

Evidence for the location of the handedness gene on the sex chromosomes

M.C. Corballis,¹ K. Lee,¹ C. McManus,² and T.J. Crow³

¹Department of Psychology, University of Auckland, New Zealand;
²Department of Psychology, University College London, England;
³Division of Psychiatry, Clinical Research Centre, Northwick Park Hospital, Harrow, England

The accumulation of data from several handedness surveys (total $n > 15,000$ families) shows that concordance for sex is slightly but reliably higher among siblings of the same handedness than among those of opposite handedness. This is consistent with the theory that the genetic locus of the gene for psychosis is the same as that of the gene for handedness and cerebral asymmetry, and that this locus is an X-Y homologous region of the same sex chromosomes. The small size of the effect is predicted from genetic models, such as those of Annett and McManus, in which there is a large random component underlying

phenotypic left handedness. An X-Y homologous gene could account for sexual dimorphism in human cerebral asymmetry.

References:

1. Annett M: **Left, Right Hand and Brain: The Right Shift Theory**, (L. Erlbaum, London, 1985).
2. Corballis MC, Lee K, McManus IC, Crow TJ: **Is the handedness gene on the sex chromosomes?** Submitted.
3. Crow TJ: **Sexual selection, Machiavellian intelligence and the origins of psychosis.** *Lancet* 342:594-598 (1993).
4. McManus IC: **Handedness, language dominance and aphasia: a genetic model.** *Psychological Medicine. Monograph Supplement* 8:1-40 (1985).