Cardinal States: Personalizing Personality Assessment and Prediction

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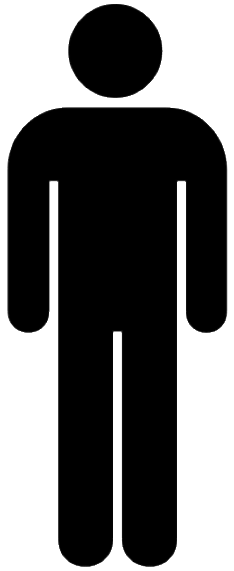
Description

Prediction

Explanation



Thoughts

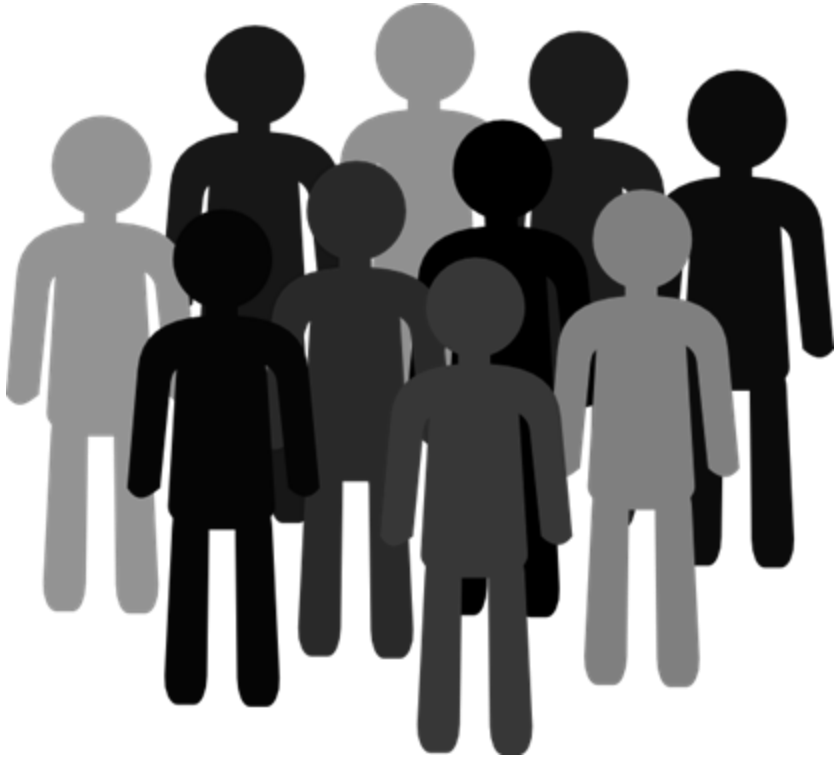
Feelings

Behaviors

Description

Prediction

Explanation



Thoughts

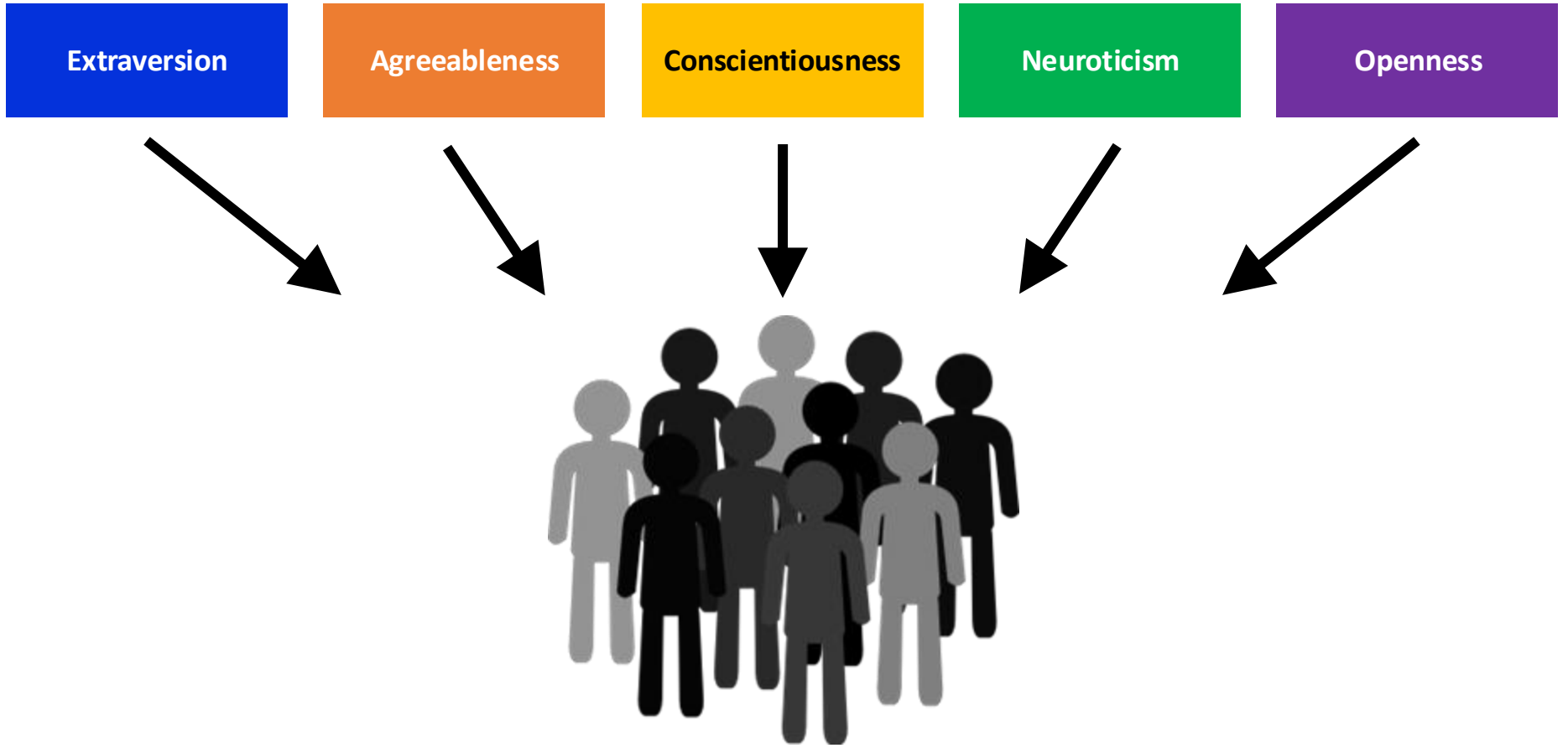
Feelings

Behaviors

What is personality?

"Personality refers to those characteristics of the person that account for **consistent patterns of feelings, thinking, and behaving**."

(Pervin, Cervone & John, 2005, p. 6)



Nomothetic
Between-Person
Variable Centered

What is personality?

UNIQUE UNITS (e.g., cardinal, secondary traits)

UNIQUE STRUCTURES

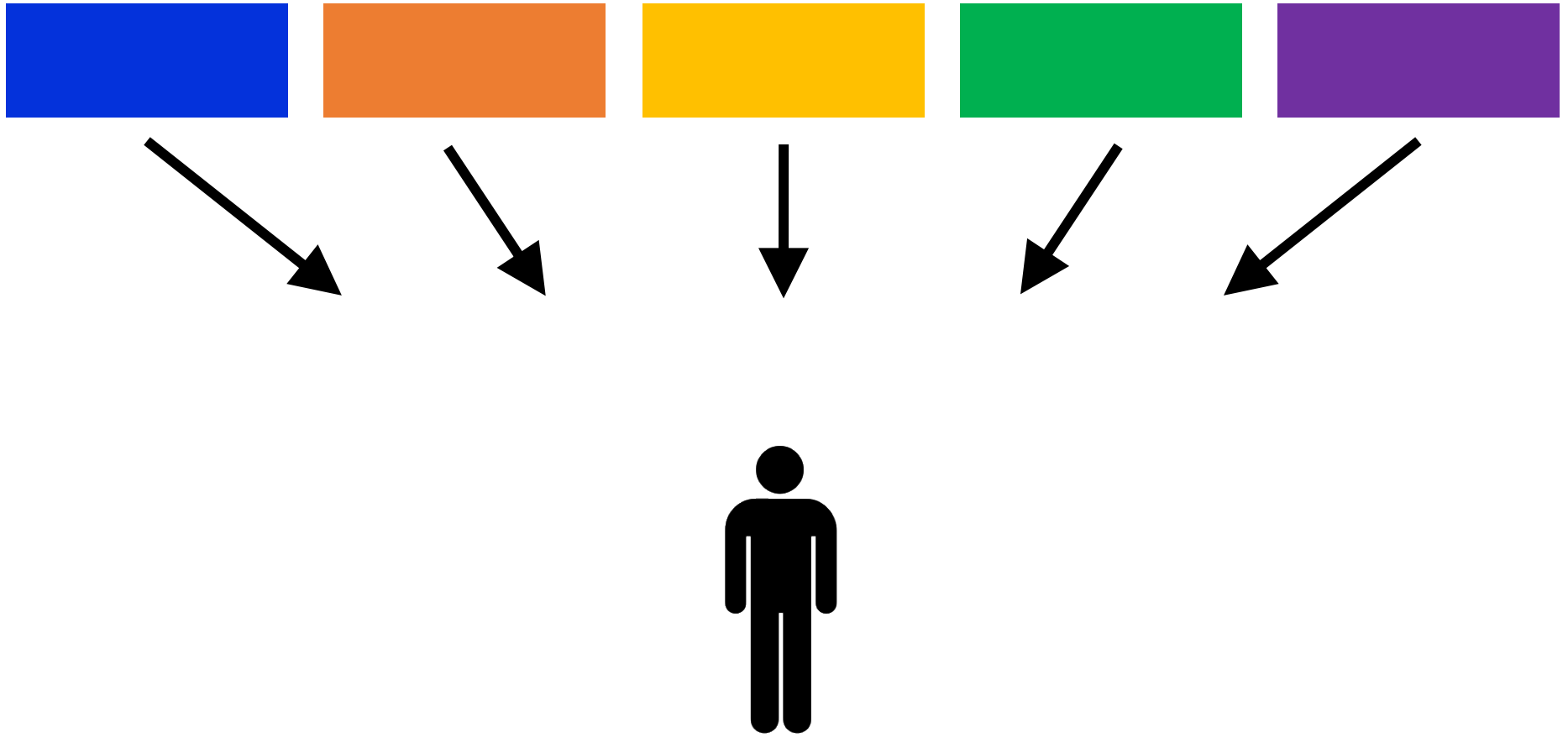
"Personality is the **dynamic organization** within the individual of those **psychophysical systems** that determine his **unique adjustments to the environment**."

(Allport, 1937, p. 32)

DYNAMIC

REFLECT CONTEXTS

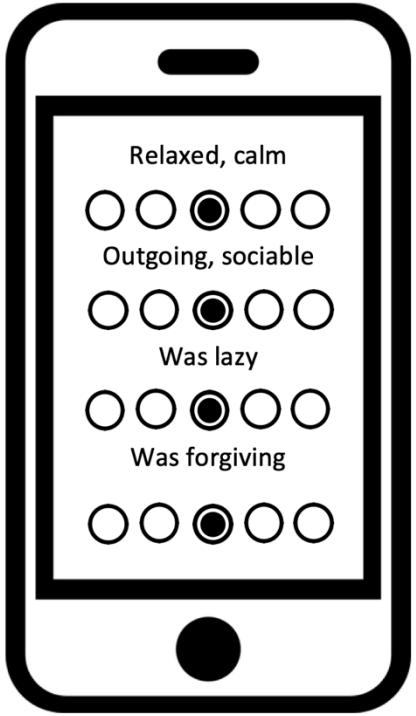
e.g., Allport, 1937, 1961, 1968



Idiographic
Person-Specific

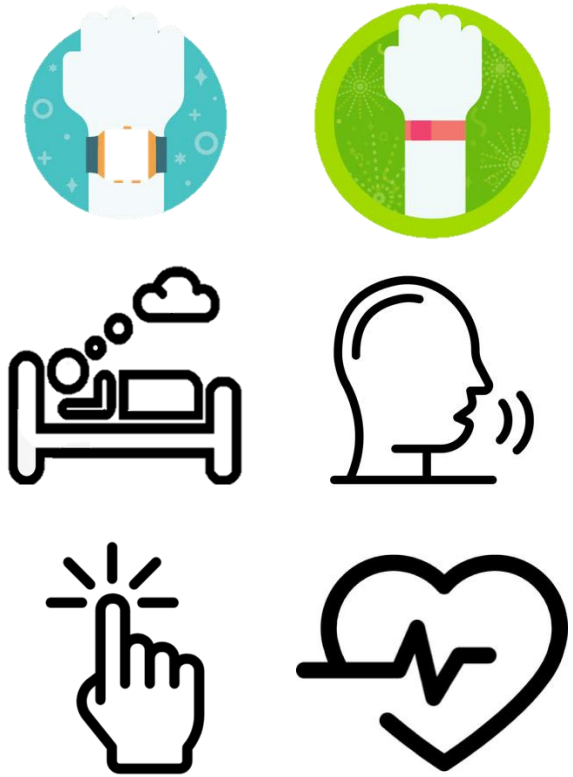
e.g., Beck & Jackson, 2020a, *JPSP;* 2020b, *CDPS*

ESM / EMA



e.g., Beck & Jackson, 2020a, *JPSP*

Mobile Sensing



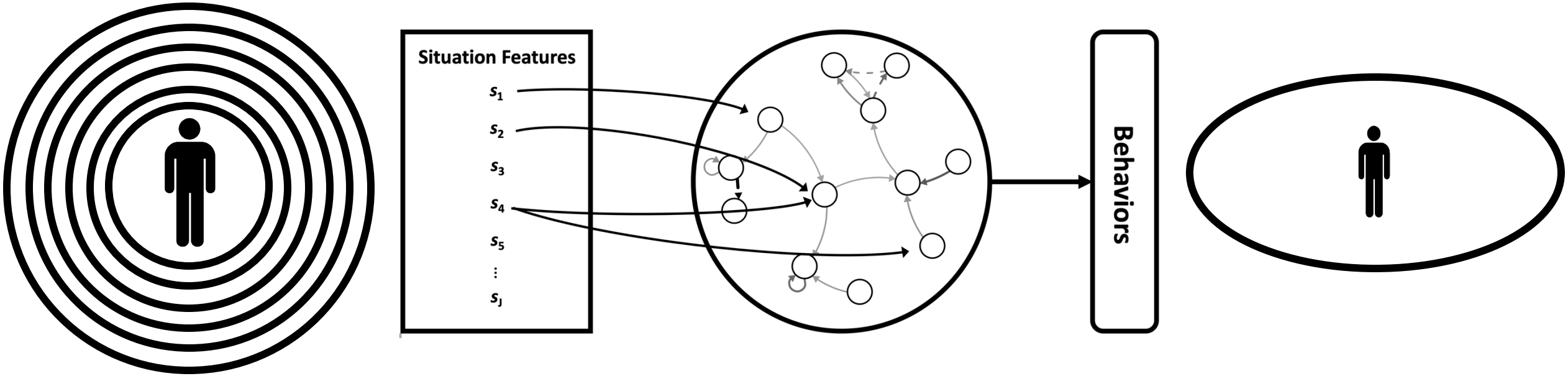
e.g., Beck & Jackson, 2022, *Psych Sci*

Persons in Context: Systems Theories

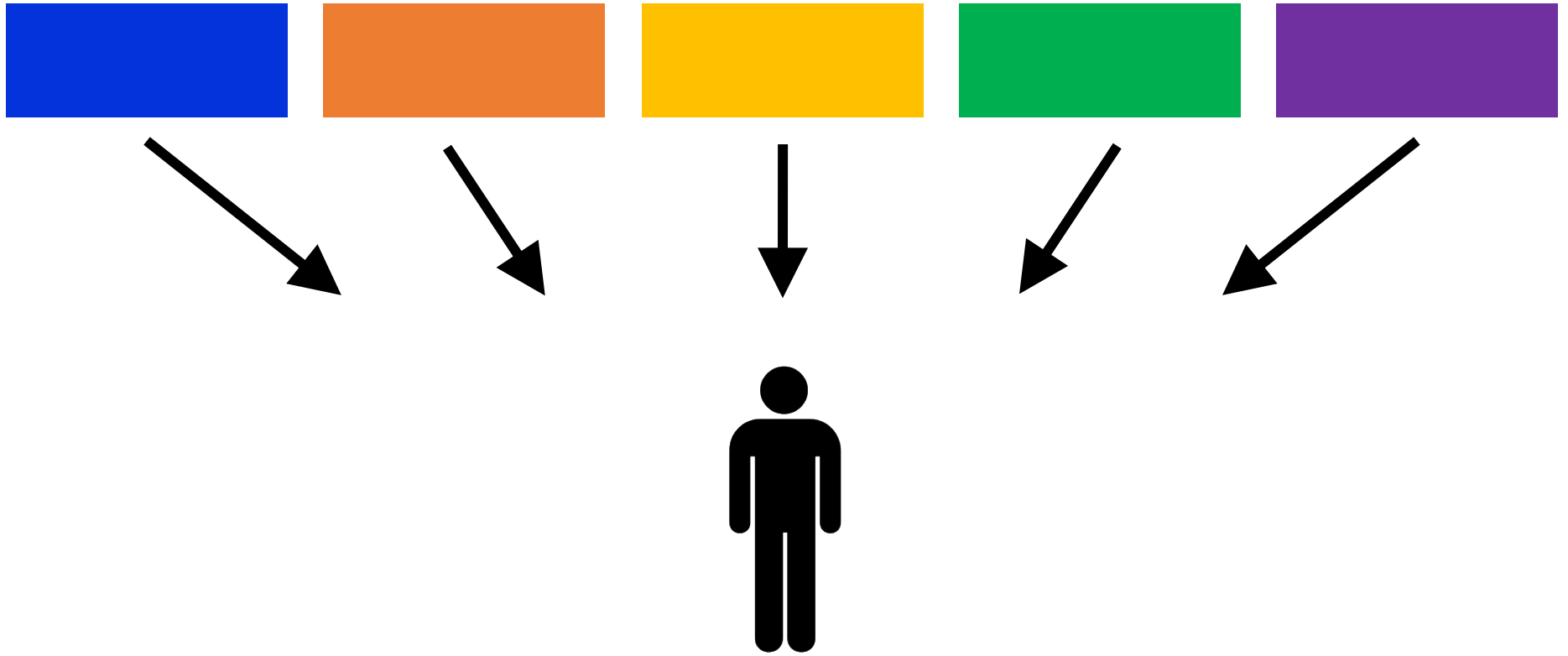
Ecological Systems Theory
(e.g., Bronfenbrenner, 1979)

Cognitive Affective Personality System
(e.g., Mischel & Shoda, 1995)

Field Theory
(e.g., Lewin, 1936)



e.g., Lewin, 1936



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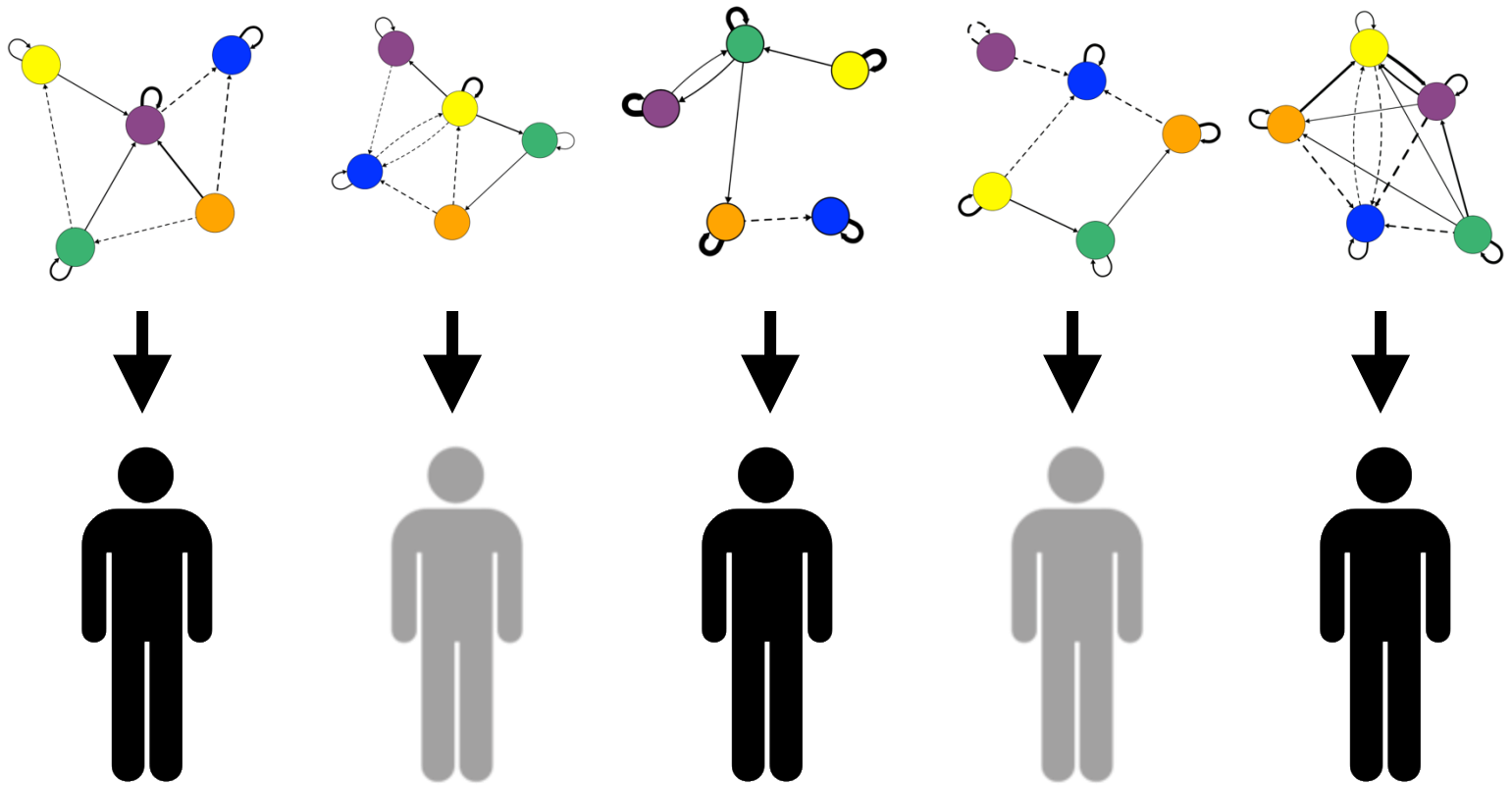

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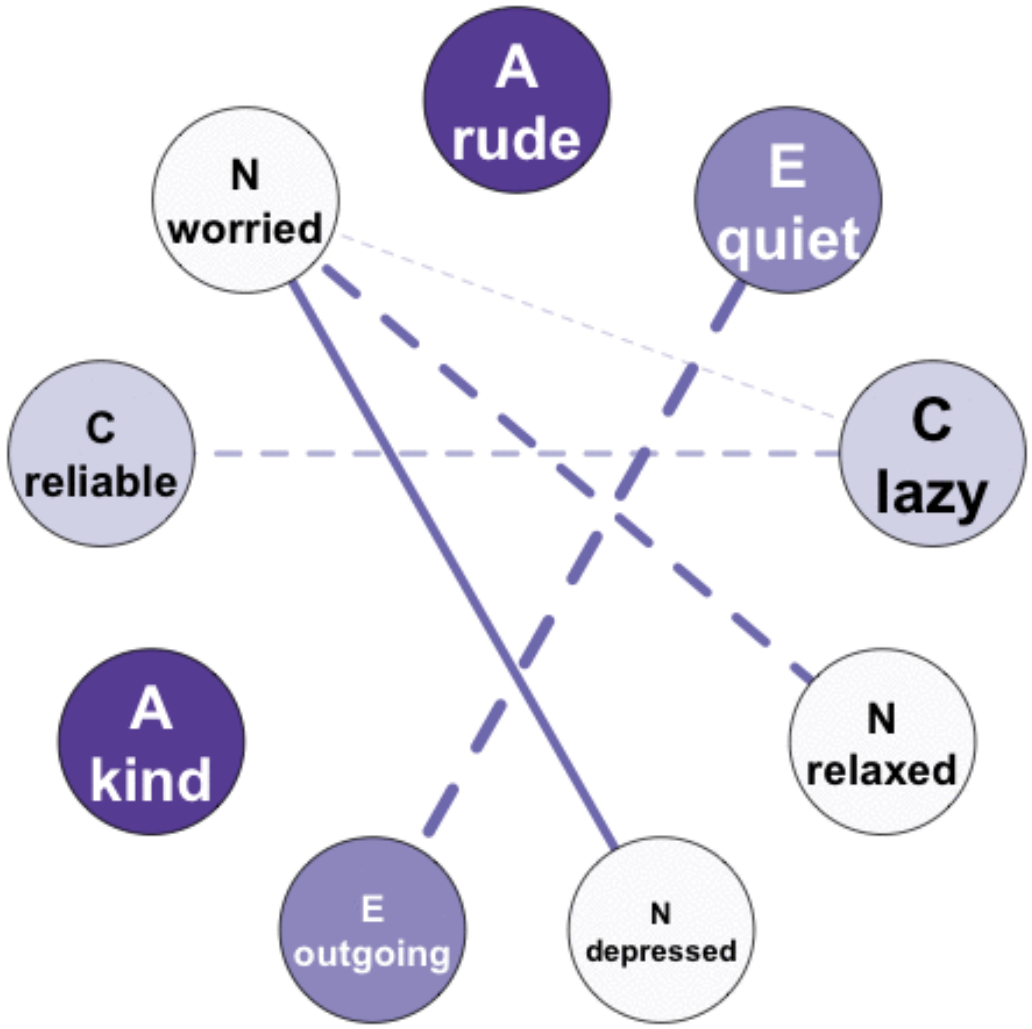
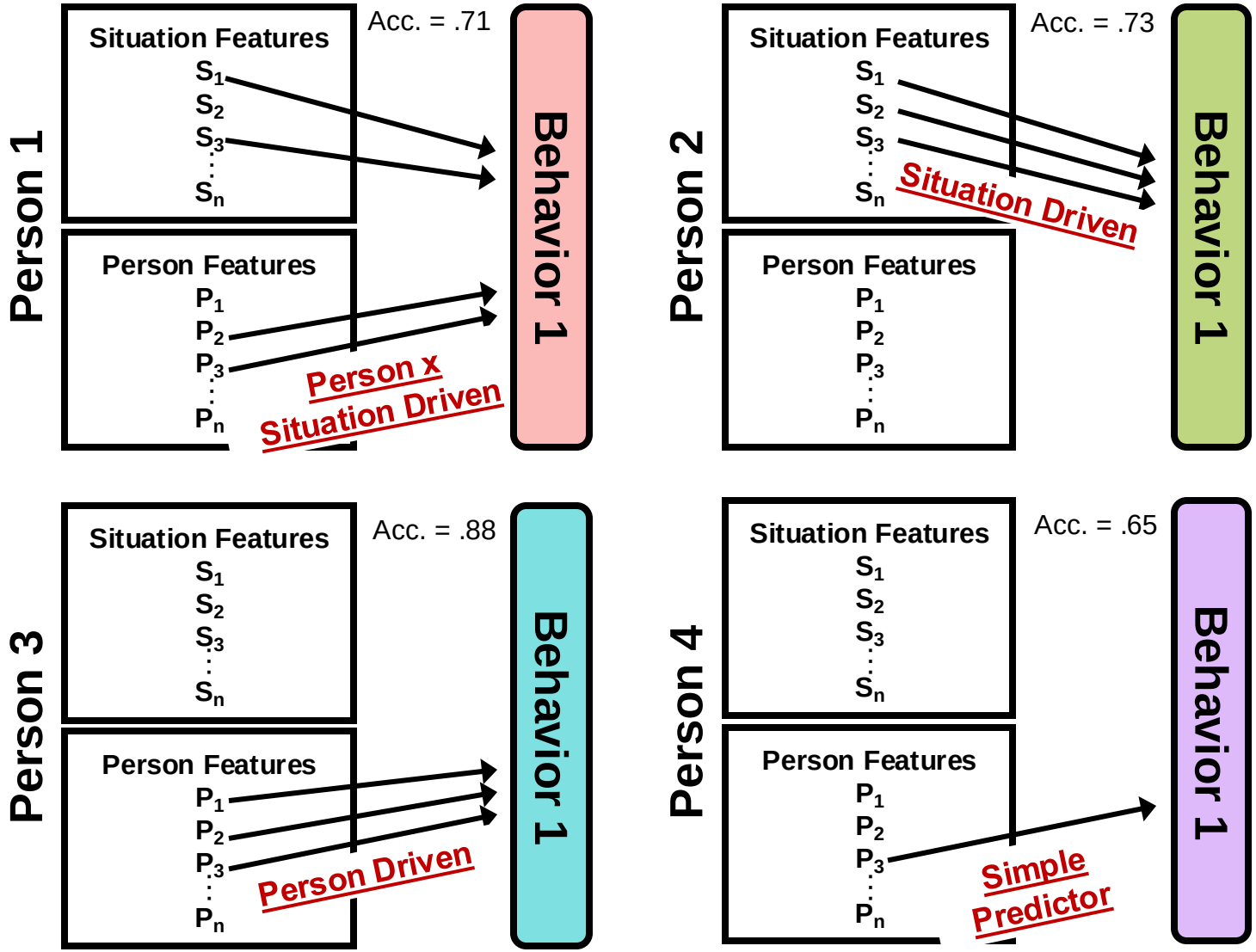


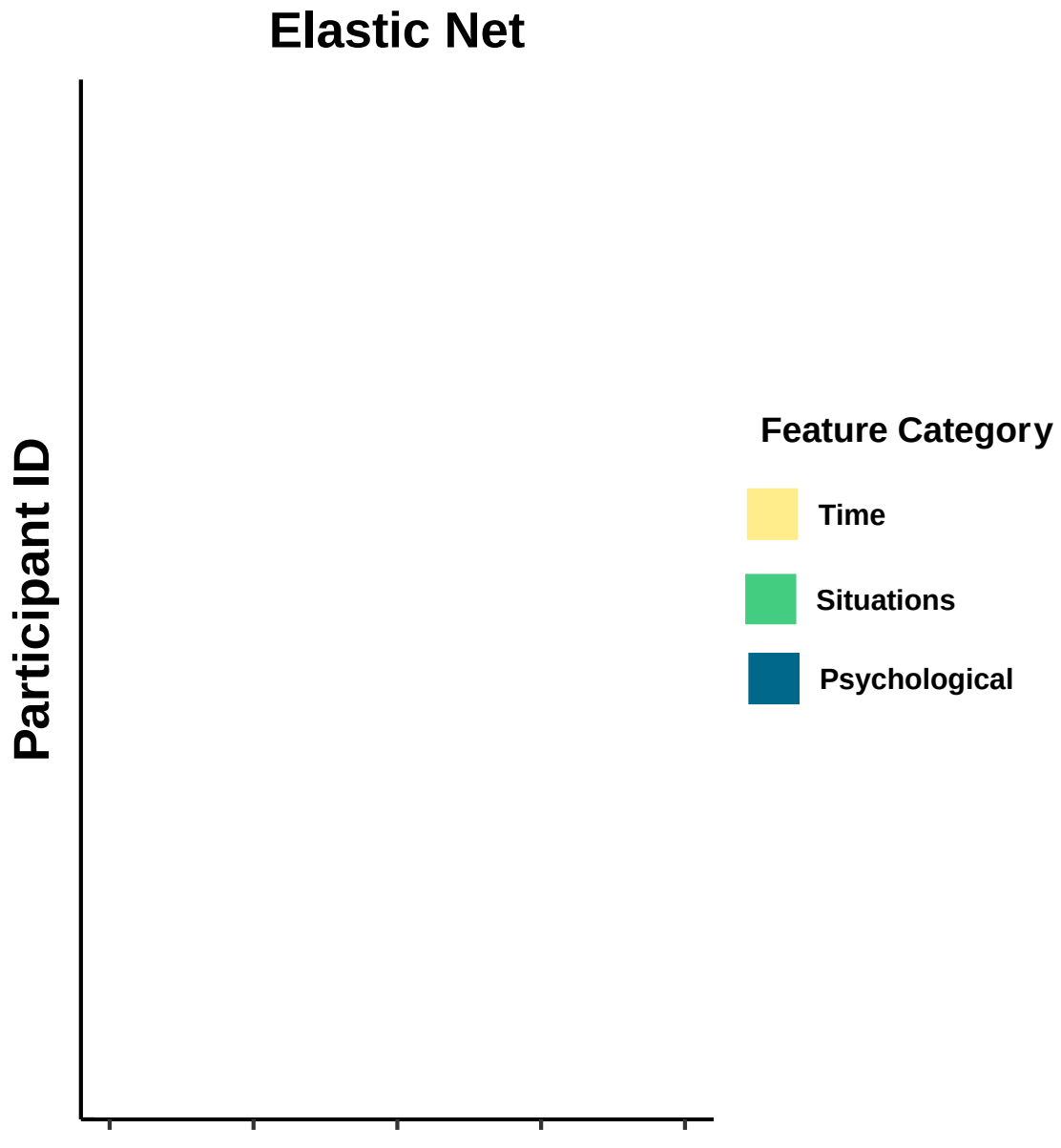
The systems differ across people.

They also show longitudinal consistency

Beck & Jackson (2020a, *JPSP;* 2021, *EJP*)

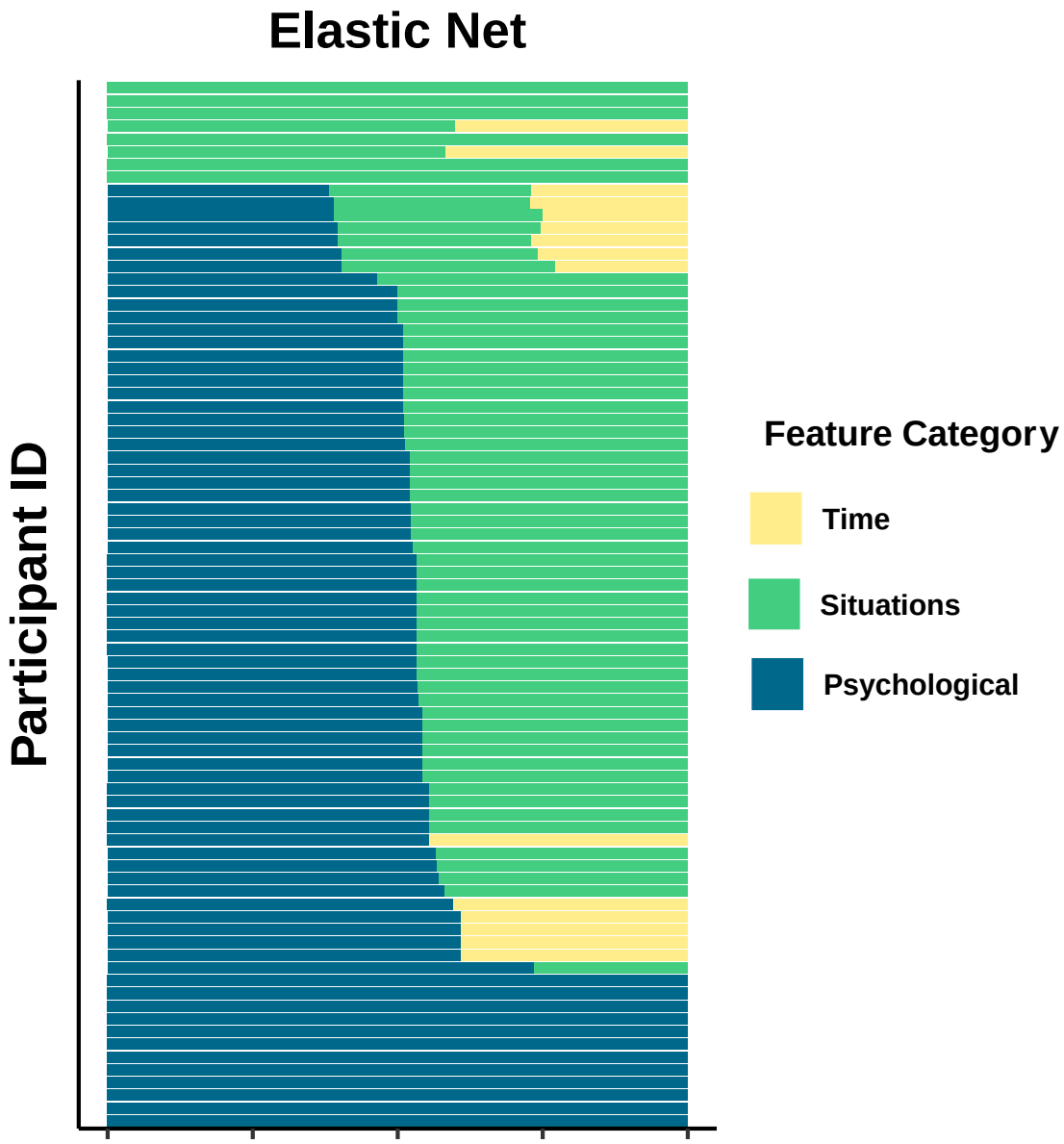

Person 1
Situation Features
S_1
S_2
S_3
S_n
Person Features
P_1
P_2
P_3
P_n
Acc. = .71
Person x Situation Driven
Behavior 1
Person 2
Situation Features
S_1
S_2
S_3
S_n
Person Features
P_1
P_2
P_3
P_n
Acc. = .73
Situation Driven
Behavior 1
Person 3
Situation Features
S_1
S_2
S_3
S_n
Person Features
P_1
P_2
P_3
P_n
Acc. = .88
Person Driven
Behavior 1
Person 4
Situation Features
S_1
S_2
S_3
S_n
Person Features
P_1
P_2
P_3
P_n
Acc. = .65
Simple Predictor
Behavior 1

Do certain categories of features out-predict others?



Beck & Jackson (2022, *Psychological Science*)

Do certain categories of features out-predict others?



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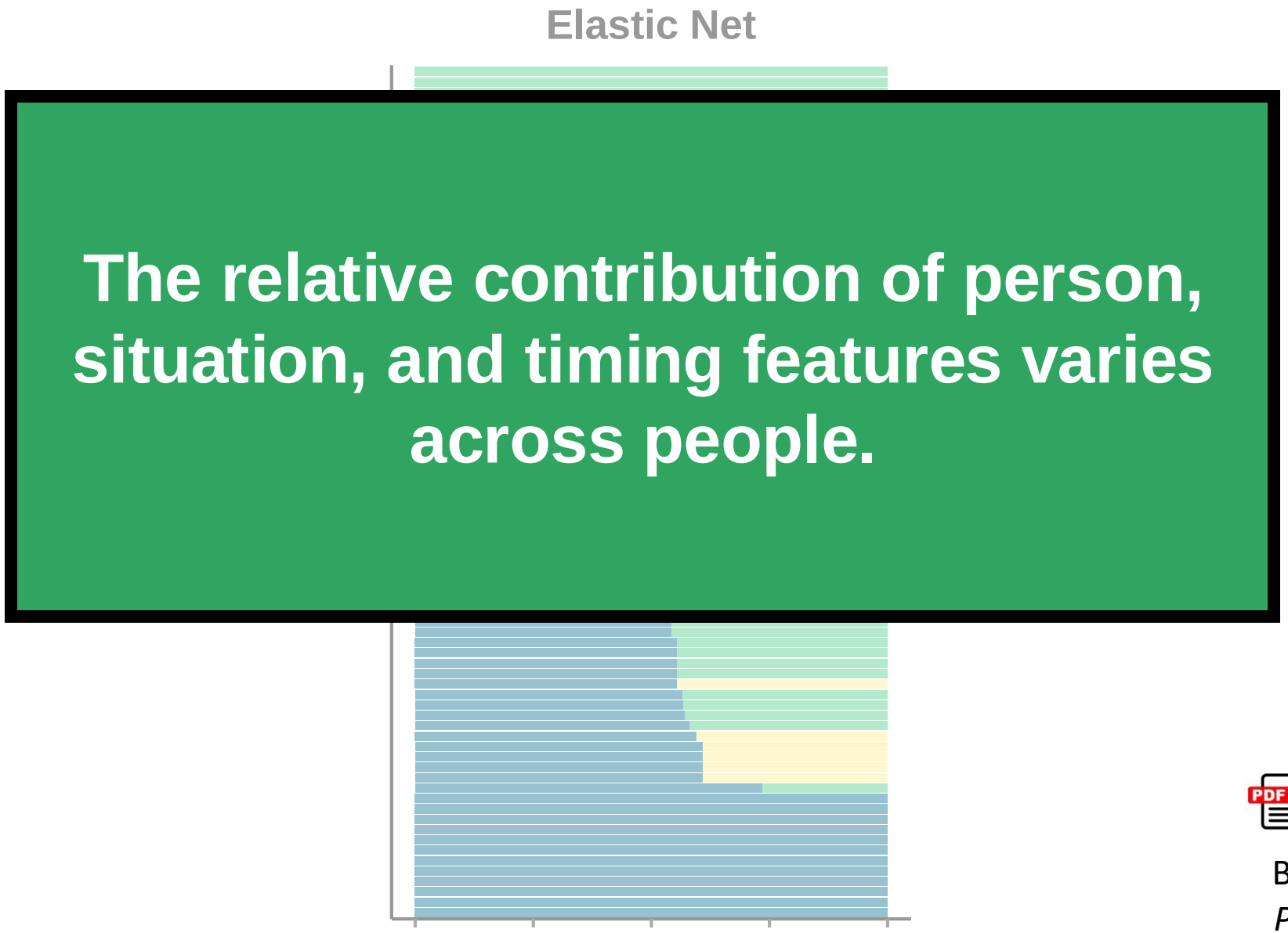
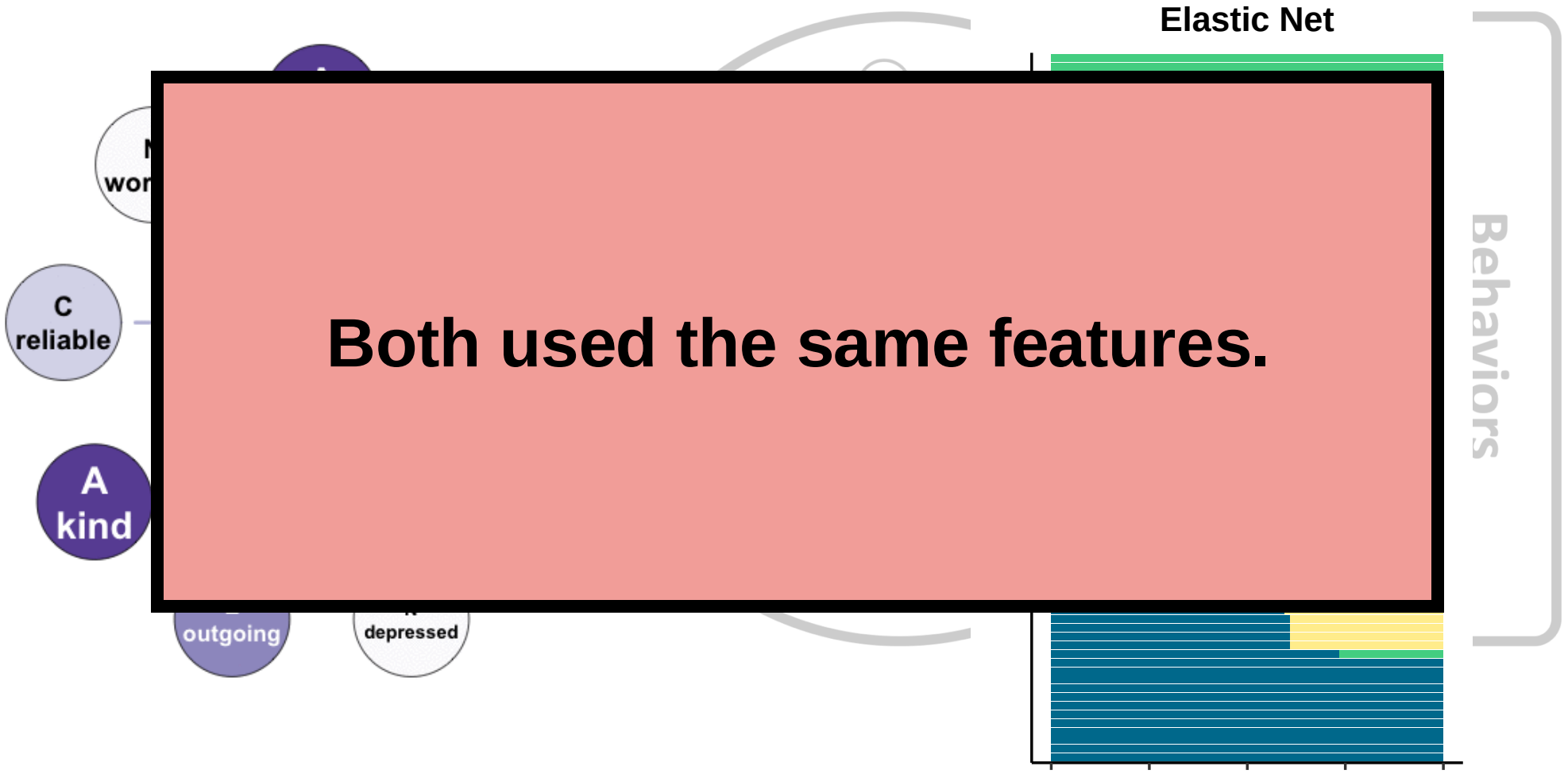


The relative contribution of person, situation, and timing features varies across people.

Beck & Jackson (2022, *Psychological Science*)

Persons in Context:
Mischel & Shoda's Cognitive Affective Processing System



e.g., Mischel & Shoda, 1995

What are we missing when we use the same measures for everyone?

We have no idea. That’s an empirical question!

What are we missing when we use the same measures for everyone?

Content

Hypothesis: People will generate content that doesn't overlap with the Big Five or other typical shared indicators we measure.

Variability

Hypothesis: People will show more variability and use the full scale more for unique items than shared items, on average.

Predictive Utility

Hypothesis: Unique items will improve predictive utility and play important roles in personalized prediction models.

The Personalizing Personality Pilot Study

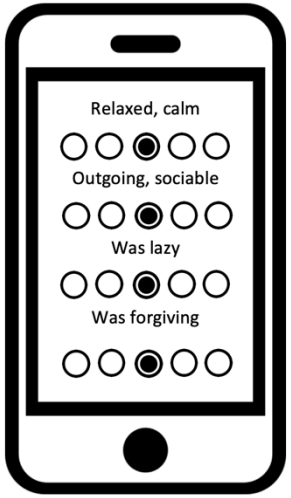
UCDAVIS

N = 200

Study Design

Baseline Surveys

- Big Five Personality
- Cardinal Traits
- Demographics
- **Unique Item Generation**
- …
- etc.



Experience Sampling Method (ESM)

5 x / day for 3 weeks (max n = 105)

- Big Five Personality States
- Unique, participant generated "Cardinal States"
- DIAMONDS Situation Characteristics
- Binary Behavior Indicators
- Passive Sensing

Anabel Büchner

What are we missing when we use the same measures for everyone?

Content: Capturing Cardinal States

Tell us about you and your life:

We want to understand your daily psychological, social, and emotional experiences; your behaviors; the contexts you inhabit; and your daily life overall. To do so, we want to give you the opportunity to tell us what questions we should ask you related to your emotions, thoughts, behaviors, contexts, goals, identities, challenges, and more in everyday life.

Please describe your typical daily thoughts, experiences, behaviors, contexts, beliefs, desires, and/or anything else you think is important below. You may say, for example, that “I’m usually very energetic, but I get tired after lunch;” “Most days, I feel excited about what I need to do, but on Wednesdays I have a lab course that ruins my mood;” or "When I'm around peers, I often feel out of place because I am a first gen student." Also think about your reasons for experiences/behaviors/etc. Is there another reason you get tired after lunch other than the time of day? What about that lab course ruins your mood? Do specific peers trigger your first gen identity more than others? There are no right or wrong answers. The goal is simply to help you think about yourself and everyday experiences as well as what you think drives those.

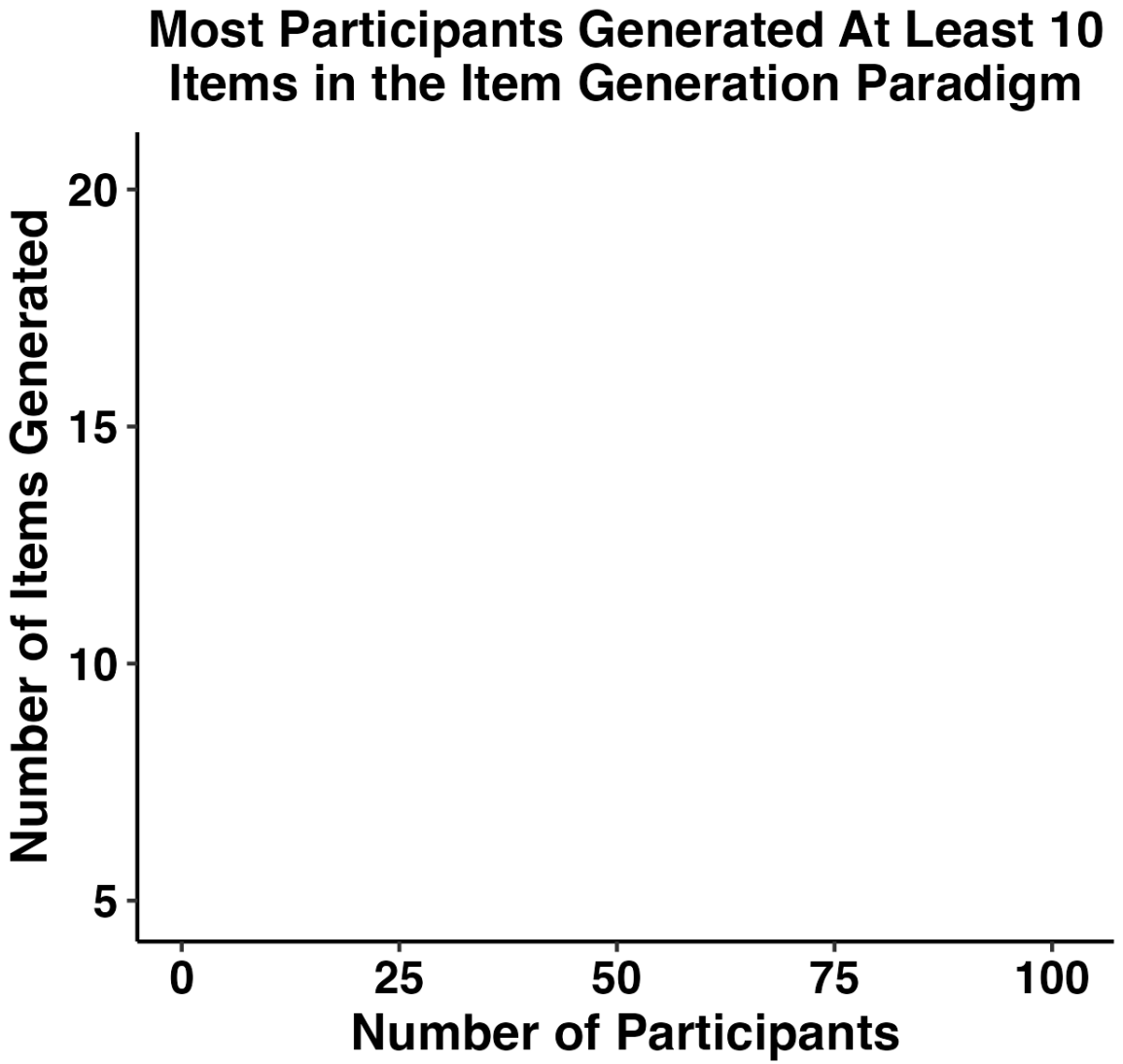
Write as much as you think is necessary to understand your daily life. There are no length limits, but please write at least two paragraphs. Richer descriptions will provide us more information to help you understand whether your perception of your daily life mirrors your actual experiences, while less rich descriptions may limit our ability to answer these questions. It might be helpful to think about the people you might be with, the places you might go, and the things you might do in the next few weeks.

(The submit button will appear after five minutes.)

What are we missing when we use the same measures for everyone?

Content: Capturing Cardinal States

Mean = 12.09 items
(SD = 3.36)
Median = 10 items
Range = 5-20 items



What are we missing when we use the same measures for everyone?

Content: Capturing Cardinal States

Structure and Mood	Context and Time	Identity, Time, Context, and Behaviors
• good mood • keep school life balance • scheduled time • focus • stay on track • consistent routine • unstructured time • skipped breakfast impacts mood • burnt out • sleep later	• Chemistry Lab • Craft Center • Thursdays • Ceramics • Sculpture • Glassblowing • Chinese • American • Creative • After Learning • 6:30 • energy • after three	• Japanese • Stressful • Free time • Library • Studying • Distracted • Gym • Fun topic • Anime • Friends

What are we missing when we use the same measures for everyone?

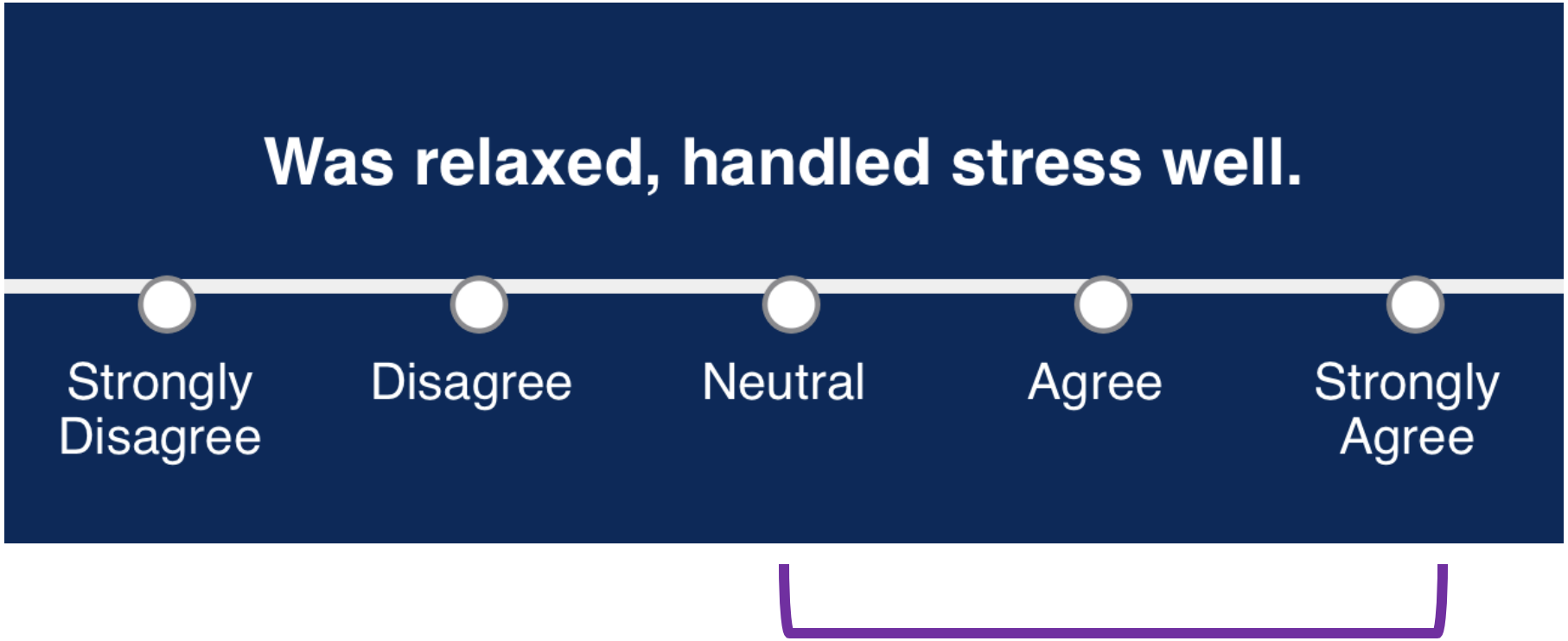
Content: Capturing Cardinal States

People generate unique content in their Cardinal States that does not overlap with many of our common measures

Structure a		ne, Context, haviors
• good mood • keep school li • scheduled tim • focus • stay on track • consistent rou • unstructured t • skipped break mood • burnt out • sleep later	• Creative • After Learning • 6:30 • energy • after three	• Anime • Friends

What are we missing when we use the same measures for everyone?

Variability

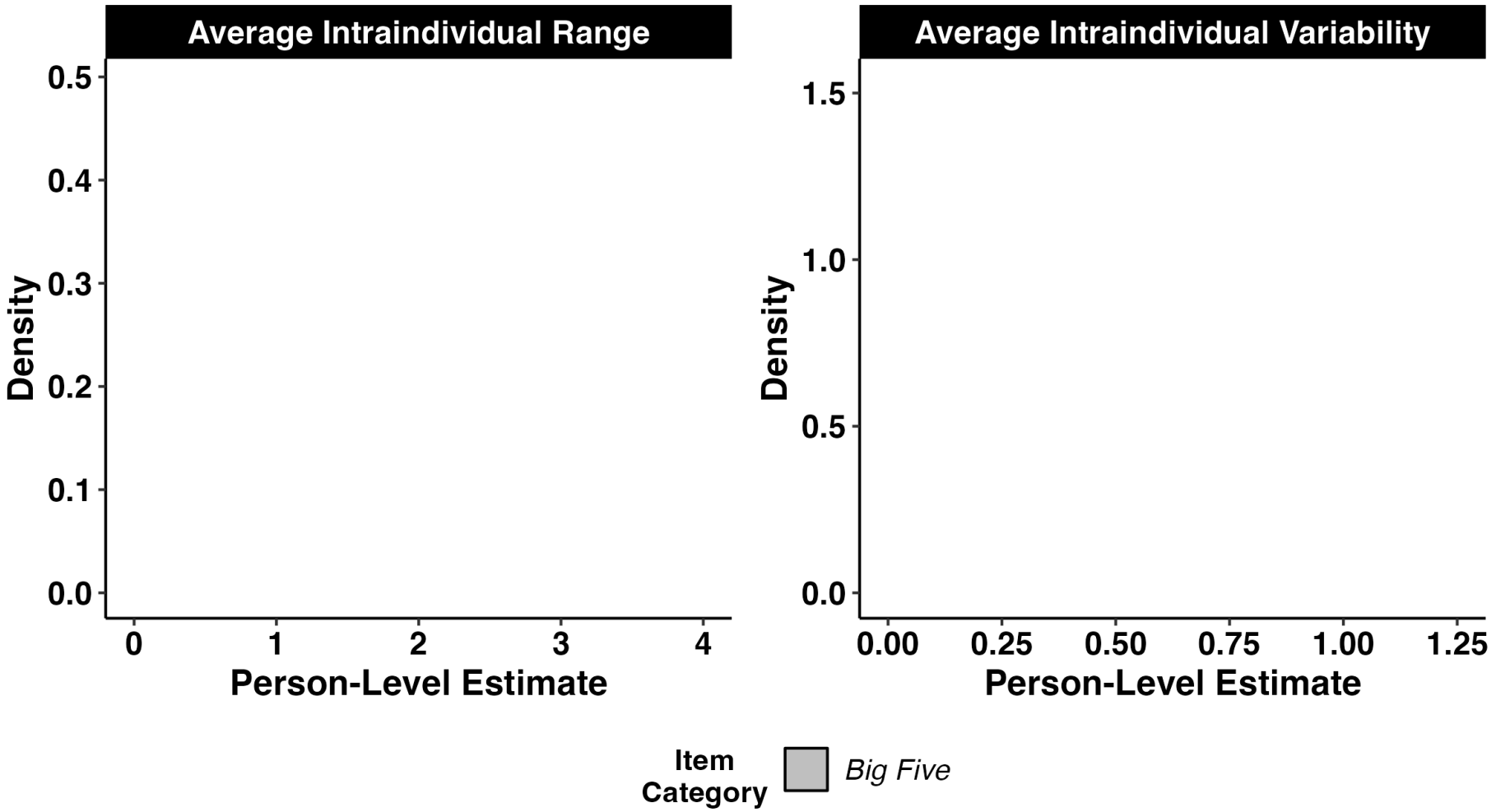


True variability?

Restricted Range?

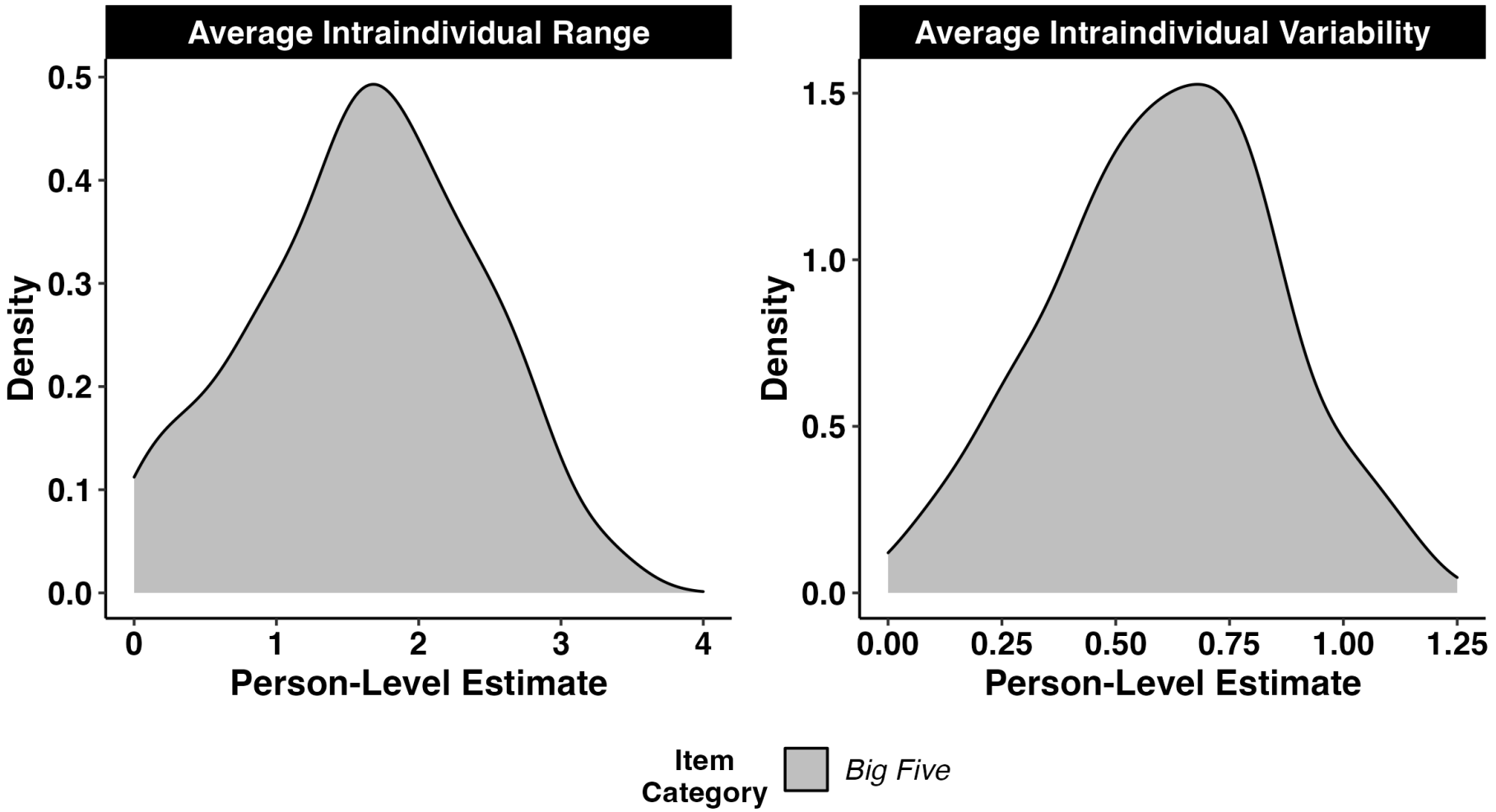
What are we missing when we use the same measures for everyone?

Variability



What are we missing when we use the same measures for everyone?

Variability



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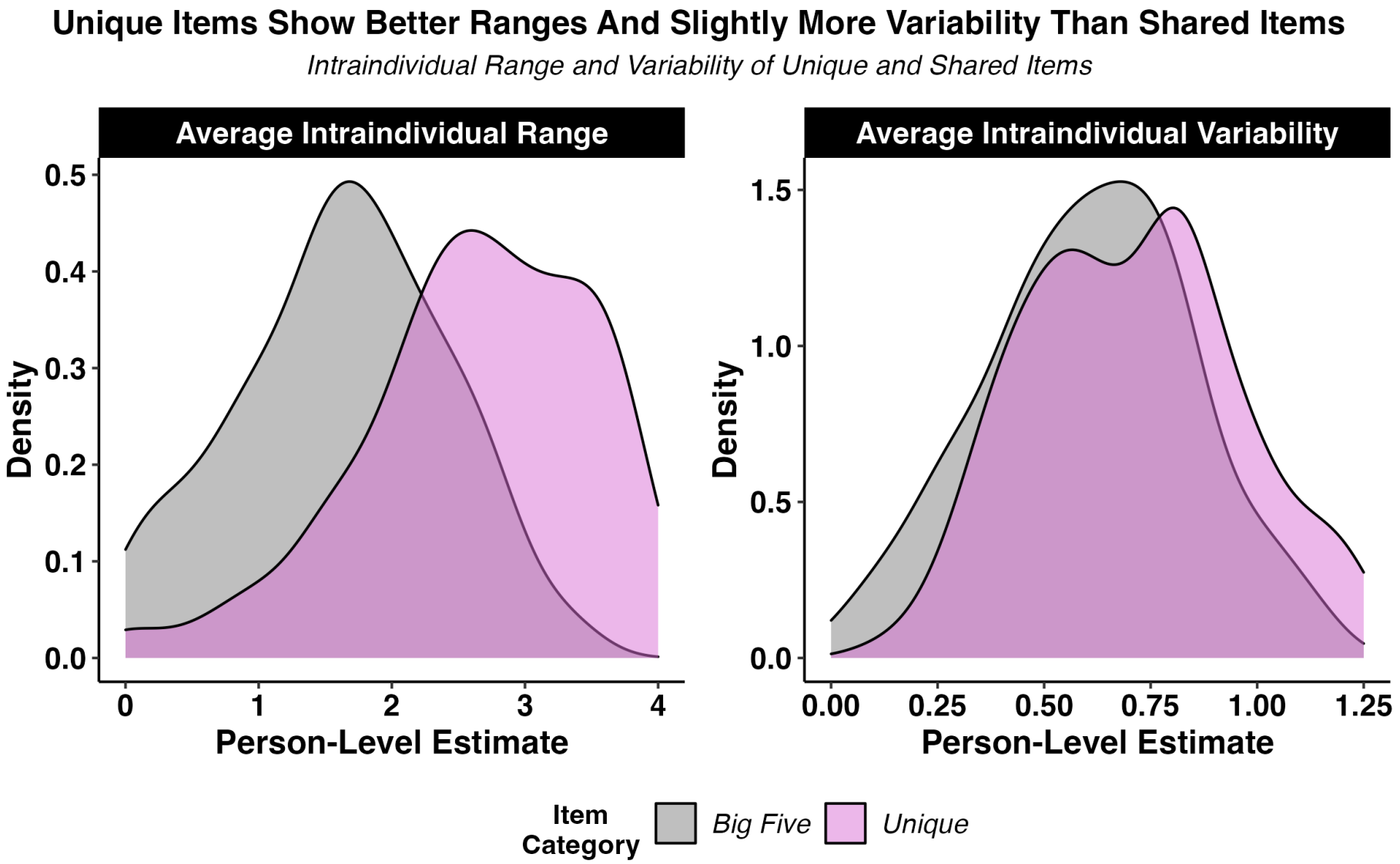
Variability



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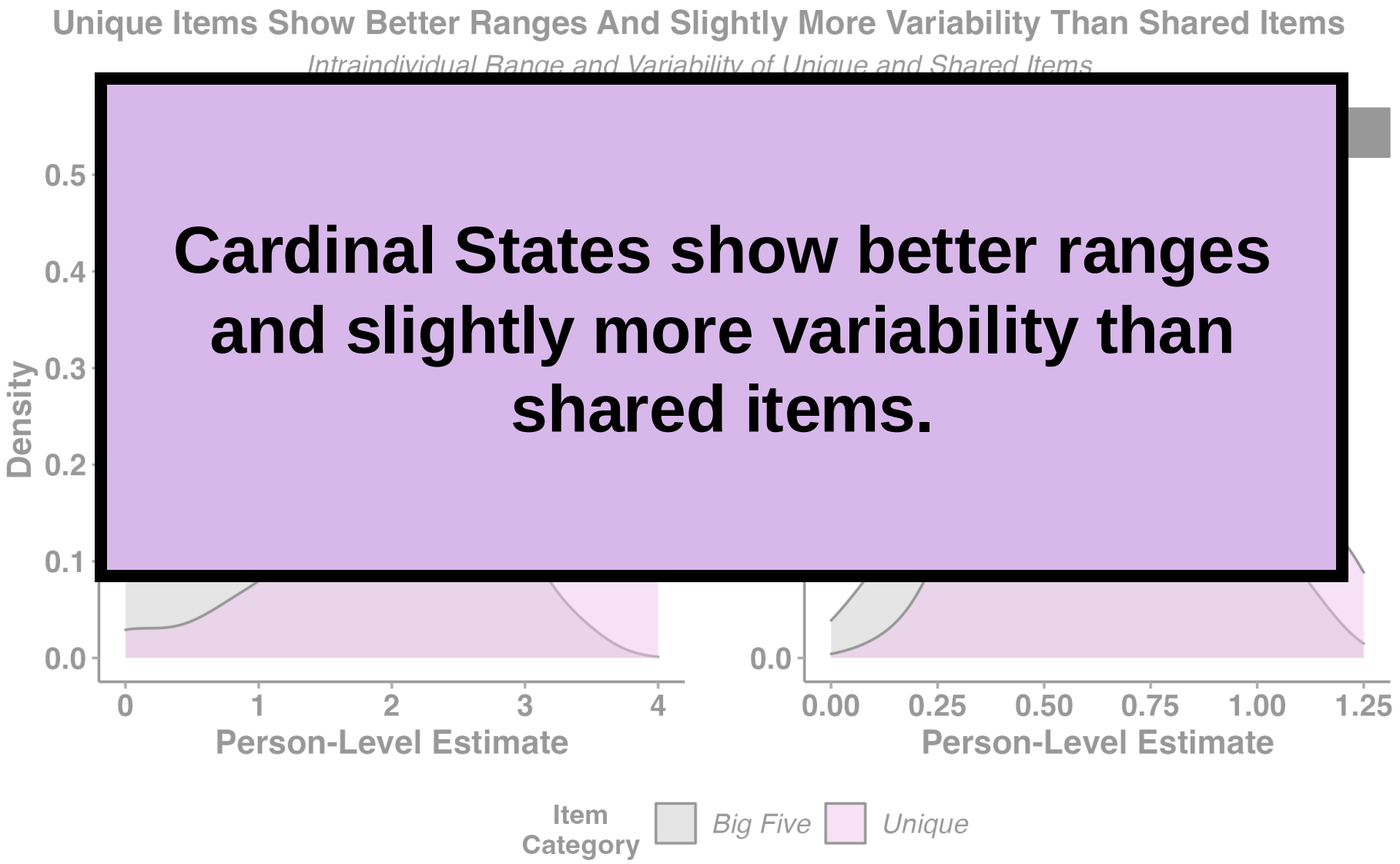
Variability

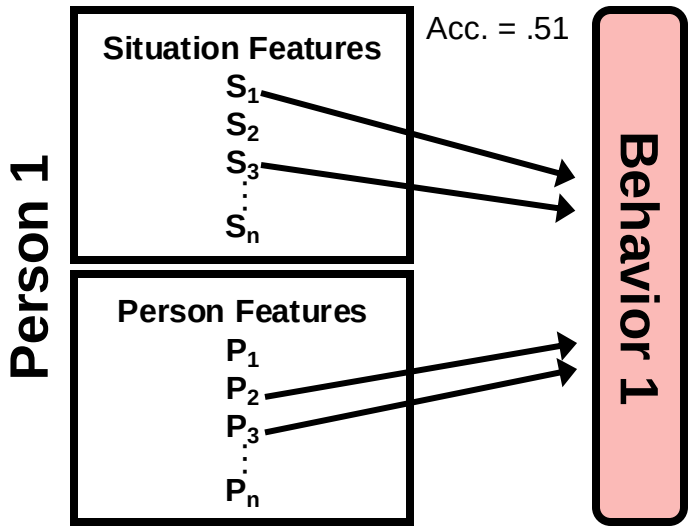


Cardinal States show better ranges and slightly more variability than shared items.

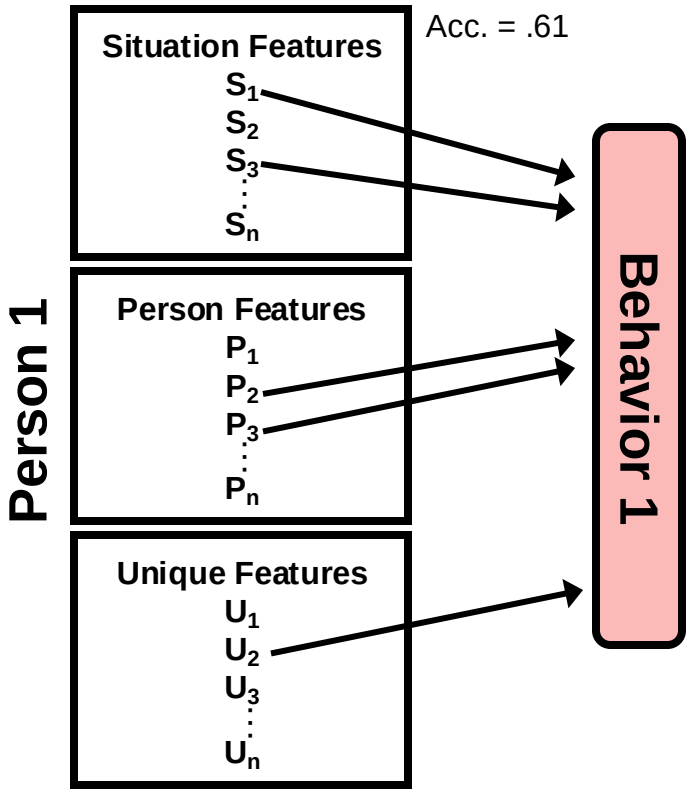
What are we missing when we use the same measures for everyone?

Predictive Utility

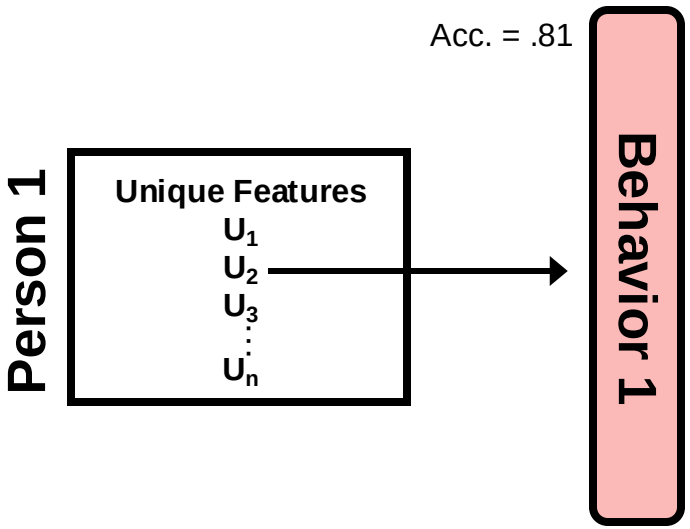
SHARED:
PERSON + SITUATION



COMBINED:
PERSON + SITUATION + UNIQUE



UNIQUE:
CARDINAL STATES



What are we missing when we use the same measures for everyone?

Predictive Utility

SHARED:
PERSON + SITUATION

COMBINED:
PERSON + SITUATION + UNIQUE

UNIQUE:
CARDINAL STATES

Situation Features

Acc. = .61

Person 1

Which feature set has the best predictive utility?

Behavior 1

U_3
⋮
U_n

What are we missing when we use the same measures for everyone?

Predictive Utility

SHARED:
PERSON + SITUATION

M = .78
SD = .13
Med = .83
Range = .46-1

COMBINED:
PERSON + SITUATION + UNIQUE

M = .80
SD = .13
Med = .89
Range = .46-.97

UNIQUE:
CARDINAL STATES

M = .80
SD = .13
Med = .89
Range = .5-.97

What are we missing when we use the same measures for everyone?

Predictive Utility

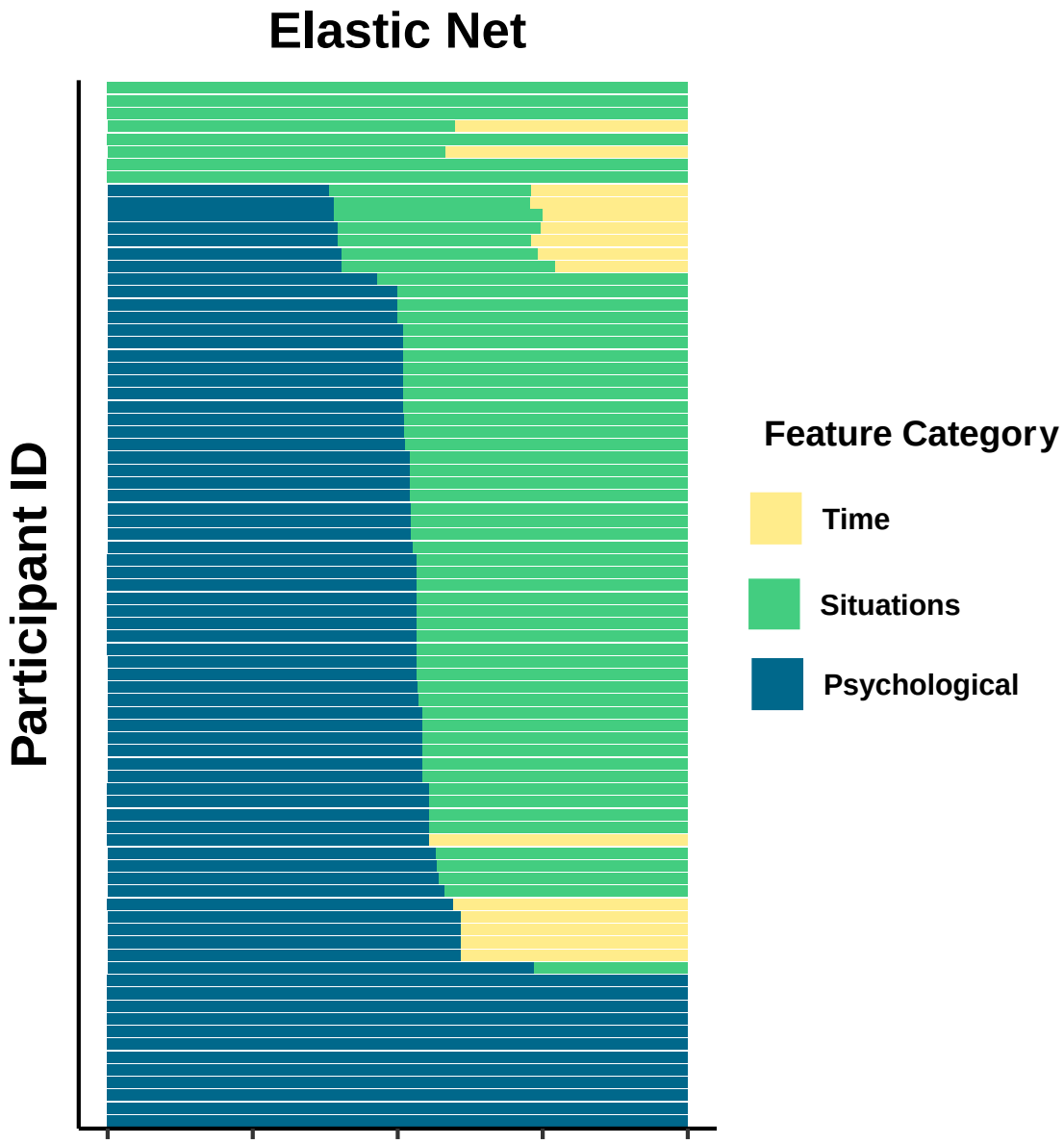
SHARED:
PERSON + SITUATION

COMBINED:
PERSON + SITUATION + UNIQUE

UNIQUE:
CARDINAL STATES

Feature sets performed largely similarly

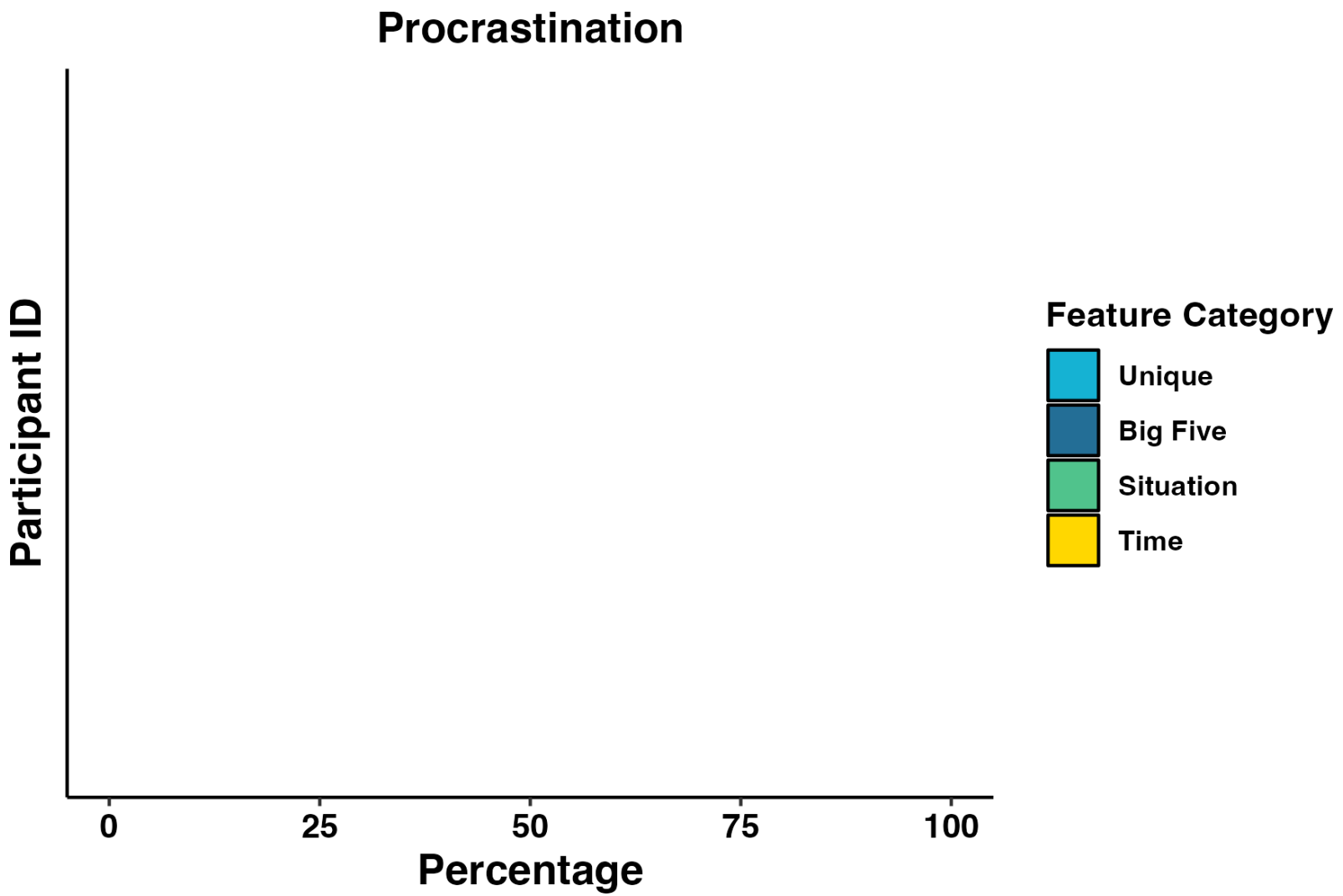
Do certain categories of features out-predict others?



Beck & Jackson (2022, *Psychological Science*)

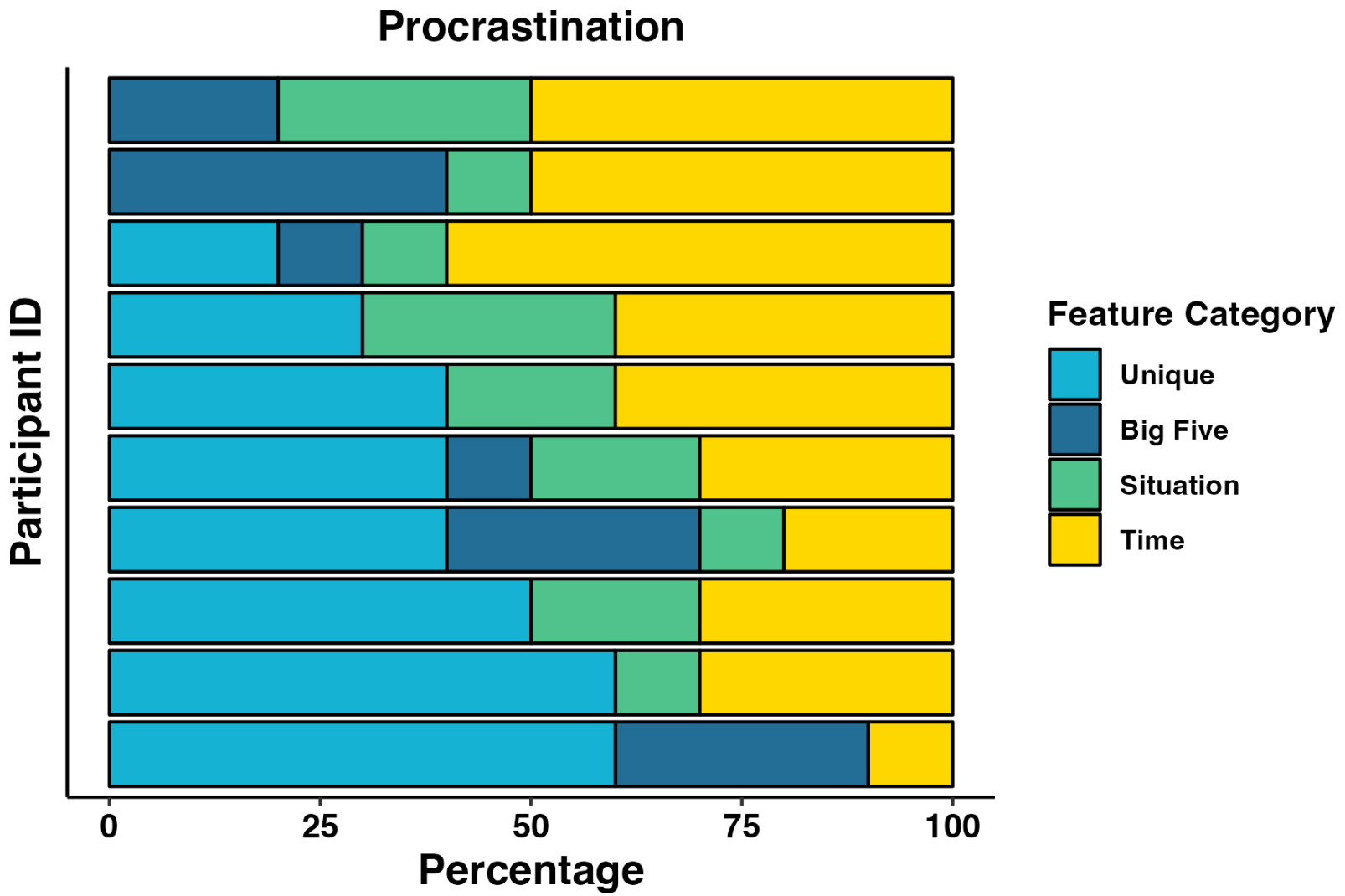
What are we missing when we use the same measures for everyone?

Predictive Utility



What are we missing when we use the same measures for everyone?

Predictive Utility



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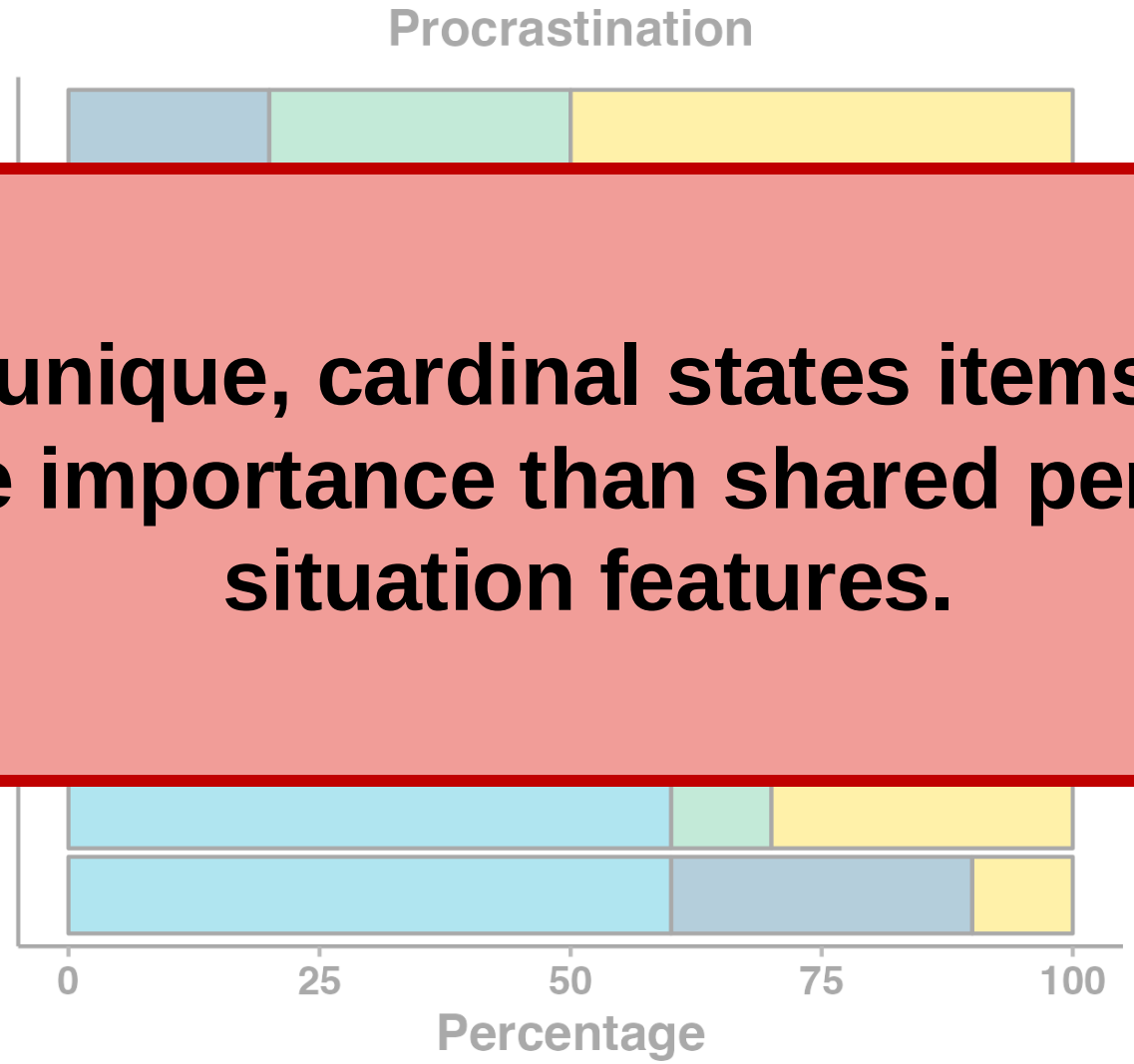

For ~50%, unique, cardinal states items had higher variable importance than shared person and situation features.

Summary

Previous work indicates that individuals have unique personality structures and antecedents

No work has examined the utility of unique, cardinal state indicators using ESM in the study of personality

Preliminary results suggest that unique, cardinal states capture unique content, have less restricted range, and are frequently top predictors of momentary outcomes

Thank you!

Materials & Contact

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The Beck Personality Lab

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UNIVERSITY OF CALIFORNIA