

# The Great Divide

Bridging the gap between  
cognitive science and clinical  
psychology

# Overview

- What is the problem?
- Bulimia
- Sexual Coercion
- References

# What is the problem?

- Clinical psychologists often use the word cognitive...
  - There is very little relationship to this use and the actual work being done on cognition.  
(McFall, et al. 1997)
- Conclusion: there is much research being done in both clinical psychology and cognitive science, yet there is little common ground.

# Yikes...

- This is very unfortunate:
  - Clinical research is primarily designed for both treating and preventing psychopathology (Treat et al. 2001)
  - This goal could be much easier to reach if researchers would stop basically ignoring everything cognitive science is learning about cognition!

# All is not lost

- Although this problem is very wide-spread, it is not universal.
- Several researchers from both sides are working together to try to resolve this issue.
- Cognitive Science:
  - Nosofsky, Robert
  - Townsend, James
  - MacKay, David
- Clinical Psychology:
  - McFall, Richard
  - Treat, Teresa
  - Viken, Richard

# Bulimia

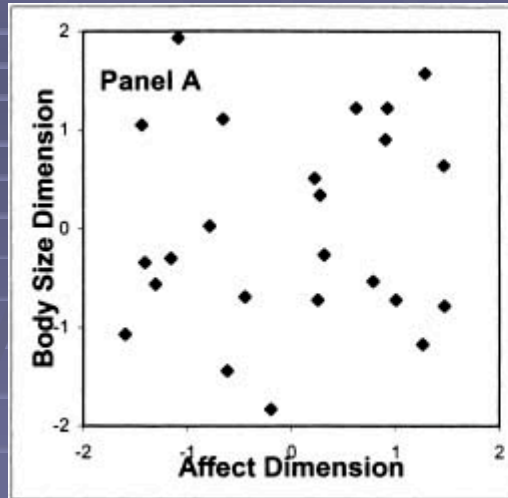
- Much of Bulimia research is based on self-report measures.
  - There is evidence of contamination of the measures
  - Many theories of psychopathology stress that negative self-image or negative affect operate at least partially outside conscious awareness (Viken et al. 2002)

# Bulimia...

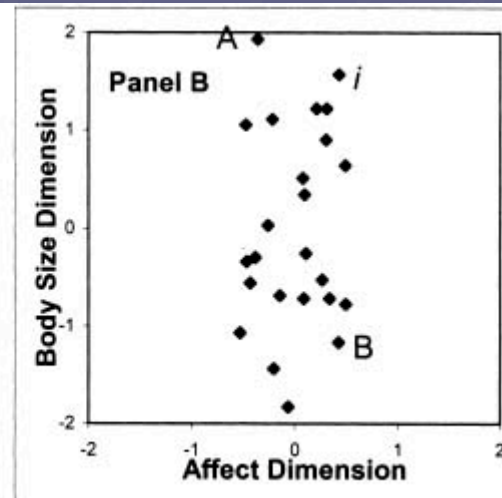
- Solution lies in performance based methods of evaluation.
  - Simple:
    - Stroop task
    - Dichotic listening task
  - Complex:
    - Multidimensional Scaling (MDS)
      - MDS is used to plot a kind of map of the psychological space between two dimensions

# MDS

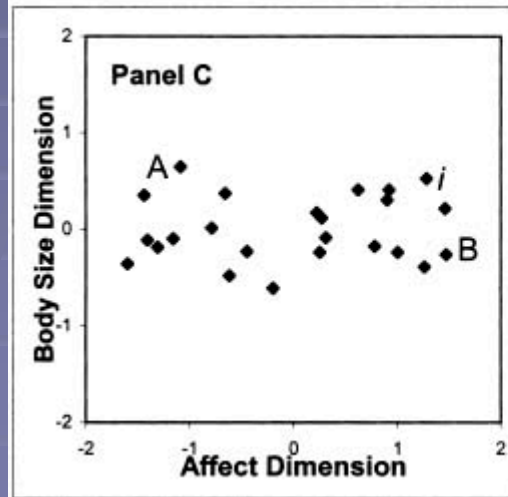
Panel A-  
hypothetical  
spread  
showing no  
preference



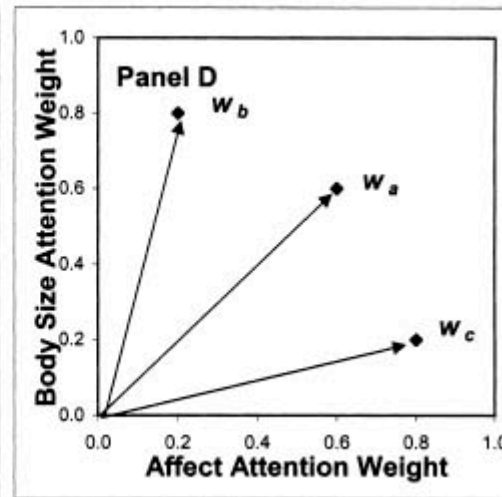
Panel B-  
Hypothetical  
spread  
showing an  
orientation  
towards  
facial affect



Panel C-  
Hypothetical  
spread  
showing an  
orientation  
towards  
body size



Panel D-  
Three subjects  
attention/weight  
vectors  
(hypothetical)





# Sexual Coercion

- Most current sexual coercion studies suffer from two problems
  - Sample
  - Self-Report
- Cognitive science can address both of these problems.
  - Sample- use signal detection theory (SDT) to establish a continuum of subjects to analyze individual differences in subjects
  - Self-report- use MDS techniques to determine the orientation of these different groups

# SDT

- Developed to help the navy train submarine radio-operators...
- Basic treatment:
  - When a radar blip is detected, an operator must decide if it is an enemy sub (should be attacked) or just noise (can safely be ignored).
  - When the operator decides to ignore a blip and it is a sub, this is called a MISS
  - When the operator decides to shoot the blip and it is just noise, this is called a FALSE ALARM
  - False alarms and misses vary in severity.
    - For example, if the torpedoes fired are very costly and dangerous; it could be better to be destroyed than to shoot at noise (ie false alarm > miss)
    - But more likely, it is more important to hit every enemy than it is to not be wasteful (ie miss > false alarm)

# SDT in sexual coercion (an example)

- Male subjects shown many pictures of women.
- Women are either sexually interested or just being friendly
- The subject has to choose if the woman is showing interest.
- Therefore:
  - miss = woman is sexually interested, and subject reports she is friendly
  - false alarm = woman is friendly, and subject reports she is sexually interested.

# An example, in production...

- A continuum is created:
  - On one side, subjects show more inclination to miss than false alarm.
    - Perhaps these subjects have more trouble meeting women, are shyer, have less dating experience
  - On the other extreme, subjects show more inclination to false alarm, than to miss.
    - Perhaps these subjects are more aggressive, have more experience, and correlate to sexual coercion and sexual aggression.

# Results

- If the hypothesis is accurate, these SDT continuums could be paired with an MDS measure as well as with traditional self-report questionnaires.
- This could lead to new ways of understanding, and even preventing sexual coercion.
- This would be an experiment that would be combining both cognitive science and clinical psychology to generate fascinating new data.

# References

- McFall, Richard, Treat, Teresa A, & Viken, Richard J. *Contributions of cognitive theory to new behavioral treatments*. Psychological Science. Vol 8(3), 1997. 174-176.
- Treat, Teresa A, et al. *Using cognitive science methods to assess the role of social information processing in sexually coercive behavior*. Psychological Assessment. Vol 13 (4), 2001. 549-565.
- Treat, Teresa A, et al. *Assessing clinically relevant perceptual organization with multidimensional scaling techniques*. Psychological Assessment. Vol 14(3), 2002. 239-252
- Viken, Richard J, McFall Richard, *Paradox lost: Implications of contemporary reinforcement theory for behavior therapy*. Current Directions in Psychological Science Vol 3(4) 1994, 121-125.
- Viken, Richard J et al. *Modeling individual differences in perceptual and attentional processes related to bulimic symptoms*. Journal of Abnormal Psychology. Vol 111(4), 2002. 598-609.