

Idiographic Personality: A Methodological Perspective on Measuring and Modeling Individuals

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Washington University in St. Louis



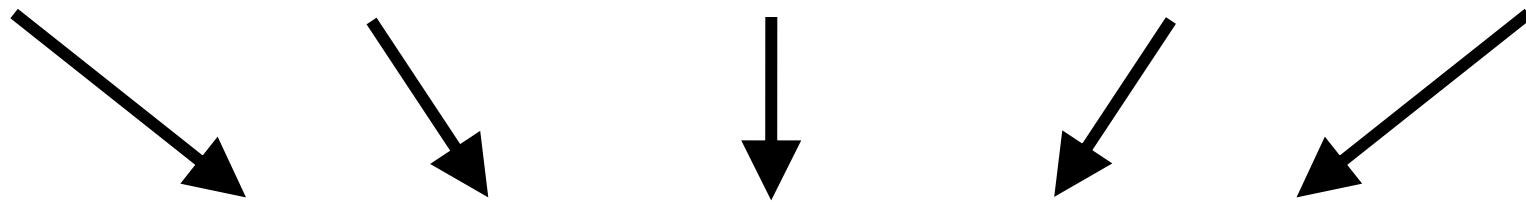
Extraversion

Agreeableness

Conscientiousness

Neuroticism

Openness



Nomothetic

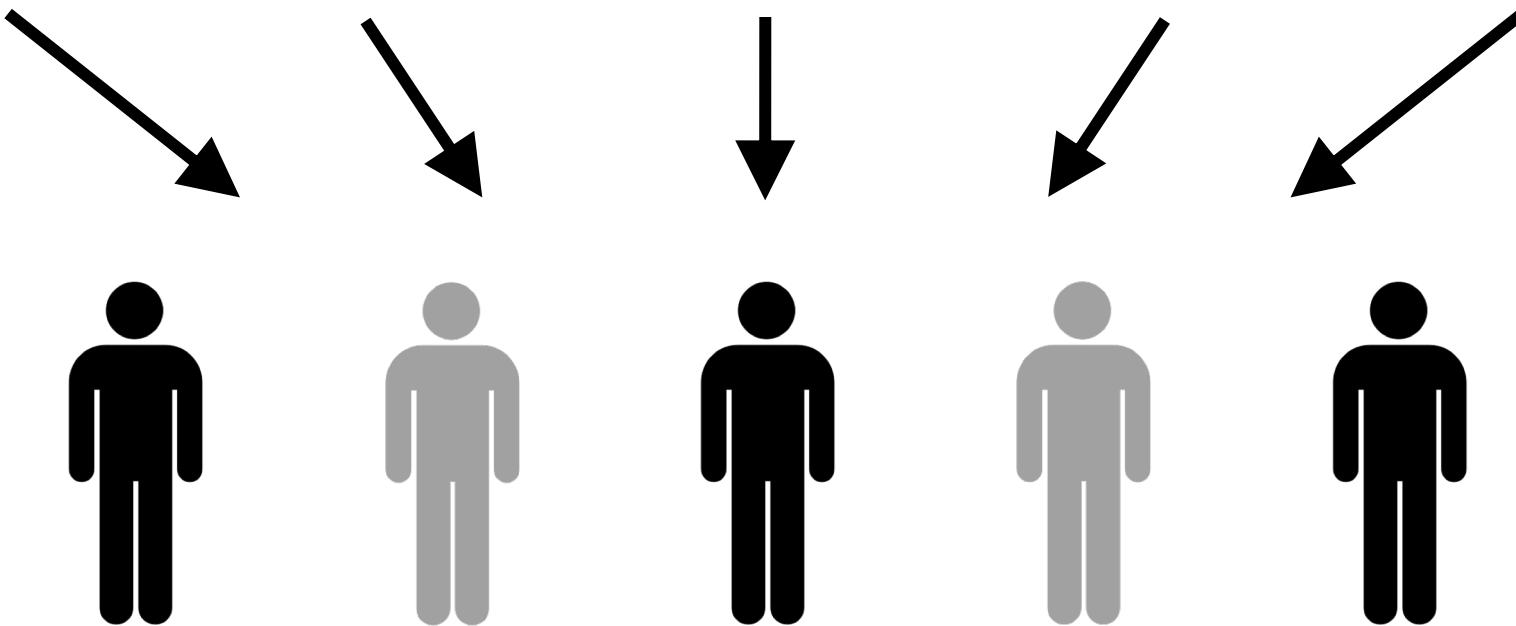
Extraversion

Agreeableness

Conscientiousness

Neuroticism

Openness



Idiographic

Personality

Rude
Quiet
Lazy
Relaxed
Depressed
Outgoing
Kind
Reliable
Worried

Cognitive Affective

Academic Motivation
Around Others
Connected
Positive Emotion
Negative Emotion
Authenticity
Self-Esteem
Happiness
Loneliness

Idiographic Assessment: Graphical Autoregressive Models

$$X_{i,k}(t) = \sum_{j=1}^n \beta_{ij} X_{j,k}(t-1) + \varepsilon_{i,k}(t)$$

k = subjects
 i = item
 j = item
 t = assessment point

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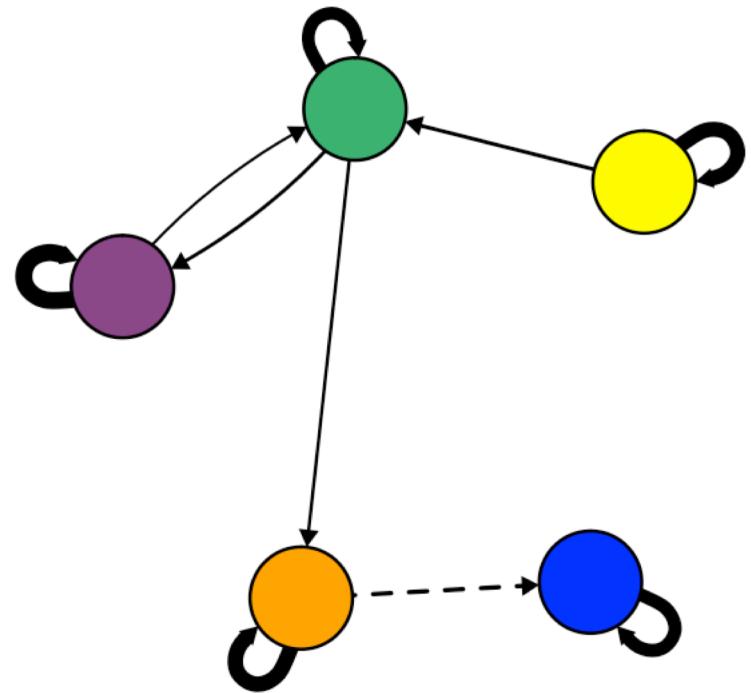
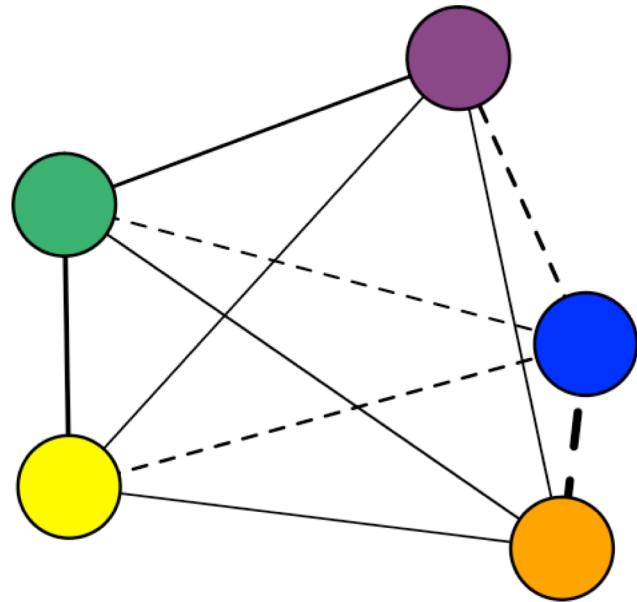
k = subjects
 i = item
 j = item
 t = assessment point

$$\text{PCC}(X_i(t), X_j(t)) = -\frac{K_{ij}}{\sqrt{K_{ii} K_{jj}}}$$

K = concentration matrix
(inverse variance-covariance matrix)

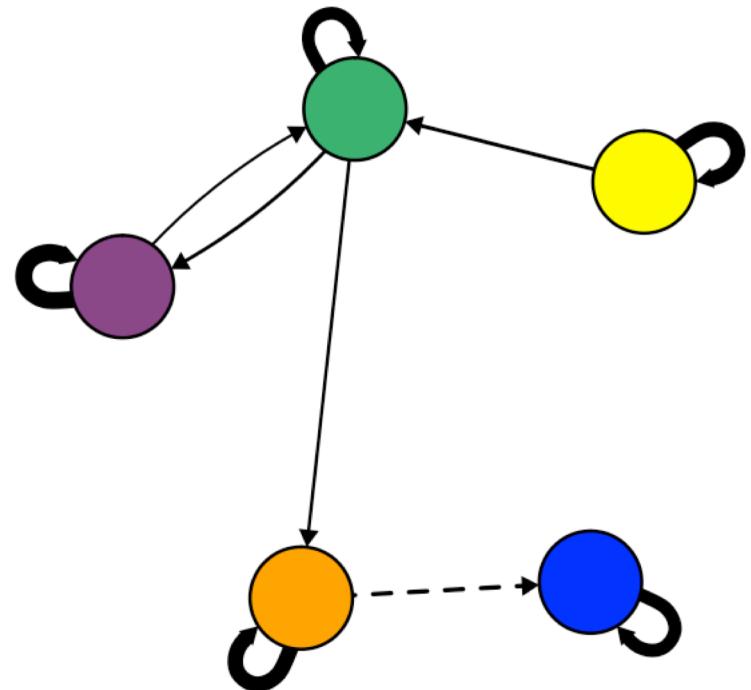
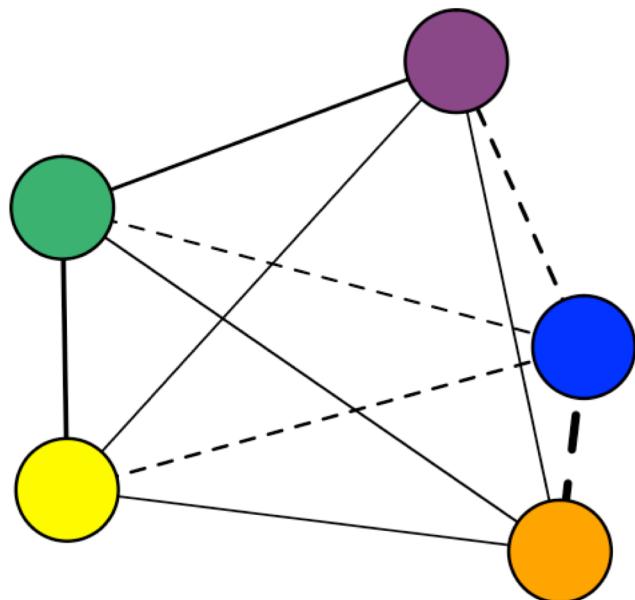
$$\text{PDC}(X_i(t), X_j(t-1)) = \frac{\beta_{ij}}{\sqrt{\Sigma_{ii} K_{jj} + \beta_{ij}^2}}$$

Wild et al., 2010; Epskamp, Waldorp, Möttus, & Borsboom (2018)



Contemporaneous

Concurrent behaviors: *While...*

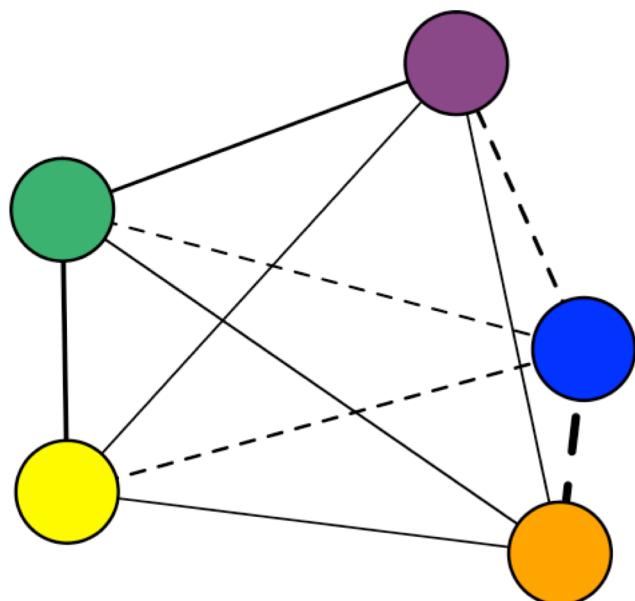


Within Time-Points:

$$X_{it} \leftrightarrow X_{jt}$$

Contemporaneous

Concurrent behaviors: *While...*

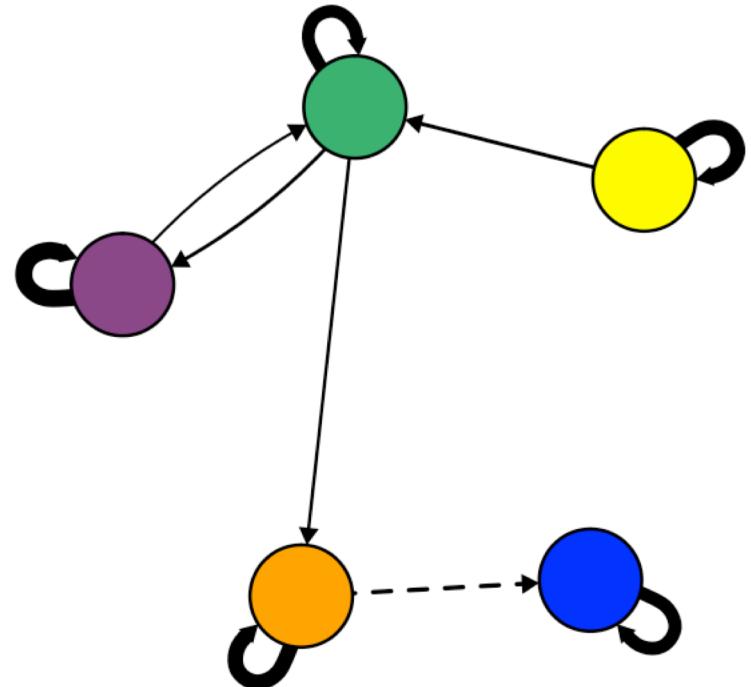


Within Time-Points:

$$X_{it} \leftrightarrow X_{jt}$$

Temporal

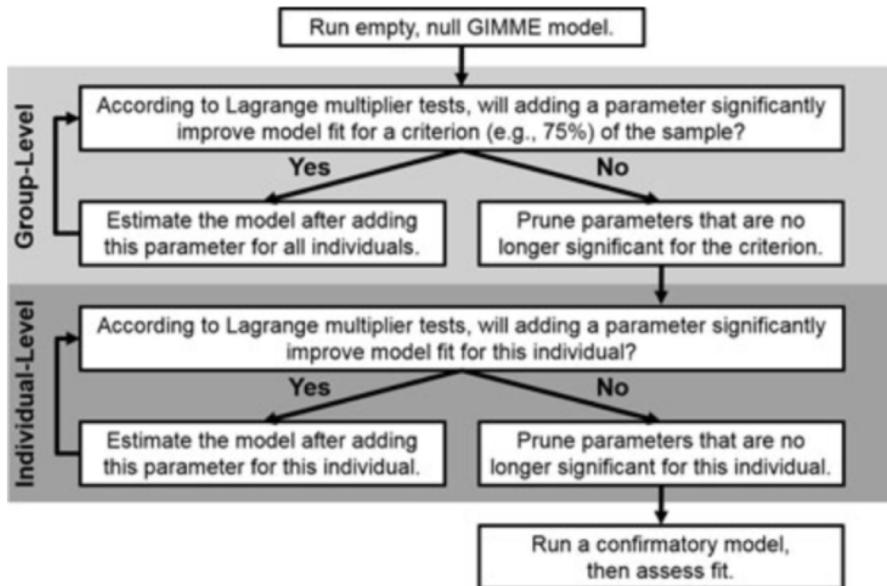
Contingent behaviors: *If... Then...*



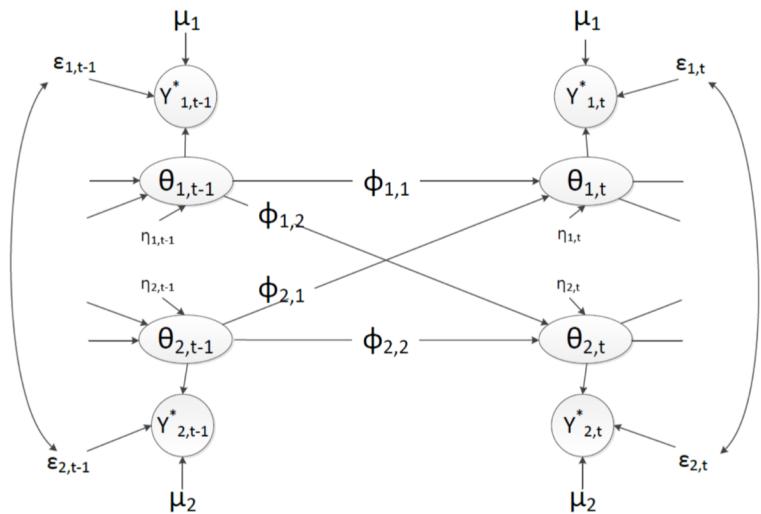
Between Time-Points:

$$X_{it} \rightarrow X_{j, t+1}$$

GIMME



VAR Bayesian Dynamic Model



Beltz & Gates, 2017; Wright et al., 2017

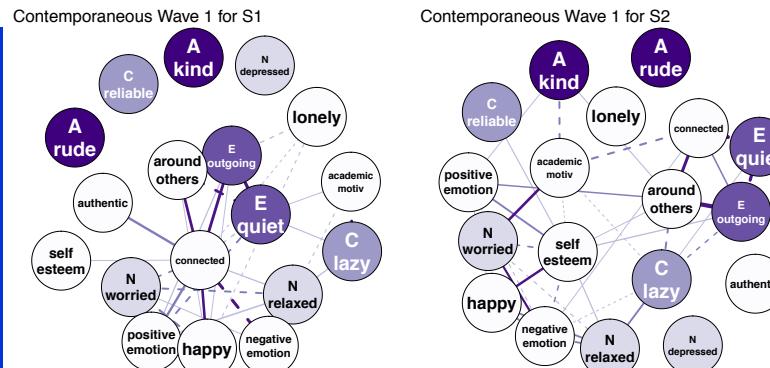
Krone, Albers, Kuppens, & Timmerman, 2017

**What does idiographic
assessment and modeling buy
us, and how do we do it well?**

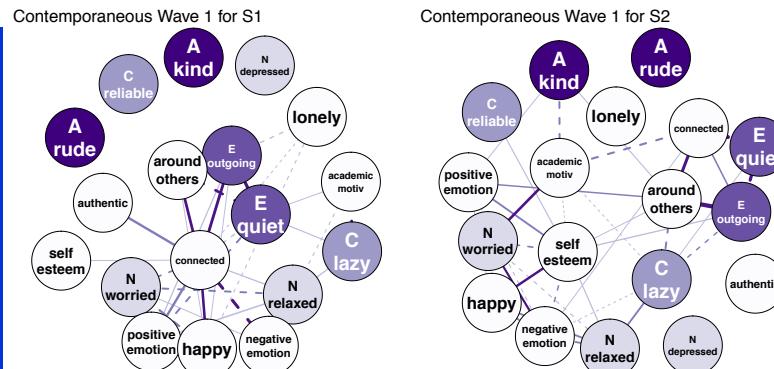
Promises

Challenges

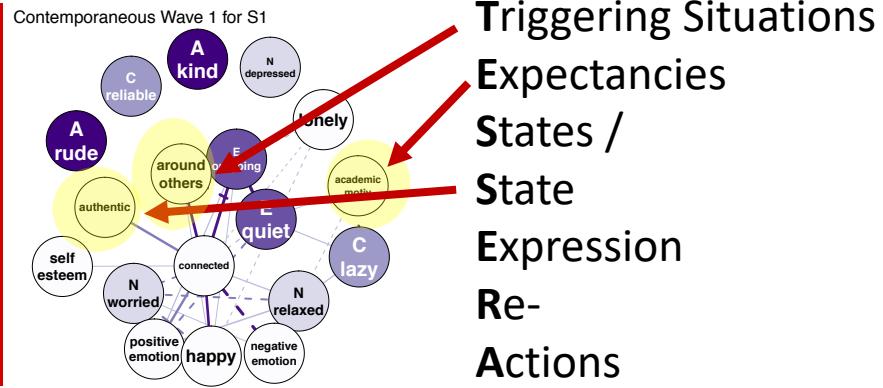
Structure



Structure



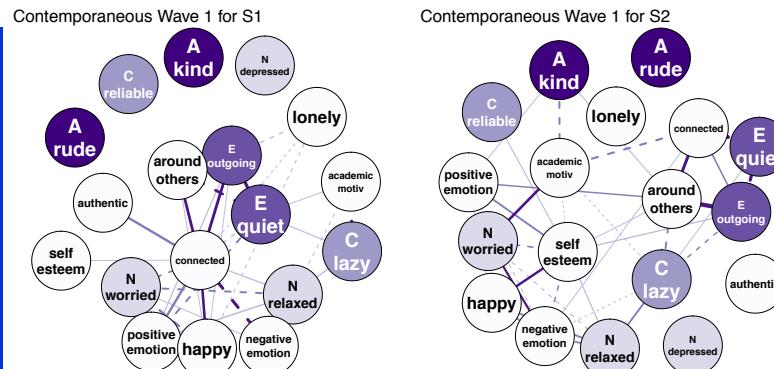
Process



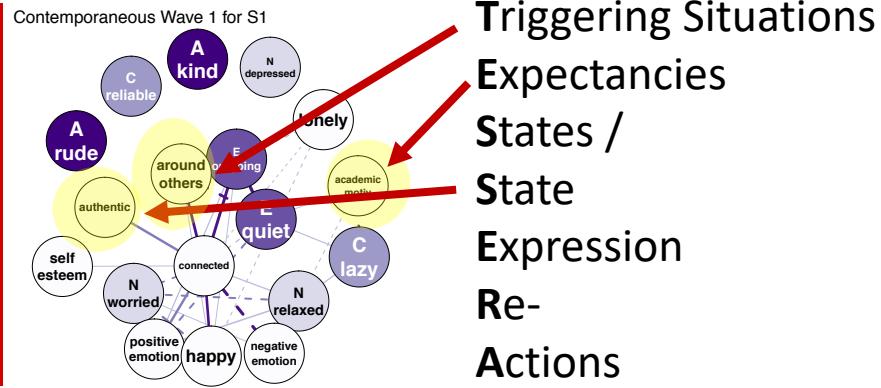
Promises

Challenges

Structure



Process



Development

psyarxiv.com/pb92q

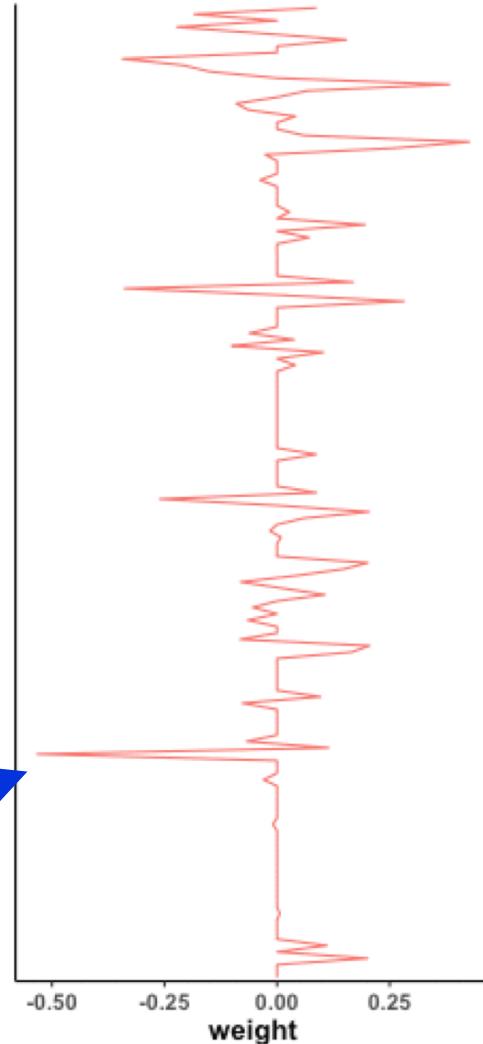
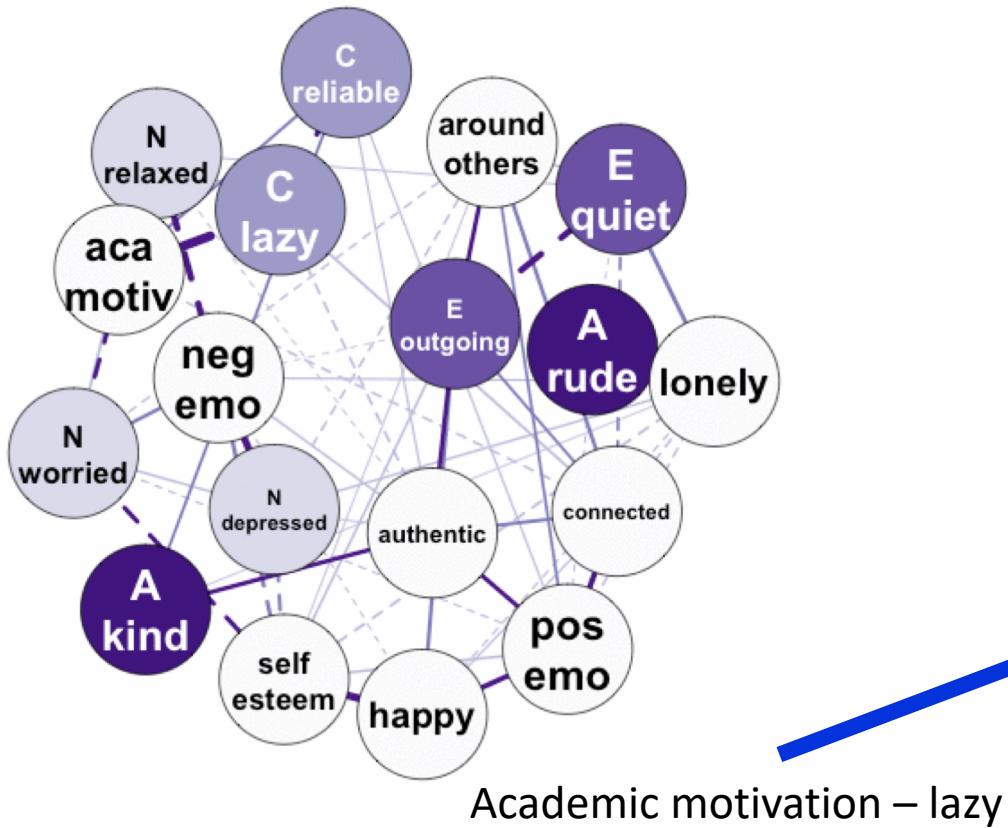
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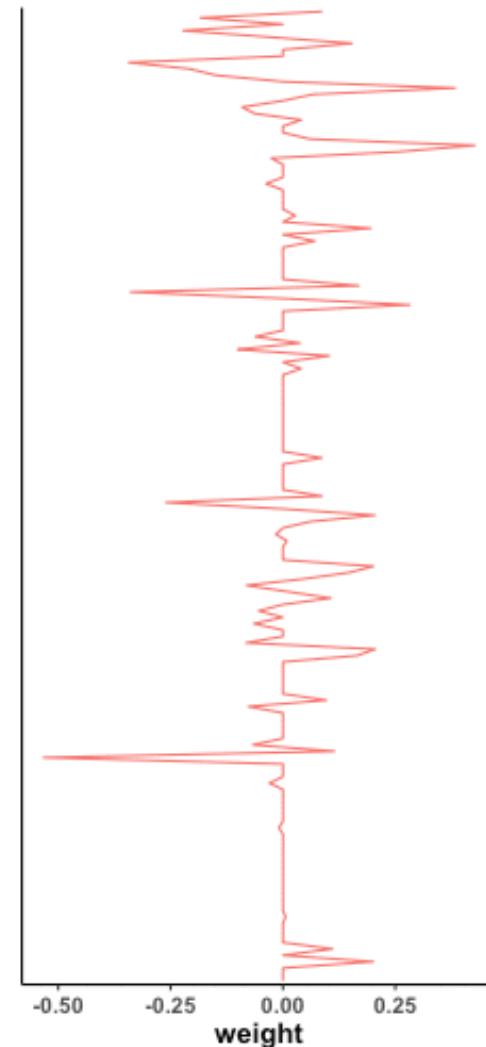
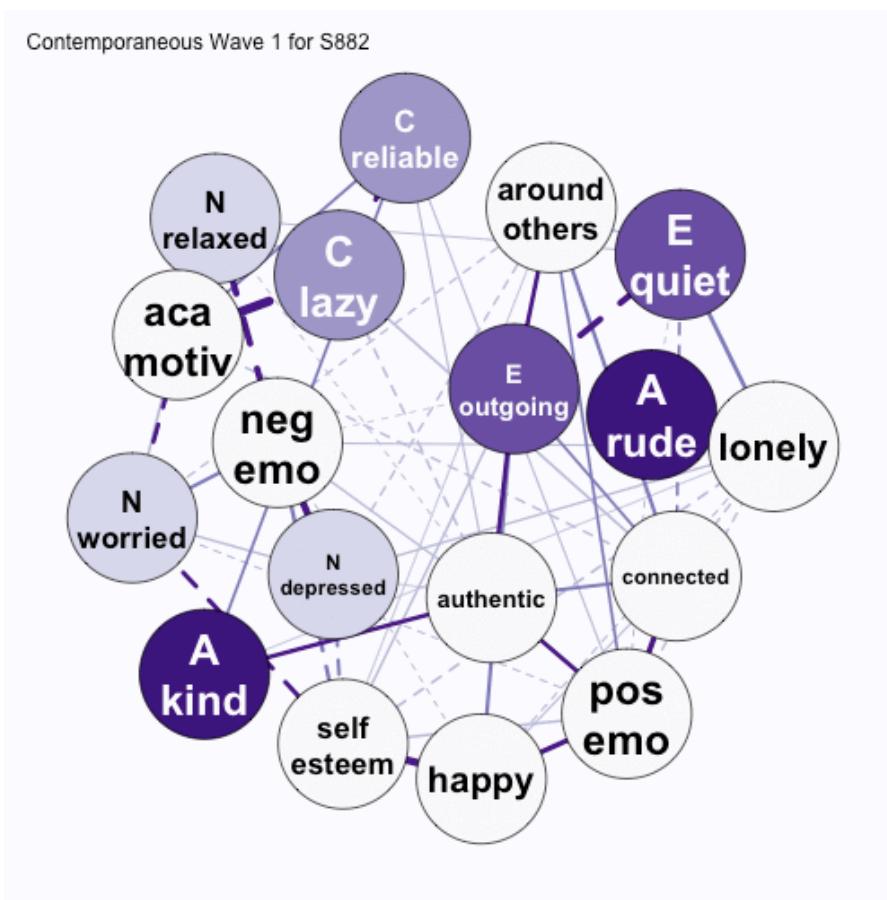
Contemporaneous Wave 1 for S882



Promises

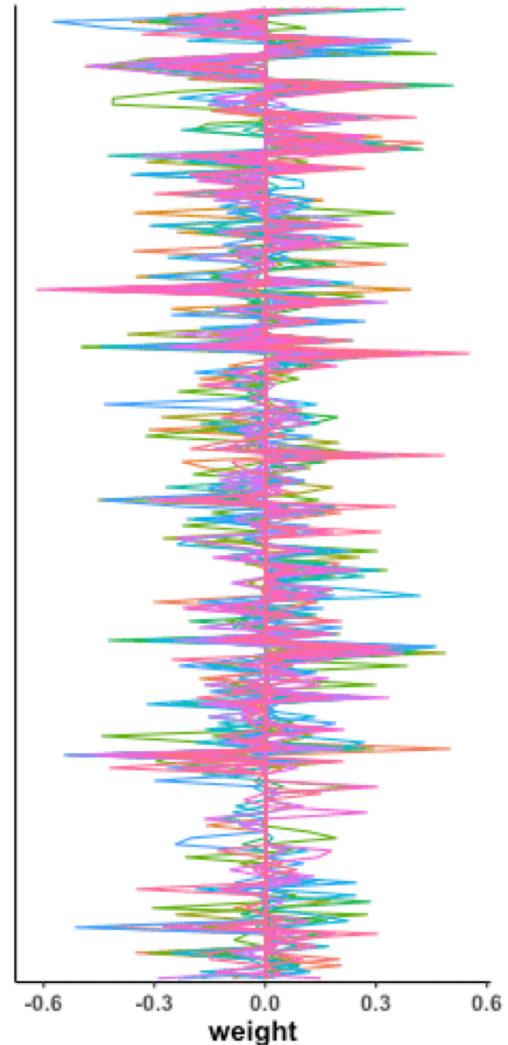
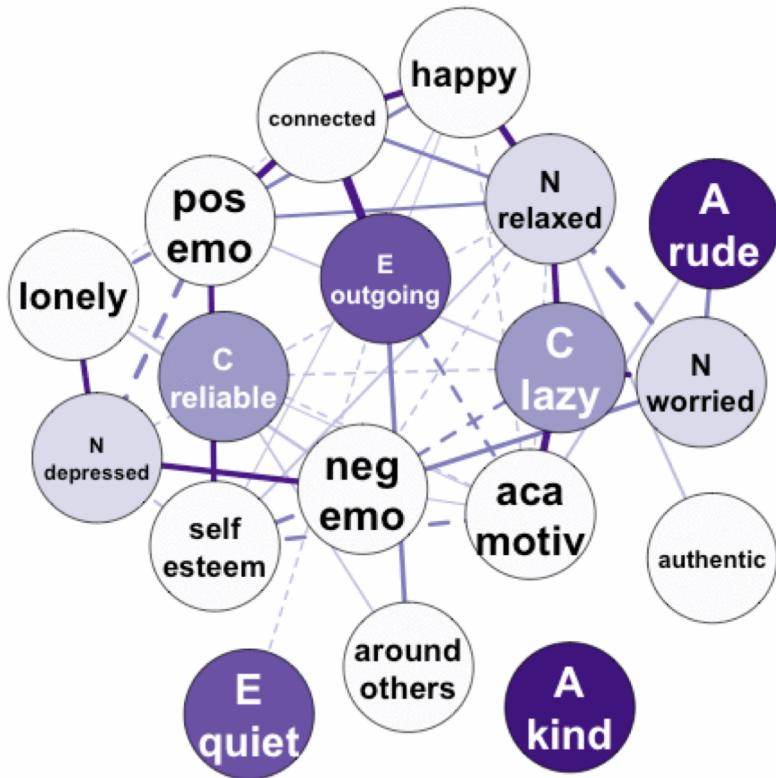
Challenges

Structure



Structure

Contemporaneous Wave 1 for S59665



Personality Processes

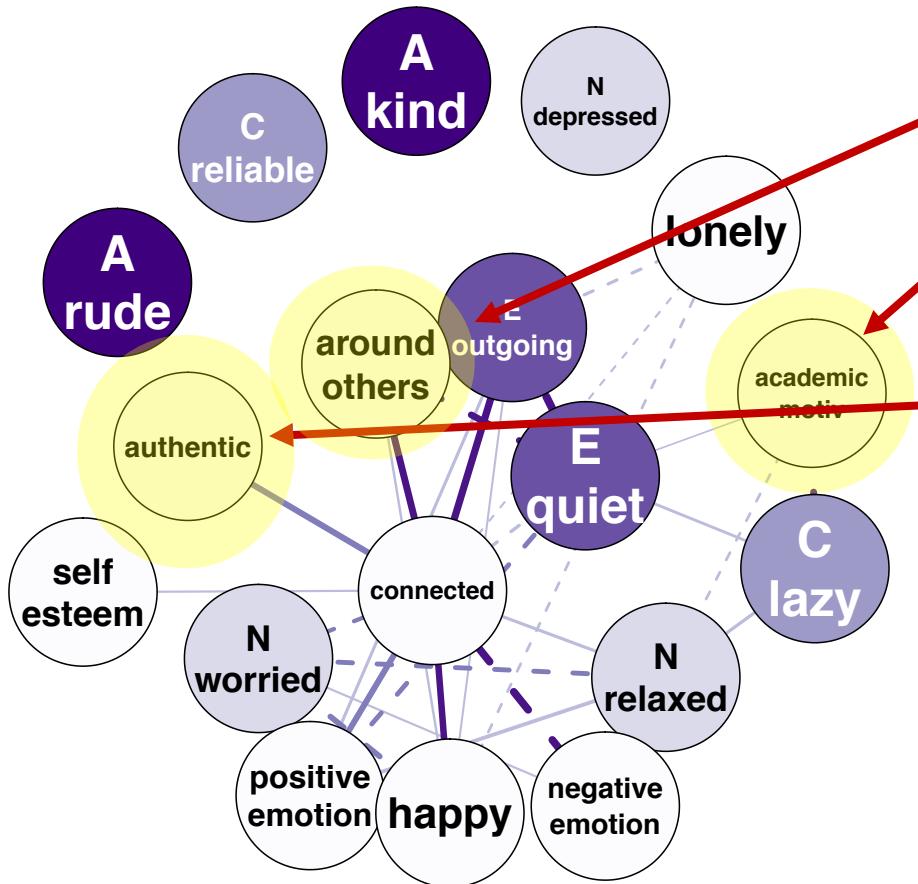
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Personality Processes

Triggering Situations
Expectancies
States /
State
Expression
Re-
Actions

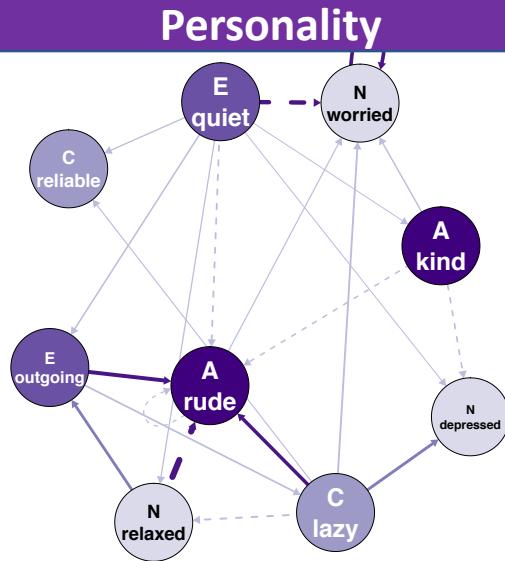
Personality Processes

Contemporaneous Wave 1 for S1



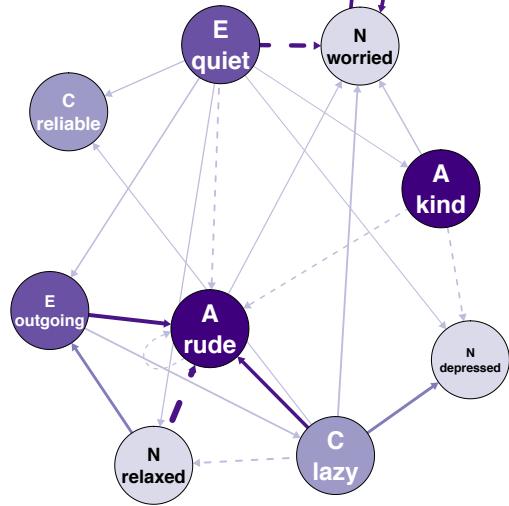
T riggering Situations
E xpectancies
S tates /
S tate
E xpression
R e-
A ctions

Personality Processes

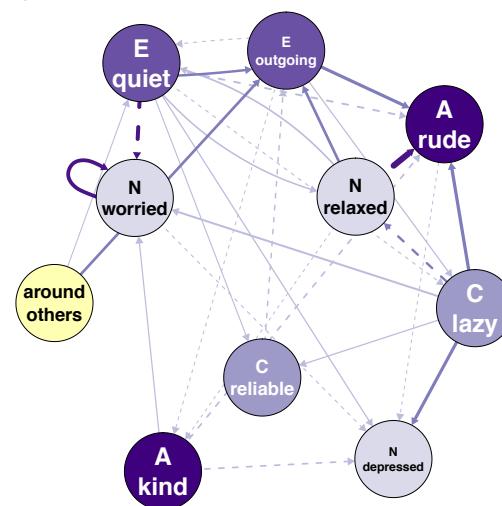


Personality Processes

Personality



Personality + Triggering Situations

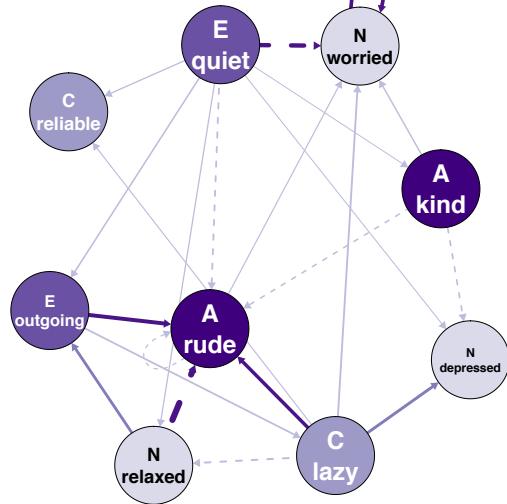


Promises

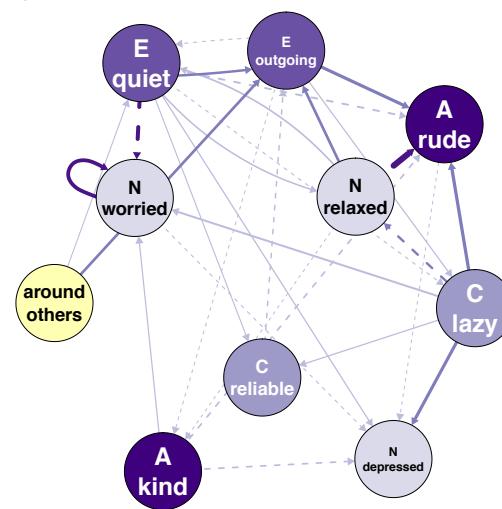
Challenges

Personality Processes

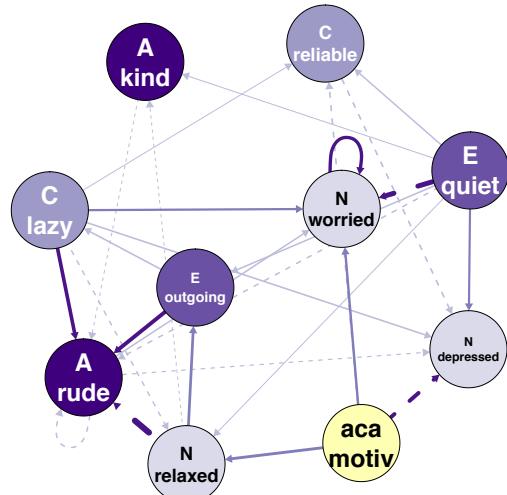
Personality



Personality + Triggering Situations



Personality + Expectancies

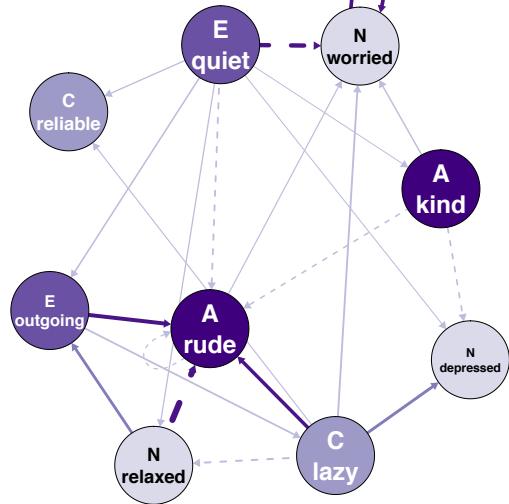


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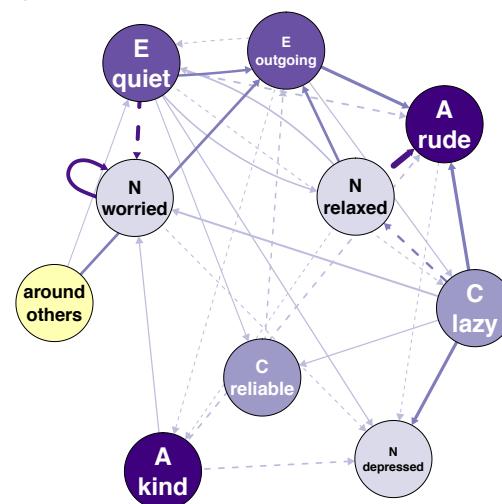
Challenges

Personality Processes

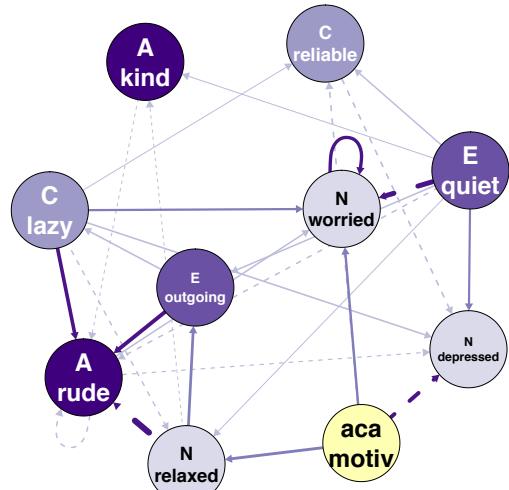
Personality



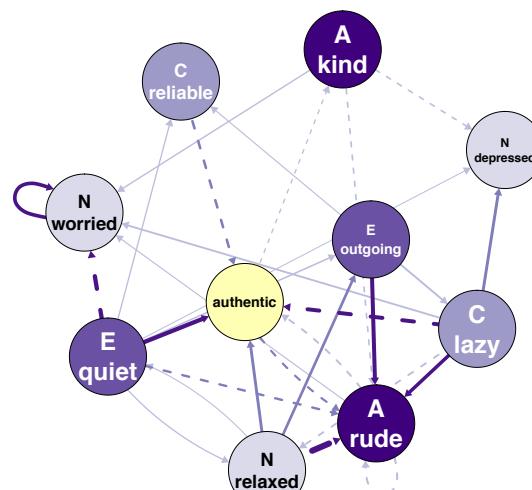
Personality + Triggering Situations



Personality + Expectancies



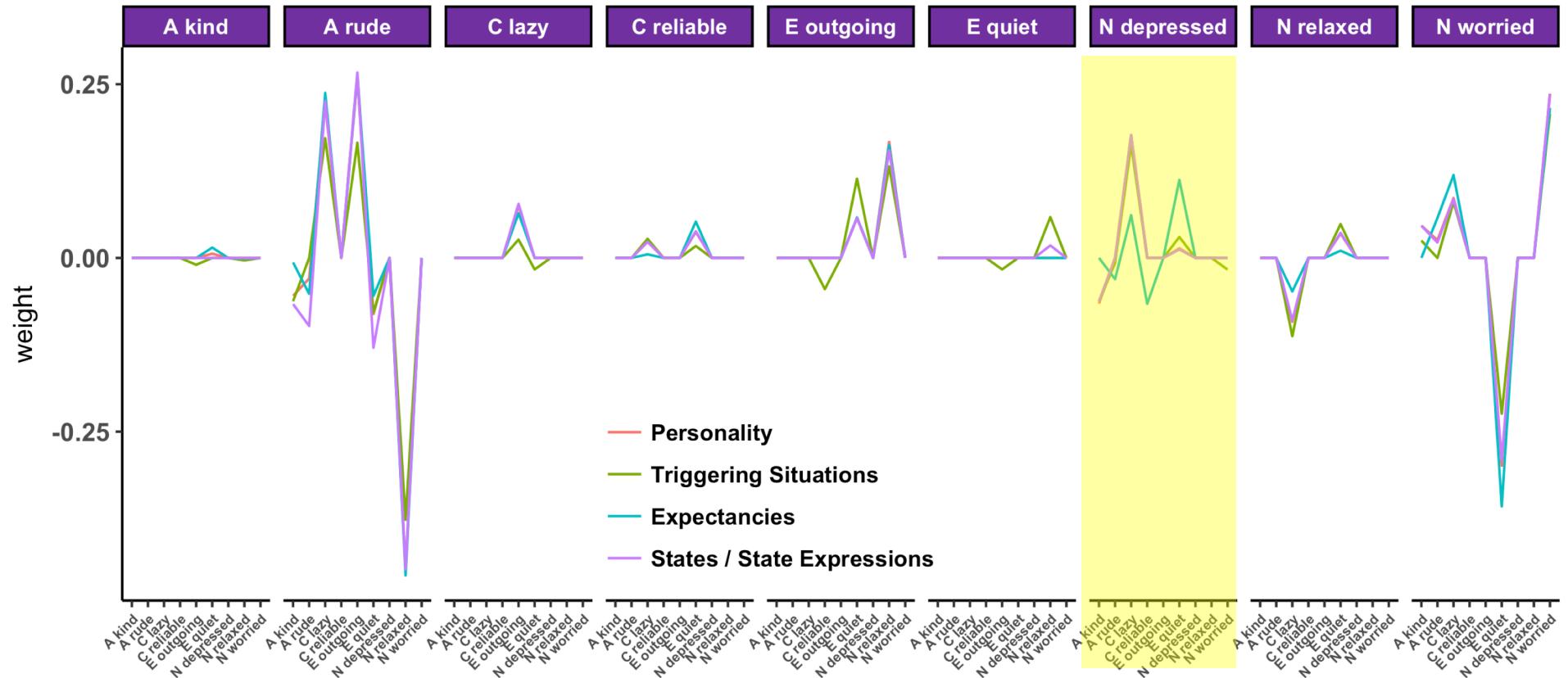
Personality + State Expression



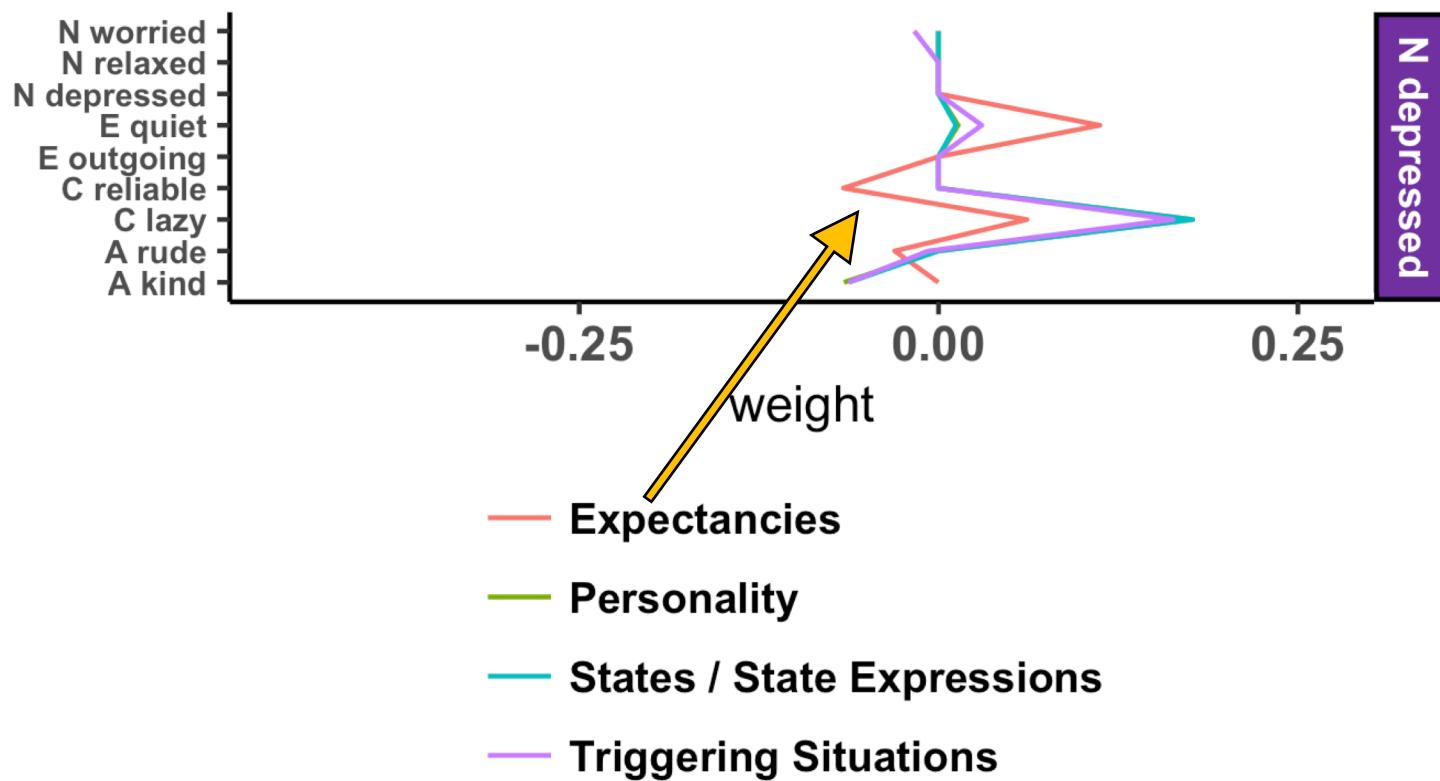
Promises

Challenges

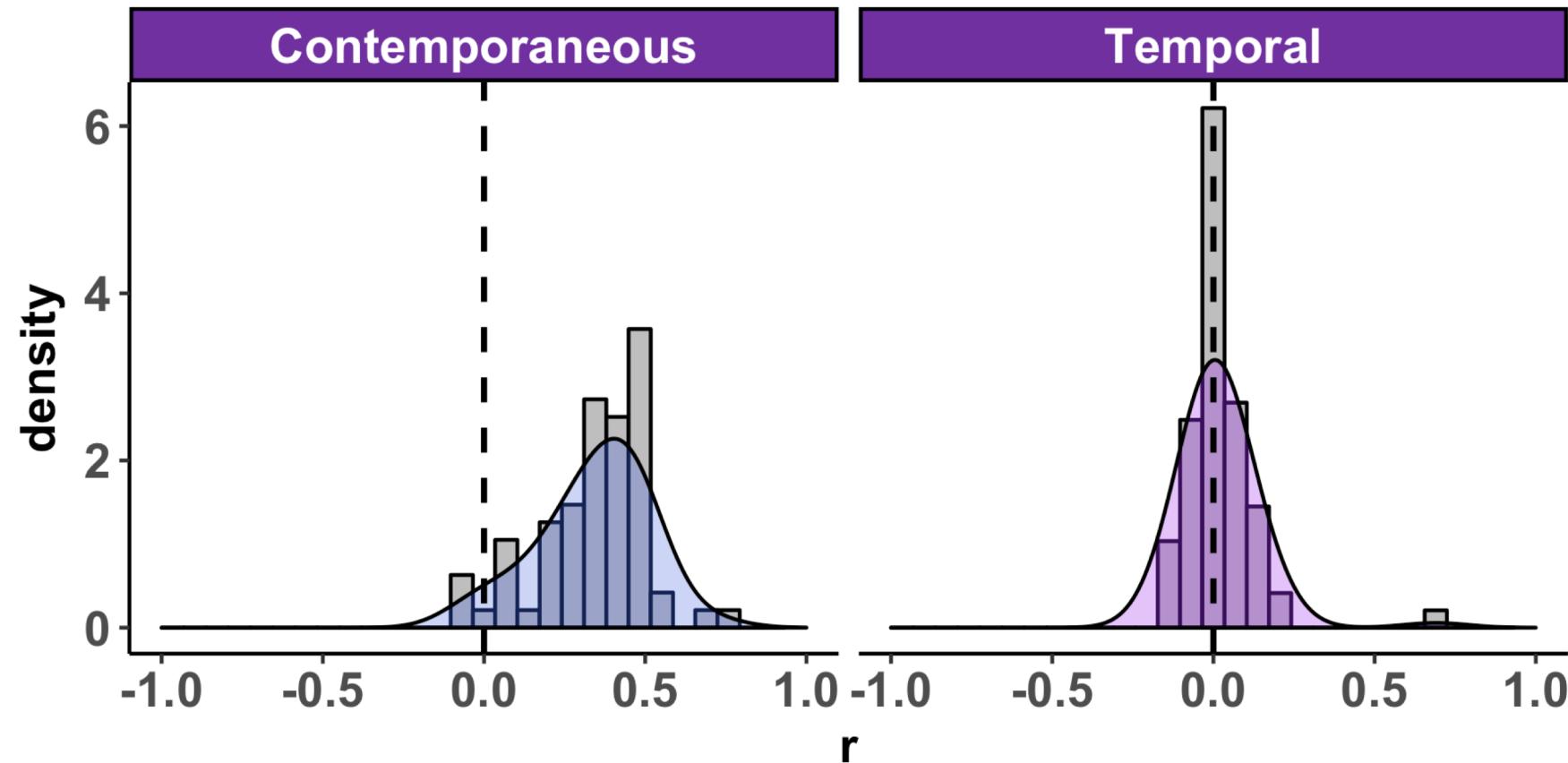
Personality Processes



Personality Processes



Development



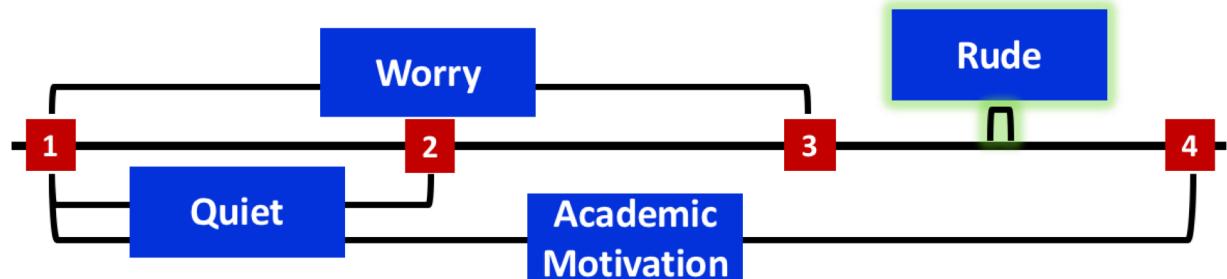
Promises

Challenges

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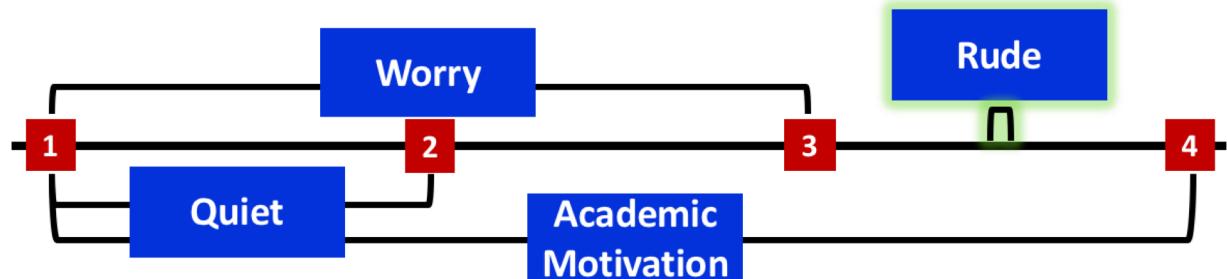
Velocity



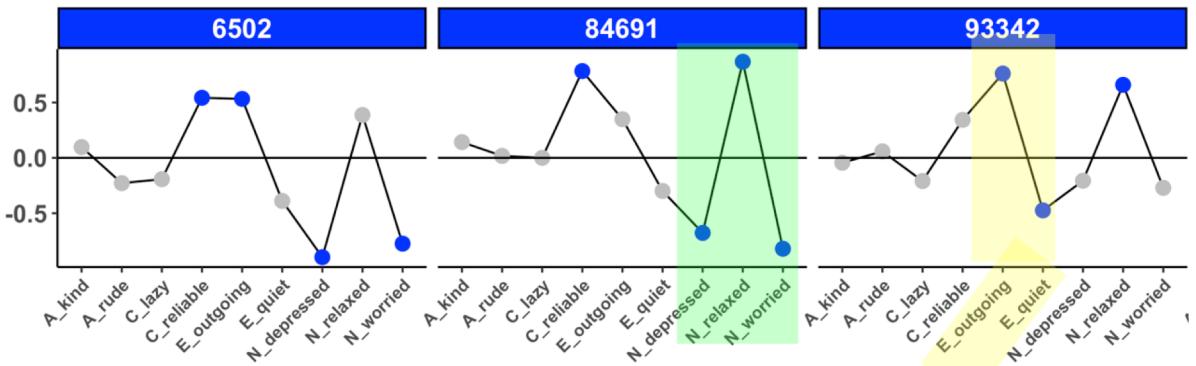
Promises

Velocity

Challenges



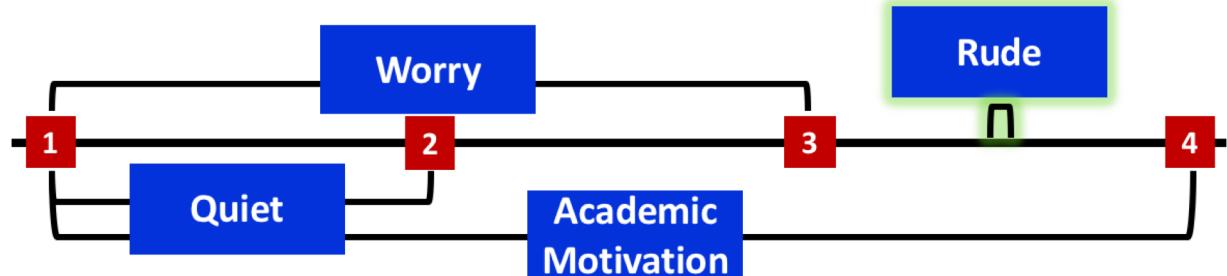
Psychometrics



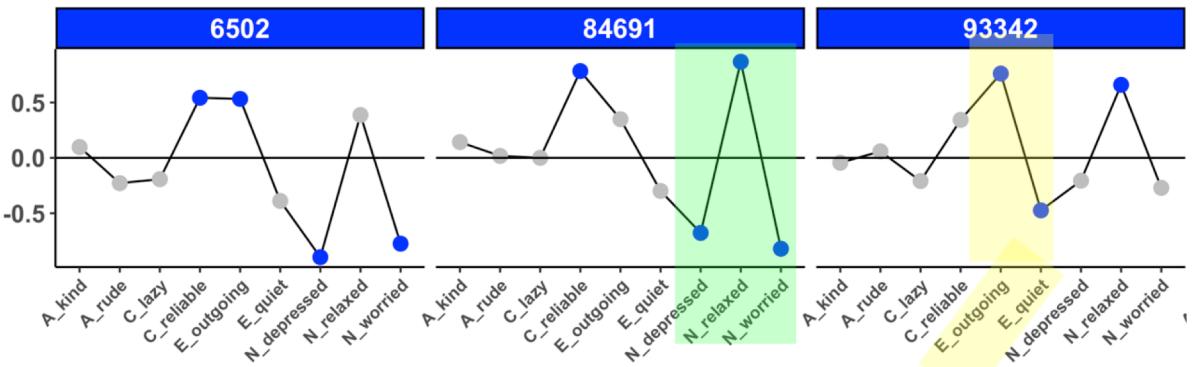
Promises

Challenges

The Time Interval Problem



Psychometrics



Aggregation

Centrality

Density

Clustering

Communities

Promises

Challenges

The Time Interval Problem



Worry

Academic
Motivation

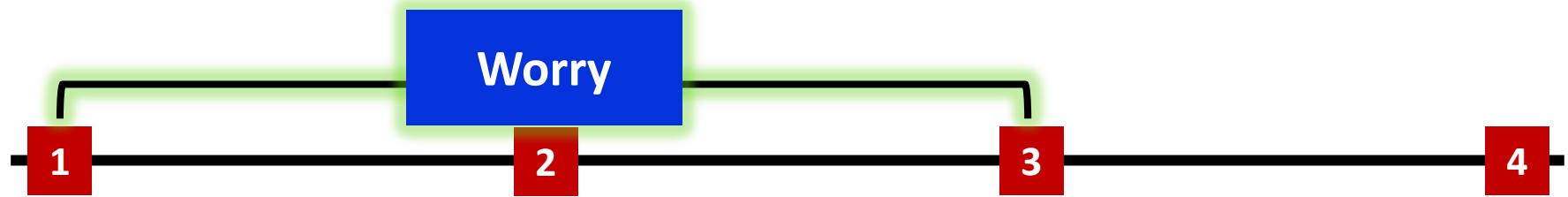
Quiet

Rude

Promises

Challenges

The Time Interval Problem



Academic
Motivation

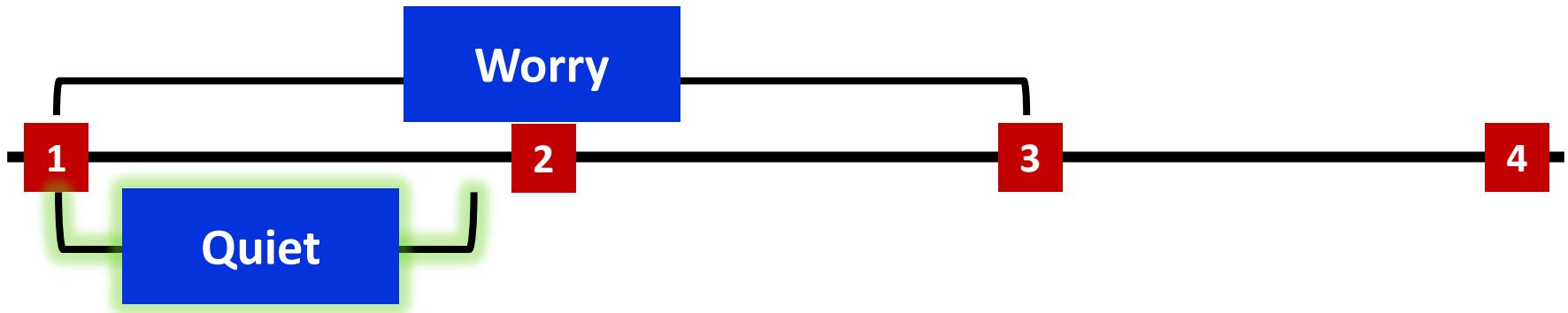
Quiet

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Promises

Challenges

The Time Interval Problem



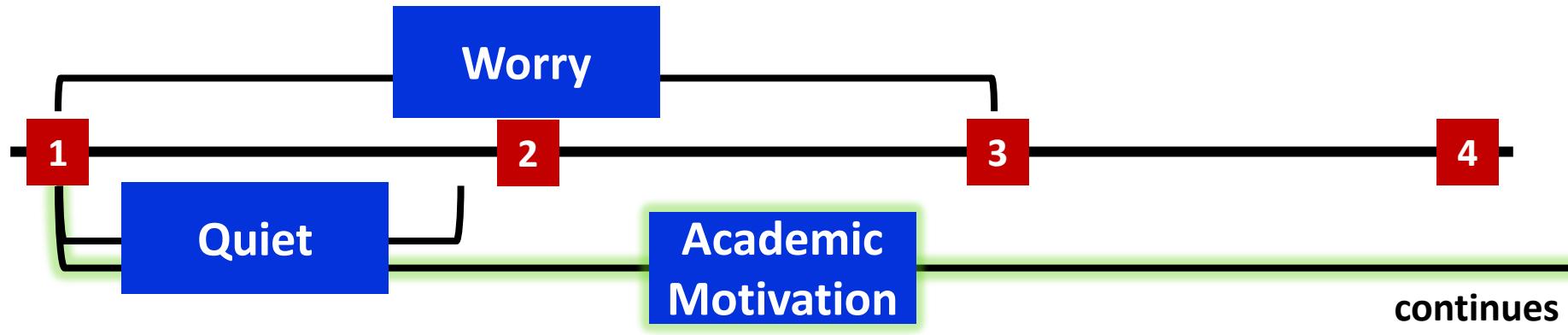
Academic
Motivation

Rude

Promises

Challenges

The Time Interval Problem

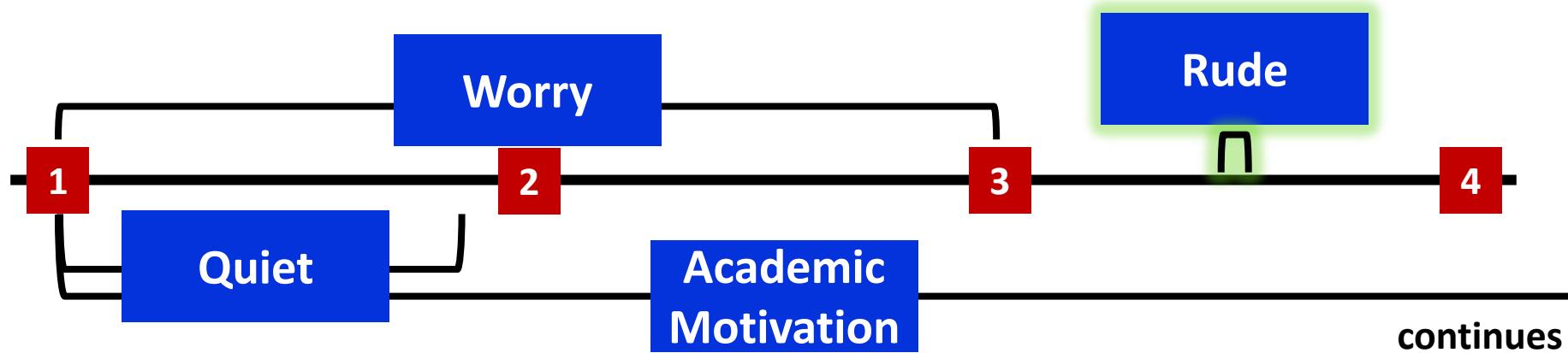


Rude

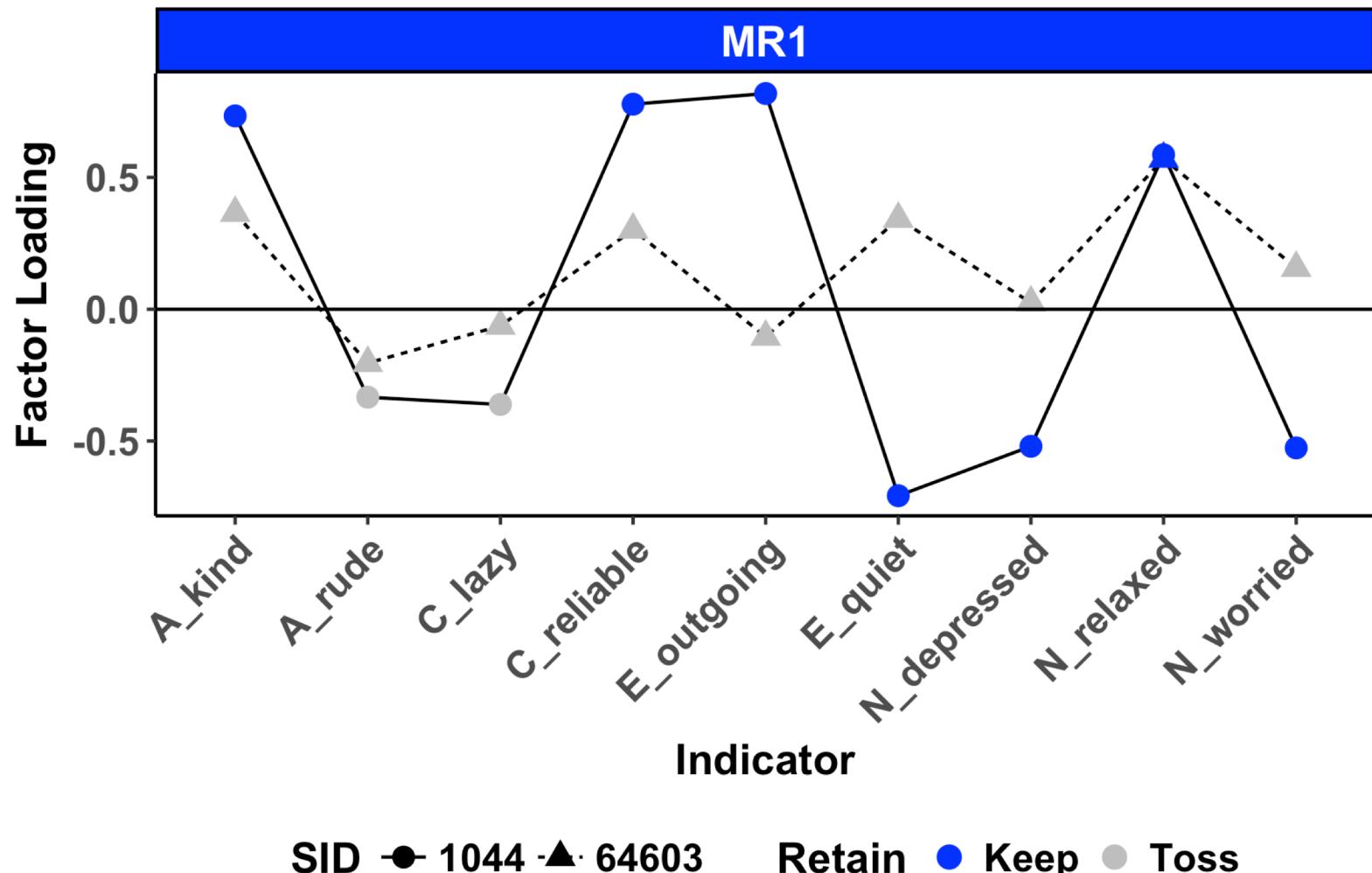
Promises

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The Time Interval Problem



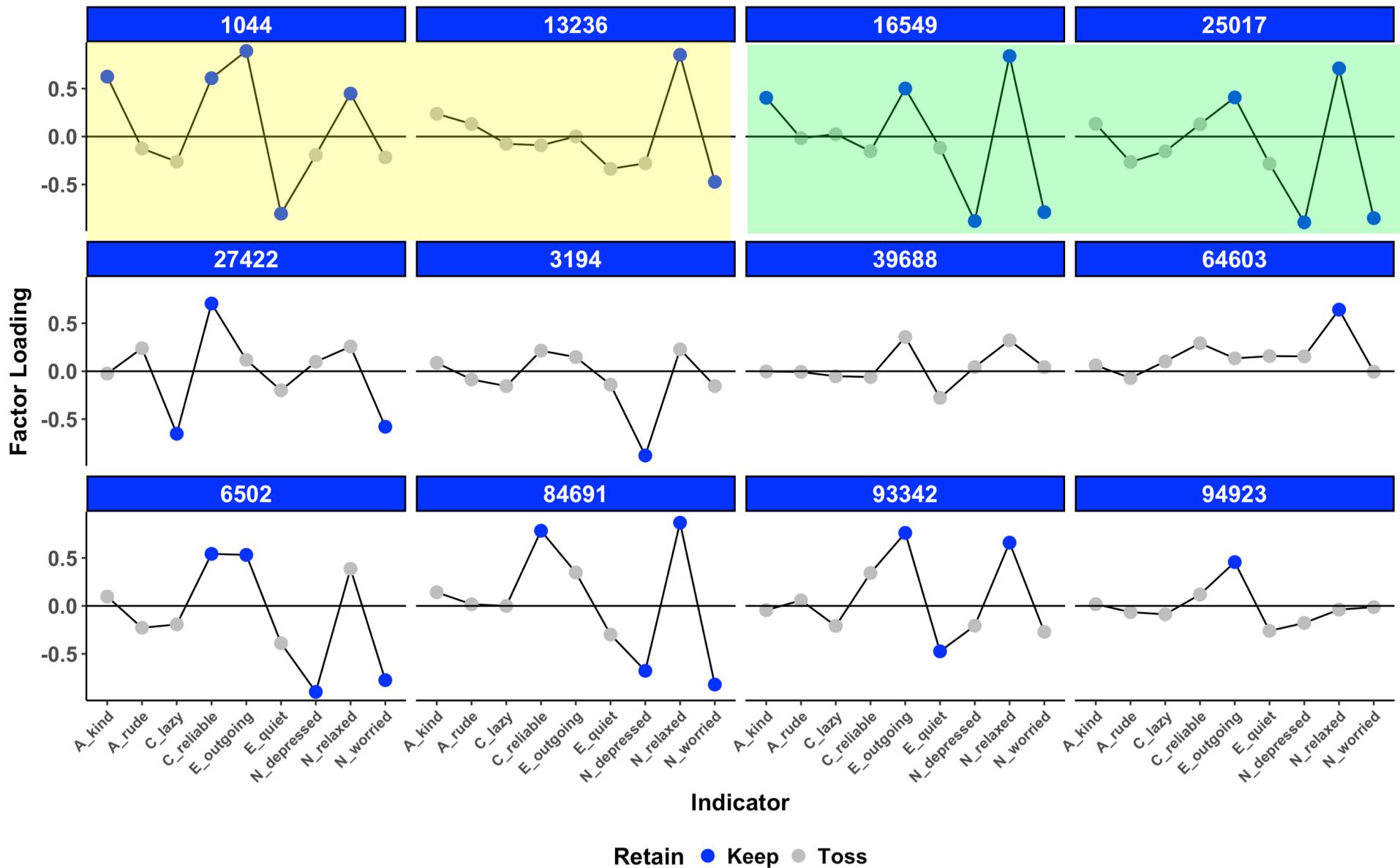
Psychometrics



Promises

Challenges

Psychometrics

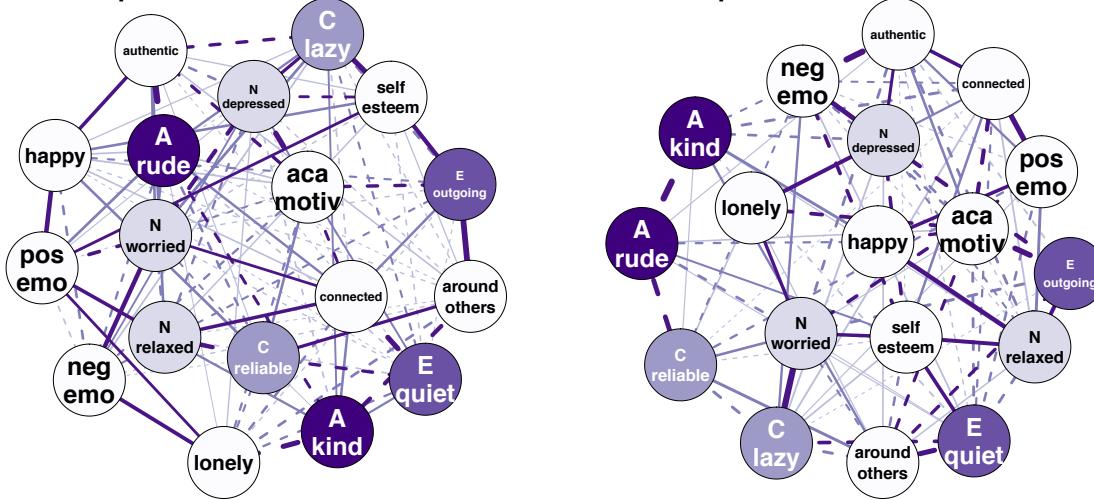


Promises

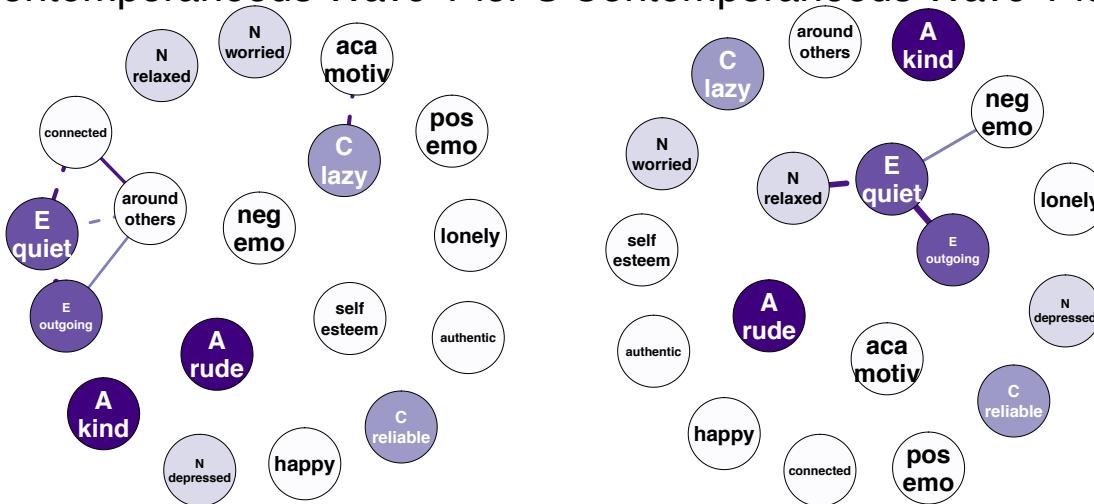
Challenges

Aggregation

Contemporaneous Wave 1 for S Contemporaneous Wave 1 for S



Contemporaneous Wave 1 for S Contemporaneous Wave 1 for S

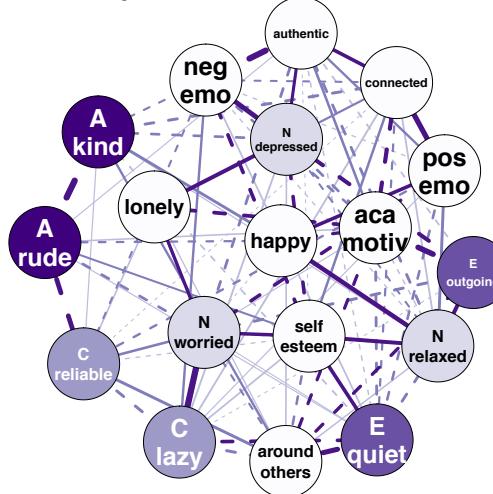
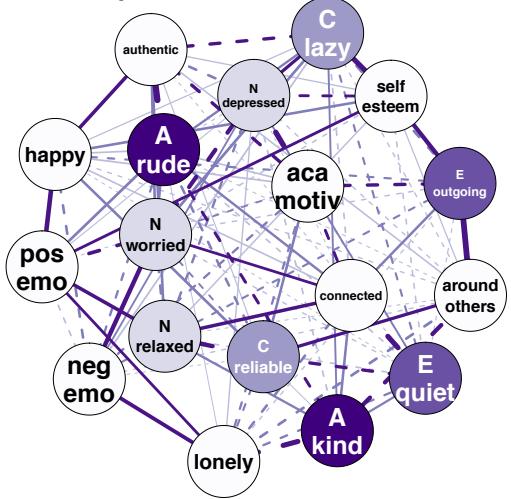


Promises

Challenges

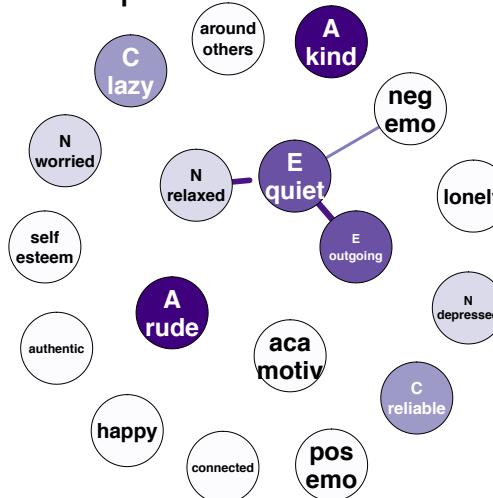
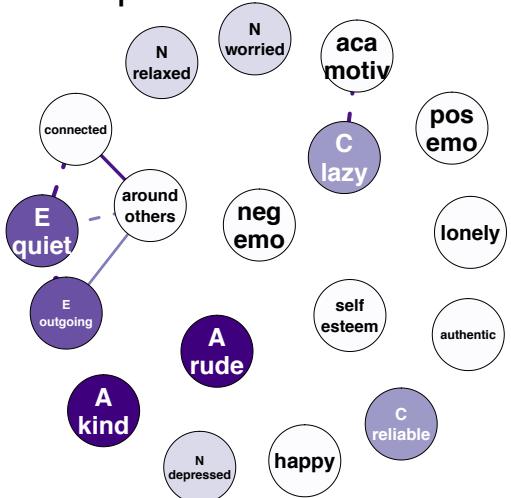
Aggregation

Contemporaneous Wave 1 for S Contemporaneous Wave 1 for S



Centrality

Contemporaneous Wave 1 for S Contemporaneous Wave 1 for S

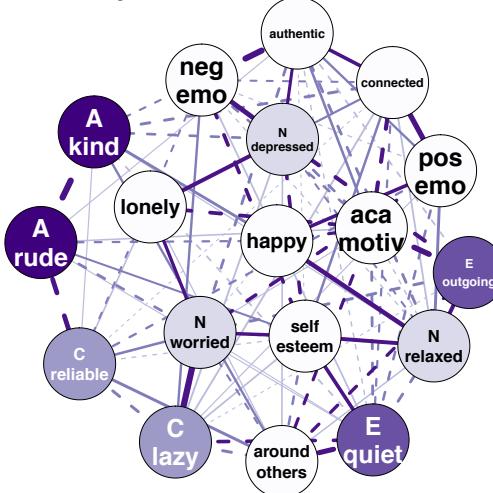
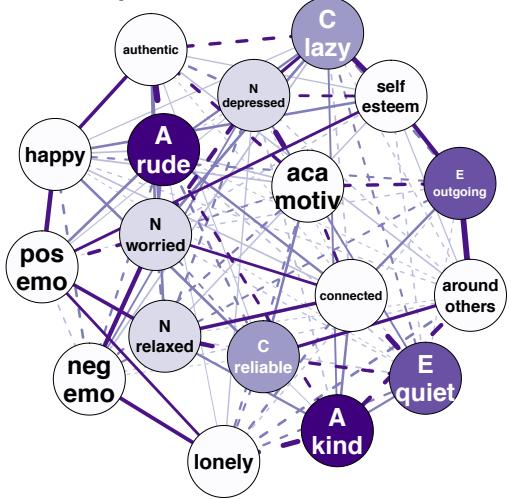


Promises

Challenges

Aggregation

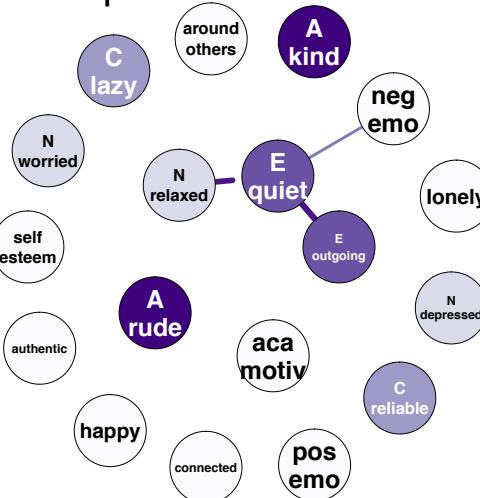
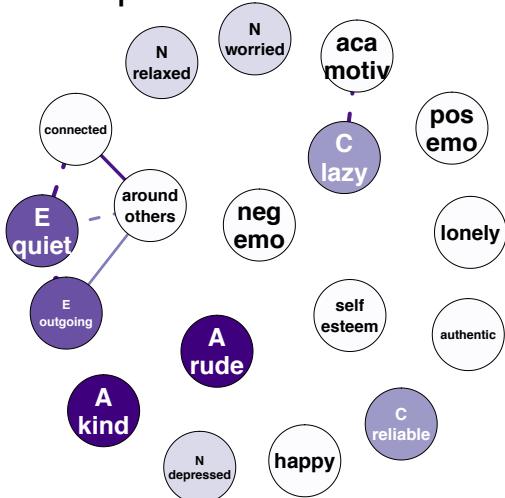
Contemporaneous Wave 1 for S Contemporaneous Wave 1 for S



Centrality

Density

Contemporaneous Wave 1 for S Contemporaneous Wave 1 for S

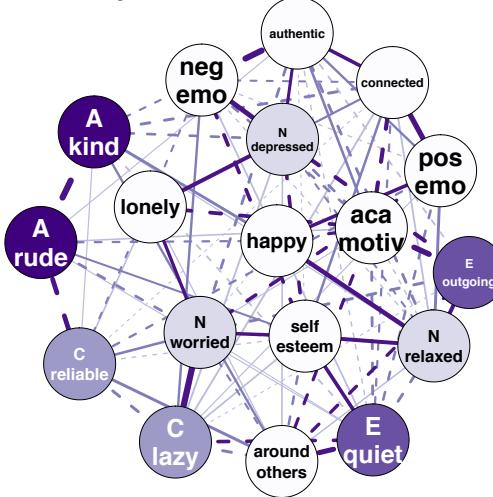
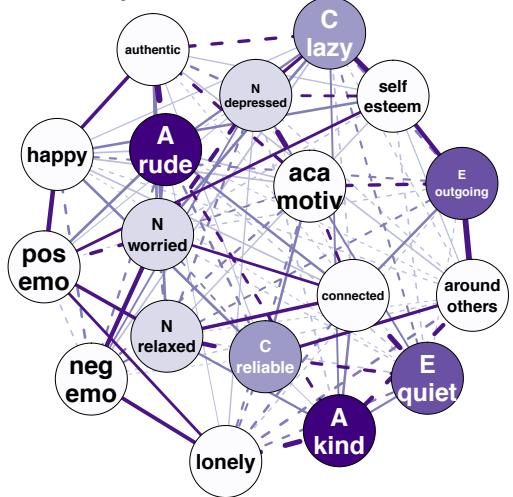


Promises

Challenges

Aggregation

Contemporaneous Wave 1 for S Contemporaneous Wave 1 for S



Centrality

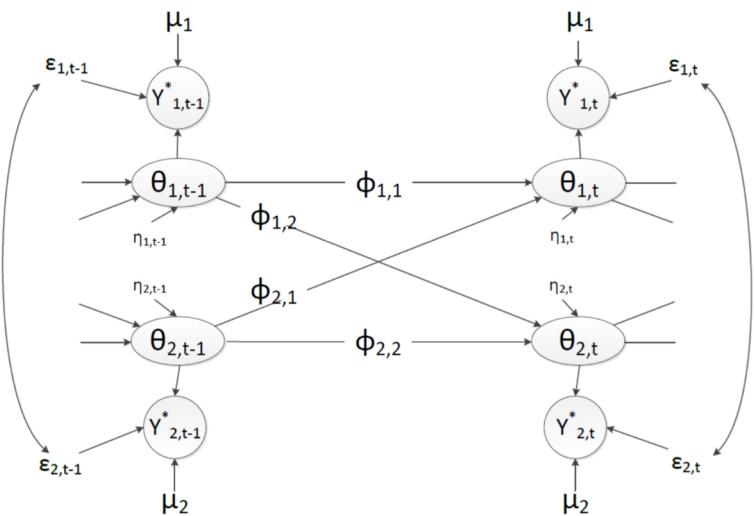
Density

Clustering

Communities

Innovation

Variability



Promises

Challenges

Summary

Structure

The Time Interval
Problem

Process

Psychometrics

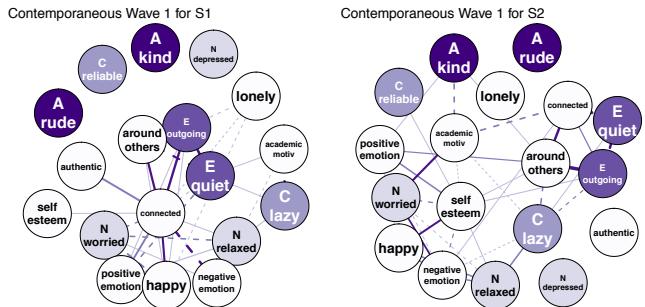
Development

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Summary



The Time Interval Problem

Process

Psychometrics

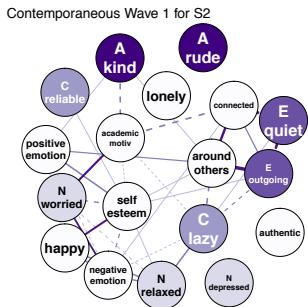
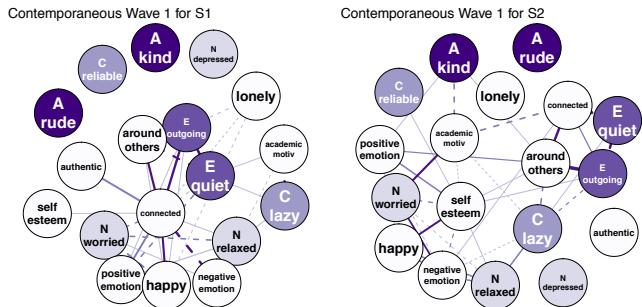
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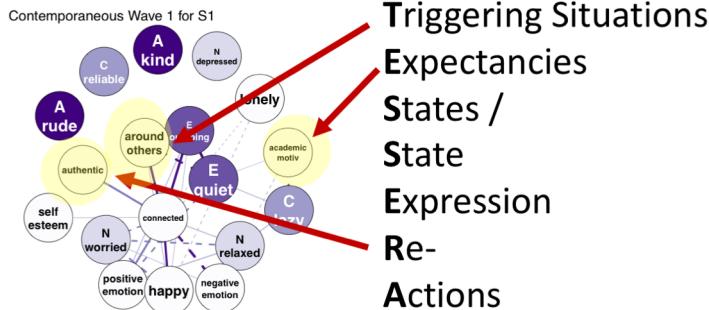
Promises

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Summary



The Time Interval Problem



Triggering Situations
Expectancies
States /
State
Expression
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Actions

Psychometrics

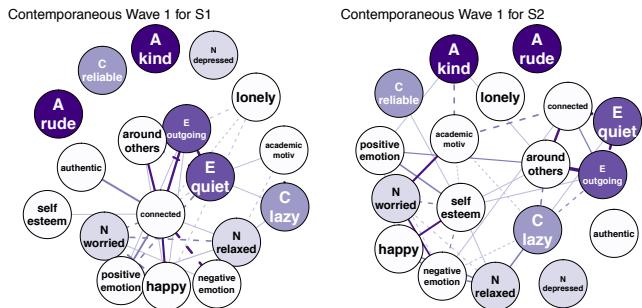
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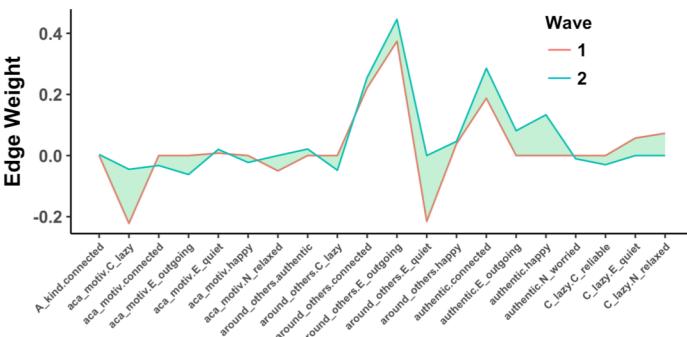
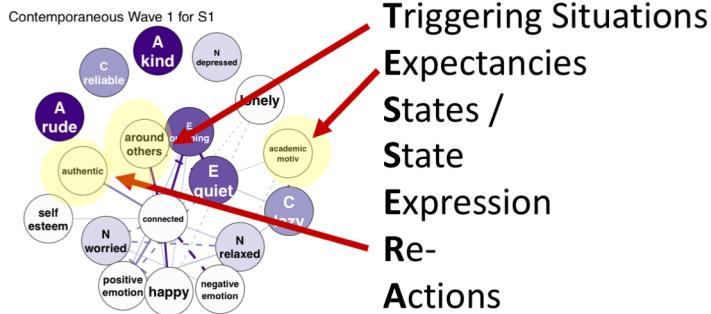
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The Time Interval Problem



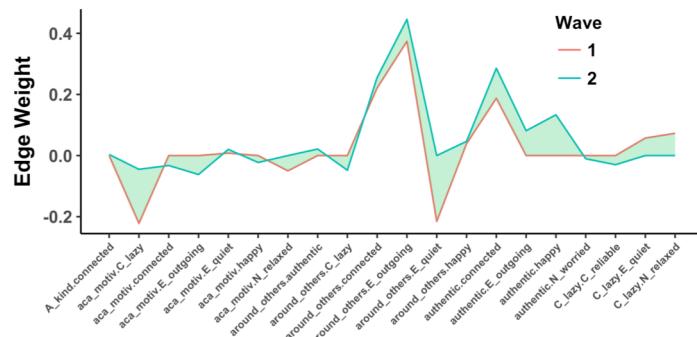
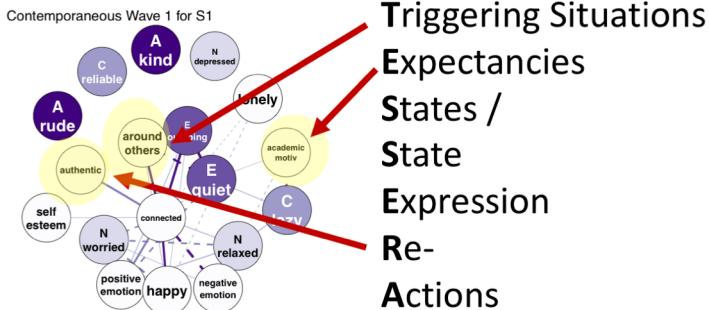
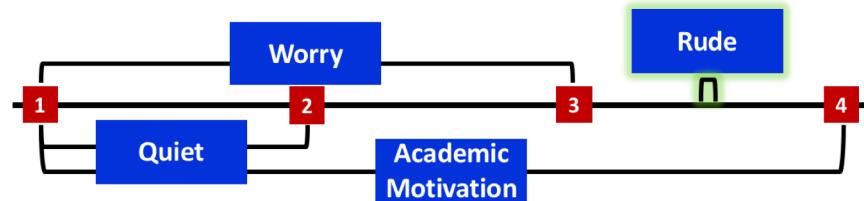
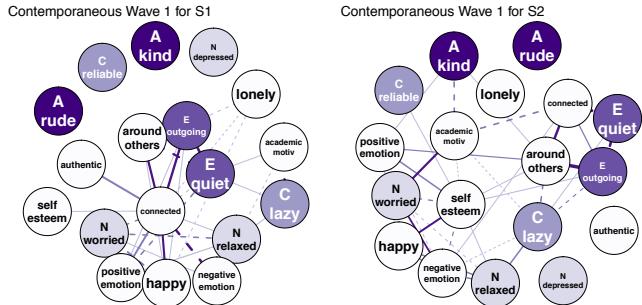
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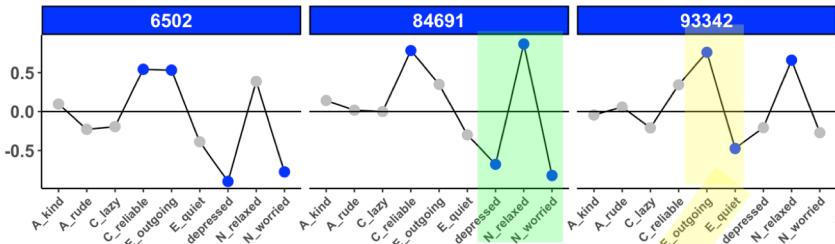
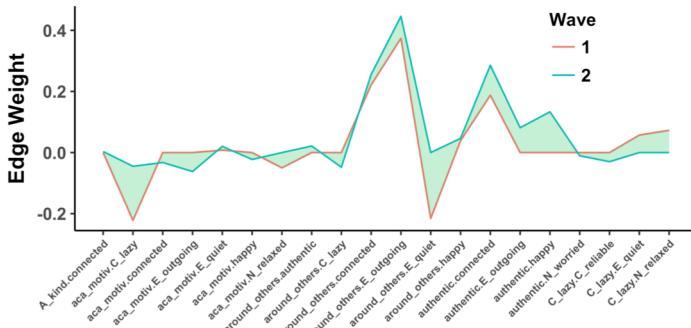
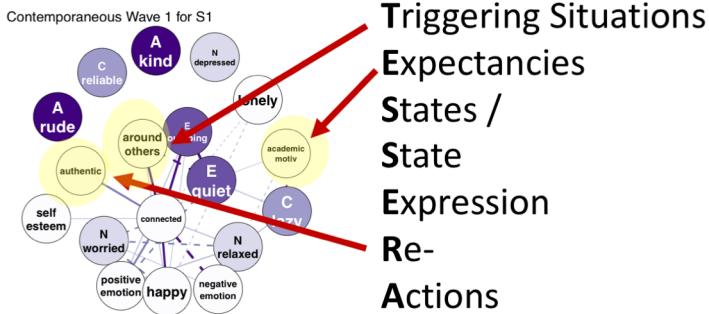
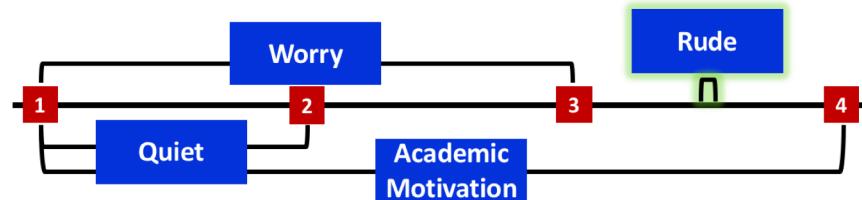
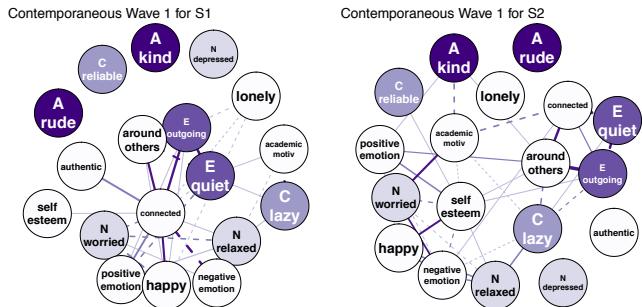
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Challenges

Summary

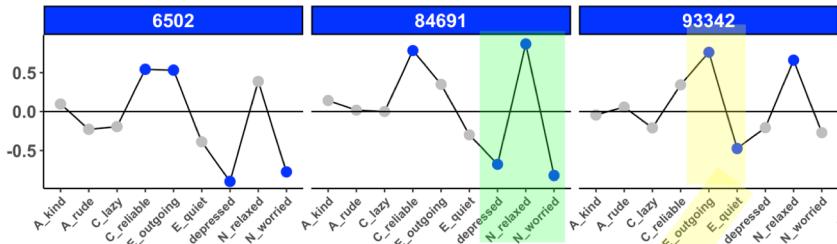
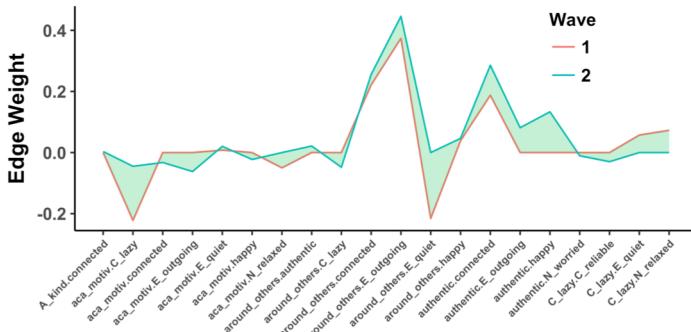
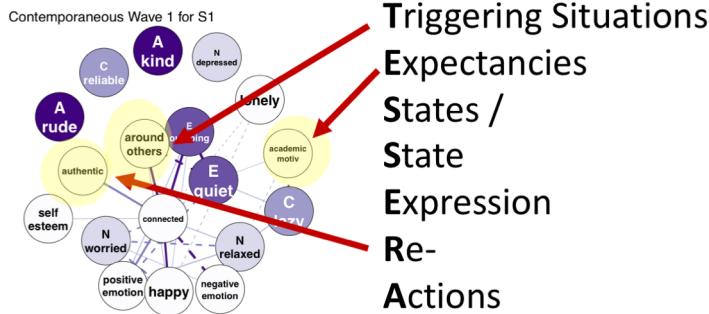
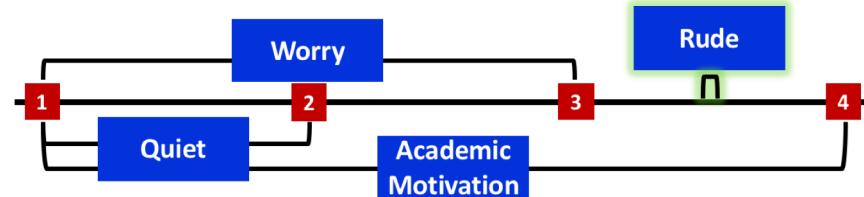
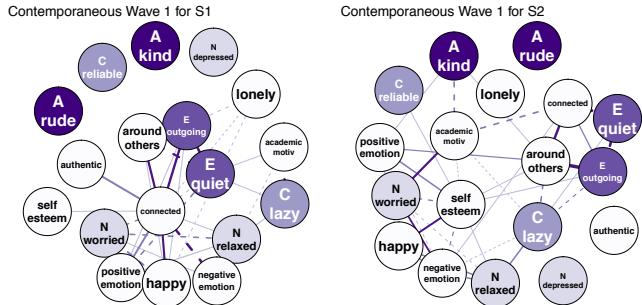


Aggregation

Promises

Challenges

Summary



Centrality

Clustering

Density

Communities

Questions?

Special Thanks to:

Josh Jackson

The PMaD Lab

(And the people who
brought us PAIRS data)



Results:

[https://pmdlab.wustl.edu/
Beck_APS_2018.html](https://pmdlab.wustl.edu/Beck_APS_2018.html)



Data and Code:

https://github.com/emorybeck/APS_2018

Promises

Challenges

Where do we go from here?

Measurement

Methodology

Modeling

Promises

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**Adaptive
Measurement**

**Pre-Defined
Idiographic
Assessments**

**Timing of
Personality
Manifestations**

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Where do we go from here?

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Measurement

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Methodology

Planned Missing
Data Designs

Longitudinal
Assessments

Intervention
Studies

Modeling

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Where do we go from here?

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Adaptive Measurement

Pre-Defined Idiographic Assessments

Timing of Personality Manifestations

Methodology

Planned Missing Data Designs

Longitudinal Assessments

Intervention Studies

Modeling

Sparse Modeling Techniques

Incorporating additional dynamic measures

Multivariate Dynamic Models