

1 **Supplemental Table 1.** Selected peer-reviewed publications using the Psychology Experiment Building Language (PEBL) software.
 2 Berg/Wisconsin Card Sorting Test (BCST); Delayed Match to Sample (DMS); Implicit Association Task (IAT); Iowa Gambling Task
 3 (IGT); Psychomotor Vigilance Task (PVT); Situation Awareness Task (SAT); Time-Wall (TW); Tower of London (ToL); and Trail
 4 Making Test (TMT).
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6	7 <u>Topic</u>	<u>1st Author</u>	<u>Year</u>	<u>Citation</u>	<u>PEBL Test(s)</u>
8	Description of PEBL	Mueller	2010	<i>International J of Machine Consciousness</i> 2 : 273-288	TMT, IGT, 9 many others
10	Pursuit rotor in children	Piper	2010	<i>J Neuroscience Methods</i> 195 :88-91	Pursuit Rotor
11	Alcohol & decision making	Lyvers	2010	<i>Addictive Behaviors</i> 35 : 1021-1028	BCST
12	Anxiety & decision making	de Visser	2010	<i>Neuropsychologia</i> 48 :1598-1606	BCST
13	Caffeine & decision making	Aggarwal	2011	<i>British J Surgery</i> 98 : 1666-1672	Stroop, BCST, 14 PVT
15	Behavioral genetics of glutamate	Ness	2011	<i>Neuropharmacology</i> 61 :950-956	IGT
16	Heavy drinkers & decision making	Gullo	2011	<i>Drug & Alcohol Dependence</i> 117 :204-210	Digit span
17	Behavioral genetics & amphetamine	Wardle	2012	<i>Genes, Brain & Behavior</i> 12 :13-20	BCST, N-back
18	Schizotypy & cognition	Cappe	2012	<i>Psychiatry Research</i> 200 :652-659	BCST
19	Brain damage & strategy updating	Danckert	2012	<i>Cerebral Cortex</i> 22 :2745-2760	BCST
20	Multiple sclerosis and cognition	Kalinowska	2012	<i>J of Neurological Sciences</i> 321 : 43-48	reaction-time
21	Executive function & lifespan	Piper	2012	<i>Behavior Research Methods</i> 44 : 110-123	BCST, TMT, 22 ToL, TW
23	Aging & executive function	Zebrowitz	2013	<i>Psychology & Aging</i> 28 : 202-212	BCST
24	Transcranial Infrared Laser	Barrett	2013	<i>Neuroscience</i> 230 : 13-23	PVT, DMS

25	Obsessive Compulsive Disorder	Tumkaya	2013	<i>Psychiatry Research</i> 209 : 579-588	SAT
26	Wilson's disease & decisions	Ma	2013	<i>J Clin Exp Neuropsychol</i> 35 : 472-479	BCST
27	Alcohol consumption & decisions	Bowley	2013	<i>Int J Psychophysiology</i> 89 : 342-348	IAT
28	Essential tremor & cognition	Bhalsing	2014	<i>Eur J Neurology</i> 21 ; 874-883	BCST
29	Tourette's & motor skill	Brandt	2014	<i>PLoS One</i> 9 : e98417	Pursuit Rotor
30	Executive function & Parkinson's	Cohen	2014	<i>J Parkinson's Dis</i> 4 : 111-122	BCST
31	Hoarders and cognition	Raines	2014	<i>J Affect Dis</i> 166 : 30-35	CPT
32	Sex differences	Evans	2015	<i>Brain & Cogn</i> 93 : 42-53	IGT
33	Decision making & alcohol	Lyvers	2015	<i>Addict Behav</i> 41 : 129-135	IGT

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35 * For an updated list, see: http://pebl.sourceforge.net/wiki/index.php/Publications_citing_PEBL

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37 **Supplemental Table 2.** Comparison of the antecedents to measures contained in the Psychology Experiment Building Language
 38 (PEBL) battery including the originator(s), year of key publication, construct measured, and title for PEBL version. Berg Card Sorting
 39 Test (BCST); Executive Function (EF); Iowa Gambling Task (IGT); Mental Rotation Test (MRT); Tower of London (ToL); Test
 40 Attentional Vigilance (TOAV); Trail Making Test (TMT)

42	<u>Test</u>	<u>Originator</u>	<u>Year</u>	<u>Construct</u>	<u>PEBL Version</u>
43	Digit Span	Alfred Binet	1905	working memory	Digit Span
44	Rotary Pursuit	Robert Ammons	1947	procedural learning	Pursuit Rotor
45	Wisconsin Card Sorting Test	David Grant; Esta Berg	1948	EF: set shifting	BCST
46	TMT	Ralph Reitan	1955	EF: divided attention	TMT
47	MRT	Roger Shepard	1978	EF: decision making	MRT
48	ToL	Tim Shallice	1983	EF: planning	ToL
49	Test of Variables of Attention	Lawrence Greenberg	1993	sustained attention	TOAV
50	IGT	Antoine Bechara	1994	decision making	IGT

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53 **Supplemental Table 3.** Mean performance and correlation between test sessions on Psychology Experiment Building Language
 54 measures. The number of participants is listed in () after each test; ^rreported previously⁴⁷; Coded according to the ^OOringal Berg
 55 sorting rules or the ^HHeaton rules; ^At-test $P \leq .01$ versus test; ^Bcorrelation $P < .01$.

	Test		Retest		%	Cohen's	Correlation		
	<u>Mean</u>	<u>SEM</u>	<u>Mean</u>	<u>SEM</u>	<u>Difference</u>	<u>d</u>	<u>Pearson r</u>	<u>rho</u>	
60	Rotary Pursuit (76)								
61	Total time (sec)	37.9	1.1	43.7 ^A	0.9	+15.4	.60	.86 ^B	.81 ^B
62	Error (pixels)	31.7	3.3	24.7	2.7	-22.0	.24	.59 ^B	.77 ^B
63	Trail Making Test (78)								
64	Time A (sec) ^f	16.5	0.3	15.4 ^A	0.3	-6.6	.07	.74 ^B	.71 ^B
65	Time B (sec) ^f	22.1	0.5	19.3 ^A	0.5	-12.8	.13	.61 ^B	.56 ^B
66	Ratio (B/A)	1.35	0.03	1.25 ^A	0.02	-7.2	.07	.39 ^B	.35 ^B
67	Digit Span Forward (72)	12.2	0.48	13.0	0.44	+6.6	.20	.63 ^B	.62 ^B
68	Test of Attentional Vigilance (68)								
69	Response Time	385.4	4.8	395.2	7.7	+2.5	.25	.79 ^B	.72 ^B
70	SD of Response Time	109.8	5.3	98.9 ^A	6.7	-9.9	.25	.87 ^B	.69 ^B
71	Omission Errors	8.1	1.9	5.7	1.4	-30.2	.16	.88 ^B	.43 ^B
72	Commission Errors	16.9	1.1	13.8	1.3	-18.3	.34	.65 ^B	.66 ^B
73	Tower of London (66)								
74	Moves	8.9	0.2	9.0	0.3	+1.3	.09	.15	.34 ^B
75	Time (sec)	16.8	0.5	14.1 ^A	0.5	-16.0	.62	.36 ^B	.48 ^B
76	Iowa Gambling Task (68)								
77	Response pattern	8.8	2.9	18.2 ^A	3.5	+106.3	.39	.41 ^B	.22
78	Money	1944.8	85.0	2162.1	116.0	+11.2	.31	.10	-.01
79	Berg Card Sorting Test (73 ^O /60 ^H)								
80	Categories Completed ^O	3.1	0.2	3.6 ^A	0.2	+16.0	.39	.51 ^B	.47 ^B
81	Errors (%) ^O	30.0	1.7	22.0 ^A	1.6	-26.7	.55	.69 ^B	.68 ^B
82	Perseverative responses ^O (%)	30.7	0.9	31.1	1.0	-1.3	.05	.03	.00
83	Perseverative errors ^O (%)	14.9	0.8	12.2 ^A	0.9	-18.2	.41	.45 ^B	.35 ^B

