to equate duration): The *ing had feathers.

Many-syllable condition: The *ing had an exquisite set of feathers.
- Reliable effect of number of syllables (.08)
- Effect of congruency (.16)

6. Conclusions
- Influence of following context on word disambiguation diminishes as a function of the number of intervening syllables, not duration
- Only when acoustic evidence of the phoneme is present (hits) does context selectively bias rate of restoration. No such bias occurs when evidence of the phoneme is absent (false alarms).
- Two processing decisions must occur to explain the results
  - Signal-based decision: Overall higher hit rates than false alarm rates indicate that the phonetic evidence signaling the phoneme affects responding
  - Post-lexical decision: Congruency had an independent and selective effect on responding, appearing only when the phoneme was present

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