A3 Development of Regression Models

Below is the series of charts representing the progression of fitting regression curves to the data. Only those for the male data set are shown here as an example of the process undertaken. The process was repeated fro all regression models derived. In the example below the models range from using only 1 regressor, being simple maturity score (SMS) to using many regressors, up to and including SMS^5.

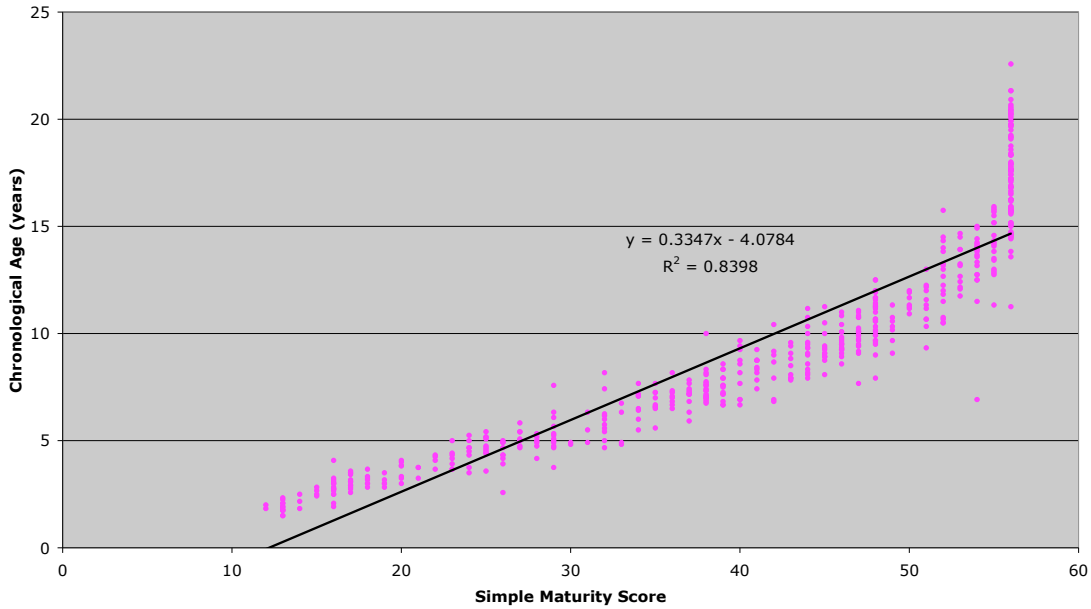

Figure A1: Chronological Age against Simple maturity Score for the Male development sample. Superimposed is the regression curve described by the formula quoted on the chart, using one regressor (sms).

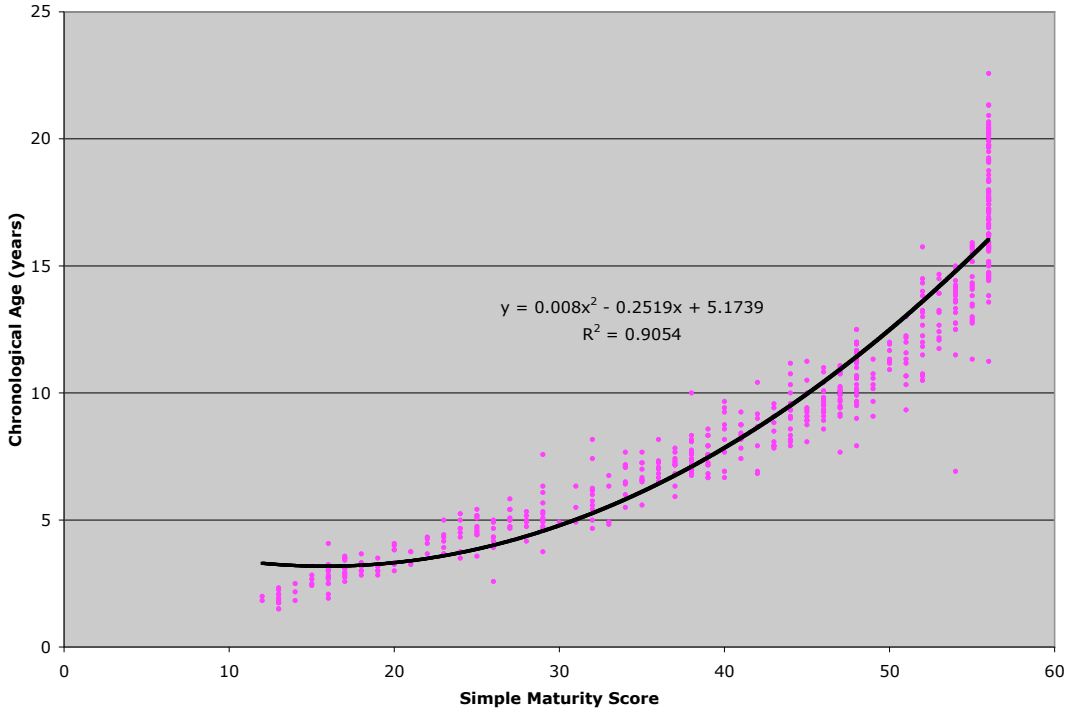

Figure A2: Chronological Age against Simple maturity Score for the Male development sample. Superimposed is the regression curve described by the formula quoted on the chart, using two regressors (sms and sms^2).

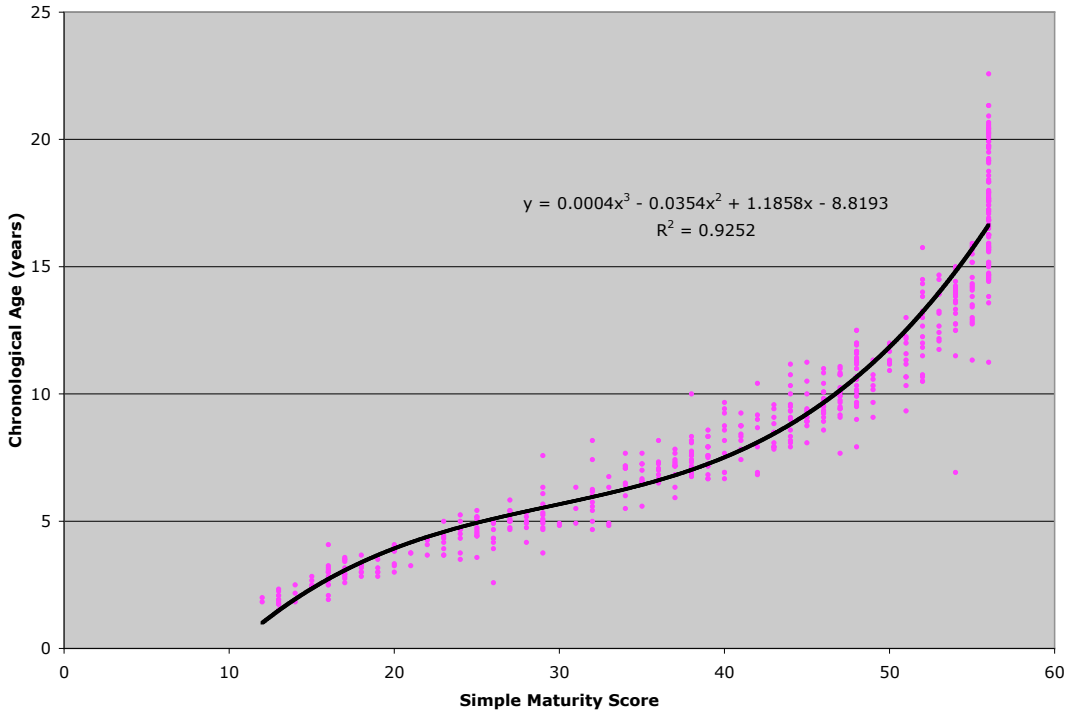

Figure A3: Chronological Age against Simple maturity Score for the Male development sample. Superimposed is the regression curve described by the formula quoted on the chart, using three regressors (sms, sms^2 and sms^3).

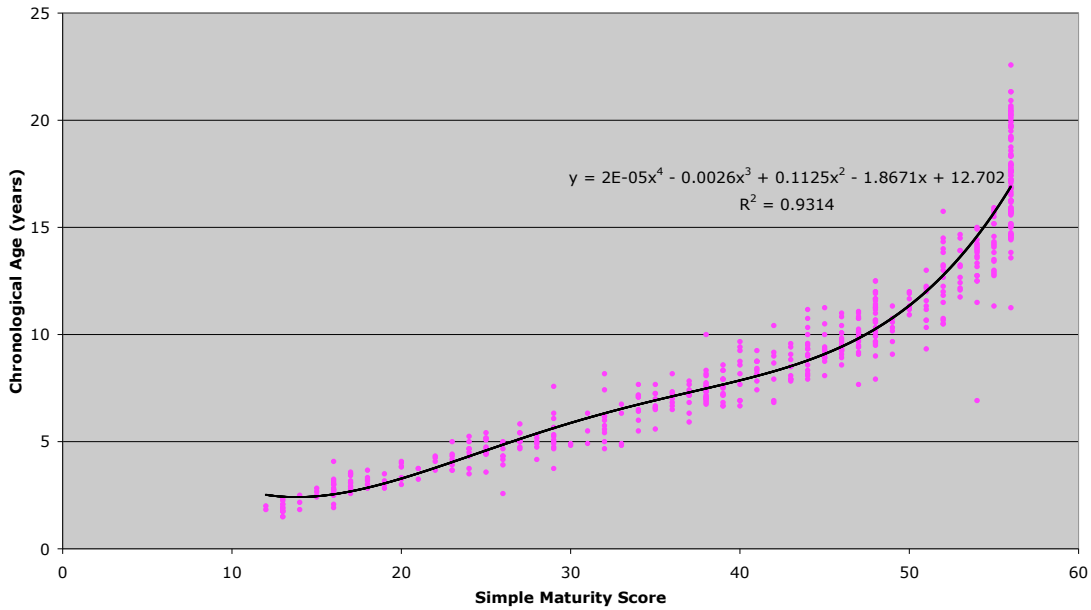

Figure A4: Chronological Age against Simple maturity Score for the Male development sample. Superimposed is the regression curve described by the formula quoted on the chart, using four regressors (sms, sms^2, sms^3 and sms^4).

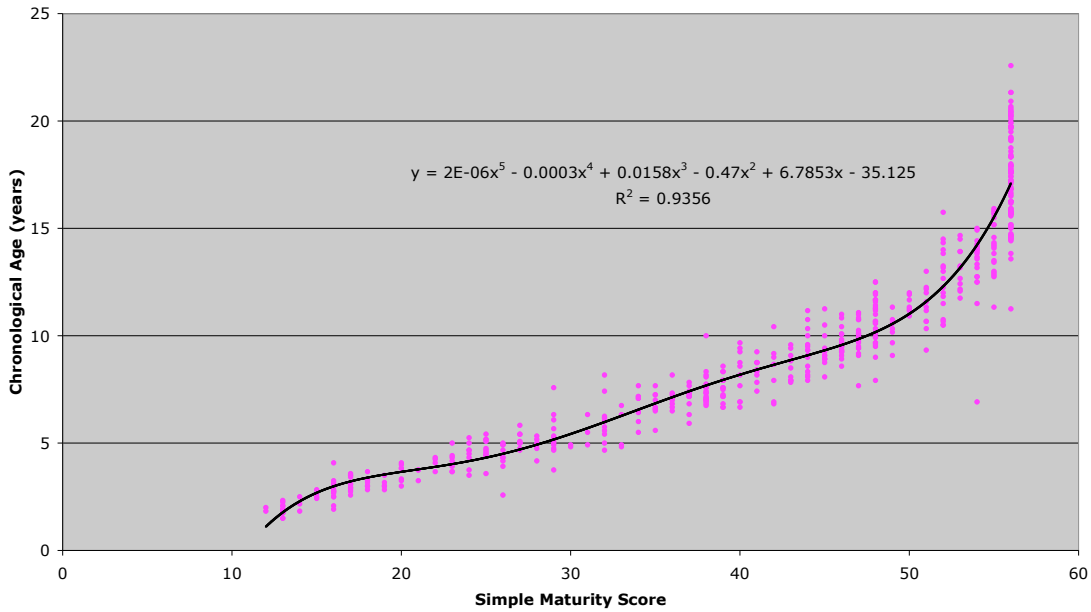

Figure A5: Chronological Age against Simple maturity Score for the Male development sample. Superimposed is the regression curve described by the formula quoted on the chart, using four regressors (sms, sms^2, sms^3, sms^4 and sms^5).

In examining these charts it can be seen that as the number of regressors increases so does the visually assessed accuracy of fit of the curve to the

‘cloud’ of data as represented by the pink data points on each chart. This increase in accuracy of fit is consistent with the increasing value of R-square.

A4 Inter-Observer Agreement Results

SEX	MRN	47	46	45	44	43	42	41	Number of discrepancies per xray by 1 level	Number of discrepancies per xray by 2 levels	Total Number of discrepancies per xray
F	xxxxxx	A	D	0	C	C	C	D			
	xxxxxx	B	D		C	C	D	D			
		1	0	0	0	0	1	0	2		2
M	xxxxxx	E	G	E	F	F	G	G			
	xxxxxx	E	G	E	E	E	G	G			
		0	0	0	1	1	0	0	2		2
M	xxxxxx	C	E	D	D	D	E	E			
	xxxxxx	C	E	D	D	D	F	F			
		0	0	0	0	0	1	1	2		2
M	xxxxxx	E	H	F	F	F	G	H			
	xxxxxx	E	H	F	F	F	H	H			
		0	0	0	0	0	1	0	1		1
M	xxxxxx	D	G	F	F	F	G	G			
	xxxxxx	D	G	E	E	E	H	H			
		0	0	1	1	1	1	1	5		5
M	xxxxxx	B	D	B	C	C	C	D			
	xxxxxx	B	D	B	C	D	E	E			
		0	0	0	0	1	2	1	2	1	3
M	xxxxxx	0	D	0	A	C	D	D			
	xxxxxx		C			B	D	D			
		0	1	0	1	1	0	0	3		3
F	xxxxxx	D	G	D	D	E	F	G			
	xxxxxx	D	G	D	E	E	G	G			
		0	0	0	1	0	1	0	2		2
F	xxxxxx	D	F	C	E	E	F	F			
	xxxxxx	C	F	D	E	E	F	F			
		1	0	1	0	0	0	0	2		2
M	xxxxxx	E	H	F	F	F	G	H			
	xxxxxx	E	H	F	F	F	H	H			
		0	0	0	0	0	1	0	1		1
M	xxxxxx	C	E	B	C	C	D	E			
	xxxxxx	C	E	B	C	C	E	E			
		0	0	0	0	0	1	0	1		1
F	xxxxxx	E	H	F	F	F	H	H			
	xxxxxx	E	G	E	F	F	H	H			
		0	1	0	0	0	0	0	1		1
M	xxxxxx	B	E	C	D	D	D	D			
	xxxxxx	B	E	C	C	C	E	E			
		0	0	0	1	1	1	1	4		4
M	xxxxxx	D	F	D	D	E	F	G			
	xxxxxx	D	G	D	E	E	F	G			
		0	1	0	1	0	0	0	2		2
Number of discrepancies per tooth by 1 level		10	14	12	20	17	48	29	150		
Number of discrepancies per tooth by 2 levels		1	0	1	0	0	3	0	5		
Number of discrepancies (irrespective of magnitude)		11	14	13	20	17	51	29	155		

Table A4: Example of raw results collected from two separate analyses undertaken by two separate researchers. The first row of each case is one set of observations, being the assessed levels of dental development per tooth; the second row is the other set of a observations from the second researcher. The third row in each case indicates the magnitude of any disagreement between the two observations. These disagreements are totalled by tooth and by case in the respective columns.

A5 Intra-Observer Agreement Results

SEX	MRN	47	46	45	44	43	42	41	Number of discrepancies per xray by 1 level	Number of discrepancies per xray by 2 levels	Total Number of discrepancies per xray
F	xxxxxxx	C	E	C	D	D	E	E			
	xxxxxxx	C	F	C	D	D	E	F			
		0	1	0	0	0	0	1	2	0	2
F	xxxxxxx	G	H	G	H	H	H	H			
	xxxxxxx	G	H	G	H	H	H	H			
		0	0	0	0	0	0	0	0	0	0
F	xxxxxxx	F	H	F	F	F	H	H			
	xxxxxxx	F	G	F	F	F	H	H			
		0	1	0	0	0	0	0	1	0	1
M	xxxxxxx	H	H	H	H	H	H	H			
	xxxxxxx	H	H	H	H	H	H	H			
		0	0	0	0	0	0	0	0	0	0
F	xxxxxxx	G	H	H	H	H	H	H			
	xxxxxxx	G	H	H	H	H	H	H			
		0	0	0	0	0	0	0	0	0	0
M	xxxxxxx	F	H	F	G	G	H	H			
	xxxxxxx	F	H	G	G	G	H	H			
		0	0	1	0	0	0	0	1	0	1
M	xxxxxxx	E	H	E	F	F	H	H			
	xxxxxxx	F	G	F	F	G	H	H			
		1	1	1	0	1	0	0	4	0	4
M	xxxxxxx	G	H	H	H	H	H	H			
	xxxxxxx	G	H	H	H	H	H	H			
		0	0	0	0	0	0	0	0	0	0
F	xxxxxxx	D	G	E	E	E	G	G			
	xxxxxxx	D	G	E	F	F	G	G			
		0	0	0	1	1	0	0	2	0	2
M	xxxxxxx	C	E	A	C	D	E	E			
	xxxxxxx	B	F	B	C	D	E	F			
		1	1	1	0	0	0	1	4	0	4
M	xxxxxxx	E	H	F	F	F	G	H			
	xxxxxxx	E	H	F	F	F	G	H			
		0	0	0	0	0	0	0	0	0	0
F	xxxxxxx	E	H	E	E	F	H	H			
	xxxxxxx	E	G	F	F	F	H	H			
		0	1	1	1	0	0	0	3	0	3
M	xxxxxxx	C	F	D	D	D	E	F			
	xxxxxxx	C	F	C	D	E	E	F			
		0	0	1	0	1	0	0	2	0	2
F	xxxxxxx	F	H	F	G	G	H	H			
	xxxxxxx	F	H	G	G	G	H	H			
		0	0	0	0	0	0	0	0	0	0
Number of discrepancies per tooth by 1 level		24	27	30	28	40	29	31	209		
Number of discrepancies per tooth by 2 levels		0	1	0	0	0	1	1	3		
Number of discrepancies (irrespective of magnitude)		24	28	30	28	40	30	32	212		

Table A5: Example of raw results collected from two separate analyses undertaken by the same researcher. The first row of each case is one set of observations, being the assessed levels of dental development per tooth; the second row is the other set of a results form a subsequent set of observations by the same researcher. The third row in each case indicates the magnitude of any disagreement between the two observations. These disagreements are totalled by tooth and by case in the respective columns.