

## Introduction

### Background:

**Previous studies** have shown that prosocial behaviors can be increased through interpersonal synchrony (Cirelli, 2018). This effect can be seen in both large- and small- scale movements, with children experiencing greater preferences for those who synchronize with them (Cirelli, 2018).

### Prosocial Behavior:

- Acting in ways that benefit others (Deschamps, Been, & Matthys, 2014)
- This includes:
  - Volunteering
  - Cooperating with others
  - Spontaneous helping
  - Sharing

### Interpersonal synchrony:

- Two or more people moving in time with one another (Cirelli, 2018)



- Large scale movements:
  - Marching
  - Dancing
  - Singing/Chanting
- Small scale movements:
  - Tapping
  - Clapping
  - Bouncing

**Purpose:** The influence of interpersonal synchrony on children's empathy and helping behavior will be explored in typically developing children ages 3-12 years. We will also examine how the age of peer playmates affect these outcomes.

## Methods

### FISH FEEDING TASK:

(Kirschner & Tomasello, 2010)

- Children are instructed to fill fish tubes with fish food
- One child's fish food is spilt on the way to a fish tank, creating an opportunity for the other child to engage in **spontaneous helping behaviour**

### CLAPPING GAME:

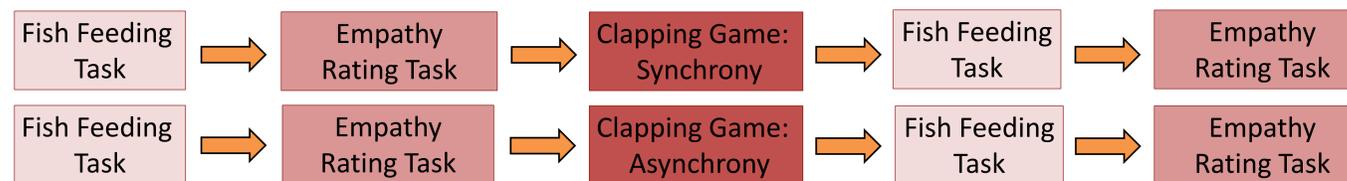
(Tunçgenç & Cohen, 2018)

- Children will clap and tap to metronome sounds either in- or out-of synchrony.
- Eye-contact and the number of shared and mutual smiles will be used to measure **social bonding**

### EMPATHY RATING TASK:

(Tunçgenç & Cohen, 2018)

- Children will respond to questions using a 7-point Likert scale.
- Two components of empathy will be examined:
  - Cognitive empathy**
  - Affective empathy**



**PARTICIPANTS:** Typically developing 3-12 year old children will be recruited from MacEwan's childcare center. 40 children will be paired with an adult experimenter and further divided in 2 age groups: 20 younger children and 20 older children. 40 younger children will be recruited in the peer interaction condition.

## Expected Results

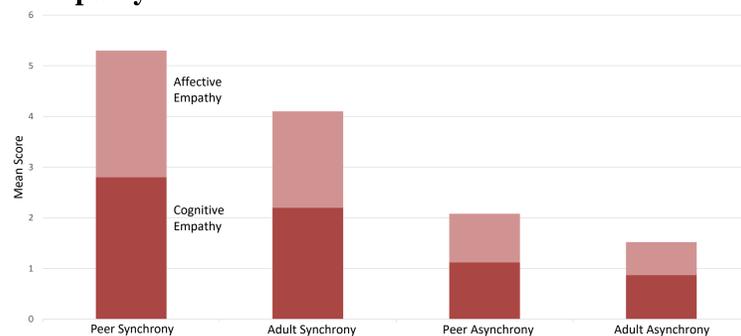
### Synchronous Condition

- Helping Behaviour ↑
- Cognitive Empathy ↑
- Affective Empathy ↑
- Social Bonding ↑

Furthermore, we expect children will display greater empathy and helping towards same age peers than towards older age peers.

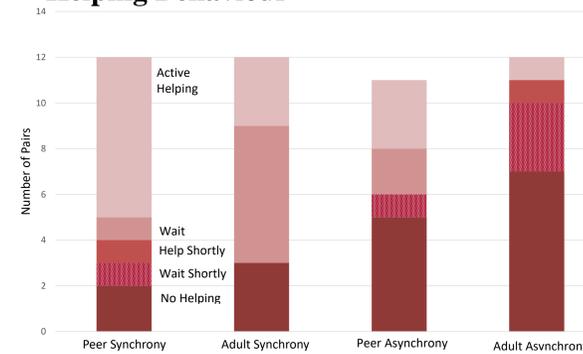
- Eye-Contact
- Mutual Smiles
- Individual Smiles

### Empathy



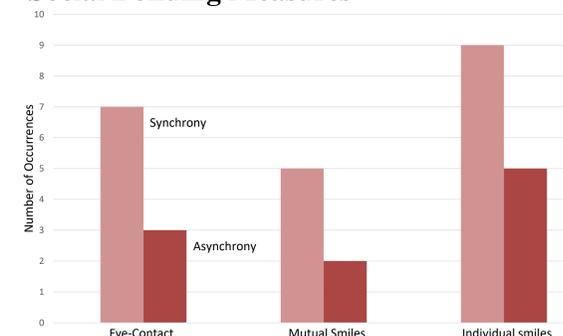
Predicted measures of cognitive and affective empathy between synchrony and asynchrony, along with differences in empathy between child-child and child-experimenter interactions

### Helping Behaviour



Predicted helping behaviors between synchrony and asynchrony, and between child-child and child-experimenter interactions

### Social Bonding Measures



Predicted differences in eye-gaze, and shared and mutual smiles in the synchrony and asynchrony condition

## Conclusions

**The findings** of this study may have implications for children with autism spectrum disorders, who show impairments in:

- Social communication
- Social relationships
- Social understanding and imagination (Fitzpatrick, 2017)

Training methods that improve inter-personal synchrony may enhance their social connections and prosocial abilities.

