

This is the first of what I hope will be a regular, informal interview slot, in which I put 3 questions to people who are researching in areas that may be of interest to ICCI members and readers. We hope you enjoy hearing from them. I haven't asked interviewees to commit to post-interview discussion, though I'm hopeful that we'll interview many of our own members. Your reactions and comments are always welcome. Thanks in advance to our interviewees!



[Simon Baron-Cohen](#) is Professor of Developmental Psychopathology at the University of Cambridge, Fellow of Trinity College, and Director of the Autism Research Centre in Cambridge. He is widely known for his work on Theory of Mind, empathy, and autism. He has coordinated and consulted on a wide range of educational and health programmes, including the DVD series, [The Transporters](#), created especially for children with autism. A host of publications, current projects, and prizes are listed on his [webpage](#).

### Three Questions

What finding from your recent research has most excited you?

My research into the link between foetal testosterone (FT) and empathy has been keeping me pretty excited for a number of years, in part because it's so counter-intuitive. When we think of empathy we imagine all sorts of social factors might be influences, such as the quality of parenting you received as a child or the stability of your early family environment. I don't doubt that experience counts for a lot, but it has been eye-opening for me to see that FT levels measured in the amniotic fluid in the womb correlate significantly with later empathy levels in the child [see [here](#)]. My excitement for this research topic is driven by trying to understand how this molecule - a sex steroid hormone - could be involved in empathy.

The obvious answer is that the hormone is affecting brain development, so it was with great excitement that we put the children (whose FT levels were known) into the MRI brain scanner.

And just this month we published the first finding from this project, showing that FT not only correlates with behaviour but also with brain structure [see [here](#)]. We looked specifically at the corpus callosum (CC), the connective tissue joining the two hemispheres of the brain, because it has long been thought that the CC is sexually dimorphic, so there was a good reason to expect that if FT is shaping sexual dimorphism in the brain, we would see a link between FT and the CC. And the real excitement is when you set up a scientific hypothesis, test it, and (with baited breath) wait to see if the predictions are confirmed. (It was). Naturally, we don't think the CC is the only part of the brain where FT is having an effect, but it is the first such demonstration in humans.

What single research question would you most like cross-cultural evidence on?

This question links to my answer to the previous question, because if FT is having an effect on empathy and on brain development in the one culture we have tested this in (the UK) we naturally expect this will be independent of culture. It should be true if we repeated the experiment in a non-

western culture. These experiments are not easy to set up since they involve getting access to amniotic fluid (we collected ours from women who were having amniocentesis during pregnancy, a procedure that is probably being done in many non-western cultures) and then waiting for the child to be born and being available for follow-up testing. At the very least one should be able to test this hypothesis cross culturally in countries that have modern medicine and biochemistry labs, such as Japan, and that by itself would be really exciting to do. I am not trying to dismiss the importance of cross-cultural variation but from a Darwinian perspective, cross-cultural research is also an opportunity to look for universals that may arise from the same genes affecting the same hormones in the same neural pathways, independently of where on the planet such genes find themselves

If you were buying a car, would you want to obtain specific information about its engine capacity?

Well Dr Cohen, where have I seen this question before? [[Here! The Systemizing Quotient](#)- Em]. If you're asking if I like systems, the answer of course is 'yes'. it would be hard to do science without a love of and a curiosity about systems and how they work. Indeed, maybe modern science is the magnificent outcome of the genes that enabled the human brain to systemize. In early eras of human history the drive to systemize likely allowed the construction of tools, the invention of music, ways of navigating using the stars, and the tracking of animals. In more recent eras of human history systemizing likely enabled the development of mathematics, physics, industrialization, and medicine. I think systemizers sometimes get bad press but we have a lot to be grateful to them for.

With thanks for inviting me to answer these questions.