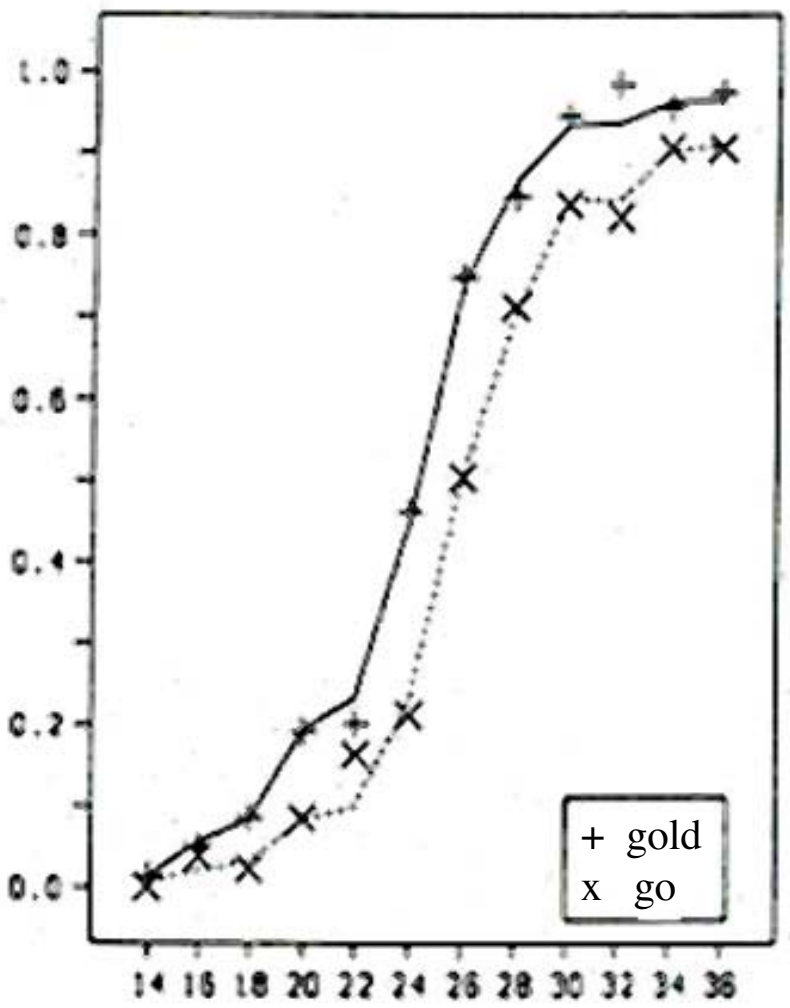
Percent
Identifications
as “the”




Sound energy (db) attentuation

Cohort model
Marslen-Wilson

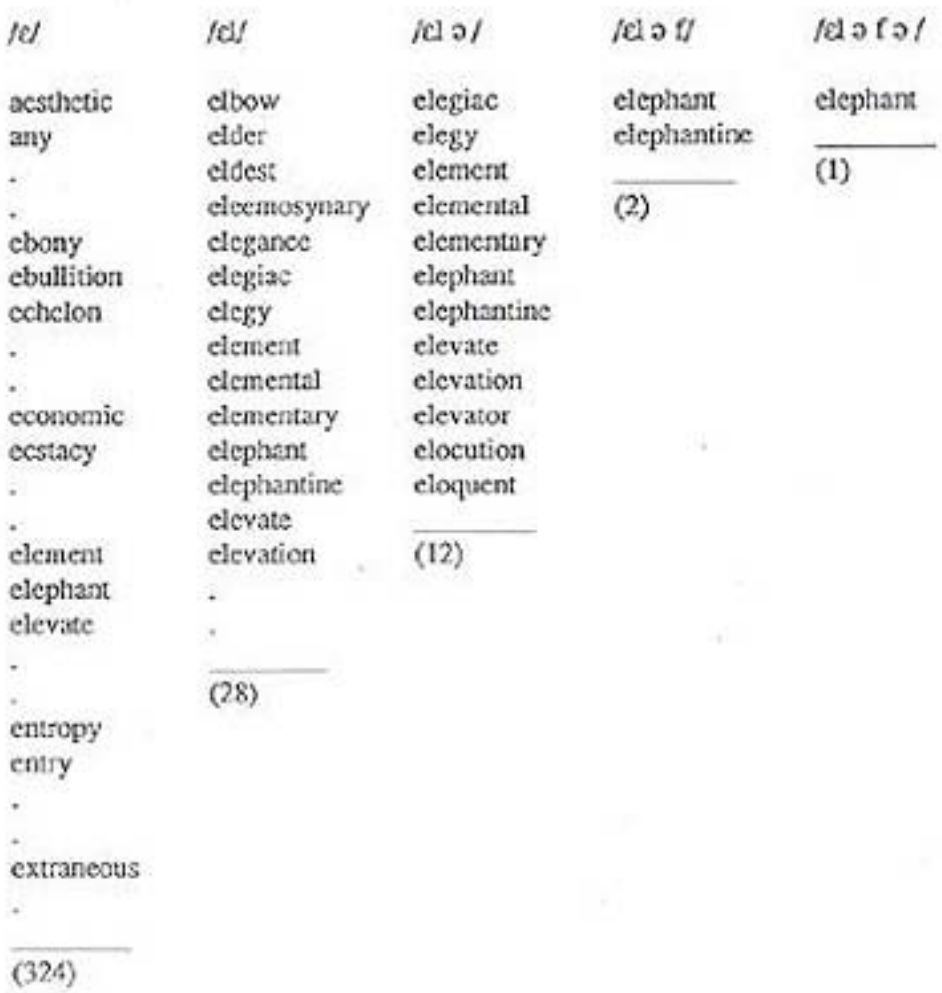
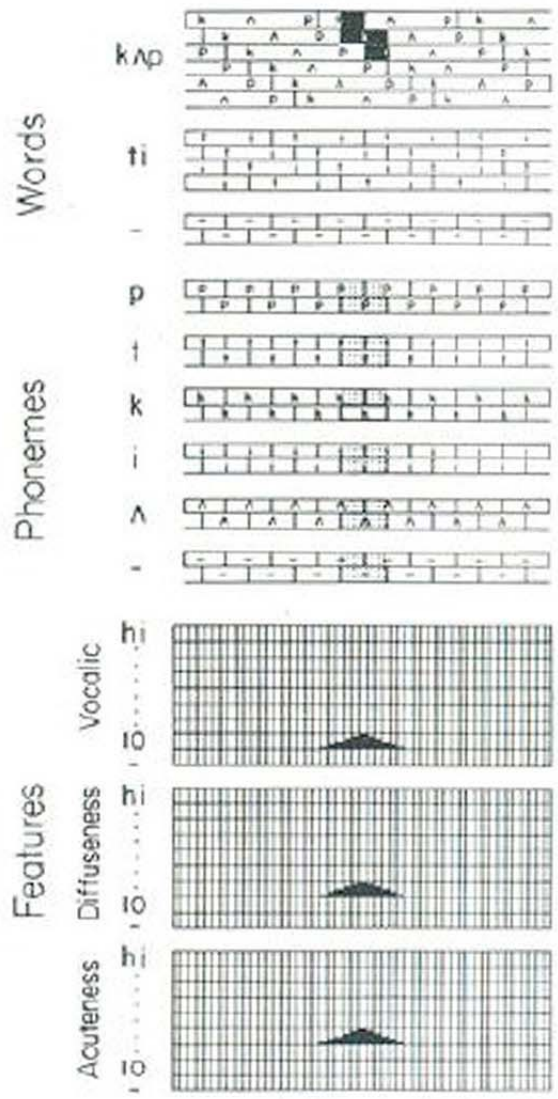



FIG. 10 "Illustration of how the word *elephant* is recognized, according to the cohort mode (Marslen-Wilson, 1984). Phonemes are recognized categorically and on-line in a left-to-right fashio as they are spoken. All words inconsistent with the phoneme string are eliminated from the cohort The number below each column represents the number of words remaining in the cohort set a that point in processing the spoken word. Note that the example is for British pronunciation i which the third vowel of *elephantine* is pronounced /ə/" (from Massaro, 1989c).

Elman and McClelland
Trace Model



# Statistical Learning by 8-Month-Old Infants

Saffran, Aslin, Newport (1996)

Infants heard 2 min of continuous speech -
4 three-syllable nonsense "words" - e.g. "bidaku" "padoti"
Randomly ordered

"bidakupadotigolabubidaku….."

http://psych.wisc.edu/faculty/bio/saffran.html

http://whyfiles.org/058language/baby_talk.html

**“bidakupadotigolabubidaku…..”**

**Transitional probabilities:**

**Within “word” (daku) - 1.00**
**Between “word” (tigol) - .33**

**Infant listening times:**

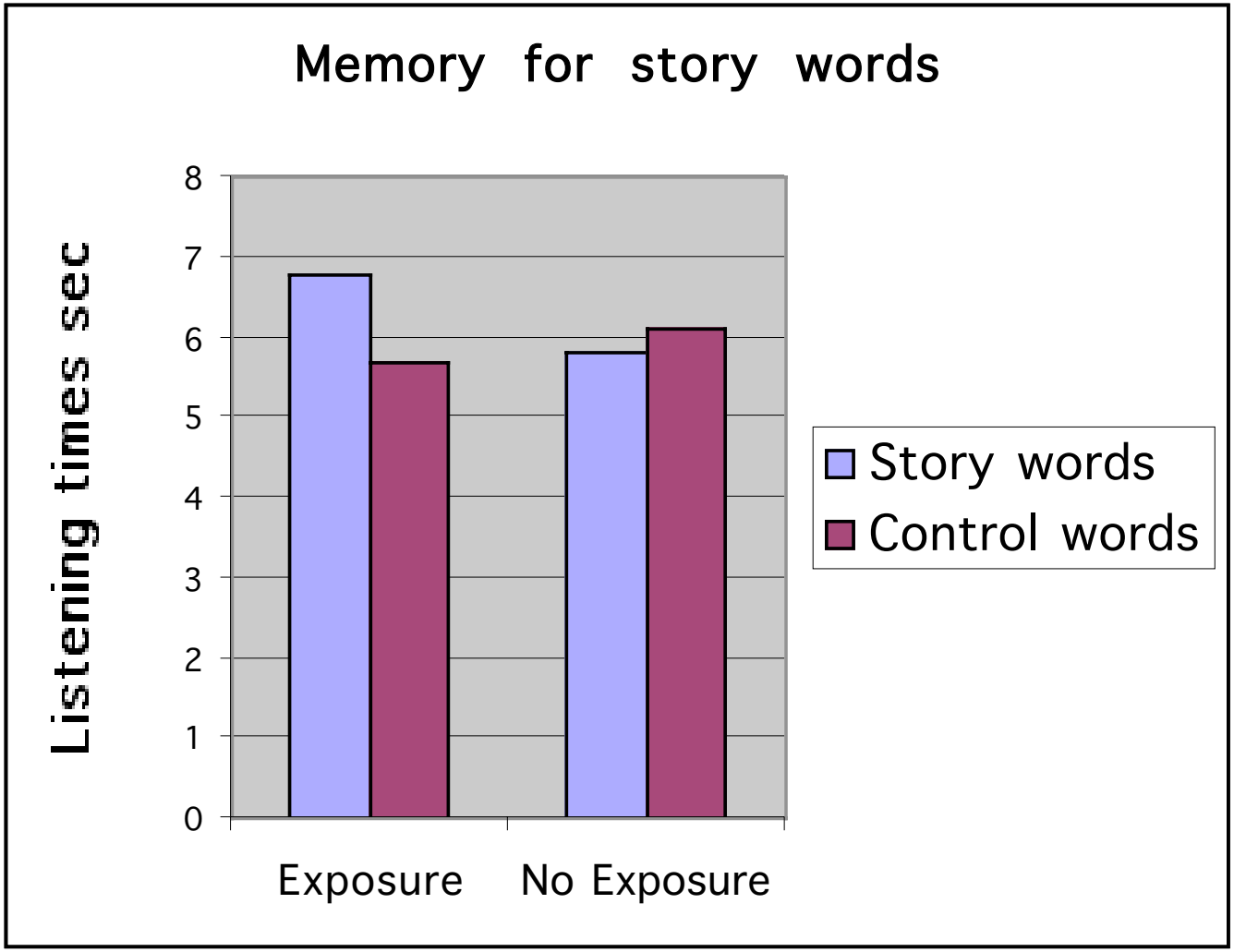
| | |
|---|---|
| **“Words”** | **6.8 sec** |
| **Other** | **7.6 sec** |

## Long-Term Learning of Words
## Jusczyk & Hohne (1997)

8 mo old infants
10 times in 2 weeks hear 30 minutes of speech - three stories for children

Test: two weeks later, head-turn preference procedure used
Lists of words common in stories or matched words not presented

Control condition: no exposure to stories, same test


Memory for story words
Listening times sec
8
7
6
5
4
3
2
1
0
Exposure
No Exposure
Story words
Control words

# Awareness of ambiguity?

I was afraid of Ali's punch because it contains too much alcohol.

The lawyer decided to take the case because it was large enough to hold all his papers.

## Lexical Ambiguity

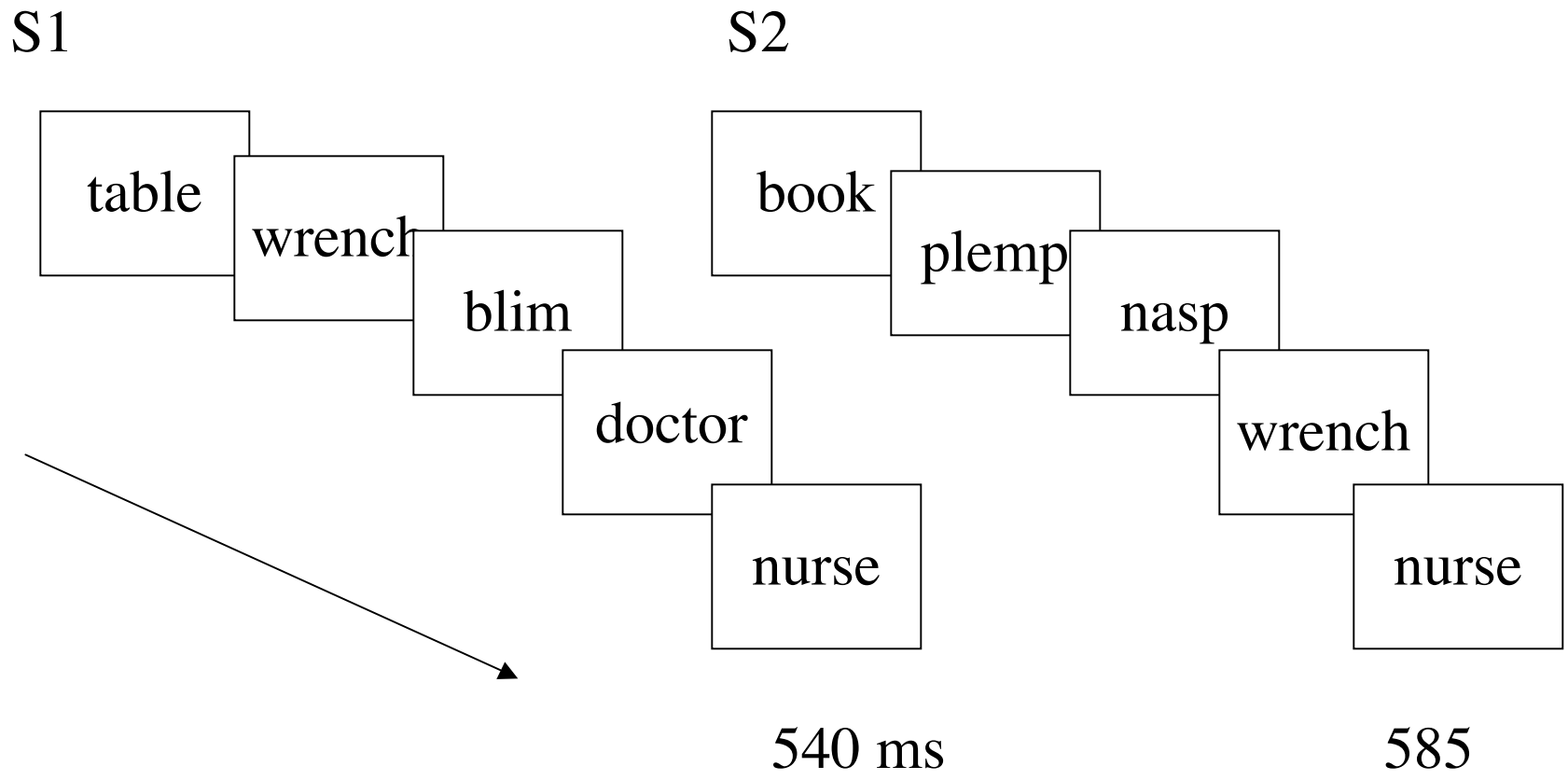
"The stranger noticed the **bugs** in the apartment."

Bugs:  insects, listening devices

David Swinney (1979)

**Semantic Priming**

**(Word naming, lexical decision)**



# Cross-modal priming

| | **Priming condition** | (control) |
|---|---|---|
| auditory | **I better do my laundry** | I never do my laundry |
| | ↓ | ↓ |
| visual | **good** | good |
| auditory | **I bet her five dollars** | I lent her five dollars |
| | ↓ | ↓ |
| visual | **wager** | wager |

Zwitserlood (1989)

auditory "The stranger noticed the **bugs** in the apartment."

visual condition (time) →

immediate

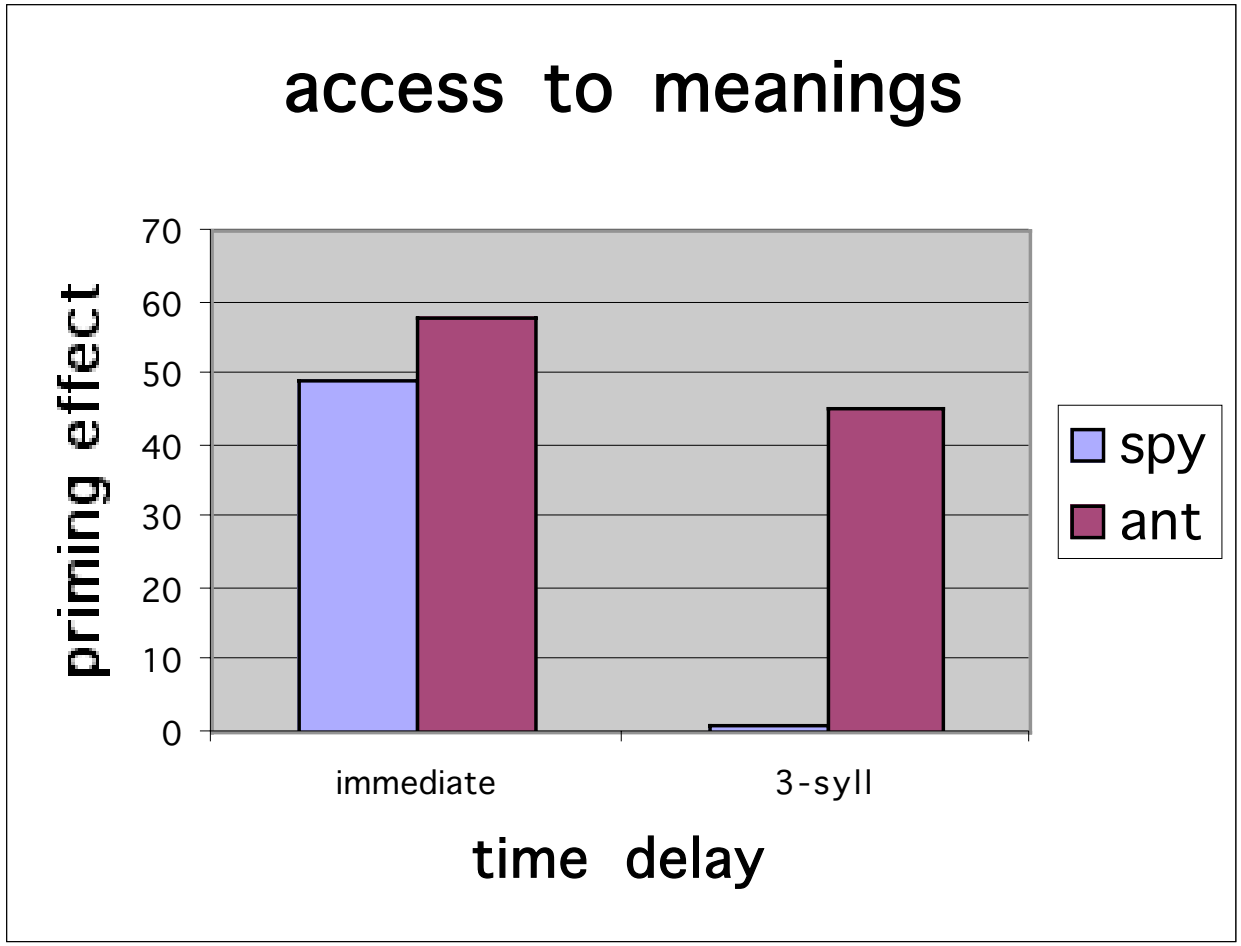
spy
ant
sew

3 syllables

spy
ant
sew

priming effect = unrelated - related

Swinney : Priming for both meanings initially



“The filthy apartment had roaches and other **bugs** in the cupboards”

auditory

visual condition (time) →

immediate

spy
ant
sew

3 syllables

spy
ant
sew

Swinney : Even with strong context, priming for both meanings initially

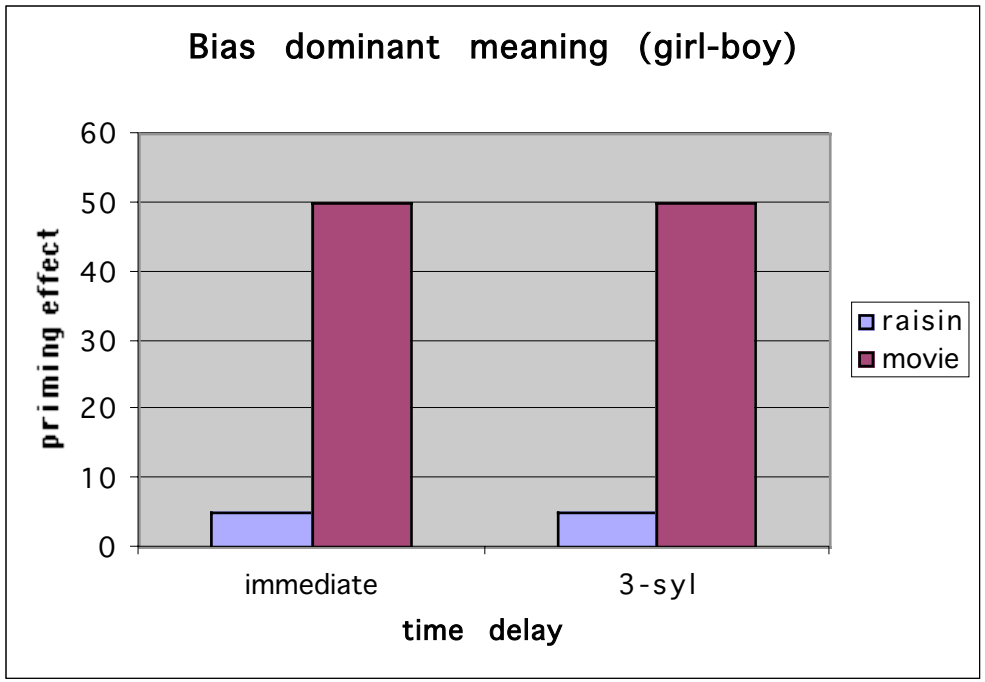
Later studies: Selective access to meaning with strong context and bias toward dominant (higher frequency) meaning

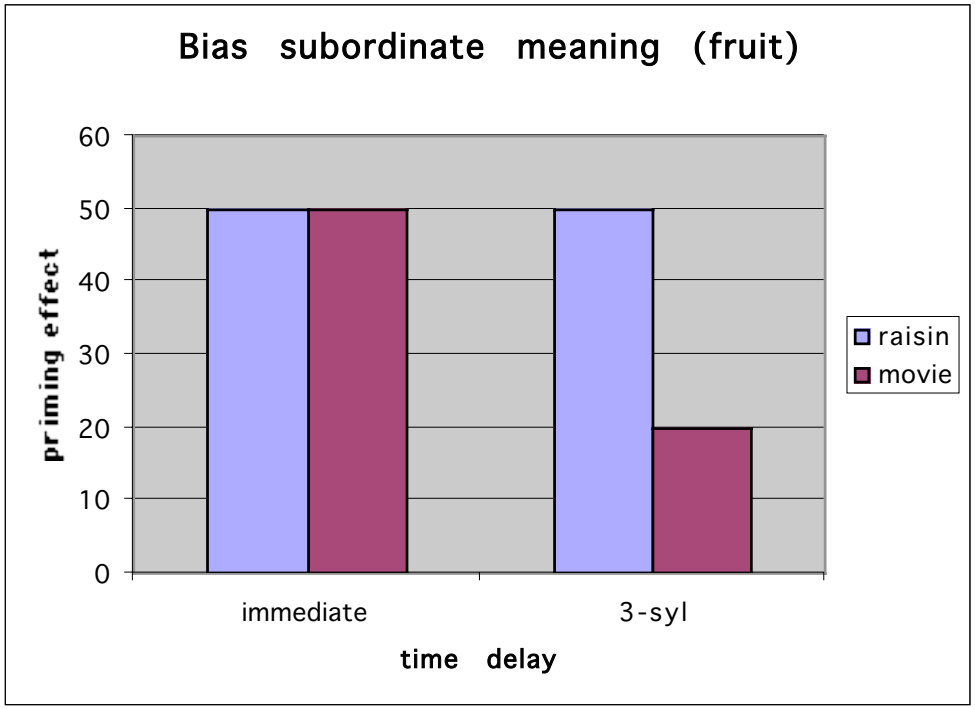
e.g., "date" girl-boy social event (dominant)
"date" fruit (subordinate)

"The young couple went on their first date"
priming only for social related meaning

"The fruit plate included figs and a date"

priming for words related to both meanings


Bias dominant meaning (girl-boy)
60
50
40
30
20
10
0
priming effect
raisin
movie
immediate
3-syl
time delay


Bias subordinate meaning (fruit)
60
50
40
30
20
10
0
priming effect
raisin
movie
immediate
3-syl
time delay