

Brief Research Communication

Location of the Handedness Gene

on the X and Y Chromosomes

M.C. Corballis, K. Lee, I.C. McManus, and T.J. Crow

Department of Psychology, University of Auckland, Auckland (M.C.C., K.L.), New Zealand; Department of Psychology, Warneford Hospital, Warneford

TABLE I. Predictions of SS/OS Ratios, Four-Fold Point Correlations (ϕ), and Critical Sample Sizes (N), According to Two Single-Gene Models of Handedness*

Parental phenotypes (Mother \times Father)	Offspring phenotypes			ϕ	N
	R \times R	R \times L	L \times L		
McManus's model					
R \times R	1.008	0.874	1.982	0.0222	15,928
R \times L	1.039	0.826	2.176	0.0590	2,255
L \times R	1.010	0.953	1.206	0.0148	35,838
L \times L	1.053	0.877	1.356	0.0538	2,712
Overall	1.013	0.872	1.562	0.0246	12,972
Annett's model					
R \times R	1.010	0.904	1.687	0.0224	15,645
R \times L	1.008	0.956	1.166	0.0133	44,378
L \times R	1.026	0.869	1.631	0.0415	4,558
L \times L	1.024	0.935	1.158	0.0263	11,349
Overall	1.016	0.898	1.535	0.0234	14,336

*The parameters used to derive these predictions were: for McManus's model [1985], $p(R/DD) = 1$, $p(R/DC) = 0.75$, $p(R/CC) = 0.5$, and $p(D) = 0.845$; for Annett's model [1985], $p(R/DD) = 0.9934$, $p(R/DC) = 0.9162$, $p(R/CC) = 0.61$, and $p(D) = 0.57$. Values of N are sample sizes needed for power of 0.80 at the

TABLE III Accumulated Data on the Concordance of Handedness and Sex Across Siblings

Parental pairs	Sex pairings	Offspring Handedness pairings		
		R × R	R × L	L × L
(Mother × father)	M × M	2217	222	22
(Mother × mother)	M × M	2217	222	22
(Father × father)	M × M	2217	222	22
(Mother × mother)	F × F	2217	222	22
(Mother × father)	F × F	2217	222	22
(Father × father)	F × F	2217	222	22