

Which type of pressure is worse for math anxiety and math performance – accuracy or time pressure?

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Introduction

- Math anxiety can negatively impact math performance (Ashcraft, 2002)
- Anxiety impairs working memory, thereby affecting the problem solving strategies learners choose to use. (Beilock & DeCaro, 2007)

Pressure Conditions

- Speed (S): 20 problems in 30 seconds
- Accuracy (A): 18 of 20 problems correctly
- Speed + Accuracy (Combo): 18 of 20 problems in 30 sec or less
- Control: Complete these problems

Hypotheses

Performance: A > Combo > Control > S

Problem Solving Time: A > Control > Combo > S

Anxiety Ratings: Combo > S > A > Control

Figure 1

Sample Modular Arithmetic Problems

Difficulty

Fluency

	Easy	Difficult
Fluent	9=6 (mod 3)	50=10 (mod 5)
Disfluent	5=1 (mod 3)	43=18 (mod 5)

Method

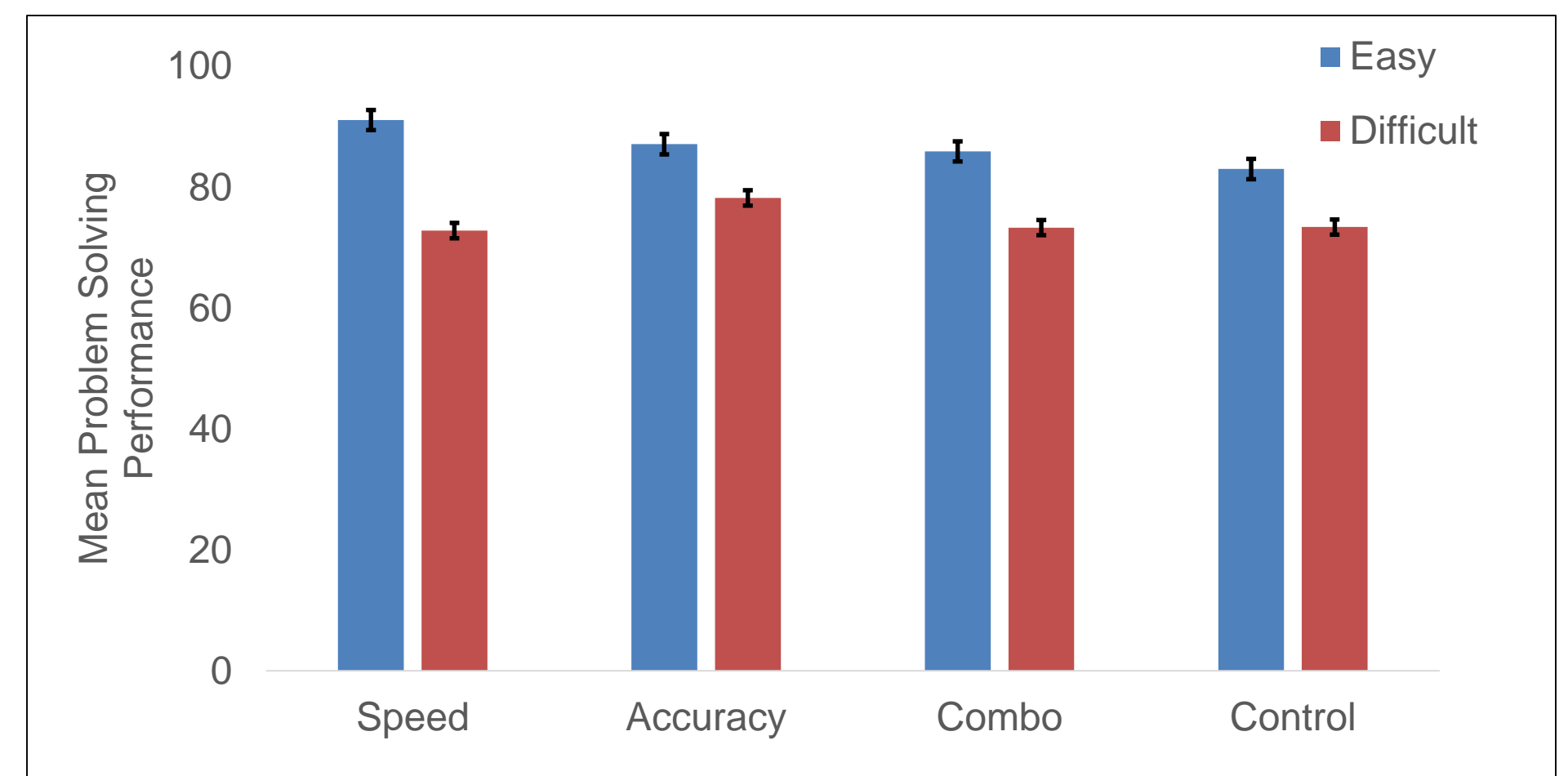
- 98 participants
- Mean age = 20.61 (*SD* = 4.49)
- Female: 64%
- 2 blocks, 20 problems each

References

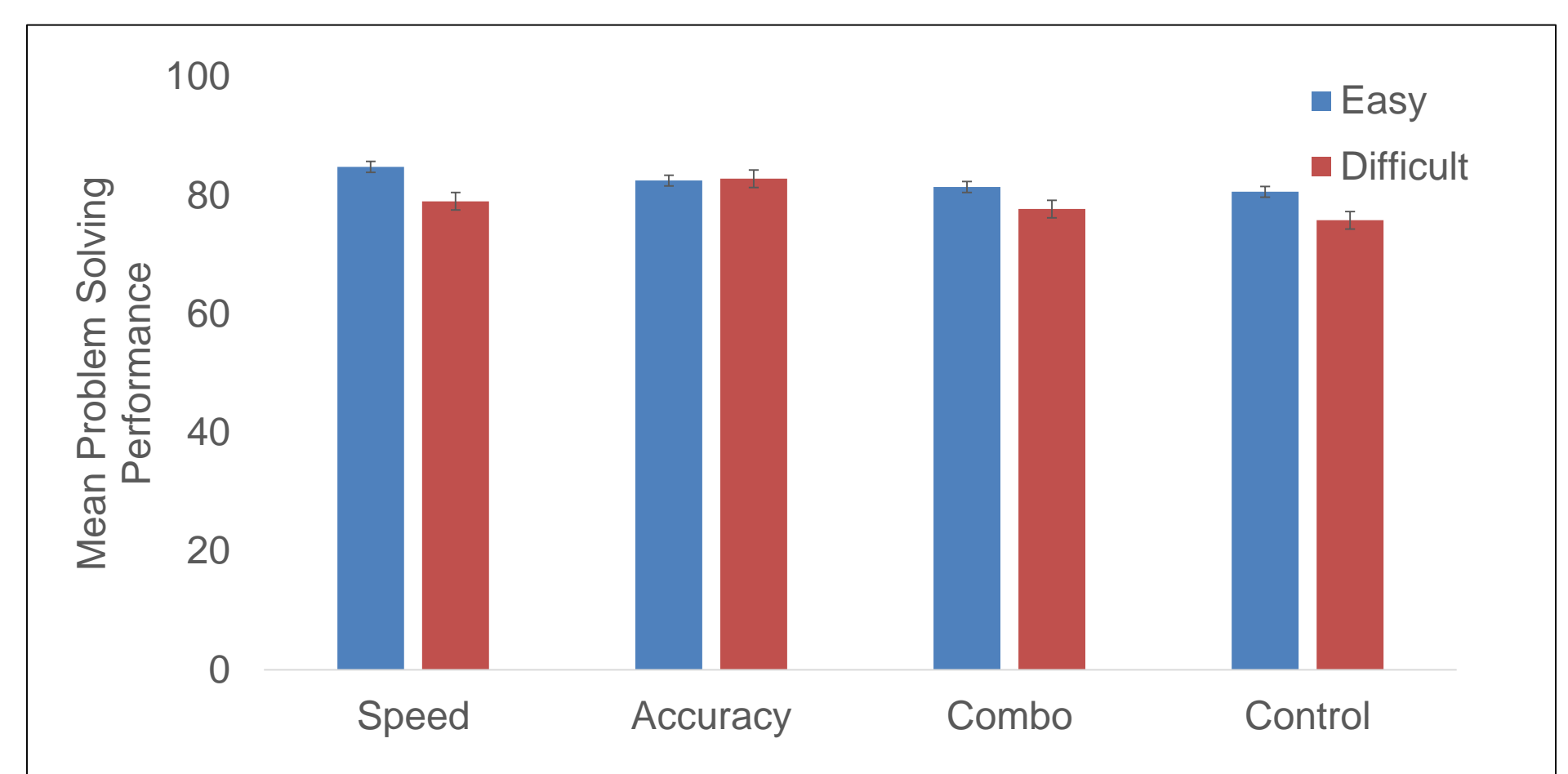
- Ashcraft, M. H. (2002). Math anxiety: Personal, educational, and cognitive consequences. *Current Directions in Psychological Science*, 11, 181-185.
- Beilock, S. L., & DeCaro, M. S. (2007). From poor performance to success under stress: Working memory, strategy selection, and mathematical problem solving under pressure. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 33(6), 983-998. doi:10.1037/0278-7393.33.6.983

Key Findings

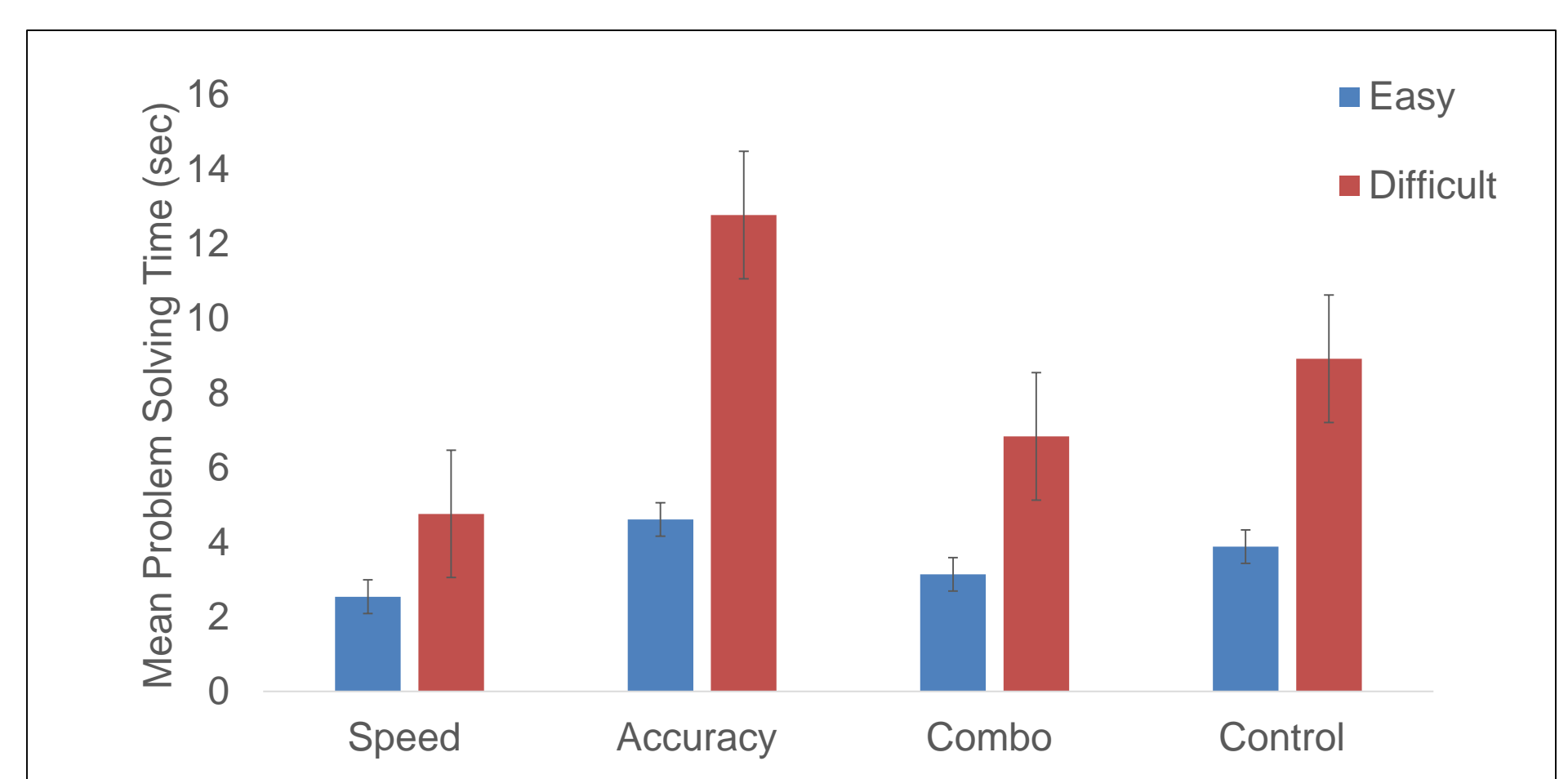
Performance: Condition x Difficulty



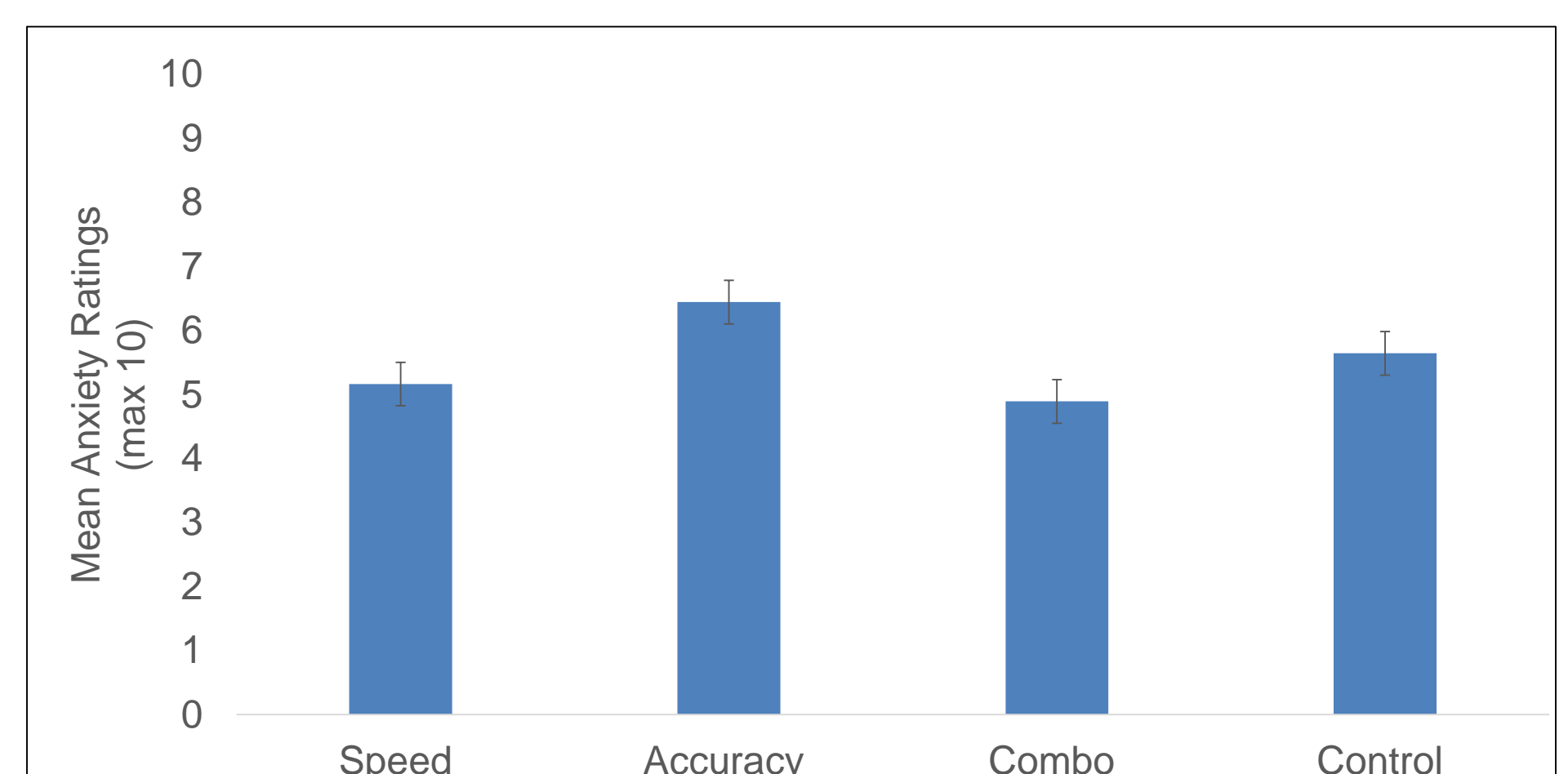
Performance: Condition x Fluency



Problem Solving Time: Condition x Difficulty



Anxiety Ratings



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