Preregistration

On Predicting Other People Some of the Time: Within- and Cross-Situational Consistency in Behavior

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26. February 2019

Study Information

Title	On Predicting Other People Some of the Time: Within- and Cross-Situational Consistency in Behavior
Background	Since its inception in the early 20th century, personality psychology has grappled with questions of stability and consistency, with evidence suggesting that personality is temporally stable but somewhat cross-situationally inconsistent. Situationally contingent changes in behavior neither suggest that personality traits do not exist nor diminish the importance of traits. Instead, cross-situational inconsistency is proof of the ability to regulate and respond to the needs of different situations, and variability in cross-situational personality may be a meaningful, "trait-like" individual difference characteristic itself. Some evidence suggests that individuals

can a priori estimate their own average variability of personality manifestations (defined as within-person standard deviations; Bem & Allen, 1974), while other evidence suggests that individual estimates of average variability only correspond to the consistency of if...then contingent patterns of personality manifestations in context (Mischel & Shoda, 1995). In other words, it remains an open question whether self-reported consistency corresponds to overall consistency (i.e. cross-situational consistency) in behavior or whether individuals are actually picking up on their tendency to respond consistently in similar contexts (i.e. within-context consistency). However, the existent evidence relies on the overlap of self-reports and/or a lack of objectively defined estimates of variability, thereby artificially inflating the likelihood that there are reliable individual differences in consistency across situations due to method variance. Currently there has been no systematic study of self-and observer differences in cross-situational consistency. The current study investigated self- and observer-reported variability with empirical estimates of within-person variability from Experience Sampling Method data to test whether selves, observers, or neither can accurately capture real variability in personality manifestations. Using longitudinal self-, observer-, and ESM reports, we additionally test the long-term stability of variability estimates.

Research questions

1. What is the relationship between a priori estimates of one's average variability of personality manifestations and observed consistency...
   (a) operationalized as observed consistency (within-person standard deviations) of experience sampling measures?
   (b) operationalized as observed if...then consistency of experience sampling measures?
2. What is the relationship between a priori observer estimates of average variability of personality manifestations and observed consistency...
   (a) operationalized as observed consistency (within-person standard deviations) of experience sampling measures?
   (b) operationalized as observed if...then consistency of experience sampling measures?

Hypotheses

1. H1: The relationship between Targets' a priori consistency ratings will be non-zero...
   (a) H1a: for within-person variability estimates (Bem & Allen, 1983).
   (b) H1b: for if... then contingency consistency estimates (Mischel & Shoda, 1995).
2. H2: The relationship between Observers' a priori consistency ratings will be non-zero...
   (a) H1a: for within-person variability estimates.
   (b) H1b: for if... then contingency consistency estimates.
3. H3: A-priori consistency-observed consistency relationships will be stronger for if... then contingencies than for within-person variability (Mischel & Shoda, 1995).

Sampling Plan

Existing data

Registration prior to analysis of the data. As of the date of submission, the data exist and you have accessed it, though no analysis has been conducted related to the research plan (including calculation of summary statistics). In this case, the authors have used the experience sampling data used this study for other projects but have not used self- or observer-estimates of a priori consistency or calculated the composites of consistency that will be the main focus of the present analyses.

Explanation of existing data

Although both authors have previously worked with these data, neither have examined (1) within-person variability of ESM measures, (2) if... then contingency consistency of ESM measures, (3) self-ratings of a priori consistency, or (4) observer ratings of a priori consistency. A script of the planned analyses for this project will be included with this preregistration before the data are examined or the planned analyses are run.

Data collection procedures

(Adapted from Beck & Jackson, 2019)

Undergraduate students at Washington University completed experience sampling method (ESM) surveys as part of the longitudinal Personality and Intimate Relationships Study (PAIRS; Vazire, Wilson, Solomon, Bollich, Harris, Weston, Mike, & Jackson, 2015). For Wave 1, 417 (136 males, 279 females) students with a mean age of 19.44 (SD = 2.33) completed ESM surveys. For each wave, participants were paid $20 for the laboratory portion of each assessment and entered into a lottery with the chance to win $100 for completing ESM surveys (if all ESM surveys were completed, the odds of winning were 1 in 10). Participants' self-reported ethnicities indicated that 56% identified as Caucasian, 23% as Asian, 9% as Black, and 12% as other. 2% of participants did not report their ethnicities.

Before completing the ESM component, participants first completed a two-hour laboratory experiment in which they completed multiple questionnaires as well as several other tasks, which will not be considered in the current study. After completing the laboratory portion, the researchers provided participants with instructions on the ESM component of the study. Participants received four emails per day with links to the ESM survey for two weeks. Including a practice survey, there were thus 59 possible surveys for each participant.

Participants responded to questions about their situation, emotions, and behavior in the last hour. Nine personality items were taken from the BFI-44 (John, Naumann, & Soto, 2008), but were modified to reflect the collection periods of the ESM survey (e.g. "From 5-6 pm, how engaged were you?"). As noted in Wilson, Thompson, and Vazire (2016), "The shortened BFI scale was comprised of two items per construct taken from the original BFI-44, making sure that each item (a) made sense at the state level; (b) assessed a different facet of the respective Big Five construct; (c) avoided difficult vocabulary words, and (d) had a comparatively high item-total correlation" (p. 4). Participants responded on a 5-point scale from 1 "Not a lot" to 5 "Very." With the exception of Agreeableness items (2), which were only collected if the participant indicated they were interacting with someone in the previous hour, participants responded to all items at each measurement point. In addition, items from the Openness to Experience domain were not included. A few additional state manifestations of personality were also included, measuring participants' state self-esteem, positve emotion, and negative emotion, each of which were measured in

the same way as the BFI items.

Sample size

Participants completed a total of 15,563 ESM surveys in Wave 1. Before analyzing the data, several exclusion criteria were applied. ESM surveys were excluded if (1) a survey was completed more than 3 hours after it was sent out, (2) the participant was sleeping during the target measurement point, (3) the participant completed less than 75% of the survey items, and (4) the participant provided the same response for 70% or more of the items. This resulted in a sample of 11,540 surveys (Wave 1).

Sample size rationale

Sample size was determined by power estimates for questions unrelated to this study that were conducted prior to data collection.

Stopping rule

Sample size was pre-planned for ~400.

Variables

A full codebook of the variables are included as an attachment with this preregistration.

Roughly they fall into a few categories, listed below. In parenthese are the categories each falls into in the codebook.

1. Self-ratings of consistency (level == “trait”, perspective == “self”, type == “consistency”)
2. Observer ratings of consistency (level == “trait”, perspective == “observer”, type == “consistency”)
3. Self-ratings of state personality (level == “state”, perspective == “self”, type == “personality”)
4. Self-ratings of binary situation items (level == “state”, perspective == “self”, type == “situation”)

Manipulated variables	This study is observational.
Measured variables	See codebook.
Indices	**Within-Person Variability:** calculated for each person by finding the within-person variability (within-person standard deviation) for each personality variable separately. **If...then Contingency Consistency:** calculated for each person by finding the within-person variability (within-person standard deviation) for each personality variable separately *in each situation separately.*

Design Plan

Study type	**Observational Study**. Data is collected from study subjects that are not randomly assigned to a treatment. This includes surveys, natural experiments, and regression discontinuity designs.
Blinding	No blinding is involved in this study.
Study design	These data come from a longitudinal study of undergraduates and include both repeated assessments of a number of questionnaires over the course of two years as well as intensive repeated measures of personality, situation, and affect measures 4 times per day for two weeks.
Randomization	Randomization was done at the participant level for the ordering of items in questionnaires.

Analysis Plan

1. Calculate within-person variability and if...then contingency consistency for ESM measures.

2. Correlate a priori consistency ratings of self and observers with within-person variability and if...then contingency consistency.

Critical tests will be to test if:

1. Correlations differ from 0.
2. Self- and Observer correlations differ from one another.
3. Within-person variability and if...then contingency correlations differ from one another.

Statistical models

To calculate within-person variability, we will use a bias corrected standard deviation at the level of the individual.

To calculate the correspondence between a priori consistency ratings and observed consistency, we will use a Pearson's r.

To test whether the correlations differ from 0 (H1 and H2), we will estimate the correlations using Bayesian regression with standardized variables ($Y = r_{YX} + \epsilon$. If the lower tail of the 95% uncertainty interval of posterior distribution of r_{XY} does not overlap with zero, we will have reliable evidence that a priori consistency corresponds with observed consistency.

To test the difference in correlations (H3), we will use a test of the difference of dependent correlations (Steiger, 1980).

Transformations

There will be no transformations of the data.

Follow-up analyses

Possible follow-up analyses will be to test whether types of situations may relate to better self- or observer estimates of consistency.

Inference criteria

We will use Bayesian correlations, so the critical test will be in the overlap of the posterior distributions with a criterion.

Data exclusion	Participants will be excluded pairwise in the analysis (that is, in any given analysis, a participant must have a measure of a priori consistency and a measure of within-person variability or if... then contingency consistency).
Missing data	See above on Data exclusion.
Analysis scripts (optional)	See attachment.

References