

Online Supplementary Materials

Table A

Extreme group analysis comparing HMM and LMM based on MMI scores.

Variable	Sample	HMM			LMM			Welch <i>t</i> -test			Cohens <i>d</i>	95% CI	
		n	mean	SEM	n	mean	SEM	df	t	p		low	high
MMI	MTurk	80	5.73	0.10	81	1.32	0.05	111.6	38.78	<.00	6.12	5.26	6.97
	Prolific	76	4.62	0.11	76	1.29	0.05	101.1	29.15	<.00	4.73	4.00	5.45
	Student	74	4.31	0.09	75	1.38	0.05	117.5	28.13	<.00	4.62	3.94	5.29
MH	MTurk	80	112.6	14.1	81	81.27	4.70	96.21	2.10	0.04	0.33	0.02	0.65
	Prolific	76	121.5	11.0	76	83.52	5.26	107.3	3.11	0.00	0.50	0.18	0.83
	Student	74	117.4	8.13	75	79.48	4.49	113.8	4.08	<.00	0.67	0.34	1.00
MF	MTurk	80	2.96	0.07	81	2.29	0.06	153.8	7.45	<.00	1.18	0.84	1.51
	Prolific	76	2.72	0.05	76	2.49	0.06	148.5	2.97	0.00	0.48	0.16	0.80
	Student	74	2.88	0.05	75	2.47	0.05	146.6	6.07	<.00	0.99	0.65	1.33
Attention Problems	MTurk	80	11.34	0.71	81	6.67	0.53	146.8	5.27	<.00	0.83	0.51	1.15
	Prolific	76	8.22	0.53	76	7.03	0.52	149.9	1.62	0.11	0.26	-0.06	0.58
	Student	74	10.11	0.50	75	8.43	0.54	146.4	2.29	0.02	0.38	0.05	0.70
Motor Impulsiveness	MTurk	80	9.14	0.54	81	4.04	0.40	146.0	7.66	<.00	1.21	0.87	1.55
	Prolific	76	6.12	0.49	76	4.95	0.45	148.8	1.75	0.08	0.28	-0.04	0.60
	Student	74	8.01	0.47	75	6.47	0.42	145.1	2.47	0.02	0.41	0.08	0.73
Sensation Seeking	MTurk	80	4.45	0.28	81	1.68	0.20	144.3	8.15	<.00	1.29	0.94	1.63
	Prolific	76	2.67	0.23	76	1.84	0.20	148.5	2.72	0.01	0.44	0.12	0.76
	Student	74	3.92	0.22	75	2.71	0.24	146.5	3.70	<.00	0.61	0.28	0.93
GradCPT : <i>d'</i>	MTurk	80	2.64	0.14	81	3.68	0.11	148.9	-6.03	<.00	-0.95	-1.28	-0.62
	Prolific	76	3.06	0.12	76	3.45	0.11	148.8	-2.49	0.01	-0.40	-0.73	-0.08
	Student	74	3.13	0.11	75	3.40	0.11	146.9	-1.70	0.09	-0.28	-0.60	0.05

Note. 'Variable' indicates by which variable HMMs and LMMs were compared. Computed [lower quartiles; higher quartiles] based on MMI were [1.92 ; 4.26] for MTurk, [1.82 ; 3.48] for Prolific and [1.96 ; 3.43] for Student. *df*, *t*- and *p*-values come t-tests. Confidence intervals were set at 95%. MMI = Media Multitasking Index; HMM = High Media Multitaskers, participants having an MMI superior than the higher quartile of their sample; LMM = Low Media Multitaskers, participants having an MMI inferior than the lower quartile of their sample; MH = Media Hours from the adapted Media Use Questionnaire, computed as the sum of all self-reported hours per week across the nine media; MF = Media Frequency, computed as the average of the frequencies of usage across the nine media; GradCPT = Gradual-onset Continuous Performance Task.

Table B

Extreme group analysis comparing F-HMM and F-LMM based on F-MMI scores.

Variable	Sample	F-HMM		F-LMM		Welch <i>t</i> -test			Cohens <i>d</i>	95% CI	
		n	mean SEM	n	mean SEM	df	t	p		low	high
F-MMI	MTurk	80	3.18 0.04	81	1.22 0.03	155.6	37.47	< .001	5.91	5.18	6.63
	Prolific	76	2.89 0.04	76	1.26 0.04	148.7	29.10	< .001	4.72	4.10	5.34
	Student	74	2.91 0.03	75	1.39 0.04	146.9	31.20	< .001	5.11	4.44	5.78
MH	MTurk	80	117.5 12.1	81	81.60 7.76	134.4	2.49	0.01	0.39	0.08	0.71
	Prolific	76	126.9 8.16	76	84.05 6.11	138.9	4.20	< .001	0.68	0.35	1.01
	Student	74	112.3 7.50	75	80.54 4.18	114.5	3.70	< .001	0.61	0.28	0.94
MF	MTurk	80	3.15 0.05	81	2.20 0.07	145.9	11.25	< .001	1.77	1.40	2.14
	Prolific	76	2.82 0.05	76	2.41 0.06	148.9	5.33	< .001	0.87	0.53	1.20
	Student	74	2.91 0.04	75	2.44 0.05	143.2	7.45	< .001	1.22	0.87	1.57
Attention Problems	MTurk	80	11.23 0.71	81	6.36 0.54	147.9	5.44	< .001	0.86	0.53	1.18
	Prolific	76	8.58 0.54	76	7.72 0.53	149.9	1.13	0.26	0.18	-0.14	0.50
	Student	74	9.74 0.48	75	8.27 0.52	146.3	2.08	0.04	0.34	0.02	0.66
Motor Impulsiveness	MTurk	80	8.75 0.56	81	3.91 0.39	142.2	7.07	< .001	1.12	0.78	1.45
	Prolific	76	6.40 0.50	76	5.65 0.48	149.7	1.07	0.28	0.17	-0.15	0.49
	Student	74	8.10 0.48	75	6.43 0.42	144.1	2.60	0.01	0.43	0.10	0.75
Sensation Seeking	MTurk	80	4.06 0.31	81	1.69 0.20	134.5	6.39	< .001	1.01	0.67	1.34
	Prolific	76	2.43 0.24	76	2.18 0.21	146.3	0.79	0.43	0.13	-0.19	0.45
	Student	74	3.78 0.23	75	2.77 0.22	146.0	3.17	0.00	0.52	0.19	0.85
GradCPT : <i>d'</i>	MTurk	80	2.85 0.14	81	3.45 0.11	154.3	-3.35	0.00	-0.53	-0.84	-0.21
	Prolific	76	3.33 0.11	76	3.41 0.10	149.7	-0.59	0.56	-0.10	-0.41	0.22
	Student	74	3.05 0.11	75	3.28 0.12	146.4	-1.42	0.16	-0.23	-0.55	0.09

Note. 'Variable' indicates by which variable F-HMM and F-LMMs were compared. Computed [lower quartiles ; higher quartiles] based on F-MMI were [1.67 ; 2.67] for MTurk, [1.67 ; 2.56] for Prolific and [1.78 ; 2.56] for Student. df, t- and *p*-values come from t-tests.

Confidence intervals were set at 95%. F-MMI = Frequency-based Media Multitasking Index; F-HMM = Frequency-based High Media Multitaskers, participants having an F-MMI superior than the higher quartile of their sample; F-LMM = Frequency-based Low Media Multitaskers, participants having an MMI inferior than the lower quartile of their sample; MH = Media Hours from the adapted Media Use Questionnaire, computed as the sum of all self-reported hours per week across the nine media; MF = Media Frequency, computed as the average of the frequencies of usage across the nine media; GradCPT = Gradual-onset Continuous Performance Task.

Table C

Type-I ANOVA's eta-squared ran on the collated sample removing participants with an MMI greater than or equal to 6 (N = 879).

Dependent variables	Sample	Model 1		Model 2	
		MMI	F-MMI	F-MMI	MMI
Attention problems	0.02	0.03	0	0.02	0.01
Motor impulsiveness	0.04	0.03	0.01	0.03	0.01
Sensation seeking	0.05	0.04	0	0.02	0.02
GradCPT d'	0	0.03	0	0	0.03

Note. Model 1 : $Y \sim \text{Sample} + \text{MMI} + \text{F-MMI}$. Model 2 : $Y \sim \text{Sample} + \text{F-MMI} + \text{MMI}$. First column shows the dependent variables (DV). Since Sample is placed in first position in both hierarchical models, we reported one common column for Sample effect. The other columns show the explained variance of the specified DVs for Model 1 and Model 2. MMI = Media Multitasking Index; F-MMI = Frequency-based Media Multitasking Index; GradCPT = Gradual-onset Continuous Performance Task.

Table D
Descriptive statistics of each variable of interest by Sample of Origin.

Variable	Sample	n	Mean	SD	SEM	Median	Q1	Q3
Attention problems	MTurk	322	8.38	5.60	0.31	8	4	13
	Prolific	304	8.13	4.71	0.27	8	5	11.2
	Student	298	9.15	4.37	0.25	9	6	12
Motor impulsiveness	MTurk	322	6.09	4.39	0.25	5	3	9.75
	Prolific	304	5.89	4.08	0.23	5	3	9
	Student	298	7.22	3.76	0.22	7	4	10
Sensation seeking	MTurk	322	2.58	2.35	0.13	2	0	4
	Prolific	304	2.34	1.93	0.11	2	1	4
	Student	298	3.19	2.05	0.12	3	2	5
GradCPT: d'	MTurk	322	3.32	1.11	0.06	3.49	2.74	4.07
	Prolific	304	3.40	0.91	0.05	3.38	2.85	4.07
	Student	298	3.32	0.94	0.06	3.39	2.71	4.02

Figure A
Power Analysis

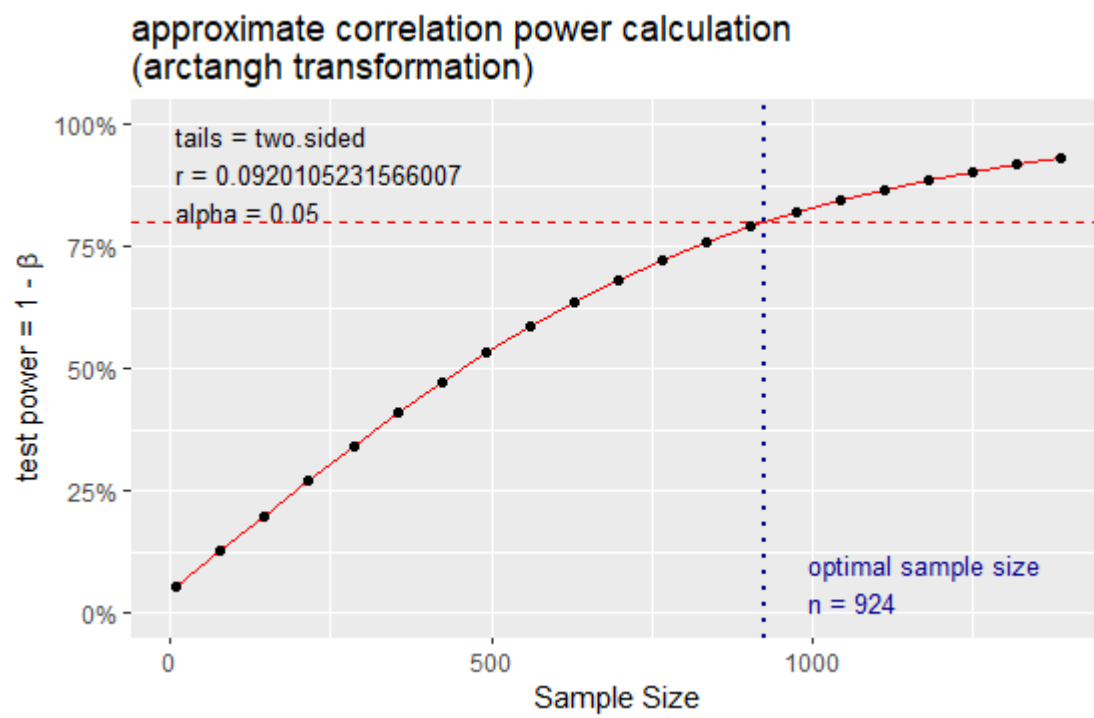


Figure A. Power analysis for our sample size (N = 924) with alpha = 5% and power = 80%.

Asymmetry assumption

Whether using an asymmetric questionnaire impacts the measurement of media multitasking is addressed using results from the Bavelier lab through an unpublished data set. Participants went through the original Ophir MUQ – symmetric questionnaire, 11 activities were assessed in this order: reading (including homework); watching TV; watching computer-based videos; playing video games; listening to music; listening to non-music audio (podcasts, news, etc.); emailing; texting or instant messaging; talking on the phone or video chatting; web surfing; using other computer-based applications. Using data from 1566 participants in the lab, we computed 2 different MMI indices:

1) "mmi full" or symmetric - computing m_i via the media of interest i as a primary and as a secondary media (e.g., m_{reading} will include both reading while listening to music and listening to music while reading),

2) "mmi madore" or asymmetric (as done in this work) - computing m_i via the same mapping than what was used in Madore et al. (2020) that is, extracting only one half of the symmetric questionnaire without items being repeated (e.g., m_{tv} will include only the item presented first between watching TV while watching computer-based videos; while playing video games; while listening to music; while listening to non-music audio (podcasts, news, etc.); while emailing; while texting or instant messaging; while talking on the phone or video chatting; while web surfing; while using other computer-based applications; and then those from reading print media while watching TV).

The Figure B below show the correlation between "mmi full" and "mmi madore" : $r_{\text{spearman}} = 0.961$. This high correlation allowed us to confidently use the asymmetric adapted MUQ (only asking half of the total number of media multitasking items : $n_{\text{items}} = (n_{\text{media}}^2 - n_{\text{media}}) / 2$) as Madore et al. 2020 did.

Figure B

The impact of computing MMI symmetrically (mmi_full) vs asymmetrically (mmi_madore)

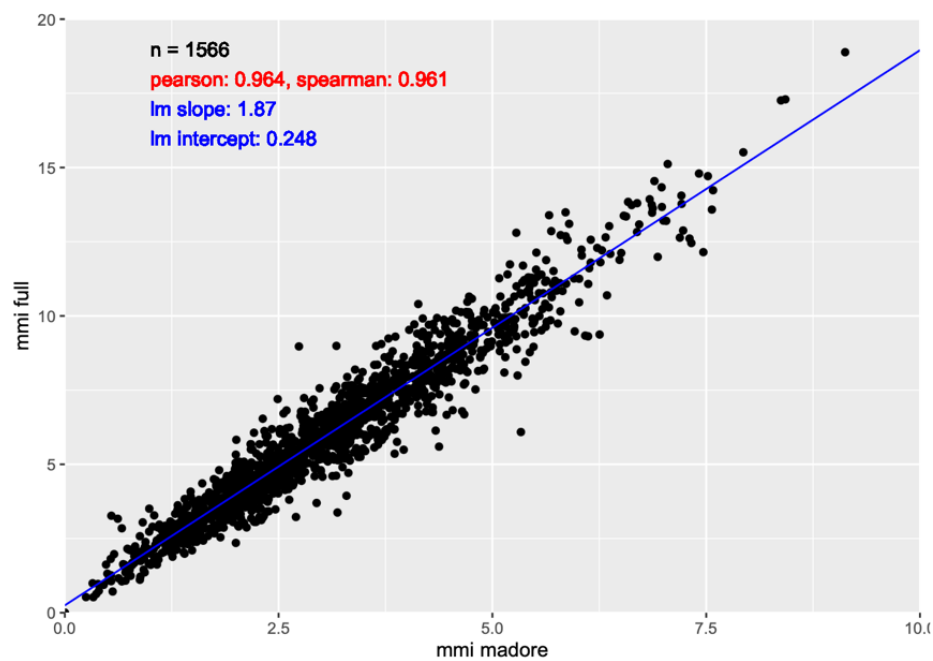


Figure B. "mmi madore" as a function of "mmi full" on 1566 participants. In red are reported correlations. In blue is the linear model with notes about the slope and intercept values.