

Why incremental?

Ling499a, Spring 2009

Memory demand

- During language comprehension...
 - Speech perception
 - Lexical access
 - Tree building
 - Storing trees in memory
 - Semantic processing
 - Discourse integration

 - LOTS of things to do!

Memory demand

- The more structured the input, the easier to hold in memory
- Memorize the following sequence of seven letters (in the order in which they were presented)

+

D

P

M

U

R

T

E

RECALL

Did you memorize it?

- The answer is DPMURTE
- Now try this one

+

U

M

D

T

E

R

P

RECALL

Did you memorize it?

- The answer is UMDTERP
- This one is so much easier!
- [UMD][TERP]
- Structuring/organizing input (i.e., interpreting) turns 7 items into 2 items

Memory problem 2

- ...people forget!
- Memory representations decay over time – the earlier interpreted, the less likely to be forgotten

Incremental sentence processing

- Early structural integration reduces memory burden
- The boy will eat [the cake!] → now worry about other things
- Wh-question: Primary example of memory demand in sentence processing
→ Erica & Sherrod's presentation!

Traxler & Pickering 1996

- **Plausibility manipulation - eye-tracking**
 - That's the {pistol/garage} with which the heartless killer shot the hapless man yesterday afternoon.
 - That's the {garage/pistol} in which the heartless killer shot the hapless man yesterday afternoon.

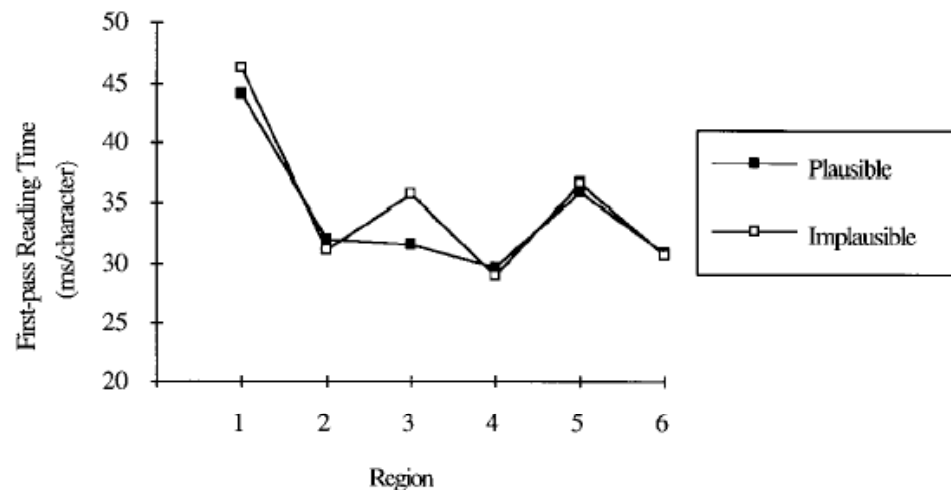


FIG. 1. Experiment 1: Mean first-pass reading time by region and condition. Region 3 corresponds to the word *shot* in the example sentence. Region 5 corresponds to the words *man yesterday* in the example sentence.

More from Traxler

- Non-island
 - The book that the author **wrote** regularly about...
 - The city that the author **wrote** regularly about...
- Island
 - The book that the author who **wrote** regularly saw...
 - The city that the author who **wrote** regularly saw...

For Thursday

- Summarize Sussman & Sedivy
- 1-page report for Lab 1 **due Friday**