## Comparing the WJIII-COG, NEPSY, and D-KEFS Scores of Attention in a Mixed Clinical Group Sample Jordana Mortimer, B.S., Erin Avirett, B.A., Denise Maricle, Ph.D. & Daniel C. Miller, Ph.D., Elizabeth Smith, Ed.S., Valerie Weed, B.S. EE Texas Woman's University, Denton, Texas

These data were drawn from a archival sample of 316 case studies that were conducted by students in the School Neuropsychology Post-Graduate Certification Program (2001 - 2007). There were 216 males (68%) and 98 females (31%) and 2 not identified (.6%) in the sample. There were 72 Caucasians (22.8%), 8 African-Americans (2.5%), 24 Hispanic/Latino Americans (7.6%), 2 Asian-Americans (.6%), 3 biracial (.9%), 1 foreign-national (.3%), and 206 with ethnicity not identified (65.2%). The range of the ages of the sample was 3.4 to 18.7 years.

School Neuropsychology Conceptual Model (Miller, 2007)			WJIII COG Measures					1	NEPSY	Measures	S	<b>D-KEFS Measures</b>			
Selective/Focused Attention	N	Mean (SD)													
<ul> <li>WJIII-COG Auditory Attention</li> </ul>	185 9	96.05 (12.34)	<pre></pre>		WJAA	WJPC	WJAWM	AARS	AA	RS	VA	TMT(4)	VF(3)	<i>C</i> W(4)	DF(3)
<ul> <li>NEPSY Auditory Attention and Response Set Total</li> </ul>	160	8.89 ( 6.44)													
- Auditory Attention	119	9.27 (2.75)		WJAA		.22	.35	02	.21	.17	.18	.32	.19	02	.05
- Response Set	122	7.96 (2.97)	C C C			(<.001)	(<.001)	(.85)	(.05)	(.11)	(.07)	(.002)	(.10)	(.87)	(.70)
• NEPSY Visual Attention	168	9.21 ( 3.27)	Õ	WJPC			.23	.22	.29	.44	.47	.35	.08	.25	.38
Sustained Attention	100 0	02 00 (11 71)	Se				(.003)	(.03)	(.005)	(<.001)	(<.01)	(.001)	(.50)	(.03)	(.01)
• NEPSV Auditory Attention and Dechance Set Total	190 9	92.99 (11.71) 8 89 ( 6 44)	asu												
- Auditory Attention	119	927(275)	lre	WJAWM				.25	.34	.40	.21	.22	.39	.45	.23
- Response Set	122	796 (297)	Ň					(.01)	(.001)	(<.001)	(.03)	(.04)	(.001)	(<.001)	(.06)
Shifting Attention		/./0 ( 2.// )		AARS					35	39	17	37	18	62	46
<ul> <li>NEPSY Auditory Attention and Response Set Total</li> </ul>	160	8.89 ( 6.44)							(<.001)	(<.001)	(.03)	(.05)	(.39)	(.001)	(.03)
- Auditory Attention	119	9.27 ( 2.75)													
- Response Set	122	7.96 (2.97)	PS							.62	.20	.17	.12	.50	.29
· D-KEFS										(<.001)	(.03)	(.39)	(.63)	(.01)	(.21)
<ul> <li>Trail Making Test (Condition 4 - Switching)</li> </ul>	129	6.96 (4.24)	Se	RS							.35	.37	.12	.74	.53
- Verbal Fluency (Condition 3 - Switching)	114	7.89 (3.45)	asc								(<.001)	(.05)	(.60)	(<.01)	(.01)
- Color-Word Interference (Condition 4 - Switching)	106	7.63 (3.12)	Ire												
- Design Fluency (Condition 3 - Switching)	100	8.27 (3.05)	N N	VA								.46	24	.31	.31
NATTER COG Auditory Marking Margary	102 0	05 51 (14 83)										(.009)	(.24)	(.10)	(01.5)
VIIII-COG AUDITORY WORKING MEMORY	195 9	99.91 (14.83)		TMT(4)									.20	.27	.33
													(.04)	(.007)	(.001)
Exploratory Factor Analyses														20	22
			≥⊽	VF(3)										.20	.32
Factor Analysis Variables: All variables except NEPSY	-AA & NEPSY-	-RS												(.07)	(.002)
				<i>C</i> W(4)											.39
<u>Factor</u> <u>Eigenvalue</u> <u>% of variance</u>	<u>Cumulative V</u>	<u>ariance</u>	N S												(<.001)
1 3.97 44.15%	44.15% 44.15%			DF(3)											
2 1.79 19.99%	64.14	%													
3 1.24 13.88%	13.88% 78.02%														
4 1.07 11.99%	11.99% 90.02%														
Factor Loadinas:															
Factor 1 Factor 2	Factor 3	Factor 4		Implicat	ions:										
W.TTTT-COG Scores				• WJII	I Auditory	Working M	Nemory and	the D-KE	FS Trail	Making	Test (Cor	ndition 4 -	Switching	) are the	
-Auditory Attention 37 64	- 41	47		two m	easures th	at are mos <sup>-</sup>	t highly corr	related wi	ith all of	the oth	er measu	res.			
- Pain Cancellation	30			<ul> <li>Many of the WJIII COG, NEPSY, and D-KEFS measures that reportedly measure attention are intercorrelated: however, they are neurocoanitively complex. Many of these tests are not factorially pure</li> </ul>											
$-1 \text{ uncention} \qquad .57 \qquad05$	.50	.09											re.		
-Auditory working memory .01 .14	25	.40		in that	t they real	ire multin	e component	ts of atte	ention (e	n celect	tive cust	ained and	0 1101 / 40		
INEPSY Scores	1 1	AE		chifti	na attentio	n)	e componem			g., seree		uncu, unu			
- AUG. ATTENTION/RESPONSE SET .80 .1/	11	40	• The factor analysis indicated that all of the tasts are measuring come concert of attention												
-Visual Attention .6766	.11	.21			actor analys	I to at a de l	a mar all of	THE LEST	S UPE ME	labeled	some yen	erur uspec	and another		
D-KEFS Scores			riowever, several lesis do load on a jacior mai could be labeled selective allention and another set of								er set ot				
- Trail Making Test (4) .8802	01	13	The formula factor that could be labeled shifting attention.												
-Verbal Fluency (3) .25 .62	.61	34		• The tourth factor appears to be made up of tasks that measure either divided attention or working											
-Design Fluency (3) .72 .33	.53	.27		memory.											
$Colon M and Theorem and (1) \qquad 61 \qquad 07$		•													
-Color word interference $(4)$ .0407	51	50													

<u>Factor</u>	<u>Eigenvalue</u>	<u>% of variance</u>
1	3.97	44.15%
2	1.79	19.99%
3	1.24	13.88%
4	1.07	11.99%

School Neuropsychology Conceptual Model (Miller, 2007)					WJIII COG Measures					NEPSY Measures				D-KEFS Measures			
Selective/Focused Attention			N	Mean (SD)													
<ul> <li>WJIII-COG Auditory Attention</li> </ul>			185	96.05 (12.34)	\$		WJAA	WJPC	WJAWM	AARS	AA	RS	VA	TMT(4)	VF(3)	CW(4)	DF(3)
• NEPSY Auditory Attention and Res	sponse Set To <sup>.</sup>	tal	160	8.89 ( 6.44)	L C I												
- Auditory Attention	•		119	9.27 ( 2.75)		WJAA		.22	.35	02	.21	.17	.18	.32	.19	02	.05
- Response Set			122	7.96 (2.97)	0			(<.001)	(<.001)	(.85)	(.05)	(.11)	(.07)	(.002)	(.10)	(.87)	(.70)
<ul> <li>NEPSY Visual Attention</li> </ul>			168	9.21 ( 3.27)	OG G								A 🖛				
Sustained Attention					3	WJPC			.23	.22	.29	.44	.4/	.35	.08	.25	.38
<ul> <li>WJIII-COG Pair Cancellation</li> </ul>			190	92.99 (11.71)	ea				(.003)	(.03)	(.005)	(<.001)	(<.01)	(.001)	(.50)	(.03)	(.01)
<ul> <li>NEPSY Auditory Attention and Res</li> </ul>	sponse Set To <sup>.</sup>	tal	160	8.89 ( 6.44)	Sur	W.TAWM				25	34	40	21	22	39	45	23
<ul> <li>Auditory Attention</li> </ul>			119	9.27 ( 2.75)	, es					(01)	( 001)	(< 001)	(03)	(04)	(001)	(< 001)	(06)
- Response Set			122	7.96 ( 2.97)						()	()	(*.002)	()		()	(*.002)	()
Shifting Attention						AARS					.35	.39	.17	.37	.18	.62	.46
<ul> <li>NEPSY Auditory Attention and Res</li> </ul>	sponse Set To <sup>.</sup>	tal	160	8.89 ( 6.44) 9.27 ( 2.75)	ZE						(<.001)	(<.001)	) (.03)	(.05)	(.39)	(.001)	(.03)
<ul> <li>Auditory Attention</li> </ul>			119									()					
- Response Set			122	7.96 (2.97)	So	AA						.02	.20	.1/	.12	.50	.29
• D-KEFS					×								(.03)	(.39)	(.03)	(.01)	(.21)
- Trail Making Test (Condition 4 - S	Switching)		129	6.96 (4.24)	Se	RS							.35	.37	.12	.74	.53
- Verbal Fluency (Condition 3 - Swit	tching)	. 、	114	7.89 (3.45)	asu								(<.001)	(.05)	(.60)	(<.01)	(.01)
- Color-Word Interference (Condition	10n 4 - Switch	ung)	106	7.63 (3.12)	Ire											24	24
- Design Fluency (Condition 3 - Swith	tching)		100	8.27 (3.05)	N N	VA								.46	24	.31	.31
Divided Attention			102	0551(1402)										(.009)	(.24)	(.10)	(.15)
• WJIII-COG AUditory Working Mei	mory		193	99.91 (14.83)		TMT(4)									.20	.27	.33
Exploratory Factor Analyses															(.04)	(.007)	(.001)
					≥ ⊂	VF(3)										.20	.32 (.002)
<u>ractor Analysis Variables</u> : All	variadies ex	CEPT INEPSY	-AA & INEPS	99-K2	asur	CW(4)											39
Factor Figenvalue	% of vari	ance	Cumulative	» Variance	S. Se												(<.001)
$\frac{1}{2} \frac{2}{3} \frac{2}$	<u>70 01 Vαι 1</u> ΔΔ 1	<u>5%</u>	ΔΔ	15%													
1   3.27   1.70	10 0	J 70 D 9/		1 / 0/		DF(3)											
$\begin{array}{c} 1.77 \\ 2 \\ 1.24 \end{array}$	19.9		04.														
3 1.24	13.8	8%	/8.	02%													
4 1.07	11.9	9%	90.	02%													
Factor Loadings:							•										
	<u>Factor 1</u>	<u>Factor 2</u>	<u>Factor 3</u>	Factor 4		Implicat	rions:										
WJIII-COG Scores						• WJIJ	II Auditory	/Working I	Memory and	the D-KE	:FS Trai	I Making	Test (Cor	ndition 4 -	Switching	g) are the	
-Auditory Attention	.37	.64	41	.47		two measures that are most highly correlated with all of the other measures.											
- Pair Cancellation	.57	65	.30	.09		<ul> <li>Many of the WJIII COG, NEPSY, and D-KEFS measures that reportedly measure attention are intercorrelated; however, they are neurocognitively complex. Many of these tests are not factorially pure</li> </ul>											
-Auditory Working Memory	81	14	- 25	40											re		
NEDSV Sconec	.01	• 4 1				in tha	t they real	jire multipl	e component	ts of atte	ntion (e	a. select	ive sust	ained and			
Aud Attention /Dechange Cot	00	17	11	15		shifti	na attentic	n)									
- Aud. Alternion/Response Set	.00	.1/	11	49		<ul> <li>The factor analysis indicated that all of the tests are measuring some general aspect of attention</li> </ul>											
-VISUAL ATTENTION	.07	00	.11	.21			von covonc	l tosta da l	land on a fac	ton that	suld be	labeled	some yen	ettention	and anoth	non.	
D-KEFS Scores						Flowe	ver, sever		oud on a fac				SEIECTIVE	urrennon	and anoth	ier sei ui	
- Trail Making Test (4)	.88	02	01	13		<ul> <li>The fourth factor appears to be made up of tasks that measure either divided attention or working</li> </ul>											
-Verbal Fluency (3)	.25	.62	.61	34													
-Design Fluency (3)	.72	.33	.53	.27		memo	ry.										
-Color Word Interference (4)	.64	07	51	50													
	General	Selective	Shifting	Weak Divided													
tactor Labels:	Attention	Attention	Attention	Attention or V	Vorking Mer	nory											