

Unique And Predictive Relationships Between Components Of Cognitive Vulnerability And Symptoms Of Depression

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COGNITIVE VULNERABILITY

- Etiology of depression
- Reformulated Learned Helplessness Theory of Depression (Abramson, Seligman, & Teasdale, 1978)
- Hopelessness Theory of Depression (Abramson, Metalsky, & Alloy, 1989)
- Predicts first onset and recurrence of depression (Alloy et al., 2006; Mac Giollabhui et al., 2018)

COGNITIVE VULNERABILITY COMPONENTS

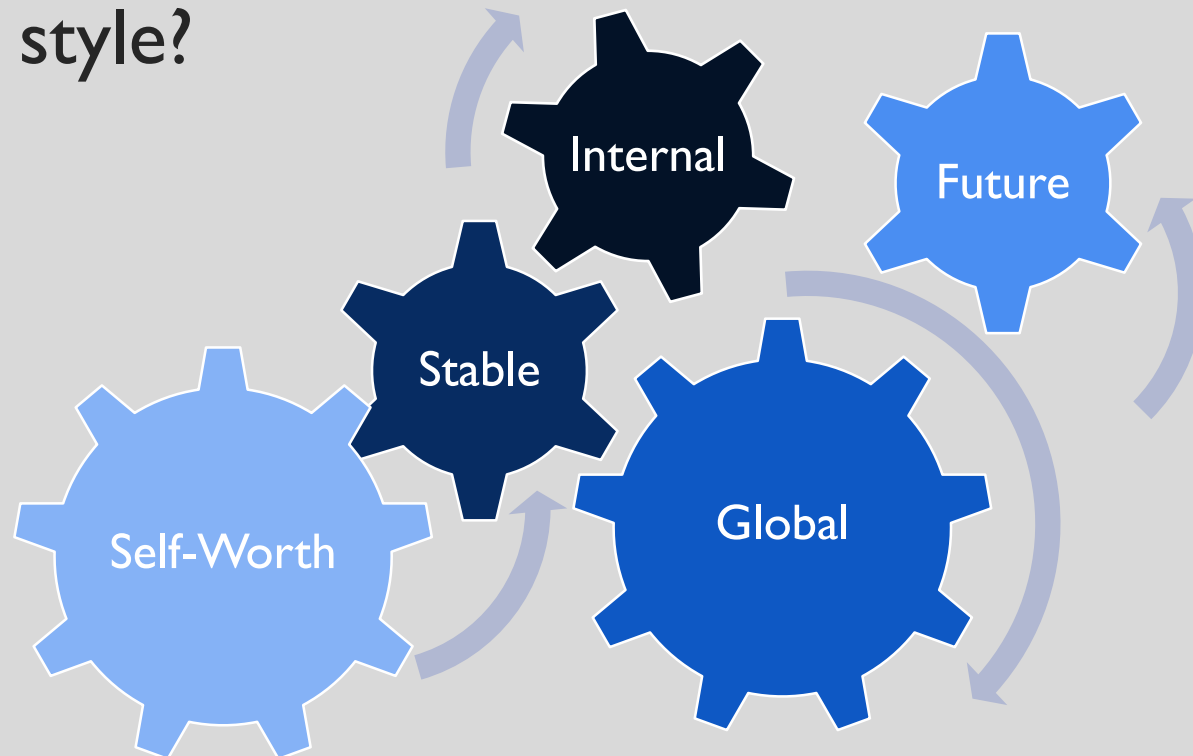
MEASUREMENT OF COGNITIVE VULNERABILITY

- Inconsistent with theory
- Additive or composite score (Liu, Kleiman, Nestor, & Cheek, 2015)
- Weakest link (Abela & Sarin, 2002)

Current Study

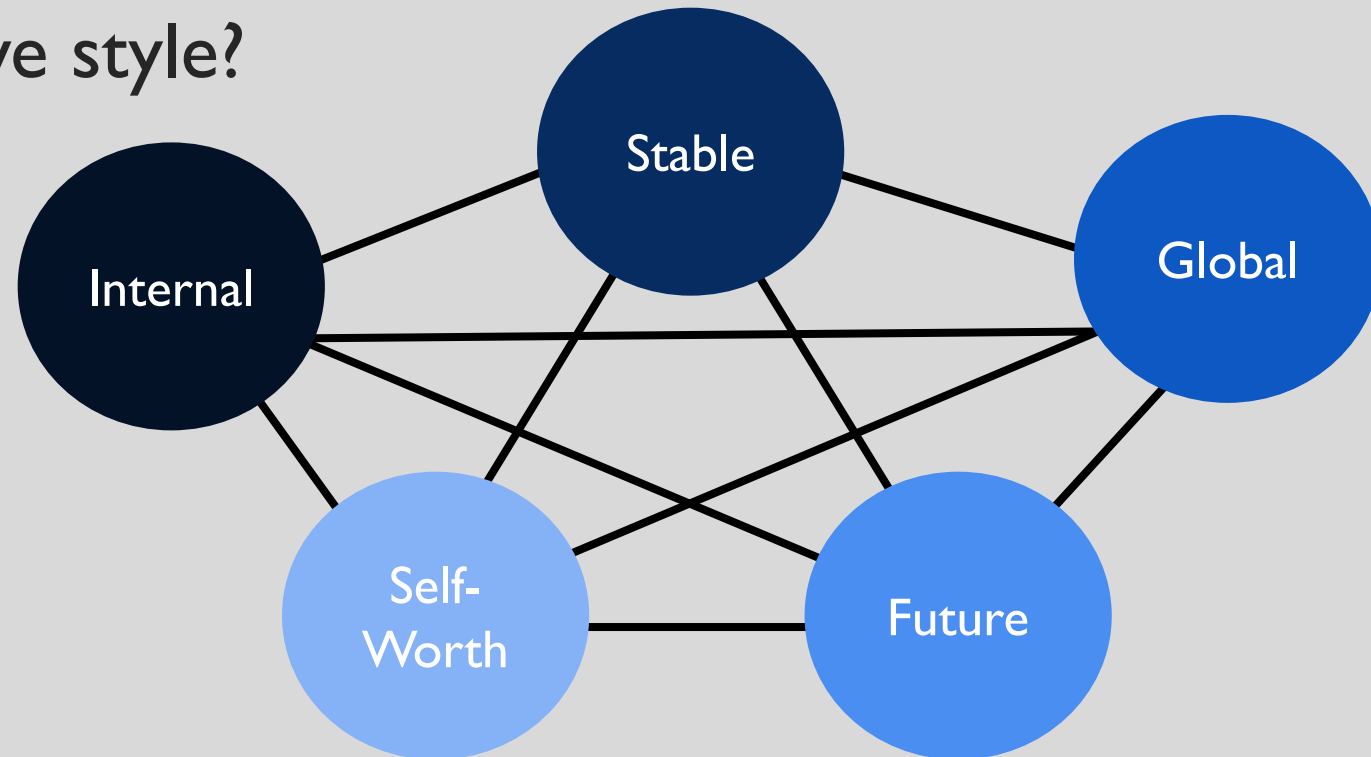
CURRENT STUDY

- I. What are the relationships between the components of cognitive style?



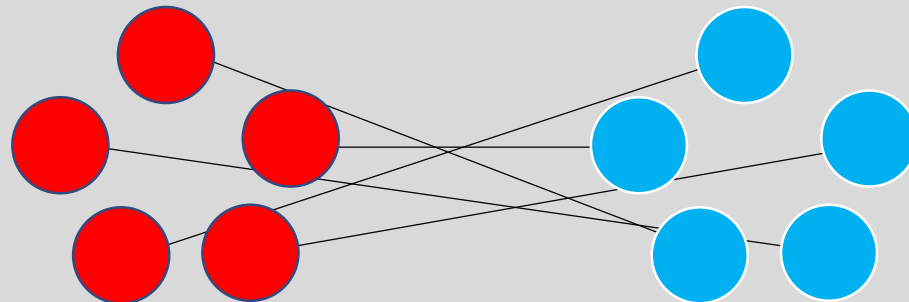
CURRENT STUDY

- I. What are the relationships between the components of cognitive style?



CURRENT STUDY

1. What are the relationships between the components of cognitive style?
2. How do the components of negative cognitive style relate to the symptoms of depression?



Methods

PARTICIPANTS

- $M_{\text{age}} = 12.57$ ($SD = .90$)
- 53% female
- (T1) $N = 608$
- (T2) $N = 222$
- Adolescent Cognition and Emotion (ACE) Project (Temple University; Alloy et al., 2012)

MEASURES

Adolescent Cognitive Style Questionnaire—Modified (CSQ)

(1) Internal (2) Stable (3) Global (4) Future (5) Self-Worth

Children's Depression Inventory (CDI)

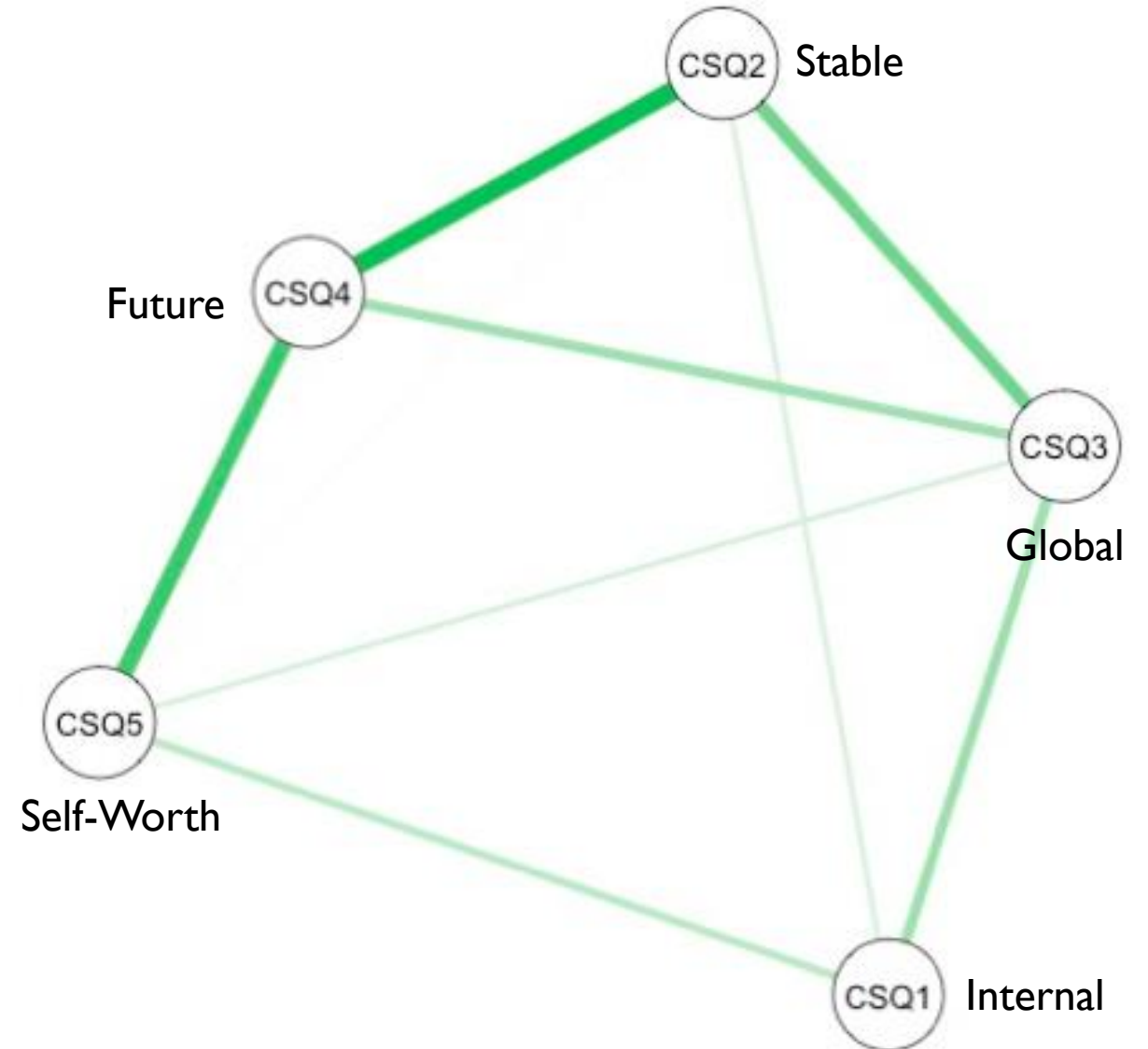
(1) Depressed mood (2) Ineffectiveness (3) Anhedonia

(4) Self-Esteem (5) Interpersonal problems

Analyses & Results

CONTEMPORANEOUS NETWORK (COGNITIVE STYLE)

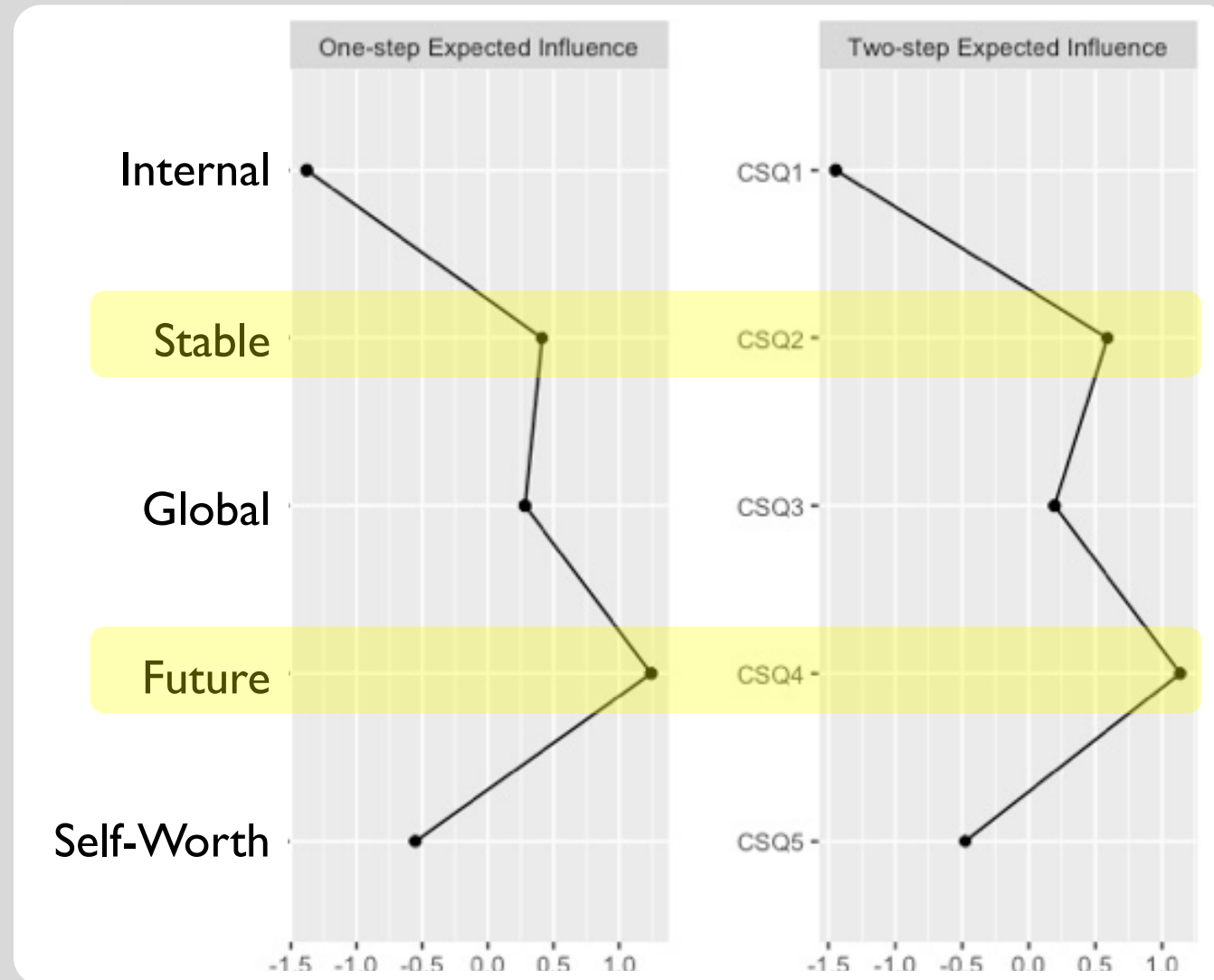
1. GGM regularized via the graphical LASSO
2. Edges = pairwise regularized partial correlations



CONTEMPORANEOUS NETWORK

(COGNITIVE STYLE)

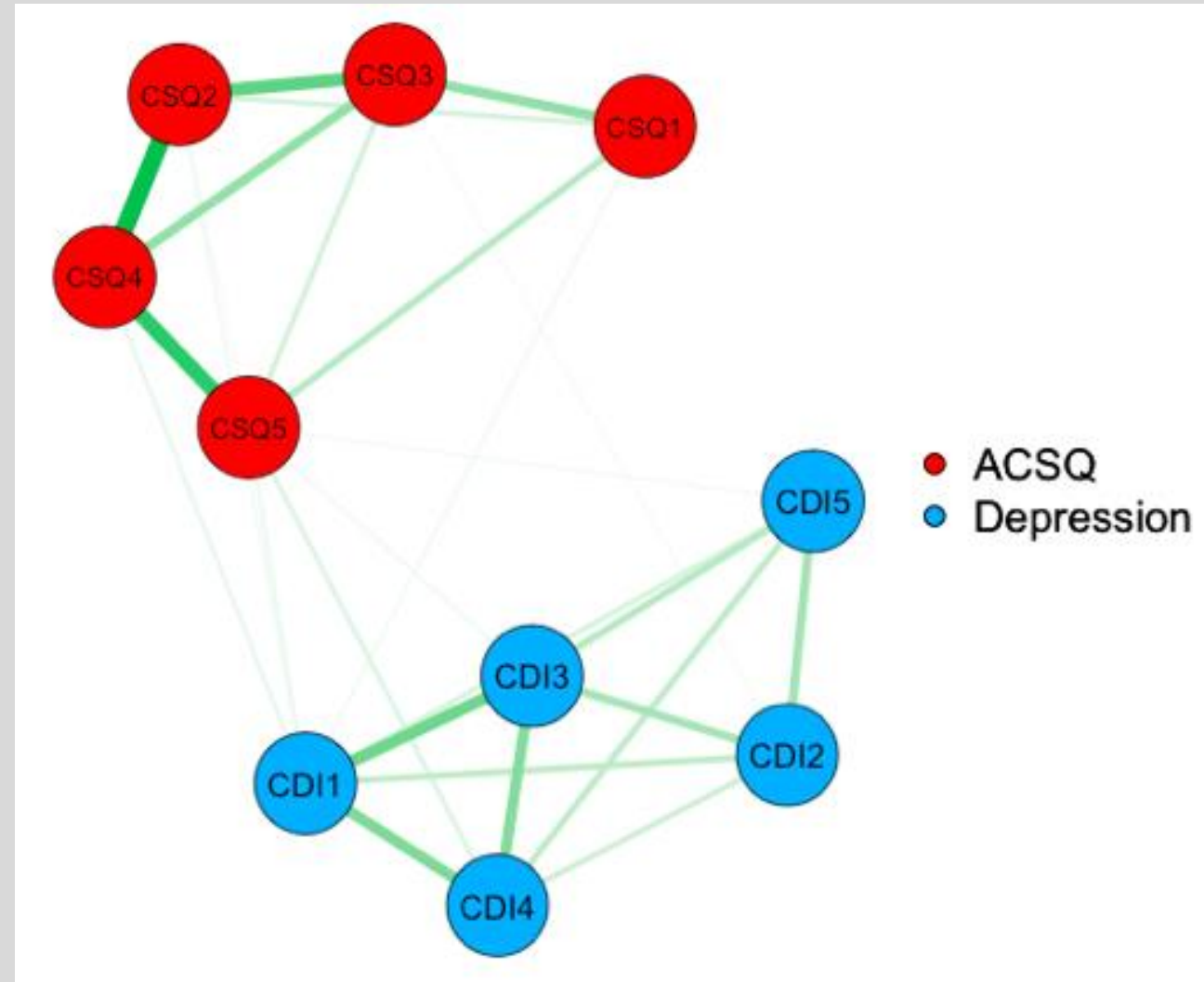
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2. Edges = pairwise regularized partial correlations
3. Expected influence estimates



CONTEMPORANEOUS NETWORK

(COGNITIVE STYLE & DEPRESSION)

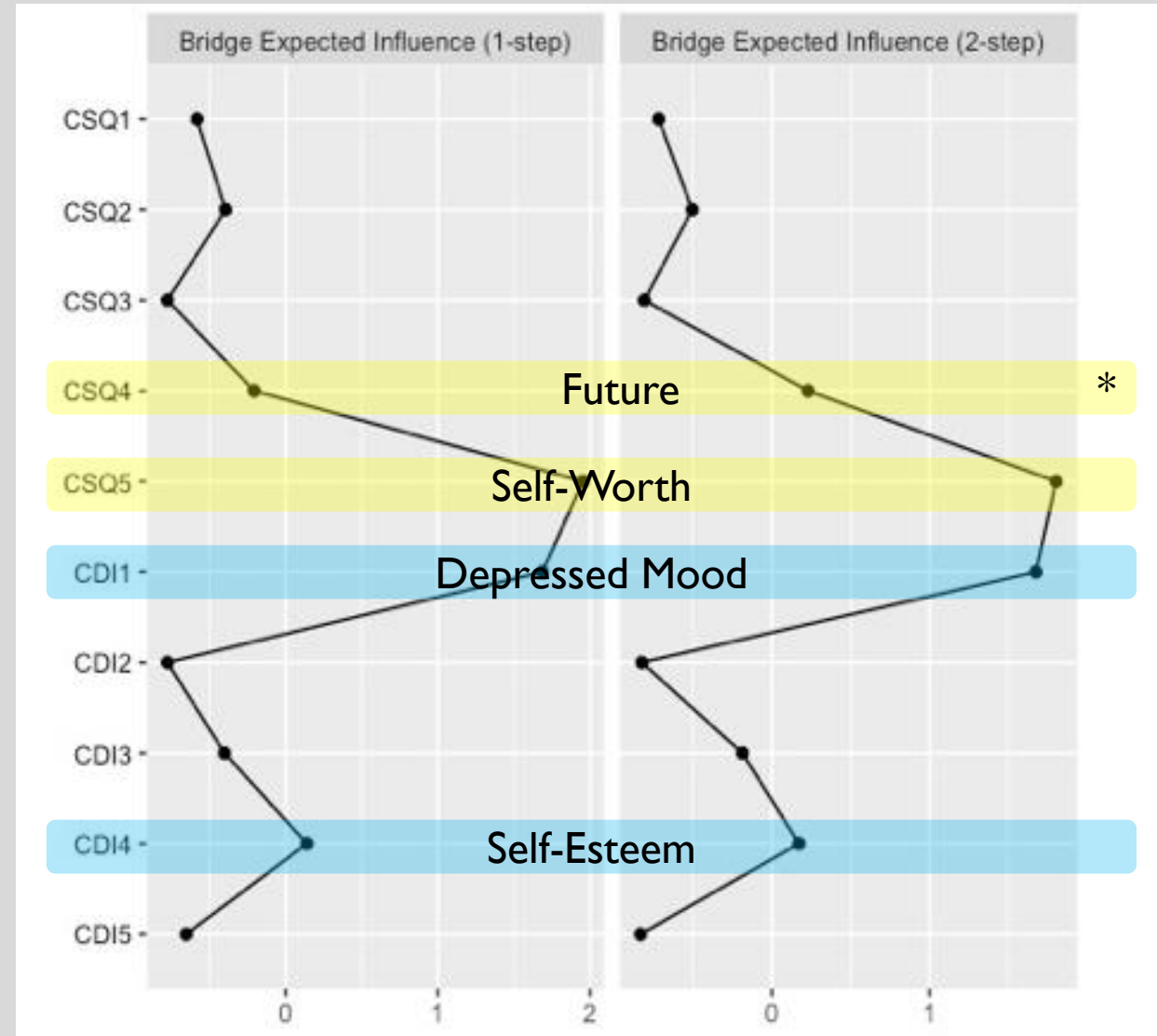
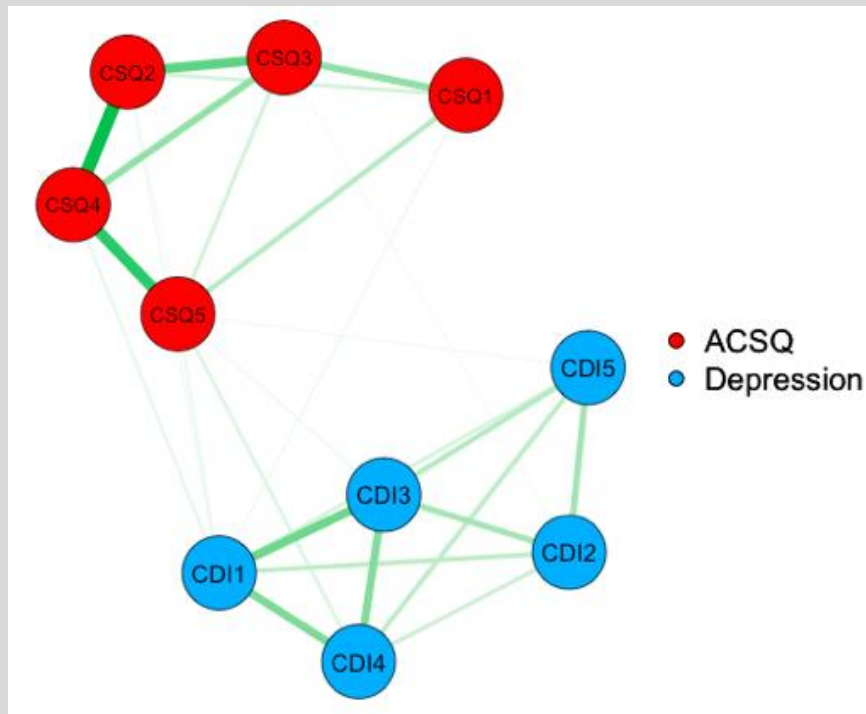
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CONTEMPORANEOUS NETWORK

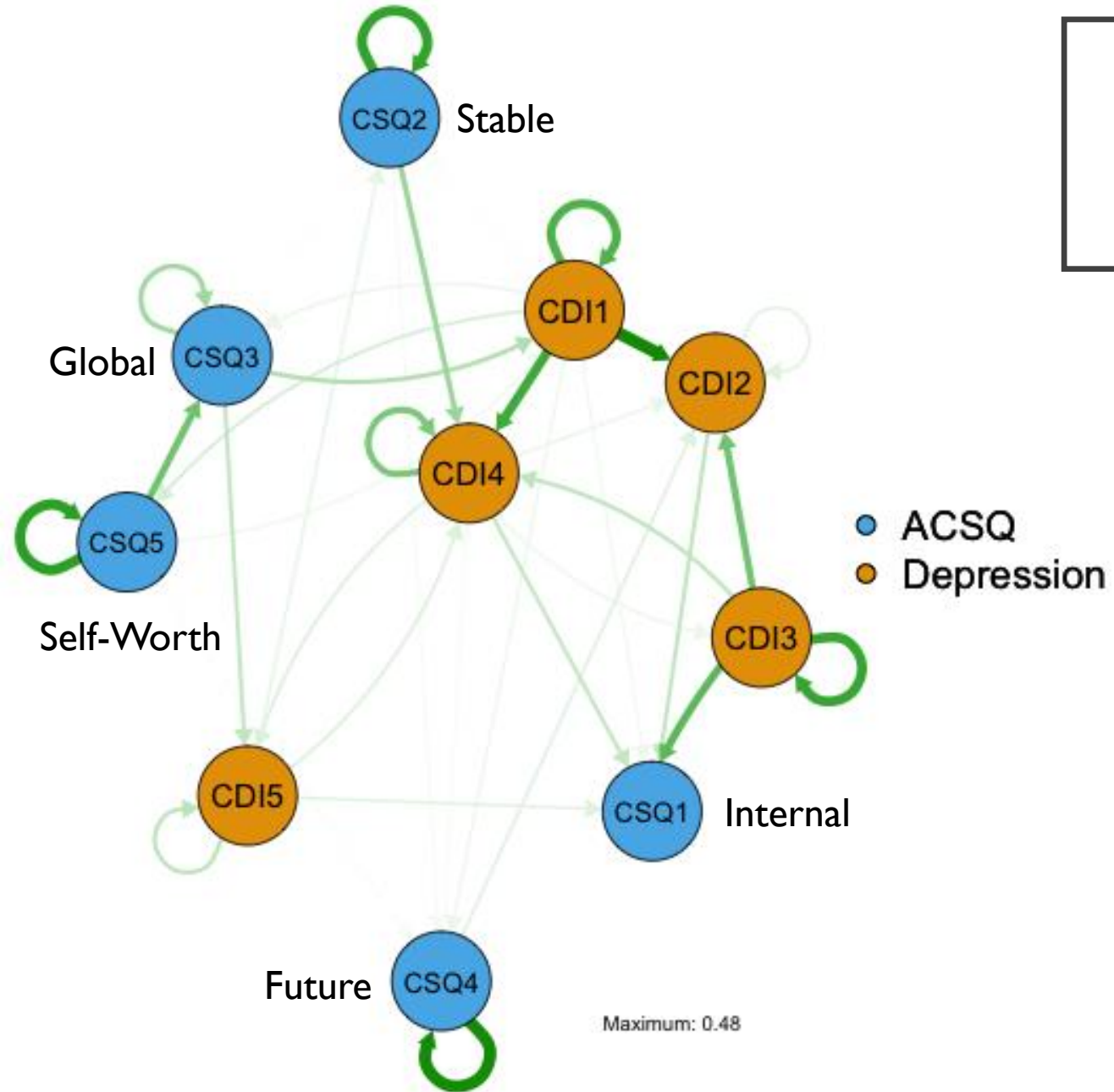
(COGNITIVE STYLE & DEPRESSION)

Bridge expected influence estimates



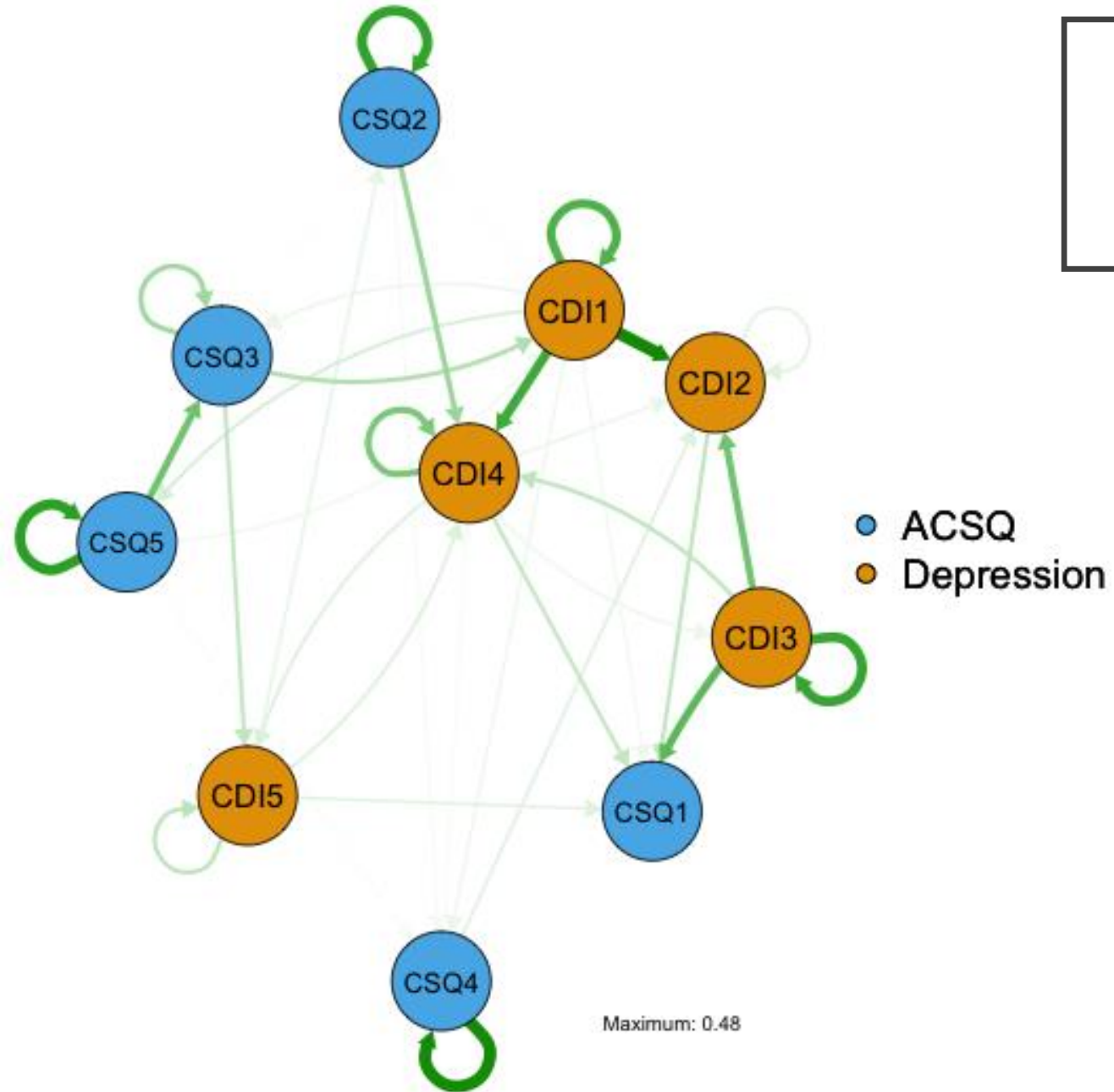
(bridge function from the R package *networktools*; Jones, 2018; Heeren, Jones, & McNally, 2018; Jones, Mair, Riemann, Mugno, & McNally, 2017)

TEMPORAL NETWORKS (COGNITIVE STYLE & DEPRESSION)



1. Cross-lagged panel network
2. Edges = cross-time effects
3. Arrows indicate direction of prediction

TEMPORAL NETWORKS (COGNITIVE STYLE & DEPRESSION)

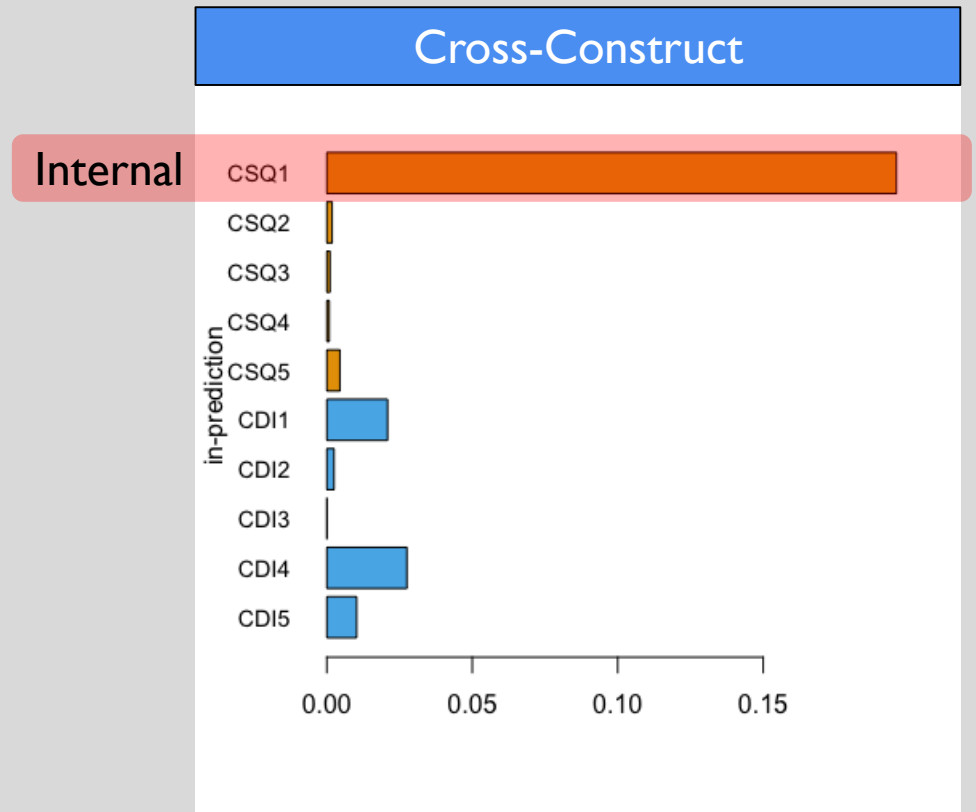


- Cross-Lagged ($T1 \rightarrow T2$)
- Cross-Construct ($T1 \text{ CSQ} \rightarrow T2 \text{ CDI}$)
- In-Prediction (impact *on* node A)
- Out-Prediction (impact *of* node A)

TEMPORAL NETWORKS (COGNITIVE STYLE & DEPRESSION)

In-Prediction (impact *on* node A)

Estimate for a node at T2 *by all nodes in the other construct at T1*



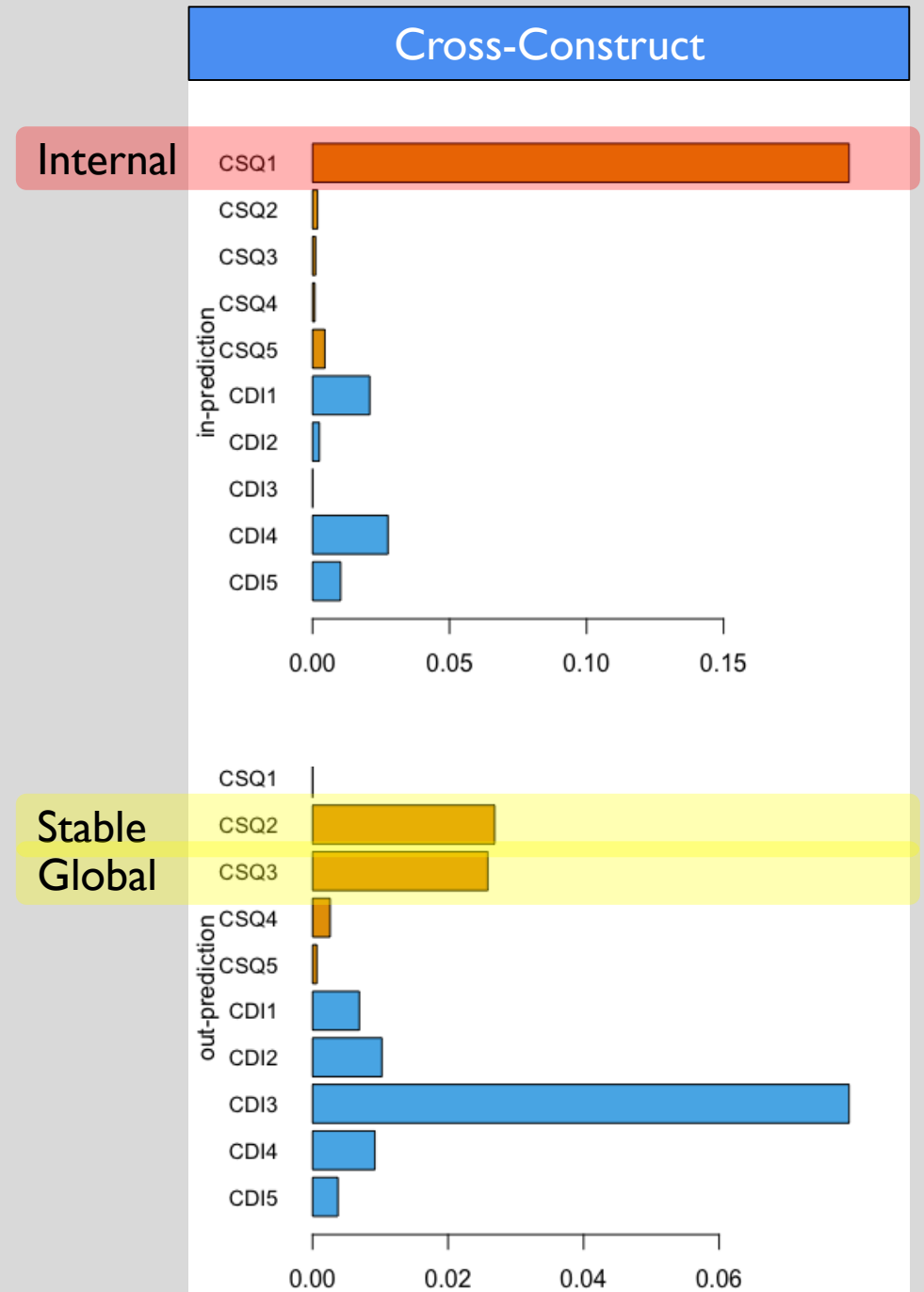
TEMPORAL NETWORKS (COGNITIVE STYLE & DEPRESSION)

In-Prediction (impact *on* node A)

Estimate for a node at T2 *by all nodes in the other construct at T1*

Out-Prediction (impact *of* node A)

Estimate for a node at T1 *to all other nodes in the other construct at T2*



Discussion

RELATIONSHIPS BETWEEN COMPONENTS OF COGNITIVE STYLE

- Missing information in additive and weakest link scores

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- Expected influence
 - ▶ Stable (vs. temporary) thinking
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- Missing information in additive and weakest link scores
- Expected influence
 - ▶ Stable (vs. temporary) thinking
 - ▶ Negative future consequences
- Future directions
 - ▶ Longitudinal and experimental data
 - ▶ Intervention

NEGATIVE COGNITIVE STYLE & DEPRESSION

- Specific pathways connecting negative cognitive style to depression

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- Implications for
 - ▶ Prediction
 - ▶ Intervention

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- Specific pathways connecting negative cognitive style to depression
- Implications for
 - ▶ Prediction
 - ▶ Intervention
- Causal relationships?
 - ▶ Stable and global thinking → depressive symptoms
 - ▶ Depressive symptoms → internal attributions
 - ▶ Feedback effects?

CONCLUSIONS

- Novel approach for studying cognitive style that fits with theory
- Potential implications for prediction and treatment



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