Supplementary Table 1: Complete case results of tests comparing alternative life course hypotheses for crystallised cognitive ability (NSHD: NART score, Whitehall II: Mill Hill test score) with the saturated model (NSHD models are unadjusted, Whitehall II models are adjusted for age and number of times the Mill Hill test has previously been taken.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>NSHD</th>
<th></th>
<th>Whitehall II</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td></td>
<td>F statistic</td>
<td>P-value*</td>
<td>F statistic</td>
<td>P-value*</td>
</tr>
<tr>
<td>No effect</td>
<td>80.72</td>
<td>&lt;0.0001</td>
<td>53.99</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Accumulation models</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Accumulation</td>
<td>4.90</td>
<td>0.0001</td>
<td>4.74</td>
<td>0.0001</td>
</tr>
<tr>
<td>Adult accumulation</td>
<td>7.18</td>
<td>&lt;0.0001</td>
<td>1.85</td>
<td><strong>0.0861</strong></td>
</tr>
<tr>
<td>Sensitive period</td>
<td>2.02</td>
<td><strong>0.0891</strong></td>
<td>0.69</td>
<td><strong>0.5967</strong></td>
</tr>
<tr>
<td>Critical period models</td>
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<tr>
<td>Childhood</td>
<td>51.80</td>
<td>&lt;0.0001</td>
<td>28.49</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Early adulthood</td>
<td>23.43</td>
<td>&lt;0.0001</td>
<td>13.89</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Adulthood</td>
<td>52.01</td>
<td>&lt;0.0001</td>
<td>8.55</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Social mobility models</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inter generational</td>
<td>109.03</td>
<td>&lt;0.0001</td>
<td>40.48</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Inter generational without constraints</td>
<td>21.55</td>
<td>&lt;0.0001</td>
<td>17.74</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Intra generational</td>
<td>89.89</td>
<td>&lt;0.0001</td>
<td>40.78</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Intra generational without constraints</td>
<td>6.65</td>
<td>&lt;0.0001</td>
<td>2.23</td>
<td><strong>0.0639</strong></td>
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<td>Any mobility</td>
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<td>38.22</td>
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<tr>
<td>Any mobility with 3-way interaction</td>
<td>29.44</td>
<td>&lt;0.0001</td>
<td>5.45</td>
<td>0.0002</td>
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</tbody>
</table>

* The P-values test whether the life course model is significantly different from the saturated model. P-values in bold indicate where a model fits as well as the saturated model.
Supplementary Table 2: Results of tests comparing alternative life course hypotheses for crystallised cognitive ability (NSHD: NART score, Whitehall II: Mill Hill test score) with the saturated model, using a cutoff of very low SEP vs. the rest. NSHD models are unadjusted, Whitehall II models are adjusted for age and number of times the Mill Hill test has previously been taken. Multiple imputation is implemented to account for missing data.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>NSHD</th>
<th>Whitehall II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women (N=2,547)</td>
<td>Men (N=2,815)</td>
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<tr>
<td></td>
<td>F statistic</td>
<td>P-value*</td>
</tr>
<tr>
<td>No effect</td>
<td>72.65 &lt;0.0001</td>
<td></td>
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<tr>
<td>Accumulation models</td>
<td></td>
<td></td>
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<tr>
<td>Accumulation</td>
<td>17.97 &lt;0.0001</td>
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<tr>
<td>Adult accumulation</td>
<td>5.97 &lt;0.0001</td>
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<tr>
<td>Sensitive period</td>
<td>0.38 0.8216</td>
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</tr>
<tr>
<td>Critical period models</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childhood SEP</td>
<td>68.58 &lt;0.0001</td>
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<tr>
<td>Early-adulthood SEP</td>
<td>3.36 0.0029</td>
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<tr>
<td>Adult SEP</td>
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<td>Social mobility models</td>
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<tr>
<td>Intergenerational</td>
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<td>Intergenerational without constraints</td>
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<tr>
<td>Intra generational</td>
<td>31.16 &lt;0.0001</td>
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<tr>
<td>Intra generational without constraints</td>
<td>3.45 0.0085</td>
<td></td>
</tr>
<tr>
<td>Any mobility</td>
<td>44.54 &lt;0.0001</td>
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<tr>
<td>Any mobility with 3-way interaction</td>
<td>29.37 &lt;0.0001</td>
<td></td>
</tr>
</tbody>
</table>

* The P-values test whether the life course model is significantly different from the saturated model. P-values in bold indicate where a model fits as well as the saturated model.