

Highly analytical people

By Sources: BBC News Online, Daily Telegraph, January 30, 2006

CAMBRIDGE, UK: Highly analytical people, such as scientists who fall for each other, may be more likely to produce children with autism, an expert has argued.

Professor Simon Baron-Cohen, of the University of Cambridge, said the phenomenon may help explain the recent rise in diagnoses. He believes the genes which make some analytical may also impair their social and communication skills. A weakness in these areas is the key characteristic of autism.

It is thought that around one child in every 100 has a form of autism - the vast majority of those affected being boys.

The number of diagnoses seems to be on the increase, but some argue this is simply because of a greater awareness of the condition.

In a paper published in the journal Archives of Disease of Childhood, Professor Baron-Cohen labels people such as scientists, mathematicians and engineers as "systemisers." They are skilled at analysing systems - whether it be a vehicle, or a maths equation - to figure out how they work. But they also tend to be less interested in the social side of life, and can exhibit behaviour such as an obsession with detail - classic traits associated with autism.

Professor Baron-Cohen argues that systemisers are often attracted to each other - and thus more likely to pass "autism" genes to their offspring.

He cited a survey of 1,000 members of the National Autistic Society which found that fathers and grandfathers of children with autistic spectrum conditions are twice as likely to work in a systemising profession.

In addition, students in the natural sciences have a higher number of relatives with autism than do students in the humanities, and mathematicians have a higher rate of autistic spectrum conditions compared with the general population.

Other research has found that both mothers and fathers of children with autism score highly on a questionnaire measuring autistic traits.

Brain scan studies have also shown that mothers of autistic children often show patterns of brain activity more associated with men.

Professor Baron-Cohen said the rise in autism may be linked to the fact that it has become easier for systemisers to meet each other, with the advent of international conferences, greater job opportunities and more women working in these fields.

Brain scan studies of mothers and fathers of children with autism have shown that the mothers have a masculinised pattern of brain activity, again suggesting they are strong systemisers.

When all the evidence is taken together it suggests a genetic cause of autism, with both parents contributing genes that ultimately relate to a similar kind of mind: one with an affinity for thinking systematically.

Prof Baron-Cohen says the rise in autism could be driven because assortative mating is becoming easier: recent years have seen a rise in mobility, an increase in the employment prospects of systemizers - notably in the computer industry - and a rise in the numbers of women studying mathematics, engineering and other systemizing subjects at university, where they are more likely to come into contact with systemizing men.

He points out that the parents of children with autism may not have strong skills in such subjects, but that does not mean they are not strong systemisers. The parents may, for example, have a remarkable memory for the names of songs in their CD collection, or for dates or telephone numbers.

He thinks the key characteristic is "exactness" in their style of thinking.

In the spectrum of conditions that count as autism, the largest groups are classic autism and Asperger's syndrome. Both share features: a difficulty in developing social relationships, a difficulty in communication, the presence of unusually strong, narrow interests, and a strong adherence to routines.

They differ in that, in classic autism, the person might have an IQ at any point on the scale, even in the learning disabled range, and the person invariably had a language delay as a toddler.

In Asperger's syndrome, the person is always at least average in IQ, and may be well above average, and talked on time as a toddler.

Richard Mills, of the National Autistic Society, said: "The society welcomes all new research, particularly that which helps us understand the nature and possible causes of autism and which may inform the support that we give to individuals. Over half a million people in the UK have a form of autism. It is a lifelong developmental disorder which requires specialist support."