The Relationship(s) Between Recollection and Familiarity

Andrew Yonelinas
Joel Quamme
University of California Davis

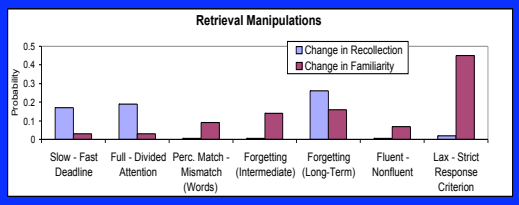
The Questions

- Independence/Redundancy

- At Encoding or Retrieval

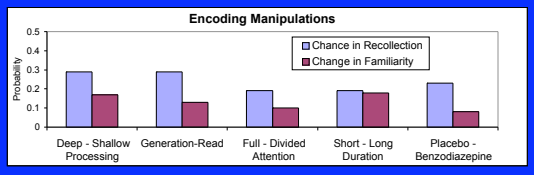
Retrieval

- At time of retrieval R and F can be doubly dissociated
- → independent retrieval processes



Encoding

- At time of encoding R can be dissociated from F
- → redundant encoding processes?



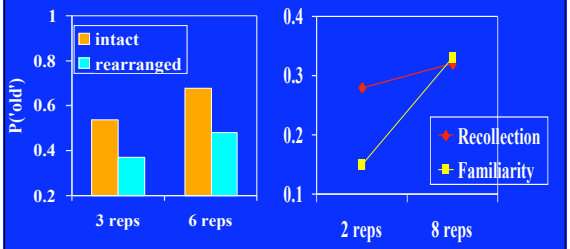
Help Wanted:

Encoding manipulations that influence F more than R

Rote Rehearsal?

- Ian Dobbins et al (under review)

Exp 1 – assoc. recogn. Exp 2 R/K recogn.



Conclusions

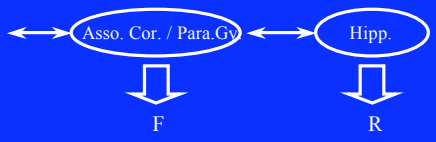
1) R and F are independent at retrieval

2) R and F may also be independent at encoding

Questions:

- independent neural substrates of R and F at encoding and retrieval processes?

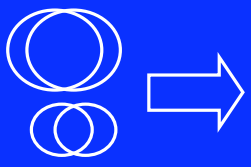
The 'Modal' Temporal Lobe Model of Recollection and Familiarity



- Independent mnemonic computations in two interconnected regions (e.g., fluency of item ID/categorization versus associative binding of nonunitized items/features).

Testing for Statistical Independence?

Testing for statistical independence across subjects or items does not provide a test of process independence.



Positive Correlation

Strength-based Redundancy

- No less than two-functionally independent memory components are required to account for standard recognition (R & d', or d' & Vo) (Glanzer, et al, 1999; Ratcliff, et al, 1992; Yonelinas, 1994)

→There must be more to recognition than just strength or amount of information

Knowlton & Squire (1995)

- Test at 10 min then retest 1 week later
- The number of items that 'converted' from an R to a K response was greater than any model predicted, but was closest to that expected by the redundancy model.
- But, to measure conversion rates you need to test the same item twice. If retesting influences R or F then one can no longer derive predictions from either model, unless you make additional assumptions about how retesting influences R and F.