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)
RECALL
Did you memorize it?

• The answer is DPMURTE

• Now try this one
M
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**