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Behavioural Flexibility in Young Children with Autism

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Autism

Triad of impairment (APA, 2000)

- Language and Communication
- Reciprocal social interactions
- Restricted and repetitive behaviours and interests
 - Repetitive motor mannerisms
 - Insistence on sameness, resistance to change



Behavioural Flexibility

The ability to accommodate the changes that occur in everyday life

(Wahlberg & Jordan, 2001)



Behavioural Inflexibility

Also apparent in:

- Typical development < 5 (Evans et al., 1997)
- Down syndrome (Green et al., 2006;)
- Angelman's syndrome (Didden et al., 2008)
- Developmental Delay (Bodfish et al., 2000)
- Obsessive Compulsive Disorder (Zandt, Prior, & Kyrios, 2007)



Selected research in the area

- Findings suggest greater problems with a lack of flexibility in children with autism (Didden et al., 2008; Prior & MacMillan, 1973)
- There is a tendency towards greater problems in higher functioning individuals and those with Asperger's syndrome (Green et al., 2006; Bartak & Rutter, 1976).



Conceptualisations of the behaviour in children with Autism

- Avoidance of unpredictable situations
 - due to an inability to cope with the complexity of the particular situation (Wahlberg & Jordan, 2001)
- Impairments in executive functioning
 - the ability to plan behaviour, behave appropriately and inhibit actions (Turner, 1997)



Further Theories

- Adaptive functioning deficit
 - the inability to problem solve and tolerate change (Green et al., 2008)
- A failure to construct new internal schema
 - thus unable to familiarise with new situations (Kootz, et al 1982)



Manifestations of the Behaviour

- Wanting to travel on the same route every day
- Insisting on eating the same food or wearing the same clothes every day
- Insist that furniture remain in the same place

(Green et al., 2007)



Associated problems

- A major concern surrounding inflexible behaviour is the associated problem behaviour
- A lack of flexibility may bring about mild problem behaviour such as whingeing, whining and minor tantrums, to more severe tantrums, aggression, and self injurious behaviour



Associated Problems

- May pose a threat to safety
 - Includes safety of individual involved, as well as others
- May impact on family, community and school life
 - Places strains on family and other relationships
 - Impacts the learning of new skills
 - Disrupts other children's learning in the classroom
 - Limits teacher effectiveness

(Matson & Minshawi, 2006; Green et al, 2008)



Questions raised by previous research

Are there differences in the behaviour between high and low functioning individuals?

What motivates the problem behaviour associated with a lack of flexibility?

Are the motivations different for typically developing children given that they tend to 'grow out' of the behaviour?



Research Method

- Phase one: Survey study to investigate the motivations behind problem behaviour.
- Phase two: a play based assessment utilising a multi-element design



Criteria for Instruments Chosen for Phase One:

- Address research questions
- Fit 2-10 age group
- Be valid and reliable measures of the behaviour assessed
- Can be completed by an informed lay person
- Relatively fast completion time



Instruments used in Phase 1

- Behavioral Flexibility Rating Scale-Revised (BFRS-R) (Green et al., 2007)
 - Situations resulting from inflexibility
- Sameness Questionnaire (Prior & MacMillan, 1973)
 - Extent to which sameness behaviours occur
- Aberrant Behavior Checklist (ABC) (Aman & Singh, 1994)
 - Rates extent of problem behaviour



Instruments Continued

- **Motivation Assessment Scale (MAS)** (Durand & Crimmins, 1992)
 - Assesses the influence of tangibles, escape, social attention and sensory perception
- **Short Sensory Profile (SSP)** (McIntosh, Miller, Shyu, & Dunn, 1999)
 - Measures child's sensory processing abilities in daily life



Instruments Continued

- Childhood Autism Rating Scale (CARS)
(Schopler, Reichler, & Rochen Renner, 1988)
- Gilliam Autism Rating Scale (2nd Edition)
(Gilliam, 2006)
- Vineland Adaptive Behavior Scale- (2nd Edition) (Sparrow et al., 2005)



Phase one participants

- Parents/caregivers of children with ASD and typically developing children aged 2 to 10.
- Recruitment via Autism Associations and childcare centres
- 8 case studies selected for this presentation of preliminary findings



Results

Table 1: MAS Raw Scores for the 6 cases with a reported diagnosis of ASD.

	CASE 1	CASE 3	CASE 6	CASE 2	CASE 4*	CASE 5
	Male	FEMALE	MALE	Male	MALE	MALE
	8.5yrs	7yrs	7.5yrs	9.5yrs	8yrs	6.5yrs
	HFA	HFA	HFA	LFA	LFA	LFA
MAS						
Tangible	20	11	12	14	13	3
Self-stim/ sensory	14	16	12	15	14	11
Escape/avoid	14	8	11	8	10	11
Attention	12	11	9	16	7	5



Results

Table 2: Raw scores on the MAS, SSP, ABC, BFRS-R, & Sameness Questionnaire

	CASE 1 Male 8.5yrs HFA	CASE 3 FEMALE 7yrs HFA	CASE 6 MALE 7.5yrs HFA	CASE 2 Male 9 .5yrs LFA	CASE 4* MALE 8yrs LFA	CASE 5 MALE 6.5yrs LFA	CASE 7 MALE 4.5yrs CONTROL	CASE 8 MALE 7yrs CONTROL
MAS								
Tangible	20	11	12	14	13	3	0	0
Self-stim/ sensory	14	16	12	15	14	11	0	0
Escape/avoid	14	8	11	8	10	11	0	0
Attention	12	11	9	16	7	5	0	0
SHORT SENSORY PROFILE	89	124	150	121	96	125	43	58
Tactile sensitivity	11	29	26	21	12	19	7	7
Taste/smell sensitivity	17	16	20	20	8	20	6	4
Movement sensitivity	3	4	6	3	7	13	3	3
seeks sensation	24	12	20	20	26	13	7	17
Auditory filtering	15	23	26	15	21	15	9	16
Low energy/ weak	6	22	30	30	6	30	6	6
Visual/auditory sensitivity	13	18	22	12	16	15	5	5
ABC								
Irritability	14	26	11	25	7	10	2	2
Lethargy	7	37	12	8	11	9	1	0
stereotypy	1	3	5	3	5	2	0	0
Hyperactivity	26	14	11	31	23	3	2	8
Inappropriate speech	4	1	1	9	3	0	0	0
BFRS-R	15	38	30	37	25	23	7	1
SAMENESS QUESTIONNAIRE	21	29	30	27	9	21	6	2



Findings on BFRS -R

Most commonly reported items

(>5/8 participants reported moderate to severe problems)

- A commonly used object is misplaced and cannot be found
- A planned event is delayed or cancelled
- When required to try something new e.g food
- Another person is doing something annoying
- An activity is interrupted before he/she was able to finish the task



Findings on sameness Questionnaire

Most commonly reported items:

(>5/8 participants reported moderate to severe problems)

- Insists on eating the same foods
- Makes a ritual out of e.g. going to bed



Future Work

- Develop an ecologically valid assessment that can be used to directly assess the motivation of problem behaviour associated with a lack of flexibility
- Inform interventions aimed at teaching children to cope with change or problem solve

