INTRODUCTION

- It has been commonly observed that players have the ability to trade off speed for spatial accuracy (e.g., shot placement, racquet-ball contact location, etc.) and accuracy for speed in performing various strokes and other tennis related skills.
- However, it has only been recently recognized that by increasing movement speed an individual also tends to increase timing errors. Because most skills require both timing and spatial accuracy, the selection and performance of an appropriate movement speed appears to lead to a compromise between spatial for timing accuracy.
- While past research looking at these various factors have come to different conclusions, they all appear to agree that movement time, movement speeds, and timing accuracy are intertwined.
- Furthermore, the use of the principles related to response time/speeds and accuracy may have important implications for teaching and practicing timing and anticipation skills.

PURPOSE

- The purpose of this study was to understand the relationship between movement time, range of motion and timing accuracy by examining the effects of controlling the speed and/or duration of a forehand stroke in response to balls traveling at various speeds and durations.

SAMPLE

- Participants for this study were 24 right-handed females with an average age of 23 years.
- The women swung a tennis racquet through a range of motion of 60 degrees, 105 degrees, or 150 degrees over three separate sessions.
- Participants were also assigned to one of four experimental groups:
  - The first group swung the racquet at their preferred speed
  - The second group swung at maximal speed
  - The third group swung 20% faster than their minimal speed
  - The fourth group swung 40% faster than their minimum forehand speed.

YEAR PERFORMED 1989