

Table S1.

Loadings on the First Principal Component of Subtests of the Wechsler Intelligence Scale for Children or Its Revisions, Obtained From 5
Manuals

Subtest	Manual					Average
	WISC US	WISC-R US	WISC-III US	WISC III-UK	WISC III-NL	
	(Wechsler,1949)	(Wechsler, 1974)	(Wechsler, 1991)	(Wechsler, 1992)	(Wechsler, 2002)	
Vocabulary	0.81	0.82	0.82	0.78	0.78	0.80
Information	0.79	0.79	0.80	0.76	0.75	0.78
Comprehension	0.69	0.72	0.70	0.65	0.65	0.68
Similarities	0.72	0.79	0.80	0.78	0.75	0.77
Arithmetic	0.67	0.64	0.70	0.60	0.69	0.66
Picture Completion	0.49	0.58	0.60	0.50	0.49	0.53
Picture Arrangement	0.58	0.56	0.52	0.42	0.50	0.52
Block Design	0.59	0.67	0.66	0.54	0.57	0.61
Coding	0.44	0.40	0.33	0.26	0.34	0.35
Digit Span	0.51	0.45	0.45	0.42	0.43	0.45
Object Assembly	0.47	0.56	0.58	0.40	0.47	0.50

References

- Wechsler, D. (1949). *Wechsler Intelligence Scale for Children: Manual*. New York: Psychological Corporation.
- Wechsler, D. (1974). *WISC-R: Wechsler Intelligence Scale for Children-Revised*. New York: Psychological Corporation.
- Wechsler, D. (1991). *WISC-III : Wechsler intelligence scale for children*. San Antonio, TX: Psychological Corporation.
- Wechsler, D. (1992). *WISC-III UK. Manual*. London: Psychological Corporation Limited.
- Wechsler, D. (2002). *WISC-III NL. Handleiding*. London: Psychological Corporation Limited.

Table S2.

Loadings on the First Principal Component of Subtests of the Wechsler Adult Scale of Intelligence or Its Revisions, Obtained From 4 Manuals

Subtest	Manual				Average
	WAIS US	WAIS-R US	WAIS-III US	WAIS III-NL	
	(Wechsler, 1955)	(Wechsler, 1981)	(Wechsler, 1997)	(Wechsler, 2005)	
Vocabulary	0.88	0.88	0.88	0.87	0.88
Information	0.86	0.84	0.84	0.86	0.85
Comprehension	0.80	0.80	0.82	0.82	0.81
Similarities	0.79	0.80	0.84	0.85	0.82
Arithmetic	0.77	0.74	0.72	0.73	0.74
Picture Completion	0.73	0.67	0.60	0.52	0.63
Picture Arrangement	0.69	0.62	0.64	0.58	0.63
Block Design	0.73	0.67	0.64	0.64	0.67
Coding	0.58	0.58	0.51	0.53	0.55
Digit Span	0.63	0.60	0.52	0.56	0.58
Object Assembly	0.52	0.55	0.58	0.55	0.55

References

- Wechsler, D. (1955). *Manual for the Wechsler Adult Intelligence Scale*. New York: Psychological Corporation.
- Wechsler, D. (1981). *WAIS-R: Wechsler Adult Intelligence Scale, Revised*. San Antonio, TX: Psychological Corporation.
- Wechsler, D. (1997). *WAIS-III: Administration and Scoring Manual : Wechsler Adult Intelligence Scale--third Edition*. San Antonio, TX: Psychological Corporation.
- Wechsler, D. (2005). *WAIS-III Nederlandse bewerking. Technische handleiding*. Amsterdam: Hartcourt Assessment B.V.

Table S3.

Reliability Coefficients of Wechsler Intelligence Scale for Children or Its Revisions, Obtained From 5 Manuals

Subtest	Manual					Average
	WISC US	WISC-R US	WISC-III US	WISC III-UK	WISC III-NL	
	(Wechsler,1949)	(Wechsler, 1974)	(Wechsler, 1991)	(Wechsler, 1992)	(Wechsler, 2002)	
Vocabulary	0.86	0.86	0.86	0.89	0.96	0.89
Information	0.76	0.85	0.85	0.85	0.95	0.85
Comprehension	0.68	0.77	0.77	0.73	0.93	0.78
Similarities	0.75	0.81	0.81	0.81	0.93	0.82
Arithmetic	0.75	0.77	0.77	0.74	0.93	0.79
Picture Completion	0.64	0.77	0.77	0.81	0.87	0.77
Picture Arrangement	0.72	0.73	0.73	0.64	0.88	0.74
Block Design	0.86	0.85	0.85	0.77	0.94	0.85
Coding	0.60	0.72	-	0.77	-	0.70
Digit Span	0.56	0.78	-	0.73	0.89	0.74
Object Assembly	0.66	0.70	0.70	0.66	0.77	0.70

References

- Wechsler, D. (1949). *Wechsler intelligence scale for children : manual*. New York: Psychological Corp.
- Wechsler, D. (1974). *WISC-R: Wechsler Intelligence Scale for Children*: Psychological Corporation.
- Wechsler, D. (1991). *WISC-III : Wechsler intelligence scale for children*. San Antonio, [TX]: Psychological Corporation, Harcourt Brace Jovanovich.
- Wechsler, D. (1992). *WISC-III UK. Manual*. London: Psychological Corporation Limited.
- Wechsler, D. (2002). *WISC-III NL. Handleiding*. London: Psychological Corporation Limited.

Table S4.

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Reliability Coefficients of Wechsler Adult Scale of Intelligence or Its Revisions, Obtained From 4 Manuals

Subtest	Manual				Average
	WAIS US	WAIS-R US	WAIS-III US	WAIS III-NL	
	(Wechsler, 1955)	(Wechsler, 1981)	(Wechsler, 1997)	(Wechsler, 2005)	
Vocabulary	0.95	0.96	0.93	0.93	0.94
Information	0.91	0.89	0.92	0.92	0.91
Comprehension	0.78	0.84	0.85	0.85	0.83
Similarities	0.86	0.84	0.84	0.86	0.85
Arithmetic	0.82	0.84	0.88	0.90	0.86
Picture Completion	0.83	0.81	0.82	0.78	0.81
Picture Arrangement	0.67	0.74	0.72	0.72	0.71
Block Design	0.84	0.87	0.89	0.87	0.87
Coding	-	0.82	0.82	0.84	0.83
Digit Span	0.68	0.83	0.91	0.90	0.83
Object Assembly	0.68	0.68	0.73	0.74	0.71

References

- Wechsler, D. (1955). *Manual for the Wechsler Adult Intelligence Scale*. New York: Psychological Corporation.
- Wechsler, D. (1981). *WAIS-R: Wechsler Adult Intelligence Scale, Revised*. San Antonio, TX: Psychological Corporation.
- Wechsler, D. (1997). *WAIS-III: Administration and Scoring Manual : Wechsler Adult Intelligence Scale--third Edition*. San Antonio, TX: Psychological Corporation.
- Wechsler, D. (2005). *WAIS-III Nederlandse bewerking. Technische handleiding*. Amsterdam: Hartcourt Assessment B.V.

Table S5.

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Heritability Coefficients (h^2) of the Subtests of the Wechsler Intelligence Scale for Children or Revisions (WISC) in Six Studies (of Sample Size n)

Subtest	Study (year)					
	Segal (1985)	Luo, Petrill, and Thompson (1994)	Williams (1975)	LaBuda, DeFries, and Fulker (1987)	Owen and Sines (1970)	Jacobs et al. (2001)
	$n = 103$	$n = 283$	$n = 100$	$n = 143$	$n = 42$	$n = 451$
Vocabulary	0.72	0.54	0.53	0.51	0.20	0.57
Information	0.82	0.26	0.25	0.54	0.41	0.40
Comprehension	0.44	0.45	0.26	0.29	0.00	0.39
Similarities	0.94	0.32	0.36	0.33	0.56	0.56
Arithmetic	0.80	0.19	0.45	0.43	0.66	0.52
Picture Completion	0.00	0.25	-0.12	0.25	0.00	0.30
Picture Arrangement	0.16	0.41	0.07	0.26	0.60	0.12
Block Design	0.84	0.17	0.34	0.24	0.17	0.71
Coding	0.56	0.13	0.56	0.47	0.46	0.55
Digit Span	-	0.15	0.13	0.44	0.16	0.26
Object Assembly	0.68	0.45	0.02	0.15	0.75	0.33

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Table S6.

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Heritability Coefficients (h^2) of the Subtests of the Wechsler Adult Intelligence Scale (WAIS) or Revisions in Four Studies (of Sample Size n)

Subtest	Study			
	Block (1965)	Tambs, Sundet, and Magnus (1984)	Rijsdijk, Vernon, and Boomsma (2002)	Friedman et al. (2008)
	$n = 120$	$n = 80$	$n = 194$	$n = 293$
Vocabulary	0.68	0.86	0.72	0.63
Information	0.74	0.59	0.76	0.53
Comprehension	0.55	0.79	0.56	0.47
Similarities	0.45	0.73	0.53	0.34
Arithmetic	0.64	0.67	0.65	0.57
Picture Completion	0.33	0.33	0.27	0.10
Picture Arrangement	0.43	0.58	0.36	0.30
Block Design	0.57	0.50	0.69	0.58
Coding	0.51	0.54	0.48	0.51
Digit Span	0.35	0.49	0.61	0.37
Object Assembly	0.26	0.51	0.49	0.44

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Heritability Coefficients (h^2) of the Wechsler Intelligence Scale for Children (WISC) and Wechsler Adult Intelligence Scale (WAIS) Verbal IQ (VIQ) and Performance IQ (PIQ) Subscales

Study	Scale	<i>n</i>	h^2	h^2	VIQ-PIQ
			VIQ	PIQ	h^2 difference
(Alarcón et al., 2000)	WISC	1110	0.74	0.68	0.06
(Edmonds et al., 2008)	WISC	240	0.85	0.73	0.12
(Gosso 2007)	WISC	359	0.70	0.73	-0.03
(Hoekstra et al., 2007)	WISC	115*	0.46	0.64	-0.18
(van der Sluis et al., 2008)	WISC	385	0.78	0.78	0.00
(Betjemann et al., 2010)	WAIS	142	0.66	0.66	0.00
(Gosso, 2007)	WAIS	580	0.78	0.71	0.07
(Hoekstra et al., 2007)	WAIS	115*	0.84	0.74	0.10
(Malykh et al., 2005)	WAIS	160	0.86	0.84	0.02
(Rijsdijk et al., 1998)	WAIS	416	0.64	0.46	0.18
(Vandenberg 1966)	WAIS	-	0.63	0.41	0.22
(van der Sluis et al., 2008)	WAIS	360	0.68	0.75	-0.07

* Longitudinal study

- Alarcón, M., Knopik, V. S., & DeFries, J. C. (2000). Covariation of Mathematics Achievement and General Cognitive Ability in Twins. *Journal of School Psychology, 38*(1), 63-77.
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Table s8 Characteristics of the subtests used in the Minnesota Twin Study

Battery	Subtest (Johnson, et al., 2007)	<i>g</i> -loading	Heritability coefficient (h^2)	Primary loadings on first order Verbal and Scholastic	Positive loadings on second order Verbal	Cultural load	Reason given
CAB	Numerical Ability	0.54	0.58	no	yes	Culture- loaded	Scholastic
CAB	Spatial Ability	0.22	0.57	no	no	Culture-reduced	
CAB	Memory Span	0.40	0.44	no	yes	Culture-reduced	
CAB	Flexibility of Closure	0.34	0.31	no	yes	Culture-reduced	
CAB	Mechanical Ability	0.09	0.48	no	no	Culture-reduced	
CAB	Speed of Closure	0.33	0.50	yes	yes	Culture-reduced	
CAB	Perceptual Speed	0.31	0.42	no	yes	Culture-reduced	
CAB	Word Fluency	0.46	0.64	yes	yes	Culture- loaded	Language
CAB	Inductive Reasoning	0.33	0.49	no	yes	Culture-reduced	
CAB	Associative Memory	0.25	0.46	no	yes	Culture-reduced	
CAB	Meaningful Memory	0.21	0.44	yes	yes	Culture-reduced	
CAB	Verbal-Vocabulary	0.57	0.60	yes	yes	Culture- loaded	Language
CAB	Verbal-Proverbs	0.49	0.43	yes	yes	Culture- loaded	Language
CAB	Spelling	0.50	0.72	yes	yes	Culture- loaded	Scholastic

Table s8 Continued

Battery	Subtest (Johnson, et al., 2007)	<i>g</i> -loading	Heritability coefficient (h^2)	Primary loadings on first order Verbal and Scholastic	Positive loadings on second order Verbal	Cultural load	Reason given
HB	Card Rotations	0.13	0.67	no	no	Culture-reduced	
HB	Mental Rotation	0.15	0.54	no	no	Culture-reduced	
HB	Paper Form Board	0.14	0.55	no	no	Culture-reduced	
HB	Hidden Patterns	0.19	0.59	no	no	Culture-reduced	
HB	Cubes	0.16	0.48	no	no	Culture-reduced	
HB	Paper Folding	0.11	0.47	no	no	Culture-reduced	
HB	Raven	0.20	0.58	no	yes	Culture-reduced	
HB	HB Vocabulary	0.55	0.76	yes	yes	Culture-loaded	Language
HB	Subtraction/ Multiplication	0.50	0.64	no	yes	Culture-loaded	Scholastic
HB	Word Beginnings/ Endings	0.45	0.59	yes	yes	Culture-loaded	Language
HB	Pedigrees	0.44	0.66	yes	yes	Culture-	

						reduced	
HB	Things Categories	0.32	0.51	yes	yes	Culture-loaded	Language
HB	Different Uses	0.30	0.61	yes	yes	Culture-loaded	Language
HB	Immediate Visual Memory	0.03	0.16	no	no	Culture-reduced	

Table s8 Continued

Battery	Subtest (Johnson, et al., 2007)	<i>g</i> -loading	Heritability coefficient (h^2)	Primary loadings on first order Verbal and Scholastic	Positive loadings on second order Verbal	Cultural load	Reason given
HB	Delayed Visual Memory	0.03	0.32	no	no	Culture-reduced	
HB	Lines and Dots	0.11	0.26	no	no	Culture-reduced	
HB	Identical Pictures	0.20	0.64	no	no	Culture-reduced	
WAIS	Information	0.31	0.65	yes	yes	Culture- loaded	Scholastic
WAIS	Comprehension	0.30	0.49	yes	yes	Culture- loaded	Language
WAIS	Vocabulary	0.43	0.62	yes	yes	Culture- loaded	Language
WAIS	Coding	0.35	0.64	no	yes	Culture-reduced	
WAIS	Arithmetic	0.48	0.67	no	yes	Culture- loaded	Scholastic
WAIS	Similarities	0.31	0.45	yes	yes	Culture- loaded	Language
WAIS	Digit Span	0.36	0.61	no	yes	Culture-reduced	
WAIS	Picture Completion	0.19	0.31	no	yes	Culture-reduced	
WAIS	Block Design	0.13	0.59	no	no	Culture-reduced	
WAIS	Picture Arrangement	0.14	0.48	no	yes	Culture-reduced	
WAIS	Object Assembly	0.10	0.50	no	no	Culture-reduced	

Note: CAB = Comprehensive Ability Battery, HB = Hawaii Battery, including Raven's progressive matrices, WAIS = Wechsler Adult Intelligence Scale

References

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