

Discourse Salience and Movement Constructions

CUNY Sentence Processing Conference
New York, NY 21 March 2002

by Ralph L. Rose
Northwestern University
r-rose@northwestern.edu

Pronominal Resolution

- Noun Phrases in syntactically prominent positions (e.g., surface subjects) are preferred antecedents.
 - (1) Nancy_i will certainly beat Susan_j in the 100-yard dash.
She_i will become the state champ again.
 - (2) Nancy_i will certainly beat Susan_j in the 100-yard dash.
She_j will no doubt be very frustrated.
- Discourse (1) more coherent than (2).

Syntactic Prominence

- D'Zmura & Tanenhaus, 1998
 - sentences containing pronouns with subject–antecedents were judged more coherent and read faster than sentences containing object–antecedent pronouns.
- Gordon & Chan, 1995
 - passive sentences with subject pronouns (syntactically prominent argument) were read faster than passive sentences with *by*–phrase pronouns (semantically prominent argument).

IMPLICATION: Syntactic Prominence increases salience in pronoun resolution.

Syntactic Prominence and Movement

- Psycholinguistic evidence indicates antecedent reactivation at gap sites (Bever & McElree 1988, Nicol, 1988).
 - Reattention to the entity might cause it to be closer to the center of attention (hence, more salient).
- Can subject preference in passives be explained by movement?

Hypothesis: *Movement increases the discourse salience of the entity associated with the moved noun phrase.*

Design

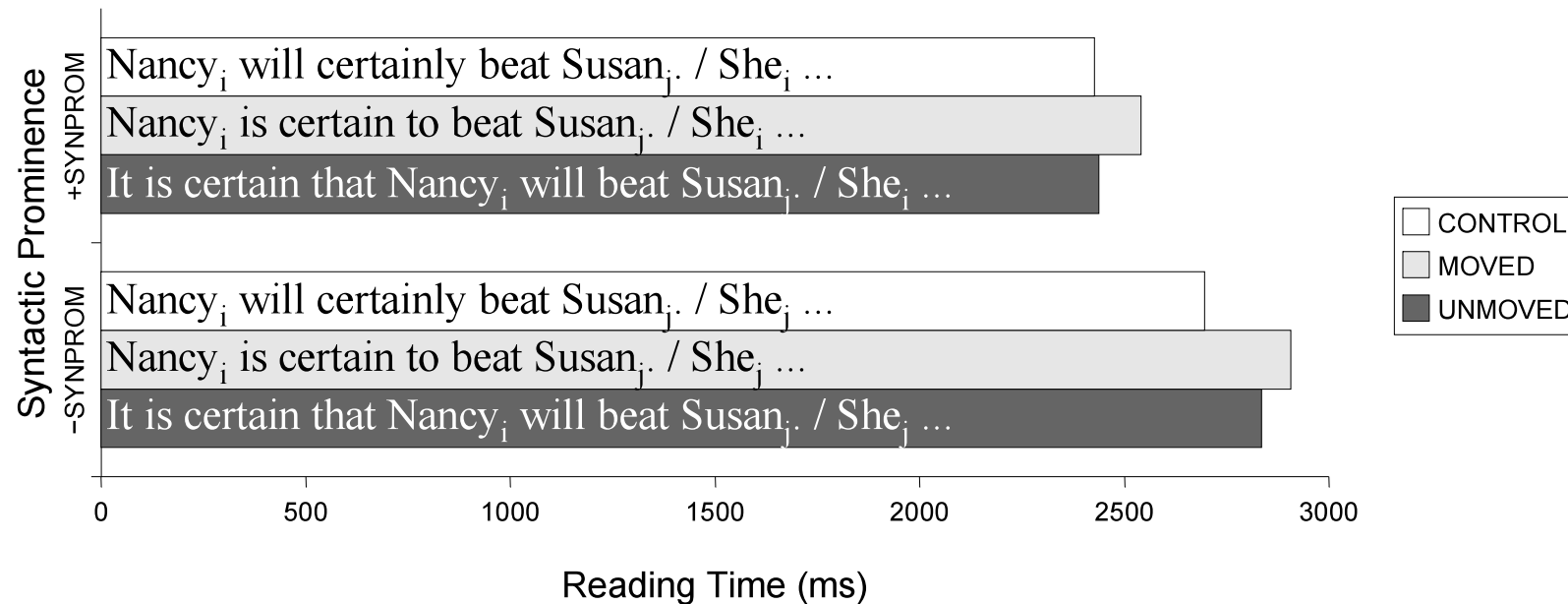
- Self-paced reading task
- N = 24 native speakers of English
- Target sentences presented on computer screen one sentence at a time in 5-sentence vignettes
- Two main factors
 - Movement Condition:
 - CONTROL, MOVED, UNMOVED
 - Syntactic Prominence Condition:
 - +SYNPROM, –SYNPROM

Stimuli

- NP–raising constructions (24 items)
 - (3) a. Nancy_i will certainly beat Susan_j in the 100–yard dash. (CONTROL)
 - b. Nancy_i is certain t_i to beat Susan_j in the 100–yard dash. (MOVED)
 - c. It is certain that Nancy_i will beat Susan_j in the 100–yard dash. (UNMOVED)
 - i. She_i will become the state champ again. (+SYNPROM)
 - ii. She_j will no doubt be very frustrated. (–SYNPROM)
- Tough–movement constructions (24 items)
 - (4) a. John_i could hardly hit Matt_j. (CONTROL)
 - b. Matt_j was hard for John_i to hit t_i . (MOVED)
 - c. It was hard for John_i to hit Matt_j. (UNMOVED)
 - i. He_j still landed a knockout punch, though. (a,c +SYNPROM / b –SYNPROM)
 - ii. He_i finished without getting hit even once. (a,c –SYNPROM / b +SYNPROM)
- Fillers (24 items)

NP-raising Constructions

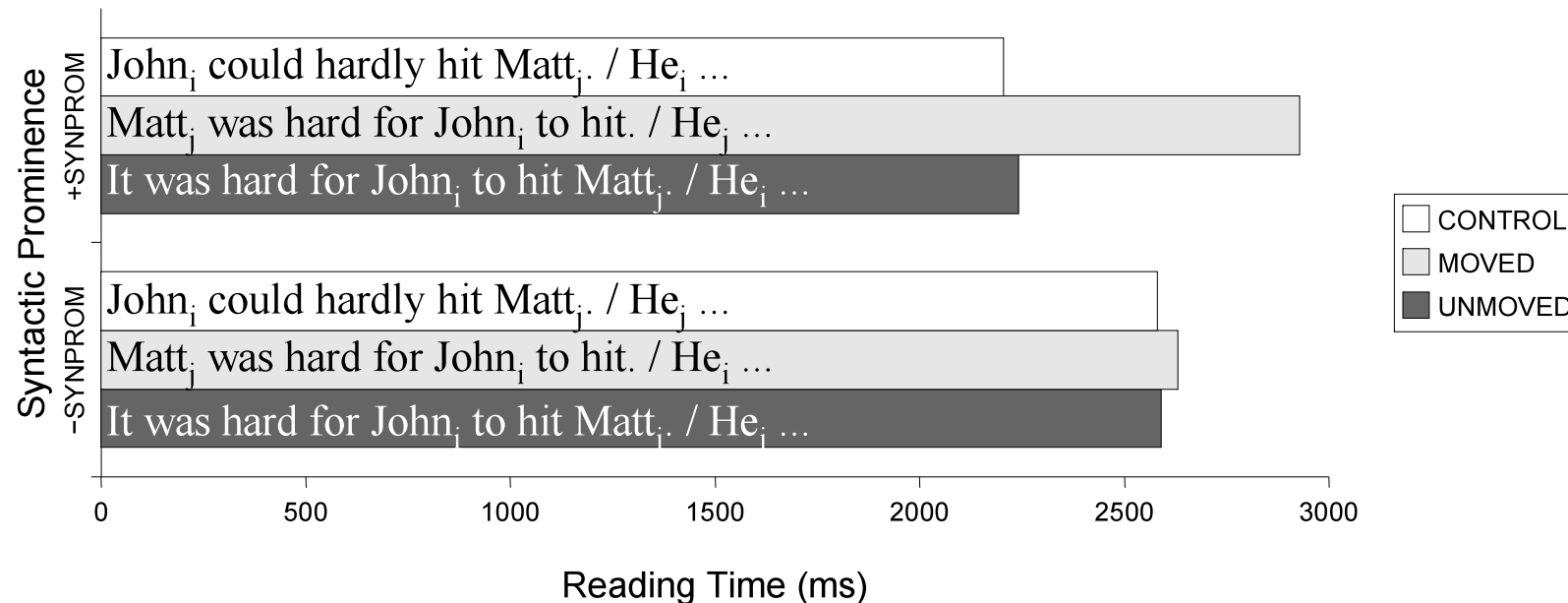
Reading Times for Critical Sentences, NP-raising



- Significant main effect of Syntactic Prominence (by subjects $F=4.51$, $p<0.05$; by items $F=15.05$, $p<0.005$)
- No significant main effect of Movement
- No significant interaction between Movement and Syntactic Prom.

Tough-movement Constructions

Reading Times for Critical Sentences, Tough-movement



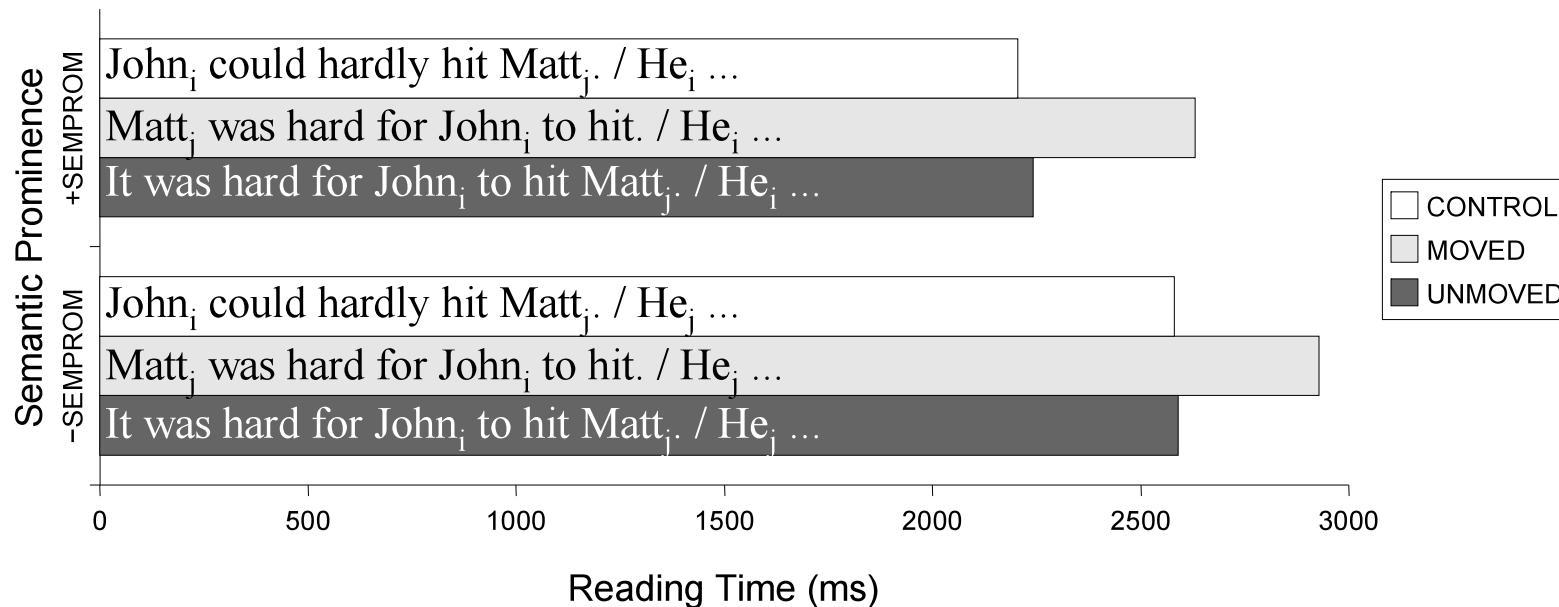
- No significant main effect of Syntactic Prominence
- Significant main effect of Movement (by subjects $F=7.20$, $p<0.005$; by items $F=3.87$, $p<0.05$)
- No significant interaction between Movement and Syntactic Prom.

Semantic Prominence

- Syntactic Prominence poorly characterizes subjects' pronoun resolution preferences with Tough–movement constructions. Is there any other way of partitioning the data to make it more uniform with NP–raising results?
- AN ALTERNATIVE: Semantic Prominence
 - NP–raising conflates Syntactic and Semantic Prominence (i.e., surface subject is always prominent in both measures).
 - Tough–movement crucially partitions these (i.e., surface subject is syntactically prominent while embedded subject is semantically prominent, i.e., an Agent).

Tough–movement Constructions (revised)

Reading Times for Critical Sentence, Tough–movement



- Significant main effect of Semantic Prominence (by subjects $F=5.37$, $p<0.05$; by items n.s.)
- Significant main effect of Movement (by subjects $F=7.20$, $p<0.005$; by items $F=3.87$, $p<0.05$)
- No significant interaction between Movement and Semantic Prom.

Syntactic and Semantic Prominence

- Prominence
 - NP-raising results replicate D'Zmura & Tanenhaus (1997) supporting the role of Syntactic prominence in pronominal resolution.
 - Tough-movement results do not give evidence of the effect of Syntactic Prominence, but rather suggest that Semantic Prominence is relevant.
- Movement
 - NP-raising constructions give no evidence that movement has any effect on discourse salience.
 - Tough-movement constructions suggest movement is significant, but results are paradoxical
 - In both prominence conditions, movement appears to affect salience; however, they should oppose each other (i.e., if reading times increase in a +prominent condition, they should decrease in a –prominent condition).
- How can the movement results be explained?

Competing Constraints?

- Under a constraint–based view, Syntactic and Semantic prominence constitute constraints on the resolution of an anaphor.
- Across movement conditions,
 - CONTROL & UNMOVED: constraint satisfaction coincides
 - MOVED: constraints compete for satisfaction
- In the MOVED condition, competing interpretations are maintained, yielding additional processing burden.

Not movement, but constraints

- Movement is not a relevant contributor to discourse prominence.
- Syntactic prominence is confirmed as relevant for pronominal resolution.
- Semantic prominence also appears to be relevant for pronominal resolution.
- Results favor a constraint-based analysis of discourse prominence and anaphora resolution.