Aspergers syndrome and the importance of schemata

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For some months now, I have been thinking about the effect of the Aspergers syndrome and schemata. Increasingly over the past few years, I have started to see some aspects of Aspergers syndrome in terms of schema deficit. In this article I will explain and explore the presence, or lack there of, of schemas in Aspergers syndrome, and its effects on every day life. I will say right now, that this will probably raise more questions than it will answer, but hopefully in time, we will find more answers.

For those of you who are not psychologists, I should probably explain what schemata are. A schema is a mental representation of different aspects of the world around us. One of the first people to use, and explain the concept of schema was Jean Piaget in his 1926 paper *Children's conceptions of the world*. We can have an object schema, which is (unsurprisingly) a representation about an object. So for example, we have a schema about a chair; it is an object with four legs, a seat, and a back that we sit on. The two schemas I will be focusing on for this article are **procedural and role schemas.**

Procedural schemas, tell us about what we do in different situations. For example, we have a procedure for ordering a drink at a bar; we queue, tell the barman what we would like, wait for them to make the drink, give them money, and take our drink away. A role schema could be "student", "customer", "mother", etc. They are a set of rules on 'how' we are expected to behave, 'how' we should act, 'what' we should do.

So what does all this have to do with Asperger syndrome? Well let's look at procedural schemas. A neuro-typical person will start taking the bus from their early

teens to see their friends; for them, it is not a big deal. They will have accurately observed role models, such as parents, siblings, and other friends use the bus, and so will be happy to use the bus with just this knowledge as they will have used that knowledge to form a procedural schema. This gives them information on things like, how to flag down a bus, how to pay, where to sit and when to press the button to tell the bus driver to stop.

I first used the bus when I was 16, and for me, this was a very difficult experience. I had previously used the bus, perhaps not as often as most people, but I had seen what is done none the less. However, I discovered I did not have an accurate schema. When I got on the bus, I forgot to take my ticket and sat down. I was asked by the driver to come back and take my ticket. Later I pressed the button too late and the driver was not able to stop where I wanted to get off.

Since then, my schema has evolved slightly though what Piaget called Accommodation and Assimilation. In basic terms, accommodation is a changing of schema to fit with the outside world; assimilation is fitting the outside world into our schema. However unlike most people's schemas, which are almost automatic, mine is very thought out, and very situation specific, which can create problems. For example, when I went to University in St Andrews, I had a problem. At home, I had learnt when to press the button; I had marked out a tree that I passed on my journey, and I would always press the button when I passed that tree. However, there was obviously no tree at St Andrews. The problem was that my schema was too localised to that particular journey at home, and I could not accommodate the change. At St Andrews I had to find a new marker, and it took me several attempts to find a suitable point at which to press the button. This is not me accommodating it into my old schema, rather, creating a totally new one. This is not because I do not know

where the bus stops are, but because I cannot judge how much time to leave – too early and the driver can forget, too late and the driver overshoots.

Another example of where we can fail because of our lack of schema is with something as simple as going to a checkout to pay for items. This is something every child has seen over and over again. Yet children with Asperger syndrome often require a written out procedure that tells them exactly what to do, which is in effect, replacing the schema. However, unlike a schema, it is not dynamic, and so when asked a question like "would you like to pay with card or cash", or "you do not have enough money", the taught procedure fails, whereas a schema would be dynamic and stand a greater chance of adjusting to this change.

What about other schemas? Role schema is one that I often see lacking, particularly in children or adults with autism. What a student should and should not do in a class is a very common example. I know a lot of teachers who get very frustrated that a child will not do things like be quiet in assembly or do their class work rather than go to the corner and re-read their favourite book for the 10th time, and then seem to treat them more like their mother than their teacher. While the obvious explanation is "because he/she is autistic" is valid, it is rather superficial. What is it about autism that is causing this behaviour? One explanation could be that they lack the appropriate role schema. The child does not grasp what their role is, or do not have a schema which accurately dictates what their role is. This would be like you going into work, and not understanding that you have to do what your boss tells you, that you can't work while singing Bohemian Rhapsody, etc – these things are not allowed in your role.

Another simpler example of this would be out shopping in town. I think most people, at some point or another, have been walking and seen someone who acts out of

social norms – they are not acting like everyone else. This is quite common with Asperger syndrome and Autism. They might not have a suitable, or a complete schema for what and is not allowed when walking down the high street.

So it seems these schema formation and adaptation mechanisms seem to be somehow lacking. Certainly I have noticed from my own experiences that while I can often (not always) create schemas, I have problems adapting the schemas to new situations, and they cannot always accommodate new information/situations. I have also noticed what appear to be problems in forming schemas in my two autistic brothers, where, often, no matter how many times they are told what is and is not deemed appropriate for this situation/role, they cannot grasp it.

This is of course all conjecture from introspection and my personal observations of Aspergers and autistic behaviour. I have no research to back up these suggestions. However, it is an area I am keen to research more on in the future.