

Simon Baron-Cohen

## The essential difference.

### Men, woman and the extreme male brain

Book review by Martine F. Delfos (published in the WTA, journal of Autism)

In July 2003 Simon Baron-Cohen presents a new model about the differences between men and women, and autism as the extreme male brain. An interesting book, very readable, and completely fitting into the spirit of the age. An attempt to exceed the three important autism theories of that moment (TOM, Theory-of-mind; CC, Central Coherence; EF, Planning and Executive function). His premise is that autism is a specific kind of human functioning and not of the dysfunction of the brain. To me it was an interesting perspective, because I just build a model concerning autism starting from the same premises. The spirit of age seems to be mature for this perspective.

Simon Baron-Cohen proposes that there are two kinds of brains, the empathic brain (E-type) and the male kind, the systemizing brain (S-Type). There is also a balance possible between the two, and in that case he speaks of a brain 'in balance' (B-type). The idea originated from the signalled differences in functioning of the brain in men and women. Women prove to be more empathic, men on the contrary have their talents especially in the field of systemizing. Baron Cohen applies these differences to autism to comes to the conclusion that autism is like the extreme male brain.

Autism has been described in two basic articles, one by Leo Kanner and one by Hans Asperger. It took some thirty years before the last article filtered through to a broader audience, because it was not available in English before. Hans Asperger stated already in 1944 that autism seemed to be associated with an extreme male brain. The time seems to be ripe for this approach again with a step beyond; this time autism is not considered as a deficit as Asperger did, but as a variant development.

What Baron-Cohen essentially does is summing up the research on the male and the female brain and summarizing these as female-empathic (social sensitiveness, sensitivity for communication, capacity to imagine other people's thoughts and feelings) and male-systemizing (isles of talents, obsessions with systems, repetitive behaviour). However, a step ahead is that he constructs some characteristics from autism to a logical whole. The explanatory principle is no longer one element like in the TOM, CC or EF theory, but a variant of development. This enables him to place more elements of autism into picture than foregoing theories could. The problem is that he forms a picture from a correlational set of elements and not as an inherent coherent system like my model of the socioscheme (Delfos 2001-2003, in press).

When one travels the same - scientific - roads, like Baron-Cohen and I did, one encounters not only the same heroes, like Geschwind, but also the same problems. I was excited to read that Baron-Cohen experienced the same

problem, that is that in all textbooks it is mentioned that baby boys look longer at objects and baby girls longer at faces, but that it was impossible to find the original reference.

Countless times me and my colleagues searched d-bases, journals, libraries without any result. It is a merit that Baron-Cohen put the thought into a deed and had his institute test the hypotheses. And sure enough, the first day after birth, when socialisation has had no time yet to sort any effect, baby boys look longer at objects and baby girls look longer at faces (Connellan, Baron-Cohen, Wheelwright, Ba'tki en Ahluwia, 2001). The interest boys show to objects and their tendency to study objects makes that their knowledge and expertise in that field exceeds that of women by large. The attention of the boy/man is more directed towards objects and their functioning, and that of girls/women more on people and how they socialize.

I have a nice anecdote to illustrate this difference in tendency in men and women. I gave a lecture before an audience of some 250/300 infant welfare centre physicians at the University of Leiden, The Netherlands. The lecture room was not prepared for such a large audience and it was crowded, till the aisles. Among all those physicians there was only one male physician. The audience was allowed to put questions forward and within five minutes the first question was put before me, by the man. As a result of the acoustics of that crowded room I could not hear his question and thereupon he did something that in my opinion only a man would do. He rolled a sheet of paper into a megaphone and asked his question again. A woman would have thought: the communication between her and me does not work, I have to speak up loud and clear; the man thought: the function hearing does not work in this room and he came up with a technical solution.

The approach to build a model from some details (e.g. the scientific research on men and women) like Baron-Cohen does, has the consequence that quite some elements that cohere with autism still remain unexplained. One reason for this is that he -perhaps too - rigidly clings to autism as a systemizing brain and the empathic brain as not-systemizing. Another reason is that he does not fully explore and utilize his starting-point of the differences between men and women. His premise that empathy would not be a kind of systemizing is a shortfall in my opinion. Maybe because, as he puts it himself, the idea originated in a male brain - his - he looks at the female brain as not systemizing. He even proposes that it is his male systemizing brain that fosters a model like his, forgetting that the most important theory on autism sprouted from a female brain. Empathy is most certainly systemizing. As a matter of fact the factors concerned in sensing what goes on in another men's mind is enormously complex and flexible compared to what Baron-Cohen calls systems; it could be compared as variance analysis (empathic analysis) versus factor analysis ('system' analysis). However, voicing human complexity on a conscious level is almost impossible, so that leaves us with little more information than 'intuition', 'sensitivity'. Baron-Cohen, however, is not convincing in his nominating of systems. He uses input-action-output to describe the process. Possibly he could have taken his theory a step ahead if he had used emotion-related versus object-related processes. An important merit is that many research results can now be categorized as male versus

female, situating autism as systemizing more than on average with men and empathizing less than on average with men.

There still are several criticisms to mention in relation to the E-S-B-model. The first is that Baron-Cohen mentions the difference between male and female brains, in which he uses the traditional giving birth/hunting duality, but he does not explain why men and women at the same time are so much the same. The similarities between men and women being more noticeable than the differences. For both the similarities and the differences there are evolutionary explanations to offer (Delfos, 2004a).

Another criticism is that on the one hand he is talking about the empathic capacity and does not translate this in brain technical terms (except for the language function) whereas on the other hand he is talking about the systemizing brain and does translate this in brain technical terms, as a strong right half of the brain. He then places autism based on the results of research in a brain that leans more on the right brain half.

It touched me to read that he writes getting the shivers when he realized Geschwind was right, in any case as far as the right brain half is concerned. The reason this touched me, is because a few years ago I was looking into the handbook of Charles Njiokitjien (1987) about the corpus callosum of the child and there I saw, hardly noticeable on a page, that someone had the thought that testosterone influenced the brains of a foetus: Geschwind. For one reason or another I immediately felt attracted to the Geschwind-hypothesis (Geschwind & Galaburda, 1987) and I used this to develop a model of the differences between men and women. It became clear to me that we are dealing with the spirit of age when I read that Simon Baron-Cohen mentions that his first publication concerning the influence of testosterone on the differences between men and women was as early as 1997. It is the same year I first published my model about the influence of testosterone on the development of the foetus in the womb, and worked it out for anxiety, aggression and depression (Delfos, 1997-2003).

The Geschwind-hypothesis has been subject to criticism because Geschwind hypothesized that as a result of an suppressed immune system, men would have more allergies than women. The contrary proved itself to be true. I encountered the same problem when I was reviewing the research on allergies. When I used the Geschwind-hypothesis for the first time, I looked into the research on allergies. A very contradictory picture showed itself. Plunging deeper into the material I discovered that the contradictions could be resolved by interpreting a part of the so called allergies as the consequence of an immature immune system instead of an allergic reaction caused by an immune system that was too strong. The pieces of the puzzle began to fit together and Geschwind proved to be right.

Still another criticism on the model developed by Baron-Cohen is that he deals only with a part of what I have come to call the empathy spectrum. He does not give much attention to research that shows that men in effect are empathic, but in a different field (selecting signals of danger and stress). It was this research that led me to develop the idea of an empathy spectrum (Delfos, 2001-2003; 2004a, 2004b, in press).

With the book of Simon Baron-Cohen we now have a new model to look at the differences between men and women, spreading to autism. It is written as an exciting quest and summarizes research.

The spirit of age seems ready for a post-modern jump into constructing encompassing models on autism: the ES-model of Baron-Cohen and my socioscheme seem the announcements of this. The book of Simon Baron-Cohen gives no practical advice how to deal with autism, but it is a strong argumentation and conveys respect for the autistic person. The perspective of empathic versus systemizing with respect to the differences between men and women place autism in a logical context.

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