How far can I reach? Perception of action capabilities in people with Parkinson’s
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Introduction

- Successful interaction within the environment is contingent upon the ability to accurately perceive the extent over which actions can be successfully performed, known as action boundaries.
- Individuals are very accurate in perceiving their action boundaries and can update their perceptions to accommodate for stable changes in ability.

However, What happens when changes are not stable and rather are continually fluctuating?

Task 1: Perception of Reaching Ability

Reaching Ability estimation
- Participants estimated the farthest distance they could reach

Results
- No significant difference in the accuracy of perceived action boundaries between the Parkinson’s and healthy older adult groups (p = .260)
- Bayes factor indicated that the evidence was weakly in favour of the null hypothesis B(0.05) = 0.70, RR(0.05, 0.21).

Task 2: Perception of Grasping Ability

Grasping Ability estimation
- Participants estimated the largest block they could grasp with their dominant hand.

Results
- No significant difference in the accuracy of perceived action boundaries between the Parkinson’s and healthy older adult groups (p = .882)

Bayes factor indicated that the evidence was moderately in favour of the null hypothesis B(0.08) = 0.13, RR(0.03, =).

Task 3: Perception of Aperture passing Ability

Aperture Passing Ability estimation
- Participants estimated the smallest size opening they could pass their hand

Results
- No significant difference in the accuracy of perceived action boundaries between the Parkinson’s and healthy older adult groups (p = .760

Bayes factor indicated that the evidence was weakly in favour of the null hypothesis B(0.08) = 0.39, RR(0.09).

Discussion

- Overall older adults perceptions of their action capabilities appear more conservative than healthy younger controls.
- The reduction in ability to perform motor actions and the variability in action capabilities in Parkinson’s does not significantly influence patients perceptions of their action capabilities.
- Successful interaction within the environment is contingent upon the ability to accurately perceive ones action capabilities. Based on the tasks we have conducted so far as this ability is preserved in Parkinson’s, individuals with Parkinson’s ability to safely and successfully navigate and interact with the environment will be preserved.

References