High functioning autism spectrum disorders: an investigation of psychological vulnerabilities during interrogative interview

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Forensic psychologists and psychiatrists are commonly asked to ascertain the reliability of statements made by suspects to the police during questioning and to assess an individual's vulnerability to providing information which is inaccurate, unreliable, and misleading during police interview. Autism spectrum disorders (ASD) are characterised by qualitative impairments in social communication and interaction, and a restricted or repetitive pattern of behaviours, interests, and activities. It is not clear whether people with ASD are more vulnerable at interview, or more prone to respond negatively to interrogative pressure, when compared with the general population. In the present study, 26 individuals with high functioning ASD, and 27 gender- and IQ-matched controls, were compared on measures of interrogative suggestibility and compliance as well as on measures of anxiety, depression, the extent to which they feared negative evaluation by others, and whether they had a suspicious outlook. There were no significant between-group differences on the measures of suggestibility, but the group with ASD were rated as significantly more compliant than the controls in terms of both parental and self-report, and also had higher scores on measures of depression, anxiety, fear of negative social evaluation and paranoia. Bi-modal distribution of suggestibility scores within the ASD group indicates that individual characteristics should be taken into account when considering an assessment. Individuals with ASD may be more eager to please or to avoid conflict and confrontation than controls, and may be more prone to respond compliantly to requests and demands.

Keywords: autism spectrum disorders; police interview; suggestibility; compliance

Introduction

Suspects cope with police interviews and custodial confinement in different ways. Research in this area has helped to clarify the circumstances...
under which false confessions and potential miscarriages of justice can arise, and has subsequently helped bring about official acknowledgement of individuals who are psychologically vulnerable (Home Office, 1985, 2004).

Vulnerabilities in the context of a police interview have been studied in individuals with impaired mental state or low intellectual ability (see Clare & Gudjonsson, 1995; Gudjonsson, 2003). Particular attention has also been given to psychological vulnerabilities such as abnormally high interrogative suggestibility and/or compliance (Gudjonsson, 2003). Interrogative suggestibility is defined by Gudjonsson and Clark (1986) as ‘the extent to which, within a closed social interaction, people come to accept messages communicated during formal questioning, as the result of which their subsequent behavioural response is affected’ (p. 84). Compliance has been defined as ‘the tendency of the individual to go along with propositions, requests, or instructions, for some immediate instrumental gain’ (Gudjonsson, 1992, p. 137). A number of factors have been found to be associated with both suggestibility and compliance, including general intellectual ability (e.g., Gudjonsson, 1988a; Gudjonsson & Clare, 1995), memory (e.g., Gudjonsson, 1987, 1988a), low self-esteem, fear of negative evaluation by others, and high levels of anxiety (Gudjonsson, 1988b; Wolfradt & Meyer, 1998).

Autism spectrum disorders (ASD) are characterised by qualitative impairments in reciprocal social interaction and communication, and a restricted, stereotyped, or repetitive pattern of interests and behaviours persisting from the early developmental period. Intellectual ability can fall across the spectrum, and delay/deviance in language development can be marked or mild. There is a growing literature on the validity of the number of diagnostic categories subsumed under the generic label of ASD, particularly where intellectual function falls in the average range (Volkmar et al., 1998). There is increasing awareness of heterogeneity within diagnostic groups and evidence for a lack of unity in relation to the expression of the triad of impairments, indicating that research and clinical studies seeking precise classification within the traditional diagnostic framework may be misleading (Happe, Ronald, & Plomin, 2006). Consequently, the study of trait-like symptoms occurring as part of a spectrum consistent with normality is increasingly being viewed as potentially more informative. Combined with increasing rates of ASD diagnosis, greater understanding and study of the traits represented by difficulties in social communication and repetitive behaviours in the general population are more pertinent than ever.

In terms of offending behaviour and contact with the criminal justice system for individuals with ASD, the literature is primarily confined to single (e.g., Everall & LeCouteur, 1990) or small group (e.g., Barry-Walsh &
Mullen, 2004) case reports, as well as prevalence studies in maximum security psychiatric settings – the findings of which suggest that high functioning ASD may be over-represented among this population (Hare, Gould, Mills, & Wing, 1999; Scragg & Shah, 1994). Siponmaa, Kristiansson, Jonsson, Nyden, and Gillberg (2001) similarly found an over-representation of individuals diagnosed with high functioning ASD in a community study of juvenile offenders. In addition to the debate about the use of diagnostic categories, rapidly fluctuating prevalence rates of ASD in the population mean that it can be difficult to draw definitive conclusions from this type of epidemiological research.

A report prepared for the All Party Parliamentary Group on Autism (Loynes, 2001) commented on the lack of information available about the number of people with ASD involved with the criminal justice system, either as victims or perpetrators of crime. Howlin (1997) outlines a taxonomy of reasons for criminal behaviour in this group, comprising: exploitation by others, disruptive behaviour following interruptions to routines, behaviour deriving from difficulties understanding social cues, and obsessional tendencies/morbid interests. The lack of large-scale epidemiological research in this area means that this taxonomy has not as yet been evaluated, although many single and small group case reports are consistent with the proposed framework. Woodbury-Smith et al. (2005) did explore the relationships between the main cognitive deficits associated with ASD and offending behaviour by comparing a group of offenders with ASD, non-offenders with ASD, and general population controls on a number of cognitive paradigms, including theory of mind and executive function. They found few between-group differences, but did establish that the ASD offending group were relatively disadvantaged in their ability to rate fear accurately on a facial affect recognition task when compared with the non-offending ASD group and general population controls.

There is evidence, then, that individuals with high functioning ASD do come into contact with the criminal justice system and, in particular, may be over-represented in the secure hospital population. However, little is known about the numbers of people with ASD in prison settings, or being detained and interviewed by the police.

In terms of vulnerability during interview, individuals with high functioning ASD may not necessarily be recognised as immediately vulnerable by the police, by virtue of having an apparently competent use of language and presenting as intellectually able. However, these individuals may face considerable difficulties in understanding and coping with police demands, and may also experience high levels of distress in the context of the closed social situation of an interrogative interview. By definition, this group will have difficulty decoding aspects of social
interaction, and consequently in using this information to inform their own behaviour – particularly those aspects involving non-verbal means of communication. In relation to the known risk factors for vulnerability during interrogation, there is some evidence that memory deficits may be present in high functioning groups with ASD (Bowler, Matthews, & Gardiner, 1997). There is also evidence that individuals with ASD may be particularly prone to developing anxiety disorders (Green, Gilchrist, Burton, & Cox, 2000; Sofronoff, Attwood, & Hinton, 2005) and more vulnerable to low self-esteem and depression (Ghaziuddin, Weidmer-Mikhail, & Ghaziuddin, 1998; Howlin, 2002). Some authors have suggested that this may arise from individuals paradoxically having a greater insight into their own impairment, which causes them to feel set apart socially and inadequate (Hare & Paine, 1997; Howlin, 2002). There is also evidence to suggest that individuals with ASD may show greater levels of suspicion or mistrust of others (e.g., Blackshaw, Kinderman, Hare, & Hatton, 2001). Conversely, this may help them to question and resist police demands and to present as rigid and unwavering in their responding.

The current study aims to establish whether individuals with ASD perform poorly on measures of interrogative suggestibility and compliance, when compared to general population (IQ-matched) controls. Elevated scores on measures of these constructs might indicate that individuals with ASD could have more difficulty coping with a real-life interrogative situation than people from the general population of a similar intellect.

**Method and measures**

An independent groups design was used to assess interrogative suggestibility and compliance in 26 individuals with high functioning ASD, and 27 gender- and IQ-matched controls. Participants with ASD were recruited from a specialist clinic carrying out diagnostic assessments and from an existing database of people with a diagnosis interested in participating in research studies. Local clinicians and researchers provided information on the suitability of participants. Diagnosis of ASD was made according to ICD-10 criteria by consultant psychiatrists with expertise in this area. Diagnostic assessment was supplemented by information gathered from the Autism Diagnostic Interview (ADI-R; Lord, Rutter, & Lecouter, 1994) in 14 (54%) of the cases and by the Autism Diagnostic Observation Schedule (ADOS; Lord, Rutter, DiLavore, & Risi, 1999) in four (15%) of the cases. All participants in the ASD group had been ascribed a diagnosis of Asperger’s syndrome, indicating that they had not had a delay in the acquisition of spoken language in addition to the triad of impairments. The participants with ASD had a mean age of 34.73 (SD = 11.13, range = 18–61), and 21 (80.7%) were male. At the time of testing, most participants were
either in private residences or supported accommodation, although seven (27%) were inpatients in a specialist unit for people with ASD.

A similar number of control participants were recruited from a control database at the Institute of Psychiatry, London. The control participants had a mean age of 33.93 (SD = 11.93, range = 18–61) and 21 (77.7%) were male. Of the ASD group, eight (30.7%) had been arrested/cautioned by the police compared with four (14.8%) of the general population controls.

All participants spoke English as their first language. Exclusion criteria included current acute psychotic illness, substance misuse, head injury or neurological illness, a measured IQ below 70 points, or a systemic medical illness that might hinder performance. None of the participants in the ASD or control groups were known personally to the researcher, and all participants were paid for their time and expenses. Similar numbers of ASD and non-ASD participants were invited to take part in the study, with equivalent numbers declining to take part. Prior to recruiting, ethical approval for this study was obtained from the joint Institute of Psychiatry and South London and Maudsley NHS Trust Ethics Committee.

The Gudjonsson Suggestibility Scale 2 (GSS 2; Gudjonsson, 1997) is a standardised research and clinical tool measuring individuals’ suggestibility in response to leading questions and negative feedback. Four different types of scores can be calculated. ‘Yield 1’ is the extent to which the person succumbs to the 15 misleading questions when these are first presented. ‘Yield 2’ is the extent to which the person responds differently to the same questions after being informed that some of his or her answers were wrong and the questions are repeated. ‘Shift’ is made up of the changes in the person’s answers to any of the 20 questions after negative feedback. Yield 1 and Shift combine to give the total suggestibility score, with the range of scores being from 0 to 35. Higher scores indicate greater suggestibility. Additionally, a participant’s recall memory of a narrative (that serves as the witness event) and the degree to which participants confabulate can also be assessed by the GSS 2. Participants’ responses were recorded on tape and subsequently transcribed. Clear non-discretionary scoring guidelines are provided in the manual, and the interviewer was trained by the author of the GSS 2 prior to the study. Good retest reliability and validity of the scales has been well documented (see Gudjonsson, 2003).

The Gudjonsson Compliance Scale (GCS; Gudjonsson, 1989) is a 20-item self-report scale which measures the extent to which an individual is compliant in a range of situations. This measure comprises true/false statements. Scores range from 0 to 20, with a higher score indicating greater compliance. Normative data are available for the GCS. The Gudjonsson Compliance Scale Form E (GCS-Form E; Gudjonsson, 1997) purports to
assess compliance from an informant’s perspective; true/false responses to the 20 GCS items are provided by an informant who knows the participant well. In the current study, the parents of individuals within the AS group were asked to fill in Form E. This was because the GCS had not been used in this population before.

Three measures of mental state were also included: the Hospital Anxiety and Depression Scale (Snaith & Zigmond, 1994) to assess anxiety and depression; the Brief Fear of Negative Evaluation Scale (Leary, 1983) to measure the extent to which an individual feared negative reactions from others/social evaluative anxiety; and the Paranoia Scale (Fenigstein & Vanable, 1992) to measure trait suspiciousness/tendencies to mistrust others.

**Results**

One participant in the ASD group was unable to complete self-report measures.

Scores on the measures of suggestibility (GSS 2) and compliance (GCS) were first compared to published norms (Gudjonsson, 1997) and were found to be generally in line with these. However, the distribution of several variables on the GSS 2 did not appear normal. Scores were skewed towards the low end of the scale on Yield 1 in both groups. This was also apparent on Shift and total suggestibility scores for the ASD group, with scores on the latter measure having a bimodal representation – that is, the majority of participants scored towards the low end but there was a distinct sub-group of higher scorers.

Distribution-free, non-parametric Mann Whitney U tests were conducted to explore specific group differences in terms of types of suggestibility and compliance. The results are shown in Table 1. After controlling for multiple comparisons using a Bonferroni correction, the ASD group was found to have significantly higher scores on the GCS than controls. No group differences were found for the various scores of the GSS 2.

To check the reliability of self-reported compliance in the ASD group, participants were asked if a parent could complete the GCS Form E on their behalf. Information was available for 15 of the 26 participants. Agreement was examined using an intra-class coefficient statistic. This was .67 and significant at the .05 level, indicating a satisfactory level of agreement between the total scores on the GCS from self-report and parental report.

Using the Mann Whitney U test, significant between-group differences were also found on the Hospital Anxiety ($U = 166, p < .01$, two-tailed) and Depression ($U = 181, p < .01$, two-tailed) Scale, the Paranoia Scale
Table 1. Between–group differences on the GSS2 and GCS.

<table>
<thead>
<tr>
<th></th>
<th>ASD (n = 26)</th>
<th>Control (n = 27)</th>
<th>U values</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Median (range)</td>
<td>Median (range)</td>
<td></td>
</tr>
<tr>
<td>GSS2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immediate recall</td>
<td>20.5 (8–35.5)</td>
<td>22 (7–32.5)</td>
<td>300.5</td>
</tr>
<tr>
<td>Total confabulations</td>
<td>2.5 (0–6)</td>
<td>3 (0–7)</td>
<td>339.5</td>
</tr>
<tr>
<td>Delayed recall</td>
<td>20.3 (4.5–33.5)</td>
<td>22.5 (3.5–29.5)</td>
<td>298.5</td>
</tr>
<tr>
<td>Total confabulations</td>
<td>3 (0–5)</td>
<td>3 (0–7)</td>
<td>329</td>
</tr>
<tr>
<td>Yield 1</td>
<td>2 (0–13)</td>
<td>3 (0–12)</td>
<td>332.5</td>
</tr>
<tr>
<td>Yield 2</td>
<td>4 (0–12)</td>
<td>6 (0–13)</td>
<td>293</td>
</tr>
<tr>
<td>Shift</td>
<td>3 (0–11)</td>
<td>4 (0–10)</td>
<td>330.5</td>
</tr>
<tr>
<td>Total suggestibility</td>
<td>5.5 (0–22)</td>
<td>6 (0–20)</td>
<td>350</td>
</tr>
<tr>
<td>GCS</td>
<td>13 (6–20)</td>
<td>8 (3–14)</td>
<td>130***</td>
</tr>
</tbody>
</table>

***p < .001 (one–tailed).

(U = 105, p < .001, two-tailed), and the brief Fear of Negative Evaluation Scale (U = 120, p < .001, two-tailed) after controlling for multiple comparisons using a Bonferroni correction (p < .0125, two-tailed). The ASD group were more depressed (ASD median, range = 6.0–16; control median, range = 2.0–10), anxious (ASD median, range = 8.0–20; control median, range = 4.0–10), and paranoid (ASD median, range = 43.21–77; control median, range = 28.18–52) than controls, and scored higher on the Brief Fear of Negative Evaluation Scale (ASD median, range = 44.18–77; control median, range = 29.15–53). None of these variables were found to have a significant association with the GSS 2 or GCS.

Discussion

Individuals with ASD were found not to differ significantly from people in the general population of a similar intellect in terms of the extent to which they yielded to misleading questions or changed their answers following negative feedback on the measure of interrogative suggestibility (the GSS 2). This was contrary to expectations for a group with social communication impairments, difficulties inferring mental states, reports of memory difficulties, and high anxiety levels. What might account for this finding?

First, research has consistently shown that low intellectual ability and poor memory are associated with suggestibility (Clare & Gudjonsson, 1993; Gudjonsson, 1988a). The experimental and general population control groups in the current study did not differ on measures of verbal IQ or memory performance on the GSS2, and it may simply be that this ‘common
ground’ supersedes other differences. Second, perhaps particularly surprising was the absence of significant differences between groups on the Shift, a measure of the degree to which answers given change following negative feedback. The Shift index score has been found in previous research to be particularly associated with anxiety (e.g., Gudjonsson, 1988b; Tata, 1983), and significantly higher levels of trait anxiety and a tendency to fear negative disapproval were found in the ASD participants. There is a growing understanding about the role of executive function deficits in the profile of ASD, particularly in the areas of planning and cognitive shift (Ozonoff et al., 2004). It is plausible, then, that the group with ASD, although susceptible to many of the risk factors for increased suggestibility, were not able to shift their responses and presented as rigid or unwavering. An alternative hypothesis suggests that due to social communicative impairments and/or impaired theory of mind, participants with ASD may have failed to recognise that the motivations or intentions of the interviewer were to elicit a different response by providing negative feedback. These hypotheses require further investigation, but it is plausible that the influence of executive function and/or theory of mind impairments on interrogative suggestibility might outweigh the effects of other, more established factors such as anxiety.

Individuals with ASD also had significantly higher scores on the depression subscale of the Hospital Anxiety and Depression Scale and on the Paranoia Scale. There is relatively less research concerning suggestibility and these variables. However, the current results would support the findings of Sigurdsson, Gudjonsson, Kolbeinsson, and Petursson (1994) that depression does not elevate suggestibility, and the theoretical argument that suspiciousness may be associated with a more resistant cognitive set (Gudjonsson & Clark, 1986). It may be that individuals with ASD were predisposed to adopt a less trusting approach than controls, and thus may have been more inclined to doubt leading questions and negative feedback. It is also possible that higher levels of depression within the ASD group may have led participants to withdraw and give more evasive answers, such as ‘I don’t know’ or ‘I’m not sure’, which on the GSS2 would be scored as a non-suggestible response.

Individuals with ASD did score significantly more highly than controls on a measure of compliance. Satisfactory agreement between self and parent ratings of compliance in the ASD group suggests that the high scores in the ASD group were not due to difficulties completing the measure or an inaccurate self-perception of compliance. Despite this additional information, there are considerable difficulties inherent in measuring compliance using self-report methods, in particular where an individual has been suspected of or interviewed with respect to a crime, as they may seek to present themselves as not accountable for their behaviour. However, the present data are in line with previous research.
demonstrating that, unlike suggestibility, compliance is not significantly associated with intelligence (Gudjonsson, 1989), and is not believed to be negatively associated with a suspicious cognitive set (Gudjonsson, Sigurdsson, Brynjolfsdottir, & Hreinsdottir, 2002). In addition, the current results may also be consistent with research linking low self-esteem and compliance (Gudjonsson et al., 2002). Self-esteem was not directly measured in this study, although higher rates of depression in the ASD group might denote this. It is not inconceivable that individuals with low self-esteem may feel less able to challenge a request or demand made by an authority figure.

In summary, these findings partially support the case presented in the literature review that individuals with ASD may be more vulnerable in an interrogative interview than people in the general population. As a group they were not found to yield more readily to misleading information, or to respond to direct negative feedback by the interviewer. However, the results suggest that individuals with ASD may be more eager to please or avoid conflict and confrontation, and therefore may respond compliantly to the requests or suggestions of others, despite not necessarily agreeing. In a police interview a tendency to respond in this way may, in some circumstances, disadvantage a suspect. In the worse case, it could lead to a statement that is erroneous and self-incriminating (Gudjonsson, 2003). ASD group members’ relatively high compliance score may also indicate that they are more easily led, manipulated, or coerced into criminal activity by peers (Gudjonsson & Sigurdsson, 2004), which offers some evidence in support of Howlin’s (1997) taxonomy proposal of deliberate exploitation by others as being one reason why people with ASD may commit crimes.

Although between-group differences on the GSS 2 were not found, this does not mean that suggestibility need not be examined in suspects with ASD. Indeed, a proportion of participants with ASD were found to score towards the high end of the suggestibility scale. Assessment of these psychological vulnerabilities should therefore principally relate to information from police transcripts, such as the manner in which questions were phrased and how the interviewee responded to challenges. Gudjonsson (2003) recommends that psychological tests of suggestibility and compliance may then be useful supplements to an assessment of intellectual ability and mental state, and provide important information about the strengths and vulnerabilities of an alleged offender.

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