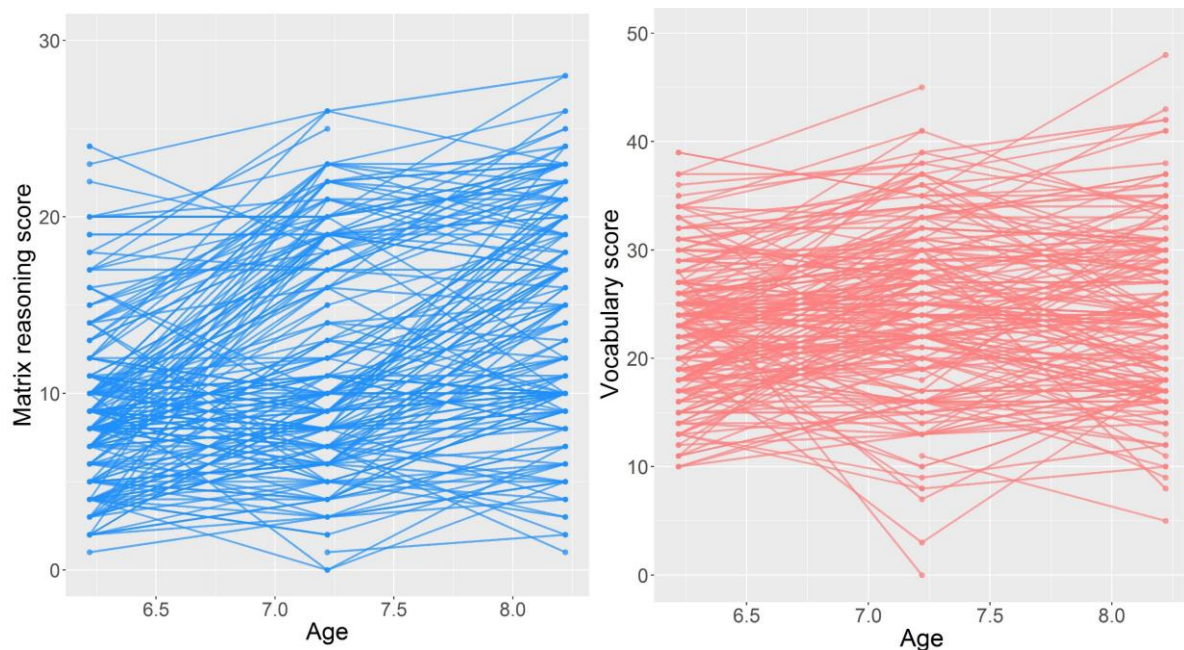
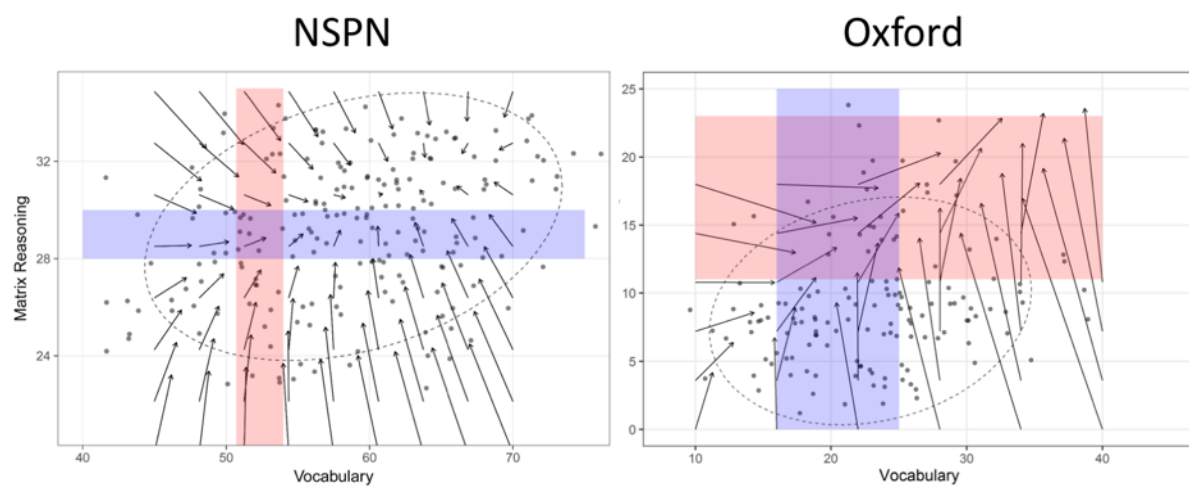


## Supplementary figures and tables

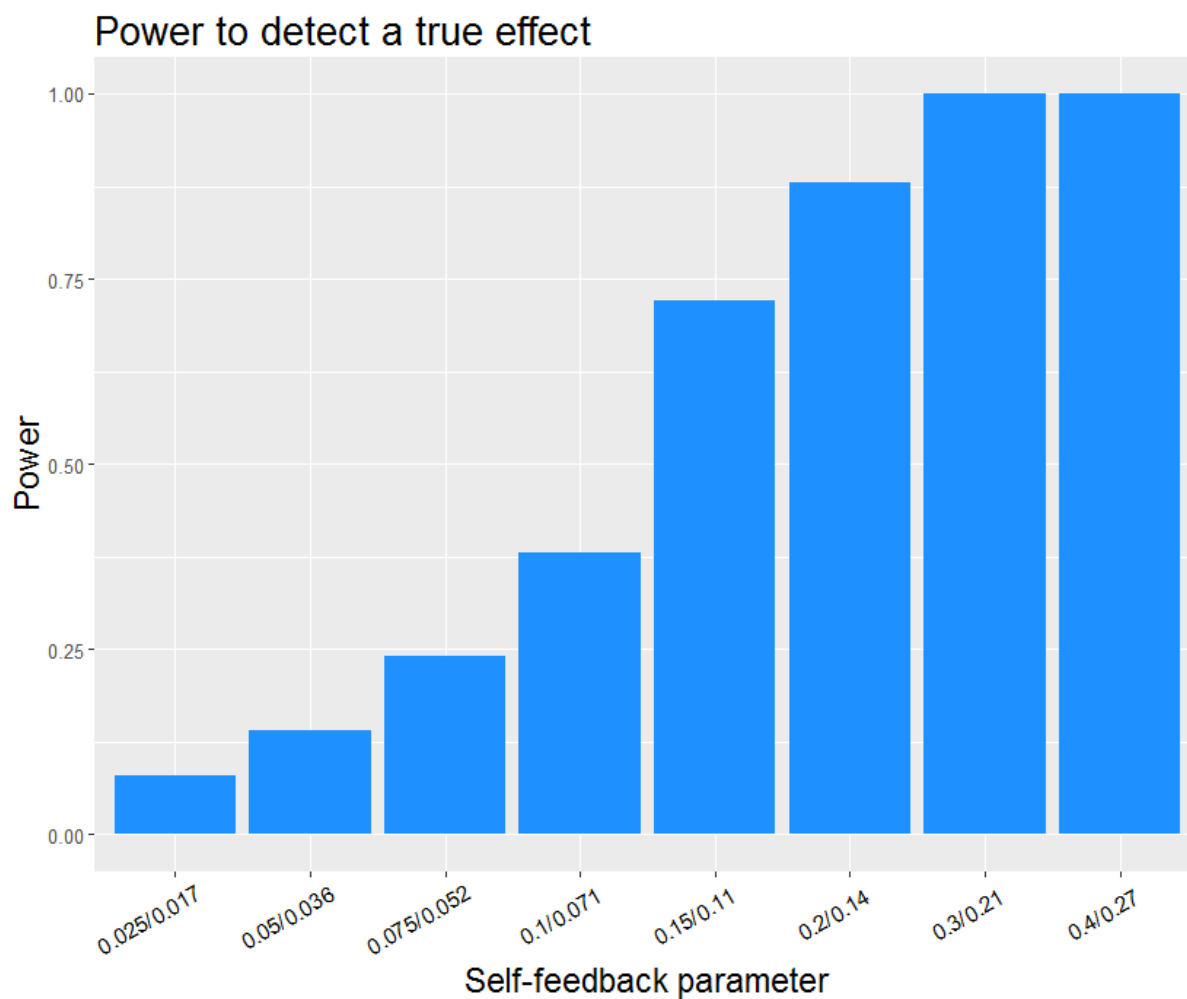
**Figure S1:** Raw data across three waves



**Figure S2:** Vector plot of model-implied changes for the latent change score specification. On the left, we show the mutualism effect in adolescents (highlighted as the size of the blue and red panels, which reflects the asymmetry in predicted cognitive change). On the right, we show the much stronger effect in the Oxford sample – not only is the aggregate change greater, the dependency on cross-domain coupling is visibly stronger.



**Figure S3:** Power analysis. Bars reflect raw/standardized betas for the simulated coupling strength.



**Table S1:** Raw Scores and Descriptive Statistics for Matrix Reasoning and Vocabulary Scores across three waves.

Task	N	Min	Max	Mean	SD	Skewness	Kurtosis
Matrix reasoning T1	215	1	24	8.86	4.58	0.98	0.96
Matrix reasoning T2	202	0	26	12.05	6.27	0.33	-0.97
Matrix reasoning T3	172	1	28	14.53	6.38	-0.03	-1.04
Vocabulary T1	213	10	39	22.77	6.27	0.16	-0.41
Vocabulary T2	202	0	45	24.57	7.77	-0.24	0.00
Vocabulary T3	172	5	48	24.20	7.84	0.29	-0.29

## Mutualism between vocabulary and reasoning in children

**Table S2:** Fit Statistics for Each of the Three Models

	$\chi^2$	df	p( $\chi^2$ )	RMSEA	CFI	SRMR
g factor	165.42	15	<0.0001	0.21 [0.182 - 0.239]	0,654	0,161
Investment	43,311	9	<0.0001	0.13 [0.092 - 0.170]	0,921	0,092
Mutualism	9,849	8	0.27	0.032 [0.000 - 0.088]	0,992	0,027