**INTRODUCTION**

What is the relationship between Semantic Relatedness and Semantic Integration—two overlapping meaning-based factors affecting S-V agreement?

Bock & Miller (1991) established the mismatch effect: Participants produced more subject-verb agreement errors while making sentence completions for preambles containing a singular head noun (HN) paired with a plural local noun (LN) relative to corresponding singular HN-singular LN controls.

Additional studies have increased the mismatch effect by manipulating conceptual properties unrelated to number.

Semantic Relatedness

Barker, Nicol, & Garrett (2001) increased the mismatch effect by manipulating semantic relatedness, a general meaning-based relationship between two words irrespective of context.

Semantic Integration

Solomon & Pearlmutter (2004) increased the mismatch effect by manipulating semantic integration, operationally defined as the degree to which constituent elements of a to-be-uttered phrase are tightly linked at the conceptual level, where the context in which the words occurs is of critical importance.

Relatedness and Integration:

- Are meaning-based properties not connected to number meaning
- Produce similar effects on agreement (possibly via the same mechanisms)
- Have not been separately controlled for in previous studies:
  - No control for semantic integration in Barker et al.
  - Implicit control for semantic relatedness in four of five Solomon & Pearlmutter experiments, but overall, relatedness across experiments was uncontrolled

**Goals**

- Investigate the relationship between relatedness and integration, manipulating each factor independently
- Investigate potential component aspects of relatedness

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**EXPERIMENT 1**

**Method**

**Materials**

24 NP + PP sentence preambles in eight versions, crossing local noun number (singular vs. plural), semantic relatedness (related vs. unrelated), and semantic integration (integrated vs. unintegrated):

**Results & Discussion**

- Coordinating preambles were rated as related (1 to 7, 7 = very related) and integration (1 to 7, tightly linked);
- Association scores reflect the proportion of responses for LN s given to response to HN prompts out of two choices for each condition.

Ns, Adjs, and Ps matched for length in characters, phonemes, syllables, and for frequency 72 filler preambles (including 24 Plural Head NP + PP preambles)

**Participants**

269 native-English speakers

**Procedure**

Participants read visually presented preambles aloud and provided a sentence completion.

Responses were recorded and transcribed.

**Scoring**

- Correct-
  - Correct preamble and appropriately inflected verb
- Error-
  - Same as Correct but with agreement error
  - Other (e.g., preamble error, use of uninflected verb)

Subject-verb agreement error rate = Error/(Error + Correct)

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**EXPERIMENT 2**

**Are different semantic relationships similarly capable of increasing mismatch effects?**

- Different types of semantic relationships have been manipulated in priming studies (Lucas, 2000); effect sizes vary as a function of relationship type, suggesting possible differences in error-inducing abilities.

Experiment 2 manipulated various semantic relationships based on interesting contrasts.

**Condition**

- Coordinate = Non-Coordinate
  - In contrast to Barker et al.
  - Attribute = Associate
  - Attribute > Unrelated
  - Associate > Unrelated

**Procedure & Scoring**

- Same as Experiment 1

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**GENERAL DISCUSSION**

- Category coordinate relations appear not to increase mismatch effects in Experiment 2, contra Barker et al.
  - Coordinate items in Barker et al. may have also been associated, integrated, or confounded with alternative factors.
  - Attribute relations may account for part of the effect of relatedness on agreement in Experiment 1, as well as part of the reported effects of integration in previous research.
  - Likewise, Experiment 2 shows that association in the absence of other kinds of semantic relationships may be sufficient on its own to increase the mismatch effect.

**Limitations & Future Directions**

- Weak manipulation of integration in Experiment 1; future studies could attempt a stronger manipulation.
- Attribute effect in Experiment 1 and 2 may be driven, in part, by association; additional analyses partiauling the effects of each type of relationship on the others are planned.
- A separate study is assessing applicability of timing-based explanation for effects of relatedness, consistent with Solomon & Pearlmutter, who proposed that integration speeds up the activation of LN s in a to-be-uttered phrase. This mechanism parallels explanations for priming effects of relatedness, which hinge on “boosted” activation for targets, given a related prime.

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**REFERENCES & ACKNOWLEDGMENTS**


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**Procedure & Scoring:**

- Same as Experiment 1