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Muchen Xi

*Washington University in St. Louis*

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WASHINGTON UNIVERSITY IN ST. LOUIS  
Division of Psychological and Brain Sciences  
Social & Personality Psychology

Consistent Across Situations?

A Person Specific Approach to Examining a Long-standing Paradox.

A thesis presented to  
Washington University in St. Louis  
in partial fulfillment of the  
requirements for the degree  
of Master of Arts

December, 2023  
St. Louis, Missouri

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## Acknowledgments

I extend my deepest gratitude to my advisor, Dr. Joshua J. Jackson, for his invaluable guidance and insightful feedback throughout the entire process of completing this master thesis. His expertise and healthy mentorship have been instrumental in shaping the direction and quality of this research. Again, Josh, you are the only reason why I am in St. Louis!!! In the meantime, I want to express my genuinely gratefulness to my committee members Dr. Patrick Hill and Dr. Emily Willroth for their guidance and advice.

I am immensely grateful to my parents, whose unwavering support and guidance were my anchor during moments when I felt lost. Their belief in my abilities and sacrifices made this journey possible. I owe the successful completion of this thesis to their love, understanding, and encouragement.

A heartfelt thank you goes to my friends for their understanding, companion, and occasional distractions that added moments of joy to this challenging endeavor. Your friendship has been a source of strength.

Last but not least, I want to acknowledge the constant companionship and unconditional love of my dog, Rusty. Your wagging tail and comforting presence provided solace during long hours of work.

This thesis is as much a reflection of the collective support and encouragement I have received as it is of my individual efforts. Thank you to everyone who has been a part of this transformative journey.

Muchen Xi

*Washington University in St. Louis*

*December 2023*

## ABSTRACT OF THE THESIS

Consistent Across Situations? A Person Specific Approach to Examining a Long-standing  
Paradox.

by

Muchen Xi

Master of Arts (A.M.) in Psychological and Brain Sciences

Washington University in St. Louis, 2023

Joshua J. Jackson, Chair

Bem and Allen (1974) address the person situation debate by proposing that there are some people behave more consistently, which can be better “explained” by personality traits, than others who are more influenced by situations. However, with failures to directly replicate Bem and Allen’s study, the existence of individual difference in cross situation consistency of behaviors remaining unclear. The current study addressed open questions that arose from the personality consistency debate by employing Mixed Effect Location Scale Model (MELSM) in an intensive longitudinal study. We found 1) there are individual difference in the overall behavioral consistency across situations; 2) there are individual difference in the behavioral consistency within each particular situation; 3) the consistency of one’s Extraversion and Neuroticism related behaviors are similar across situations, but not behaviors related to Agreeableness or Conscientiousness

## Introduction

Personality is assumed to be consistent across time and situations. Although numerous studies have demonstrated cross-situational consistency of behaviors (Borkenau et al., 2004; Epstein, 1983; Fleeson, 2001), substantive unexplained variance due to additional factors, like situations, remain (Wright & Mischel, 1987; Diener & Larsen, 1984). These findings are interpreted very differently by two different camps with one side emphasizing the utility of personality concepts, pointing to evidence that aggregated personality states show high levels of consistency (Epstein, 1983). The other perspective is that from situation to situation, the actual behavior associations are low, such that there is modest at best consistency, which make concepts like traits less useful (Shoda, 1999). The interpretation of these two different views of human nature – one emphasizing consistency across situations and the other emphasizing inconsistency across situations – has been described as a “paradox”. How can personality be both true – or is one perspective more correct?

The ensuing Person-Situation Debate resulted in a few ideas to resolve the paradox, with the most notable coming from Bem (1972) and Bem & Allen (1974). Namely that the paradox could be solved, and both parties could be correct, if only *some* people were consistent across situations. If not, everyone was cross-situationally consistent, then aggregate correlations assessing the consistency of behavior would naturally be low. At the same time, some people do behave consistently, and thus concepts like traits that people bring with themselves situation-to-situation provide utility in understanding human behavior. The paradox, however, has yet to be resolved empirically. Despite interest in the idea, there have been difficulties in testing the idea, stemming from methodological shortcomings and failures to replicate (Chaplin, 1991). The current study takes a novel quantitative approach using intensive longitudinal data to integrate



these disparate perspectives simultaneously, modeling both personal and situational features that may be important for some people, but not others.

### **Trait Perspective**

A trait (or dispositional) perspective emphasizes the power of dispositional traits in explaining our behavior, affect, and cognitions accurately across time and situations (Allport, 1937; McCrae & Costa, 2003). This perspective argues that singular behaviors are multi-determined and thus it is unreasonable to expect a large cross-situation correlations (Funder & Ozer, 1973). In a seminal paper, Epstein (1979) demonstrated that by aggregating participant's behavior, consistency estimates can be as large as 0.9. Thus, small correlations among behaviors do not reflect the reality of behavioral consistency. Consistency in aggregated behavior was not only found with self-reports, but also in observant report and objective measure of behaviors (Epstein, 1979).

These high levels of consistency have further been replicated. Across two weeks the consistency of aggregated behaviors as reported in the moment are above 0.9 (Fleeson, 2001). Similarly, having people behave in artificial situations and rated by unacquainted observers demonstrate the consistency of behavior when aggregated across situations (Borkenau et al., 2004). Beyond temporal consistency, aggregation helps within situations too, such that aggregating observations within a situation results in consistency across different situations (Diener & Larsen, 1984).

### **Social Cognitive Perspective**

The trait perspective side steps the consistency paradox by aggregating across situations. In doing so the focus is thus less on behaviors given a situation and more so in average behaviors across situations. In contrast, the social cognitive perspective, also refer as situational

perspective, put more emphasis on understanding behavior given a particular situation. This perspective claims that behavior cannot be well explained by broad dispositional traits with low behavioral consistency across situations (Hunt, 1965; Mischel, 1968; Vernon, 1964; Wallace, 1966). Rather, consistency is viewed at a different level, emphasizing consistency in how situations trigger behaviors, opposed to personality traits being the driver of consistency (Mischel, 1973; Wright & Mischel, 1987).

Social cognitive theorists argue that individuals may interpret and behave uniquely regarding various situations. Hence, there exists a consistent but unique if... then contingency, as a situation-behavior profile for everyone, where if someone is in a situation, then they will probabilistically behave a certain way (Mischel & Shoda, 1995). The contingency between situations and behaviors were thought to be consistent across time and observations such that different situations would trigger unique behaviors consistently. For example, social interactions in a party situation can make one person much more sociable than they normally are, whereas a museum visit may result in them being less talkative than usual. Whereas the same set of situations may result a different set of behaviors for another person where they know a lot about art and thus talk more than usual in a museum, while being a wallflower at a party. The consistency of personality is then conceptualized as the totality of these stable situation-behavior profiles for each individual. Given that everyone can be unique, the consistency of behaviors is best represented idiographically for a specific person.

Supporting such claims, several studies have tested the unique consistencies empirically. Children's social behaviors (e.g., verbal aggression & prosocial behaviors) under situations with different psychological features (e.g., provoked & warned by adult) were studied with archival data from a children's residential camp (Shoda, Mischel, & Wright, 1994). They found

individual differences in the conditional probability of the same behaviors across different situations (i.e., if...then contingencies). For example, when comparing behaviors of two individuals in the same situation, child #1 showed lower verbal aggression when they are approached by friendly peers whereas the same situation of friendly peer approaching triggers a higher verbal aggression for child #2. Although there are individual differences in the consistency of the if...then profiles, these profiles are generally highly consistent for each individual with repeated observations of the same situations (Fournier, Moskowitz, & Zuroff, 2008; Shoda, Mischel, & Wright, 1994).

### **The Lack of a Resolution**

Neither of these two branches of theories can fully describe variability in behavior as they tend to emphasize different aspects – the trait approach focuses on long term consistency at the expense of situations whereas social cognitive focuses on specific behaviors at the expense of testing commonalities across people. As a result, the personality paradox remains unsolved. Bem and Allen (1974) pointed out a potential solution that both parties are correct at the same time but for different populations. There are some individuals are more cross-situationally consistent and thus better explained by personality traits. In contrast, others may be more influenced by situations, leading to less consistency across situations but explainable via situation-behavioral contingencies. In support of this idea, Bem and Allen found that individuals who believe they vary more across situations displayed more inconsistency in cross-situational ratings. Bem and Allen (1974) argued that the cross-situational consistency of behaviors is an individual difference itself, such that some people behave more consistently than others. This individual difference in behavioral consistency then moderates the effect of dispositions to behaviors so that the highly consistent individuals are better “explained” by personality traits, whereas less consistent

individuals are more influenced by the situation. Consistent with this idea is Snyder's (1974, 1987) construct of self-monitoring, which indexes the level of adjustment of one's behavior such that high self-monitored individuals are better able to adjust their behaviors according to favor of situations than others resulting their behavior less consistent in many domains.

A number of resulting studies attempted to build upon Bem & Allen's work, looking for moderators of consistency (Chaplin, 1991). However, the results were not supportive but exposed more concerns to the moderation proposed in reconciling the paradox. The behavioral consistency moderator was criticized for low power stemming from to small sample sizes (Tellegen, Kamp, & Watson, 1982; Paunonen and Jackson, 1985), lack of construct validity (Paunonen, 1988), and failures in replicating the original results (Chaplin & Goldberg, 1984). Despite a popular and important theoretical model 40 years ago, progress in investigating Bem & Allen's contention has stalled.

### **Personality Paradox, Revisited**

Despite numerous replications attempts and the discussion of study shortcomings, there lacks a resolution of the paradox. Camps have mostly retreated to their respective corners after proclaimed truces of the person-situation debate (Kenrick & Funder, 1988; Lucas & Donnellan, 2009). While there exists attempts to integrate these disciplines (e.g., Beck & Jackson, 2022; Fleeson, 2001; Kuper et al., 2022), novel approaches towards situation, person and behavior integration are needed.

Notably, Bem & Allen's central contention – that people differ on how they respond to situations, with some being more and some being less effected – remains untested. We put forth a novel quantitative model to test this. We represent both sides of the argument in Figure 1. In the middle, each dot within a situation represents an aggregated behavioral level of each

individual at a specific situation. All observations across time and situations for each person can be piled up to create a density distribution (Fleeson, 2001) of one's behaviors (as shown at the right side of the figure). The central tendency of this distribution represents a person's trait level. Because dispositions are expected to be consistent, trait theories emphasize the behavioral consistency within each individual, aggregated across time and situations.



Figure 1: Orthogonal Interpretations of Consistency by Trait and Situation Perspectives

In contrast, a standard situationist view emphasizes the importance of each situation. Instead of aggregating behavioral levels across situations (horizontally) like the trait position, situationists aggregate behavioral ratings across people (vertically) within the same situations forming the distributions shown in the upper part of Figure 1. Specifically, situationists propose that some situations (situation B) will make everyone in generally more extraverted than another situation (situation A) does. The person-situation debate can be distilled to asking which of these aggregations (across situations or across people) explains more variance.

The social cognitive approach emphasizes a more specific level of analysis, focusing on the middle of Figure 1. Unlike traditional trait perspective and simplistic situational perspective focusing on only one factors by collapsing the other one, social cognitive approach emphasized the if...then contingency at a both person- and situation-specific level. The same person's behaviors at the same situation should be consistent if they were observed for numerous times. Hence, instead of focusing on the aggregated density distributions shown on the sides, the social cognitive approach focuses on the if...then profile for each person at each situation shown in Figure 1.

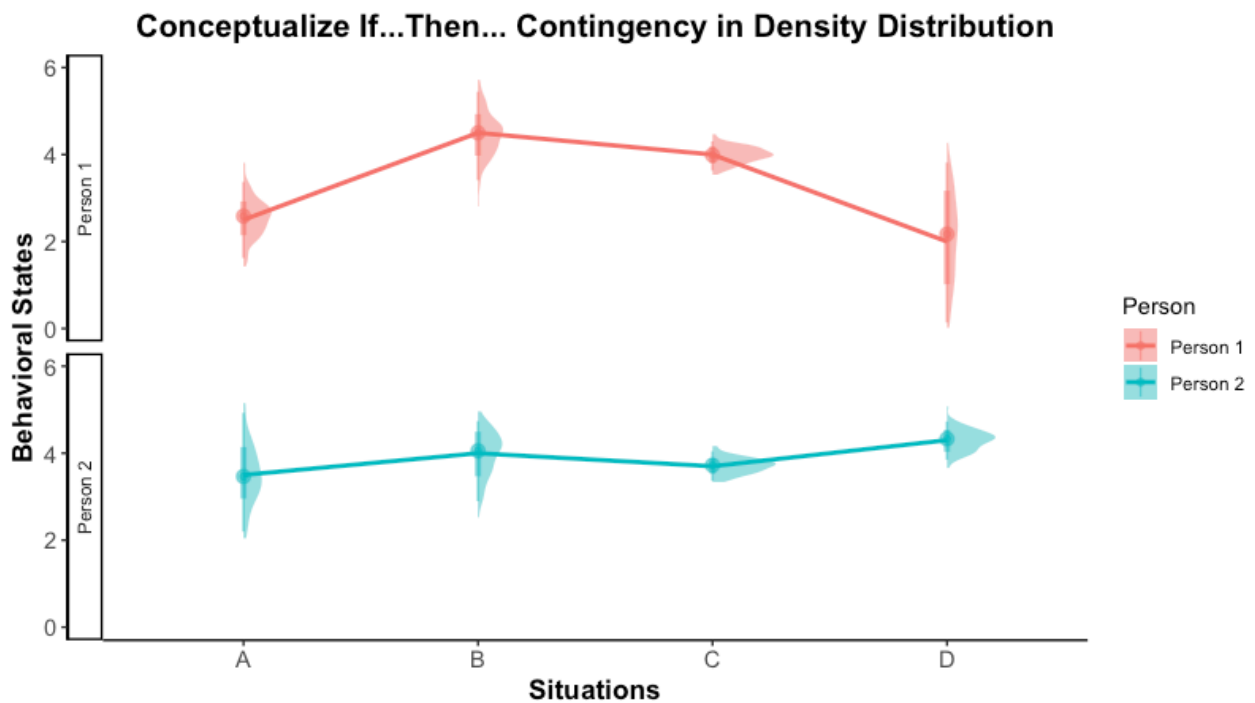


Figure 2: Conceptualize If...Then... Contingency in Density Distribution

Yet this approach does not represent the probabilistic nature of if...then contingencies. In other words, it does not represent how consistent someone is in their behavior within a situation. We present a new model that incorporates the if...then. contingency approach from social cognitive theorists with a density distribution approach from trait theorists (Figure 2), which

allows us to look at consistency (i.e., the standard deviation of the density distribution) within a situation. While if...then approaches discuss the probabilistic nature of their approach, they only focus on the mean response of a person, given a situation. If we observe two individuals' behavior multiple times at each situation from A to D, instead of aggregating them to a dot shown in Figure 1, the frequency of their behaviors can form a density distribution centered at the aggregated value as shown in Figure 2. The narrower the distribution the more consistent the person is at that situation. For example, Person 1 is much more consistent at Situation C comparing to Situation D.

Bem & Allen's (1974) theory had several components that have not been empirically addressed, that are possible using our model. First, they hypothesized that some people will be more consistent than others. While there is evidence on different time scales (Beck & Jackson, 2020; Wright & Jackson, 2022), there is less evidence this is the case from situation to situation and within a situation. Second, they emphasized that situations would have more of an impact for some than others (i.e., situational contingencies). Situational contingencies have exclusively been examined at the mean level where some situations result in higher or lower level of certain behaviors (Kuper et al., 2022). However, the empirical evidence supporting Bem & Allen's theory, suggesting some situations should lead different people to be more or less consistent, is still scarce (Xi & Jackson, Manuscript in preparation). That is, after accounting for situational features that are associated with mean level and consistency of behavior (e.g., some situations result in more consistent behavior), are there individual differences in how consistent people respond to situations? Third, these situationally influenced people are going to be similarly influenced across other situations, resulting in higher or lower levels of cross situational

consistency in their behavior. The natural question to be addressed is whether the overall highly consistent people are also consistent within each and every situation?

### **Current study**

In the current study, we will address open questions that arose from the personality consistency debate using an intensive longitudinal study. We will employ Mixed Effect Location Scale Model (MELSM) where observations are nested within people and situations, so as sigma can be modeled as reflecting consistency within a situation. First, we will first examine associations among state-level variability (i.e., consistency) to test Bem and Allen (1974)'s contention that some people are more consistent than others. Then we will test whether there is an individual difference in consistency after accounting for a person's average consistency of behaviors. Finally, we will test whether people who show situational contingencies in one situation, show similar situational contingencies in another by examining the covariance among situation specific sigmas. Addressing the paradox, social cognitive perspectives posit a completely individualized approach, where each person's reaction is unique to the situation, whereas trait theory would posit that some individuals are contingent on a situational press.

## **Method**

### **Participants**

422 undergraduate students at Washington University in St. Louis with a mean age of 19.44 (SD = 2.33) completed an experience sampling method (ESM) survey in Wave 1 of the longitudinal Personality and Interpersonal Role Study (PAIRS, Vazire et al., 2015). Self-reported ethnicities identified 56% as Caucasian, 23% as Asian, 9% as Black, 12% as others, and 2% unknown. Participants were compensated \$20 for the initial laboratory assessment session and



entered a lottery with 10% chance to win \$100 for completing all ESM surveys. This study was approved (IRB#201206090) by the Institutional Review Board at Washington University in St. Louis

## **Measures**

### 1.1. Procedure

All subjects were asked to first complete a 2-hr laboratory session where they received the instructions on the ESM portion of the study while completing multiple surveys and other tasks that are out of the interests of current study. Each participant received four emails per day with links to the ESM survey per day for, in total, two weeks. Consequently, with an additional practice survey, 57 possible surveys would be collected for each participant.

### 1.2. Assessments

Each ESM survey includes assessments on multiple constructs one experienced in the past hour, including emotion, situations, behaviors, and personality states. The concerns of current study focus only on personality states and situations.

#### 1.2.1. Situations

Seven dichotomous items asking whether one has been exposed to a situation has been presented in each survey (e.g., “During the last hour, felt tired:”) with 0 suggesting absent from such situation whereas 1 indicating exposure. Specifically, two negative/passive situations and five positive/interactive situations were measured (see table)

#### 1.2.2. States

In total, nine personality items were taken from the BFI-44 (John, Naumann, & Soto, 2008), with two items measuring each domain of Big-Five personality with exceptions of Neuroticism measured by three items and Openness to Experience not been assessed.

Meanwhile, Agreeableness is only measured when subjects is exposed to a social interaction event in the past hour. All items were modified to reflect the collection time periods of the ESM surveys (e.g., “From 5– 6 pm, how engaged were you?”). Participants responded to items on a 5-point Likert-scale from 1 *Not a lot* to 5 *Very*.

### 1.2.3. Data exclusion

Before analyzing the data, several exclusion criteria were applied to the original 15,563 ESM surveys completed by participants. 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 11,370 surveys from 422 participants.

### **Analytical strategy**

The present study tries to examine the between person difference in person-specific cross-situational consistency. That is whether the person who is more consistent in Situation 1 is also consistent in Situation 2. To investigate this question, employed mixed-effect location scale model (MELSM) to tackle both person specific variabilities across situations (level 1) and between person difference in those variabilities (level 2). MELSM are similar to multi-level models, but they also directly model individual differences in variability (Williams, Martin, & Rast, 2022).

Taking advantage of the intensive longitudinal data can model each individual's states as a function of the situations one has been exposed to (Equation 1). Here, as it is in standard MLM models,  $State_{is}$  is the repeated observation of one domain of an individual's,  $i$ , personality states within in a situation  $s$ . Between person differences  $\gamma_{00}$  indicates population average of the

modeled state in situation  $s$ , whereas  $U_{0i}$  captures the deviance of person- $i$ 's average level of state in situation  $s$  from the population average.,  $\gamma_{10}$ , reflects the difference in state when experiencing a situation versus not, with  $U_{1i}$  indexing the deviance of person- $i$ 's effect of situation  $s_i$  from the population average.

Level 1:

$$State_{is} = \beta_{0i} + \beta_{1i} \cdot Situation_i + \varepsilon_{is}$$

$$\sigma_{is} = \varphi_{0i} + \varphi_{1i} \cdot Situation_i$$

Level 2:

$$\beta_{0i} = \gamma_{00} + U_{0i}$$

$$\beta_{1i} = \gamma_{10} + U_{1i}$$

$$\varphi_{0i} = \eta_{00} + U_{2i}$$

$$\varphi_{1i} = \eta_{10} + U_{3i}$$

MELSM differ from standard treatments of intensive longitudinal data in that the variability is simultaneously modeled. The variance of a person's states,  $\sigma_{is}^2$ , is modeled as a function of person  $i$  within situation  $s$ , similar to estimating the means, above.  $\eta_{00}$  is the average variability of person- $i$ 's personality state when not in situation  $s$ .  $U_{2i}$  captures the deviance from average level of variance.  $\eta_{10}$  is the effect of situation  $s$  on the variability of personality state. Positive signs indicate an increase in variance relative to average variance whereas a negative value indicates a decrease.  $U_{3i}$  is the corresponding random effect indexing the deviation of an individual- $i$ 's variability in a situation  $s$  from the population average variability. A person with

high-positive rating on  $U_{3i}$  indicates the person is much more variable/inconsistent in situation  $s$  than the population average.

To answer the main questions that whether the more consistent person in Situation 1 is also consistent in other situations,  $U_{3i}$  for all individuals were correlated across all situations. To do so, a model was run for each DV and each situation, with the random effect posteriors extracted. If there exist an individual difference in the cross situational consistency like Bem & Allen (1976) suggested, we shall see a sizeable positive correlation  $U_{3i}$  across all situations, indicating the more variable person in Situation 1 (over and above the average variability) is also more variable in other situations.

## Results

We ran a total of twenty-eight MELSMs (One for each combination of situations and state level manifestations). To fully examine Bem and Allen (1974) theory, we tested three questions: 1) Are some people generally more consistent than the others? 2) Are there individual differences in consistency within particular situations? 3) Is consistency of behaviors consistent across situations?

### **Question 1: Are some people generally more consistent than the others?**

We first examined whether some individuals are overall more or less consistent than other regardless of what situations they were exposed to. We found this true for all traits. As seen in Figure 3, each person's consistency of state levels is aggregated across all situations for each personality domains. Then people are rank by their consistency of states in each personality domain from the most consistent (least variable) to least consistent (most variable). There is a clear individual difference in consistency, shown by many people at the lower and upper tails can

deviate from the population average consistency, in each of the four tested domains. These findings indicate that some people are more or less consistent than others (See more in Xi & Jackson, 2023).

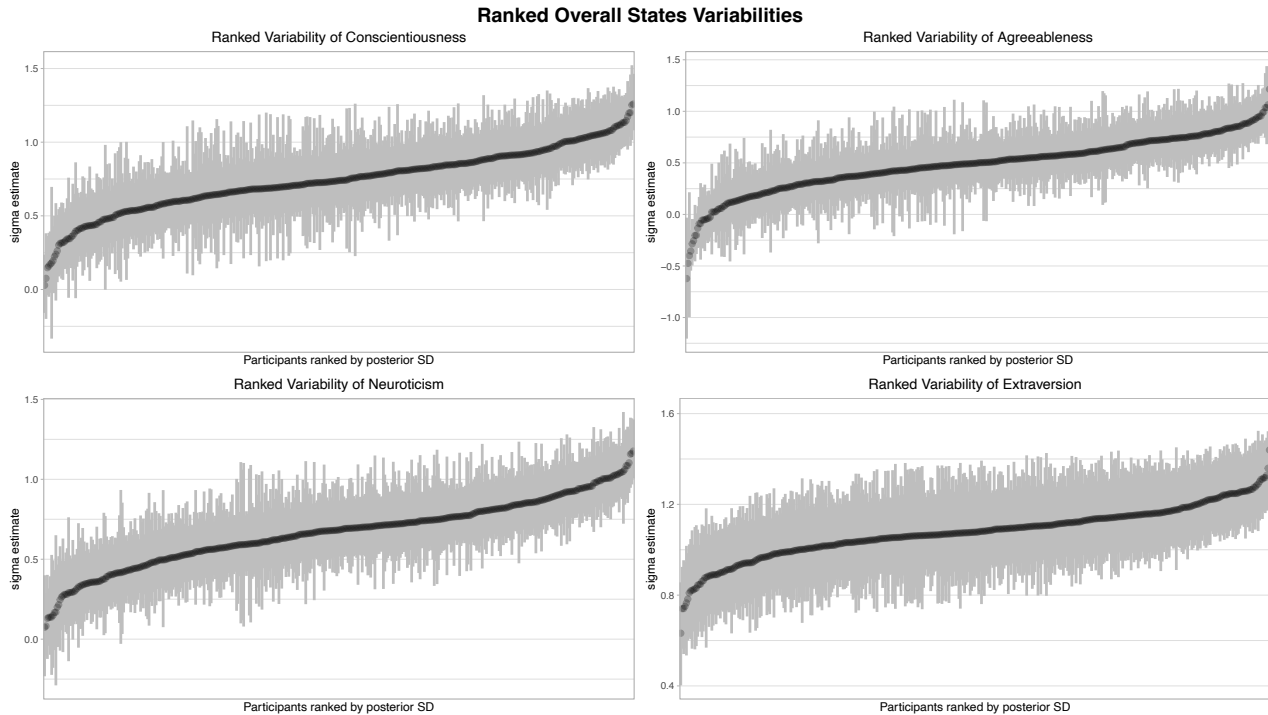


Figure 3: Rank-Ordered Consistencies of Personality States

**Question 2: Are there individual differences in consistency within particular situations?**

Next, we examined whether there are individual differences in people’s consistency within a particular situation. Rather than examine consistency in general, aggregating across all situations, here we test whether there are individual differences in how consistent people are for a given situation, accounting for the tendency of situations on average to either constrain or inflate consistency. Individual difference of consistency was found for 93% (26/28) of the combinations of personality domains and situations (plots for all situation and behavior combinations are available in supplementary plots S1 – S28). As seen in Figure 4, for example people differ a lot in how much they vary in their conscientiousness when they are with their

family members – some behave consistently in the same manner whereas others fluctuate from very low to very high levels of conscientiousness. In rare cases, there were no individual differences after accounting for the main effects of situation. For example, as seen in Figure 4, consistency of everyone’s sociability is constrained at a same level when they are experiencing bad things.

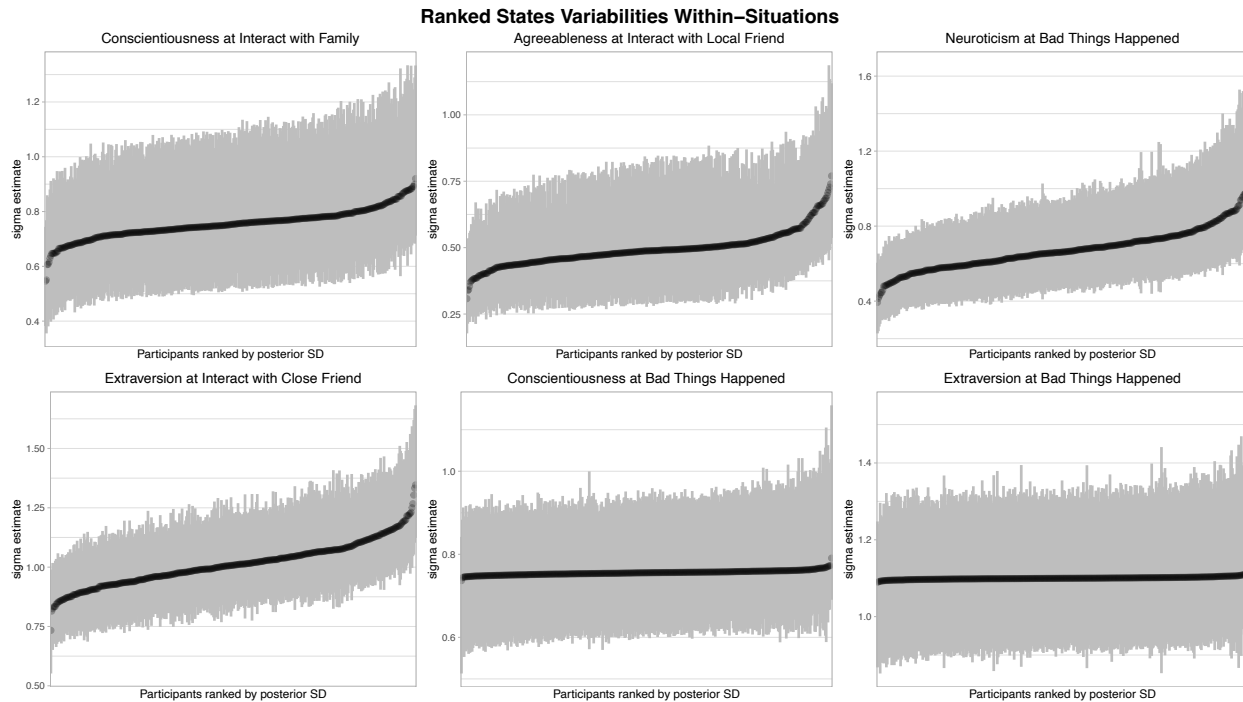


Figure 4: Rank-Ordered Consistencies of Personality States within Particular Situations

**Question 3: Is consistency of behaviors consistent across situations?**

We next tested the key thesis of Bem and Allen (1974)’s idea that those who are consistent in one situation are more consistent in another. We correlated each person’s consistency within a situation with different situations, to assess whether the more consistent person in the first situation is also consistent in the second. What is notable is that we are controlling for average levels of person consistency, resulting in a stronger test of whether a person who is consistent in one situation is cross situationally consistent in another.

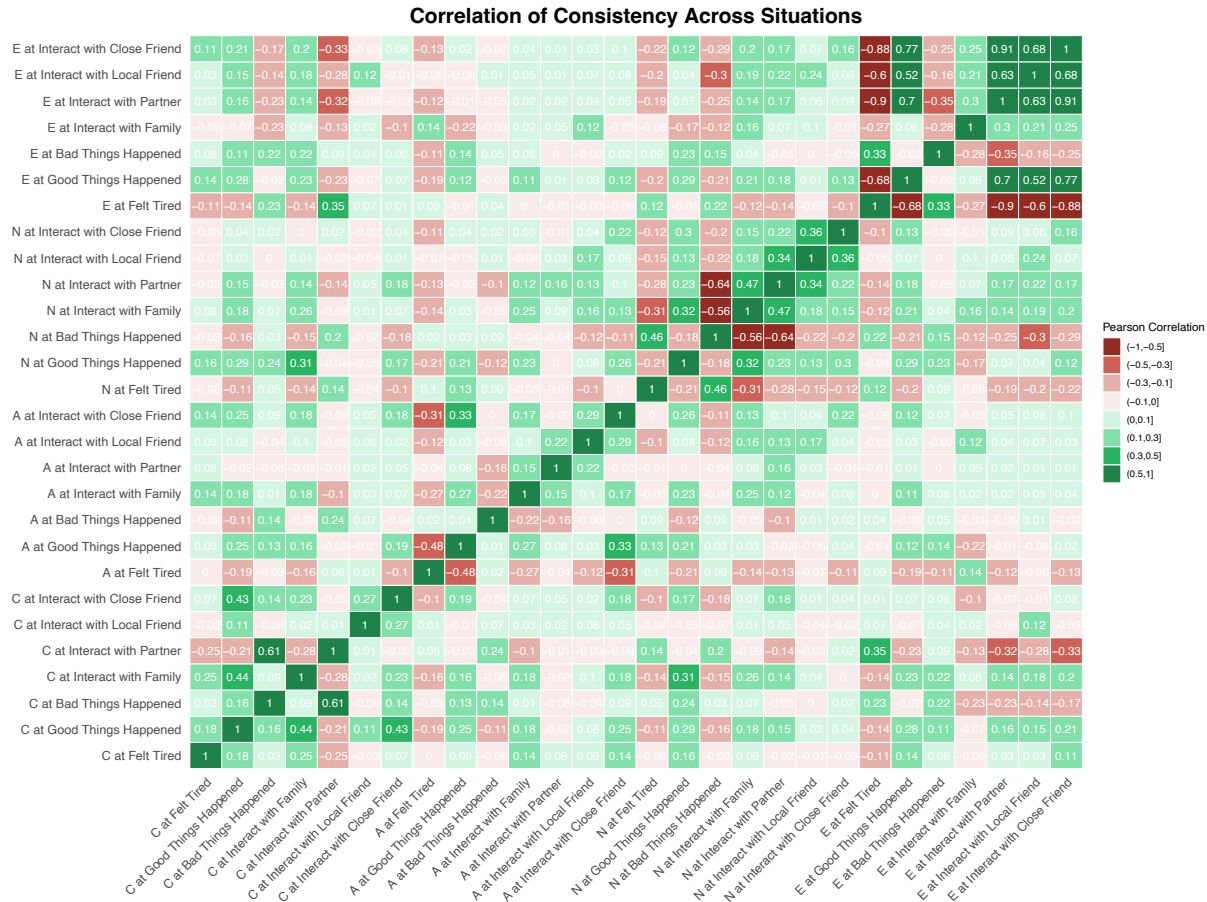


Figure 5: Correlation Matrix of State Consistencies Across Situations

As shown in Figure 5, each cell in the correlation table demonstrates how one's consistency in situation 1 relates to their consistency in situation 2 -- all while controlling for the effect of situations to influence the consistency of behaviors. High correlations are expected by Bem & Allen's theory, which would indicate that some people are highly consistent from situation to situation whereas others are not -- i.e., stable individual differences in how consistent they are from situation to situation. No correlation would indicate that once accounting for whether some people are consistent or not in general, how consistent one is in a one situation is not related to how consistent they are in another situation. If the correlation is small, this would mean that someone who is consistent in in situation 1 may only be moderately consistent in

situation 2. In contrast, if the correlation is negative, the more consistent a person in situation 1 they would be expected to be more inconsistent and flexible in situation 2.

In general, we found null to small correlations, with the exception for consistency of extraversion and neuroticism states. The consistency of conscientiousness and agreeableness are nonsignificant to small correlation among situations. This indicates that individuals' consistency of conscientiousness and agreeableness in one situation situations is not related to consistency in other situations, after accounting for their general tendency to be consistent or not from situation to situation. For example, those who consistently acted conscientiousness when around their romantic partner was not associated with the consistency of acting conscientiousness around their local best friend ( $r=0.01$ ). This indicate that the most consistently controlled individual when they were with their romantic partner can fluctuate in their orderliness when they are with their friends instead; being consistent in one situation was not related to how consistent they were in another. Similarly, how consistently agreeable when interacting with their family members is not related with being consistently agreeable when they interact with their romantic partner ( $r = 0.01$ ). Exceptions of medium associations of consistency are rarely found in conscientiousness and agreeableness. As an example, the more consistently conscientious when with family members is also highly consistent conscientious when they are experiencing good things ( $r = 0.44$ ). In general, these findings suggest a perspective more closely aligned with social-cognitive theory, rather than Bem and Allen or trait theories, where it is necessary to understand behavior at a situation specific level.

In contrast, consistency in Extraversion, in general, shows medium to large correlations among situations, in expectation of Bem & Allen (1974). That is, the effect a situation has on the consistency of a person is similar across situations. For example, the highly consistent individual



in their sociability when interacting with their close friends were found highly consistent when they communicate with their romantic partner as well ( $r = 0.91$ ). This can be interpreted as the influence of the situation was similar for each of these situations. Similarly, the more consistent the one is talkative to their close friends, the more consistent the one behaves more or less socially engaging when there are good things happened to them ( $r = 0.77$ ). There are exceptions for this high association of consistencies: the consistency of extraversion in the same situation of good things happened was found not related with how much one varies when they talk to their family members ( $r = 0.06$ ).

Similar with Extraversion, consistency in Neuroticism shows almost all medium correlations across situations. For instance, the more consistent person in their emotional stability when they talk with their romantic partner is found mostly likely also be consistent in the stability of their emotion when they were with their family members ( $r = 0.47$ ). Similar sizable associations for consistency of Neuroticism are also found, but not limit to, when pairing good things happened with interacted with family member ( $r = 0.32$ ), interacted with local friends and other close friends ( $r = 0.36$ ), and interacted with local friends and romantic partner ( $r = 0.34$ ).

It is worth noting that these large associations observed in Extraversion and Neuroticism were not always positive. For example, the correlation of extraversion state consistency between the situation of feeling tired and interacting with close friend is  $r = -0.88$ , which indicating the person who is more consistently socially inhibited when they are feeling tired has a larger range of capability to be sociable and enthusiastic when they are chatting with their close friends. In general, positive associations of consistencies for Extraversion and Neuroticism are shown among positive and socially interactive situations. Whereas the negative associations were found when pairing negative situations (e.g., Bad things happened) with positive and socially active

situations. Similar patterns of direction of associations are also found in consistency of agreeableness, but not conscientiousness, while bearing small and non-significant correlations.

Of note, there were almost non-existent associations across trait manifestations. For example, those who were consistent in extraversion within different situations was not at all related to consistency for the remaining traits. These findings indicate that the consistency of behavior in one context is not related to the consistency of behavior in another context.

### **Discussion:**

The current study examined Bem & Allen's popular and long discussed theory within personality psychology that only *some* people are consistent across situations. With their theory they attempted to integrate trait and social cognitive perspectives. We tested their theoretical proposals using Mixed Effect Locational Scale Models that can model behavioral consistency within a situation while accounting for average levels of behavior. Moreover, we introduce a novel way to think about integrating person and situation aspects by taking the if...then contingency approach popular with social cognitive theorists, and combining it with the density distribution approach, popular with trait theorists.

Two main findings emerged. First, individual differences were found for people's overall behavioral consistency such that some individuals more or less consistent than others in general. Individual differences in behavioral consistency also occurred within particular situations, even after accounting for individual differences in general, in alliance with Bem & Allen's theory. Second, we found the consistency of behaviors within a particular situation is not associated with behavioral consistency for agreeableness and conscientiousness behaviors, counter to Bem & Allen. Knowing how consistent a person in situation 1 will not tell you much about how

consistent their agreeable and conscientious behavior is in a different situation. In contrast, consistency in neuroticism and extraversion were correlated across situations, indicating a person-level attribute that people with them to all situations, such that some people are consistently consistent, and others are consistently inconsistent.

### **Individual Differences in Consistency**

Are some people more consistent than the others, like Bem & Allen (1974) questioned? The evidence for individual difference in personality consistency and change have been largely examined at different time scales rather than within particular situations. The current study replicates previous findings (e.g., Beck & Jackson, 2020; Fleeson & Law, 2015; Wright & Jackson, 2022) that people differ both how consistent they are. Our findings extend this idea to show that these individual differences also exist given a situation. Some people are more consistent than others, but also this consistency depends on specific situations such that consistent individuals are more (or less) consistent in particular situations. Individual differences in consistency exist, but they are contextual. The findings reveal the heterogeneity in consistency that is overlooked when talking about general tendencies of consistency. Hence, we need to be cautious talking about “personality consistency” in general, as for any sample there are many people that may not follow these patterns. These findings contradict on the idea of strong or weak situations, which are expected to constrain relax behavior responses, leading to increased or decreased consistency (e.g., Cooper & Withey; 2009). We found very few situations can rule out individual differences in behavioral consistency.

The individual differences in consistency observed both in general and at specific situations demonstrate the importance for incorporating the if...then contingency with the density distribution of behaviors. Although the traditional if... then contingency (Mischel &

Shoda, 1995) emphasized to consistency of behaviors specified for both person and situation, they focused on the mean response and thus missed the probabilistic nature of behaviors (Wright & Mischel, 1987; Mischel & Shoda, 1995). Density distributions specific to a situation indicate that people differ in what behaviors are likely to occur, with the probability for a particular behavior high for those who are more consistent compared to those who are less consistent. By incorporating the if...then contingency with the view of density distribution, we not only capture the best estimate behavior of an individual at a situation but the likelihood of that behavior.

The important part for current findings in individual difference of behavioral consistency is not just some people are more consistent than other, like Bem & Allen (1974) proposed, but people are also different for specific situations. The former individual difference reveals a more complexed reality than the traditional view captured that it is not only someone is more consistent than another, but their consistencies can be uniquely affected by even the same situation. Hence when consider one's behavioral consistency, it is important to think about one's consistency at a particular situation, rather than just in general. Due to these needs for the person- and situation-specific approach, the incorporation of the if...then contingency and density distribution shines its importance again. This joint approach also makes it apparent that standard density distributions that collapse across situations average across meaningful individual differences. For levels of traits, compiling across situations makes sense: The mean across all situations is reflected in the measure of central tendency and the individual observations are reflected in the spread of the distribution. However, given that there are differences in the distributions for each situation, this aggregation to a general density distribution natural neglects information. Individual differences in consistency are best conceptualized at context level. In

terms of thinking about a purely idiographic vs a nomothetic conceptualization, our results suggest that the level of analysis is more individualized vs shared.

### **Consistency Across Situations**

Despite the meaningful individual differences in behavioral consistency for situations, the consistency of Conscientiousness and Agreeableness did not show associations across situations. This finding contradicts with Bem & All (1974)'s theory where they expect the consistency as an attribute of people that is shared across situations. One potential reason for the lack of consistency across situations could be due to that the consistency of conscientiousness and agreeableness related behaviors are believed to be more contextualized such that some situations may require certain behaviors whereas other situations may call for more flexibility. For example, you may need to be consistently self-conscious and watch out for your words when you are with your romantic partner but when you are with your family, your consistency in self-control could be much more relaxed that your family may grant you are larger variability on how conscientious you are than how your romantic partner would favor.

Alternatively, this inconsistent pattern of consistency in C and A could also be due to the relatedness or importance of the trait manifestation to the situations being tested. Specifically, if the personality trait under assessing is not important or related to a situation, the situation then could not provide much contextual information to constraining the variability of the state's manifestation (Funder & Colvin, 1991). Hence, when a pair of situations or even one of the pair is irrelevant to the traits, the connections of the contextual information affecting the states from two situations then become unclear which then resulting an inconsistent variability across situations. For example, agreeableness does not take an important role in one's performance in a tired situation, so that there is not much contextual information in being tired that influences the

manifestation of agreeableness. In contrast, agreeableness is highly important to social interaction settings, such that there is much more contextual information from the social interaction settings that guides for intended levels of agreeableness which then poses stricter constrain of variability of agreeableness. Hence, the correlation between the tired situation to the social interaction situations naturally turns out to be small.

In contrast to Agreeableness and Conscientiousness, there is cross situational consistency for consistency of Extraversion and Neuroticism. People who are consistently extraverted in one situation are likely to be consistently extraverted in another. Why? The situations under study may just be especially relevant to constraining (or not) extraversion and neuroticism. That is, for a particular person these situations may allow one to behave their full repertoire of behavior. For example, in the situation of interacting with romantic partner, someone may have a particular style of communication where some people behave relatively consistent, and others span a broad range. This flexibility in one's behavior could likewise be employed in different situations, especially the situations we studied as a lot of them were interaction oriented. It may the case that these situations were viewed similarly by people with regards to these specific behaviors. Although the targets of interaction may be different from family member to friends, these minor demands would not affect how someone responds. Previous research finds similar effects for situation contingencies such that across similar situations there were similar individual differences in behavioral contingences (Kuper et al., 2022). More research is needed to replicate these associations across a wider range of situations.

Imagine there is a continuum on to study human behavior, where trait theory stands for one pole claiming every observed behavior across time and conditions can be explained by dispositional traits, common across everyone. On the other pole is if...then contingencies

proposed by social cognitive approach claiming human behaviors are best understood to be complete idiographic where to understand our behaviors, we have to acquire information of every person at every single situation. Bem & Allen (1974)'s theory softened the pole of trait theory by suggesting that there are some people can be simply described by dispositional traits, but others are not. This high association of behavioral consistency (for extraversion and neuroticism) across situations is in line with what Bem & Allen (1974) suggested. Opposite to the if...then contingency proposed by social cognitive approach, there are some common features of behaviors shared across different situations. This result suggests that the if...then contingencies do not have to be completely idiographic where to understand a person we need to understand them in each and every situation. Instead, at least for Extraversion and Neuroticism related behaviors, at what level they are performing and how consistent they are in one situation will inform how they behave at other situations that shares meaningful component with the first situation. Hence, the results of current study also soften the complete idiographic approach and suggest the real answer to understand behaviors is not at the two poles but rather at somewhere in the middle, because although behaviors vary at both mean level and consistency across different situations, there are still shared features of behaviors observed for situations with similar psychological components. Rather than claim people are completely idiographic, we would propose to build models to simplify the idiographic process, allowing for idiographic features, but only when needed.

### **Limitations and Future Directions**

Despite a novel method and a novel theoretical framework to test a 40-year-old theory, there are several limitations of the current study. For measurement of personality, in current study, personality states and trait were measured by four of Big Five personality traits where

openness is not included in current data collection. Further, agreeableness was only measured only if the participant was exposed to a social interaction situation. This made the interpretation of result for agreeableness difficult to interpret.

Similarly, we were constrained in situations measured. There are infinite number of possible ways to measure situations, where even the objectively similar situations may differ a lot in meaning across people (Rauthmann, Sherman, & Funder, 2015). The current study was only able to test on seven simple situations. With more than half of the items are related with social interactions, we are missing many other components of situations. In the meantime, while many literatures have shown the important association between psychological attribution of situations with behaviors, the current study has only been able to focus on the objective characteristics of situation but missing the psychological attribution of the situations. t

### **Conclusion**

By integrating the if...then contingency with the density distribution of behaviors, the current study tested and extended Bem & Allen (1974)'s theory that there are some people who are more or less consistent than others across time and situations. We found 1) there are individual difference in the overall behavioral consistency across situations; 2) there are individual difference in the behavioral consistency within each particular situation; 3) the consistency of one's Extraversion and Neuroticism related behaviors are similar across situations, but not behaviors related to Agreeableness or Conscientiousness.

The discovery of individual differences in overall consistency and consistency within particular situation highlights the importance to study behaviors specified to both person and situation. We incorporated the if...then approach with density distribution to bring important insight to the probabilistic nature of human behaviors. On the other hand, the cross-situation



correlation found for consistency of Extraversion and Neuroticism calls to simplify the complete idiographic view proposed in the original if...then approach to one that allows shared aspects across situations.

## Reference

- Allport, G. W. (1937). *Personality: A psychological interpretation*.
- Beck, E. D., & Jackson, J. J. (2020). Consistency and change in idiographic personality: A longitudinal ESM network study. *Journal of Personality and Social Psychology, 118*(5), 1080.
- Beck, E. D., & Jackson, J. J. (2022). Idiographic personality coherence: A quasi experimental longitudinal ESM study. *European Journal of Personality, 36*(3), 391-412.
- Bem, D. J., & Allen, A. (1974). On predicting some of the people some of the time: The search for cross-situational consistencies in behavior. *Psychological review, 81*(6), 506.
- Bem., D. J. (1972) Constructing cross-situational consistencies in behavior: Some thoughts on Alker's critique of Mischel. *Journal of Personality, 1972, 40*, 17-26
- Borkenau, P., Mauer, N., Riemann, R., Spinath, F. M., & Angleitner, A. (2004). Thin Slices of Behavior as Cues of Personality and Intelligence. *Journal of Personality and Social Psychology, 86*(4), 599–614. <https://doi.org/10.1037/0022-3514.86.4.599>
- Chaplin, W. F. (1991). The next generation of moderator research in personality psychology. *Journal of personality, 59*(2), 143-178.
- Chaplin, W. F., & Goldberg, L. R. (1984). A failure to replicate the Bem and Allen study of individual differences in cross-situational consistency. *Journal of Personality and Social Psychology, 47*(5), 1074.
- Cooper, W. H., & Withey, M. J. (2009). The strong situation hypothesis. *Personality and Social Psychology Review, 13*(1), 62-72.

- Diener, E., & Larsen, R. J. (1984). Temporal Stability and Cross-Situational Consistency of Affective, Behavioral, and Cognitive Responses. *Journal of Personality and Social Psychology*, 47(4), 871–883.
- Epstein, S. (1979). *Personality Social Psychology The Stability of Behavior: I. On Predicting Most of the People Much of the Time* (Vol. 37).
- Fleeson, W. (2001). Toward a structure- and process-integrated view of personality: Traits as density distributions of states. *Journal of Personality and Social Psychology*, 80(6), 1011–1027. <https://doi.org/10.1037/0022-3514.80.6.1011>
- Fleeson, W., & Law, M. K. (2015). Trait enactments as density distributions: The role of actors, situations, and observers in explaining stability and variability. *Journal of personality and social psychology*, 109(6), 1090.
- Fournier, M. A., Moskowitz, D. S., & Zuroff, D. C. (2008). Integrating dispositions, signatures, and the interpersonal domain. *Journal of personality and social psychology*, 94(3), 531.
- Funder, D. C., & Colvin, C. R. (1991). Explorations in behavioral consistency: properties of persons, situations, and behaviors. *Journal of personality and social psychology*, 60(5), 773.
- Funder, D. C., & Ozer, D. J. (1983). Behavior as a function of the situation. *Journal of Personality and Social Psychology*, 44(1), 107.
- Hunt, J. M. (1965). Traditional personality theory in the light of recent evidence. *American Scientist*, 53(1), 80-96.
- Kenrick, D. T., & Funder, D. C. (1988). Profiting from controversy: Lessons from the person-situation debate. *American psychologist*, 43(1), 23.

- Kuper, N., Breil, S. M., Horstmann, K. T., Roemer, L., Lischetzke, T., Sherman, R. A., ... & Rauthmann, J. F. (2022). Individual differences in contingencies between situation characteristics and personality states. *Journal of Personality and Social Psychology*, 123(5), 1166.
- Lucas, R. E., & Donnellan, M. B. (2009). Age differences in personality: evidence from a nationally representative Australian sample. *Developmental Psychology*, 45(5), 1353.
- McCrae, R. R., & Costa, P. T. (2003). *Personality in adulthood: A five-factor theory perspective*. Guilford Press.
- Mischel, W. (1973). Toward a cognitive social learning reconceptualization of personality. *Psychological review*, 80(4), 252.
- Mischel, W. *Personality and assessment*. New York: Wiley, 1968
- Mischel, W., & Shoda, Y. (1995). A cognitive-affective system theory of personality: reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological review*, 102(2), 246.
- Paunonen, S. V. (1988). Trait relevance and the differential predictability of behavior. *Journal of Personality*, 56(3), 599-619.
- Paunonen, S. V., & Jackson, D. N. (1985). Idiographic measurement strategies for personality and prediction: Some unredeemed promissory notes. *Psychological Review*, 92(4), 486.
- Rauthmann, J. F., Sherman, R. A., & Funder, D. C. (2015). Principles of situation research: Towards a better understanding of psychological situations. *European Journal of Personality*, 29(3), 363-381.
- Shoda, Y. (1999). A unified framework for the study of behavioral consistency: Bridging person × situation interaction and the consistency paradox. *European Journal of Personality*,

13(5), 361–387. [https://doi.org/10.1002/\(SICI\)1099-0984\(199909/10\)13:5<361::AID-PER362>3.0.CO;2-X](https://doi.org/10.1002/(SICI)1099-0984(199909/10)13:5<361::AID-PER362>3.0.CO;2-X)

Shoda, Y., Mischel, W., & Wright, J. C. (1994). Intraindividual stability in the organization and patterning of behavior: incorporating psychological situations into the idiographic analysis of personality. *Journal of personality and social psychology*, 67(4), 674.

Snyder, M. (1974). Self-monitoring of expressive behavior. *Journal of personality and social psychology*, 30(4), 526.

Snyder, M. (1987). *Public appearances, Private realities: The psychology of self-monitoring*. WH Freeman/Times Books/Henry Holt & Co.

Tellegen, A., Kamp, J., & Watson, D. (1982). Recognizing individual differences in predictive structure.

Vernon, P. E. (1964). *Personality assessment: A critical survey*. New York: Wiley.

Wallace, J. (1966). A n abilities conception of personality: Some implications for personality measurement. *American Psychologist*, 21, 132-138.

Williams, D. R., Martin, S. R., & Rast, P. (2022). Putting the individual into reliability: Bayesian testing of homogeneous within-person variance in hierarchical models. *Behavior research methods*, 54(3), 1272-1290.

Wright, A. J., & Jackson, J. J. (2022). Are some people more consistent? Examining the stability and underlying processes of personality profile consistency. *Journal of Personality and Social Psychology*.

Wright, J. C., & Mischel, W. (1987). A Conditional Approach to Dispositional Constructs: The Local Predictability of Social Behavior. In *Journal of Personality and Social Psychology* (Vol. 53, Issue 6).