THE DEVELOPMENT AND ASSESSMENT OF STANDARDIZED PATTERNS IN THE STUDY OF MEMORY FOR PAIN

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Introduction

- Rainville (2004)
  - Examined the short-term memory of thermal and pain sensitivity
  - Although generally reliable, pain ratings become inaccurate even after short time delays
- Lefebvre and Keefe (2006)
  - Examined the relation of catastrophizing to the recall of arthritic pain
  - Higher levels of catastrophizing related to better accuracy in the recall of pain intensity and variability

Purpose

- Purpose
  - To develop a valid and reliable measure of memory for pain

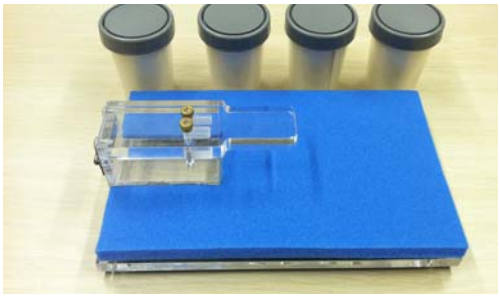
Initial Study Design

- 9 Pattern-trial with 4 weights
  - Too complex
- Step-wise technique of increasing difficulty
  - 3-pattern x 2 weights
  - 5-pattern x 3 weights
  - 9-pattern x 3 weights

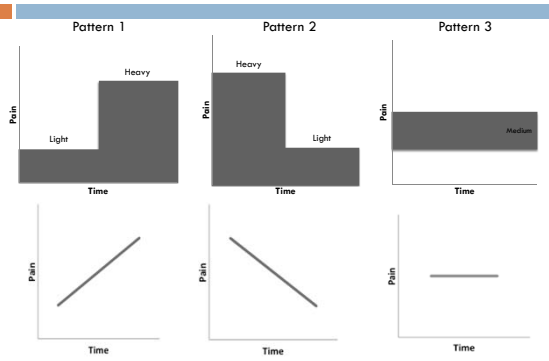
Methods

- Subjects
  - 30 undergraduate students
    - 21 females, 9 males
    - Ages 18-23
    - 67% Caucasian, 30% African-American, 3% Other
- Materials
  - Forgione-Barber device
  - 3, 5, 9 Trial Patterns

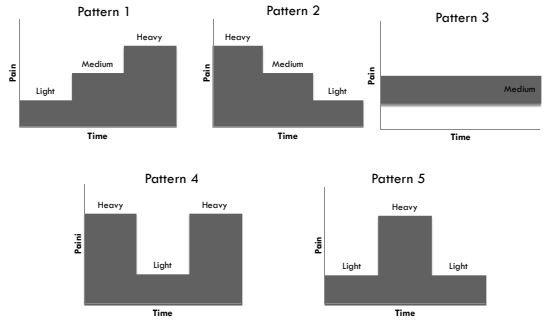
Forgione-Barber Device



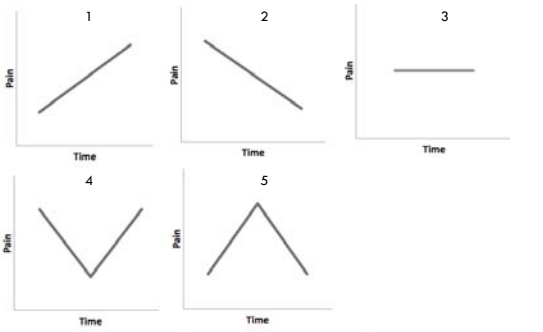
Methods—3-trial Procedure



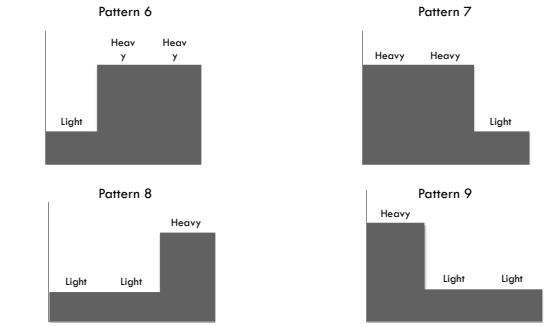
Methods—5-trial Procedure



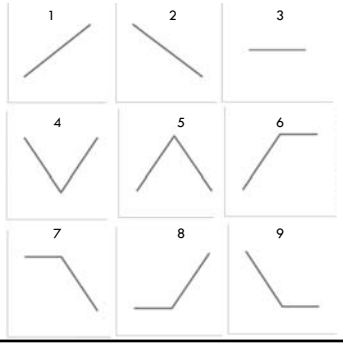
5-trial Patterns



Methods—9-trial Procedure

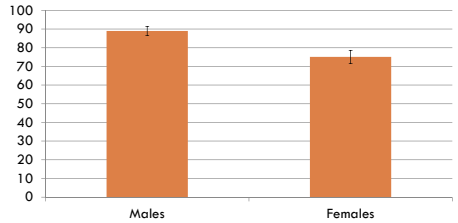


9-trial Patterns



Results: Gender Differences

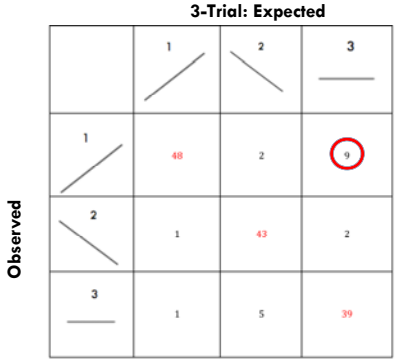
- Significant main effect of gender ($F(1, 29)=6.24$, $p<0.05$).



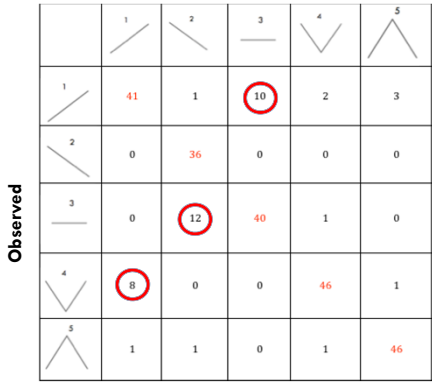
Kappa Values

- Percent correct after accounting for chance
- 3-Trial: 0.80, very high agreement
- 5-Trial: 0.80, very high agreement
- 9-Trial: 0.61, moderate agreement

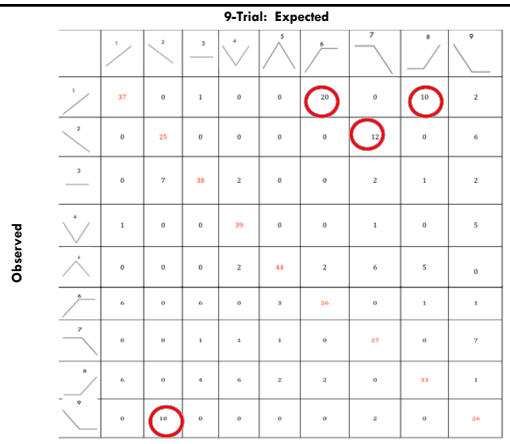
3-Trial: Expected



5- Trial: Expected



9-Trial: Expected



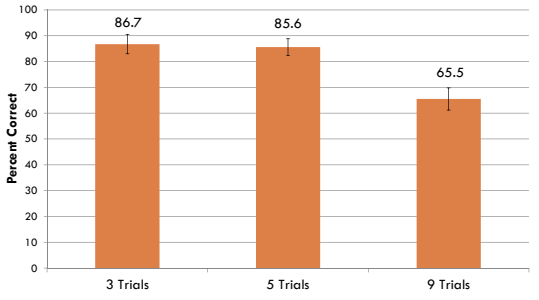
Results

- One-Way ANOVA and Tukey's HSD Post-hoc comparisons

Results: Total Percent Correct

- Main effect of Percent Correct between groups, (F(2, 29)=10.029, p<0.01)
- Significant difference between 3-Trial and 9-Trial.
- Significant difference between 5-Trial and 9-Trial.

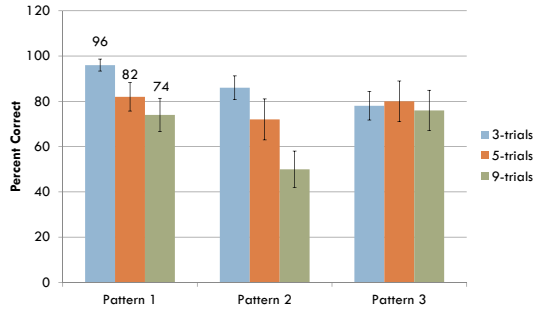
Total Percent Correct * Condition



Results: Percent Correct for Pattern 1

- Significant main effect of percent correct of Pattern 1 ($F(2,29)=3.704$, $p<0.05$)
- Significant between 3-trial and 9-Trial
- No significant differences between 3-Trial and 5-Trial or the 5-Trial and 9-Trial

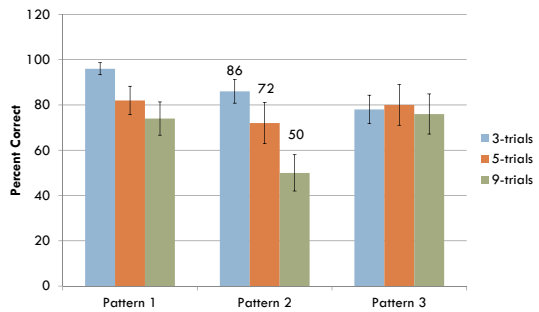
Percent Correct Patterns 1, 2, 3



Results: Percent Correct for Pattern 2

- Significant main effect of percent correct ($F(2, 29)=5.7$, $p<0.01$) for pattern 2
- Significant difference of percent correct between 3-Trial and 9-Trial for Pattern 2

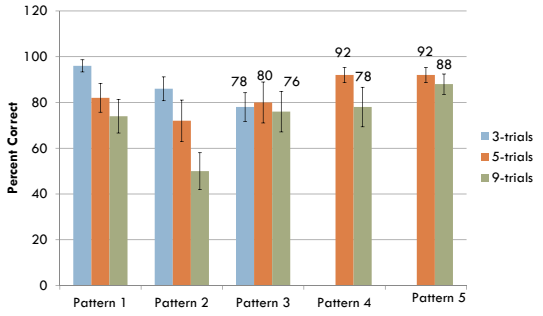
Percent Correct Patterns 1, 2, 3



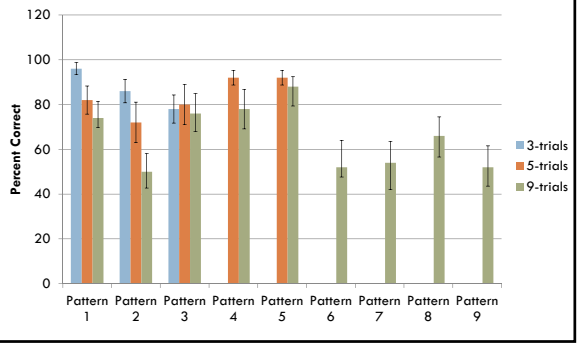
Results: Percent Correct for Patterns 3, 4, 5

- No significant main effects or differences between trials for patterns 3, 4, or 5

Percent Correct Patterns 1-5

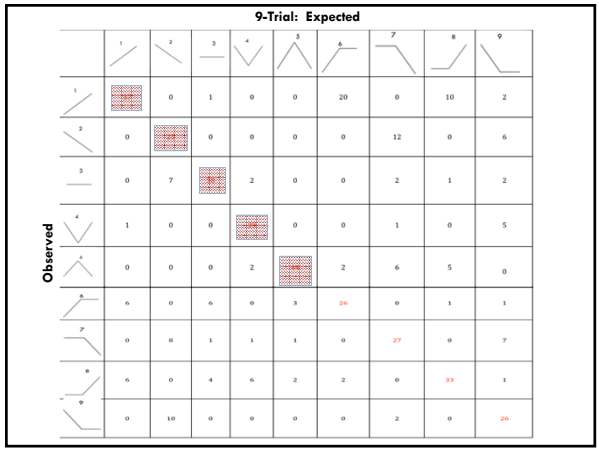


Percent Correct Patterns 1-9

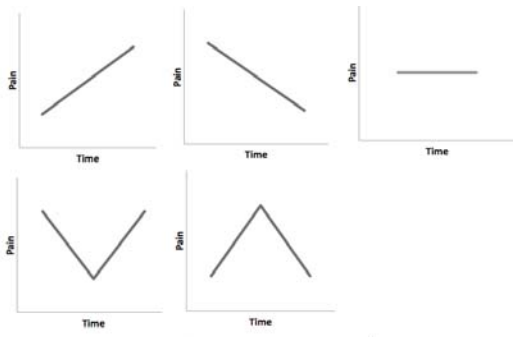


Discussion

- Males better than Females
- 3-Trial and 5-Trial designs provide best levels of agreement
- 5-trial is best for future studies—and are the best 5 patterns
  - Maintains very good agreement without sacrificing diversity



Best Method: 5-Trial



Discussion

- Opportunities for Improvement
  - 3-trial Inconsistency
  - Finger Inconsistency
  - Increase Diversity
- Future Directions
  - Memory Research

Acknowledgements

- Participants
- Fellow Senior Thesis members
- Dr. Lefebvre
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Thank You!