

Untangling the cognitive correlates of emotion recognition deficits in sexual offenders that committed offences against children

Tineke Dillien^{1,2}, Inti A. Brazil^{1,3}, Bernard Sabbe¹, Kris Goethals^{1,2}

¹ CAPRI, University of Antwerp, Belgium; ² University Forensic Centre, University Hospital Antwerp (UZA), Belgium; ³ Donders Institute for Brain, Cognition and Behaviour, Radboud University, Nijmegen, The Netherlands
Corresponding author: tineke.dillien@uza.be

Introduction

- Prior studies indicate that sexual offenders against children (CSOs) are impaired in their emotion recognition abilities.
- These emotion recognition deficits may underlie the social-emotional deficits and the behavioural control impairments that are present in CSOs.
- Notwithstanding the suggested positive correlations between emotion recognition deficits and contributory factors to sexual offending, emotion recognition has received little attention in the sexual offender literature. Consequently, the nature of the emotion recognition impairments has remained poorly understood.

Objectives:

- By applying signal detection theory, this study aims to unravel the sources of impairment within the emotion recognition mechanism of CSOs. Signal detection theory offers a way to study how individuals decide whether a particular emotion is present or not in facial expressions by distinguishing between two cognitive processes that affect this decision:
 - Sensory sensitivity reflects the capacity to discriminate a target facial emotion from other facial emotions (estimated using the *sensitivity index*).
 - Response bias reflects the tendency to classify any facial emotion as the target emotion (measured with the *response criterion* parameter).

Method

Participants: 56 CSOs versus 32 nonsexual violent offender controls (NSOc) versus 35 nonoffender controls (NOc).

Measures: Facial expression recognition task:

- This task assesses the recognition of six basic facial expressions: anger, disgust, fear, happiness, sadness, and surprise.
- Stimuli = 240 photographs of facial emotional expressions, morphed with neutral expressions to create 10 levels of intensity for each of the six emotions ranging from 10% (neutral) to 100% (full-blown expressions).
- The emotional expressions were presented in random order on a computer screen for 700 ms each.
- After the presentation of an image, participants were required to identify the emotional expression.



Example stimuli: Fearful facial expressions expressed at (left-right): 30%, 60%, and 100% intensity.

Results

The sensitivity index:

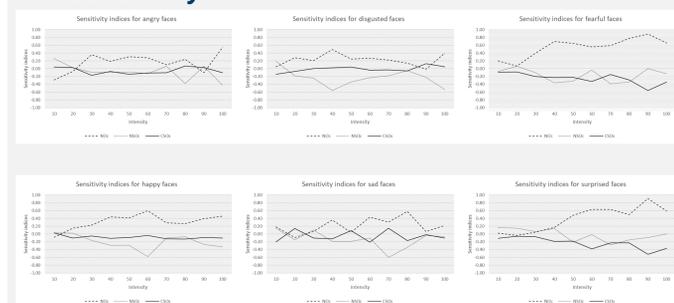


Figure 1. Sensitivity indices per emotion as a function of group and intensity level. NOc = nonoffender controls; NSOc = nonsexual offender controls; CSOs = sexual offenders that committed offenses against children

The CSOs were less sensitive to facial expressions of:

- fear from an intensity of 30% upwards relative to the NOc (no differences between CSOs and NSOc).
- surprise starting from an intensity of 50% relative to the NOc (no differences between CSOs and NSOc).
- happiness in general relative to the NOc (no differences between CSOs and NSOc).

- anger at 30% and 100% intensity relative to the NOc (no differences found between the CSOs and the NSOc) (See Figure 1).

Response criterion:

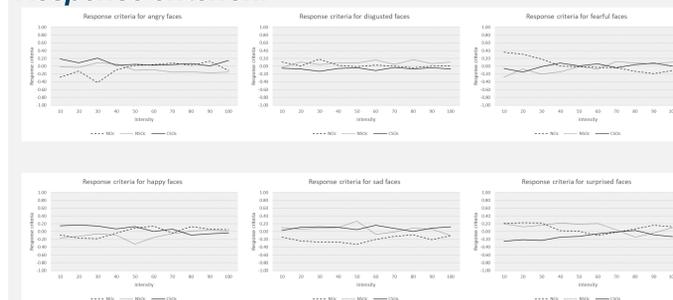


Figure 2. Response criteria per emotion as a function of group and intensity level. NOc = nonoffender controls; NSOc = nonsexual offender controls; CSOs = sexual offenders that committed offenses against children

The CSOs were more conservative when classifying emotional expressions as

- sad relative to the NOc (no differences between CSOs and NSOc).
- anger at 30% intensity relative to the NOc (no differences between CSOs and NSOc) (See Figure 2).

Discussion

These findings confirm that CSOs show emotion recognition impairments relative to NOc.

- These impairments are shared among violent offender groups.
- Both sensory sensitivity deficits and response biases play a role in this impairment.
 - A rather pervasive pattern of sensory sensitivity impairments was found, involving both negative emotions and happiness.
 - The sensory sensitivity deficits were evident across all or almost all intensity levels (except for angry facial expressions).

Clinical implications:

- Adding emotion recognition interventions to standard treatment programmes for CSOs could be helpful to tackle known contributory factors to sexual offending (i.e., social-emotional dysfunctions and behavioural control difficulties).
- Both the sensory sensitivity deficits and the response biases should be targeted when remediating the emotion recognition deficits in CSOs.

Limitations and avenues for further research:

- Differences in age and/or IQ may (partly) explain differences in emotion recognition abilities between CSOs and NOc. Studies with matched designs are needed to draw firmer conclusions.
- Emotion recognition impairments may vary across subgroups of CSOs. Future studies should study within-group differences in emotion recognition.