

# e-Interview



## Tim Crow

Professor Crow is Honorary Director of SANE POWIC in Oxford and was for 20 years Head of the Division of Psychiatry of the MRC Clinical Research Centre, UK. He trained at the Royal London Hospital and the University of Aberdeen. His special interest is in evolutionary theory.

### If you were not a psychiatrist, what would you do?

I passed the qualifying examination for the Mechanical Sciences Tripos in Cambridge in 1956, but thought better of a career in engineering when as one of the last to undertake National Service (as a conscientious objector) I found myself working successively in a geriatric ward, in a tuberculosis sanatorium, as an operating theatre auxiliary and a cess-pit digger. These environments raised larger and more interesting questions than I imagined one encountered on a construction site, or in an electronics laboratory.

### What has been the greatest impact of your profession on you personally?

To bring into focus the scientific problem of the nature and diversity of *Homo sapiens*.

### What are your interests outside of work?

Archaeology and palaeontology. When I worked in the University Departments of Physiology and Mental Health in Aberdeen, I became aware of the stone circles at the time these were being mapped and shown to have interesting geometrical properties by Alexander Thom and his family. Then I visited Callanish and Avebury, and Carnac in Brittany. What were these people, 5000 years ago, trying to achieve? How had they come to cooperate with each other on such great enterprises, apparently peaceably, without leaving a written record? What were the cursuses and the stone rows, stretching across the landscape, for? Were these the endeavours of a Neolithic science research council? If so, the fund-raising capacity has never been surpassed.

### Who was your most influential trainer, and why?

Miles Weatherall, Professor of Pharmacology at the London Hospital Medical College, who taught me that scientific solutions are simplifying accounts that

need to be tested and, where appropriate, eliminated. A good theory can be written on the back of an envelope.

### Which publication has influenced you most?

Thomas Huxley's monograph on *Man's Place in Nature* (1863, re-published by Modern Library, 2001). Although Darwin's scope was enormous, and his attention to detail meticulous, he initially shrank from addressing the origins of man. Huxley was his close follower ('How stupid not to have thought of that'), his polemical advocate ('bulldog'), and on certain key issues (e.g. hybrid infertility that remains problematic to this day), his most cogent critic. As an exponent of scientific advance, and its promotion within society, he was forthright and lucid. In this book he explains why we are compelled to the conclusion that man was descended from a great ape. How did this happen? At this point Alfred Russell Wallace, co-discoverer of natural selection, developed qualms. Maybe the spirit had entered the material organism. Darwin was displeased 'I hope you have not altogether murdered your child and mine', but Huxley had already forged the way ahead, and in 1871 Darwin followed with *The Descent of Man*.

### What part of your work gives you the most satisfaction?

To have contributed modestly, with many colleagues, to what I hope have been scientific advances: the recognition of central catecholamine pathways as reward systems; the identification of a cholinergic link between short- and long-term memory; evidence that schizophrenia has an anatomical basis; formulation and elimination of the viral hypothesis of psychosis; identification of the first mutation to cause a neuropsychiatric disease; theory of the genetic basis of cerebral dominance; theory of the origins of psychosis and the evolution of language; a theory of nuclear symptoms; and identification of the *PCDH11XY* gene pair as a candidate for cerebral asymmetry and psychosis.

### What do you least enjoy?

Reading, as a forlorn addict, the literature on psychosis genetics. As instigator of the first World Congress on Psychiatric Genetics in 1989, I suspect I am complicit in licensing the discipline with the highest rate of false-positive findings in scientific history.

### What is the most promising opportunity facing the profession?

The possibility of a physiological understanding of the nature of human belief, and

thereby an explanation of the 'material basis of mind'.

### What is the most important advice you could offer to a new trainee?

In science, look for the simplest generalisation that you think is defensible, that most others will think is untenable, but if it were true would be significant, and defend it. For example, in 1969 when Flor-Henry asserted that with respect to psychosis the two sides of the brain were not equivalent, in 1970 when Kendell & Gourlay attacked the Kraepelinian separation of the two major psychoses, or in 1980 when Prusiner took up the defence of the scrapie agent as infectious protein, each was more or less on their own. For the record, I was convinced of the first only by 1984, of the second by 1986 and the third by 1985, with some evidence of learning. By contrast consider the propositions that electroconvulsive therapy is no more effective than a placebo, that schizophrenia is due to a virus, or that the gene for asymmetry and psychosis is in the pseudo-autosomal region. These were effectively eliminated by 1980, 1984 and 1994. Although I had held to the second and third with some fervour, and viewed the first with partisan interest, by the time the evidence was in I was convinced that they did not hold. But in 1991 I almost overlooked John Burn's reformulation of the pseudo-autosomal theory – that an X-Y homologous non-recombining gene will explain more than a pseudo-autosomal gene, and is not eliminated by the evidence that contradicted the latter. L.E. DeLisi had a similar concept, and I still believe it is viable, although it has been difficult to subject to critical test. Meantime the field as a whole has gone in the direction of 'polygenes' in large and in my view indiscriminate numbers. So the rule is to look for a simple and distinctive issue that if true would matter, and defend it until the evidence convinces you that you have to abandon it. Then do so.

### What single area of psychiatric research should be given priority?

Ruthless exposure to cross-disciplinary critical discussion as advocated by Karl Popper, Peter Medawar and Miles Weatherall.

### How would you like to be remembered?

As a psychiatric researcher who generated some ideas, and realised that at least some of them were wrong.

Dominic Fannon

doi: 10.1192/pb.bp.110.032300