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Autism – 'autos':

literally, a total focus on the self?

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The idea that as a result of neurological factors one might lose aspects of the self is scientifically important, in that it offers the promise of teaching us more about what the self is. In this chapter, I do not tackle the thorny question of how to define the self (though this is attempted in other chapters in this book). Rather, I accept that this word refers to something we recognize and instead raise the question: are people with autism trapped – for neurological reasons – to be totally self-focused?

Autism

Autism is a neurodevelopmental condition diagnosed on the basis that a child or adult has difficulties with social relationships and communication, alongside strongly repetitive behaviour and unusually narrow interests ('obsessions'). The term 'autism' literally means 'self'-ism, derived from the Greek word 'autos' ('self'). It was first coined by Bleuler to describe the social withdrawal characteristic of someone with schizophrenia, but (Kanner, 1943) co-opted the term as more fitting for the group of children he saw in his clinic who (he wrote) paid as little attention to people in the room as they did the furniture. It is testimony to Kanner's insight that although across the subsequent 60 years there have been changes in the diagnostic criteria for autism, and although theories about its cause have come and gone, his focus on the self as abnormal in autism has remained essentially applicable to these children and adults.

Today we recognize a spectrum of autistic conditions, with Kanner's autism (also referred to as 'classic autism') being the more severe form. In the case of Kanner's autism, the total focus on the self is (forgive the pun) self-evident. The child has his or her interests (usually his, since this condition affects males more often than females) and tends to focus totally on these. To the extent that other people figure in the child's life, it tends to be if the other person is interested to join in with the child's interests. If there is any invitation by the other person for the child to join in with someone else's interests, typically the child will simply turn away. Other people's behaviour, and other people's minds, are of no interest to children with autism. Typically this is because the child with autism is interested in phenomena that are controllable, and of course other people's behaviour is difficult to control. That is not to say that children with autism don't try to control other's behaviour, e.g., through tantrums when others introduce change, or by being very bossy, or by insisting on people performing a scripted sequence of behaviour. Some children with autism also appear to be interested in others, such as asking them questions, but typically the child is amassing information relevant to his or her own interests, rather than this being a genuine interest in the other person, for its own sake.

Part of this autistic spectrum is a subgroup known as Asperger Syndrome (Asperger, 1944). We will return to this later, but for now, it is worth summarizing the argument in this chapter. My proposal is this: that what drives a non-autistic person to be interested in another self (not just their own) is *empathy*. And that what drives a person with autism (be it classic autism or the milder Asperger Syndrome) to be relatively disinterested in other selves, and primarily focused on their own interests, knowledge, goals or projects,

is an impairment in empathy. But to understand this, we have to start by examining what is meant by empathy.

Empathizing

Empathizing is the drive to identify another person's emotions and thoughts, and to respond to these with an appropriate emotion (Davis, 1994). Empathizing doesn't just entail the cold calculation of what someone else thinks and feels (or what is sometimes called mindreading). Psychopaths can do that much. Empathizing is also about having an appropriate emotional reaction inside you, an emotion triggered *by* the other person's emotion. And empathizing is done in order to understand another person, predict their behaviour, and to connect or resonate with them emotionally. Imagine you could recognize that "Jane is in pain" but this left you cold, or detached, or happy, or preoccupied. This would not be empathizing. Now imagine you don't just see Jane's pain, but you also automatically feel concern, wincing yourself, and feeling a desire to run across and help alleviate her pain. That is empathizing. And empathizing extends to recognizing and responding to any emotion or state of mind, not just the more obvious ones, like pain. For me, empathy arises out of a natural desire to *care* about others.

Empathy is a skill (or a set of skills). As with any other skill, such as athleticism or mathematical or musical ability, we all vary in it. In the same way that we can think about why someone is talented or average or even disabled in these other areas, so we can think about individual differences in empathy. You can even think of empathy as a trait,

like height, since that is also something in which we all differ. And in the same way that you can measure someone's height, so you can measure differences in empathizing between individuals. The funny thing about empathizing is that by definition, you'd have a hard time realizing that you were short of it, if indeed you were a few points lower on the Empathy Quotient (EQ) than other people (S. Baron-Cohen, Richler, Bisarya, Gurunathan, & Wheelwright, 2003; S. Baron-Cohen & Wheelwright, 2004). Empathizing requires you to be aware of how others see you, and you might ***believe*** that they see you as the most sensitive being on the planet. But none of us can ever really know how we are coming across to others (we can only do our best). The reality may be that our own evaluation of ourselves falls short of how others ***actually*** perceive us.

Most of us have some ***awareness*** of our empathizing skill, but may not have any awareness of when we hit our limits in this. In this sense, empathizing is not like athletic ability, where you get direct feedback during your performance of whether you are any good at it or not. With empathy, you might aim to be very empathic during a conversation, and walk away from it believing that you were truly empathic. The person you were just interacting with might never tell you how limited your empathy was – they may have been too hurt, or too diplomatic, to tell you.

Empathizing is about spontaneously and naturally tuning into the other person's thoughts and feelings, whatever these might be. It is not just about reacting to a small number of emotions in others, like their pain or sadness. And it is about reading the emotional atmosphere between people. It is about effortlessly putting yourself into another's shoes.

It is about sensitively negotiating an interaction with another person so as not to hurt or offend them in any way. It is about caring about another's feelings. A good empathizer can immediately sense when an emotional change has occurred, what might cause an emotional change, and can rapidly anticipate what might make this particular person feel better or worse. A good empathizer responds intuitively to a change in another person's mood with concern, appreciation, understanding, comforting, or whatever the appropriate emotion might be.

Empathizing leads you to pick up the phone and tell someone you're thinking about them and their current situation, even when your own life demands are equally pressing. Empathizing leads you to constantly search people's tone of voice and scan people's faces, and especially their eyes, so as to pick up how they might be feeling or what they might be thinking. You use the 'language of the eyes', and intonation, as windows to their mind. And empathizing drives you to do this because you start from the position that your view of the world may not be the only one, or the true one, and that their views and feelings matter.

The natural empathizer can perceive fine shifts of mood, all the intermediate shades of an emotion in another person that might otherwise go un-noticed. Take hostility, for example. Some people only notice a small number of shades of hostility (such as aggression, hate, and threat). In contrast, a good empathizer might recognize fifty different shades of hostility (such as contempt, cruelty, condescension, and superciliousness). It's like colour vision. Some people just notice just a few shades of

blue, whilst others notice a hundred. My colleagues Jacqueline Hill, Sally Wheelwright, Ofer Golan, and I recently completed an emotion taxonomy (an encyclopaedia of emotions, if you like), and discovered that there are actually 412 discrete (mutually exclusive, semantically distinct) human emotions. Some people find it easy to define the subtle differences between such shades of emotion, and for others the differences can be very hard to see (S. Baron-Cohen, Golan, Wheelwright, & Hill, 2004).

A natural empathizer not only notices others' feelings. They are constantly thinking about what the other person might be feeling, thinking or intending. They empathize people who are present, and those who aren't present but whose thoughts and feelings have a bearing on the present in some way. They read the emotional weather in this way *not* because they want to manipulate the person. A psychopath or a businessman might think of a person as an object to be exploited. This is not empathizing (Blair, 1995). Rather, an empathizer continually cares how the other might be feeling.

Why do we empathize?

Empathy is a defining feature of human relationships. For example, empathy stops you doing things that would hurt another person's feelings. Empathy makes you bite your lip, rather than saying something that might offend someone, or make them feel hurt or rejected. Empathy also stops you inflicting physical pain on a person or animal. You may feel angry toward your dog for barking, but you don't hit him because you know he'd suffer. Empathy helps you tune into someone else's world, setting aside your own world

– your perception, knowledge, assumptions or feelings. It allows you to see another side of an argument easily. Empathy drives you to care for, or offer comfort to, another person, even if they are unrelated to you and you stand to gain nothing in return. Imagine you are a bystander, witnessing a crash, and you're first on the scene. Empathy propels you to sit with the victim of the crash, checking how they are, reassuring them that someone is there for them. Seconds before, you had never met each other. Minutes later, you might never see that person again. But you still care.

Empathy also makes real communication possible (S. Baron-Cohen, 1988). Talking 'at' a person is not real communication. It is a monologue. If you talk for significantly more than 50% of the time every few sentences, it is not a conversation. It is venting, or story-telling, or lecturing, or indoctrinating, or controlling, or persuading, or dominating, or filling silence. There is, in any conversation, a risk that one party will hijack the topic in an undemocratic manner. Not that their intention is necessarily to be undemocratic. But in hijacking the conversation, the speaker does not stop to consider that, if they are doing all the talking, this is only fulfilling ***their*** needs, not the listeners. Empathy ensures this risk is minimized by enabling the speaker to check how long to carry on for, and to be receptive to the listener's wish to switch to a different topic.

Real conversation is sensitive to ***this*** listener at ***this*** time. Empathy leads you to ask the listener how ***they*** feel and to check if they want to enter the dialogue, or what ***they*** think about the topic. Not to check just once, and then ignore their thoughts and feelings whilst you focus on your own. Rather, to keep asking, frequently, in the dialogue. Why check?

Because otherwise you might be pouring words all over your listener without them being interested.

Empathy leads you not just to check, but to be able to follow through on what they say, so they don't feel it was insincere, shallow interest you showed in them. Empathy allows for a reciprocal dialogue, because you are constantly making space in the conversation for the other person, through turn-taking. Empathy allows you to adjust your conversation to be attuned to theirs. Empathy involves a leap of imagination into someone else's headspace. Whilst you can try to figure out another person's thoughts and feelings by reading their face, their voice, and their posture, ultimately their internal world is not transparent, and to climb inside their head requires imagining what it must be like to be them.

But empathy is not just doing all of the above in order to ***appear*** appropriate, or as an intellectual exercise. You do it because you can't help doing it, because you ***care*** about the other person's thoughts and feelings. Because it matters. For someone who is poor at empathizing, they may be able to do it when they are reminded, or if they discover that people will include them more often if they do or say the right thing, and they may even rehearse how to empathize so as to get the benefits. But they may not do it spontaneously. For them, other people's feelings matter less, and it takes an effort to maintain empathic appearances. For the natural empathizer, it's easy.

Empathy ensures you see a person as a person, with feelings, rather than as a thing, to be used to satisfy your own needs and desires. For example, an empathic father decides not to smack his child, even if he is feeling outraged at the child's obstinate refusal to cooperate. The parent's own feelings of frustration are set aside in the face of the hurt that could be caused to another. Or an empathic boss appreciates that her employees are not production slaves, but have personal lives that need their own private time and space, even within working hours.

Empathy also provides a framework for the development of a moral code. Moral codes are built by people out of natural empathy, fellow feeling and compassion. Some people think that it is legal systems that determine how we should act. There is no doubt that is a great achievement to produce a legal system which underpins a moral code. Just look at what happens in countries where the legal code has collapsed. It would be marvellous if systemising, the pure process of logic, could give us a sense of justice and injustice. But there are plenty of instances in history where logic and legal systems have been used to defend autocratic, even genocidal regimes, Nazism being one of the clearest of recent examples. One can be a excellent logician, but without a full quotient of empathy, one's morality can end up being quite harmful. So it's good that we don't have to depend on pure logic as a guide to moral behaviour. Rather, it is our feelings of empathy that helps us choose between one set of laws and another. This is not a complete list of the reasons why empathy is so important, but hopefully it highlights the fact that empathy is central to what it is to be a person, as distinct from any other kind of animal.

Two elements to empathy

There are basically two major elements to empathy (S. Baron-Cohen & Wheelwright, 2004). The first is the 'cognitive' component: *understanding* the other's feelings and switching to take their perspective. Swiss developmental psychologist Jean Piaget referred to empathy as 'decentering', or responding non-egocentrically, which are both nice ways of capturing this cognitive component (Piaget & Inhelder, 1956). More recent developmental psychologists refer to this aspect of empathy in terms of using a 'theory of mind', or 'mindreading' (Astington, Harris, & Olson, 1988; Whiten, 1991) . Essentially, the cognitive component entails setting aside your own current perspective, attributing a mental state (sometimes called an 'attitude') to the other person, and then inferring the likely content of their mental state, given their experience. The cognitive element also allows you to *predict* the other person's behaviour or mental state.

The second aspect to empathy is the 'affective' component (Hobson, 1993). This is an appropriate emotional response in the observer to the emotional state of the other person. Sympathy is just one such type of empathic response, where you feel both an emotional response to someone else's distress, and a desire to alleviate their suffering. (You may not actually act on this desire, but at least you feel you want to reduce the other's distress.) Sympathy is perhaps the clearest case of empathy. You walk past a homeless person in the winter, and you are moved to want to help them out of their misfortune. This counts as sympathy. You may do nothing about it, as you may also feel that your action would be futile given the many other homeless people in the same neighbourhood,

and the difficulty of helping all of them. So you walk past. Your reaction was still sympathetic because you felt the desire to alleviate the other person's suffering. It was still sympathy whether or not you took the appropriate action and gave the poor guy your gloves. But in other empathic reactions, there is a different, still appropriate, emotional response to someone else's feelings. Perhaps you feel anger (at the system) in response to the homeless person's sadness, or fear (for his safety), or guilt (over not being able to help) etc. All of these are empathy. Feeling pleasure, or smug, or hate towards the poor guy would not count as empathy, as none of these emotions are appropriate to ***his*** emotion.

If we accept that there are these two aspects to empathizing (the cognitive and the affective), can this be formalised? Alan Leslie suggests the cognitive aspect involves what he calls an M-Representation (M for mental state) (Leslie, 1987). Here's how he characterises it:

Agent-***Attitude***-Proposition

For example:

John-***thinks***-Sarah is beautiful

Here, the attitude (in the mind of the other person, in this case John), is highlighted in italics. This tripartite structure captures the cognitive aspect of empathizing but this

leaves out the extra element, namely, that the observer experiences an emotion triggered by the other person's emotion or mental state. To capture this second aspect would require a longer formulation, along the lines of

Self-**Emotion** (Agent-*attitude*-proposition)

Here, the Emotion term is within the observer, and is highlighted in bold. It is an appropriate affective reaction to everything that follows in brackets, and where the Agent is always another person/animal.

For example:

Jane-**is concerned** (John-*feels sad*- his mother died)

This notation suggests that empathy is really quite complex, involving quite long chains of information embedded in highly specific ways. But this notational description of empathizing fails to convey how immediate and automatic empathy is, that Jane doesn't have to grind through laborious cognitive reasoning to feel concern at John's sadness. You just feel it, as clearly as you feel fear if you look over a cliff edge, or disgust if you see half a worm in your half-eaten apple. These are emotions triggered by physical situations, and in empathy you simply have an emotion triggered by someone else's emotion. As we all know, when we get a lump in the throat and tears welling up in our eyes during a good movie or when reading a good book, such emotions can be very

powerful, even if all what we are reacting to is the imagined emotion of the imaginary character.

Asperger Syndrome: a disability of empathy?

Let us go back to autism and Asperger Syndrome. There is little doubt that classic autism involves a total focus on the self, and little if any apparent interest in the emotional states of others. Not out of some sense of cruelty, but purely as a result of a complete failure to understand another person's emotions and thoughts. Out of a neurologically-based 'mindblindness' (S. Baron-Cohen, 1995). But the challenge in this essay is to ask if this total focus on the self – 'autos' – also applies to everyone on the autistic spectrum, even those with Asperger Syndrome (AS)? A brief word about AS.

These are people (mostly men) who may talk to others only at work, for the purposes of work alone, or talk only to obtain something they need, or to share factual information. They may answer with 'just the facts' when you ask them a question, but otherwise not ask questions of others because they don't naturally consider what others might think. These are the people who can't see the point of social chit-chat. They don't mind having a discussion (note, not a chat) on a particular issue, in order to establish the truth of the matter (mostly persuading you of the view). But just a casual, superficial chat? Why bother? And what on earth about? How? For these people, it's both too hard, and pointless.

These are the people who, in the first instance, think of solving tasks *on their own*, by figuring it out for themselves. The object or system in front of them is all that is in their mind, and they do not stop for a moment to consider another person's knowledge of it. Present them with a system and they become interested to spot the underlying factual regularities. They tune into the tiny details to such a great degree that, in their fascination with cracking the system, they may become oblivious to all those around them. The spotlight of attention onto that tiny variable becomes all that matters, and the fact that a person is standing next to them with tears rolling down their cheeks is irrelevant information that is passed over. All that they focus on is determining the unvarying if-then rules, which allow them to control and predict the system, in principle 100%. Present them with some speculation about what someone might think or feel, or with a topic that is ultimately not factual, and they switch off or even avoid it, because of its unknowability and therefore unpredictability.

Diagnostic, historical and aetiological issues

Autism is diagnosed when a person shows abnormalities in social development, communication, and displays unusually strong obsessional interests, from an early age. Even as recently as the 1980's, autism was thought of as the most *severe* childhood psychiatric condition, and it was thought of as *rare*. It was thought of as severe because half of these children didn't speak, and most (75%) had below-average intelligence (IQ). Their poor language and low IQ predicted greater difficulties (Rutter, 1978).

In addition, they had the core features of autism: poor social skills, limited imagination, and obsessive interests in unusual topics, such as collecting types of stones, or travelling to every railway station in Britain just to look at each depot. And autism was thought of as rare because only 4 children in every 10,000 seemed to be affected in this severe way. But an interesting shift occurred during the early 1990's. It had always been known that a small proportion (25%) of children with autism had normal, or even above average intelligence (IQ), but slowly such 'high-functioning' cases started being identified more and more. By the late 1990's, it seemed that the high-functioning children with autism were no longer in the minority. It is part of the diagnosis of autism that such children are late to start talking. But in these high-functioning cases of autism, the late start in language doesn't seem to stop them developing good or even talented levels of mathematics, chess, mechanical knowledge, and other factual, scientific, technical, or rule-based subjects.

And in the 1990s clinicians and scientists also started talking about a group of children, who were just a small step away from high-functioning autism. They called this Asperger Syndrome (AS) (Frith, 1991). AS was proposed as a variant of autism. The child with AS has the same difficulties in social and communication skills, and has the same obsessional interests. But such children (like those with high-functioning autism) not only have normal or high IQ. They also start speaking on time. And their problems are not all that as rare. Today, approximately 1 in 200 children have one of the autistic spectrum conditions, which includes AS, and many of them are in mainstream schools (Scott, Baron-Cohen, Bolton, & Brayne, 2002). So now we have to radically re-conceptualize

autism. From 4 in 10,000 in the 1970s, to 1 in 200 at the start of this millenium. That's more than a ten-fold increase in prevalence. This is most likely a reflection of better awareness and broader diagnosis, to include AS.

In people with AS, the problems are not as obviously severe as is seen in the mute or learning-disabled child with autism. But most children with AS are nevertheless often miserable at school because they can't make friends. It's hard to imagine what this must be like. Most of us just take it for granted that we will fit in well enough to have a mix of friends. But for people with AS, the sad realization is that they are surrounded by acquaintances, or strangers, but not friends, as we understand the word. Many of them are teased and bullied because they do not manage to fit in, or have no interest to fit in. Their lack of social awareness means they may not even try to camouflage their oddities.

Autism spectrum conditions are strongly genetic in origin. The evidence for this comes from twin and family studies. If an identical twin has autism, the chance of his or her co-twin also having an autism spectrum condition is very high (between 60-90%) (Bailey, 1993). If a non-identical twin has an autism spectrum condition, the equivalent risk for his or her co-twin is much less (about 20%). Autism spectrum conditions are also neurodevelopmental. That's to say, they start early – probably prenatally – and affect the development and functioning of the brain. There is evidence of brain dysfunction (such as epilepsy in a proportion of cases). There is also evidence of structural and functional differences in regions of the brain (such as the amygdala being abnormal in size, and less

responsive to emotional cues) (S. Baron-Cohen et al., 2000; S. Baron-Cohen, Ring et al., 1999).

Empathy deficit in adults with Asperger Syndrome

In our clinic in Cambridge we meet adults who suspect they may have AS, but whose problems went undetected in their childhood. AS just wasn't recognized when they were at school. So they have limped through childhood, adolescence, and young adulthood, but slowly the accumulated difficulties have piled up until they reach a clinic like ours, where they are desperate for a way to make sense of a life-time of not fitting in. Many of them struggle to work out a huge set of rules of how to behave in each and every situation, and expend enormous effort into consulting a sort of mental look-up table for how to behave and what to say, from minute to minute. It is as if they are trying to write a manual for social interaction, of if-then rules. It is as if they are trying to 'systemise' social behaviour when the natural approach to socialising should be via empathizing.

Imagine the sort of Victorian books on social etiquette for dinner-parties (which fork to use, how to reply to questions like 'would you like some more dessert?' etc.,) but writ long, to cover every eventuality in social discourse. Of course, it turns out to be impossible to be fully prepared, but some of these individuals do a brilliant job in getting close to this goal. But it is physically exhausting. By the time they get home from work, where they have been "pretending to be normal" (Willey, 1999), the last thing they want to do is socialise. They just want to close the door on the world and say the words, or

perform the actions that they had to censor all day. They don't know why they can't say what they think, and wish that others would do the same, and cannot see why saying what they think could cause offence or lead them into social difficulties.

One man with AS put it very clearly to me.

> "What I say is what I believe. How someone else perceives what I say is nothing to do with me".

This shows that this man (who had an IQ in the superior range) could not appreciate that people have feelings that we have a responsibility not to hurt. Nevertheless, many people with AS learn to stay silent, rather than make a personal comment about someone. But they do this not out of any empathic understanding or concern, but because that way they avoid getting into trouble. Once again, they learn a rule, rather than being motivated by empathy. So many adults with AS have to train themselves, through trial and plenty of error, to learn what can be said or done, and what can't. The typical set of characteristics we see in our clinic for adults with AS (they are almost all male) are as follows:

In childhood:

When we look back at the childhoods of people with AS, we find a common picture emerging. They almost always tended to be loners. Even though they saw the other children in the playground, many of them didn't know how to interact with them. Some

of them describe the experience as like being “a Martian in the playground” (Sainsbury, 2000). Instead, many of them preferred to talk to adults, such as teachers than to the other children.

Sadly, it was the case that as children they were rarely invited to play at other children’s houses or to their birthday parties. Or if they were invited once, they tended not to be invited back. When we ask their parents what kind of play their child produced, they did not produce much varied, social pretend play. Instead, they would be far more focused on constructional play (building things), or reading factual books (such as encyclopaedias). If other children did come around to play, the child with AS was often described as ‘bossy’, trying to control the other person. Not just choosing the game, but directing the other child what to say and what to do. Many of them as children were content to spend long, solitary hours playing with jigsaw puzzles, Lego, Meccano, and other constructional systems. Some also built houses out of boxes around the home, or dens outside. Or miniature systems, such as model-making, or setting up armies of tiny figures of knights in armour, soldiers or fantasy figures.

Typically, they pursued their own intellectual interests to high levels, such as learning books of facts, or studying the movement of the sun and shadows around their bedroom, or attempting to breed tropical fish, becoming very knowledgeable on these subjects. But many also failed to hand in the required schoolwork, so that they were failing in some academic subjects. Having no drive to please the teacher, they simply followed their own interests, rather than the whole curriculum. Throughout childhood there were those signs

of obsessional or deep interest in narrow topics, such as collecting the complete set of wildlife picture cards, or carrying around mathematical equations in their pockets, or learning language after language, as part of a collection of knowledge. As for the female patients with AS, many of them recall being described as 'tomboys' in their behaviour and interests.

As teenagers

When we asked our patients with AS to recall their adolescence, most recall that they did best at factual subjects, like maths, science, history, and geography, or at the vocabulary and syntax aspects of foreign languages. Many (but not all) were weakest at literature, where the task was to ***interpret*** a fictional text or write pure fiction or enter into a character's emotional life. Some learnt rules to systemise the analysis of fiction and obtained good grades in this way. In an extreme example, a young woman with AS bought exam-preparation books and learnt literary criticisms about texts, without actually reading the texts herself.

Many became acutely aware that they were low in social popularity, and were failing at making friends, especially girl-friends for the males with AS. Their obsessions continued, changing topic when the last one was fully exhausted, every few years. The female patients found their adolescent peer group particularly confusing and impossible to join.

> "All that giggling in lifts, and talk about fashion and hair. I couldn't understand why they did it".

Some got into trouble for pursuing unusual interests (the chemistry of poisons, the construction of explosives). Most of them at one time or another had said things that had hurt other's feelings, often on a frequent basis, yet couldn't understand why the other person took offence if their statement was true.

As adults

We see them now as adults. Many of them have held a series of jobs, and have experienced social difficulties leading to clashes with colleagues and employers, so that they have had to leave. In their work they are often considered technically expert and thorough, but may never get promoted because their 'people skills' are so limited. Some have had a series of short-term sexual relationships. Such relationships usually flounder, in part because the other person feels they are being over-controlled, or used, or because they feel their partner is not emotionally supportive or communicative. Other people recognize they are socially odd (though this is harder to detect in the female patients), and their few friends are also usually somewhat odd. Typically, their friendships drop away, because they do not maintain them. A significant proportion of adults with AS experience clinical levels of depression and some even feel suicidal, through not belonging, and feeling a social failure.

Many of them continue to say things that offend others, even though they did not intend any offence. They may learn to avoid obvious statements like reference to someone's weight, and instead will commit faux pas of a more subtle kind. For example, at their sister's second wedding, sitting at the reception dinner table with the new husband, one adolescent with AS turned to his sister and asked:

"How's David (the first husband)? Do you see much of him these days?"

Almost invariably, they are disinterested in small talk, and do not know how to do it, or what it is for. They frequently feel they cannot say what they think, as people often seem shocked by their independent, extreme, unempathic and sometimes offensive views. For example, one man with AS described his politics as "green fascism": the belief that anyone spoiling nature should be shot. Another said he believed in "meritocratic misogyny": the belief that women have not achieved equally high positions in society because they are less able. Most have no time for political correctness or spin. They believe in saying what they think, seeing no point in sugaring the pill or spin-doctoring.

Frequently, they hate crowds, or people dropping in, as they find people unpredictable and annoying when things are moved around. If people are invited over for supper by their partner, the person with AS might just walk into the next room and read a book whilst the guests are at the table. Politically or in other ways, their views are often held very strongly, and are black or white. They are typically convinced by the rightness of their beliefs, and given the chance will spend hours relentlessly trying to convince the

other person to change their view. They feel their beliefs are not beliefs in the sense of being “just one point of view”, a matter of subjectivity. Rather, they believe their own beliefs are a true reflection of the world, and as such, correct. Coming up against a different person’s belief therefore can mean them trying to persuade you that they are right and you are wrong.

Sitting next to them at dinner can begin to feel like you are being pinned to the wall whilst the person goes too far in explaining their views. Or in response to a polite question about their weekend, the person with AS might go into too much detail about the technicalities of their hobby, not picking up that their listener has long since become bored. In other individuals with AS, their conversation might be too brief, and strictly factual, giving too little information. As if they can’t judge what would be expected by or interesting to another mind.

One patient I met watched news reports of buildings collapsing after terrorist bombings, on video over and over again, in order to understand the differences between types of architecture and the consequences. He could give me statistics on how many people were killed in each building collapse, and the materials that the building was made up from, and an account of the physics of each type of material, but admitted that he did not find himself spontaneously stopping to think about the victims or their families.

Some marry, but remain married only if their partner is patient to the point of saintliness and are able to accommodate family life to the rigidity of the autistic routines and

systems, and can accept an eccentric, remote, often controlling partner. Some marry a partner of a different ethnicity, possibly because their social oddness and communication abnormality is less apparent to a non-native speaker. Their partners often learn to avoid asking friends around because their spouse with AS is so socially embarrassing. Their social life may be restricted to that which is structured for them (e.g. through the church) or by others. I should stress that the above symptoms are typical only of those people with AS who are suffering enough that they have sought the help of a clinic. But now you have a picture of autism or AS.

Experimental evidence for impaired empathizing – an extreme of the male brain?

On the Empathy Quotient (or EQ), females score higher than males, but people with AS or high functioning autism score even lower than males (S. Baron-Cohen & Wheelwright, 2004). On social tests such as the 'Reading the Mind in the Eyes' Test or the Facial Expressions Test, females score higher than males, but people with AS score even lower than males (Baron-Cohen, Joliffe, Mortimore, & Robertson, 1997; S. Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001; S. Baron-Cohen, Wheelwright, & Jolliffe, 1997). In terms of eye contact, females make more eye contact than do males, and people with autism or AS make less eye contact than males (Lutchmaya, Baron-Cohen, & Raggett, 2002; Swettenham, 1996). In terms of language, girls develop vocabulary faster than boys, and children with autism are even slower than males to develop vocabulary (Lutchmaya, Baron-Cohen, & Raggatt, 2002).

Females tend to be superior to males in terms of chatting and the pragmatics of conversation, and it is precisely this aspect of language that people with AS find most difficult (S. Baron-Cohen, 1988). Females are also better than males at the Faux Pas Test, and people with autism or AS have even lower scores than males do (S. Baron-Cohen, O'Riordan, Jones, Stone, & Plaisted, 1999). Girls also tend to be better than boys on standard 'theory of mind' tests (involving thinking about other's thoughts and feelings), and people with autism or AS are even worse than normal boys (S. Baron-Cohen, Leslie, & Frith, 1985; Happe, 1995). Finally, women score higher on the Friendship Questionnaire (FQ) that assesses empathic styles of relationships. Adults with AS score even lower than normal males on the FQ (S. Baron-Cohen & Wheelwright, 2003).

Conclusions

What gets us out of our own self and into someone else's is the rare and special resource of empathy. In this essay I have argued that people on the autistic spectrum – even the high functioning individuals, such as those with Asperger Syndrome (AS), are essentially wholly focused on their own, through a neurologically based inability to empathize to normal levels. Some can empathize with others – and in this way overcome their self-focus – by supreme effort and reminding themselves constantly – but most would wish to just relax and revert to their essentially self-centred world. That is not to say that they are inward-focused, as many of them enjoy hobbies and interests that are outside of themselves, but because they are self-chosen, they are essentially self-focused. I have also argued that people with AS are not cruel or bad people, in that they have no wish to

hurt others, even if they do inadvertently do so through their lack of awareness of the effect of their actions on other's emotions. In this critical regard, they are not callous psychopaths, whose empathy-deficit is accompanied by a moral deficit. People with AS may have trouble empathizing, which imprisons them inside their own self, but they are frequently highly moral individuals, who think deeply about how – in novelist Nick Hornby's words – to be good. Through their good logic, they typically have a strong sense of justice, for others as well as for the self.

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