DILEMMAS IN STATE MEASUREMENT – *THE DEVELOPMENT AND APPLICATION OF THE STATE EMOTION REGULATION INVENTORY (SERI)*

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Emotion Regulation Measurement

- State vs Trait
- New Scale Goals

State vs Trait Emotion Regulation

- Trait Regulation
  - Many options of measurement (e.g., Gross, et al., 2003)
  - Wealth of research (e.g., Aldao, et al., 2012)
- State Regulation
  - Research in place
  - Measurement lacking (e.g., Aldao, 2013)

State vs Trait Emotion Regulation

- Reappraisal and Acceptance
  - Mechanism of change in cognitive behavioral therapies (e.g., Mennin et al., 2013)
  - But only a small trait association with psychopathology
- Brooding
  - Medium-to-large trait association with psychopathology
  - What triggers it? (Watkins, 2008)
- Distraction
  - Medium-to-large trait association with psychopathology
  - But is it ever adaptive? (Sheppes, 2014)

Goals of New Scale

- State-based
- Short
- Major regulation strategies (Watkins, 2008)
  - Brooding
  - Reappraisal
  - Acceptance
  - Distraction

Development of the State Emotion Regulation Inventory (SERI)

- Study 1 (EFA)
- Study 2 (CFA)

Study 1: From Trait to State

- State: “I *tried* to change my style of thinking about the subject”
  - Trait: “I *try* to reinterpret the thought”
    - Source: Thought Control Questionnaire (Wells et al., 1994)
- State: “I *allowed* the thought to enter my mind as it was”
  - Trait: “I *accept* that this has happened and that it can't be changed”
    - Source: Kentucky Inventory of Mindfulness Skills (Baer, et al., 2004)

Study 1: Selection of Items

Sources used for item generation			
Reappraisal	• TCQ[1] • ERQ[2]	**Distraction**	• TCQ[1] • CERQ[3]
Brooding	• RSQ[4] • CERQ[3] • RSS[5] • RRQ[6] • EQ[7]	**Acceptance**	• AAQ-2[8] • COPE[9] • CERQ[3] • KIMS[10]

1 – Thought Control Questionnaire (TCQ; Wells & Davies, 1994)
2 - Emotion Regulation Questionnaire (ERQ; Gross et al., 2003)
3 – Cognitive Emotion Regulation Questionnaire (CERQ; ; Garnefski et al., 2001)
4 – Response Styles Questionnaire (RSQ; Treynor et al., 2003)
5 – Rumination on Sadness Survey (RSS; Conway et al., 2000)

6 – Rumination – Reflection Questionnaire (RRQ; Trapnell & Campbell, 1999)
7 – Experiences Questionnaire (EQ; Fresco, et al., 2002)
8 – Acceptance and Action Questionnaire-2 (AAQ-2; Bond & Hayes, 2005)
9 – COPE Inventory (Carver et al., 1989)
10 – Kentucky Inventory of Mindfulness Skill (KIMS; Baer et al., 2004)

Study 1: Procedure

- 181 Hebrew University Students
- Key elements:
  - Lab-based
  - Negative event recall
  - Five minute focused rumination induction (Yovel, et al., 2014)
  - Three-minute wait
  - Survey of 36 prospective items
- Analysis: Principal axis factoring (PAF)
  - Promax oblique rotation
  - Parallel analysis indicated a 4-factor solution

Study 1: Item selection

	Component			
	1	2	3	4
→ 35 . I tried to think about other things	.853			
→ 23. I tried to center myself on topics unrelated to the thought	.850			
→ 2. I tried to think about something else instead of dealing with the thought	.765			
31. I tried to think more pleasant thoughts instead of the current thought	.693	.312		
20. I tried to center my thoughts on more positive topics to deal with the thought less	.664	.385		
9. I tried to bring up in my mind other positive things instead of the thought	.606	.349		
→ 27. I worried about other things instead of dealing with the thought	.647			
16. Instead of dealing with the thought, I tried to think about other problems of mine	.625	-.326	.361	
17R. When the thought entered my head, I didn't try to push it out	.489			-.335

Study 1: Final SERI

Factor 1: Distraction	Factor 2: Reappraisal	Factor 3: Brooding	Factor 4: Acceptance
I tried to think about other things	I tried to reappraise the idea, in a more positive way	I judgmentally analyzed the implications that my thought could have	When the thought enters my mind, I just accept it as it is
I tried to center myself on topics unrelated to the thought	I investigated whether there are positive aspects to the situation	I dealt judgmentally with the thoughts' significance to me	I allowed the thought to enter my mind as it was
I tried to think about something else instead of dealing with the thought	I tried to change my style of thinking about the subject	I thought about the problematic aspects of my present situation in the context of the content of the thought	I allowed the thought to come up without going into depth or avoiding it
I worried about other things instead of dealing with the thought	I tried to see the topic in a more positive light	I judgmentally analyzed the possible reasons for my thought	I allowed the thought to pass my mind without putting effort into changing it

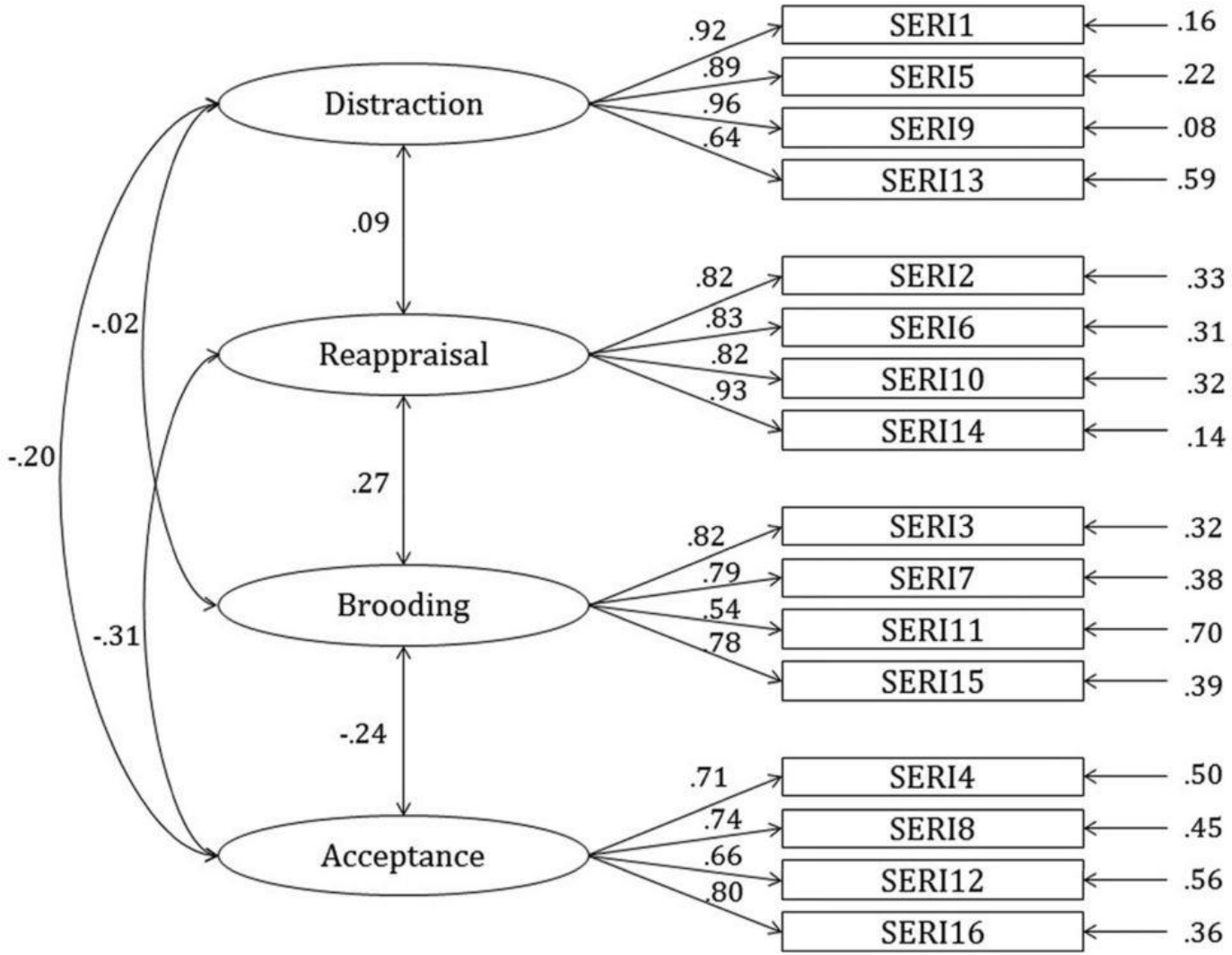
Study 2: Procedure

- 157 Hebrew University students
- Same procedure as first study
  - Lab-based
  - Negative event recall
  - Rumination induction (Yovel, et al., 2014)
  - Three-minute wait
  - State Emotion Regulation Inventory

Study 2: Analysis

- CFA with maximum likelihood mean-adjusted (MLM) estimator
- Due to high multivariate kurtosis (*z* statistic = 10.794), Santorra-Bentler correction was performed on chi squared statistic
- Alternative models compared:
  - One factor (general regulation)
  - Two factor (Reappraisal/Acceptance vs Distraction/Brooding)
  - Three factor (Reappraisal/Brooding, Acceptance, Distraction)
  - Five factor solution was rejected

Study 2: Final CFA model



Normalized chi = 1.8; sRMR = 0.072; CFI = 0.952; RMSEA=0.065

Study 2: Alternative models

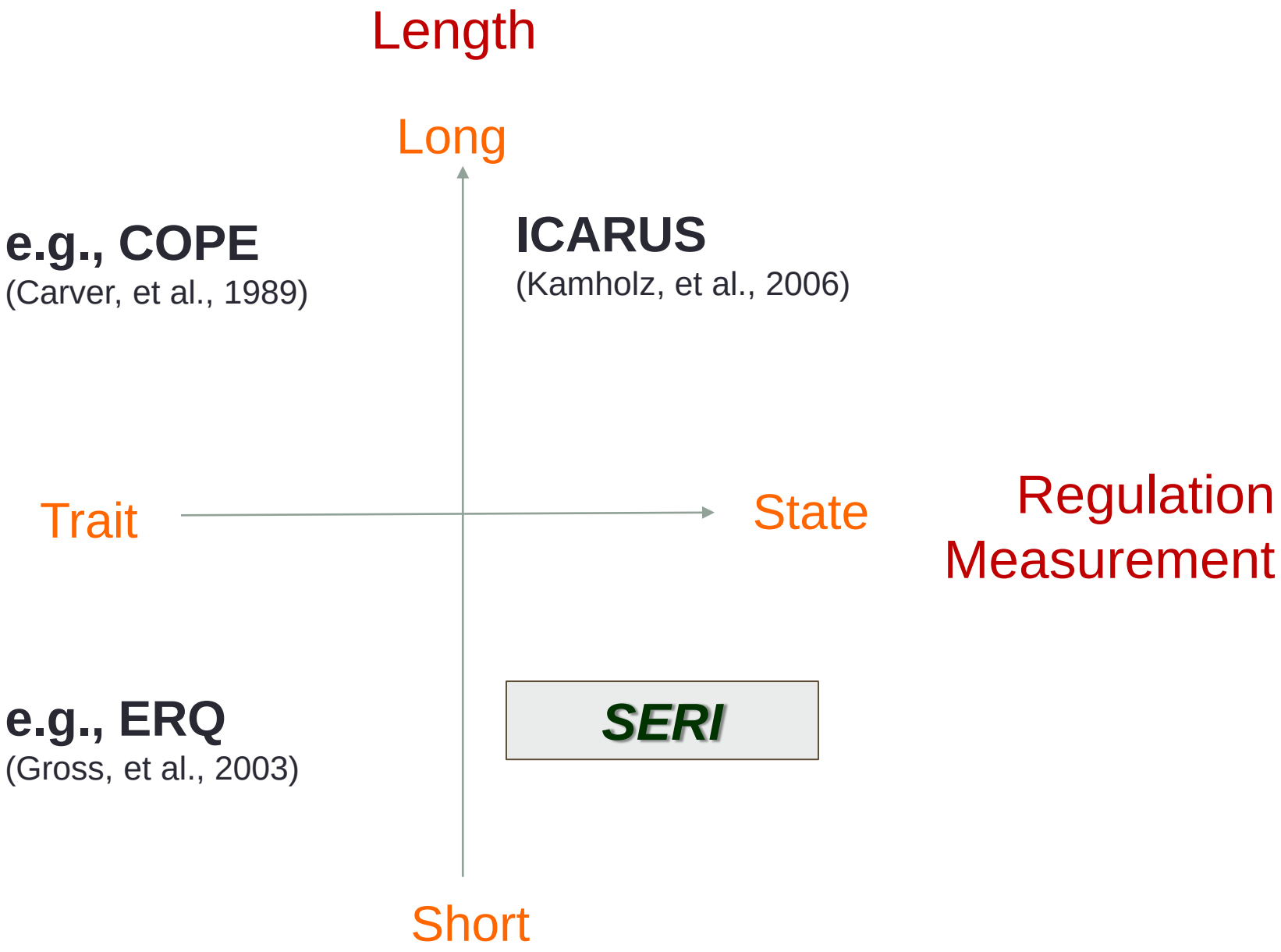
Model	$\chi^2(df)$	χ^2/df	CFI	RMSEA [90% CI]	SRMR
One factor	993.51 (104)	9.55	.344	.235 [.222, .248]	.207
Two factor	549.53 (103)	5.34	.671	.167 [.154, .181]	.174
Three factor	352.74 (101)	3.49	.814	.127 [.113, .141]	.119
Four factor	163.02 (98)	1.66	.952	.065 [.047, .083]	.072

Note. CFI = comparative fit index; RMSEA = root-mean-square error of approximation; CI = confidence interval; SRMR = Standardized root mean square residual; MLM = maximum likelihood mean-adjusted.

Normalized chi = 1.8; sRMR = 0.0797; CFI = 0.90; RMSEA=0.0795

Applications

- SERI in Context
- SERI Applications


Length
Long
e.g., COPE
(Carver, et al., 1989)
ICARUS
(Kamholz, et al., 2006)
Trait
State
Regulation
Measurement
e.g., ERQ
(Gross, et al., 2003)
SERI
Short

משימה: איך אני מגיב כשאני מדמיין את ההתקף הגרוע ביותר?

בפעם הראשונה שתתרגל את התרגיל האחרון בו (תרגיל 12) לחץ כאן

נוצר **14:49:16 05-02-2017**

נבקש ממך לכתוב את המחשבה שהי"תה הכי בולטת עבורך כשדימיינת את ההתקף

אחרי שרשמת את המחשבה, נבקש ממך לחכות דקה וחצי (90 שניות) ולאחר מכן להשיב על השאלון הבא:

המתנה דקה וחצי

ההגידים הבאים מתי"חסים לאותה מחשבה שכתבת למעלה לפני ההמתנה. אנא ציין/י את מידת ההסכמה שלך עם כל אחד מההיגדים ביחס למחשבה, לאופן ההתמודדות שלך איתה ולרגשות שהי"א מעוררת אצלך, מהרגע בו סי"מת לכתוב את המחשבה ועד לרגע הזה.

	כלל לא מסכים/ה 1	2	3	4	5	6	מסכים/ה לגמרי 7
ניסיתי לחשוב על דברים אחרים							
ניסיתי להעריך מחדש את העניין באופן חיובי יותר							
ניתחתי באופן שיפוטי את ההשלכות האפשריות של המחשבה שלי							
כאשר המחשבה חלפה בראשי אני פשוט קיבלתי את זה שהי"א שם							
ניסיתי להתמקד בנושאים שאינם קשורים למחשבה							
בחנתי אם ישנם היבטים חיוביים בהקשר זה							

Further Applications

- Research
  - Manipulation checks
  - Ecological Measurement Assessment (Aldao, 2013)
  - Clinical Change (e.g., Harrison, et al., 2010)
- Practice
  - Idiographic strategy efficacy

Thank You!

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