

Auditory and Visual Feedback Differentially Modulate Feedforward and Feedback Learning During a Novel Upper Extremity Task

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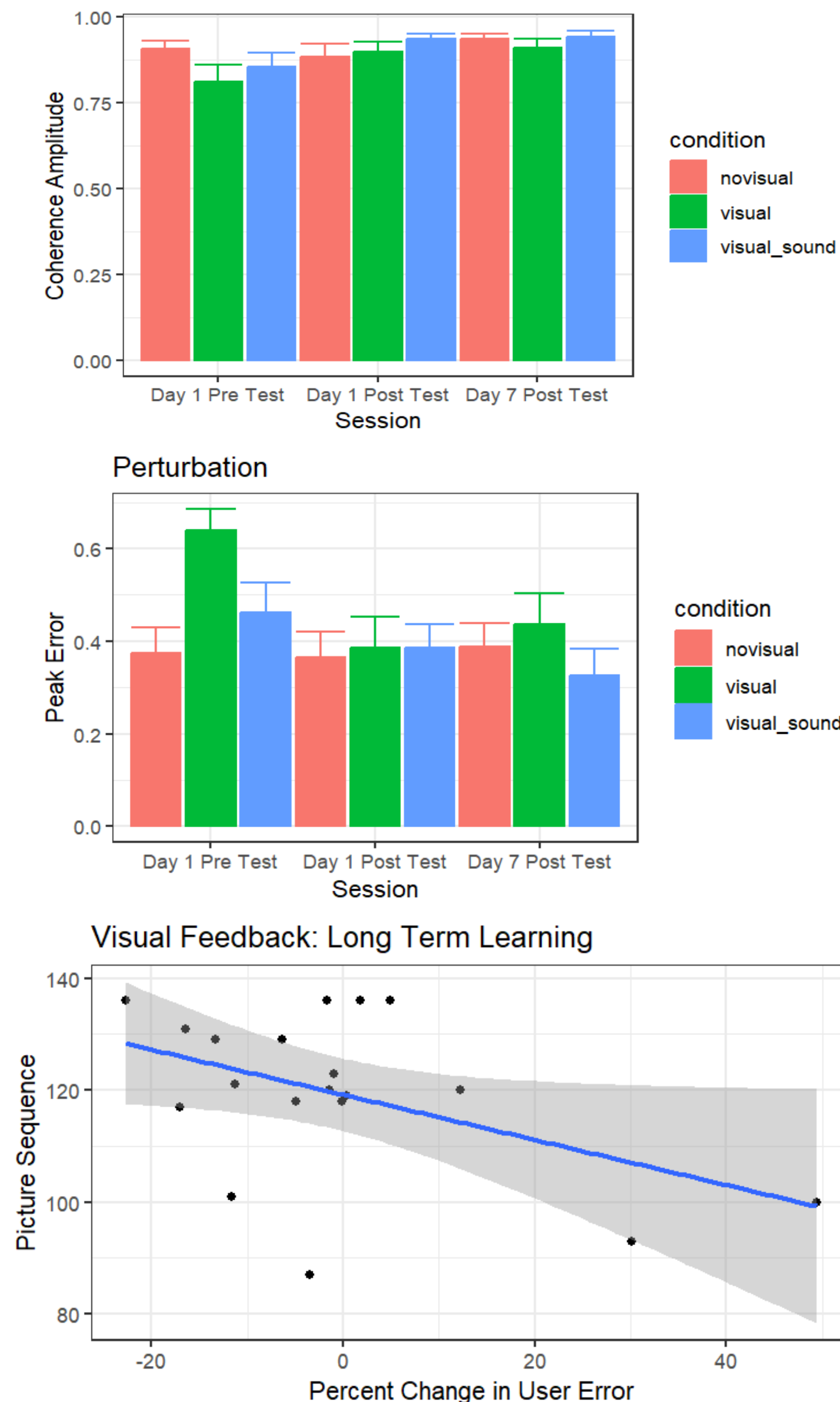
Introduction

- This study aims to explore the associations between feedback mechanisms with motor learning and retention while also looking at associations between anthropometrics, motor learning, and retention.
- By identifying the anthropometrics associated with motor learning and retention, different treatment interventions can be used for individuals with disabilities.
- Main purpose of this poster is to consider how results in a healthy population may translate or need further investigation for individuals with disabilities.

Methods

- Recruited 59 right-hand dominant, healthy young adults with no known left shoulder pathology (30 female and 29 male)
- Participants performed a novel UE movement task with unexpected perturbations administered during the task
 - Perturbations were given by decreasing resistance and UE movement was external/internal rotation of the shoulder
- Statistical analysis included Pearson Correlations and Paired T-Tests

Results



Application to Individuals with Disabilities

- Translation of this information from a healthy population to individuals with disabilities cannot be made directly, but we can consider these findings in combination with known impairments for individuals with disabilities.
- Children with cerebral palsy have difficulties in the adaptation of direction-specific activities.
- Ligamentous laxity and muscle hypotonia in individuals with Down Syndrome increases difficulty with performing motor tasks.
- Task specific training can increase strength and improve confidence.
- Cognitive levels contribute more to the impairment of motor abilities in children with fragile X syndrome and autism.

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