Supplemental Tables

Investigating the Theoretical Structure of the Differential Ability Scales—Second Edition Through Hierarchical Exploratory Factor Analysis

By REDACTED

Table A1

Differential Ability Scales, Second Edition (DAS-II) Exploratory Factor Analysis: Three Oblique Factor Solution for the Standardization Sample 5 to 8 Year Olds (N = 787)

DAS-II Subtest	*g*	F1:	F2:	F3:	h^2
Recall of Design (Gv)	.70	**.82 (.76)**	-.01 (.53)	.03 (.33)	.579
Copy (Gv)	.63	**.80 (.70)**	-.15 (.47)	.03 (.30)	.501
Matching Letter Like Form (Gv)	.63	**.64 (.66)**	.02 (.51)	.10 (.29)	.439
Pattern Construction-Alternative (Gv)	.73	**.63 (.75)**	.21 (.64)	-.11 (.26)	.583
Early Number Concepts (Gc/Gf)	.69	**.57 (.70)**	.20 (.60)	-.04 (.28)	.499
Recognition of Pictures (Gv)	.57	**.53 (.58)**	.00 (.46)	.12 (.35)	.350
Sequential and Quantitative Reasoning (Gf)	.75	**.51 (.73)**	.38 (.70)	-.16 (.22)	.604
Rapid Naming (Gs)	.49	**.47 (.50)**	-.03 (.38)	.12 (.31)	.264
Speed of Information Processing (Gs)	.43	**.44 (.45)**	.05 (.33)	.10 (.27)	.210
Digit Backwards (Gsm)	.69	**.44 (.67)**	.28 (.63)	.04 (.35)	.482
Picture Similarities (Gf)	.54	**.33 (.52)**	.27 (.50)	-.03 (.23)	.300
Word Definitions (Gc)	.64	-.23 (.47)	**.90 (.75)**	.05 (.35)	.584
Verbal Similarities (Gc)	.70	-.02 (-.57)	**.77 (.76)**	.02 (.35)	.583
Naming Vocabulary (Gc)	.65	-.02 (.53)	**.72 (.71)**	.02 (.33)	.508
Verbal Comprehension (Gc)	.65	.14 (.57)	**.58 (.68)**	-.01 (.30)	.465
Recall of Sequential Order (Gwm)	.73	.25 (.65)	**.47 (.71)**	.11 (.42)	.539
Digit Forward (Gsm)	.62	.21 (.55)	**.43(.61)**	.05 (.33)	.392
Matrices (Gf)	.65	**.32 (.61)**	**.38 (.62)**	-.04 (.27)	.428
Recall of Object Delayed (Glr)	.47	.06 (.38)	-.02 (.39)	**.78 (.80)**	.643
Recall of Object Immediate (Glr)	.55	.05 (.44)	.10 (.47)	**.76 (.82)**	.685
Eigenvalue		8.47	1.31	1.23	
% Variance		42.4	6.5	6.1	
<u>Factor Correlations</u>					
Verbal Comprehension		1.000			
Visual Spatial		.754	1.000	.444	
Working Memory		.422	.444	1.000	

Note. *g* = general structure coefficients based on first unrotated factor coefficients (*g* loadings), h^2 = Communality. Factor pattern coefficients (structure coefficients) based on principal factors extraction with promax rotation ($k = 4$). Salient pattern coefficients presented in bold (pattern coefficient ≥ .30).

Table A2

Differential Ability Scales, Second Edition (DAS-II) Exploratory Factor Analysis: Five Oblique Factor Solution for the Standardization Sample 5 to 8 Year Olds (N = 787)

DAS-II Subtest	*g*	F1: Gv/Gf	F2: Gc	F3: Gf	F4: Glr	F5: Gwm	h^2
Recall of Designs (Gv)	.70	**.89 (.80)**	.03 (.51)	-.13 (.55)	-.02 (.34)	-.00 (.54)	.649
Copying (Gv)	.63	**.74 (.72)**	-.09 (.43)	-.03 (.52)	-.01 (.31)	.08 (.52)	.518
Pattern Construction-Alternative (Gv)	.73	**.47 (.72)**	.14 (.60)	.31 (.70)	-.08 (.29)	-.04 (.57)	.588
Speed of Information Processing (Gs)	.43	**.46 (.46)**	.03 (.32)	-.08 (.33)	.08 (.27)	.02 (.34)	.222
Rapid Naming (Gs)	.49	**.45 (.51)**	.03 (.37)	-.03 (.39)	.10 (.32)	.03 (.39)	.271
Recognition of Pictures (Gv)	.57	**.42 (.58)**	-.01 (.42)	.26 (.52)	.16 (.37)	-.15 (.40)	.372
Matching Letter-Like Form (Gv)	.63	**.41 (.63)**	-.10 (.45)	.23 (.58)	.01 (.31)	.16 (.55)	.440
Early Number Concepts (Gc/Gf)	.69	**.33(.66)**	.04 (.55)	.30 (.65)	-.03 (.31)	.13 (.59)	.500
Picture Similarities (Gf)	.54	**.32 (.51)**	.28 (.50)	.10 (.48)	-.03 (.24)	-.08 (.40)	.313
Naming Vocabulary (Gc)	.66	.12 (.52)	**.78 (.75)**	-.14 (.51)	-.02 (.35)	.01 (.52)	.575
Word Definitions (Gc)	.64	-.19 (.43)	**.75 (.75)**	.12 (.55)	.06 (.38)	.02 (.52)	.581
Verbal Similarities (Gc)	.70	.20 (.54)	**.68 (.77)**	.06 (.59)	.01 (.38)	.05 (.57)	.591
Verbal Comprehension (Gc)	.65	.12 (.54)	**.50 (.67)**	.11 (.57)	-.02 (.32)	.04 (.53)	.469
Matrices (Gf)	.65	-.09 (.53)	.03 (.55)	**.77 (.75)**	.05 (.32)	.00 (.53)	.560
Sequential and Quantitative Reasoning (Gf)	.75	.14 (.67)	.09 (.62)	**.69 (.82)**	-.10 (.27)	-.01 (.60)	.682
Recall of Objects-Immediate (Glr)	.55	.04 (.43)	.07 (.46)	.04 (.39)	**.81 (.85)**	-.06 (.43)	.724
Recall of Objects-Delayed (Glr)	.47	.06 (.38)	-.04 (.36)	-.05 (.30)	**.77 (.79)**	.07 (.40)	.620
Digits Backward (Gwm)	.70	.09 (.61)	-.06 (.55)	.20 (.64)	.01 (.37)	**.58 (.75)**	.585
Digits Forward (Gwm)	.62	.10 (.53)	.27 (.58)	-.18 (.48)	-.03 (.34)	**.55 (.67)**	.491
Recall of Sequential Order (Gwm)	.73	-.03 (.59)	.17 (.65)	.20 (.66)	.09 (.45)	**.45 (.73)**	.593
Eigenvalue		8.47	1.31	1.23	.892	.775	
% Variance		42.4	6.5	6.1	4.5	3.9	
Factor Correlations							
F1		1.000					
F2		.656	1.000				
F3		.751	.716	1.000			
F4		.442	.464	.385	1.000		
F5		.704	.692	.716	.474	1.000	

Note. *g* = general structure coefficients based on first unrotated factor coefficients (*g* loadings), h^2 = Communality. Factor pattern coefficients (structure coefficients) based on principal factors extraction with promax rotation ($k = 4$). Salient pattern coefficients presented in bold (pattern coefficient ≥ .30).

Table A3

Sources of Variance in the DAS-II for the Standardization Sample5 to 8 Year Olds (N = 787) According to a SL Orthogonalization Model with Three First–Order Factors

	General		F1: ?		F2: ?		F3: Glr			
DAS-II Subtest	b	S^2	b	S^2	b	S^2	b	S^2	h^2	u^2
Recall of Designs (Gv)	.66	.43	**.38**	**.14**	-.05	.00	.02	.00	.579	.421
Copying (Gv)	.60	.36	**.37**	**.14**	-.08	.01	.02	.00	.501	.499
Matching Letter Like Form (Gv)	.59	.35	**.30**	**.09**	.01	.00	.01	.00	.439	.561
Pattern Construction-Alternative (Gv)	.69	.48	**.29**	**.09**	.11	.01	-.09	.01	.581	.419
Early Number Concepts (Gc/Gf)	.65	.42	**.26**	**.07**	.11	.01	-.04	.00	.500	.500
Recognition of Pictures (Gv)	.53	.28	**.24**	**.06**	.00	.00	.10	.01	.352	.648
Sequential and Quantitative Reasoning (Gf)	.70	.49	**.24**	**.06**	.20	.04	-.14	.02	.603	.397
Rapid Naming (Gs)	.46	.21	**.22**	**.05**	-.01	.00	.11	.01	.267	.733
Speed of Information Processing (Gs)	.40	.16	**.20**	**.04**	-.02	.00	.09	.01	.212	.788
Digits Backward (Gwm)	.65	.42	**.20**	**.04**	.15	.02	.04	.00	.483	.517
Picture Similarities (Gf)	.51	.26	**.15**	**.02**	.14	.02	-.03	.00	.300	.700
Word Definitions (Gc)	.58	.34	-.11	.01	**.48**	**.23**	.04	.00	.582	.418
Verbal Similarities (Gc)	.65	.42	-.01	.00	**.41**	**.17**	.02	.00	.582	.418
Naming Vocabulary (Gc)	.60	.36	-.01	.00	**.38**	**.14**	.02	.00	.507	.493
Verbal Comprehension (Gc)	.61	.37	.06	.00	**.31**	**.09**	-.01	.00	.466	.534
Recall of Sequential Order (Gwm)	.68	.46	.12	.01	**.25**	**.06**	.09	.01	.539	.461
Digits Forward (Gwm)	.57	.31	.01	.01	**.23**	**.05**	.05	.00	.392	.608
Matrices (Gf)	.60	.36	.16	.02	**.20**	**.04**	-.04	.00	.428	.572
Recall of Objects-Delayed (Glr)	.43	.19	.03	.00	-.01	.00	**.68**	**.46**	.646	.354
Recall of Objects-Immediate (Glr)	.50	.25	.02	.00	.05	.00	**.65**	**.43**	.683	.317
Explained Common Variance (ECV)		.719		.088		.093		.100	.482	.482
Explained Total Variance (ETV)		.346		.042		.045		.048		
ω_H / ω_{HS}		.842		.145		.186		.534		

Note. *b* = factor loading, S^2= variance explained, h^2= communality, u^2= uniqueness, ω_H = Omega hierarchical (*g*), ω_{HS} = Omega hierarchical subscale (group factors).

Table A4

Sources of Variance in the DAS-II for the Standardization Sample 5 to 8 Year Olds (N=787) According to a SL Orthogonalization Model with Five First-Order Factors

	General		Gv/Gs		Gc		Gf		Glr		Gwm			
DAS-II Subtest	*b*	S^2	*b*	S^2	*b*	S^2	*b*	S^2	*b*	S^2	*b*	S^2	h^2	u^2
Recall of Designs (Gv)	.66	.43	**.46**	**.21**	.02	.00	-.07	.01	-.01	.00	-.00	.00	.654	.346
Copying (Gv)	.57	.33	**.39**	**.15**	-.05	.00	-.02	.00	-.01	.00	.07	.01	.481	.519
Pattern Construction-Alternative (Gv)	.69	.47	**.24**	**.06**	.08	.01	.17	.03	-.05	.00	-.04	.00	.568	.432
Speed of Information Processing (Gs)	.42	.18	**.24**	**.06**	.02	.00	-.04	.00	.05	.00	.01	.00	.238	.762
Rapid Naming (Gs)	.48	.23	**.24**	**.06**	.01	.00	-.02	.00	.06	.00	.02	.00	.291	.709
Recognition of Pictures (Gv)	.62	.39	**.22**	**.05**	-.00	.00	.14	.02	.09	.01	-.13	.02	.481	.519
Matching Letter-Like Form (Gv)	.55	.30	**.21**	**.05**	-.05	.00	.12	.02	.01	.00	.13	.02	.386	.614
Early Number Concepts (Gc/Gf)	.61	.37	.17	.03	.02	.00	.16	.03	-.02	.00	.11	.01	.439	.561
Picture Similarities (Gf)	.53	.28	.17	.03	.15	.02	.06	.00	-.02	.00	-.07	.00	.339	.661
Naming Vocabulary (Gc)	.63	.40	.06	.00	**.41**	**.17**	-.08	.01	-.01	.00	.01	.00	.582	.418
Word Definitions (Gc)	.63	.40	-.10	.01	**.40**	**.16**	.07	.00	.03	.00	.02	.00	.575	.425
Verbal Similarities (Gc)	.67	.45	.01	.00	**.36**	**.13**	.03	.00	.01	.00	.04	.00	.578	.422
Verbal Comprehension (Gc)	.61	.38	.06	.00	**.26**	**.07**	.06	.00	-.01	.00	.03	.00	.455	.545
Matrices (Gf)	.64	.40	-.05	.00	.02	.00	**.42**	**.18**	.03	.00	.00	.00	.585	.415
Sequential and Quantitative Reasoning (Gf)	.69	.47	.07	.01	.05	.00	**.38**	**.14**	-.06	.00	-.01	.000	.626	.374
Recall of Objects-Immediate (Glr)	.76	.58	.02	.00	.04	.00	.02	.00	**.46**	**.21**	-.05	.00	.793	.207
Recall of Objects-Delayed (Glr)	.64	.40	.03	.00	-.02	.00	-.03	.00	**.44**	**.19**	.06	.00	.601	.399
Digits Backward (Gwm)	.51	.26	.05	.00	-.03	.00	.11	.01	.01	.00	**.49**	**.24**	.510	.490
Digits Forward (Gwm)	.44	.19	.05	.00	.15	.02	-.10	.01	-.02	.00	**.47**	**.22**	.446	.554
Recall of Sequential Order (Gwm)	.60	.36	-.01	.00	.09	.01	.11	.01	.05	.00	**.39**	**.15**	.526	.474
Explained Common Variance (ECV)		.715		.070		.059		.046		.042		.067	.508	.492
Explained Total Variance (ETV)		.363		.036		.030		.023		.022		.034		
ω_H/ω_{HS}		.872		.146		.198		.200		.240		.314		

Note. *b* = factor loading, S^2= variance explained, h^2= communality, u^2= uniqueness, ω_H = Omega hierarchical (*g*), ω_{HS} = Omega hierarchical subscale (group factors).