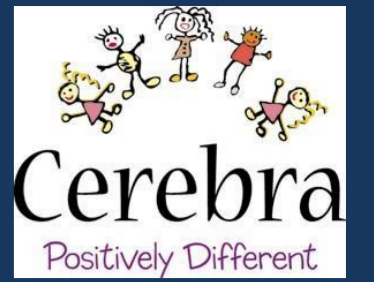


The Effect of Discrimination Training on the High Rate Social Approach Behaviours in Angelman syndrome



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Aims

- Evaluate the use of a multiple schedule approach to address the high rates of social approach behaviours observed in children with Angelman syndrome.
- Examine the use of an environmental stimulus as a cue for children with Angelman syndrome to discriminate between times of adult availability.

Introduction

Angelman syndrome (AS)

- Rare genetic syndrome caused by missing information at the maternal chromosome 15q11-13 region.
- Clinical characteristics: severe intellectual disability, seizures, ataxic gait, hypopigmentation and abnormal EEG patterns (Boyd et al., 1988).
- Behavioural phenotype: short attention span (Walz & Benson, 2002), high levels of laughing and smiling (Oliver et al., 2007) and a fascination with water and crinkly objects (Didden et al., 2006).

Sociability in AS

- Experimental observations have consistently found that children with AS laugh/smile more in the presence of adult interaction (Oliver et al., 2002) potentially indicating that children find social interaction rewarding. This is supported by the high levels of social approach behaviours towards both familiar and unfamiliar adults (Mount et al., 2011).
- Individuals with AS have been found to show high levels of challenging behaviour (Arron et al., 2011) which functions to gain access to and maintain adult social interaction (Strachan et al., 2009).

Interventions for high levels of sociability

- Functional Communication Training (FCT) has been found to lower rates of aggression in children with AS (Allen et al., 2009; Radstaake et al., 2012).
- FCT does not address the high rates of social approach behaviour observed when attention is not available.

Multiple schedule approach

- Developed by Tiger and Hanley (2004) to manipulate levels of social approach behaviours in typically developing children.
- In this approach, participants are exposed to alternating conditions of reinforcement and extinction. The authors found fewer approach behaviours when extinction conditions were signalled using a cue.

Method

Participants

	Hannah	Jennifer	Kirsty	Orla
Age	10	5	8	8
Genetic mechanism	Deletion	UBE3A mutation	Deletion	Deletion
VABS equivalent	40 (L)	49 (L)	47(L)	45(L)

Procedure

- Single case design
- Multiple schedule approach (Tiger & Hanley, 2004): participants exposed to alternating conditions of reinforcement and extinction (ABABABAB)



Results

Visual inspection

- During baseline and the first half of discrimination training, all four participants showed similar levels of social approach behaviours across reinforcement and extinction conditions.
- All four participants showed **lower levels of social approach behaviours in the presence of the environmental cue** from session 20 onwards.

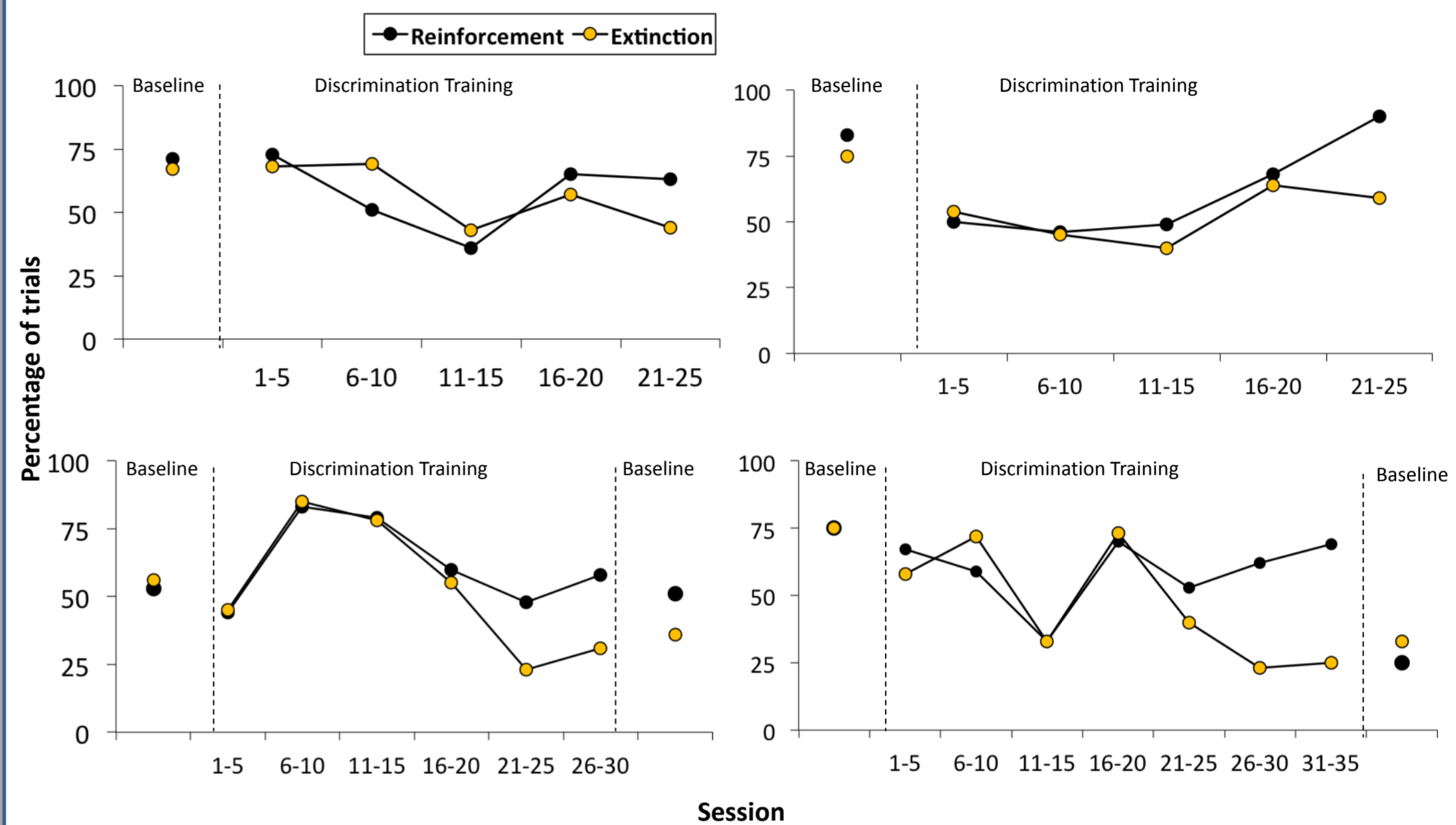


Figure 1 Percentage of trials with social approach behaviours for Hannah, Jennifer, Kirsty and Orla.

Child Sociability Rating Scales (CSRS; Moss et al., 2009)

- Footage coded using CSRS, measuring quality/nature of social interactions.
- Three variables coded: 'Initiation of interaction'; and 'focus of attention' and 'eye contact' which were combined to make an 'intention' variable.
- Differences in behaviour across reinforcement and extinction conditions were assessed using Wilcoxon matched-pairs tests.
- All four children showed **significantly lower levels of initiating behaviours in extinction conditions** (Hannah $Z=-3.811$, $p<0.01$; Jennifer $Z=-3.49$, $p<0.01$; Kirsty $Z=-3.20$, $p<0.01$; Orla $Z=-2.80$, $p<0.01$).
- There was **no significant difference in 'intent' across conditions for three participants** (Hannah $Z=-0.88$, $p=0.38$; Jennifer $Z=-1.56$, $p=0.12$; Kirsty $Z=-2.91$, $p<0.01$; Orla $Z=-1.58$, $p=0.11$).

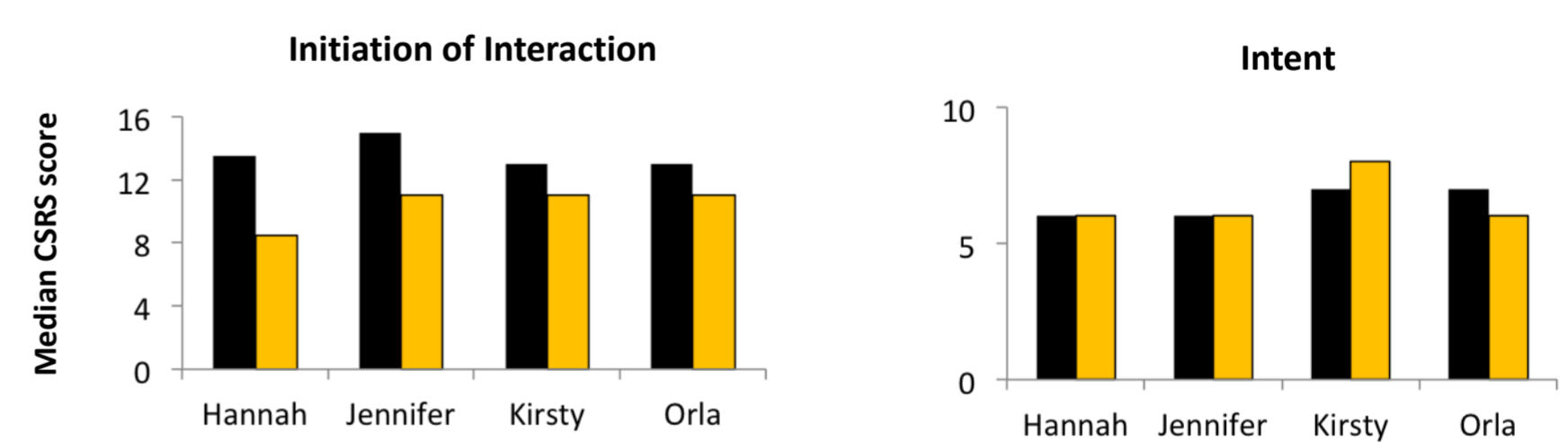


Figure 2 Median CSRS scores shown for Hannah, Jennifer, Kirsty and Orla.

*Data for Kirsty is autocorrelated, therefore the analysis is only presented as a guide.

Conclusions

Lower levels of approach behaviour: All four children displayed lower levels of social approach behaviour in the presence of the environmental cue.

Potential for an effective intervention: The results suggests a potentially effective intervention for children with a strong drive for social attention.

Change in behaviour not motivation: Although lower levels of social approach behaviours were observed in extinction conditions, the focus of attention and eye contact remained consistent across conditions.

Future directions: Further investigations into the use of this procedure as an intervention, including stimulus fading to a more practical cue.

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