Fraud, statistics, and the central limit theorem: the curious case of Sir Cyril Burt, psychologist

The background

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* Influential methodology: IQ data

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* A rift in the lute

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* What statistics has to say …

* … and what it cannot

Table I: Distribution of Intelligence According to Occupational Class: Adults

	50–60	60–70	70–80	80–90	90–100	100–110	110–120	120–130	130–140	140+	Total	Mean IQ
I: Higher Professional									2	1	3	139.7
II: Lower Professional							2	13	15	1	31	130.6
III: Clerical				1	8	16	56	38	3		122	115.9
IV: Skilled			2	11	51	101	78	14	1		258	108.2
V: Semiskilled		5	15	31	135	120	17	2			325	97.8
VI: Unskilled	1	18	52	117	53	11	9				261	84.9
Total	1	23	69	160	247	248	162	67	21	2	1000	100.0

Burt's IQ data: adults

C. Burt, "Intelligence and social mobility," British Journal of Statistical Psychology, vol. 14, pp. 3–24, 1961.

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Table II: Distribution of Intelligence According to Occupational Class: Children

	50–60	60–70	70–80	80–90	90–100	100–110	110–120	120–130	130–140	140+	Total	Mean IQ
I: Higher Professional							1		1	1	3	120.8
II: Lower Professional				1	2	6	12	8	2		31	114.7
III: Clerical			3	8	21	31	35	18	6		122	107.8
IV: Skilled		1	12	33	53	70	59	22	7	1	258	104.6
V: Semiskilled	1	6	23	55	99	85	38	13	5		325	98.9
VI: Unskilled	1	15	32	62	75	54	16	6			261	92.6
Total	2	22	70	159	250	247	160	68	21	1	1000	100.0

Burt's IQ data: children

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	50–60	60–70	70–80	80–90	90–100	100–110	110–120	120–130	130–140	140+	Total	Mean IQ
I: Higher Professional							1		1	1	3	120.8
II: Lower Professional				1	2	6	12	8	2		31	114.7
III: Clerical			3	8	21	31	35	18	6		122	107.8
IV: Skilled		1	12	33	53	70	59	22	7	1	258	104.6
V: Semiskilled	1	6	23	55	99	85	38	13	5		325	98.9
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