Supplemental Materials

Confirmatory Analyses

Confirmatory RI-CLPMs 1 and 2 investigated the relationships between trait mindfulness, interpersonal emotion regulation tendency, and aggression. Full parameter estimates including auto-lagged paths and within-wave covariances are displayed in Supplemental Tables 1 and 2.

Supplemental Table 1

Complete Parameter Estimates from Random-Intercept Cross-Lagged Panel Model 1

Model Parameters		β	*B*	*SE*	*Z*	*p*
Auto-Lagged Paths						
W1: MAAS →	**W2: MAAS**	**-0.36**	**-0.35**	**0.17**	**-2.01**	**.045**
W2: MAAS →	**W3: MAAS**	**-0.26**				
W1: IRQ →	W2: IRQ	0.04	0.04	0.19	0.21	.833
W2: IRQ →	W3: IRQ	0.04				
W1: DAT	W2: DAT	-0.05	-0.02	0.13	-0.17	.862
W2: DAT	W3: DAT	-0.02				
Cross-Lagged Paths						
W1: MAAS →	W2: DAT	0.12	0.05	0.07	0.68	.495
W2: MAAS →	W3: DAT	0.09				
W1: DAT →	W2: MAAS	-0.17	-0.20	0.20	-0.98	.329
W2: DAT →	W3: MAAS	-0.06				
W1: MAAS →	**W2: IRQ**	**0.33**	**0.44**	**0.16**	**2.85**	**.004**
W2: MAAS →	**W3: IRQ**	**0.31**				
W1: IRQ →	W2: MAAS	0.25	0.18	0.12	1.50	.133
W2: IRQ →	W3: MAAS	0.19				
W1: IRQ →	W2: DAT	-0.37	-0.11	0.08	-1.41	.159
W2: IRQ →	W3: DAT	-0.26				
W1: DAT →	W2: IRQ	0.10	0.17	0.27	0.63	.530
W2: DAT →	W3: IRQ	0.05				
Within-Wave Covariances						
W1: MAAS	W1: DAT	-0.07	-0.01	0.02	-0.73	.467
W1: MAAS	W1: IRQ	0.15	0.04	0.03	1.32	.187
W1: IRQ	W1: DAT	0.05	0.01	0.03	0.44	.659
W2: MAAS	W2: DAT	-0.38	-0.03	0.03	-0.84	.399
W2: MAAS	**W2: IRQ**	**0.90**	**0.22**	**0.06**	**3.49**	**<.001**
W2: IRQ	W2: DAT	-0.27	-0.03	0.05	-0.63	.527
W3: MAAS	W3: DAT	-0.22	-0.03	0.02	-1.47	.142
W3: MAAS	W3: IRQ	-0.18	-0.07	0.05	-1.25	.213
W3: IRQ	W3: DAT	-0.07	-0.11	0.03	-0.48	.637
Across-Wave Covariance						
RI MAAS	**RI DAT**	**-0.28**	**-0.11**	**0.03**	**-4.16**	**<.001**
RI MAAS	**RI IRQ**	**-0.25**	**-0.18**	**0.05**	**-3.63**	**<.001**
RI IRQ	RI DAT	0.09	0.05	0.04	1.30	.194
Indirect and Total Effects						
Indirect		-0.12	-0.05	0.04	-1.31	.191
Total		0.002	0.001	0.08	0.02	.986

Note. W1 = Wave 1; W2 = Wave 2; W3 = Wave 3; RI = Random Intercept; MAAS = Mindful Attention and Awareness Scale; DAT = Doll Aggression Task - Log Transformed; IRQ = Interpersonal Emotion Regulation – Tendency Subscale. Bolded values are significant at $p < .05$.

Supplemental Table 2

Complete Parameter Estimates from Random-Intercept Cross-Lagged Panel Model 2

Model Parameters		β	*B*	*SE*	*Z*	*p*
Auto-Lagged Paths						
W1: MAAS →	W2: MAAS	-0.30	-0.30	0.18	-1.69	.092
W2: MAAS →	W3: MAAS	-0.24				
W1: IRQ →	W2: IRQ	0.04	0.04	0.22	0.20	.841
W2: IRQ →	W3: IRQ	0.04				
W1: BPAQPA	W2: BPAQPA	0.30	0.34	0.18	1.87	.062
W2: BPAQPA	W3: BPAQPA	0.49				
Cross-Lagged Paths						
W1: MAAS →	W2: BPAQPA	0.16	0.28	0.22	1.28	.200
W2: MAAS →	W3: BPAQPA	0,23				
W1: BPAQPA →	W2: MAAS	-0.09	-0.06	0.13	-0.45	.655
W2: BPAQPA →	W3: MAAS	-0.09				
W1: MAAS →	**W2: IRQ**	**0.30**	**0.41**	**0.16**	**2.60**	**.009**
W2: MAAS →	**W3: IRQ**	**0.29**				
W1: IRQ →	W2: MAAS	0.16	0.12	0.14	0.87	.384
W2: IRQ →	W3: MAAS	0.13				
W1: IRQ →	W2: BPAQPA	0.01	0.01	0.21	0.06	.949
W2: IRQ →	W3: BPAQPA	0.02				
W1: BPAQPA →	W2: IRQ	-0.01	-0.01	0.15	-0.08	.938
W2: BPAQPA →	W3: IRQ	-0.02				
Within-Wave Covariances						
W1: MAAS	W1: BPAQPA	0.01	0.00	0.04	0.06	.953
W1: MAAS	W1: IRQ	0.10	0.03	0.03	0.93	.355
W1: IRQ	**W1: BPAQPA**	**-0.29**	**-0.13**	**0.06**	**-2.22**	**.026**
W2: MAAS	W2: BPAQPA	-0.29	-0.10	0.10	-1.04	.298
W2: MAAS	**W2: IRQ**	**0.79**	**0.21**	**0.07**	**3.14**	**.002**
W2: IRQ	W2: BPAQPA	-0.36	-0.17	0.11	-1.50	.134
W3: MAAS	W3: BPAQPA	-0.16	-0.05	0.04	-1.14	.254
W3: MAAS	W3: IRQ	-0.18	-0.06	0.05	-1.24	.215
W3: IRQ	W3: BPAQPA	-0.09	-0.03	0.05	-0.62	.538
Across-Wave Covariance						
RI MAAS	**RI BPAQPA**	**-0.21**	**-0.16**	**0.06**	**-2.87**	**.004**
RI MAAS	**RI IRQ**	**-0.22**	**-0.16**	**0.05**	**-3.21**	**.001**
RI IRQ	RI BPAQPA	-0.19	-0.20	0.08	-2.34	.019
Indirect and Total Effects						
Indirect		0.003	0.05	0.09	0.06	.949
Total		0.16	0.29	0.18	1.60	.111

Note. W1 = Wave 1; W2 = Wave 2; W3 = Wave 3; RI = Random Intercept; MAAS = Mindful Attention and Awareness Scale; BPAQPA = Buss-Perry Aggression Questionnaire; IRQ = Interpersonal Emotion Regulation – Tendency Subscale. Bolded values are significant at $p < .05$.

Exploratory Robustness Analyses Using the Five Factor Mindfulness Questionnaire

RI-CLPMs 3 and 4 replicated RI-CLPMs 1 and 2 using the Five Factor Mindfulness Questionnaire to index trait mindfulness instead of the Mindful Attention and Awareness Scale. Full parameter estimates of these models including auto-lagged paths and within-wave covariances are displayed in Supplemental Tables 3 and 4.

Supplemental Table 3

Complete Parameter Estimates from Random-Intercept Cross-Lagged Panel Model 3

Model Parameters		β	*B*	*SE*	*Z*	*p*
Auto-Lagged Paths						
W1: FFMQ →	W2: FFMQ	-0.09	-0.10	0.21	-0.46	.646
W2: FFMQ →	W3: FFMQ	-0.09				
W1: IRQ →	W2: IRQ	0.18	0.19	0.20	0.95	.344
W2: IRQ →	W3: IRQ	0.20				
W1: DAT	W2: DAT	0.01	0.03	0.17	0.02	.988
W2: DAT	W3: DAT	0.00				
Cross-Lagged Paths						
W1: FFMQ →	W2: DAT	-0.24	-0.24	0.21	-1.18	.239
W2: FFMQ →	W3: DAT	-0.19				
W1: DAT →	W2: FFMQ	-0.28	-0.17	0.11	-1.53	.127
W2: DAT →	W3: FFMQ	-0.15				
W1: FFMQ →	W2: IRQ	0.15	0.49	0.38	1.30	.195
W2: FFMQ →	W3: IRQ	0.18				
W1: IRQ →	W2: FFMQ	0.22	0.08	0.06	1.41	.160
W2: IRQ →	W3: FFMQ	0.23				
W1: IRQ →	W2: DAT	-0.37	-0.12	0.10	-1.25	.210
W2: IRQ →	W3: DAT	-0.28				
W1: DAT →	W2: IRQ	-0.05	-0.09	0.33	-0.26	.793
W2: DAT →	W3: IRQ	-0.03				
Within-Wave Covariances						
W1: FFMQ	W1: DAT	-0.13	-0.01	0.01	-1.06	.288
W1: FFMQ	W1: IRQ	0.14	0.02	0.02	1.22	.223
W1: IRQ	W1: DAT	0.00	0.00	0.03	-0.02	.985
W2: FFMQ	W2: DAT	-0.38	-0.02	0.02	-0.82	.411
W2: FFMQ	W2: IRQ	0.37	0.05	0.03	1.67	.095
W2: IRQ	W2: DAT	-0.44	-0.05	0.06	-0.95	.342
W3: FFMQ	W3: DAT	-0.03	0.00	0.01	-0.18	.861
W3: FFMQ	W3: IRQ	-0.03	-0.01	0.02	-0.27	.791
W3: IRQ	W3: DAT	-0.02	0.00	0.02	-0.14	.889
Across-Wave Covariance						
RI FFMQ	**RI DAT**	**-0.19**	**-0.04**	**0.02**	**-2.48**	**.013**
RI FFMQ	**RI IRQ**	**-0.18**	**-0.07**	**0.03**	**-2.54**	**.011**
RI IRQ	RI DAT	0.14	0.07	0.05	1.51	.130
Indirect and Total Effects						
Indirect		-0.06	-0.06	0.06	-0.99	.321
Total		-0.30	-0.30	0.21	-1.40	.161

Note. W1 = Wave 1; W2 = Wave 2; W3 = Wave 3; RI = Random Intercept; FFMQ = Five Factor Mindfulness Questionnaire; DAT = Doll Aggression Task - Log Transformed; IRQ = Interpersonal Emotion Regulation –Tendency Subscale. Bolded values are significant at $p < .05$.

Supplemental Table 4

Complete Parameter Estimates from Random-Intercept Cross-Lagged Panel Model 4

Model Parameters		β	*B*	*SE*	*Z*	*p*
Auto-Lagged Paths						
W1: FFMQ →	W2: FFMQ	-0.18	-0.20	0.20	-1.00	.316
W2: FFMQ →	W3: FFMQ	-0.18				
W1: IRQ →	W2: IRQ	0.28	0.31	0.18	1.82	.069
W2: IRQ →	W3: IRQ	0.33				
W1: BPAQPA	W2: BPAQPA	0.17	0.17	0.27	0.63	.527
W2: BPAQPA	W3: BPAQPA	0.21				
Cross-Lagged Paths						
W1: FFMQ →	W2: BPAQPA	-0.14	-0.49	0.47	-1.05	.293
W2: FFMQ →	W3: BPAQPA	-0.19				
W1: BPAQPA →	W2: FFMQ	-0.26	-0.08	0.06	-1.47	.142
W2: BPAQPA →	W3: FFMQ	-0.23				
W1: FFMQ →	W2: IRQ	0.18	0.65	0.43	1.52	.128
W2: FFMQ →	W3: IRQ	0.21				
W1: IRQ →	W2: FFMQ	0.22	0.07	0.06	1.24	.214
W2: IRQ →	W3: FFMQ	0.22				
W1: IRQ →	W2: BPAQPA	0.21	0.22	0.17	1.27	.203
W2: IRQ →	W3: BPAQPA	0.28				
W1: BPAQPA →	W2: IRQ	0.17	0.17	0.15	1.12	.261
W2: BPAQPA →	W3: IRQ	0.18				
Within-Wave Covariances						
W1: FFMQ	W1: BPAQPA	-0.02	-0.01	0.02	-0.28	.784
W1: FFMQ	W1: IRQ	0.16	0.02	0.02	1.23	.217
W1: IRQ	W1: BPAQPA	-0.25	-0.12	0.06	-1.85	.965
W2: FFMQ	**W2: BPAQPA**	**-0.73**	**-0.10**	**0.04**	**-2.70**	**.007**
W2: FFMQ	**W2: IRQ**	**0.49**	**-0.07**	**0.03**	**2.16**	**.031**
W2: IRQ	W2: BPAQPA	-0.10	-0.05	0.10	-0.48	.630
W3: FFMQ	W3: BPAQPA	-0.28	-0.04	0.02	-1.70	.089
W3: FFMQ	W3: IRQ	-0.14	-0.02	0.02	-1.09	.276
W3: IRQ	W3: BPAQPA	-0.06	-0.02	0.05	-0.40	.691
Across-Wave Covariance						
RI FFMQ	RI BPAQPA	-0.08	-0.03	0.03	-1.18	.239
RI FFMQ	**RI IRQ**	**-0.17**	**-0.07**	**0.03**	**-2.47**	**.013**
RI IRQ	**RI BPAQPA**	**-0.22**	**-0.23**	**0.09**	**-2.64**	**.008**
Indirect and Total Effects						
Indirect		0.04	0.14	0.18	0.81	.418
Total		-0.10	-0.35	0.54	-0.64	.524

Note. W1 = Wave 1; W2 = Wave 2; W3 = Wave 3; RI = Random Intercept; FFMQ = Five Factor Mindfulness Questionnaire; BPAQPA = Buss-Perry Aggression Questionnaire-Physical Aggression Subscale; IRQ = Interpersonal Emotion Regulation –Tendency Subscale. Bolded values are significant at $p < .05$.

Exploratory Robustness Analyses Examining the *Efficacy* of Interpersonal Emotion Regulation

RI-CLPMs 5 and 6 replicated RI-CLPMs 1 and 2 using the efficacy dimension of IER instead of tendency.

RI-CLPM 5 fit was acceptable, χ^2 = 32.02, p = .001, *RMSEA* = .06 (*90% CI* = .04, .09), *SRMR* = .05, *TLI* = .93, *CFI* = .98. No cross-lagged paths were significant. Between-participants, mindfulness was negatively associated with aggressive behavior across time points. Contrary to Models 1, 2, 3, and 4, there was no significant relationship between mindfulness and IER efficacy between-participants, suggesting that this result may be specific to IER tendency. Full parameter estimates are displayed in Supplemental Table 5.

RI-CLPM 6 fit was acceptable, χ^2 = 22.36, p = .034, *RMSEA* = .04 (*90% CI* = .01, .07), *SRMR* = .04, *TLI* = .97, *CFI* = .99. No cross-lagged paths were significant. Between-participants, aggression was negatively associated with both mindfulness and IER efficacy across time points. Contrary to Models 1, 2, 3, and 4 but consistent with Model 5, there was no significant relationship between mindfulness and IER efficacy between-participants, suggesting that this result may be specific to IER tendency. Full parameter estimates are displayed in Supplemental Table 6.

Supplemental Table 5

Complete Parameter Estimates from Random-Intercept Cross-Lagged Panel Model 5

Model Parameters		β	*B*	*SE*	*Z*	*p*
Auto-Lagged Paths						
W1: MAAS →	**W2: MAAS**	**-0.53**	**-0.45**	**0.16**	**-2.82**	**.005**
W2: MAAS →	**W3: MAAS**	**-0.29**				
W1: IRQ →	W2: IRQ	-0.09	-0.10	0.15	-0.63	.527
W2: IRQ →	W3: IRQ	-0.12				
W1: BPAQPA	W2: BPAQPA	-0.04	-0.02	0.13	-0.14	.886
W2: BPAQPA	W3: BPAQPA	-0.01				.
Cross-Lagged Paths						
W1: MAAS →	W2: DAT	0.23	0.09	0.07	1.30	.192
W2: MAAS →	W3: DAT	0.14				
W1: DAT →	W2: MAAS	-0.07	-0.08	0.18	-0.41	.679
W2: DAT →	W3: MAAS	-0.02				
W1: MAAS →	W2: IRQ	0.17	0.21	0.14	1.56	.120
W2: MAAS →	W3: IRQ	0.17				
W1: IRQ →	W2: MAAS	0.27	0.19	0.11	1.69	.091
W2: IRQ →	W3: MAAS	0.18				
W1: IRQ →	W2: DAT	-0.22	-0.07	0.07	-1.06	.289
W2: IRQ →	W3: DAT	-0.16				
W1: DAT →	W2: IRQ	0.12	0.19	0.23	0.81	.420
W2: DAT →	W3: IRQ	0.07				
Within-Wave Covariances						
W1: MAAS	W1: DAT	-0.04	-0.01	0.02	-0.43	.667
W1: MAAS	W1: IRQ	-0.02	-0.01	0.03	-0.19	.848
W1: IRQ	W1: DAT	0.16	0.03	0.02	1.66	.096
W2: MAAS	W2: DAT	0.05	0.00	0.03	0.09	.931
W2: MAAS	**W2: IRQ**	**0.80**	**0.15**	**0.06**	**2.57**	**.010**
W2: IRQ	W2: DAT	-0.14	-0.01	0.04	-0.39	.700
W3: MAAS	W3: DAT	-0.26	-0.04	0.02	-1.63	.103
W3: MAAS	W3: IRQ	-0.08	-0.02	0.04	-0.54	.588
W3: IRQ	W3: DAT	-0.11	-0.01	0.02	-0.66	.511
Across-Wave Covariance						
RI MAAS	**RI DAT**	**-0.30**	**-0.12**	**0.03**	**-4.74**	**<.001**
RI MAAS	RI IRQ	-0.03	-0.02	0.04	-0.50	.619
RI IRQ	RI DAT	0.09	0.04	0.03	1.34	.182
Indirect and Total Effects						
Indirect		-0.04	-0.02	0.02	-0.91	.365
Total		0.19	0.08	0.07	1.06	.290

Note. W1 = Wave 1; W2 = Wave 2; W3 = Wave 3; RI = Random Intercept; MAAS = Mindful Attention and Awareness Scale; DAT = Doll Aggression Task - Log Transformed; IRQ = Interpersonal Emotion Regulation – Efficacy Subscale. Bolded values are significant at $p < .05$.

Supplemental Table 6

Complete Parameter Estimates from Random-Intercept Cross-Lagged Panel Model 5

Model Parameters		β	*B*	*SE*	*Z*	*p*
Auto-Lagged Paths						
W1: MAAS →	**W2: MAAS**	**-0.53**	**-0.45**	**0.15**	**-2.93**	**.003**
W2: MAAS →	**W3: MAAS**	**-0.29**				
W1: IRQ →	W2: IRQ	-0.01	-0.01	0.17	-0.08	.937
W2: IRQ →	W3: IRQ	-0.02				
W1: BPAQPA	W2: BPAQPA	0.29	0.32	0.24	1.34	.181
W2: BPAQPA	W3: BPAQPA	0.46				
Cross-Lagged Paths						
W1: MAAS →	W2: BPAQPA	0.22	0.38	0.21	1.79	.074
W2: MAAS →	W3: BPAQPA	0.27				
W1: BPAQPA →	W2: MAAS	-0.04	-0.02	0.15	-0.16	.871
W2: BPAQPA →	W3: MAAS	-0.03				
W1: MAAS →	W2: IRQ	0.15	0.20	0.15	1.32	.188
W2: MAAS →	W3: IRQ	0.15				
W1: IRQ →	W2: MAAS	0.25	0.18	0.13	1.42	.156
W2: IRQ →	W3: MAAS	0.18				
W1: IRQ →	W2: BPAQPA	0.02	0.04	0.21	0.17	.869
W2: IRQ →	W3: BPAQPA	0.04				
W1: BPAQPA →	W2: IRQ	0.00	0.00	0.14	0.02	.981
W2: BPAQPA →	W3: IRQ	0.01				
Within-Wave Covariances						
W1: MAAS	W1: BPAQPA	0.02	0.00	0.04	0.14	.889
W1: MAAS	W1: IRQ	-0.02	-0.00	0.03	-0.16	.872
W1: IRQ	W1: BPAQPA	-0.10	-0.04	0.05	-0.78	.434
W2: MAAS	W2: BPAQPA	-0.21	-0.05	0.11	-0.48	.631
W2: MAAS	**W2: IRQ**	**0.71**	**0.14**	**0.06**	**2.29**	**.022**
W2: IRQ	W2: BPAQPA	-0.39	-0.18	0.10	-1.85	.064
W3: MAAS	W3: BPAQPA	-0.17	-0.05	0.05	-1.09	.277
W3: MAAS	W3: IRQ	-0.08	-0.02	0.04	-0.55	.586
W3: IRQ	W3: BPAQPA	-0.07	-0.02	0.04	-0.42	.676
Across-Wave Covariance						
RI MAAS	**RI BPAQPA**	**-0.22**	**-0.18**	**0.06**	**-2.96**	**.003**
RI MAAS	RI IRQ	-0.02	-0.01	0.04	-0.36	.722
RI IRQ	**RI BPAQPA**	**-0.23**	**-0.20**	**0.07**	**-2.78**	**.005**
Indirect and Total Effects						
Indirect		0.00	0.01	0.04	0.16	.873
Total		**0.22**	**0.38**	**0.19**	**2.02**	**.044**

Note. W1 = Wave 1; W2 = Wave 2; W3 = Wave 3; RI = Random Intercept; MAAS = Mindful Attention and Awareness Scale; Buss-Perry Aggression Questionnaire-Physical Aggression Subscale; IRQ = Interpersonal Emotion Regulation – Efficacy Subscale. Bolded values are significant at $p < .05$.

Source Code

All analyses were conducted in *lavaan* R package (version 0.6-15; Rosseel, 2012) using the following code:

```
## RI-CLPM 1 ##
library(lavaan)

data <- read.csv("crosslagdata.csv", header = TRUE)
attach(data)

RICLPM <-'

## Create between components ##

RImaas =~ 1*MAAS_TOTAL_Wv1 + 1*MAAS_TOTAL_Wv2 + 1*MAAS_TOTAL_Wv3
RIirq =~ 1*IRQ_Tendency_W1 + 1*IRQ_Tendency_W2 + 1*IRQ_Tendency_W3
RIdat =~ 1*dat1_log + 1*dat2_log + 1*dat3_log

## Create within-person centered variables ##

wmaas1 = ~1*MAAS_TOTAL_Wv1
wmaas2 = ~1*MAAS_TOTAL_Wv2
wmaas3 = ~1*MAAS_TOTAL_Wv3
wirq1 = ~1*IRQ_Tendency_W1
wirq2 = ~1*IRQ_Tendency_W2
wirq3 = ~1*IRQ_Tendency_W3
wdat1 = ~1*dat1_log
wdat2 = ~1*dat2_log
wdat3 = ~1*dat3_log

## Stabilities ##

wmaas2 ~ a1*wmaas1
wmaas3 ~ a1*wmaas2
wirq2 ~ a2*wirq1
```

```
wirq3 ~ a2*wirq2
wdat2 ~ a3*wdat1
wdat3 ~ a3*wdat2

## Cross-lags ##

wdat2 ~ c1*wmaas1
wdat3 ~ c1*wmaas2
wmaas2 ~ c2*wdat1
wmaas3 ~ c2*wdat2
wirq2 ~ c3*wmaas1
wirq3 ~ c3*wmaas2
wmaas2 ~ c4*wirq1
wmaas3 ~ c4*wirq2
wdat2 ~ c5*wirq1
wdat3 ~ c5*wirq2
wirq2 ~ c6*wdat1
wirq3 ~ c6*wdat2

## Estimate covariance between within-person centered variables at first wave ##

wmaas1 ~~ wdat1
wmaas1 ~~ wirq1
wirq1 ~~ wdat1

## Estimate covariance between residuals of within-person centered variables ##

wmaas2 ~~ wdat2
wmaas2 ~~ wirq2
wirq2 ~~ wdat2
wmaas3 ~~ wdat3
wmaas3 ~~ wirq3
wirq3 ~~ wdat3

## Estimate variance and covariance of random intercepts ##
```

```
RImaas ~~ RImaas
RIirq ~~ RIirq
RIdat ~~ RIdat
RImaas ~~ RIdat
RImaas ~~ RIirq
RIirq ~~ RIdat

## Estimate (residual) variance of within-person centered variables
wmaas1 ~~ wmaas1 #Variances
wirq1 ~~ wirq1
wdat1 ~~ wdat1
wmaas2 ~~ wmaas2 #Residual Variances
wirq2 ~~ wirq2
wdat2 ~~ wdat2
wmaas3 ~~ wmaas3
wirq3 ~~ wirq3
wdat3 ~~ wdat3

#indirect effect
ab := c3*c5

#Total Effect
total := c1 + ab'

RICLPM.fit <- lavaan(RICLPM,
                     data = crosslagdata,
                     missing = "FIML",
                     meanstructure = T,
                     int.ov.free = T,

)

summary(RICLPM.fit, standardized = T)
fitMeasures(RICLPM.fit)

## RI-CLPM 2 ##
```

```
RICLPM <-'

## Create between components ##

RImaas =~ 1*MAAS_TOTAL_Wv1 + 1*MAAS_TOTAL_Wv2 + 1*MAAS_TOTAL_Wv3
RIirq =~ 1*IRQ_Tendency_W1 + 1*IRQ_Tendency_W2 + 1*IRQ_Tendency_W3
RIbpaqpa =~ 1*bpaqpa1 + 1*bpaqpa2 + 1*bpaqpa3

## Create within-person centered variables ##

wmaas1 = ~1*MAAS_TOTAL_Wv1
wmaas2 = ~1*MAAS_TOTAL_Wv2
wmaas3 = ~1*MAAS_TOTAL_Wv3
wirq1 = ~1*IRQ_Tendency_W1
wirq2 = ~1*IRQ_Tendency_W2
wirq3 = ~1*IRQ_Tendency_W3
wbpaqpa1 = ~1*bpaqpa1
wbpaqpa2 = ~1*bpaqpa2
wbpaqpa3 = ~1*bpaqpa3

## Stabilities ##

wmaas2 ~ a1*wmaas1
wmaas3 ~ a1*wmaas2
wirq2 ~ a2*wirq1
wirq3 ~ a2*wirq2
wbpaqpa2 ~ a3*wbpaqpa1
wbpaqpa3 ~ a3*wbpaqpa2

## Cross-lags ##

wbpaqpa2 ~ c1*wmaas1
wbpaqpa3 ~ c1*wmaas2
wmaas2 ~ c2*wbpaqpa1
wmaas3 ~ c2*wbpaqpa2
```

```
wirq2 ~ c3*wmaas1
wirq3 ~ c3*wmaas2
wmaas2 ~ c4*wirq1
wmaas3 ~ c4*wirq2
wbpaqpa2 ~ c5*wirq1
wbpaqpa3 ~ c5*wirq2
wirq2 ~ c6*wbpaqpa1
wirq3 ~ c6*wbpaqpa2

## Estimate covariance between within-person centered variables at first wave ##

wmaas1 ~~ wbpaqpa1
wmaas1 ~~ wirq1
wirq1 ~~ wbpaqpa1

## Estimate covariance between residuals of within-person centered variables ##

wmaas2 ~~ wbpaqpa2
wmaas2 ~~ wirq2
wirq2 ~~ wbpaqpa2
wmaas3 ~~ wbpaqpa3
wmaas3 ~~ wirq3
wirq3 ~~ wbpaqpa3

## Estimate variance and covariance of random intercepts ##

RImaas ~~ RImaas
RIirq ~~ RIirq
RIbpaqpa ~~ RIbpaqpa
RImaas ~~ RIbpaqpa
RImaas ~~ RIirq
RIirq ~~ RIbpaqpa

## Estimate (residual) variance of within-person centered variables
wmaas1 ~~ wmaas1 #Variances
wirq1 ~~ wirq1
```

```
wbpaqpa1 ~~ wbpaqpa1
wmaas2 ~~ wmaas2 #Residual Variances
wirq2 ~~ wirq2
wbpaqpa2 ~~ wbpaqpa2
wmaas3 ~~ wmaas3
wirq3 ~~ wirq3
wbpaqpa3 ~~ wbpaqpa3

#indirect effect
ab := c3*c5

#Total Effect
total := c1 + ab'

RICLPM.fit <- lavaan(RICLPM,
                     data = crosslagdata,
                     missing = "FIML",
                     meanstructure = T,
                     int.ov.free = T
)

summary(RICLPM.fit, standardized = T)
fitMeasures(RICLPM.fit)

## RI-CLPM 3 ##

RICLPM <-'

## Create between components ##

RIffmq =~ 1*FFMQ_TOTAL_Wave1 + 1*FFMQ_TOTAL_Wave2 + 1*FFMQ_TOTAL_Wave3
RIirq =~ 1*IRQ_Tendency_W1 + 1*IRQ_Tendency_W2 + 1*IRQ_Tendency_W3
RIdat =~ 1*dat1_log + 1*dat2_log + 1*dat3_log

## Create within-person centered variables ##
```

```
wffmq1 = ~1*FFMQ_TOTAL_Wave1
wffmq2 = ~1*FFMQ_TOTAL_Wave2
wffmq3 = ~1*FFMQ_TOTAL_Wave3
wirq1 = ~1*IRQ_Tendency_W1
wirq2 = ~1*IRQ_Tendency_W2
wirq3 = ~1*IRQ_Tendency_W3
wdat1 = ~1*dat1_log
wdat2 = ~1*dat2_log
wdat3 = ~1*dat3_log

## Stabilities ##

wffmq2 ~ a1*wffmq1
wffmq3 ~ a1*wffmq2
wirq2 ~ a2*wirq1
wirq3 ~ a2*wirq2
wdat2 ~ a3*wdat1
wdat3 ~ a3*wdat2

## Cross-lags ##

wdat2 ~ c1*wffmq1
wdat3 ~ c1*wffmq2
wffmq2 ~ c2*wdat1
wffmq3 ~ c2*wdat2
wirq2 ~ c3*wffmq1
wirq3 ~ c3*wffmq2
wffmq2 ~ c4*wirq1
wffmq3 ~ c4*wirq2
wdat2 ~ c5*wirq1
wdat3 ~ c5*wirq2
wirq2 ~ c6*wdat1
wirq3 ~ c6*wdat2

## Estimate covariance between within-person centered variables at first wave ##
```

```
wffmq1 ~~ wdat1
wffmq1 ~~ wirq1
wirq1 ~~ wdat1

## Estimate covariance between residuals of within-person centered variables ##

wffmq2 ~~ wdat2
wffmq2 ~~ wirq2
wirq2 ~~ wdat2
wffmq3 ~~ wdat3
wffmq3 ~~ wirq3
wirq3 ~~ wdat3

## Estimate variance and covariance of random intercepts ##

RIffmq ~~ RIffmq
RIirq ~~ RIirq
RIdat ~~ RIdat
RIffmq ~~ RIdat
RIffmq ~~ RIirq
RIirq ~~ RIdat

## Estimate (residual) variance of within-person centered variables
wffmq1 ~~ wffmq1 #Variances
wirq1 ~~ wirq1
wdat1 ~~ wdat1
wffmq2 ~~ wffmq2 #Residual Variances
wirq2 ~~ wirq2
wdat2 ~~ wdat2
wffmq3 ~~ wffmq3
wirq3 ~~ wirq3
wdat3 ~~ wdat3

#indirect effect
ab := c3*c5
```

```
#Total Effect
total := c1 + ab'

RICLPM.fit <- lavaan(RICLPM,
                     data = crosslagdata,
                     missing = "FIML",
                     meanstructure = T,
                     int.ov.free = T
)

summary(RICLPM.fit, standardized = T)
fitMeasures(RICLPM.fit)

## RI-CLPM 4 ##

RICLPM <-'

## Create between components ##

RIffmq =~ 1*FFMQ_TOTAL_Wave1 + 1*FFMQ_TOTAL_Wave2 + 1*FFMQ_TOTAL_Wave3
RIirq =~ 1*IRQ_Tendency_W1 + 1*IRQ_Tendency_W2 + 1*IRQ_Tendency_W3
RIbpaqpa =~ 1*bpaqpa1 + 1*bpaqpa2 + 1*bpaqpa3

## Create within-person centered variables ##

wffmq1 = ~1*FFMQ_TOTAL_Wave1
wffmq2 = ~1*FFMQ_TOTAL_Wave2
wffmq3 = ~1*FFMQ_TOTAL_Wave3
wirq1 = ~1*IRQ_Tendency_W1
wirq2 = ~1*IRQ_Tendency_W2
wirq3 = ~1*IRQ_Tendency_W3
wbpaqpa1 = ~1*bpaqpa1
wbpaqpa2 = ~1*bpaqpa2
wbpaqpa3 = ~1*bpaqpa3

## Stabilities ##
```

```
wffmq2 ~ a1*wffmq1
wffmq3 ~ a1*wffmq2
wirq2 ~ a2*wirq1
wirq3 ~ a2*wirq2
wbpaqpa2 ~ a3*wbpaqpa1
wbpaqpa3 ~ a3*wbpaqpa2

## Cross-lags ##

wbpaqpa2 ~ c1*wffmq1
wbpaqpa3 ~ c1*wffmq2
wffmq2 ~ c2*wbpaqpa1
wffmq3 ~ c2*wbpaqpa2
wirq2 ~ c3*wffmq1
wirq3 ~ c3*wffmq2
wffmq2 ~ c4*wirq1
wffmq3 ~ c4*wirq2
wbpaqpa2 ~ c5*wirq1
wbpaqpa3 ~ c5*wirq2
wirq2 ~ c6*wbpaqpa1
wirq3 ~ c6*wbpaqpa2

## Estimate covariance between within-person centered variables at first wave ##

wffmq1 ~~ wbpaqpa1
wffmq1 ~~ wirq1
wirq1 ~~ wbpaqpa1

## Estimate covariance between residuals of within-person centered variables ##

wffmq2 ~~ wbpaqpa2
wffmq2 ~~ wirq2
wirq2 ~~ wbpaqpa2
wffmq3 ~~ wbpaqpa3
wffmq3 ~~ wirq3
```

```
wirq3 ~~ wbpaqpa3

## Estimate variance and covariance of random intercepts ##

RIffmq ~~ RIffmq
RIirq ~~ RIirq
RIbpaqpa ~~ RIbpaqpa
RIffmq ~~ RIbpaqpa
RIffmq ~~ RIirq
RIirq ~~ RIbpaqpa

## Estimate (residual) variance of within-person centered variables
wffmq1 ~~ wffmq1 #Variances
wirq1 ~~ wirq1
wbpaqpa1 ~~ wbpaqpa1
wffmq2 ~~ wffmq2 #Residual Variances
wirq2 ~~ wirq2
wbpaqpa2 ~~ wbpaqpa2
wffmq3 ~~ wffmq3
wirq3 ~~ wirq3
wbpaqpa3 ~~ wbpaqpa3

#indirect effect
ab := c3*c5

#Total Effect
total := c1 + ab'

RICLPM.fit <- lavaan(RICLPM,
                     data = crosslagdata,
                     missing = "FIML",
                     meanstructure = T,
                     int.ov.free = T
)

summary(RICLPM.fit, standardized = T)
```

```
fitMeasures(RICLPM.fit)

## RI-CLPM 5 ##

RICLPM <-'

## Create between components ##

RImaas =~ 1*MAAS_TOTAL_Wv1 + 1*MAAS_TOTAL_Wv2 + 1*MAAS_TOTAL_Wv3
RIirq =~ 1*IRQ_Efficacy_W1 + 1*IRQ_Efficacy_W2 + 1*IRQ_Efficacy_W3
RIdat =~ 1*dat1_log + 1*dat2_log + 1*dat3_log

## Create within-person centered variables ##

wmaas1 = ~1*MAAS_TOTAL_Wv1
wmaas2 = ~1*MAAS_TOTAL_Wv2
wmaas3 = ~1*MAAS_TOTAL_Wv3
wirq1 = ~1*IRQ_Efficacy_W1
wirq2 = ~1*IRQ_Efficacy_W2
wirq3 = ~1*IRQ_Efficacy_W3
wdat1 = ~1*dat1_log
wdat2 = ~1*dat2_log
wdat3 = ~1*dat3_log

## Stabilities ##

wmaas2 ~ a1*wmaas1
wmaas3 ~ a1*wmaas2
wirq2 ~ a2*wirq1
wirq3 ~ a2*wirq2
wdat2 ~ a3*wdat1
wdat3 ~ a3*wdat2

## Cross-lags ##

wdat2 ~ c1*wmaas1
```

```
wdat3 ~ c1*wmaas2
wmaas2 ~ c2*wdat1
wmaas3 ~ c2*wdat2
wirq2 ~ c3*wmaas1
wirq3 ~ c3*wmaas2
wmaas2 ~ c4*wirq1
wmaas3 ~ c4*wirq2
wdat2 ~ c5*wirq1
wdat3 ~ c5*wirq2
wirq2 ~ c6*wdat1
wirq3 ~ c6*wdat2

## Estimate covariance between within-person centered variables at first wave ##

wmaas1 ~~ wdat1
wmaas1 ~~ wirq1
wirq1 ~~ wdat1

## Estimate covariance between residuals of within-person centered variables ##

wmaas2 ~~ wdat2
wmaas2 ~~ wirq2
wirq2 ~~ wdat2
wmaas3 ~~ wdat3
wmaas3 ~~ wirq3
wirq3 ~~ wdat3

## Estimate variance and covariance of random intercepts ##

RImaas ~~ RImaas
RIirq ~~ RIirq
RIdat ~~ RIdat
RImaas ~~ RIdat
RImaas ~~ RIirq
RIirq ~~ RIdat
```

```
## Estimate (residual) variance of within-person centered variables
wmaas1 ~~ wmaas1 #Variances
wirq1 ~~ wirq1
wdat1 ~~ wdat1
wmaas2 ~~ wmaas2 #Residual Variances
wirq2 ~~ wirq2
wdat2 ~~ wdat2
wmaas3 ~~ wmaas3
wirq3 ~~ wirq3
wdat3 ~~ wdat3

#indirect effect
ab := c3*c5

#Total Effect
total := c1 + ab'

RICLPM.fit <- lavaan(RICLPM,
                     data = crosslagdata,
                     missing = "FIML",
                     meanstructure = T,
                     int.ov.free = T,

)

summary(RICLPM.fit, standardized = T)
fitMeasures(RICLPM.fit)

##RI-CLPM 6##

RICLPM <-'

## Create between components ##

RImaas =~ 1*MAAS_TOTAL_Wv1 + 1*MAAS_TOTAL_Wv2 + 1*MAAS_TOTAL_Wv3
RIirq =~ 1*IRQ_Efficacy_W1 + 1*IRQ_Efficacy_W2 + 1*IRQ_Efficacy_W3
```

```
RIbpaqpa =~ 1*bpaqpa1 + 1*bpaqpa2 + 1*bpaqpa3

## Create within-person centered variables ##

wmaas1 = ~1*MAAS_TOTAL_Wv1
wmaas2 = ~1*MAAS_TOTAL_Wv2
wmaas3 = ~1*MAAS_TOTAL_Wv3
wirq1 = ~1*IRQ_Efficacy_W1
wirq2 = ~1*IRQ_Efficacy_W2
wirq3 = ~1*IRQ_Efficacy_W3
wbpaqpa1 = ~1*bpaqpa1
wbpaqpa2 = ~1*bpaqpa2
wbpaqpa3 = ~1*bpaqpa3

## Stabilities ##

wmaas2 ~ a1*wmaas1
wmaas3 ~ a1*wmaas2
wirq2 ~ a2*wirq1
wirq3 ~ a2*wirq2
wbpaqpa2 ~ a3*wbpaqpa1
wbpaqpa3 ~ a3*wbpaqpa2

## Cross-lags ##

wbpaqpa2 ~ c1*wmaas1
wbpaqpa3 ~ c1*wmaas2
wmaas2 ~ c2*wbpaqpa1
wmaas3 ~ c2*wbpaqpa2
wirq2 ~ c3*wmaas1
wirq3 ~ c3*wmaas2
wmaas2 ~ c4*wirq1
wmaas3 ~ c4*wirq2
wbpaqpa2 ~ c5*wirq1
wbpaqpa3 ~ c5*wirq2
wirq2 ~ c6*wbpaqpa1
```

```
wirq3 ~ c6*wbpaqpa2

## Estimate covariance between within-person centered variables at first wave ##

wmaas1 ~~ wbpaqpa1
wmaas1 ~~ wirq1
wirq1 ~~ wbpaqpa1

## Estimate covariance between residuals of within-person centered variables ##

wmaas2 ~~ wbpaqpa2
wmaas2 ~~ wirq2
wirq2 ~~ wbpaqpa2
wmaas3 ~~ wbpaqpa3
wmaas3 ~~ wirq3
wirq3 ~~ wbpaqpa3

## Estimate variance and covariance of random intercepts ##

RImaas ~~ RImaas
RIirq ~~ RIirq
RIbpaqpa ~~ RIbpaqpa
RImaas ~~ RIbpaqpa
RImaas ~~ RIirq
RIirq ~~ RIbpaqpa

## Estimate (residual) variance of within-person centered variables
wmaas1 ~~ wmaas1 #Variances
wirq1 ~~ wirq1
wbpaqpa1 ~~ wbpaqpa1
wmaas2 ~~ wmaas2 #Residual Variances
wirq2 ~~ wirq2
wbpaqpa2 ~~ wbpaqpa2
wmaas3 ~~ wmaas3
wirq3 ~~ wirq3
wbpaqpa3 ~~ wbpaqpa3
```

```
#indirect effect
ab := c3*c5

#Total Effect
total := c1 + ab'

RICLPM.fit <- lavaan(RICLPM,
                     data = crosslagdata,
                     missing = "FIML",
                     meanstructure = T,
                     int.ov.free = T
)

summary(RICLPM.fit, standardized = T)
fitMeasures(RICLPM.fit)
```