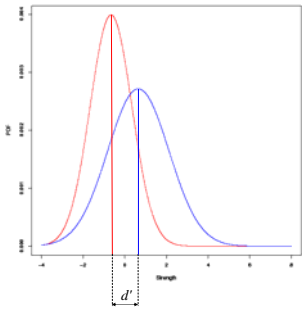


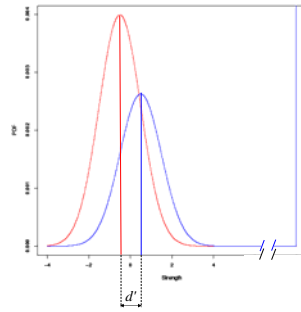
### Recognition Memory Models

#### Normal Unequal-Variance Model



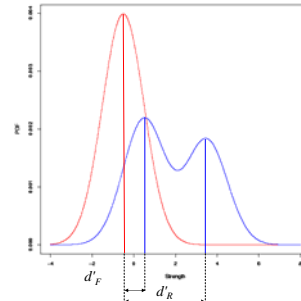
NUV:  $d' = 1.34$   $\sigma = 1.47$

#### Yonelinas High-Threshold Model



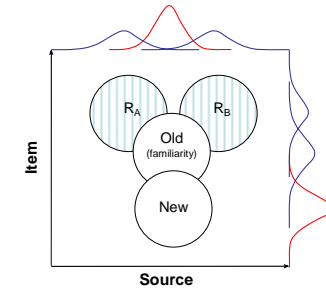
YHT:  $d' = 1$   $R = 0.34$

### Variable Recollection Model (VR)



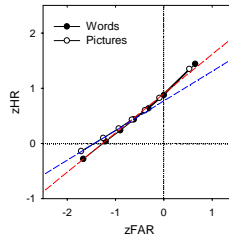
VR:  $d'_F = 1$   $d'_R = 4$   $R = 0.455$

### Unified Model of Item and Source Recognition

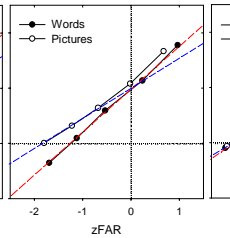


### Item Recognition in 3 Experiments

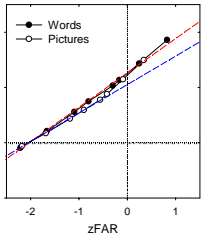
#### Experiment 1 (N = 267)



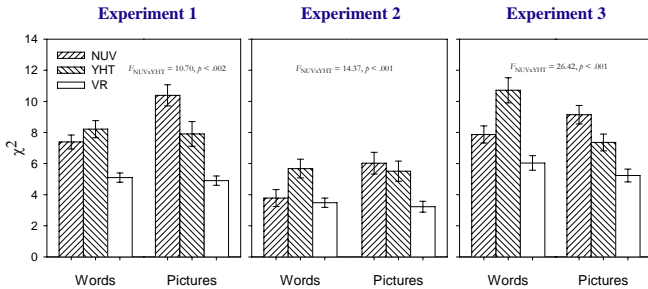
#### Experiment 2 (N = 65)



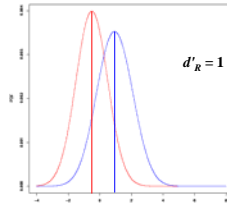
#### Experiment 3 (N = 150)



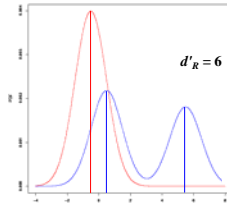
### $\chi^2$ of NUV, YHT, and VR models for words and pictures



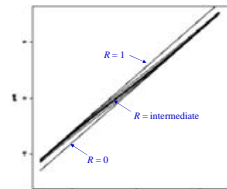
#### VR Model approximates NUV



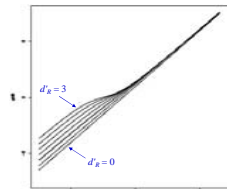
#### VR Model approximates YHT



### The effect of R and d'\_R on zROC curves generated by the VR model



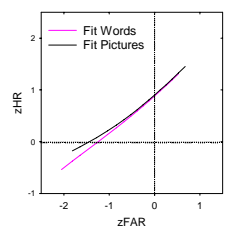
R increased from 0 to 1 in increments of 0.2



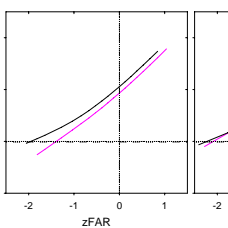
d'\_R increased from 0 to 3 in increments of 0.5

### VR model fits to response distributions

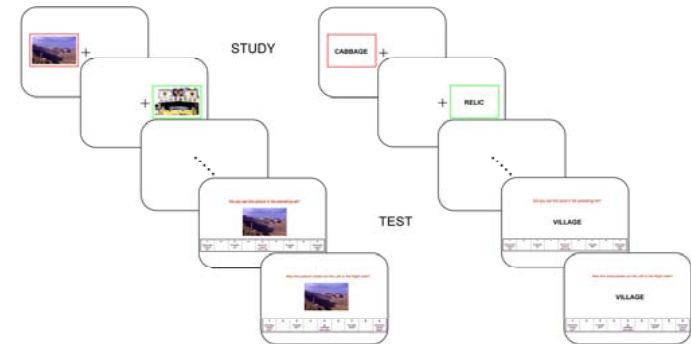
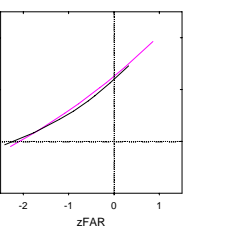
#### Experiment 1



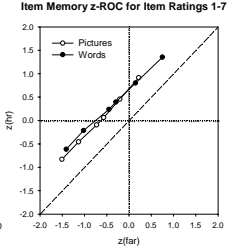
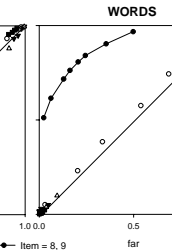
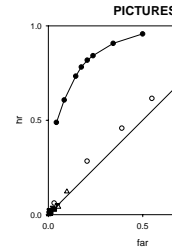
#### Experiment 2



#### Experiment 3



### Source Memory conditional on Item Memory



### References

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DeCarlo, L. T. (2003). An application of signal detection theory with finite mixture distributions to source discrimination. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 29(5), 767-78.

Howard, M. W., Besette-Symons, B., Zhang, Y., & Hoyer, W. J. (2006). Aging selectively impairs recollection in recognition memory for pictures: evidence from modeling and receiver operating characteristic curves. *Psychology and Aging*, 21(1), 96-106.

Kelley, R., & Wixted, J. T. (2001). On the nature of associative information in recognition memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 27(3), 701-22.

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Wixted, J. T. (In press). Dual-process theory and signal-detection theory of recognition memory. *Psychological Review*.