

Guest Lecture 2

Language, Culture, & Thought

Liz Baraff Bonawitz

Fast Marketing of Your Research

Vision

Steps

News

Contribution

Class Presentations

Form 3 Groups [A-G] [H-M][N-Z]

Take 5 minutes and discuss **VSNC** for the research paper you were assigned.

Select one person in your group to present the **Vision**; select a second person in your group to present the **Steps**; select a third person for **News**; and a fourth person to present **Contributions**.

Present **VSNC** to the rest of the class.

What kinds of questions should we be asking?

Why study Language & Culture?

- The origins of knowledge & nature of concepts
 - What is core, innate, universal?
 - Is knowledge invariant?
- Language processing
 - Surface differences only?
 - Sentences to mental representations
- Cognitive Architectures
 - What's connected to what?
 - What's involved with thinking?

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What's involved with Thinking?

Language/Culture as a Tool

Language/Culture as a Lens

Language/Culture as a Category Marker

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See Eve Clark & Levinson Readings

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Origins of knowledge & Nature of conceptual change

- The What is core, innate, universal?
What aspects of development are universal to all cultures?
What role does culture/language play in intellectual development?
Do some cultures/languages provide tools that help development?
- Is knowledge invariant?

Origins of knowledge & Nature of conceptual change

- The What is core, innate, universal?

What aspects of development are universal to all cultures?

What role does culture/language play in intellectual development?

Do some cultures/languages provide tools that help development?

Is cognitive development universal across cultures?

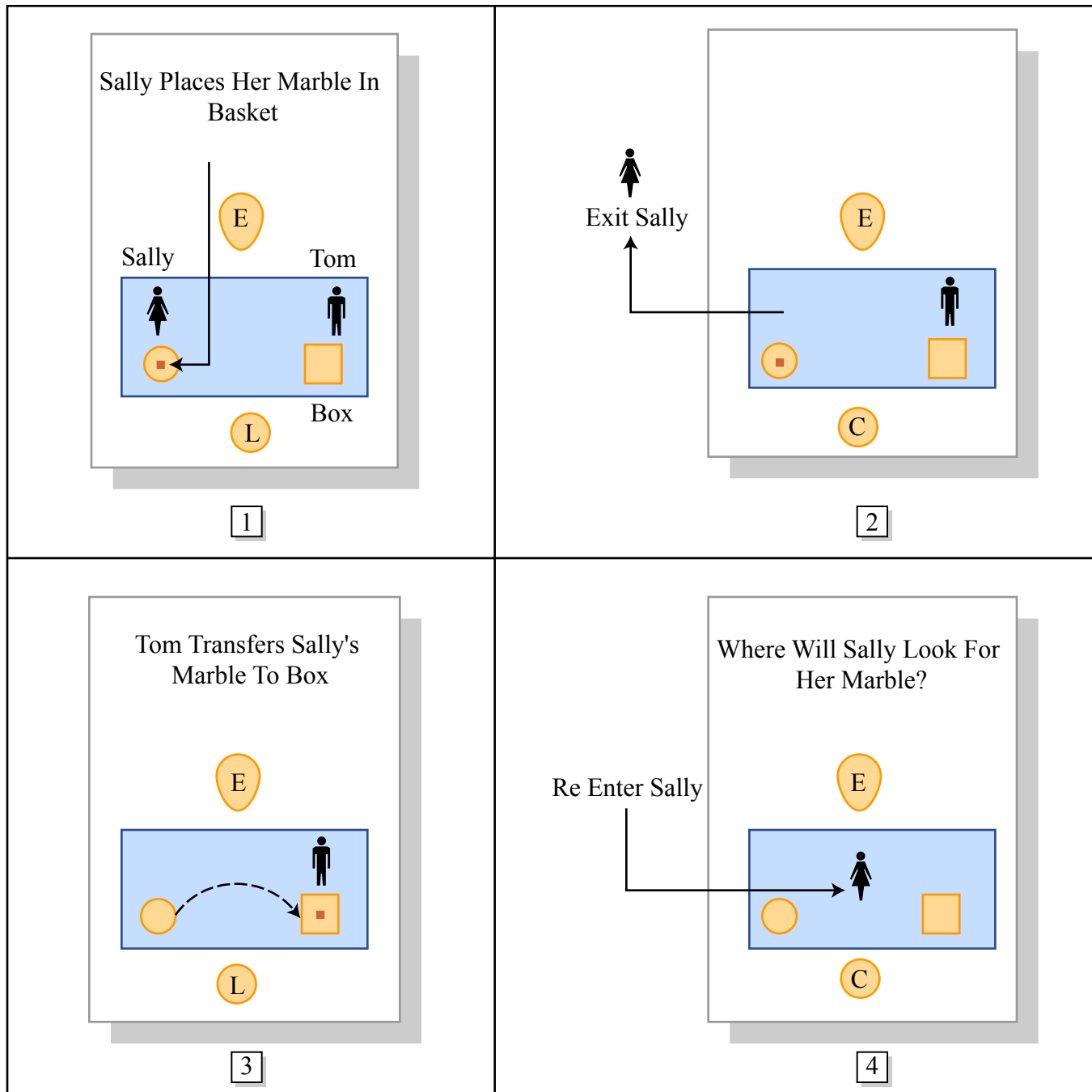


Figure courtesy of MIT OCW.
Baron-Cohen, S., A. M. Leslie, and U. Frith.
"Does the autistic child have a 'theory of mind'?" *Cognition* 21 (1985): 37–46.

Origins of knowledge & Nature of conceptual change

- The What is core, innate, universal?

What aspects of development are universal to all cultures?

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Do some cultures/languages provide tools that help development?

Vygotsky

Cultural transmission allows the child to first learn with the help of an adult and later to 'internalize' the adult's role so that they take on the adult skill within themselves.

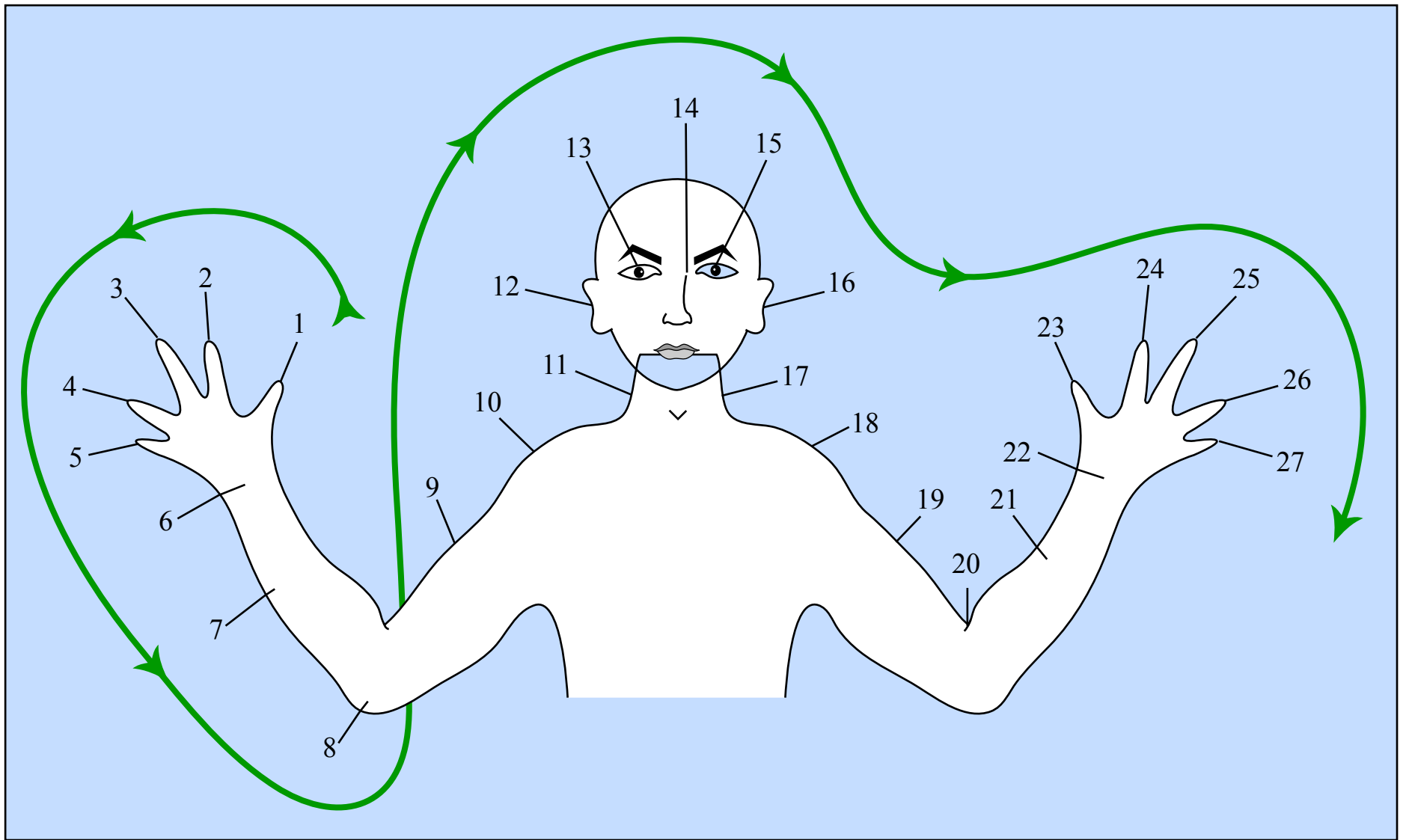


Figure courtesy of MIT OCW.

Saxe, G. B. "The development of measurement operations among the Oksapmin of Papua New Guinea." *Child Development* 53 (1982): 1242-1248.

Origins of knowledge & Nature of conceptual change

- The what is core, innate, universal?

What aspects of development are universal to all cultures?

What role does culture/language play in intellectual development?

Do some cultures/languages provide tools that help development?

Cult & Lang Provide Tools

- Spanish provides Ser/Esta
- English: In/On; Korean: Tight Fit/Loose Fit
- Rural vs. Elite Yoruba

Origins of knowledge & Nature of conceptual change

- The What is core, innate, universal?
- Is knowledge invariant?
How are cognitive developmental changes caused?
(What makes it possible for children to acquire radically new ways of thinking & behaving as they grow older?)

Language as a Tool?

Figure removed due to copyright restrictions.

Please see:

http://www.niu.edu/pubaffairs/RELEASES/2000/MAR/primate/images/color_tree_thumb.jpg

Spelke Blue Room Task

Figure removed due to copyright restrictions.

Please see:

Hermer-Vazquez, L., E. S. Spelke, and A. S. Katsnelson. "Sources of flexibility in human cognition: dual-task studies of space and language." *Cognit Psychol* 39, no. 1 (August 1999): 3-36.

Some Counter Arguments

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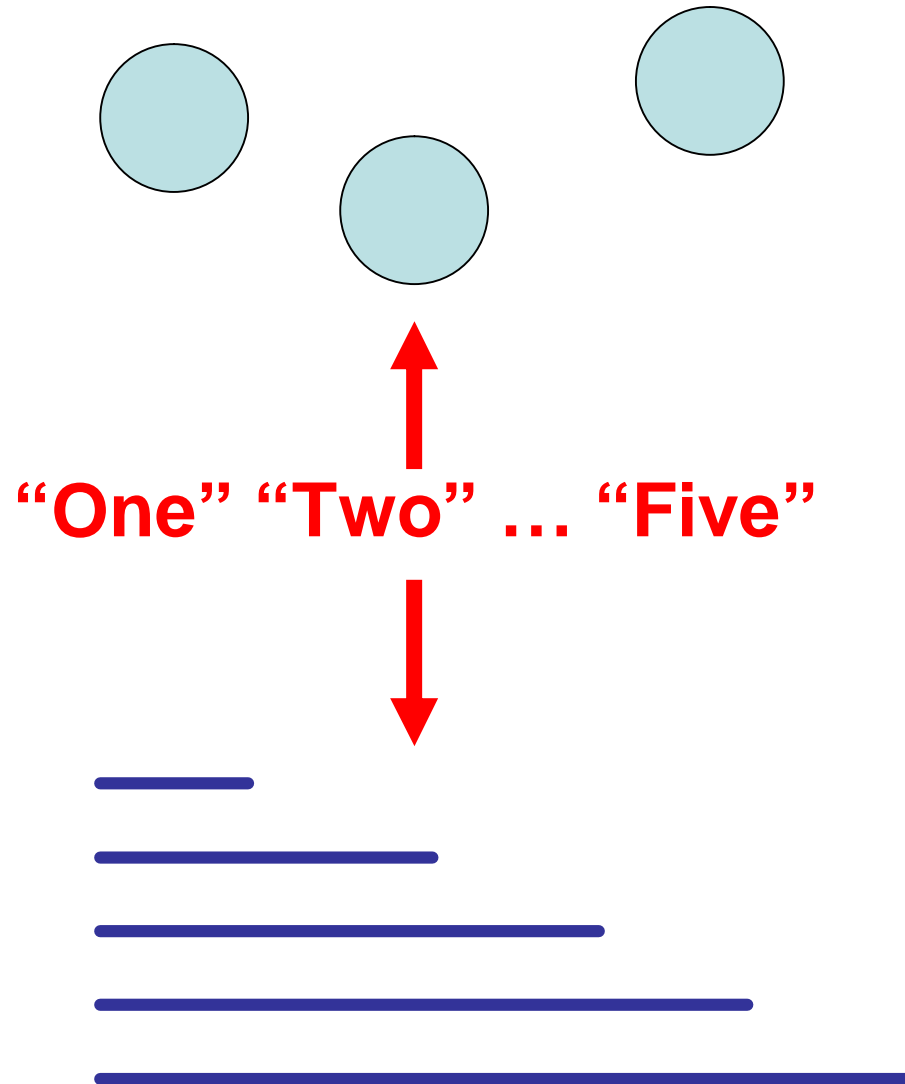
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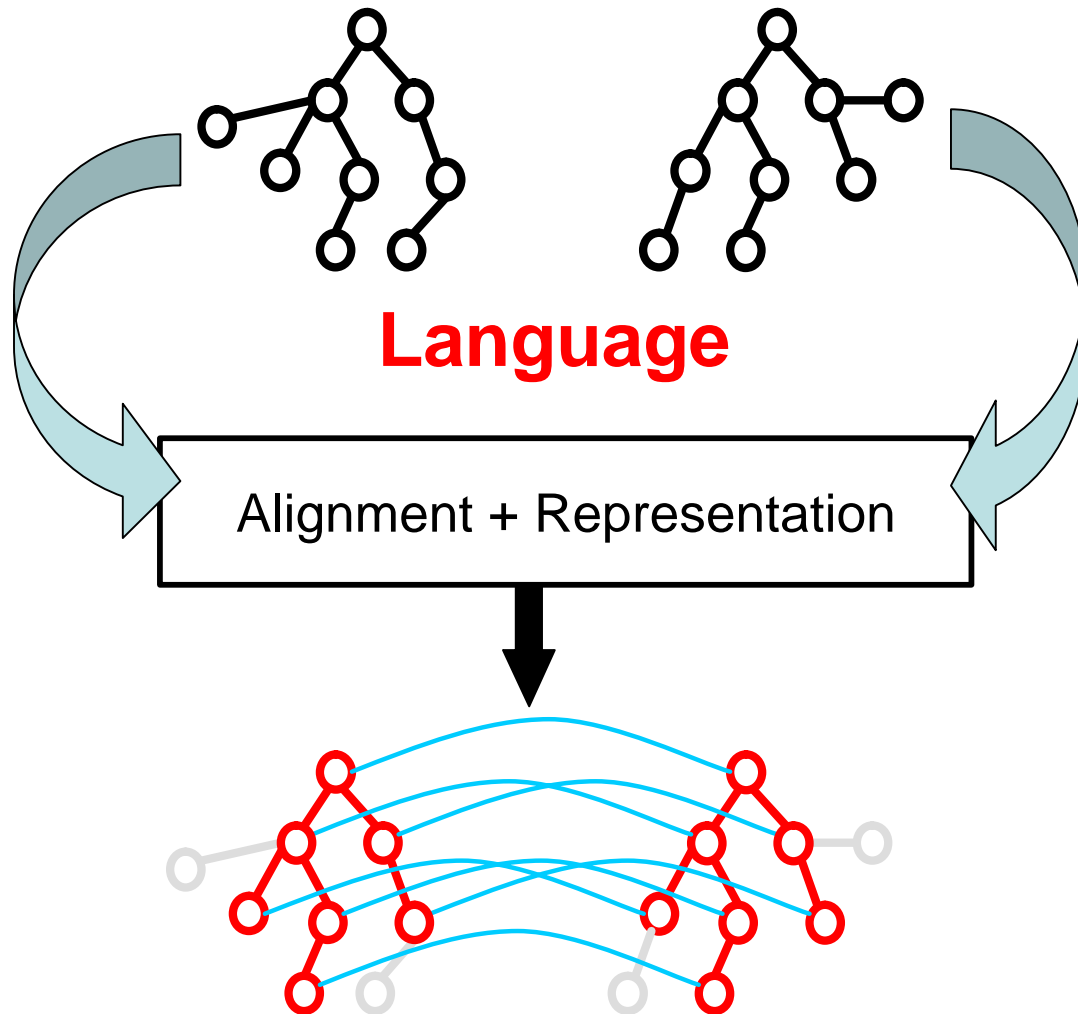
Language as a Tool

Susan Carey: Number Representation



Language as a Tool

Dedre Genter: Analogical Mapping



Next Slides courtesy of Lera Boroditsky

Time-travel?

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TIME AS SPACE

We talk about time in terms of space:

The revolution is ahead of us.

Let's move the meeting forward.

How long was the talk?

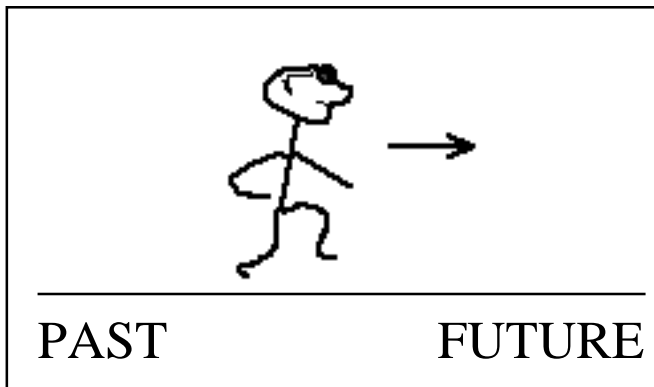
But, do we think about time in terms of space?

TWO WAYS TO THINK ABOUT TIME

Next Wednesday's meeting has been moved forward two days.

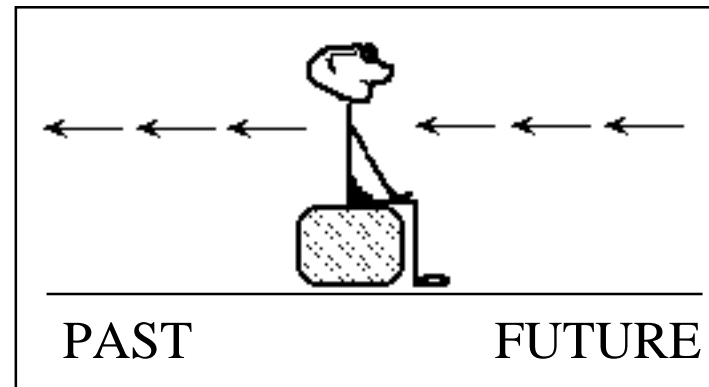
TWO WAYS TO TALK ABOUT TIME

ego-moving



VS

time-moving



We're approaching the deadline.

The deadline is approaching.

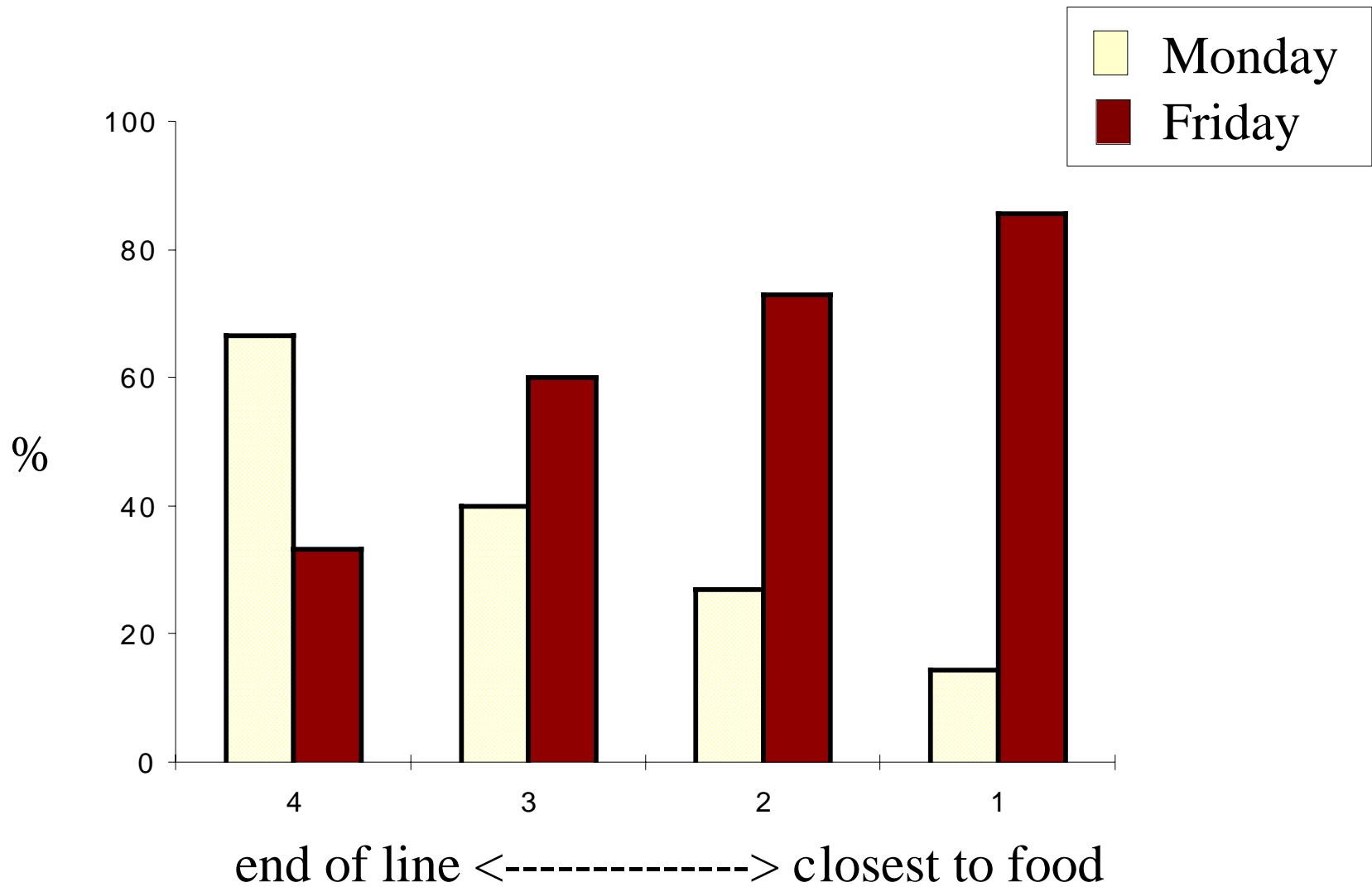
THE LUNCH-LINE (N=69)



Illustration courtesy of MIT OCW.

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THE LUNCH-LINE (N=69)



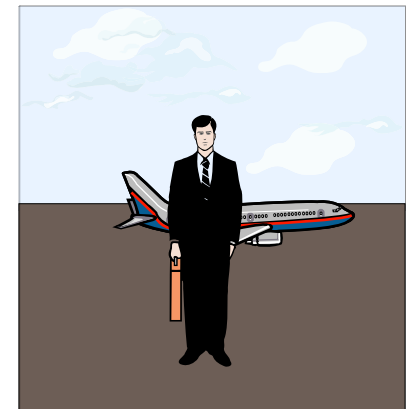
THE AIRPORT (N=333)



just waiting
for someone



about to depart

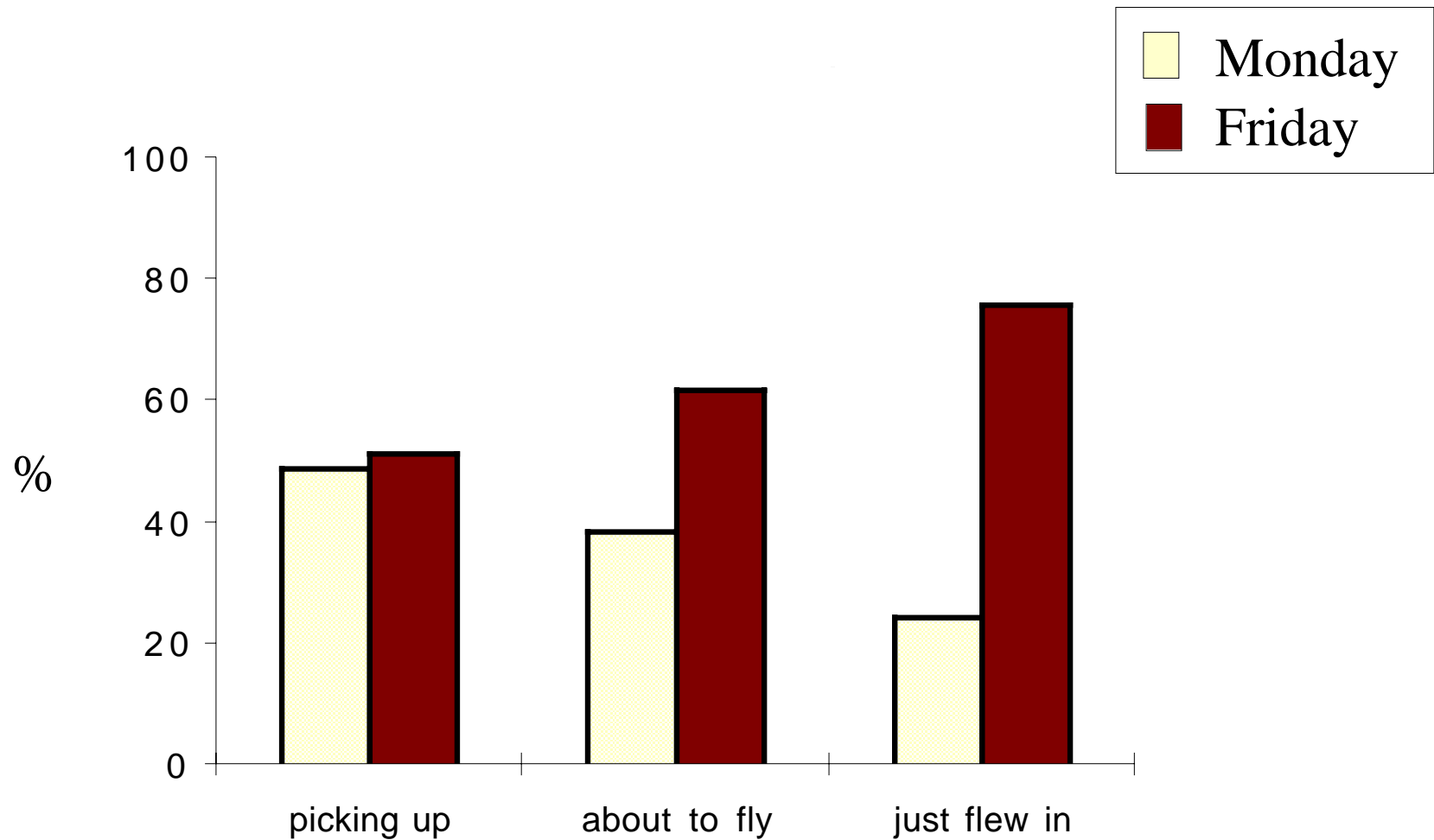


just flew in

Illustrations courtesy of MIT OCW.

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THE AIRPORT (N=333)



WAITING FOR THE TRAIN (N=101)

PLATFORM

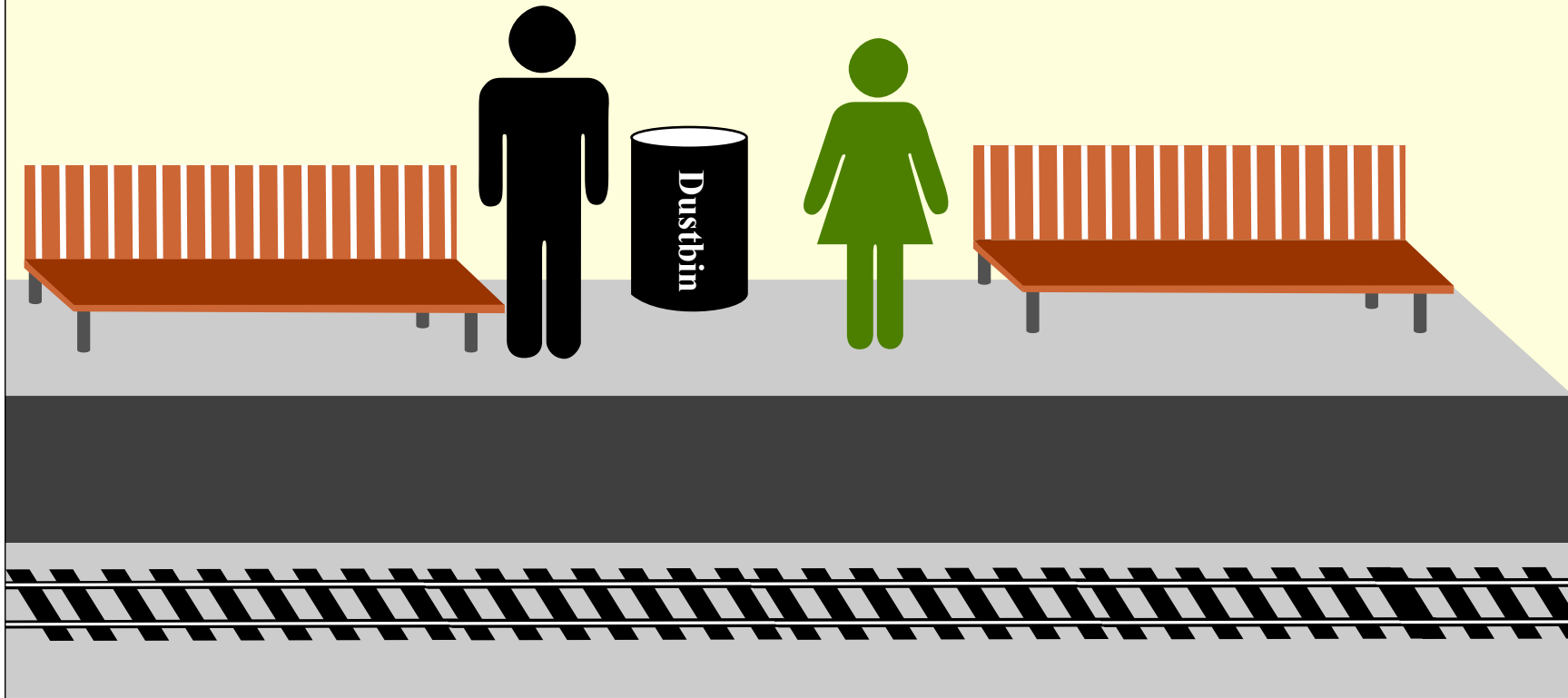
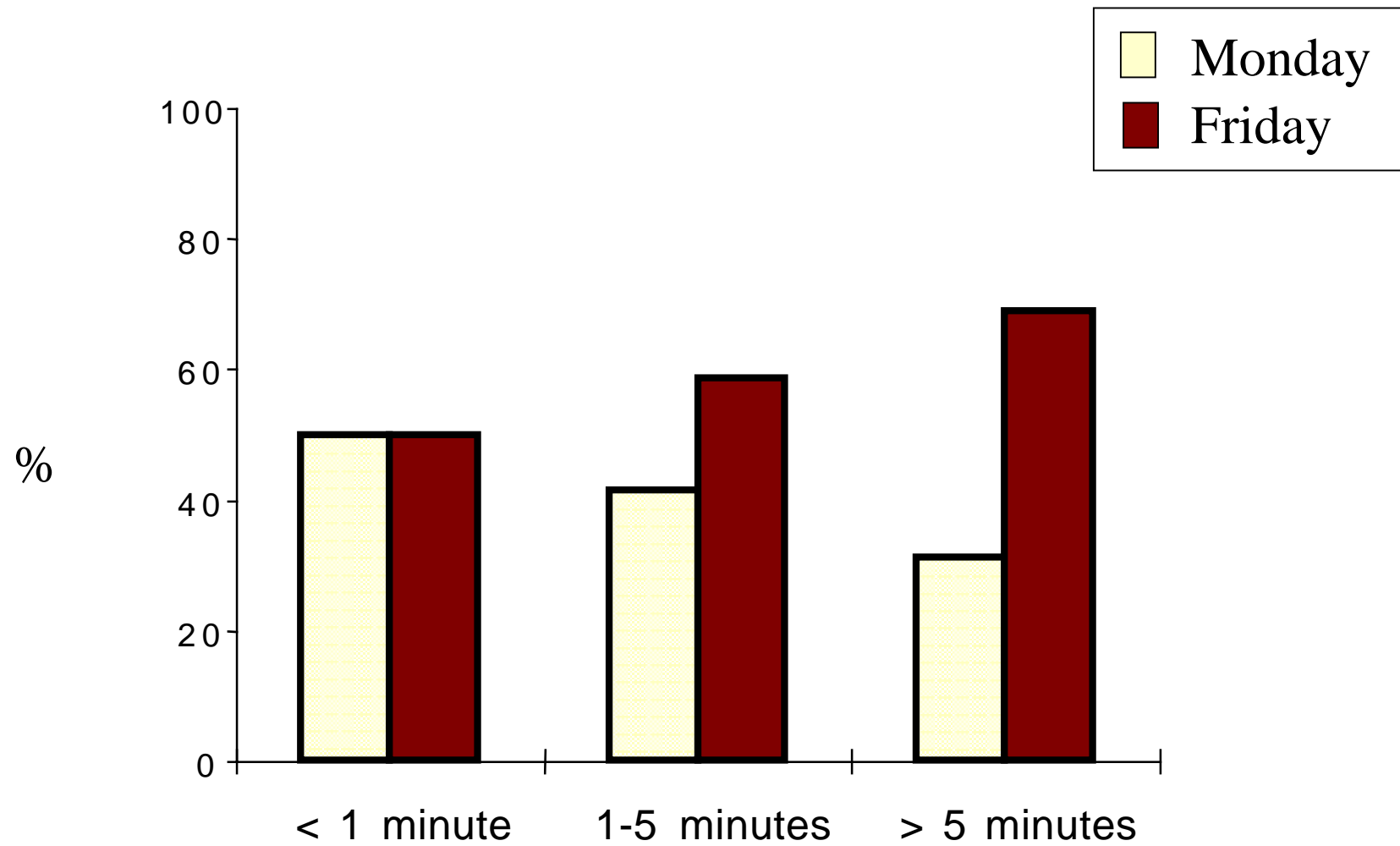


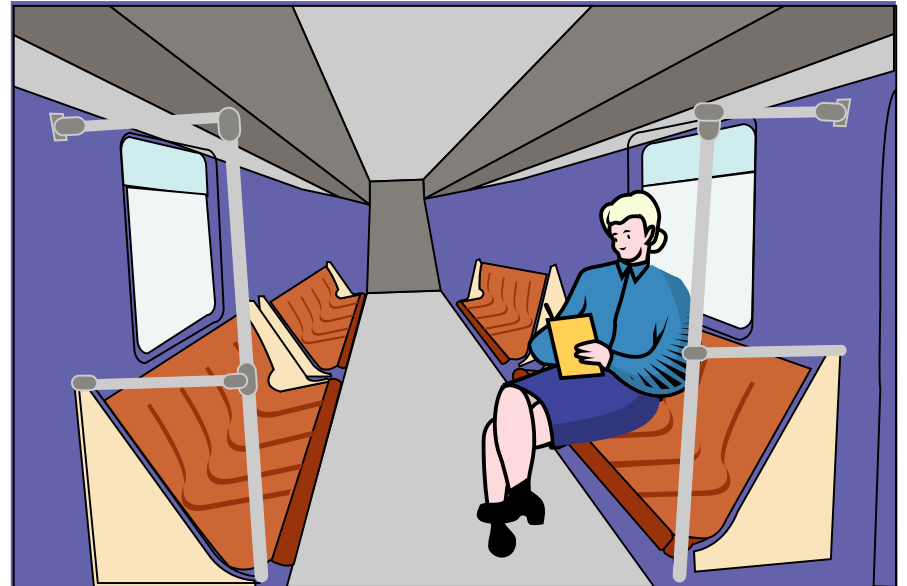
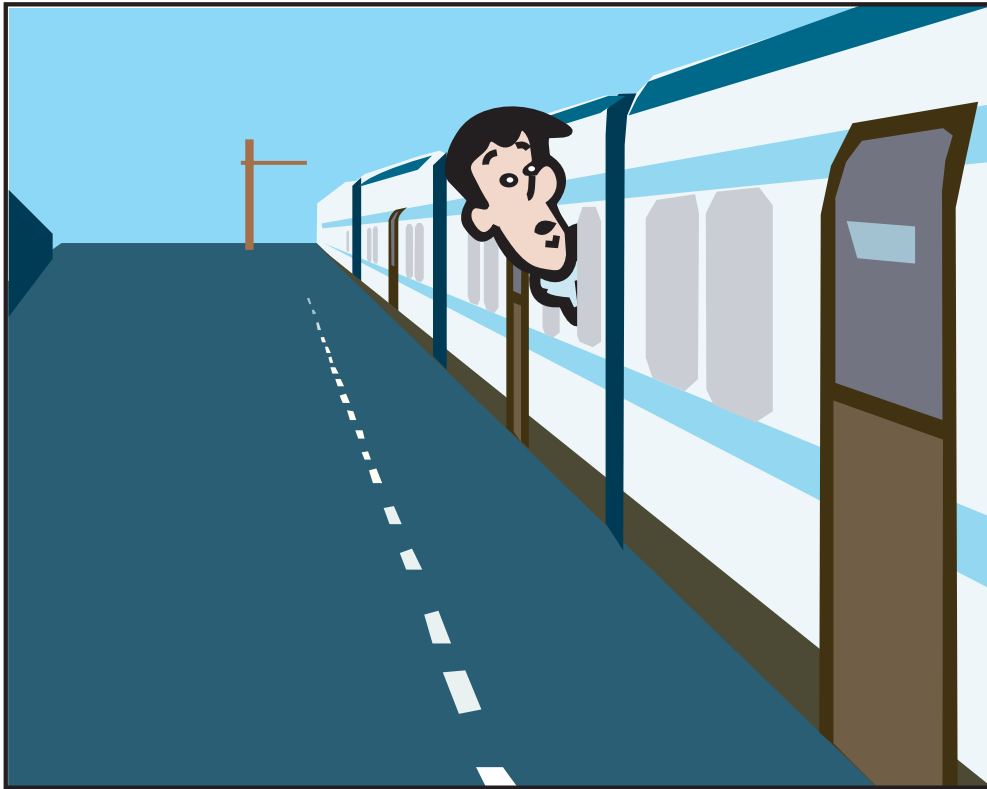
Illustration courtesy of MIT OCW.

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WAITING FOR THE TRAIN (N=101)



ON THE TRAIN (N=118)

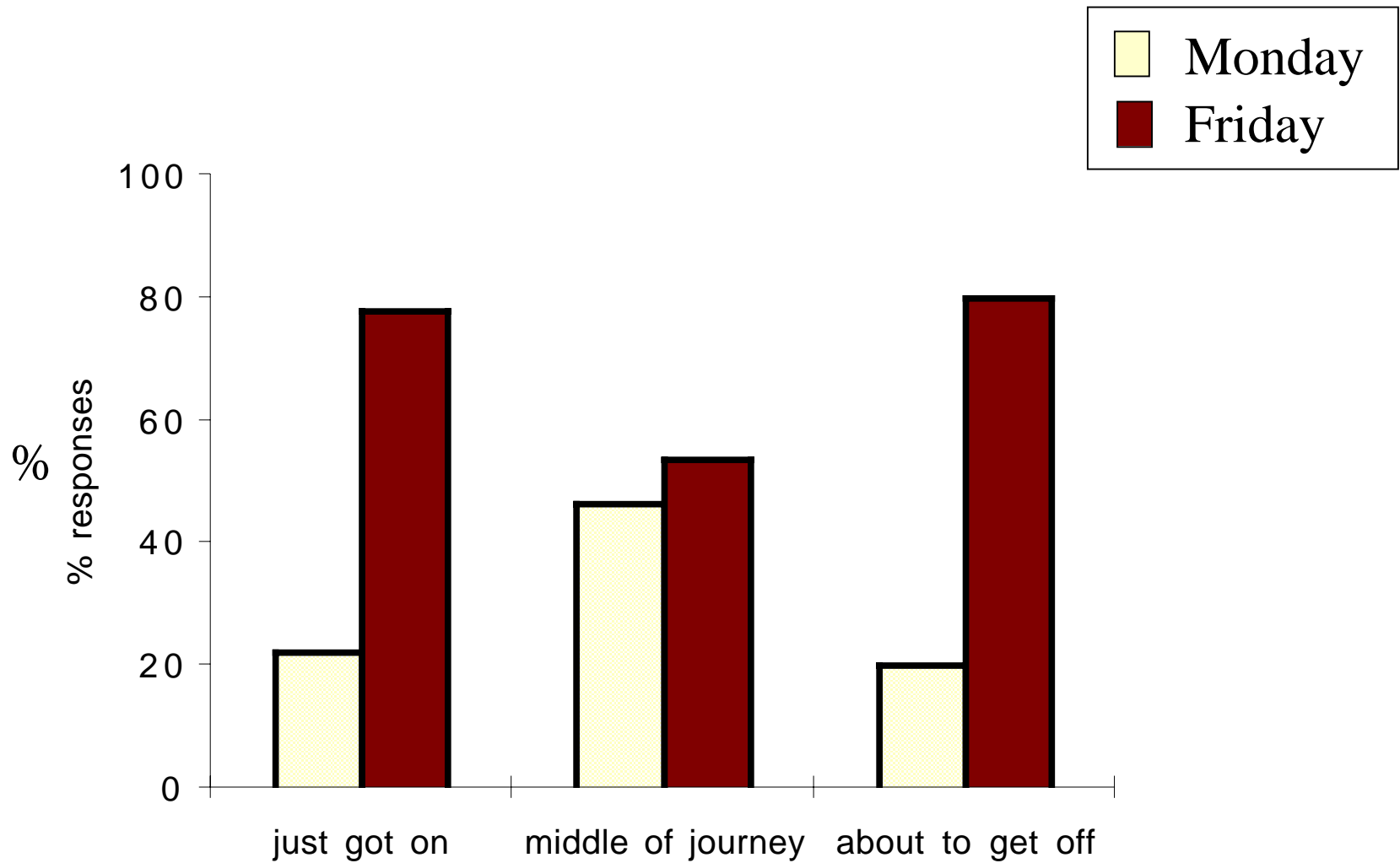


Illustrations courtesy of MIT OCW.

what to predict?

Courtesy of Lera Boroditsky, PhD. Used with permission.

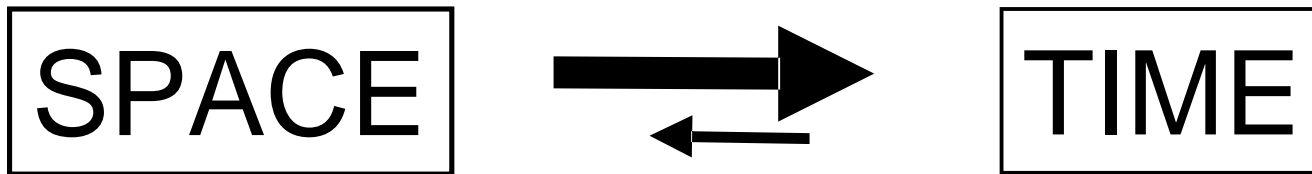
ON THE TRAIN (N=118)



Two separate questions:

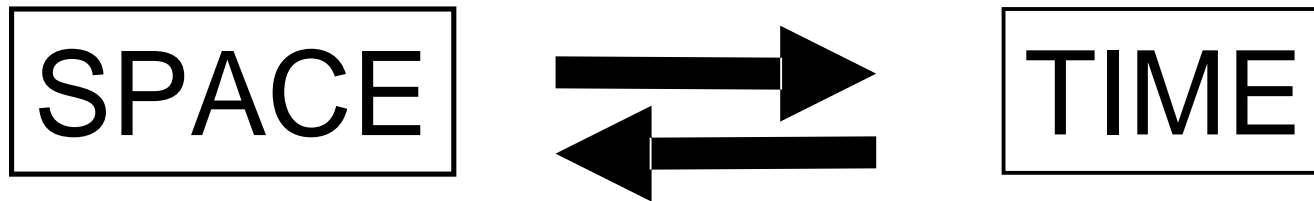
- Are representations of time constructed in part upon representations of space?
- Does language play any role in this construction?

Patterns in language suggest an asymmetric dependence of time on space



(Boroditsky, 2000; Lakoff & Johnson, 1980)

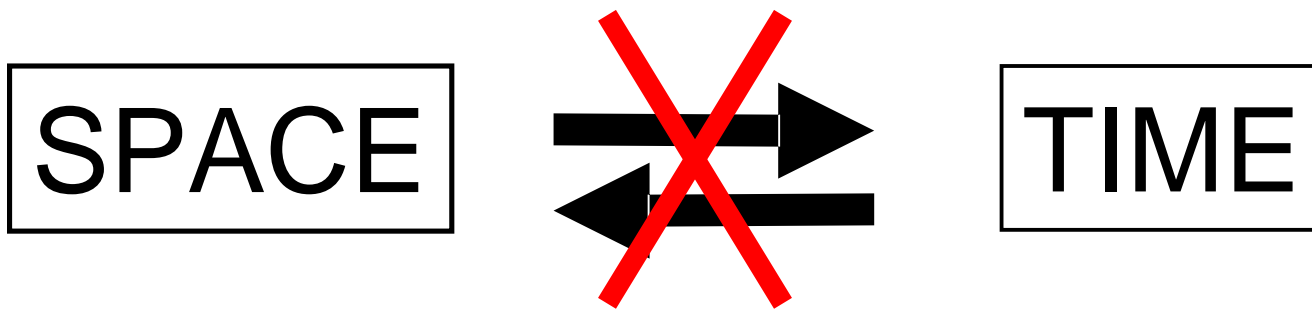
But, space and time could be completely interdependent: i.e., *symmetric* relationship



“expansion [i.e. distance] and duration do mutually embrace and comprehend each other; every part of space being in every part of duration, and every part of duration in every part of expansion.”

John Locke (1689/1995) .

Or they could be completely independent



(e.g., Jackendoff, Murphy)

Piaget observed that kids confuse space and time.

Until age 9!

SLOW

(2m / 9sec)



FAST

(4m / 7sec)



Which one went for a longer time? Why?

Piaget was all wrong about the age...

...MIT undergrads can't do it either.

×

SPACE

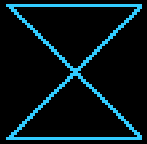


TIME





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Courtesy of Lera Boroditsky, PhD. Used with permission.

9 x 9 Design

200

275

350

425

500

575

650

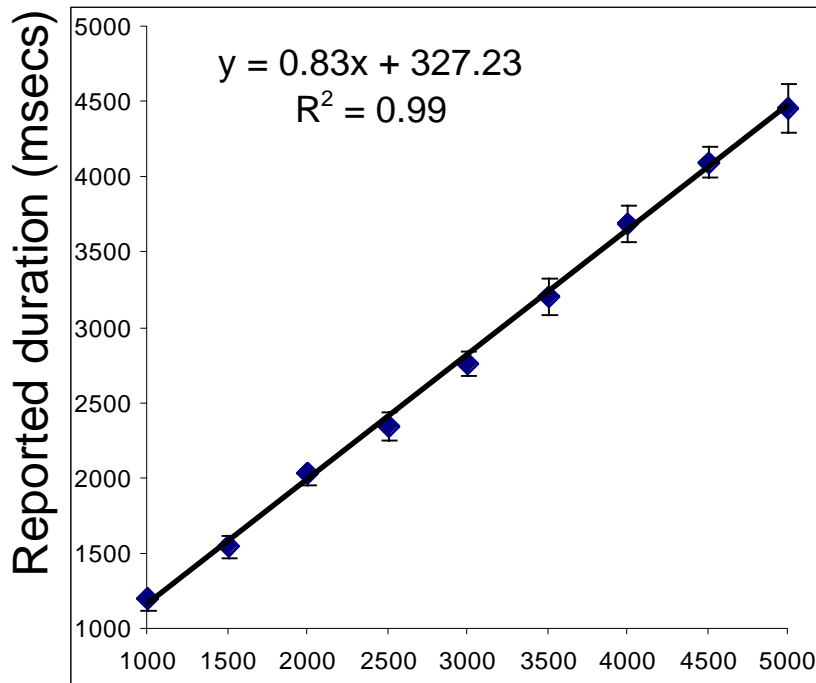
725

800

200-800 Pixels x 1-5 Seconds

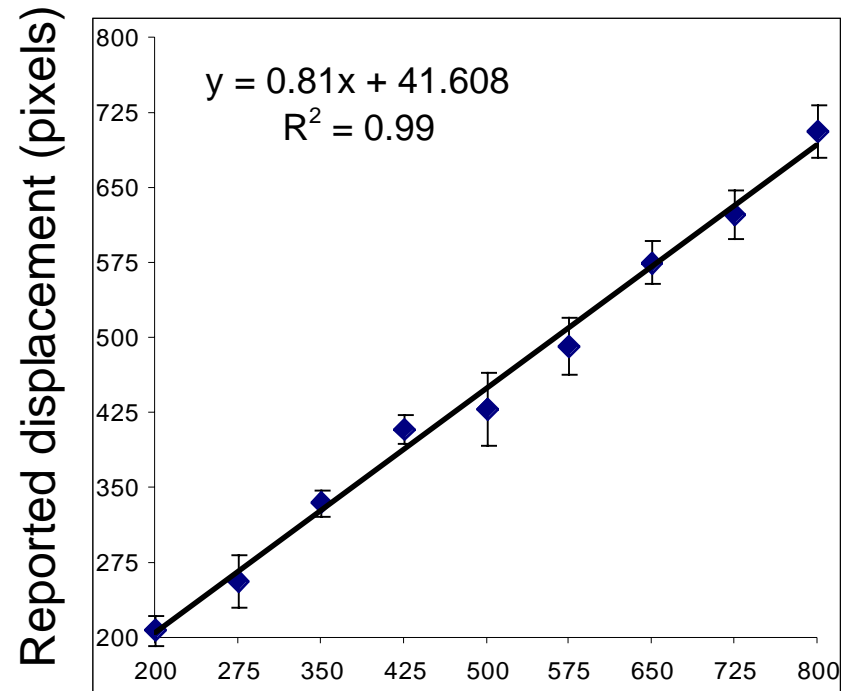
Overall, people were pretty good at the task.

TIME



Actual duration (msecs)

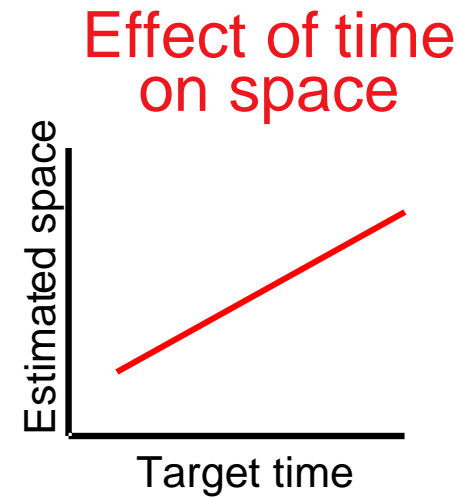
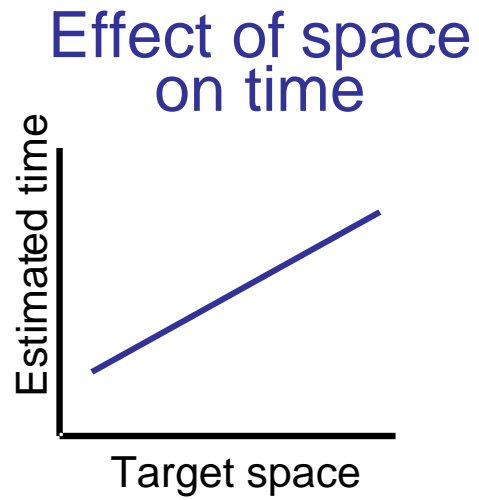
SPACE



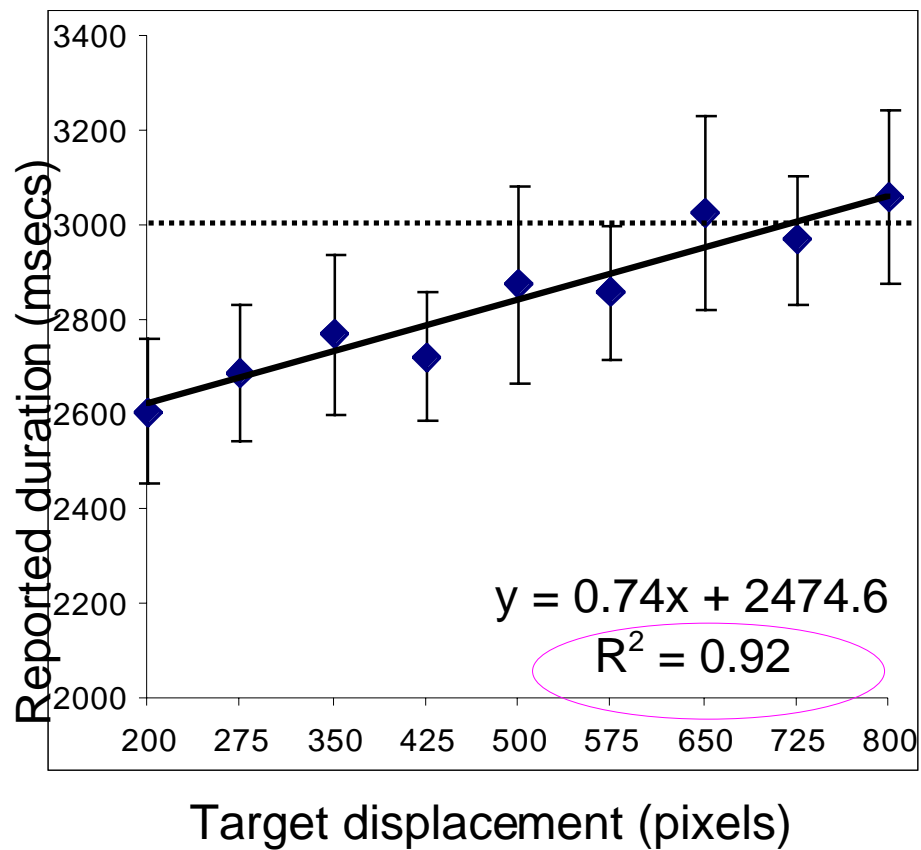
Actual displacement (pixels)

But what about the effects of space on time & time on space?

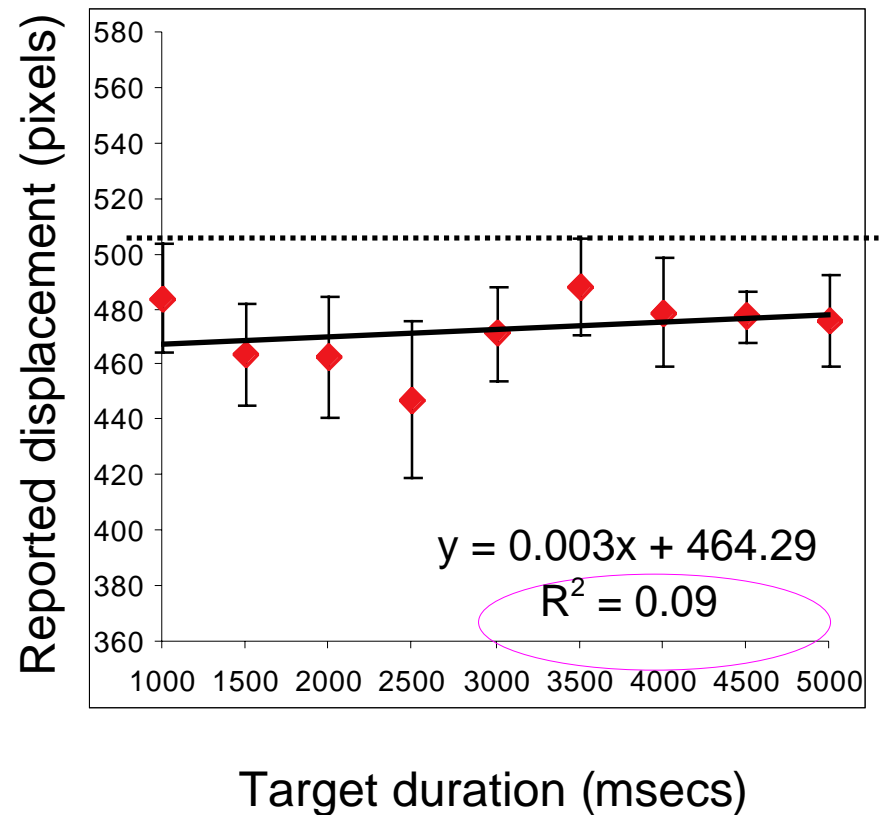
Mutually
interdependent

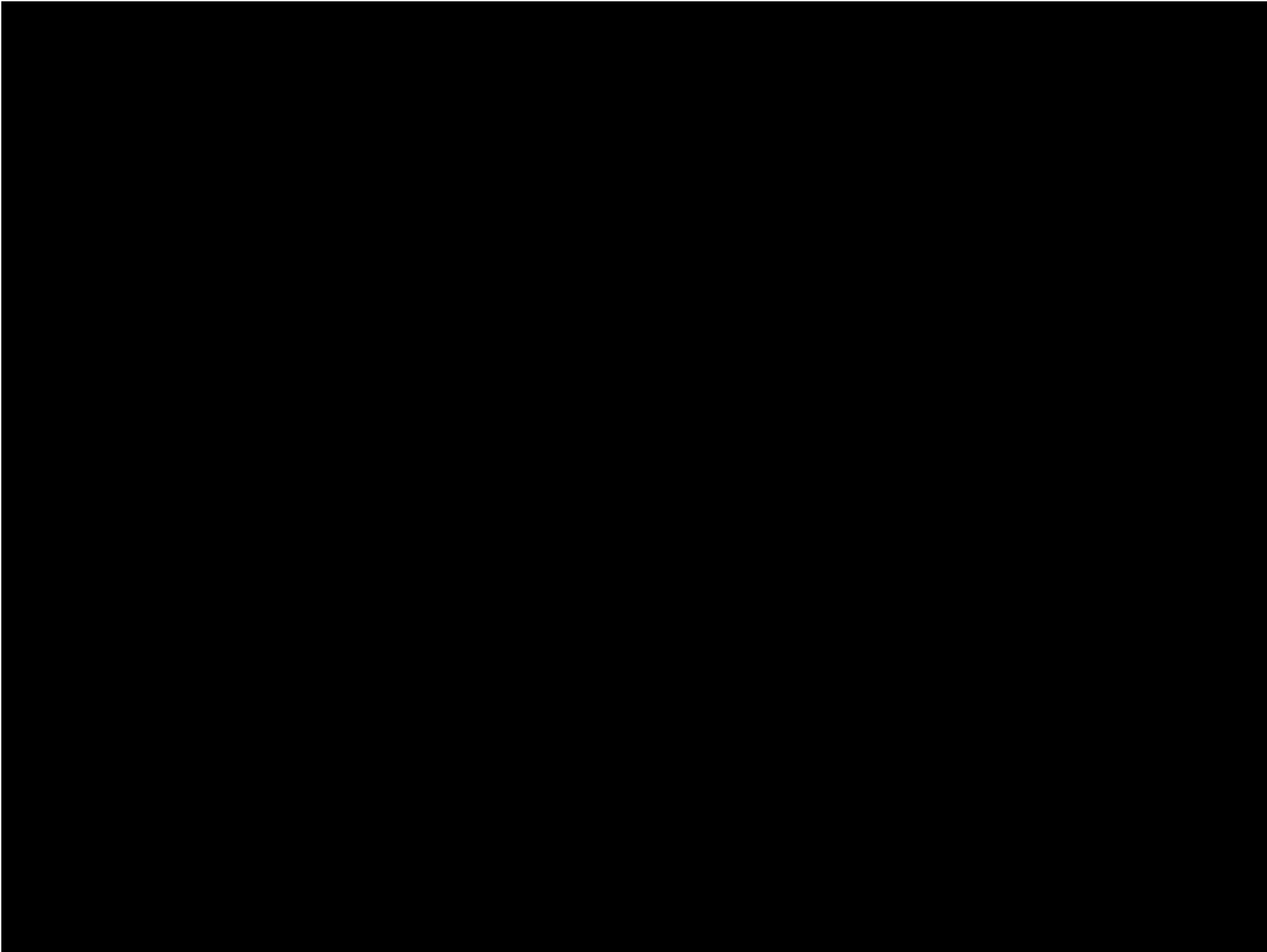


Effect of Target Displacement on Estimated Duration



Effect Target Duration on Estimated Displacement





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The Big Debate - Prep

Form 3 Groups [A-G] [H-M][N-Z]

Take 5-10 minutes and discuss:

1. Main thesis & **Vision** of position paper you read. (Summarize in 2-3 sentences)
2. What would be the **steps** required to support this point?
3. What evidence (**News**) can you think of to support this point (from today's lecture, your readings, previous lectures?)
4. What are the **Contributions** of this thesis?

Debate

Groups each present **VSNC** for their paper.

Groups each respond to **VSNC** for other groups.

Do you agree with the interpretation of the evidence?

Did two groups cite the same evidence?

Is this is a problem?

Which thesis do you really support?