Similarities and differences between children and adolescents with autism spectrum disorder and those with obsessive compulsive disorder

Executive functioning and repetitive behaviour

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ABSTRACT In order to examine hypothesized underlying neurocognitive processes in repetitive behaviour, children and adolescents (7–16 years) with autism spectrum disorder (ASD) and obsessive compulsive disorder (OCD) were compared on a range of executive function (EF) measures. Performance on neuropsychological tests assessing executive functioning showed a trend for children with ASD to perform poorly on tasks requiring generation of multiple responses, while children with OCD tended to demonstrate impairments on a task requiring inhibition. Parental ratings on a questionnaire measure of EF indicated impairments in both groups relative to controls. Relationships between questionnaire and performance measures of EF were generally weak. There was some limited support for a relationship between EF and repetitive behaviour, but effects tended to be small and variable across groups and measures.

KEYWORDS autism spectrum disorder; executive function; obsessive compulsive disorder; repetitive behaviour

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Repetitive behaviour is apparent in a range of psychiatric disorders and can also be observed in normally developing individuals, but it is a core component of two neurodevelopmental disorders: autism spectrum disorder (ASD) and obsessive compulsive disorder (OCD). The similarities in the repetitive behaviour observed in ASD and OCD mean that at times careful
assessment is required to assist with differential diagnosis (King and Scahill, 1999; Leckman et al., 1999). Another issue that has received some attention in the literature is whether secondary OCD can, or should be, diagnosed in individuals with ASD (Reaven and Hepburn, 2003; Towbin, 2003).

McDougle et al. (1995) administered the Yale Brown Obsessive Compulsive Scale to adults with ASD who reported more compulsions than obsessions, and generally reported less sophisticated obsessions and compulsions than adults with OCD. A recent study by the authors of this article demonstrated that children with OCD reported more compulsions and obsessions than children with ASD, who in turn reported more compulsions and obsessions than typically developing children. Consideration of the type of compulsions and obsessions in each disorder suggested that the compulsions in ASD tended to be less sophisticated. Children with ASD and OCD were reported by their parents to engage in similar levels of sameness behaviours and repetitive movements (Zandt et al., 2007).

In addition to behavioural similarities, particular neurocognitive patterns of functioning may be significant in the two disorders, with executive functioning (EF) impairments being hypothesised in both ASD and OCD. Executive functions are ‘depicted as the central executive component of the information-processing system – the component that directs attention, monitors activity, and coordinates and integrates information and activity’ (V. Anderson et al., 2001, p. 92). Executive functioning has a crucial role in a child’s cognitive functioning, behaviour, emotional control, and social interaction, and appears to develop rapidly through early and middle childhood, with the development continuing but slowing considerably in adolescence (V. Anderson et al., 2001). Executive functions are typically impaired in patients with frontal lobe injury and in a range of neurodevelopmental disorders thought to involve congenital impairments in the frontal lobes, including attention deficit hyperactivity disorder, Tourette syndrome, and phenylketonuria (Hill, 2004).

The concept of executive functioning remains controversial, and assessment is complicated, often as a result of the way executive functioning is conceptualized. For example, isolating the impact of executive skills, as opposed to the contribution of intelligence or language development is a challenge (V. Anderson et al., 2001). Further, the nature of the testing situation – structured, quiet, and without competing demands – may provide sufficient scaffolding to allow an individual who struggles with problem solving in everyday life to perform well. Questionnaire measures, which allow for an assessment of executive functioning in a child’s everyday environment, may be helpful in expanding the picture.

Research on executive functioning in ASD suggests that individuals with the disorder generally experience more difficulty on problem solving
tasks than controls, and may have particular difficulty with set shifting, although some inconsistent findings are apparent (see Hill, 2004; Prior and Ozonoff, 2006). Perhaps the most consistent area has been with tasks designed to assess inhibition, on which children with ASD typically appear to be unimpaired relative to matched controls (Hill, 2004; Prior and Ozonoff, 2006). Nevertheless impairments on tasks of inhibition relative to controls (Geurts et al., 2004) have been reported. The inconsistencies in the literature are likely to reflect the use of heterogeneous groups, differing tests of varied complexity, assorted scoring procedures, different comparison groups and matching procedures. In particular, careful matching of intelligence or the use of intelligence as a covariate appears to influence the results (Hill, 2004; Prior and Ozonoff, 2006).

Only a small number of studies have explored the relationship between executive functioning performance and repetitive behaviour. Turner (1999) reported that poorer performance on two tasks designed to assess generativity and one measure of inhibition were related to higher levels of repetitive behaviour in high and low functioning ASD. In contrast, Ozonoff et al. (2004) reported no relationship between performance on executive functioning tests and repetitive behaviour. More recently, Lopez et al. (2005) demonstrated that repetitive behaviour in adults with autistic disorder was associated with some executive functions (cognitive flexibility, response inhibition, and working memory), but not others (planning and fluency).

The majority of empirical work related to executive functioning in OCD has been conducted with adults and suggests that adults with OCD exhibit impairments relative to controls on executive functioning tasks (Griesberg and McKay, 2003). Research on the relationship between executive functioning performance and symptoms in adults with OCD generally suggests that impairments in executive functioning are related to clinical presentation, although some inconsistencies are apparent (Griesberg and McKay, 2003). To the authors’ knowledge just two studies have explored executive functioning in children and adolescents with OCD. Behar et al. (1984) reported that children and adolescents with OCD made significantly more errors on two maze tasks, in comparison to controls. However, the OCD group performed at a comparable level to the control group on two other tasks of executive functioning. Beers et al. (1999) found that children and adolescents with OCD were similar to controls on a range of executive functioning tests, and indeed performed better than controls on some tasks. Executive functioning results were not significantly related to any of the symptom measures.

To summarize, repetitive behaviour is a core component of ASD and OCD, two disorders that share other neurological, genetic and biological similarities. Inconsistent findings of executive function impairments have
been reported for both disorders, with some limited support for a relationship between executive function impairments and repetitive behaviour. The present study sought to (a) compare executive functioning in the two disorders, and (b) to explore the relationship between repetitive behaviour and executive functioning in children with ASD and OCD.

Method

Participants
Participants were 54 children and adolescents aged 7 to 16 years. All of the participants will be referred to as children henceforth, for the sake of brevity. The ASD group consisted of 19 children (16 males, three females) with a mean age of 11 years (SD = 2.42). The majority of these children had a diagnosis of Asperger syndrome (AS) (n = 15), two had a diagnosis of autistic disorder, and one had a diagnosis of pervasive developmental disorder not otherwise specified (PDD-NOS). Individuals with AS, autistic disorder, and PDD-NOS vary predominantly in symptom severity, and this in turn is related to intelligence level (Dickerson Mayes and Calhoun, 2003), making it reasonable to combine children with AS, autistic disorder, and PDD-NOS of comparable intelligence for the purpose of research. The term autism spectrum disorder (ASD) will be used henceforth to refer to children with these diagnoses. The majority of children with ASD were not medicated at the time of the study; however, three children were taking dexamphetamine and two were taking ritalin. Most of the children in this group were diagnosed by an experienced multidisciplinary assessment team at the Royal Children’s Hospital, consisting of a paediatrician, a psychologist, and a speech pathologist, according to the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition Text Revision (DSM-IV-TR) criteria (American Psychiatric Association, 2000). Families of four children with ASD responded to advertisements in autism newsletters and had been diagnosed in other services by experienced psychiatrists and psychologists according to DSM-IV criteria.

The OCD group consisted of 17 children (eight males, nine females) with a mean age of 12 years (SD = 2.17). At the time of the study four children in the OCD group were taking selective serotonin reuptake inhibitors, and two parents indicated that their child was taking medication but did not provide further details. Most children in this group were also receiving some form of psychological therapy (n = 15), compared with four children in the ASD group. Children with OCD were referred by clinicians in the Royal Children’s Hospital network (n = 7), as well as psychiatrists and psychologists in private practice (n = 8). Two families responded to advertisements in relevant newsletters. Again, experienced
professionals had diagnosed these children according to DSM-IV criteria. For both children with ASD and OCD, diagnoses were based on a clinical interview with children and parents and a range of other findings, such as language and cognitive tests. Standardized diagnostic tools, such as the ADOS, are not typically used as part of this process in Australia.

The typically developing or control group consisted of 18 children (six males, 12 females) with a mean age of 12 years (SD = 2.94), none of whom were receiving psychological or pharmacological treatment. Ten typically developing children were recruited from a primary school in Melbourne and a convenience sample of eight children aged between 12 and 16 years was recruited through families known to the researcher.

Exclusion criteria for the study were the presence of a comorbid neurological disorder such as Tourette syndrome or a tic disorder, a comorbid intellectual disability or language disorder, or a comorbid axis 1 disorder such as another anxiety disorder or depression. Strategies for confirming that the participants did not have a comorbid disorder included ensuring that referers were aware of the selection criteria, including items regarding comorbid disorders on an information sheet completed by parents, using the results of cognitive tests to eliminate any children with an intellectual disability or language disorder, and reviewing children’s files.

Measures
Parents completed an information sheet of demographic information that included their child’s diagnosis, medication, known comorbid psychological and neurological conditions, and family psychiatric history.

Intelligence
The children were administered a short form of the WISC-III consisting of the block design, similarities, vocabulary, and coding sub-tests. Verbal and performance intelligence (VIQ and PIQ) were estimated using the procedure outlined by Sattler (1992). If a child had been assessed with the WISC-III in the past 2 years, parents completed a release of information consent form and the researcher obtained the results from the relevant psychologist.

Executive function measures
Choice of tests for the assessment of executive functioning was based on a number of criteria. Tests were chosen that were specifically designed for or had shown reliability and validity with paediatric populations, were suitable for the broad age range included in the study, allowed for the assessment of a range of executive function skills, and incorporated both summary and strategy scores. The final selection consisted of the Verbal Fluency Task, the Concept Generation Task–Child Version, the Rey Figure, and the Walk, Don’t Walk task.
The Verbal Fluency Task from A Developmental Neuropsychological Assessment (Korkman et al., 1998) is thought to reflect an individual’s generativity or mental flexibility. The task consists of two subscales, semantic and phonemic fluency, with a total score calculated by summing the two. Semantic fluency refers to a child’s ability to generate words within a category, while phonemic fluency assesses a child’s ability to list words that begin with a given letter. This task has been demonstrated to have adequate reliability and validity.

The Concept Generation Test–Child Version (CGT–CV: Jacobs et al., 2001), which was adapted from an adult version of the task, is also a measure of generativity or mental flexibility. Jacobs et al. (2001) demonstrated that performance in a typically developing sample improved with age, with results being related to performance on more traditional measures of executive functioning.

The Rey Complex Figure Test (Rey, 1941/1993) is a commonly used neuropsychological test designed to assess planning and organizational skills. P. Anderson et al. (2001) developed the organizational strategy score as a method of analysing responses to the Rey Figure and demonstrated that performance tended to increase with age and was related to the results of more traditional executive functioning measures.

The Walk, Don’t Walk subtest of the Test of Everyday Attention for Children (TEACh) (Manly et al., 1999) provides a measure of a child’s ability to inhibit a previously acceptable response and to sustain their attention over the course of the task. Manly et al. (1999) demonstrated that the TEACh is correlated with other tests of attention and is able to identify clinical populations such as children with attention deficit hyperactivity disorder. The test also has adequate reliability.

Because of the noted potential discrepancy between everyday behaviour and clinical measures of executive function, we included the Behavior Rating Inventory of Executive Functioning (BRIEF: Gioia et al., 2000), a parent completed questionnaire designed to assess executive functioning in everyday life covering behavioural regulation, and metacognition indices. This measure has been demonstrated to have adequate reliability and validity, with correlations between this scale and other attention and behaviour rating scales providing support for construct validity.

Repetitive behaviour measures The Repetitive Behaviour Questionnaire (RBQ) was developed by Turner (1995) to assess repetitive behaviours in ASD. It is a comprehensive parent or teacher rated questionnaire that allows the assessor to calculate scale scores for repetitive language, sameness behaviour, and repetitive movements, as well as a total repetitive behaviour score. Information regarding the validity and reliability of this scale has not
been published, but can be found in Turner’s thesis (Turner, 1995). As a complement to the RBQ, the Children’s Yale–Brown Obsessive Compulsive Scale (CY–BOCS) was added (Scahill et al., 1997). The initial section, which contains two comprehensive symptom checklists, one for obsessions, and one for compulsions across a range of behaviours, was administered. Scahill et al. (1997) demonstrated that this task was both valid and reliable.

**Procedure**

Ethics approval was obtained prior to the commencement of data collection. Informed consent was obtained from parents and assent was obtained from children. Parents completed the demographic information sheet, the RBQ, and the BRIEF inventory of executive functioning. The principal researcher was aware of each child’s diagnosis and completed all of the child assessments. The short form of the WISC-III was administered first, followed by the executive functioning tests and the CY–BOCS. Whether or not the CY–BOCS was administered with the child alone, with a parent present, or with a parent only, was dependent upon the family’s preference, or on clinical judgement based on the child’s developmental level and language skills. Where administration was conducted with either the child or the parent individually, information was also obtained from the other informant and was integrated into the results.

**Results**

Given the small sample sizes in this study, effect sizes (ES) were calculated using Cohen’s (1988) formula: for t-tests $ES = d/2$, where $d = \frac{M_1 - M_2}{\sigma}$ (p. 276); for F-tests $ES = \sqrt{\frac{\eta^2}{1 - \eta^2}}$ (p. 284). ‘Small’ effect size is 0.10, ‘medium’ is 0.25, and ‘large’ is 0.40 (Cohen, 1988). Initial data screening revealed that the results were not altered when the two children with a diagnosis of autistic disorder and the child with a diagnosis of PDD-NOS were excluded from the sample; therefore these children were retained as part of the ASD group. Table 1 contains descriptive characteristics for each of the groups. The three groups did not differ in mean age, VIQ or PIQ, or on the subtest scores used to calculate the VIQ and PIQ estimates.

<table>
<thead>
<tr>
<th></th>
<th>ASD (n = 19)</th>
<th>OCD (n = 17)</th>
<th>Control (n = 18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>10.97 (2.42)</td>
<td>12.30 (2.17)</td>
<td>11.94 (2.74)</td>
</tr>
<tr>
<td>VIQ</td>
<td>96.45 (14.71)</td>
<td>94.35 (10.75)</td>
<td>94.89 (9.28)</td>
</tr>
<tr>
<td>PIQ</td>
<td>95.38 (19.96)</td>
<td>95.94 (7.86)</td>
<td>102.72 (12.15)</td>
</tr>
</tbody>
</table>

No significant differences between the groups were found, $p > 0.05$. 


Table 2 presents the mean scores on the performance measures of executive functioning for each group. The total number of words generated in the Verbal Fluency Task differed significantly by group with a large effect size, $F(2, 51) = 5.12, p = 0.00, ES = 0.45$, with post hoc tests revealing that the ASD group performed more poorly than both OCD and control groups, $p < 0.05$. This difference remained significant even when VIQ was statistically controlled, $F(2, 53) = 6.75, p = 0.00$. Further analyses revealed that this finding was accounted for by results from both semantic fluency, $F(2, 51) = 3.77, p = 0.03$, and phonemic fluency subtests, $F(2, 51) = 4.57, p = 0.02$, with the ASD group performing more poorly than the control group in both cases, $p = 0.04$ and 0.02 respectively.

Scores on the Rey Figure were not normally distributed so a non-parametric test was used, and confirmed that there were no significant group differences, $H(2) = 0.23, p = 0.89$. There was a trend for the groups to differ on the Concept Generation Task, $F(2, 50) = 2.44, p = 0.09, ES = 0.31$. The OCD group performed best on this task followed by the control group, with the ASD group demonstrating the lowest mean performance. There was also a trend for the groups to differ on the Walk, Don’t Walk task, $F(2, 47) = 2.47, p = 0.09, ES = 0.33$, with children with OCD performing worse than controls, $p = 0.08$. An analysis of extreme values on this task identified a 12-year-old boy in the control group who had received a scale score of 1. With this child removed the difference between groups became significant, $F(2, 46) = 3.52, p = 0.04, ES = 0.39$, with post hoc tests confirming a significant difference between the control and OCD groups, $p < 0.05$.

In addition to endpoint scores, repetitions on the Verbal Fluency Task and the Concept Generation Task were scored. A floor effect was apparent in both instances, with very few children in any of the groups making repetitions on either of the tasks.

Table 2  Group mean performance on psychometric measures of executive functioning (mean (SD))

<table>
<thead>
<tr>
<th></th>
<th>ASD ($n=19$)</th>
<th>OCD ($n=17$)</th>
<th>Control ($n=18$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal fluency (total words)$^a$</td>
<td>47.26 (13.81)</td>
<td>60.53 (13.81)</td>
<td>62.94 (17.93)</td>
</tr>
<tr>
<td>CGT–CV$^b$ (correct sorts)</td>
<td>2.44 (1.82)</td>
<td>3.82 (1.70)</td>
<td>3.11 (2.00)</td>
</tr>
<tr>
<td>Rey Figure$^c$</td>
<td>4.33 (1.14)</td>
<td>4.35 (1.22)</td>
<td>4.55 (1.15)</td>
</tr>
<tr>
<td>Walk, Don’t Walk$^d$</td>
<td>5.69 (3.32)</td>
<td>4.75 (2.49)</td>
<td>7.00 (3.03)</td>
</tr>
</tbody>
</table>

$^a$ ASD < control and OCD, $p < 0.05$.
$^b$ ASD ($n=18$), one child did not complete due to technical difficulties.
$^c$ ASD ($n=18$), one child did not complete due to anxiety about getting the picture ‘wrong’.
$^d$ ASD ($n=16$), three children did not complete this task due to anxiety; OCD ($n=16$), one child did not complete this task due to technical difficulties.
Better performance on each measure of executive functioning was positively related to at least one measure of intelligence as assessed by the WISC-III ($r > 0.30$ or $p < 0.05$). The most consistent finding across all groups was the significant contribution of the vocabulary score to overall executive functioning performance.

Means and standard deviations for BRIEF measures are presented in Table 3. The parent of one child with ASD completed too few items on this questionnaire for it to be reliably scored and therefore it was excluded from this analysis. Group differences were found for behavioural regulation, $F(2, 50) = 38.29$, $p = 0.00$, $ES = 1.25$, with a significant difference between both the ASD and OCD groups and the control group, $p < 0.01$.

Similar results were found for the metacognition index, with the ASD and OCD groups rated as significantly more impaired than the control group, $U = 8.00$ and 72.00, $p < 0.01$. There was also a trend for children with ASD to be rated as more problematic than children with OCD, $U = 99.50$, $p = 0.08$.

Group differences were also found for the global executive composite, $F(2, 50) = 30.45$, $p = 0.000$, $ES = 1.11$, with a significant difference between both the ASD and OCD groups and the control group, $p < 0.01$, and between the ASD and OCD groups, $p < 0.05$.

The individual subscales of the BRIEF – inhibit, shift, emotional control, initiate, working memory, planning and organization, organization of materials, and monitor – were also analysed. Figure 1 presents the mean score for each of the groups on these subscales, with higher scores indicating greater levels of impairment. Significant group differences were found on all of the above scales, $p = 0.00$, with the exception of the organization of materials scale, $F(2, 50) = 1.39$, $p = 0.26$.

Post hoc tests revealed that children with OCD and ASD were rated as experiencing significantly more difficulty than typically developing children on the inhibit, shift, emotional control, working memory, and planning and organization scales, $p < 0.01$. On each of these scales, children with ASD

### Table 3 Group means for BRIEF index scores (mean (SD))

<table>
<thead>
<tr>
<th></th>
<th>ASD ($n = 18$)$^a$</th>
<th>OCD ($n = 17$)$^b$</th>
<th>Control ($n = 18$)$^c$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioural regulation</td>
<td>72.61 (9.94)$^b$</td>
<td>69.94 (10.10)$^b$</td>
<td>47.55 (8.08)</td>
</tr>
<tr>
<td>Metacognition</td>
<td>68.11 (6.17)$^b$</td>
<td>61.53 (12.26)$^b$</td>
<td>51.61 (6.64)</td>
</tr>
<tr>
<td>Global executive composite</td>
<td>71.67 (7.01)$^b, c$</td>
<td>64.24 (11.09)$^b, d$</td>
<td>61.92 (12.36)</td>
</tr>
</tbody>
</table>

$^a$ One parent did not complete the majority of items on the BRIEF; hence subscale and index scores could not be calculated.

$^b$ $p < 0.01$, different from control.

$^c$ $p < 0.05$, different from OCD.

$^d$ $p < 0.05$, different from ASD.
and OCD did not significantly differ from each other. Children with ASD were rated as experiencing significantly more difficulty on the initiate scale than typically developing children and those with OCD, $F(2, 50) = 12.80$, $p = 0.00$, with no significant difference between the latter two groups. Children with ASD experienced more difficulty on the monitor scale than children with OCD, $U = 84.50$, $p = 0.02$, and typically developing children, $U = 20.50$, $p = 0.00$ (see Figure 1).

Correlations between the parent rated BRIEF and psychometric tests of executive functioning tended to be in the expected direction, such that more problematic behaviour was related to lower scores on neuropsychological tests. However, these relationships were most commonly small, with most failing to reach significance, $p > 0.05$, and varied between and within groups, with no clear patterns emerging.

Table 4 presents the correlations between repetitive behaviour and BRIEF results for each of the groups. For the ASD and control groups, higher rates of difficulty in the areas of behavioural regulation and general executive functioning were related to higher rates of repetitive behaviour and compulsions; however, relationships between BRIEF measures and repetitive behaviour in the OCD group were predominantly small, with none reaching significance.
The relationships between repetitive behaviour and tests of executive functioning were also assessed, with the only significant relationship being for the ASD group, with better performance on Walk, Don’t Walk related to lower levels of obsessions, $r(16) = -0.54, p = 0.03$.

**Discussion**

The major finding was that children with ASD and OCD did not differ from a control group of equivalent intelligence on the majority of executive functioning tasks, suggesting that neither group is globally impaired. There was a trend for children with ASD to demonstrate impairments on tasks that require them to generate multiple responses, as also reported by Ambery et al. (2006) with adults, while children with OCD tended to have impaired inhibition. Some limited support was found for a relationship between repetitive behaviour and executive functioning, although relationships were generally small and varied across groups.

Children with ASD tended to do more poorly on the Verbal Fluency Task and the Concept Generation Task, both of which required the generation of multiple responses. These findings are consistent with the results reported by Turner (1999) who demonstrated that both high and low functioning individuals with ASD were impaired in generative ability. The finding that children with ASD were not impaired on the Walk, Don’t Walk task is consistent with previous reports using similar tasks. Taken together,
the findings confirm that inhibition, as assessed on formal tasks under test conditions, is generally unimpaired in children with ASD. The contribution of intelligence to performance on executive functioning tasks has been noted (V. Anderson et al., 2001), with this contribution also being apparent in the present study. Hence, these results may not be applicable to lower-functioning children with ASD.

Children with OCD performed similarly to typically developing children on the majority of tasks, but tended to demonstrate impairments in inhibition, as assessed by the Walk, Don’t Walk task. This latter finding is in contrast to those of Beers et al. (1999) who reported that children with OCD performed better than controls on two tasks of inhibition, the Stroop and the Go-No-Go task, which are similar to the Walk, Don’t Walk task. The limited number of studies into executive functioning in children with OCD precludes firm conclusions, but suggests that children with OCD are not notably impaired. This contrasts with the adult literature where, although inconsistencies exist, some executive functioning impairment is typically reported (Griesberg and McKay, 2003). It is possible that anxiety may have a greater impact on the test results of adults with OCD, or that the impairments in children are more subtle and cannot be detected by the available tests, or that the impairments may result from living with OCD for an extended period.

Children with OCD and ASD were both rated by their parents as experiencing significantly more difficulty with executive functioning skills in everyday life, compared with typically developing children, consistent with previous research with a range of psychological disorders (Gioia et al., 2000). However, the relationships between the BRIEF and the psychometric measures of executive functioning were generally weak. Two recent studies with different clinical populations have reported similar results (V. Anderson et al., 2002; Vriezen and Pigott, 2002). The lack of support for a relationship could be conceived as undermining the concept of executive functioning, especially in terms of reported everyday functioning. However, these findings also raise the possibility that the BRIEF may assess something other than executive functioning, for example non-specific impairment, adaptive behaviour, or levels of parental concern.

Relationships between executive functioning as assessed by psychometric tests and repetitive behaviour were generally small, with association between inhibition and obsessions in the ASD group being the only significant finding. Both Turner (1999) and Lopez et al. (2005) reported relationships between repetitive behaviour and other executive functions, such as generative ability and cognitive flexibility. The present study, however, did not replicate these latter findings. The use of different samples and measures may have contributed to this discrepancy.
Relationships between repetitive behaviour and parental ratings of executive functioning were also explored. Greater executive function impairment, as assessed by the BRIEF, was related to repetitive behaviour in the ASD and in the typically developing group, but not in the OCD group, providing some limited support for Turner’s (1999) theory. Parental reports of executive functioning explained more of the variance in repetitive behaviour for children with ASD than for children with OCD. The OCD group acknowledged significantly more obsessions, which were only weakly if at all related to executive functioning measures, but were strongly related to compulsions (Zandt et al., 2007). As noted earlier, repetitive behaviour in the two disorders may be derived from different cognitive processes, with anxiety (and obsessions) providing a better explanation for repetitive behaviour in OCD, and executive functioning accounts being better suited to ASD.

Further exploration of the relationship between executive functioning and repetitive behaviour in OCD and ASD is warranted, with larger samples and a range of severity and ages. Exploration of the developmental trajectory of repetitive behaviour and executive functioning in each of these disorders should be helpful. Performance and questionnaire measures of executive functioning are likely to yield differing results, with further research required to determine the construct and discriminant validity of questionnaire measures. Addressing the question of underlying processes requires researchers to include measures that adequately assess children’s feelings of anxiety, sadness, and distress as well as adaptive impairments.

References


