

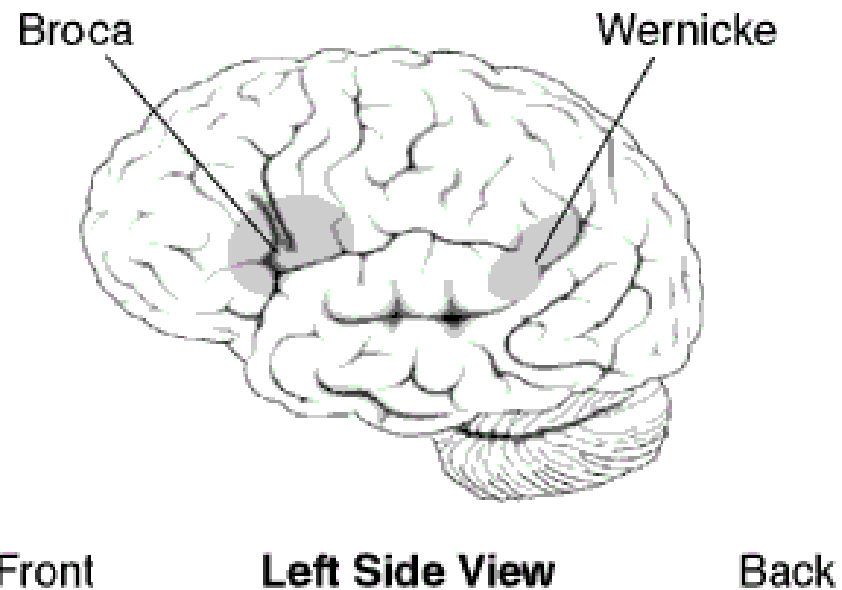
Lecture 7

Language Representation

- **Dissociation of Language Representations**
 - Reading vs. writing
 - Naming objects
 - Parts of speech
- **Language and Mental Representation**
 - The Sapir-Whorf hypothesis
 - Effect of language on visual representations

Review from Psych 100

Language and the left hemisphere



**Brain areas associated with fluency
and meaning in speech**

Dissociating Representations



Alexia without agraphia

Dissociating Representations



Anomia

Dissociating Representations



A loss of grammar

LANGUAGE AND COGNITION

SAPIR-WHORF HYPOTHESIS



**THE LANGUAGE YOU SPEAK AFFECTS THE
STRUCTURE AND ORGANIZATION OF YOUR
MENTAL REPRESENTATIONS**

Language/Vision Interactions

Question:

Which of the two bottom squares matches the colour of the top square?



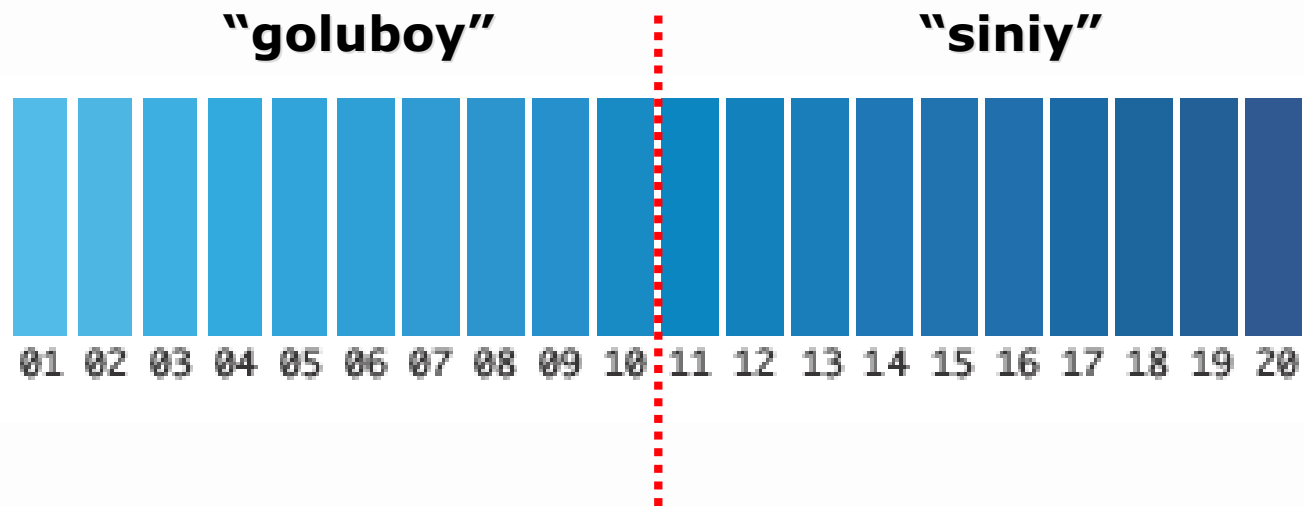
Boroditsky (2007)

Language Affecting Vision

English and Russian speakers both tested in the task

Why?!

In Russian, two different colours here:

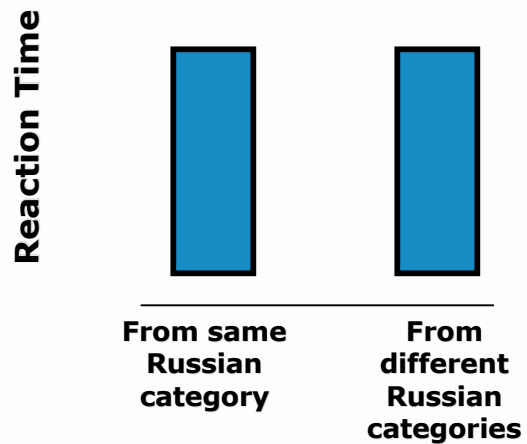


Boroditsky (2007)

Language/Vision Interactions

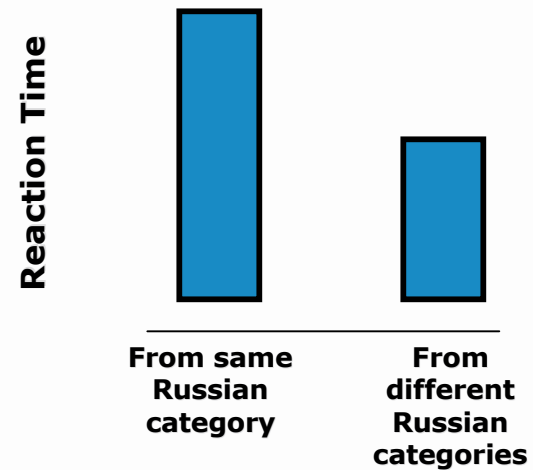
Synopsis of Experiment 1

English Speakers



Colour of bottom squares

Russian Speakers



Colour of bottom squares

Boroditsky (2007)

Language/Vision Interactions

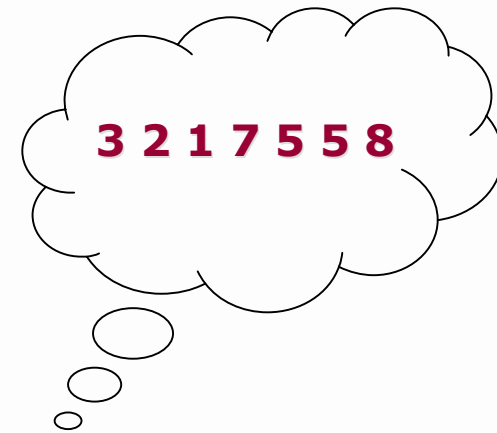
Experiment 2

Do the colour-matching task while silently holding a string of numbers in your head

Task 1



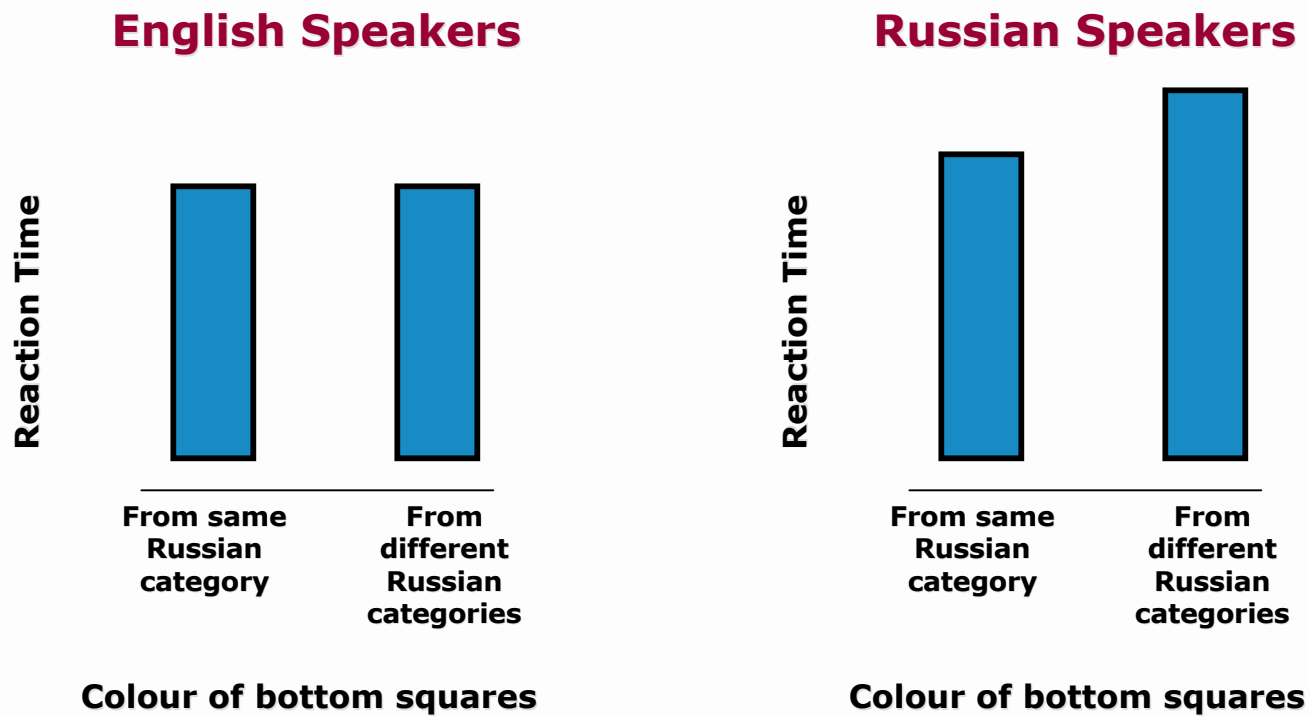
Task 2



Boroditsky (2007)

Language/Vision Interactions

Synopsis of Experiment 2



Boroditsky (2007)

Language/Vision Interactions

English and Russian color terms divide the color spectrum differently. Unlike English, Russian makes an obligatory distinction between lighter blues (“goluboy”) and darker blues (“siniy”). We investigated whether this linguistic difference leads to differences in color discrimination. We tested English and Russian speakers in a speeded color discrimination task using blue stimuli that spanned the siniy/goluboy border. We found that Russian speakers were faster to discriminate two colors when they fell into different linguistic categories in Russian (one siniy and the other goluboy) than when they were from the same linguistic category (both siniy or both goluboy). Moreover, this category advantage was eliminated by a verbal, but not a spatial, dual task.

English speakers tested on the identical stimuli did not show a category advantage in any of the conditions. These results demonstrate that (i) categories in language affect performance on simple perceptual color tasks and (ii) the effect of language is online (and can be disrupted by verbal interference).

Boroditsky (2007)