How Word Class Affects the Identification of a New Word's Meaning

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INTRODUCTION

- Most new words are learned incidentally by using surrounding linguistic context to infer meaning[1]
- Word class (i.e., noun vs. verb) might influence success in meaning identification
  - Differences in semantic organization: nouns have a hierarchical semantic organization, whereas verbs have a matrix-like organization[2]
  - Variability in word meaning: verb meanings vary more than nouns[3]

PURPOSE

Examine the types of errors made during an incidental semantic learning task to better understand how word class differences affect meaning identification

METHODS

Participants
- Monolingual English speakers with normal hearing and no history of language delays or disorders
- 61 adults, ages 18-29
  - Verb: $n = 26$, $M_{age} = 20;11$
  - Noun: $n = 35$, $M_{age} = 21;3$

Incidental Semantic Learning Task
- 100 sets of three sentences ending with a nonword that shared meaning with a common noun or verb
- Each sentence set was followed by the questions: "Does the word have meaning? If so, what is it?"
- Each participant completed two conditions:

1. **Meaning+** (50 sets):
   - Meaning of the nonword was consistent across all three sentences of a set
   - Cloze probability of each sentence increased across set

2. **Meaning-** (50 sets):
   - Meaning of the nonword varied across all three sentences of a set
   - Each sentence had low cloze probability

ERROR CODING

- Incorrect responses for the nonword's meaning were coded in two different ways:
  - **Semantic Errors**: How the meaning provided was semantically-related to the target meaning (Meaning+ only)
  - **Contextual Errors**: Which sentence(s) from the set that the meaning fit in best (Meaning- only)

Meaning+ Sentence Set Example
1. To stay healthy you should *lesh*.
2. In gym class, our teacher made us *lesh*.
3. In track you have to *lesh*.

(Correct response = *run*)

Semantic Code	Example
Synonym	*sprint*
Hyper/hyponym	*exercise*
Opposite	*rest*
Out-of-category	*eat*
Within-category	*walk*
No meaning	*none*

Table 1. Example Responses of Semantic Codes for Meaning+ Sets

Meaning- Sentence Set Example
1. He spilled food on his *goot*.
2. Before bed, I have to take a *goot*.
3. When I was a baby, that was my *goot*.

(Correct response = "The word has no meaning")

Contextual Code	Example
Does not fit in any sentence	*dark*
Fits best in 1st sentence	*pants*
Fits best in 2nd sentence	*shower*
Fits best in 3rd sentence	*nickname*
Fits well in 2+ sentences	*toy*
Most similar to nonword	*boot*

Table 2. Example Responses of Contextual Codes for Meaning- Sets

RESULTS

	Verbs		Nouns	
Meaning+	30.77%		23.26%	
	Incorrect Meaning: 17.31%	No Meaning: 13.46%	Incorrect Meaning: 11.43%	No Meaning: 11.83%
Meaning- (Incorrect Meaning)	19.46%		10.51%	

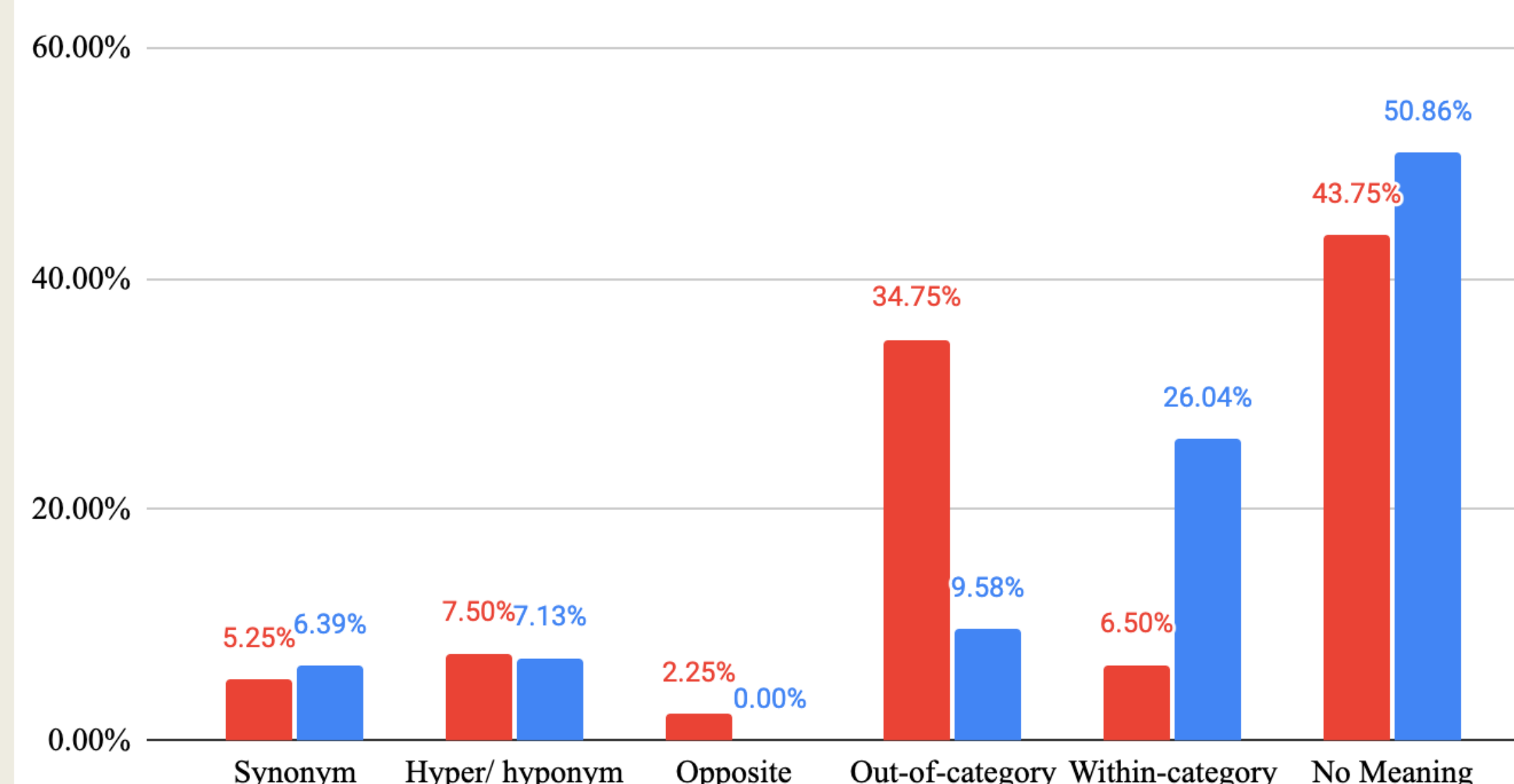Table 3. Percentage of Total Errors by Word Class
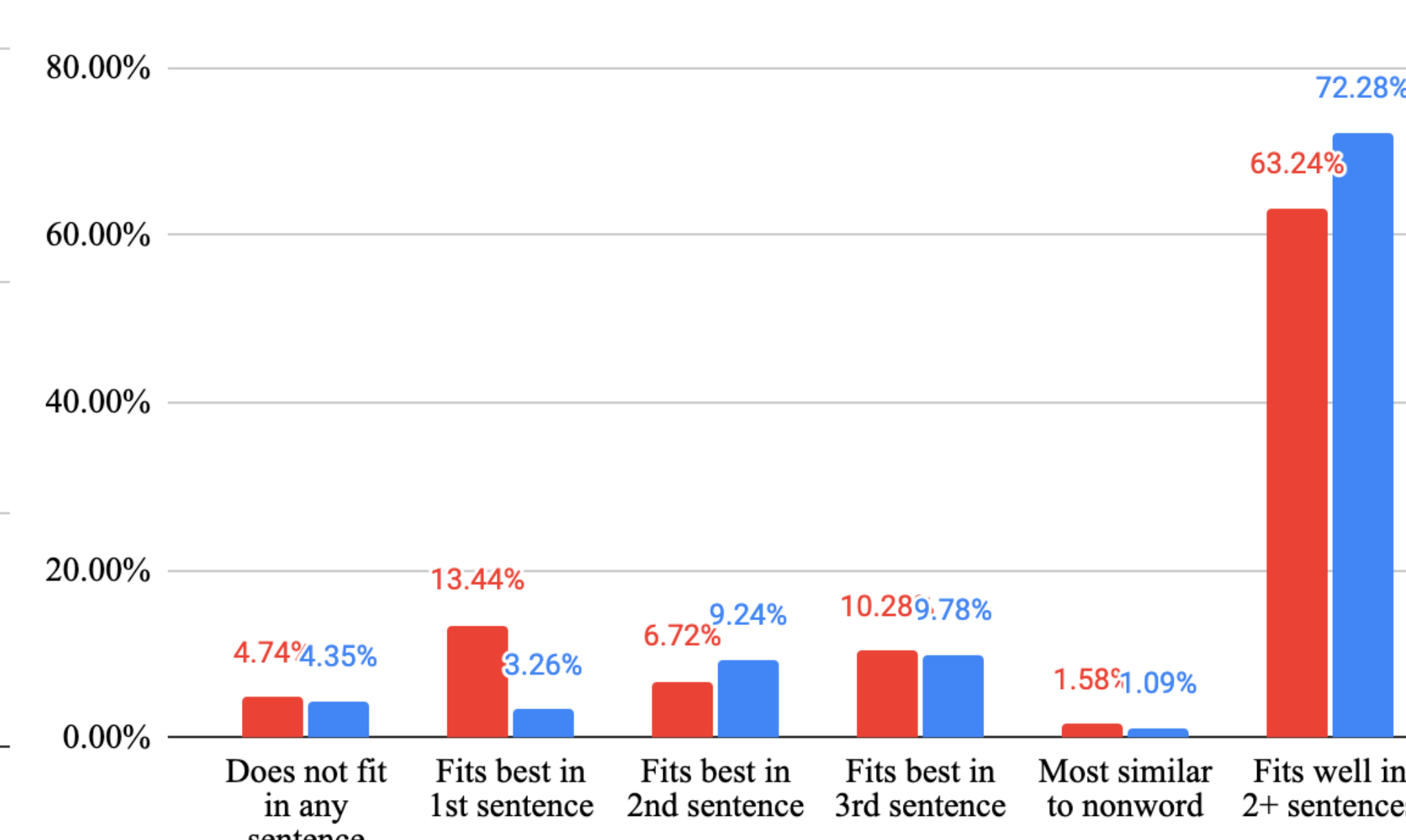

Figure 1. Semantic Coding of Meaning+ Errors

Figure 2. Contextual Coding of Meaning- Errors

DISCUSSION

- Overall, more errors for verbs than nouns
  - More likely to provide an incorrect meaning for verbs than nouns
  - Supports previous research suggesting that verbs are more difficult to learn than nouns

Semantic Errors
- Most common response for verbs and nouns was "No Meaning"
  - Suggests a risk-averse approach to word learning
- Second most common responses were out-of-category for verbs and within-category for nouns
  - Suggests that the underlying differences in semantic organization between nouns and verbs might play a role in word learning
- Responses were just as frequently synonyms or hyper/hyponyms of target meanings for both nouns and verbs but meanings opposite of target meanings were only provided for verbs

Contextual Errors
- Most of the incorrect meanings provided for both word classes fit well in two or more sentences
  - Participants were willing to ignore conflicting evidence of meaning to identify one
- Nouns and verbs had similar error patterns across all error categories (except for "Fits best in 1st sentence" category)
- Future research should explore how much supportive evidence is needed to form a meaning in the face of contrary evidence of the meaning

CONCLUSION

Word class influences both the amount and type of errors made during word learning, with a larger amount and more out-of-category meanings identified for verbs than nouns, even when contradictory evidence of the meaning is encountered

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