Validity of the CHC Factors in the WJ III COG and NEPSY

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Participants: These data were drawn from a archival sample of 472 case studies that were conducted by students in the School Neuropsychology Post-Graduate Certification Program (2001 – 2008). There were 329 males (69.7%) and 140 females (29.7%) and 3 not identified (.6%) in the sample. There were 104 Caucasians (22.0%), 12 African-Americans (2.5%), 36 Hispanic/Latino Americans (7.6%), 3 Asian-Americans (.6%), 7 Bi-racial (1.4%), 3 Foreign National (.6%), and 310 with ethnicity not identified (65.7%). The range of the ages of the sample was 3.4 to 19.8.

Exploratory Factor Analysis: Variance & Variables

Factor	Eigenvalue	% of variance	Cumulative Variance
1	12.05	33.47%	33.47%
2	9.73	27.02%	60.49%
3	8.57	23.82%	84.31%
4	5.65	15.69 %	100.00%

Discussion & Implications

- Exploratory factor analysis revealed a four-factor model
- Factors 1 and 4 are clearly defined by verbal and non-verbal components.
- Factors 2 and 3 are not as clearly defined and appear to be assessing neurocognitively complex constructs
- Factor 1 appears to be composed of tasks representing Verbal Ability
- Factors 2 and 3 appear to be measuring a mixture of tasks involved with memory, attention, and executive functions
- Factor 4 appears to be composed of visual spatial abilities
- Within the CHC theory, some broader constructs, or abilities, are supported by data; however, narrower abilities are not supported within these tasks in a clinical population
- There is some evidence that subjects with a clinical diagnosis perform differently than the normative population on WJ III COG and NEPSY tasks

Descriptive Statistics & Factor Loadings

Subtest	N	Mean	Standard Deviation	Factor 1	Factor 2	Factor 3	Factor 4
NEPSY Subtests							
Design Copy	205	9.70	3.69	-.38	.11	**,61**	**.68**
Finger Taping	218	8.39	3.29	**-.88**	-.04	-.01	-.47
Hand Positions	216	7.68	3.24	-.47	-.42	-.08	**.77**
Visual Motor Precision	215	7.73	7.30	.03	-.18	**.73**	**.66**
Auditory Attention	165	9.00	2.82	-.15	.15	**.97**	-.12
Response Set	171	7.94	2.99	.09	.49	**.84**	-.23
Visual Attention	228	9.17	3.26	.08	.45	**-.83**	.32
Arrows	218	8.90	3.33	-.16	-.26	**-.68**	**-.66**
Phonological Processing	201	8.25	3.13	**.93**	-.04	.17	-.33
Speeded Naming	192	7.29	3.57	.49	-.05	**.80**	-.34
Comprehension of Instructions	164	8.16	3.53	.24	**.55**	.13	**-.79**
Memory for Faces	194	10.38	3.51	.28	.83	-.40	.28
Memory for Names	193	7.66	3.37	**.89**	-.11	.11	-.44
Narrative Memory	190	7.95	3.57	**.99**	.11	-.09	-.07
Tower	203	9.22	3.10	**-.59**	-.21	-.20	**-.75**
WJ-III COG Subtests							
Auditory Attention	268	96.40	12.96	-.33	**.72**	**-.61**	.06
Pair Cancellation	268	93.06	12.56	-.01	**.83**	.49	.25
Auditory Working Memory	280	95.38	14.78	.18	**.96**	.07	-.20
Spatial Relations	278	97.62	11.45	-.05	.34	-.10	**.93**
Sound Blending	291	105.20	15.16	**.91**	.22	-.30	-.20
Incomplete Words	262	99.63	14.41	.45	-.03	**-.77**	-.46
Numbers Reversed	287	90.05	14.99	.08	.25	**.84**	.48
Memory for Words	219	89.93	14.98	.48	**.87**	.09	-.06
Picture Recognition	239	100.34	11.88	.14	-.32	**.94**	.03
Visual Auditory Learning	266	88.23	18.05	**.71**	.44	**.53**	.15
Retrieval Fluency	255	88.85	15.71	.48	**.59**	-.39	**-.52**
Verbal Comprehension	271	95.98	14.36	**.97**	-.09	.22	.09
General Information	226	91.42	17.28	**.89**	-.22	.35	.19
Concept Formation	278	95.41	16.04	.31	.45	**.79**	.28
Analysis Synthesis	223	97.39	15.87	**-.52**	**.82**	.23	.11
Planning	115	101.05	16.25	**-.69**	**.58**	-.40	-.14
Visual Matching	276	83.84	18.42	-.04	**.99**	-.09	.13
Decision Speed	265	94.38	16.74	-.10	**.97**	.22	.11
Rapid Picture Naming	238	84.65	14.93	**.82**	.42	-.11	-.38
Factor Labels:				Verbal	Mixture of NP Tasks (?)	Mixture of NP Tasks (?)	Non-Verbal/ Visual Spatial