The effects of developmental trauma on Theory of Mind and its relationship to psychotic experiences: a pilot behavioural study

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Rationale

- This research was conducted by **UCL's Translational Psychiatry Research Group.**
- Our current research priorities include understanding **how developmental psychological trauma causes psychotic symptoms.**
- Understanding this relationship will form the **basis of targeted treatments and interventions**.
- It is estimated that **1% of the population** has a psychotic disorder.

Background

- **Developmental trauma** encompasses the following:
  - Physical, emotional and sexual abuse.
  - Physical and emotional neglect.
- Developmental trauma **induces vulnerability to psychosis**.
- The **mechanisms** underlying this association are **poorly understood**.
- A **candidate mechanism** for developmental-trauma-induced psychosis is an **impaired mentalisation ability** – otherwise known as 'Theory of Mind'.
- **Theory of Mind/Mentalisation** is the ability to attribute mental states to ourselves or others.

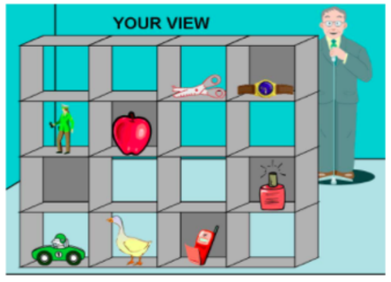
Methods

- **197 participants** were recruited.
- They were divided into two groups according to trauma status – using the **'Childhood Trauma Questionnaire'**:
  - Positive for developmental trauma **(DT+)**
  - Negative for developmental trauma **(DT-)**
- Then further divided into two further groups according to psychotic experiences - using the **'The Community Assessment of Psychotic Experiences'**:
  - Subclinical psychotic symptoms **(S)**
  - Healthy **(H)**
- Four groups for analysis: **DT+H**, **DT+S**, **DT-H**, **DT-S.**

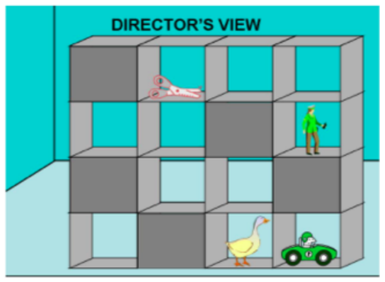
The Director Task

- To investigate impaired mentalisation ability, we used a computerised version of the **'Director Task'**.
- In the task, participants are **instructed to move objects around a 4x4 grid**.
- This is performed in the presence of a confederate - 'the director' - standing behind the grid, instructing the participants **(director task)** or without the director for comparison **(non-director task).**
- In the director task, the **confederate cannot see all of the objects** as they may be occluded on his side.
- The **participants must take this into account** when instructed to move an object.
- This allows **analysis of mentalisation ability** of participants.

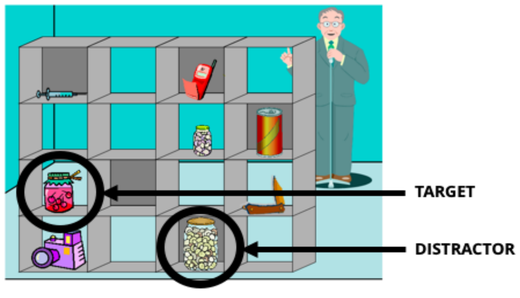
(A) Instruction Example: Participant's View



(B) Instruction Example: Director's View

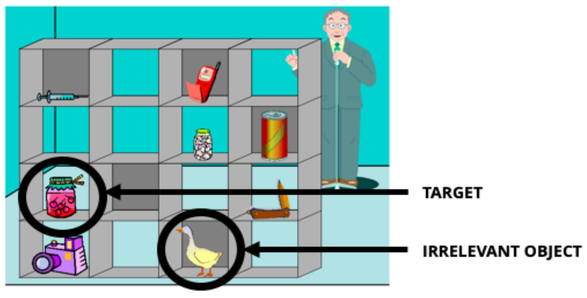


(C) Experimental Trial



"Move the large jar right."

(D) Control Trial



"Move the large jar right."

Strengths and Limitations

- ☺ The use of the 4x4 Director Task allows for **extension of previous findings**.
- ☺ **Measurement of confounds** including state anxiety.
- ☺ Large **sample size**, age-, sex- and ethnicity-**matched groups**.
- ☹ The **ecological validity** of the director task – it places "artificial demands on selective attention".
- ☹ The study has a **cross-sectional design** – it cannot ascertain a temporal relationship.
- ☹ The present study **did not include measures of IQ**.

Analysis

- Performance on the director task **(mentalisation ability)** was quantified as accuracy and reaction time.
- Task performance was analysed using a **2x2x2 ANCOVA.**
  - **Developmental Trauma Group:** DT+ vs DT-
  - **Condition:** Director vs No-Director
  - **Trial Type:** Experimental vs Control
- This was performed for **psychotic experiences**, also.
- To investigate whether an **association between mentalisation performance and DT varies as a function of PLE**, a **moderation model** was used.

Results

- Participants with a history of DT demonstrated **significantly lower accuracy** on the director task relative to control **(p = .020).**
- Participants who were more prone to psychotic experiences demonstrated **significantly lower accuracy** on the director task relative to control **(p = 0.031).**
- Groups were **controlled for the effects of age**.
- Groups **did not differ in reaction time.**
- **TOM did not mediate the relationship between DT and psychotic experiences.**

Outlook

- Our results show that **mentalisation ability is associated with both DT and psychotic experiences**.
- The finding of a **relationship between mentalisation and psychotic experiences** supports the view that **mentalisation may be involved in this relationship**.
- **Further work is needed** to investigate this relationship.
- **Interventions targeting mentalisation ability** may be helpful for adult survivors of developmental trauma e.g. **mentalisation-based therapy (MbT).**