

Immediate and Delayed Satiation Effects with Ambiguous Words

Christopher Wetherill & Angela C. Jones



So, what *is* semantic satiation?

“...to repeat, monotonously, some common word, until the sound, by dint of frequent repetition, ceased to convey any idea whatever to the mind.”

Berenice by Edgar Allen Poe (1835)

Studied formally starting in the early 20th century (Severance & Washburne, 1911; Basset & Warne, 1919)

Let's throw in some lexical ambiguity

Weakly-related semantic information may be more satiated following repetition than highly-related information (Balota & Black, 1997; Kuhl & Anderson, 2011)

e.g., ROYALTY – DUKE vs. ROYALTY – QUEEN

DUKE → weakly related → more satiated

Does this extend to biased ambiguous words?

- Some evidence of this (Black, 2001)
- Non-typical satiation method & meaning dominance not controlled

Experiment 1

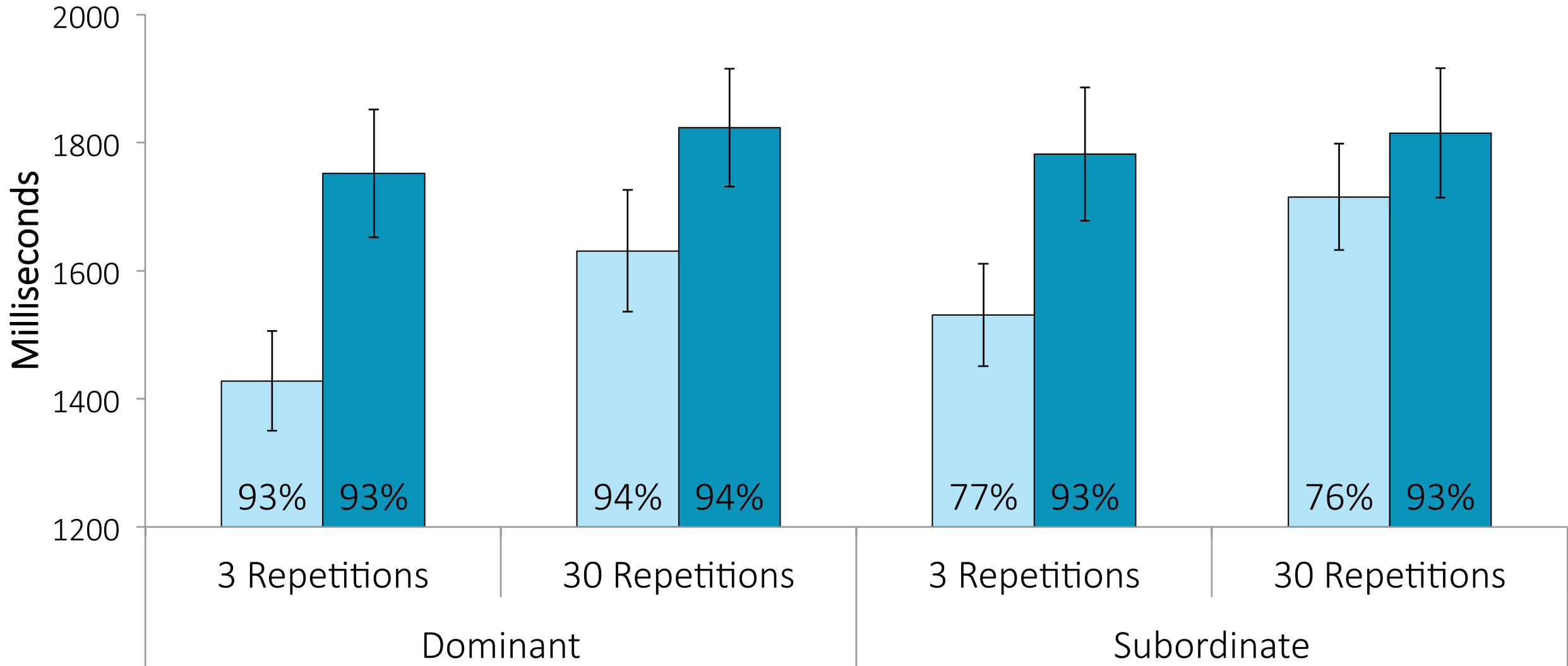
Purpose: Examine satiation with NOUN—NOUN homographs

Method:

- Participants: n = 66 John Carroll University undergraduates
- Materials: 72 biased homographs with 2 distinct noun meanings (e.g., CALF)
- Procedure:
 - **Satiation:** Participants saw cue word presented onscreen for 600ms 3 or 30 times with a 300ms inter-stimulus interval
 - **Relatedness Judgment:** Immediately following the final presentation of the cue, participants saw a CUE—TARGET pairing (dominant, subordinate, unrelated) and made a relatedness judgment

Reaction Time for Correct Responses (values in bars are % correct)

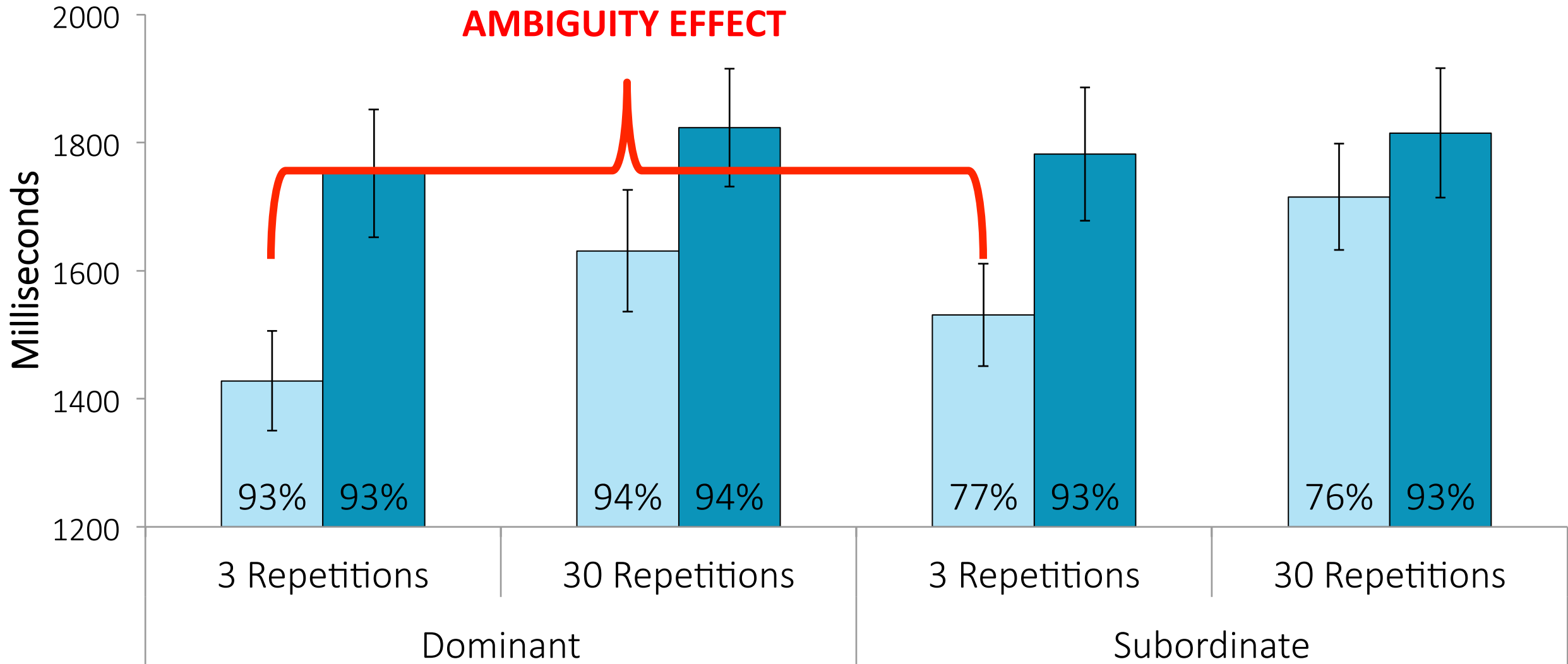
Related Unrelated



Reaction Time for Correct Responses (values in bars are % correct)

Related Unrelated

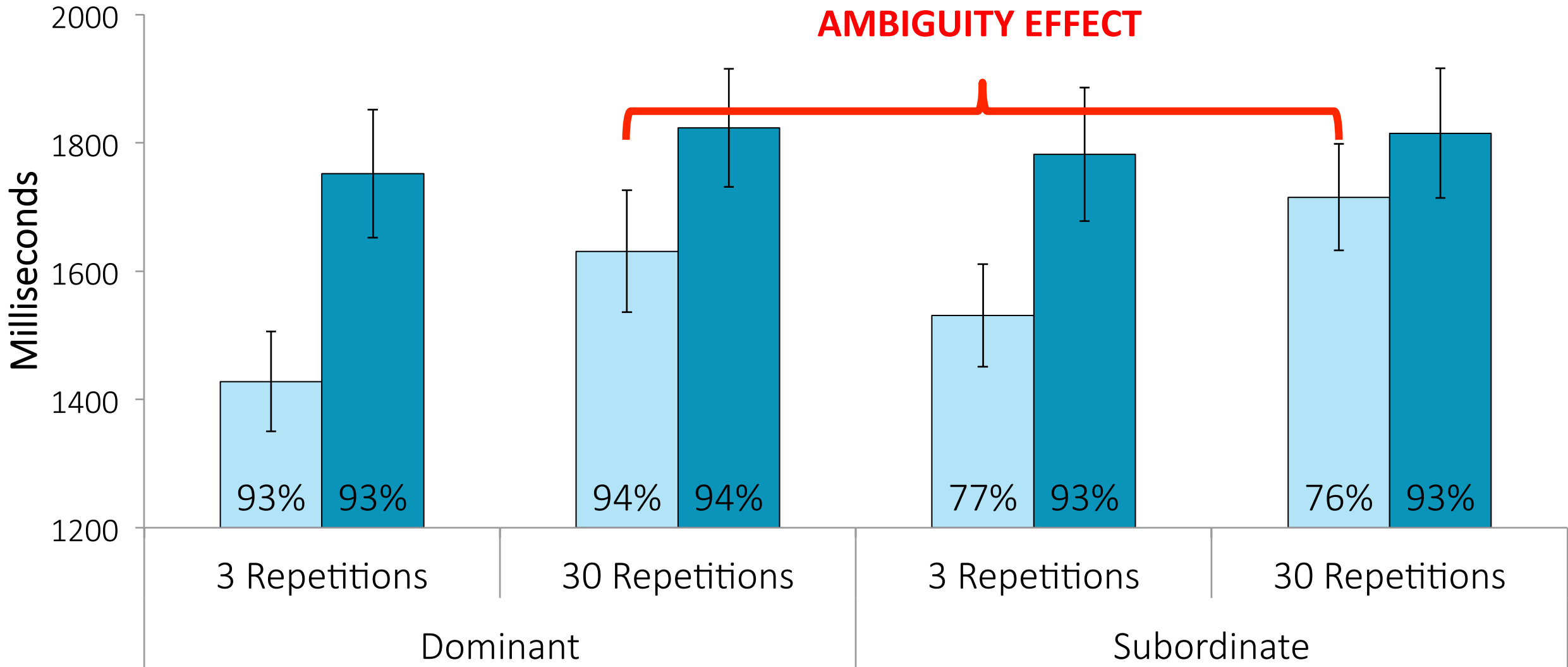
AMBIGUITY EFFECT



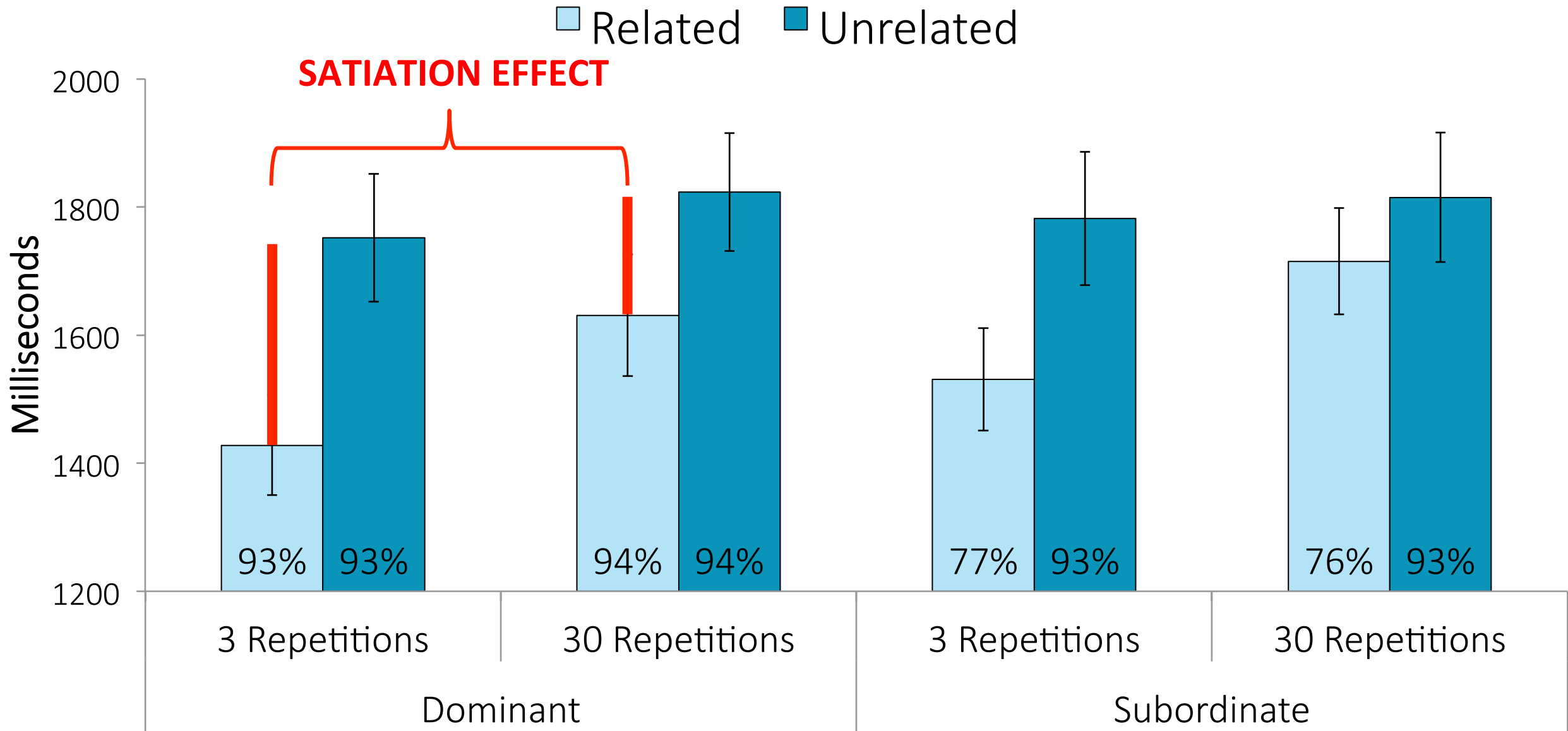
Reaction Time for Correct Responses (values in bars are % correct)

Related Unrelated

AMBIGUITY EFFECT

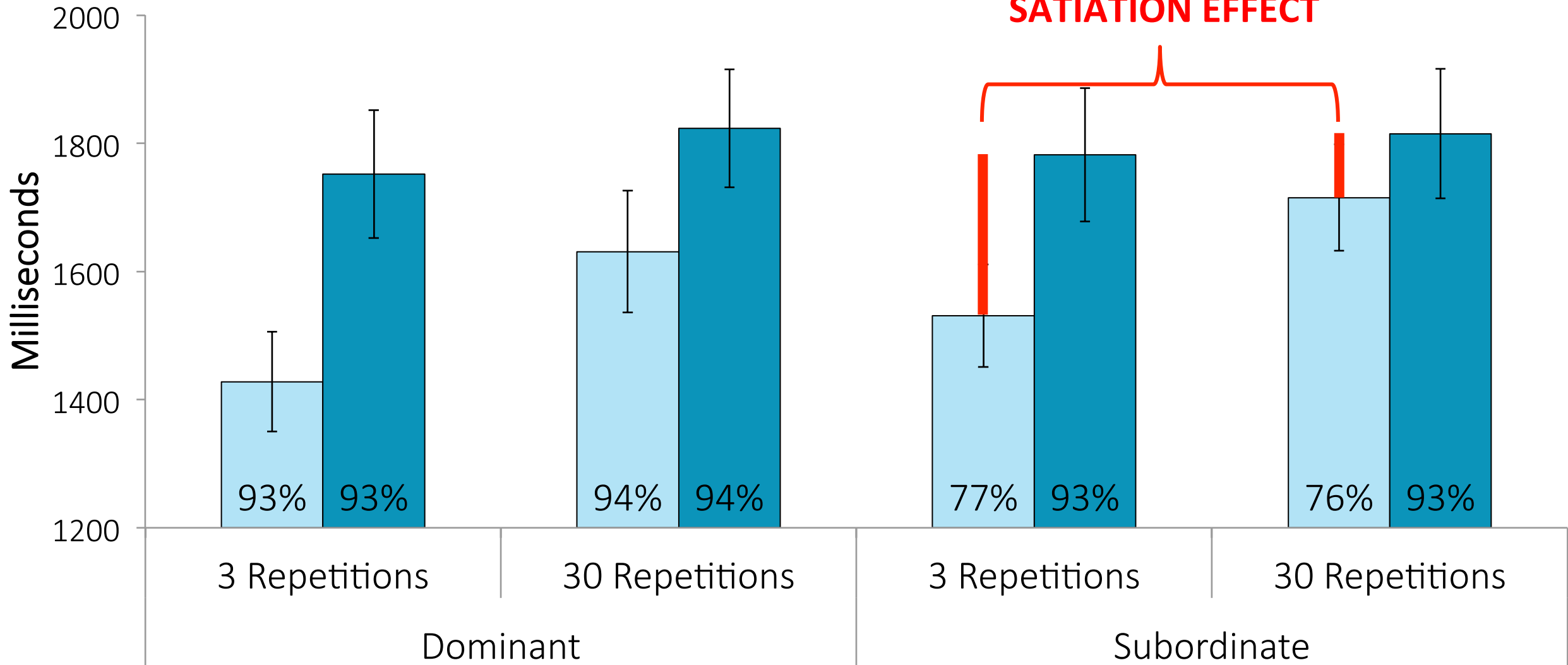


Reaction Time for Correct Responses (values in bars are % correct)



Reaction Time for Correct Responses (values in bars are % correct)

Related Unrelated



Experiment 2

Purpose: Replicate E1 and extend to NOUN – VERB ambiguous words

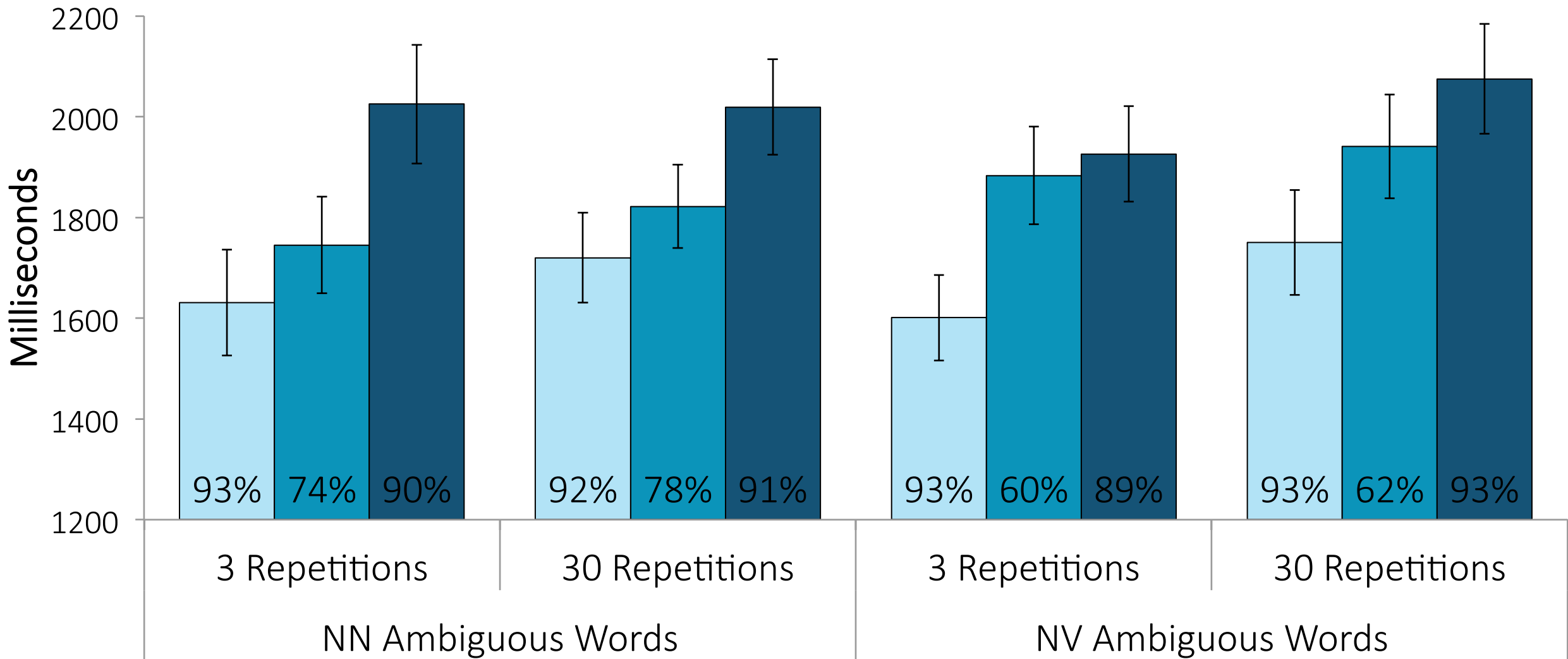
- Does semantic distance play a role in satiation?

Method:

- Participants: n = 84 John Carroll University undergraduates
- Materials: 48 biased homographs with two distinct noun meanings (NN: CALF); 48 with one distinct noun and one distinct verb meaning (NV: DUCK).
- Procedure:
 - Identical to Experiment 1

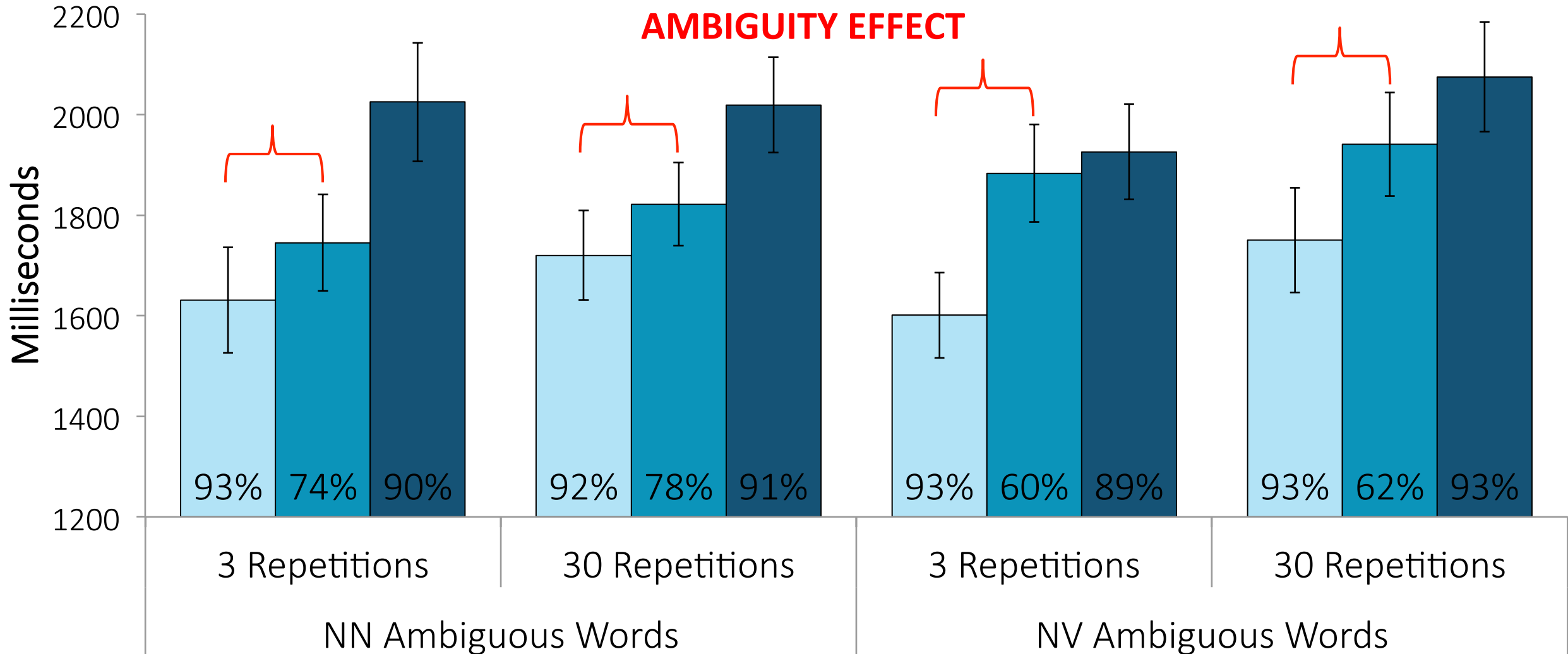
Reaction Time for Correct Responses (values in bars are % correct)

Dominant Subordinate Unrelated

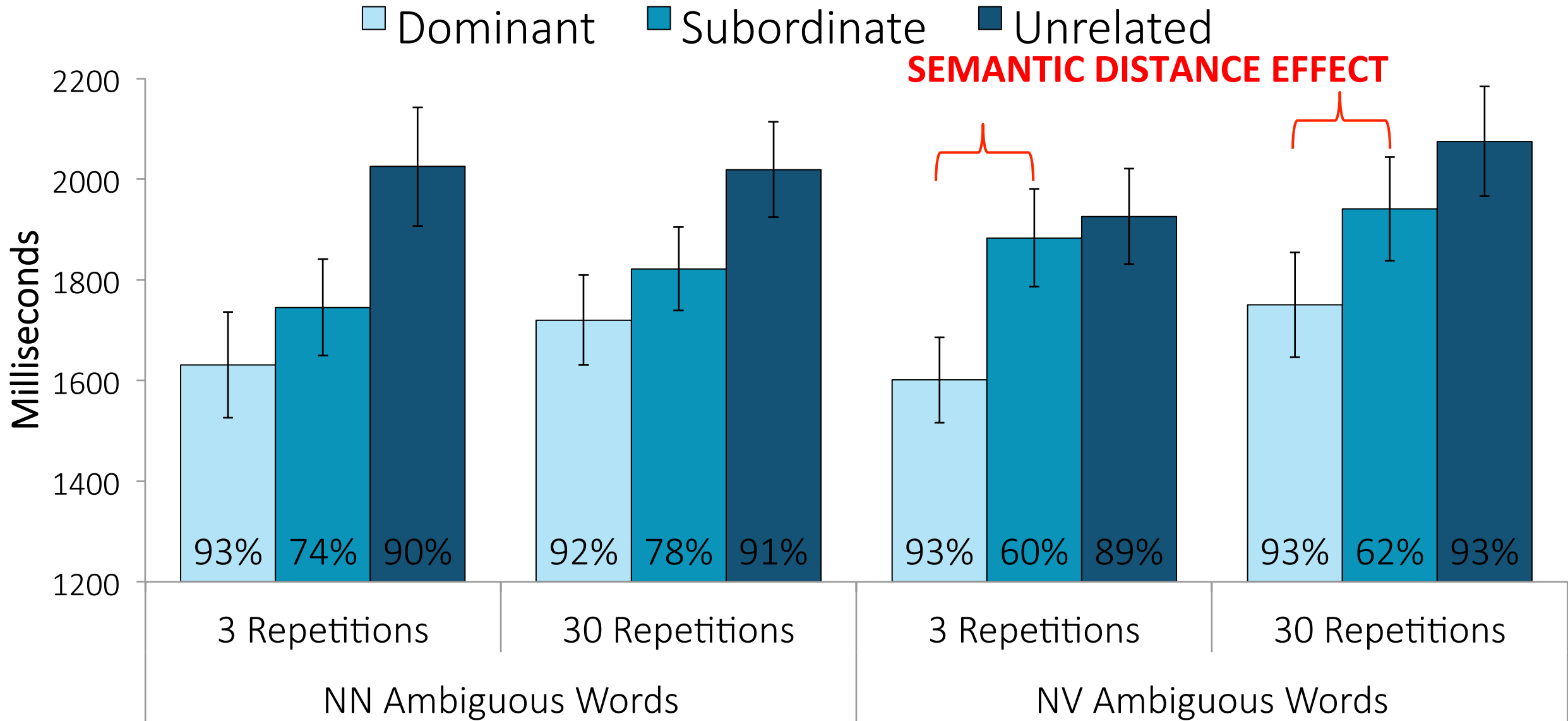


Reaction Time for Correct Responses (values in bars are % correct)

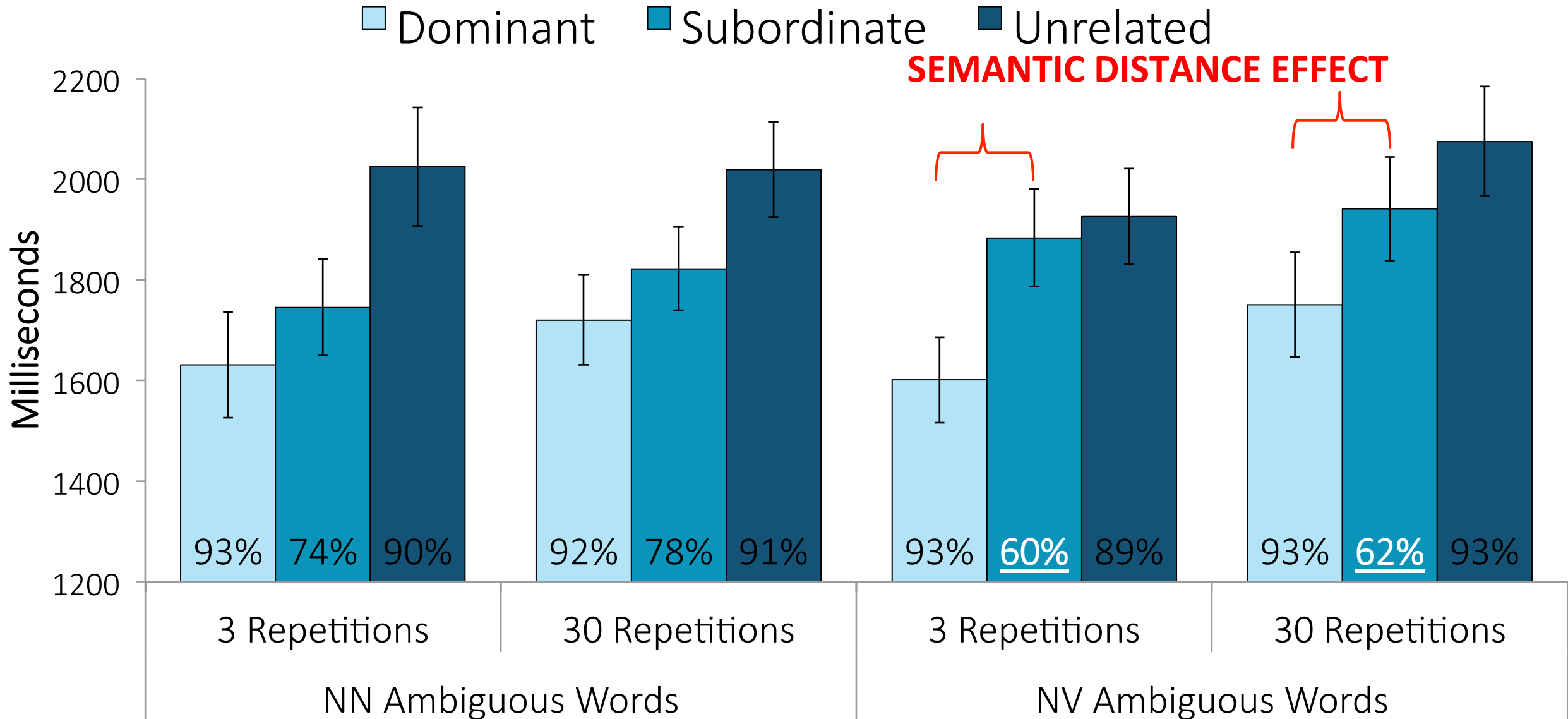
Dominant Subordinate Unrelated



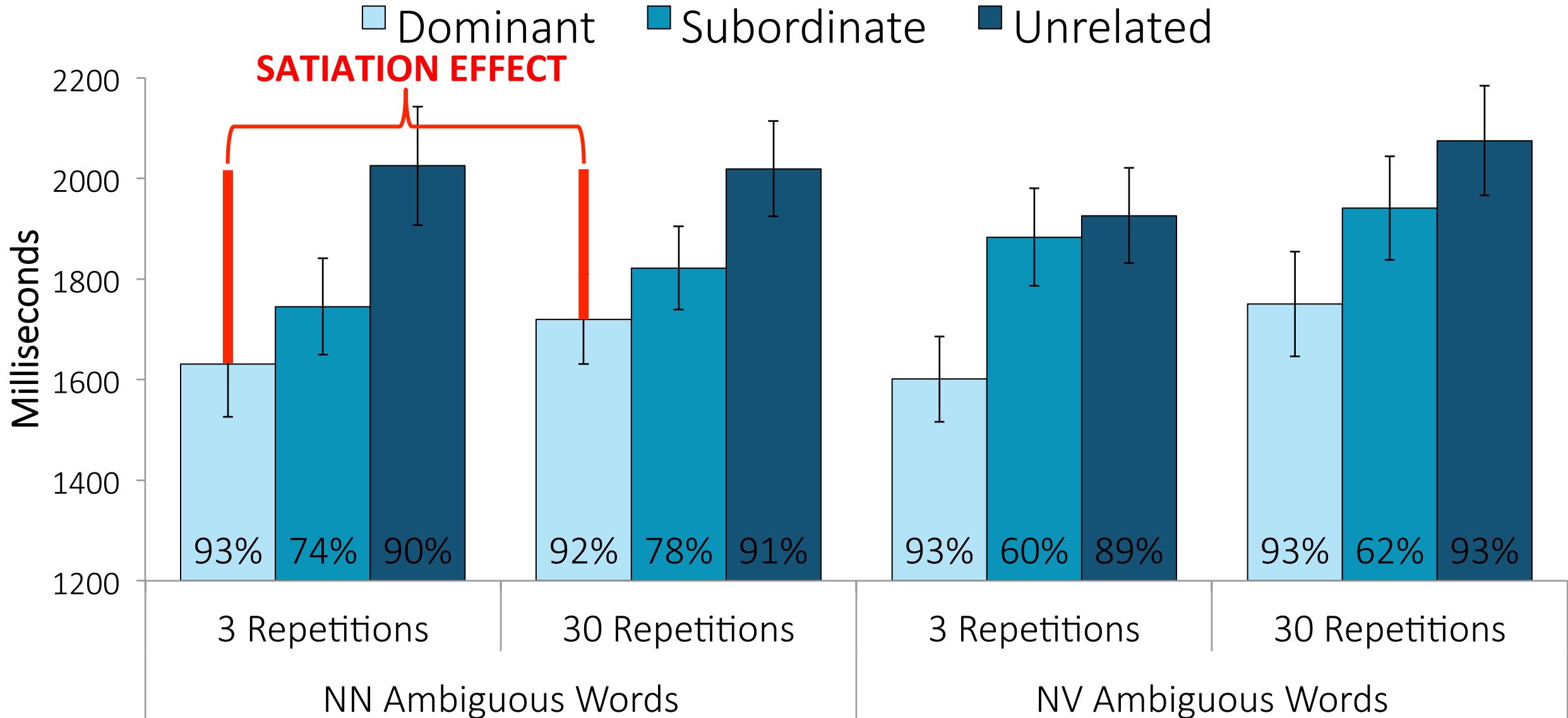
Reaction Time for Correct Responses (values in bars are % correct)



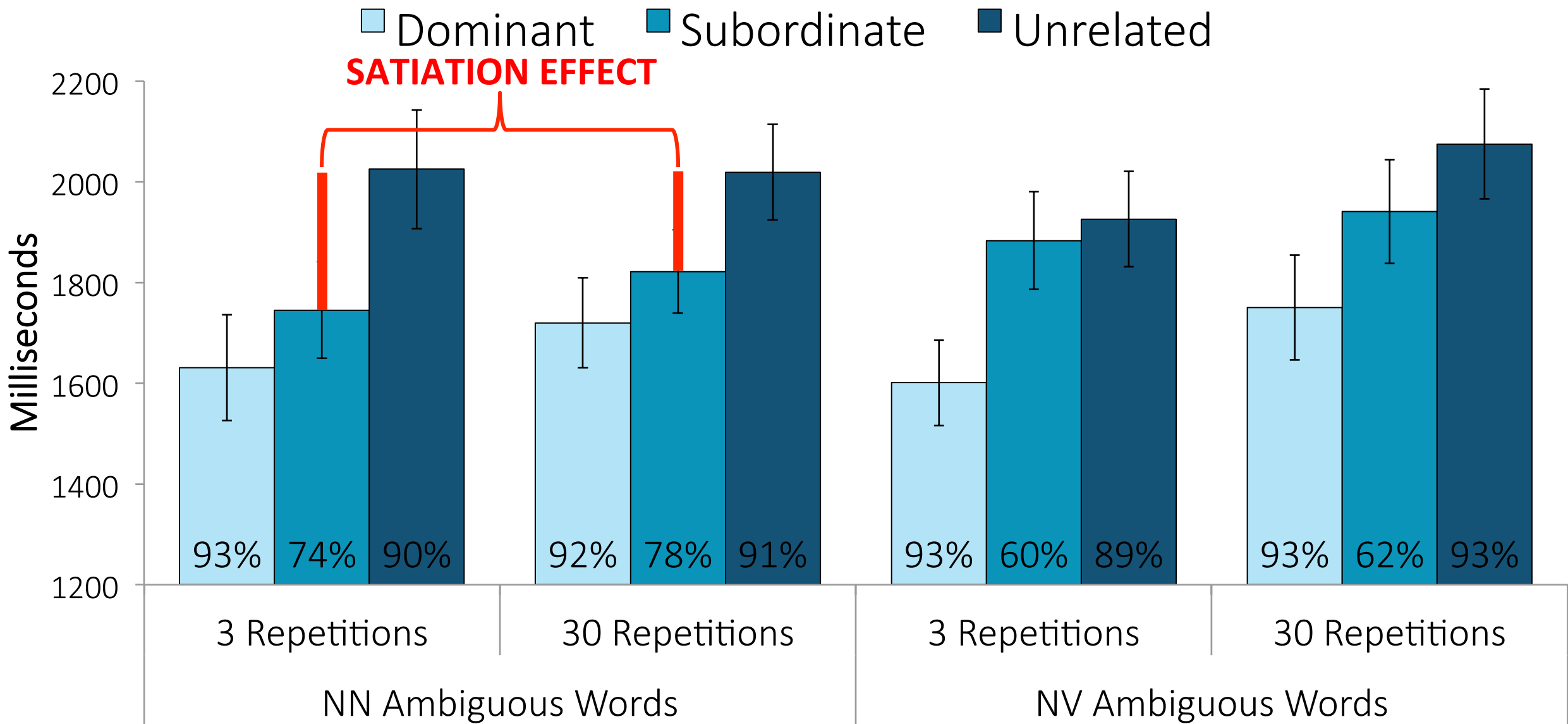
Reaction Time for Correct Responses (values in bars are % correct)



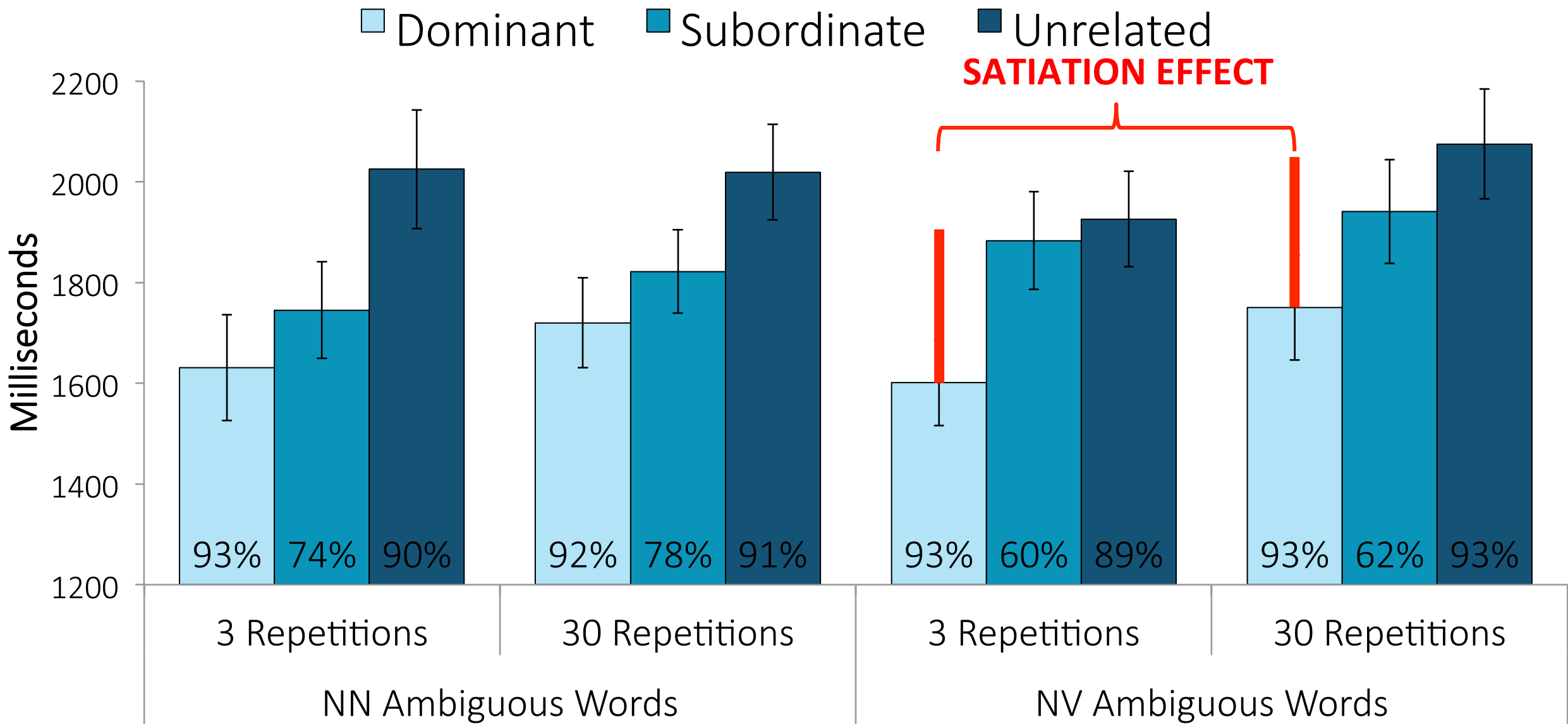
Reaction Time for Correct Responses (values in bars are % correct)



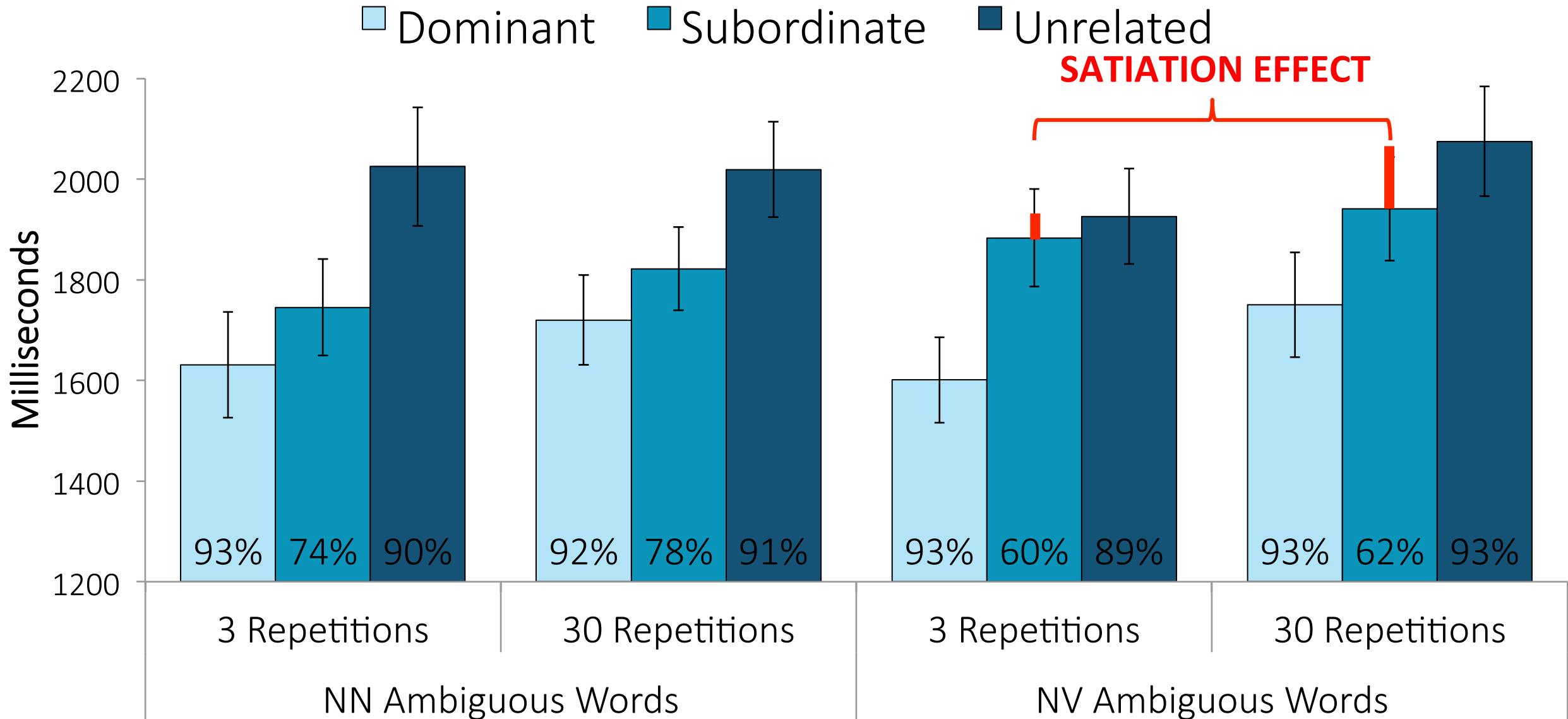
Reaction Time for Correct Responses (values in bars are % correct)



Reaction Time for Correct Responses (values in bars are % correct)



Reaction Time for Correct Responses (values in bars are % correct)



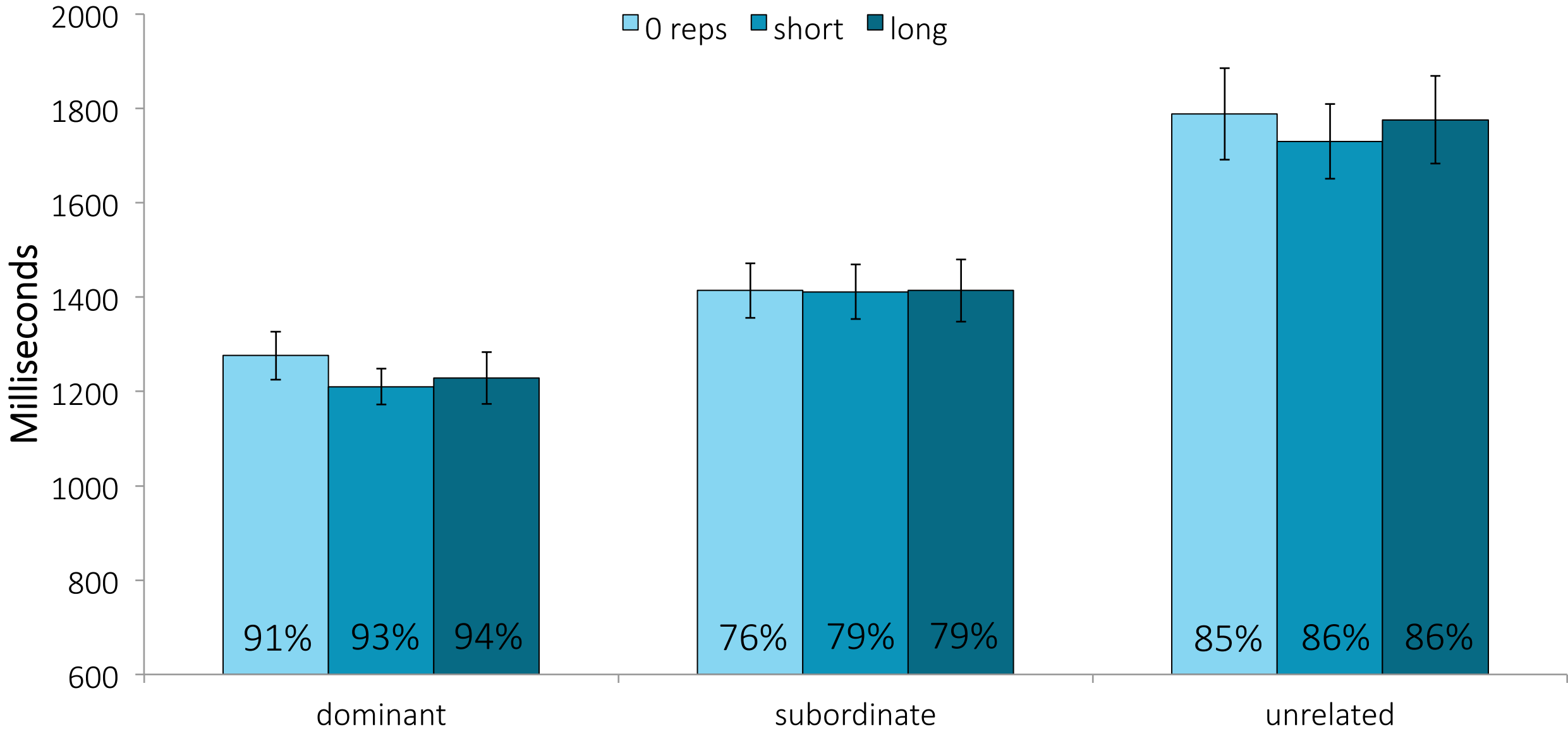
Experiment 3

Purpose: Examine duration of satiation

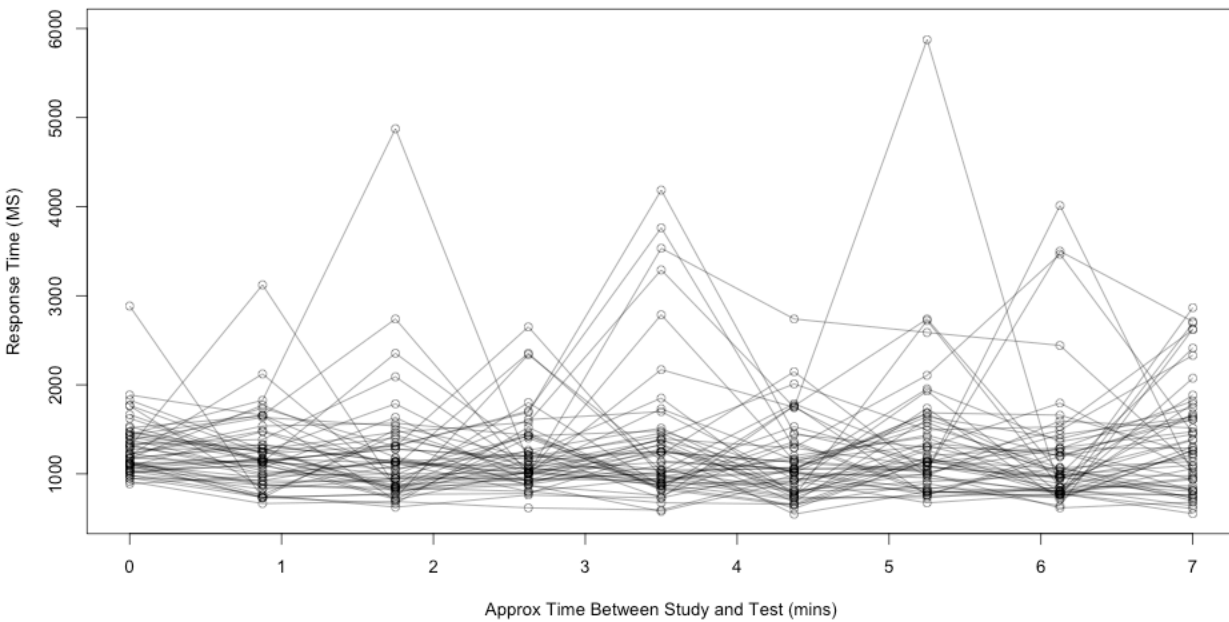
Method:

- Participants: n = 63 John Carroll University undergraduates
- Materials: 72 biased homographs with 2 distinct noun meanings (e.g., CALF)
- Procedure:
 - Similar to E1 & E2 except:
 - 24 items satiated before relatedness judgment task
 - Relatedness judgments also included non-satiated items

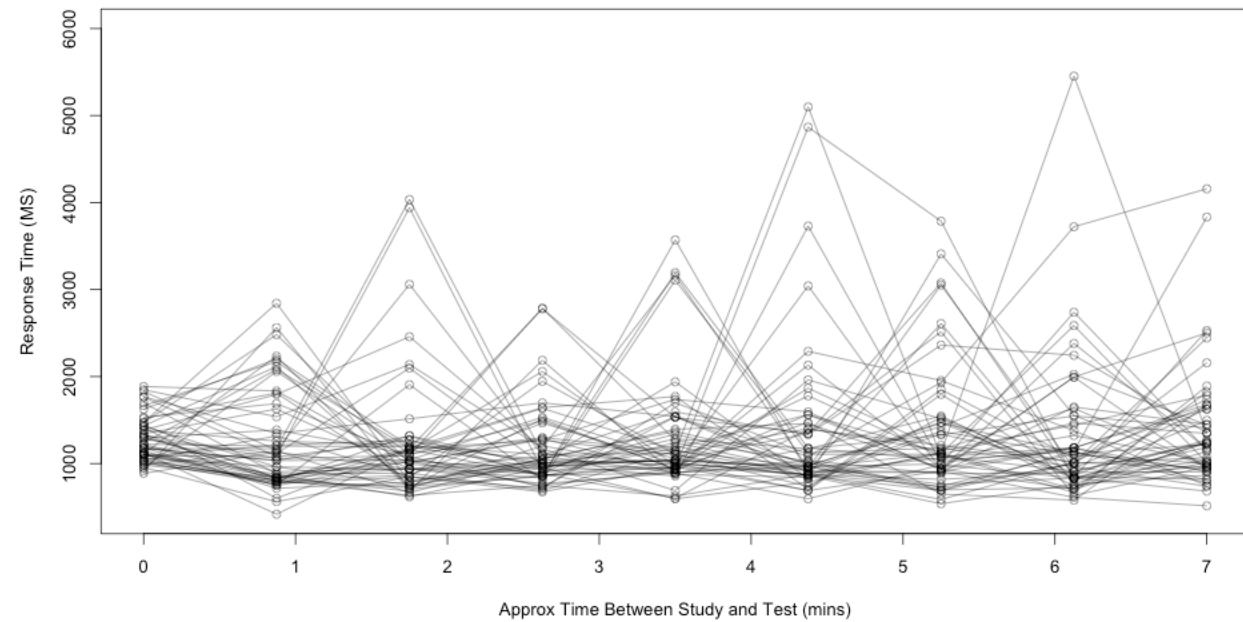
Reaction Time for Correct Responses (values in bars are % correct)



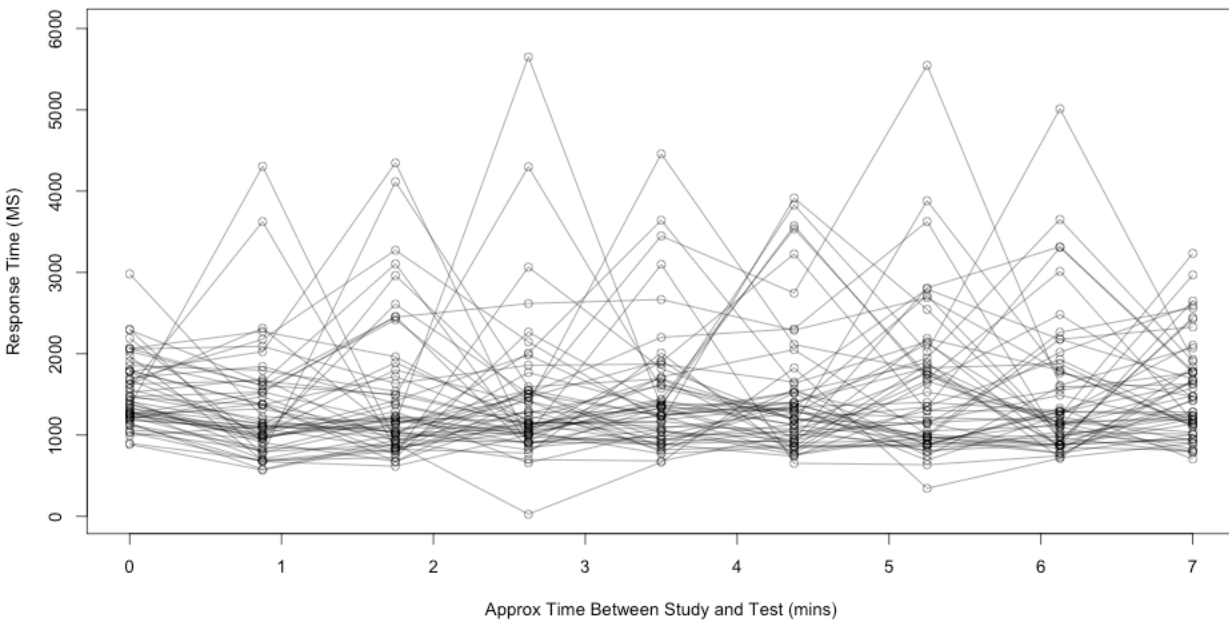
Participant Response Time by Study--Test Interval, Dominant, 3 Reps



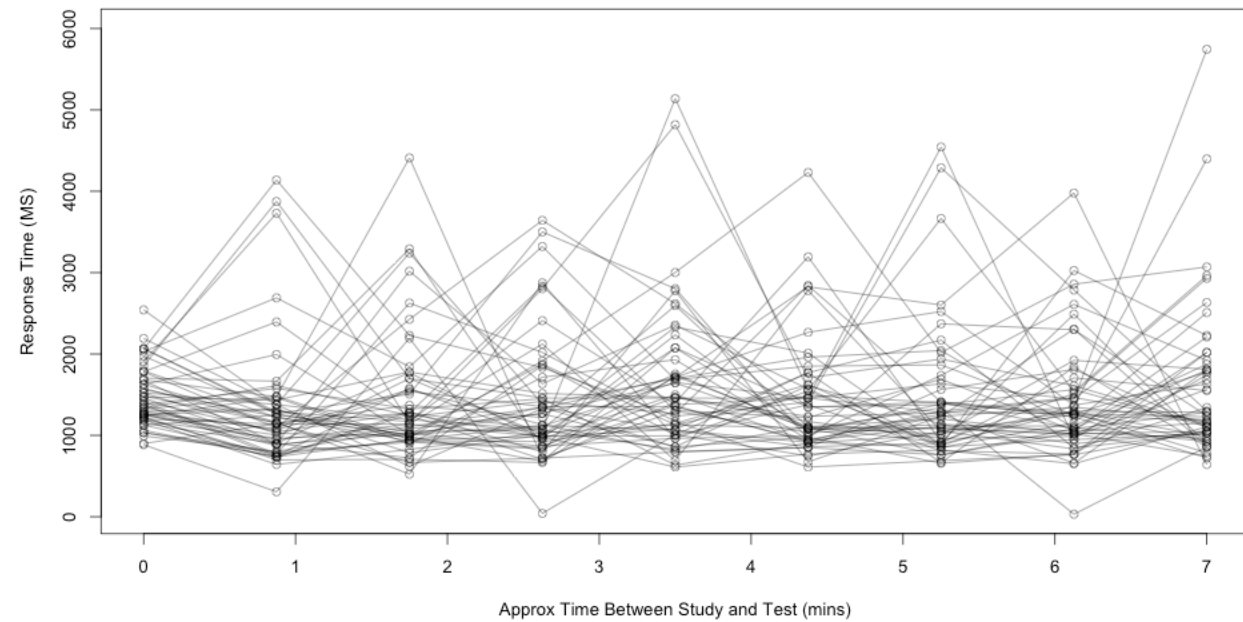
Participant Response Time by Study--Test Interval, Dominant, 30 Reps



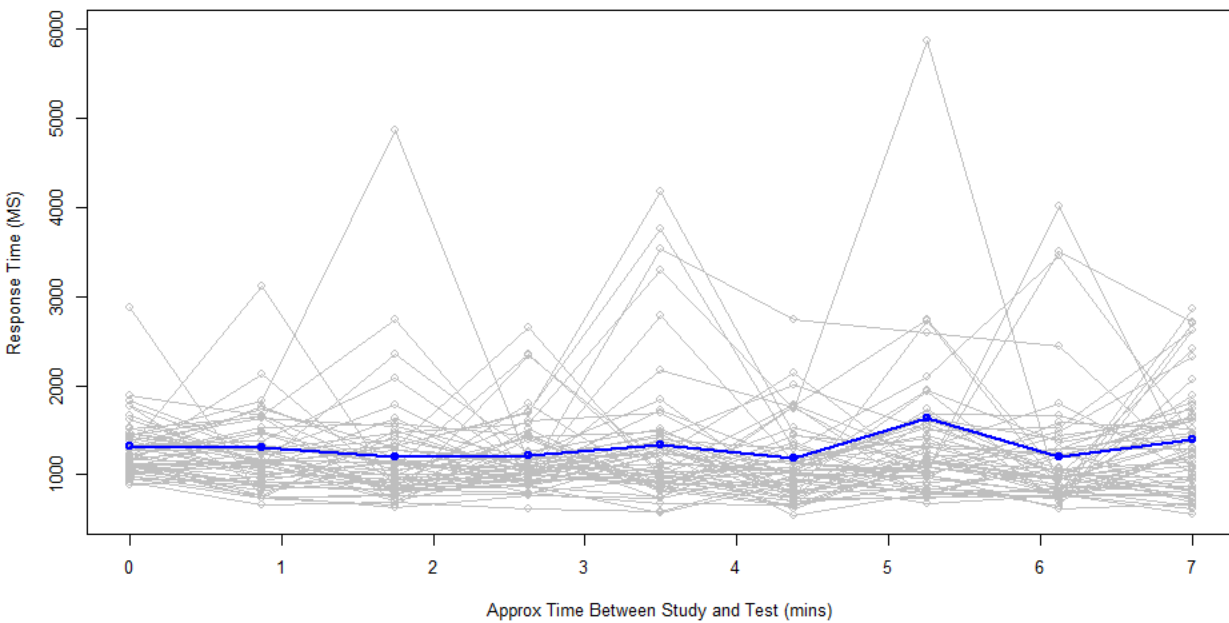
Participant Response Time by Study--Test Interval, Subordinate, 3 Reps



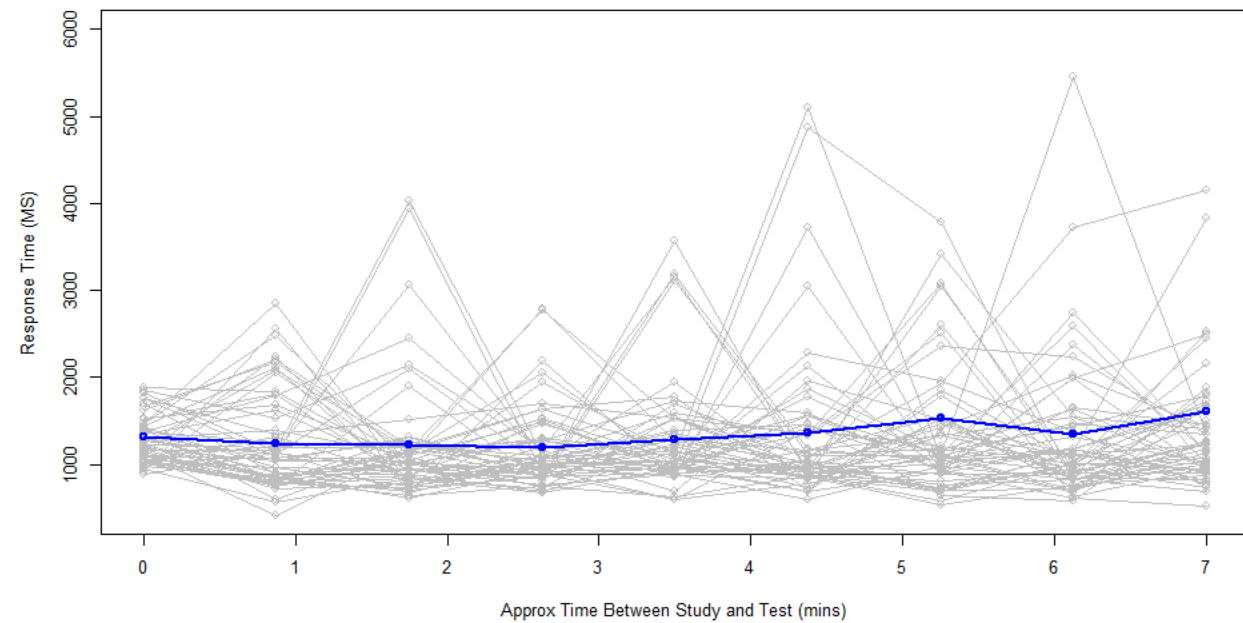
Participant Response Time by Study--Test Interval, Subordinate, 30 Reps



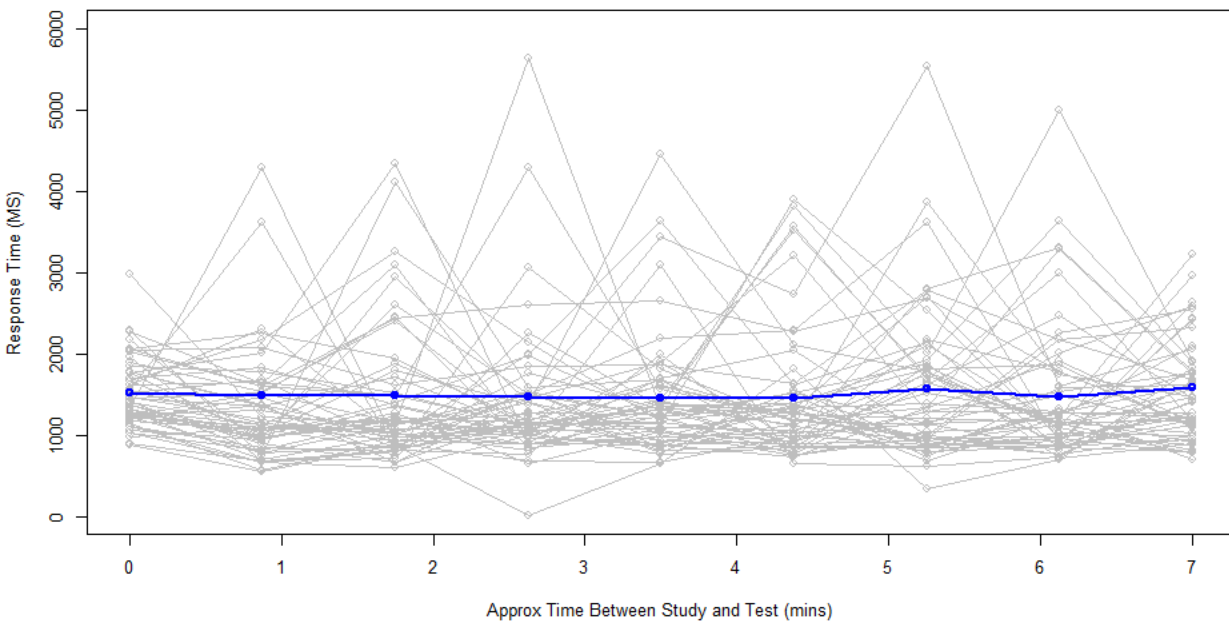
Participant Response Time by Study--Test Interval, Dominant, 3 Reps



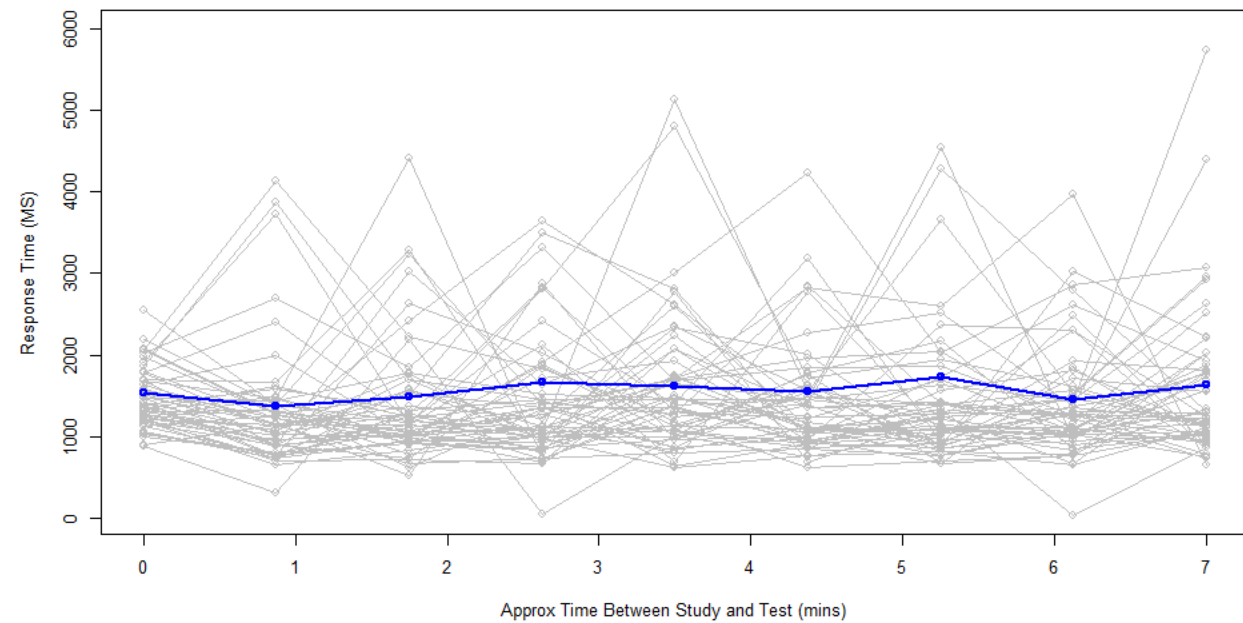
Participant Response Time by Study--Test Interval, Dominant, 30 Reps



Participant Response Time by Study--Test Interval, Subordinate, 3 Reps



Participant Response Time by Study--Test Interval, Subordinate, 30 Reps



Overall conclusions:

Evidence of satiation for both meanings of biased ambiguous words (but no differential satiation)

I.e., dominant and subordinate meanings satiate about equally

Evidence for role of semantic distance

No longer-term satiation effects with a relatedness judgment task