

What is the relationship between autism spectrum disorder and offending behaviour, if any?

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Introduction

Understanding and quantifying the relationship between autism spectrum disorder and offending behaviour is a complex and sensitive task, but one which is becoming increasingly necessary for a number of reasons. This essay seeks to explore the burgeoning body of research on this subject and draw conclusions on the nature of any relationship between autism spectrum disorder and offending behaviour.

What is autism spectrum disorder?

In order to explore the relationship between autism spectrum disorder (ASD) and offending behaviour, it is important to first define autism.

Autism describes a group of related neurodevelopmental disorders. The disorders are associated with abnormal brain development, and symptoms must therefore be present from early childhood. Estimates for prevalence of autism have increased in recent decades: whereas in the past, autism was considered quite rare and estimated prevalence was as low as 0.04% (Berney, 2004), the 2011 U.K. census gives an estimated population prevalence of approximately 1.1% (NAS, 2016). It is thought that this change is explained by wider recognition of autism as a condition, and by broader diagnostic boundaries, rather than by an increased incidence (Fombonne & Tidmarsh, 2003).

Autism spectrum disorders are diagnosed using criteria from either the World Health Organisation's *International Classification of Diseases* (ICD-10) or the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V). Both sets of criteria are based on the same "triad of impairments", first described by Lorna Wing in 1981: impairments in social communication, social interaction and social imagination.

Impairment in social communication can present as a delay in development of spoken language; an inability to engage in reciprocal conversation; unusual or repetitive use of language; or abnormalities in pitch, stress, rate, rhythm and intonation of speech (WHO, 1992). Impairment in social interaction can involve difficulties with eye contact; lack of interest in other people; not giving or seeking comfort; or difficulty making friends (WHO, 1992). Social imagination in ICD-10 is represented by restricted or stereotyped patterns of behaviour, interests and activities – this might present as an unusual and/or encompassing preoccupation; compulsive adherence to ritual; or unconventional use of play objects, such as preoccupation with part-objects.

A diagnosis of autism spectrum disorder under ICD-10 requires that at least two criteria in each of the three areas is met, with onset of symptoms occurring before the age of 36 months. This is important because it explains one difficulty of diagnosing ASD in adults, who are very unlikely to recall their first three years of life and may not have an informant available. Diagnosis of autism in adults is also difficult for a range of other reasons, including that it is sometimes difficult to discern symptoms of ASD from symptoms of other disorders. Adult diagnosis of autism is important in relation to this question as prevalence studies considering the link between autism and offending behaviour often involve diagnosing adult offenders with ASD.

ICD-10 includes a range of different types of autism: autistic disorder; Asperger syndrome (AS); and pervasive developmental disorder, or atypical autism. These types of autism comprise the “autistic spectrum.” It is important to emphasise that “autism spectrum disorder” is therefore an umbrella for a wide range of phenotypes. As Berney states, “closer examination often reveals a mix of specific developmental disabilities which [...] it is tempting to classify under autistic-spectrum disorder, sweeping in many eccentric and isolated personalities” (2004, p. 342). As such, any conclusions to be drawn between autism spectrum disorder and anything, particularly something as sensitive as offending behaviour, should be drawn with caution, and the caveat that autism presents differently in different people. In the case of offending behaviour, there has been a significant amount of research into a potential link with one particular type of autism – Asperger syndrome. This is important as some studies have focussed on ASD as a whole, whereas others have focussed solely on AS, and the conclusions of these studies could easily be blurred.

The concurrent use of two different sets of diagnostic criteria – those of ICD-10 and DSM-V – also further complicates the situation. Whilst this affects other psychiatric conditions too, it is particularly challenging in autism because the two sets of criteria are markedly different. Whilst, as previously mentioned, both sets of criteria are based on Wing’s “triad of impairment”, the DSM criteria are “stricter” – that is to say, they exclude some patients from a diagnosis of autism who would receive an ASD diagnosis under ICD-10 criteria, by requiring that a patient displays more of the symptoms for each criterion than in ICD-10 (Wilson, et al., 2013). DSM-V has also removed the subtypes of autism – including Asperger syndrome – and replaced them with the single possible diagnosis of autism spectrum disorder. These changes are based in evidence and tested in real-life clinical settings (APA, 2013), but present several problems for answering the question posed here – first, studies conducted using ICD-10, DSM-IV and DSM-V criteria cannot be compared in a “like-for-like” manner, and secondly, it could be argued that the position of the large body of research on a prospective link between Asperger syndrome and offending behaviour is compromised by the removal of Asperger syndrome from DSM-V.

Asperger syndrome

The first account of the syndrome now known by his name was published by Hans Asperger in 1944, referred to then as “autistic psychopathy” (Baron-Cohen, 1988). Asperger noted that his four young male subjects shared the traits which would later be described as those of ASD, but without the deficits in language or cognitive skills. Asperger’s work, however, was largely ignored until work published by Wing in 1981, and Asperger syndrome was not introduced into ICD-10 or DSM until the early 1990s (Bjorkly, 2009).

Asperger syndrome is thus “a condition in which many of the features of autistic spectrum disorder exist, but in persons who are of average or above average intelligence” (Allen, et al., 2008, p. 748). Diagnosis therefore involves, in contrast to autism, establishing that there was no significant delay in developing language or cognitive skills (Bjorkly, 2009). The syndrome is otherwise characterised by the same triad of deficits as ASD (Haskins & Arturo Silva, 2006). However, some features might be more prominent in AS than in ASD. People with Asperger syndrome are frequently described as having one or more all-absorbing, narrow interests (Baron-Cohen, 1988). They are also often described as lacking in empathy, or what is described by Premack and Woodruff (1978) as “Theory of Mind” – “the ability to put oneself in the position of another and to appreciate their thoughts, feelings and wishes” (Browning & Caulfield, 2011, p. 167).

As previously stated, Asperger syndrome is absent from DSM-V and there is debate elsewhere as to what the place of Asperger syndrome is, and how different it is from autism, if at all (Cashin & Newman, 2009; Higgs & Carter, 2015). It has been argued that it is not separable from high-functioning autism (Gillberg & Ehlers, 1998), and that it should be considered as part of a “continuum” of pervasive developmental disorders rather than as a qualitatively separate entity (Bjorkly, 2009, p. 307). However, as Bjorkly has observed, the absence of a consensus on definition for Asperger syndrome has discouraged neither research on the syndrome nor clinical use of the diagnosis (p. 310). Prevalence of Asperger syndrome is estimated to be “in the neighbourhood of 2 per 10,000”, or 0.02% (Fombonne & Tidmarsh, 2003, p. 19).

Relationship between autism and offending behaviour

Where has the interest in a possible relationship come from?

There are a number of factors that have contributed to an interest in the possibility of a relationship between autism and offending behaviour. One of the most important factors has been the role of the media in giving disproportionately high profile coverage to rare criminal offences involving individuals who purportedly have autism (Howlin, 2004; Alexander et al, 2010; Browning and Caulfield, 2011). Examples include a case in 2001 in which a boy with Asperger syndrome, as well as numerous other psychiatric problems, stabbed his baby brother to death, published with headlines such as “Autistic boy killed baby brother” (BBC, 2001); and recurrent media speculation as to the possible ASD or AS diagnosis of Adam Lanza, who was responsible for the tragic Sandy Hook school shootings in 2012 (eg. Daily Mail, 2014). The media has also occasionally misappropriated or sensationalised research into the relationship between autism and offending behaviour, with headlines such as “Recipe for a serial killer? Childhood abuse, autism and head injuries are more common in murderers, study claims” (Daily Mail, 2014). Such reporting influences the public into believing that a link between autism and offending behaviour exists, and therefore research into the subject is warranted so that the link can be either refuted or quantified.

There have also been a number of case studies of patients with ASD or AS who have engaged in offending behaviour reported in medical journals, which have also contributed to the hypothesis that a relationship exists. A link between Asperger syndrome and violent crime was first proposed by Mawson et al. in 1985, in a study of a single patient who had committed a number of violent crimes. Since then, a number of similar case studies have been published (see Baron-Cohen, 1988; Chesterman & Rutter, 1993; Chen et al., 2003). It has been argued that these case studies can be as counterproductive as media coverage in forming inaccurate perceptions of autism (Browning & Caulfield, 2011). Particularly significant has been a recent study by Allely et al. (2014), which proposes a “complex interplay” between ASD and serial killing, based on research which only included single case reports, most of which (118 of 165) were from web resources rather than peer reviewed articles (22 of 165); and also incorporated into its ASD category killers who had “probable or possible ASD” based on reported traits (p. 292).

Finally, if a link between offending behaviour and autism were to exist it might have implications for the criminal justice system. The Department of Health recommended research into the relationship between ASD and offending behaviour in 1992, in order to ensure that appropriate services for people with ASD could be developed if necessary (Browning & Caulfield, 2011).

Prevalence studies

A number of studies have been carried out in the last twenty years seeking to establish whether people with autism are more or less likely to engage in offending behaviours than the general population. Many of these studies have taken the form of, or incorporated into their methodology, prevalence studies, which normally involve taking a fixed forensic population and calculating what percentage of that population has autism, then comparing that to the prevalence of autism in the general population. In order to answer the question as to the nature of the relationship between autism and offending behaviour, the results of these studies should be considered, as well as the flaws in their methodology.

Scragg and Shah used this methodology for their 1994 study of 392 male patients in Broadmoor Hospital. They found a prevalence rate in the forensic population for autism (including AS) of 1.5%, which exceeded the prevalence rate of 0.36% found by Ehlers and Gillberg (1993) in the general population using the same criteria. Scragg and Shah used this finding to suggest that their work supported Mawson et al.'s (1985) theory of a link between Asperger syndrome and violent behaviour.

In 1999, Hare et al. identified 31 individuals in Rampton, Ashworth and Broadmoor hospitals with ASD, 67.64% of whom met the criteria for Asperger syndrome. However, only 10% of those people identified had a previous diagnosis – case notes were used to establish whether criteria for ASD were met. Prevalence was established as lying between the limits of 2.4% and 5.3%, which the researchers compared with Wing's 1996 prevalence estimate of 0.71% - the highest available estimated rate at the time. They did, however, comment that "the particular characteristics of the special hospitals population do not permit conclusions concerning over representation of autistic disorders among offenders in general" (p. 14).

Several studies have also taken place outside of the United Kingdom. In 2001, Siponmaa et al. conducted a retrospective study of the prevalence of neurodevelopmental disorders in children referred for forensic psychiatric investigation in Sweden. They found that 15% of subjects had pervasive developmental disorder (under DSM-IV criteria), and 3% had Asperger syndrome.¹ In 2008, Anckarsäter et al. took a clinical case series from three populations across forensic psychiatry and community youth care, also in Sweden, and found that prevalence of ASD was at least 13%.

¹ This 3% is included within the 15%.

However, other prevalence studies have shown that people with ASD are underrepresented in forensic settings. In 1991, Ghaziuddin et al. conducted a literature review of 132 case studies of people with Asperger syndrome published between 1994 and 1990, and found that only 3 had a clear history of violence, compared with an estimate of 6-7% in the general US population. In 2004, Myers studied the prevalence of autism in secure, forensic and other specialist settings in Scotland and found that prevalence rates of autism in these services were very low (0.93% in the prison service and 0.46% in secure units).

In 2006, Woodbury-Smith et al used the UK Home Office Offenders' Index to study offending rates in people with ASD or Asperger syndrome, and included a comparison group of people without ASD. They found that overall rates of offending were significantly lower in the ASD group. Mouridsen et al. also conducted a case control study in 2008 and found that only arson statistically separated the group of people with autism from the control group. Cheely et al. found in 2012 that, conducting a study of young offenders using a matched comparison group, youth with ASD had lower rates of criminal charges overall, as well as a different profile of criminality which included higher rates of person offenses and lower rates of property offenses.

Whilst this is not an exhaustive exploration of all of the prevalence studies that have been conducted on the subject to date, it clearly shows that there is evidence both for and against the idea that offending behaviour is more common in people with autism than in the general population. However, there are numerous problems with using this kind of study to draw conclusions on this relationship. One of these problems is that reported autism prevalence figures vary widely. The prevalence rates for autism used for comparison in these studies range from 0.3 to 48.4 per 10,000 (Bjørkly, 2009, p. 307). Some of these studies also focus their attention on Asperger syndrome, the study of which demands large samples for reliable results as the prevalence is so low, and these studies have not included sufficient samples to do this (Barry-Walsh & Mullen, 2003; Bjørkly, 2009).

The changes in diagnostic practice and nomenclature during the time period in which these prevalence studies have been conducted also makes it difficult to compare them. Compounding this problem are the different methodological and diagnostic approaches that these studies have taken (Browning & Caulfield, 2011; Cheely et al, 2012). Most of the studies have subjected a forensic population to diagnostic assessments for ASD in order to calculate prevalence: this prevalence is then compared with a population prevalence calculated without use of the same diagnostic stringency.

Another important problem with existing prevalence studies is their focus on forensic settings, which does not allow any conclusions to be drawn about the prevalence of offending behaviour in people with ASD, but instead only on the prevalence of conviction in people with ASD. Esan et al. (2015) assert that conviction rates in intellectual disability services are a poor marker for the size of problem behaviour and suggests that to focus solely on convictions underestimates prevalence by at least three. However, a study which captured levels of offending behaviour in both the general population and people with autism would be difficult to conduct.

In 2014 King and Murphy conducted a systematic review of studies on the relationship between ASD and the criminal justice system. They too noted that “the poor quality of much of the research and the variation of both methodologies and specific focus in each study allows only tentative conclusions” (p. 2727). However, what they did find was that the four studies which included control groups, and so constituted the best quality evidence available, all reported that people with ASD “committed the same number of offences or fewer offences than those without ASD” (p. 2729). They therefore concluded that a person with ASD is either less likely to offend than someone without ASD, or that, if they do offend, they are more likely to have this dealt with outside of the criminal justice system (King & Murphy, 2014, p. 2729).

[Exploring possible links between offending behaviour and traits associated with autistic spectrum disorder](#)

Alongside prevalence studies, the other main approach to exploring a possible link between offending behaviour and ASD has been examining the traits associated with ASD, and whether any of those traits predispose people to commit criminal offences. Unlike the prevalence study approach, this avenue of investigation has mostly focused on case studies of crimes committed by people with ASD, and so whilst less methodologically robust, could have the potential to be of direct use in clinical practice, for clinicians looking to identify whether their clients might be at risk of committing offences. As a result of this line of research, there seems to be an emerging consensus that when a person with ASD commits a crime, it is likely to be directly connected to their autism (Cheely et al., 2012; Gunasekaran & Chaplin, 2012; Higgs & Carter, 2015).

Numerous studies have argued that deficits in empathy in people with ASD can contribute to offending behaviour (Chesterman & Rutter, 1993; Kristiansson & Soerman, 1998; Murrie et al., 2002; Bjørkly et al., 2009). Lack of empathy can result in someone with ASD misunderstanding or misinterpreting the behaviour of other people. For example, Allen et al. (2008) interviewed a man with ASD who had been convicted of murder, who said “I can get very agitated by reading people wrong...It’s like, you could say something to upset me, but you wouldn’t have meant it and I would have taken it the wrong way.” Freckelton (2013) also describes the case of Mr. George, a man with AS who is prosecuted in Australia for manslaughter of his elderly mother by negligence. His mother had instructed him not to arrange home care for her as she was embarrassed at the state of her home; Mr George took this literally and by the time an ambulance was eventually called to see her, she was bedridden, severely malnourished, and very near to death.

Lack of empathy also manifests itself as inability to appreciate the consequences of offending behaviour for one’s victim/s. Baron-Cohen describes a case study in which a man called John, who has AS, regularly assaulted his partner, Betty, and commented that “despite his [John’s] intellectual level, he shows remarkably little awareness of what Betty might be thinking about him during the violent attacks, or of her feeling as a victim...” Murrie et al. (2002) observe that offenders “seem genuinely unaware of the harm they cause[d] their victims” (p. 66).

Another trait of ASD is the obsessional pursuit of special interests. There are numerous cases described in the literature where pursuit of a special interest has resulted in offending behaviour (Baron-Cohen, 1988; Chesterman & Rutter, 1993; Barry-Walsh & Mullen, 2003; Allen et al, 2008). Barry-Walsh & Mullen (2003) describe a man with ASD who commits arson: “in relation to the offences, he had taken an interest in flickering flames...the most recent arson had occurred when he again lit a fire in order to watch the fascinating flickering of flames” (p. 377). Another of his case studies features a man who listened obsessively to a particular radio station and so, when a local religious radio station set up a new broadcast which interfered with the frequency of his radio station, the man “poured [...] petrol around the station and burnt it down” (p. 379).

It has also been argued that people with ASD fail to recognise the implications or consequences of their behaviour. One of Allen et al's interviewees, who had committed murder, stated: "The main thing I can say to other people with Asperger Syndrome like me is stop and think [...] I've always had a problem with that" (2008, p. 753). Barry-Walsh & Mullen found that all of their case study subjects were "surprised by the reactions their actions evoked in others and had difficulty understanding why they were now facing criminal charges" (2003, p. 383). Hare et al. (1999) argue that the lack of comprehension of consequences of their actions means people with ASD are also more likely to reoffend.

On the other hand, there are also traits of autism which make offending behaviour less likely. In particular, it has been noted that people with autism are often scrupulously law-abiding (Wing, 1997; Murrie et al., 2002; Kristiansson & Soerman, 2008). People with autism are also more vulnerable than the general population – Gunasekaran notes that the majority of crimes reported that involve people with autism are committed against them rather than by them.

One of the most convincing arguments that has been made about the relationship between autism and offending behaviour is therefore that, where an offence is committed by a person with autism, it can usually be directly related to the clinical features of the syndrome (Chesterman & Rutter, 1993; Barry-Walsh & Mullen, 2003; Bjørkly, 2009; Berryessa, 2014). This is supported by the large body of evidence, some of which has been described here, linking crimes committed by people with ASD to the traits of their disorder. It should also be emphasised, however, that not every criminal act committed by a person with ASD is due to their disorder, and that some criminal acts committed by those with ASDs are still intentional criminal acts, voluntarily perpetrated (Freckelton, 2013; Berryessa, 2014).

Types of crime committed by people with autism spectrum disorder

As it has been observed that the nature of crimes committed by people with ASD is often related to traits of the disorder, studies have therefore sought to establish whether certain types of crime are more or less likely to be committed by people with ASD than by people without ASD.

Some case studies have shown that fire is a common interest for people with Asperger syndrome, and this sometimes results in arson being committed (Everall & LeCouteur, 1990; Murrie et al., 2002; Haskins & Silva, 2006). There is also evidence that arson is an offence more likely to be committed by people with ASD than by those without (Dein & Woodbury-Smith, 2010). For example, Mouridsen et al. (2008) found that it was only arson which statistically separated crimes committed by people with AS from those committed by the comparison group in their case controlled prevalence study.

Violent crimes are amongst those most studied in relation to people with autism. There are a number of case studies demonstrating violent crimes being committed by people with ASD (Asperger, 1944; Baron-Cohen, 1988; Simblett & Wilson, 1993) but these are of no value for drawing conclusions about prevalence, given how common violence is. In terms of prevalence, there is no consensus on whether violent crimes are more or less common in people with ASD than in the general population. Schneider's study (2013) showed that patients with ASD were less aggressive than controls, whereas Berney (2004) argues that violent aggression is "relatively frequent" in AS.

There is also extensive research on a prospective link between sexual offences and people with autism. Asperger's original 1944 paper stated that many of his cases showed early signs of strong sexual activity including masturbation in public and exhibitionism. Wing (1981) also described similar traits, as well as attempts to touch or kiss strangers (cited in Chesterman & Rutter, 1993, p. 556). Epidemiological studies have shown that sexual offences are a common crime among people with ASD, but that people with ASD are still less likely to commit sexual offences than people without ASD (Kawakami et al., 2012; Dein & Woodbury-Smith, 2010). Several explanations for prevalence of sexual offences among people with ASD have been proposed, such as impaired or problematic sexual development (Brown-Lavoie et al., 2014; Dekker et al., 2015; Dewinter et al., 2015); or sexual frustration, as a result of social deficits restricting the opportunity to encounter appropriate sexual partners (Murrie et al., 2002; Sutton et al., 2012).

Computer crimes are also being more frequently observed in people with ASD. The advent of the internet provides people with autism with a "safe and unthreatening environment" for socialising and exploring their interests (Freckelton, 2013, p. 426). There have also been high profile instances of people with autism whose special interest in computers has arguably led to inadvertent crimes, such as Gary McKinnon (see Freckelton, 2013, p. 427).

[The role of mental health comorbidities](#)

Most research into the relationship between autism and offending behaviour has made the important observation that there are high rates of psychiatric comorbidity associated with ASD (Allen et al., 2008; Cheely et al., 2012). Research by the Office of National Statistics in 1998, cited by Browning and Caulfield (2011), found that over 90% of prisoners in the UK had one or mental disorders. It has been argued that these psychiatric comorbidities increase the risk of criminal behaviour in ASD (Cheely et al., 2012), or could even be the more likely explanation for the behaviour (Helverschou, et al., 2015). Wachtel and Shorter (2013) found, for example, that "the incidence of violent crime among individuals diagnosed with ASDs is higher among those who are also psychotic" (p. 407).

Other predisposing factors

Having considered extensively the link between ASD and offending behaviour, what has perhaps been overlooked is the link between people *without* autism spectrum disorder and offending behaviour. There is an overwhelming body of literature on this subject which lies outside the scope of this essay, however it is incredibly important to note that factors which predispose any person to offending behaviour can surely also be applicable to a person with ASD. Helverschou et al (2015) summarise these risk factors as: low socio-economic status; high levels of social deprivation; unemployment; being unmarried; substance abuse and mental illness. Some research has indeed noted that these predisposing factors for offending behaviour in the general population are equally, if not more, present in people with ASD who commit crimes (Långström, et al., 2008; Kawakami et al., 2012; McCarthy, et al., 2015).

Autism spectrum disorder and the criminal justice system

Establishing the relationship between ASD and offending behaviour has important legal implications. If a relationship between ASD and offending behaviour does exist, and exist in such a way that the disorder itself explains the behaviour, it raises the question of how culpable that person is for their behaviour. Berryessa (2014) has considered this issue in depth from a legal perspective, and has concluded that there is certainly doubt over as to whether ASD offenders can exhibit the essential elements of a crime necessary for liability – namely “*actus reus, mens rea*” (guilty act, guilty mind). Others have also argued that ASD may diminish or eliminate responsibility for criminal behaviour (Freckelton, 2013; Woodbury-Smith & Dein, 2014), on the grounds that the social deficits associated with the disorder render people with ASD unable to appreciate that their actions are morally wrong. Browning frames the crucial importance of this question with the observation that “if it is assumed that there is no association between AS and criminality, it becomes difficult to make any claim to special dispensation on the grounds that an individual has AS; if however we concede that AS is a contributing factor, any claim for discretion, defence or mitigation becomes more valid.” In others words, if a relationship between autism and offending behaviour *does* exist, the fair treatment of those offenders, taking their disorder into account, is an important incentive for uncovering and articulating that relationship.

Conclusion

This essay clearly demonstrates that there is a relationship between autism spectrum disorder and offending behaviour. Whilst prevalence studies present conflicting results, the most methodologically rigorous research shows that people with ASD are equally or less likely to commit crimes than people without ASD. However, the relationship that exists between ASD and offending behaviour lies not in the prevalence, but in the nature of offending among people with ASD. Where offending does occur in the context of ASD, this essay has shown that it is often a function of autistic traits. This in turn creates a different crime profile for people with ASD than those without: that is to say, certain crimes, such as arson, are more common among people with ASD than they are among the general population. This knowledge has important implications for clinical and non-clinical care of people with autism. That said, there remains a large amount of work to be done to provide definitive proof of these conclusions, and to truly extricate the relationship between ASD and offending behaviour from confounding factors, such as mental health comorbidities. Finally, the most important implications of this relationship are for the treatment of people with ASD by the criminal justice system, as there remains an unanswered question as to whether crimes committed that relate directly to traits of autism can truly be considered and treated as crimes, if they were not intended as such, and if the offender did not possess the cognitive ability to understand or appreciate the consequences of their actions.

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