

# Why Identities Fluctuate: Variability in Traits as a Function of Situational Variations in Autonomy Support

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**ABSTRACT** Interest in intra-individual variation in trait expression across situations, contexts, and relationships, and the meaning of this variation for personal functioning has grown significantly. In this article we review this literature with an emphasis on (a) appropriate methods for identifying variations in trait expression and (b) the substantive meaning and sources of this variation. Self-determination theory suggests that people will express traits differently as a function of the degree of support for autonomy they experience in any given setting. Accordingly, autonomy support is shown to predict variations in Big Five trait expression and other stable individual differences such as attachment security and dependency. The discussion focuses on methodological issues in the study of variability and on why autonomy support may play a central role in explaining trait variability and its relation to well-being.

Personality psychology has long been concerned with the concept of traits as stable individual differences and has assessed the relative importance of these dispositions for behavior and personal functioning (McCrae & Costa, 1997). Yet, as trait research has developed, considerable evidence has emerged showing that each person may also show considerable variation in trait expression over time, situations, or contexts (Baird, Le, & Lucas, 2006; Funder & Colvin, 1991). In addition, some research suggests that people may also reliably differ in the mean level of such variability—that is, some people will vary more in their trait expression over time, situations, or

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contexts than do others (e.g., Fleeson, 2004; Kernis, 2003; Roberts & Donahue, 1994). Given this evidence for both the relative stability and variability of trait expressions and individual differences in the extent to which people tend to be more or less variable, our understanding of personality has shifted away from person-situation debates that pit the explanatory power of individual differences and situational factors against one another (Block, 1961, 1968; Mischel, 1968) toward examining how these different levels of analysis inform each other about the many ways in which traits influence behavior and well-being.

As the literature on traits and variability in their expression has evolved, there are several questions that have come to the forefront and continue to evoke considerable attention in the literature. The first question concerns the nature of variability and how to assess it most appropriately. The second concerns what processes might best explain why trait-like features of personality are differentially expressed at the level of the situation. A third concern is to select the appropriate outcomes at each level of analysis (e.g., overall well-being for individual differences and proximal functioning markers within specific contexts) and show how stability and variability of trait expressions impact these outcomes. Finally, there is significant debate as to whether the processes that explain stability and variation, and their relations to outcomes, hold across cultures. The aim of this article is to address these questions concerning trait variability both methodologically and substantively.

To presage our thesis, we will suggest that despite some early findings in the literature associating variability in trait expressions across contexts with poorer mental health, recent analyses suggest that when variability is simultaneously considered with mean trait-level expression, it is largely unrelated to wellness outcomes (La Guardia, 2001; La Guardia, Ryan, Couchman, & Deci, 2000). Nonetheless, evidence of substantial variability of trait expressions is found and, we argue, is highly systematic and meaningful. That is, in our view, people reliably vary in the expression of their traits as a function of the support for psychological needs they experience in different settings. We focus especially on autonomy support, which in a number of studies has been associated with more positive trait manifestations and more optimal functioning (La Guardia, 2005; La Guardia, Lynch, & Ryan, 2007; Lynch, La Guardia, & Ryan, 2007).

In studies employing diverse cultural samples, we further find evidence that the connections between intra-individual variability in traits and autonomy-supportive contexts are largely not culturally specific. Before turning to these substantive issues, however, let us first discuss some of the methodological aspects of research on variability, beginning with an understanding of trait stability, variability, and the processes that might explain them.

### **Trait Stability and Variability: Methodological Considerations**

Research in personality can be characterized by the relative level of personal and situational breadth addressed, with the broadest studies examining mean trait-level differences between people or between different cultural groups and the most narrow examining the expression of a given trait in a person's thoughts, feelings, and behaviors within a given situation (Roberts & Pomerantz, 2004). While person and situation levels of inquiry were viewed in the past as either unrelated or contradictory (Cross & Markus, 1999; Mischel & Shoda, 1998; Pervin, 1994), researchers now attempt to understand how findings at each level can complement the other (Baird et al., 2006; Funder & Colvin, 1991; Roberts, Caspi, & Moffitt, 2001; Roberts & Pomerantz, 2004).

Fleeson (2001), for example, suggested that trait expressions within any given person are best represented as density distributions, showing both stability in mean levels of traits as well as variation in trait expressions across time or situations. Thus, for any given person, his or her behavior potentially embodies a frequency distribution around his or her own mean for each trait, such that across time or situations the person will be somewhat higher in the expression of a given trait (e.g., extraversion) and at other times somewhat lower relative to his or her own mean. Using interpersonal trust as an illustration, Fleeson and Leicht (2005) showed that people varied significantly in their level of trust from one interaction to the next (calculated by taking the standard deviation across interactions;  $SD = 1.21$ , translated as a variation between 3 to 7 on a 7-point scale). Yet people also maintained a relatively stable mean level of trust over interactions (calculated by dividing their own data randomly and correlating across the two halves; average stability:  $r = .80$ ), with some people having higher overall or mean levels of trust as compared to others. Thus, people have a relatively stable

level of trust over time but still show variation in trust level as a function of the situation they are in.<sup>1</sup>

Fleeson and Leicht's (2005) study thus demonstrates at a methodological level that there is considerable situational variability as well as considerable stability in trait expressions. Before turning to substantive formulations of why variation in trait expression may occur, we first need to understand more about what constitutes variability and how it can be assessed.

### *Assessing Personality Variability and Relating It to Outcomes*

Clearly, the study of stability and variability in personality traits requires that researchers (a) appropriately define and assess variability and (b) attend to both global and proximal levels of analysis such that broad-level traits can be related to global measures (e.g., well-being) and situation-level trait expressions related to more proximal measures of functioning (e.g., satisfaction with partner).

Stability effects concern how the general or mean level of trait expression relates to a given outcome such as well-being. For example, higher levels of Neuroticism might predict greater risk for psychopathology. Variability reflects how much one fluctuates in the expression of a trait from relationship to relationship (relational variation), situation to situation (situational variation), or even moment to moment (temporal variation). For example, an individual may be more neurotic in some settings or relationships than others and/or might vacillate widely in their level of neuroticism over time. An important issue, then, is to understand how mean level and variability each contribute to well-being and how they interact to impact well-being.

The Big Five construct of Neuroticism represents a particularly interesting trait to illustrate this point. Notably, although Neuroticism is often described as the polar opposite of emotional stability,

1. To explain variation in trait expression, Fleeson and Leicht (2005) suggested that variations in trust corresponded with the with type of relationship encountered, such that more "intimate" relationships (family, best friend, romantic partner) were associated with greater trust than less "intimate" relationships (e.g., friend, acquaintance, stranger). Their study also suggested that qualities of a relationship (e.g., degree of intimacy or connection) can be meaningfully related to variations in trait expression and predictive of important relational quality outcomes. As we will later argue, however, there may be more specific, core motivational, relationship-based predictors of variability in trait expression.

its definition and measurement actually do not reflect the stability dimension. Indeed, Neuroticism is defined by the tendency to experience negative emotions and, in its measurement, is defined by facets of anxiety, angry hostility, depression, self-consciousness, impulsiveness, and vulnerability (John & Srivastava, 1999). Thus, Neuroticism is the tendency to be tense, irritable, uncontent, shy, moody, and lacking in self-confidence, with variability in the expression of Neuroticism across different situations (e.g., at workplace, home, in leisure activities), across roles (e.g., as a caretaker, friend, spouse), or across relationships (e.g., when with one's mother, father, romantic partner, best friend) reflecting differences in the level of negative affect experienced in each of these situations. Variability, as measured as a function of changes in the expression of Neuroticism over time, reflects affective lability, or the tendency to experience frequent and changing negative affective states over time. Interestingly, Neuroticism and affective lability have been shown to be distinct but somewhat related constructs (Miller & Pilkonis, 2006), with those who show both high Neuroticism and high affective lability reflecting some of the most enduring and severe forms of psychopathology. Thus, methodologically, we need to tease apart the contribution of mean levels and variation to understand trait structure and its implications for health. It may well be the case that those who are high on Neuroticism and also fluctuate quite widely in the expression of this trait (high negative affect in some relationships and less in others) may have the worst overall well-being relative to all others. Yet, within the extant research, rarely are these effects modeled simultaneously and even less common are models of their interaction (Baird et al., 2006).

In prior work, many studies relating variability to personal health and well-being have suggested that variability in trait expression across roles is associated with poorer psychological and physical health (Cross, Gore, & Morris, 2003; Donahue, Robins, Roberts, & John, 1993; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997).<sup>2</sup> For

2. Some have argued that the concept of variability is closely related to other constructs measuring self-concept structure, such as self-complexity or compartmentalization. However, Campbell, Assanand, and Di Paula (2003) showed that measures of self-concept structures reflecting pluralism (e.g., self-complexity by Linville and colleagues [1985, 1987] and self-concept compartmentalization by Showers [1992, 1996; Rafaeli-Mor & Steinberg, 2002] and colleagues) were not related to measures of adjustment in analyses (e.g., SCD by Donahue and colleagues [1993], self-concept clarity by Campbell and colleagues, self-concept dis-

example, Donahue and colleagues (Donahue et al., 1993; Roberts & Donahue, 1994) assessed the relations of variability in traits across different social roles and found that variation in trait ratings across different social roles is associated with lower well-being. Sheldon and colleagues (1997) expanded on this model by demonstrating significant variation in Big Five traits across different life roles (e.g., employee, student, child) and, in line with the earlier work by Donahue and colleagues, found that the more people varied from role to role in the traits displayed, the lower their well-being. Subsequently, Cross and colleagues (2003) also found support for this relation, and Suh (2002) extended the study of this variability effect into cross-cultural samples, again finding the variability to well-being link despite mean-level differences in trait and well-being estimates across countries.

In each of these studies, although variation per se predicted lower well-being, the contribution of the mean level of each trait was not assessed simultaneously. Thus, the stability or consistency of the trait was not accounted for in relation to overall well-being outcomes. Further, while global outcomes such as well-being are typically analyzed as a function of either stability estimates (e.g., mean level, coefficient alpha) or variability estimates (e.g., standard deviation, self-concept differentiation [SCD]), mean level and variability of traits may be correlated (Baird et al., 2006; La Guardia, 2001). Thus, without stepwise or simultaneous estimation of stability and variability, each contribution to well-being outcomes will likely be overestimated.

As the SCD index is one of the widely employed measures of variation, let us, more specifically, examine the ramifications of this procedure. Donahue et al. (1993) modeled their estimate of self-concept differentiation (SCD) on Block's (1961) factor analytic procedure. In this procedure, participants' ratings on 60 Big Five trait adjectives for each of five roles (son/daughter, employee, friend, ro-

crepancies by Higgins and colleagues [Higgins, Bond, et al., 1986; Higgins, Klein, et al., 1985; Strauman & Higgins, 1987]). Campbell and colleagues also found the pluralism measures were unrelated to psychological adjustment indices. Thus, pluralism measures will not be discussed herein, as one of the important foci of this thesis is to understand the relation of trait structure to well-being. Notably, self-concept measures were moderately related to measures of adjustment analyses. However, as in other work in the literature, analyses did not include mean level measures in conjunction with variability constructs.

mantic partner, student) were intercorrelated, resulting in a  $5 \times 5$  correlation matrix (or 10 correlation coefficients representing the comparison between pairs of each of the five roles). Estimates were then subjected to a principal components factor analysis, with the first principal component representing the shared variance across the five roles and the remaining variance used as an index of SCD or variation. Similarly, Sheldon et al. (1997) and Cross et al. (2003) used these same basic procedures to obtain SCD estimates, while Suh (2002) used the first principal component as an indicator of consistency rather than indexing inconsistency.

The SCD index estimates trait-pattern similarity across roles without providing much information about specific trait levels (mean) or how the traits cluster in patterns. For example, it is conceivable that one person's trait profile clusters in two very distinct but separate patterns (e.g., work and student in one cluster pattern and friend and romantic partner in another cluster). The patterning of data would yield a large first-principle component—and thus a very small SCD score—yet this person would not be consistent across the full range of roles but rather would be differentiated according to meaningful clusters. Also, with patterning as yielded by a principal components factor analysis, it is conceivable that a person could show high levels of Neuroticism across various roles and a pattern of low Extraversion, Openness, Agreeableness, and Conscientiousness across roles. This person's patterning would reflect consistency, or again, low SCD. According to the Donahue et al. model, predictions about SCD would suggest that low SCD would reflect consistency and should confer greater well-being. However, this seems to be the opposite of what would be predicted by the pattern described. Indeed, we would expect that greater levels of some traits (such as Neuroticism) across all situations or relationships may bring with it great challenges to well-being over and above that conferred by variation in this trait. Indeed, researchers have found that trait levels of neuroticism have important implications for level and variation in interpersonal behavior (Moskowitz & Zuroff, 2004).

Notably, within the same study, Donahue et al. (1993) calculated an alternative to the SCD index which estimates differences between role identities. This alternative estimate was computed by taking the standard deviation of each trait item across the five roles and then averaging these estimates across the 60 attributes. This index was highly correlated with the SCD index, and the substantive results of

their study were similar using the two indices. Indeed, if the SCD and standard deviation estimates are essentially equivalent, this amounts to assessing variability without considering the contribution of the relative level (or mean) of any given trait.

Thus, as it stands, the majority of research assessing the relation of trait expressions to well-being does not help us understand how general (mean level) and situational (variations over setting or time) of personality traits together predict well-being. This is because past studies have not disentangled the two issues. Thus, in our recent work, we have focused on variability in traits after controlling for mean level of traits, as this truly isolates the variability phenomenon per se (e.g., La Guardia, 2005; La Guardia, Lynch, & Ryan, 2007). As we shall show, variability does not in itself seem to be problematic for mental health, but it is indicative of important features of situations that can teach us much about the dynamics of trait expression.

For example, La Guardia et al. (2000) illustrated how individual differences in attachment security and intra-individual variations in attachment security across close relationships related to well-being. First, they found that individual differences in attachment security were significantly related to well-being, such that those who stylistically embodied greater security in attachment have higher well-being. When this individual difference (or what might be considered the mean or average level of attachment security) was simultaneously regressed with intra-individual variation in attachment security (calculated by taking the standard deviation of attachment ratings across close relationships) onto well-being, variability generally did not emerge as significantly related to well-being. Indeed, after examining three indices of attachment—overall security, model of self (anxiety dimension), and model of other (avoidance dimension)—and meta-analytically combining results across three studies, only intra-individual variability in the “model of other” across several close relationships was negatively related to well-being. Variation in the model of other suggests that the person assesses that some of his or her relational partners are supportive figures on whom he or she can rely, while others are not. Understandably then, lack of support in some key relationships can still have a negative affect on well-being, above and beyond the overall level of support one receives across his or her many relationships. Variations in model of self, which reflects variations in how a person views himself or herself positively and as worthy of care, is most similar to what personality



researchers have been assessing as variations in the self-concept or trait expressions across different relationships. Interestingly, when the mean level of model of self is accounted for, variability in this dimension across close relationships does not relate to well-being.

These results, which suggested that variability per se did not negatively predict wellness, did not seem to match the findings pattern described by Donahue et al. and others in the literature. Yet, if we consider that the La Guardia et al. study simultaneously assessed mean level and variability effects on well-being, whereas previous studies had not, the results seem to make even more sense. That is, the procedures used by La Guardia et al. controlled for the mean level of the trait in question, rendering the variability of attachment per se generally nonsignificant as a predictor of overall well-being. Only when the dimension measures perceptions of others' likely support did variation still impact well-being. We shall subsequently describe similar findings from other studies of traits, including Big Five traits, and people's tendencies toward dependence. However, for the moment, our point is merely that when we assess variability per se, separated from the effects of mean levels, it does not appear to yield the negative outcomes some have assumed.

Our own findings were recently confirmed by Baird and colleagues (2006). They compared three methods of assessing variability, namely the SCD method described by Donahue and colleagues, the alternative standard deviation method employed by Donahue and colleagues (1993) and later employed by Sheldon et al. (1997), and, finally, the method using the standard deviation after controlling for mean levels of traits. This final method is conceptually and methodologically the cleanest of the three for differentiating intra-individual trait variability per se from the effects of mean trait levels. What Baird et al. found is that variability per se predicted poorer well-being only when trait mean levels were not controlled. That is, variability per se was unrelated to well-being in most analyses. Interestingly, variability in itself was trait-like in nature, such that some people were found to be more variable than others. However, this was neither a marker of health nor pathonomic.

The implications of both our recent findings and those of Baird et al. (2006) are manifold. By showing both that there is considerable intra-individual variability in trait expressions and that this variability is not itself problematic, the findings suggest that theories of personality should not equate stability or consistency with wellness

(Ryan, 1993). Instead, the data suggest that we need to think differently about variability. Perhaps, in fact, such data should have us look more closely at what drives variability from situation to situation. For a substantive account of what makes people change, we turn now to a self-determination theory perspective.

### From Methods to Substance: The Role of Autonomy Support in Trait Expressions

Self-determination theory (SDT; Deci & Ryan, 2003; Ryan & Deci, 2001) is a theory of personality and motivation that describes individual differences in people's orientations to the environment and tendencies to engage in behavior. SDT also defines how social contexts support the expression of these tendencies, and outlines the consequences of these factors for important tasks of growth and development. The central concept that helps frame individual differences, situational variation, and growth within SDT is that of basic psychological needs.

SDT outlines three basic psychological needs—*autonomy*, *competence*, and *relatedness*—as the central constituents for healthy psychological development. Relatedness concerns feelings of connection and belongingness with others (Baumeister & Leary, 1995; Deci & Ryan, 2000), competence refers to feeling effective in one's actions and capable of meeting the challenges of everyday life (White, 1959), and autonomy concerns a sense of volition and a willing engagement in one's behavior (Deci & Ryan, 1987, 2000). Although the expression of autonomy, competence, and relatedness needs may vary at different points in development and may vary from culture to culture, a rich body of evidence has shown that satisfaction of these needs within varied contexts, domains, and relationships is salient across the life span (La Guardia & Ryan, 2000; Ryan & La Guardia, 2000) and across cultures (e.g., Chirkov, Ryan, Kim, & Kaplan, 2003).

Environments can vary significantly in the extent to which they are need supportive (see Deci & Ryan, 2000; Ryan & Deci, 2004, for reviews). The extent to which important environments or relationships are need supportive has implications for optimal growth and functioning across the lifespan (Deci & Ryan, 2000; Ryan & Deci, 2001; Ryan & La Guardia, 2000), such that to the extent that needs are satisfied, people are expected to function effectively and develop in a healthy way, while showing evidence of ill-being and nonoptimal

functioning when inadequately fulfilled. Importantly, then, it is not simply the person or the situation that is important but the dialectic or dynamic interplay between the person and the social context that is the basis for predictions about behavior, experience, development, and well-being.

Specifically, with regard to traits, we suggest that to understand why a person might show differences in trait expressions in different relational contexts, we must understand how well the relational context supports the individual's psychological needs for autonomy, competence, and relatedness (Deci & Ryan, 2000; Ryan & Deci, 2001). As autonomy is seemingly the most controversial need from a cross-cultural perspective (Chirkov & Ryan, 2001; Chirkov et al., 2003), we more specifically focus on the role of autonomy support herein, though all three needs are important (see, e.g., La Guardia et al., 2000; Brown & Ryan, 2007). Moreover, because support for autonomy concerns support for "being oneself," it is particularly meaningful as a predictor of trait expression, and its variation (Ryan & Deci, 2004). Stated differently, we suspect that when one is in a context where one feels controlled or pressured to conform, attributes that depart from one's trait nature are more likely to be expressed.

*Autonomy* literally means "rule by the self" and, as previously mentioned, a person is autonomous when his or her behavior is willingly enacted and endorsed (Ryan, 1993). The opposite of autonomy is heteronomy and implies feeling compelled, pressured, or forced to behave in particular ways. Thus, autonomy support concerns an atmosphere in which one is not pressured to be a specific way; instead, one is supported to express oneself authentically (Ryan & Deci, 2004). In this sense, autonomy support directly concerns the issue of what one manifests in a situation or context relative to "who one is," with the greatest discrepancies between abiding traits and situationally displayed personality characteristics occurring when autonomy support is low.

Importantly, in SDT terms, autonomy is not equated with independence or individualism. Indeed, autonomy is seen within SDT as orthogonal to both independence and individualism, in that a person can be willingly or unwillingly dependent on another (Ryan, La Guardia, Solky-Butzel, Chirkov, & Kim, 2005) and may be inclusive of the other within one's self-concept without sacrificing volition (Chirkov et al., 2003; Gore & Cross, 2006). This theoretical distinction

cannot be emphasized enough. Some researchers who equate autonomy with independence suggest that autonomy may not be important or valued within some cultures, such as in traditionally collectivist cultures in which it is normative to have others included in self-conceptualizations and intimately considered in choices about how to behave (Iyengar & DeVoe, 2003; Iyengar & Lepper, 1999; Markus, Kitayama, & Heiman, 1996; Miller, 1997; Oishi, 2000). When autonomy is defined as individualism, it is often negatively related to well-being. However, when defined as willing engagement—as in SDT—autonomy is related to greater psychological health and adjustment. Thus, without clearly differentiating these terms, predictions about autonomy and its relation to well-being can be readily confounded.

Research in the SDT tradition has specifically demonstrated how the concept of psychological needs and situational supports for them can more broadly account for stability and variation in trait-like propensities. For example, as we previously mentioned, La Guardia et al. (2000) showed that attachment security varies significantly, even across close relational partners (e.g., mother, father, romantic partner, best friend). Further, variations in attachment security were systematically associated with relationship-specific need satisfaction, such that greater attachment security was found in those relationships that were more need supportive. With regard to Big Five personality traits, Sheldon and colleagues (1997) assessed how trait expressions vary across important roles (e.g. son/daughter, school, friend). In roles where people felt they could be more authentic or “truly themselves,” they reported feeling less neurotic and more extraverted, agreeable, conscientious, and open relative to their general or overall level of trait expression. Finally, Ryan et al. (2005) looked at within-person variations in emotional reliance and found that people’s willingness to rely on others in emotional times was a function of partner-specific autonomy support, such that people are more willing to rely on partners who are more autonomy supportive and less willing to rely on those who are not.

What these studies suggest is that variability is meaningful, such that people may feel or behave differently in relationships or roles in which needs are differentially supported. In fact, these studies show that more optimal trait expressions are manifest within situations where one experiences support for autonomy. Thus, when with others who support one’s autonomy, one feels more securely attached

and more willing to depend on the other. Moreover, in terms of Big Five traits, one is more likely to feel open, extraverted, agreeable, conscientious and less neurotic when in a situation that supports autonomy.

### *An Illustrative Example of the SDT Model*

Based on the SDT model, we recently examined people's general endorsement of Big Five trait expressions as well as their relative expression of these traits within important relationships (La Guardia et al., 2007; Lynch, La Guardia, & Ryan, 2007). We present a detailed overview of this study as it illustrates (a) the importance of distinguishing mean-level trait expression from variability in trait expression; (b) the importance of measuring both global and situational outcomes; and (c) the relation of autonomy support to intra-individual variability in trait expressions across different cultures.

Six hundred forty-two students from universities in the United States, Russia, and China completed measures assessing the extent to which they perceived themselves to demonstrate Big Five traits generally as well as the extent to which they express these traits within specific relationships to their mothers, fathers, romantic partners, best friends, roommates, and teachers. Autonomy support was assessed as a process for understanding both stability and variation. Composite measures of positive well-being (positive affect, life satisfaction, vitality) and negative well-being (negative affect, risk for depression, anxiety, and physical symptoms) were utilized as indicators of global psychological health, while satisfaction and energy for each relationship were used as proximal indicators of relational functioning. Finally, to assess the influence of culture, a widely used measure of cultural orientation on dimensions of independence and interdependence was used (Singelis, 1994), yielding estimates of the extent to which a person places priority on the individual or the group within his or her self-concept.

Measurement models using means and covariance structure analyses (MACS; Little, 1997, 2000) suggested that the constructs assessed were comparable across cultures. Overall, participants from both China and Russia rated themselves as less extraverted, agreeable, and open than those from the United States (mean-level individual differences). However, across all cultural groups, our data indicated significant intra-individual variability in trait expressions

across partners. Further, mean and variability were often significantly related to each other. For example, in the United States, higher mean levels of neuroticism were associated with greater fluctuations in Neuroticism across relationships, and higher mean levels of Extraversion, Openness, Agreeableness, and Conscientiousness were associated with lower fluctuations in these trait expressions across relationships. In Chinese and Russian participants, the mean and variability estimates for Neuroticism, Agreeableness, and Conscientiousness were significantly related (in the same directions as in the U.S. sample), but these associations were not found for Extraversion and Openness. Thus, in line with previous research and a density distribution approach to personality, there is evidence for both personality stability and variation and some links between these distributional indices.

Next, we assessed autonomy support as a process that might help us understand intra-individual trait variation. Overall, U.S. students reported receiving greater autonomy support than Russian and Chinese participants, a result consistent with previous research showing lower levels of autonomy support among participants from traditionally mixed or collectivist societies (e.g., Chirkov & Ryan, 2001). Despite this mean-level difference, autonomy support was also found to relate significantly to trait expression and outcomes (e.g., vitality, satisfaction) within relationships. Specifically, trait residual scores were regressed onto autonomy-support ratings within the relationship. Trait residuals are derived by regressing the mean level out of relationship-specific trait measures, thereby creating scores that indicate the direction and extent to which a person expresses a given trait within a particular relationship. Again, this residual reflects the density-distribution approach as it demonstrates variation in trait expression away from one's own mean. Results showed that when people depart from their baseline or general trait expressions in their relationships, they deviate in a direction that is in line with autonomy support from their partners. That is, the more autonomy-supportive the relationship, the more the person feels extraverted, agreeable, open, conscientious, and less neurotic relative to his or her own general profile on these traits. Furthermore, the more autonomy-supportive people experience their relationship partners to be, the more positively they rated the quality of that relationship (as indicated by greater satisfaction and vitality for the relationship). Thus, in line with prior work within the SDT tradition, autonomy

support is an important indicator for how people bring important traits to bear on their engagement with relational partners.

More importantly, these results held across cultures, despite quite diverse cultural orientations toward relational engagement. Clearly, cultural orientation plays an important role in how people engage in any given situation. However, some have argued that autonomy is not a relevant concept, outside of Western cultures, in the understanding of the situational engagement. In our study, differences were found between Chinese, Russian, and U.S. samples in their orientations toward interdependence and independence. Chinese participants considered themselves to be more interdependent than independent, while both Russian and U.S. participants considered themselves to be more independent than interdependent. U.S. students were more independent than either Russian or Chinese students overall, but they were also significantly interdependent as well, at levels similar to their Chinese counterparts. Interestingly, despite these cultural differences, we found that neither independent nor interdependent self-construals moderated the associations between autonomy support and trait expressions or between autonomy support and self-reported relationship quality. That is, despite suggestions that culture may play a more proximal role in situational engagement, cultural orientation did not qualify the relation of autonomy support to more positive trait expressions or relational well-being outcomes.

Finally, we examined how mean trait expression and variation in trait expression relates to global well-being indices.<sup>3</sup> When assessing variability in relation to PWB alone (the method commonly used in past literature), variability in trait expression was not initially correlated with positive well-being (PWB) indices, such that although trait expression varied across relationships, this variation did not affect PWB. Instead, the effects on PWB rested largely on the contribution of the mean, such that higher PWB was associated with lower Neuroticism and greater Extraversion, Openness,

3. In all regression analyses that assessed the relation of trait mean and variability to well-being, we also tested the relation of the interaction of the mean and variability to well-being. In only 4 of 30 cases was the interaction statistically significant, just above the occurrence of chance. While these may be significant, replication of these results would be needed to explore meaningful conclusions about these effects.

Agreeableness, and Conscientiousness. This was true across the three countries, with the exception found for Conscientiousness in the Russian sample, in which the mean level was not significantly related to PWB.

The picture for negative well-being (NWB) was more complex. As with PWB, there were some cases in which variability estimates were not initially correlated with NWB. In the Chinese sample, for all traits, variability alone was not significantly related to NWB. Instead, negative mental health outcomes rested on mean trait expression, such that NWB was associated with greater Neuroticism and lower Extraversion, Openness, Agreeableness, and Conscientiousness.

In the U.S. sample, variability estimates were not initially correlated with NWB for Openness, Agreeableness, and Conscientiousness. As we were concerned with how the mean and standard deviation simultaneously predicts well-being, we report here only the simultaneous regression both the mean and standard deviation for Neuroticism and Extraversion (those in which the zero-order correlations between variability [standard deviation] and NWB were significantly related). Results indicated that negative mental health outcomes were associated with lower mean levels of Extraversion and higher mean levels of Neuroticism, but the variability effect was no longer significant once we accounted for the mean level of these traits.

Finally, in the Russian sample, variability estimates were not initially correlated with NWB for Neuroticism, Openness, and Agreeableness. Further, the mean trait expression of Extraversion, Openness, Agreeableness, and Conscientiousness was not significantly related to NWB. Thus, no simultaneous regressions of the mean and variability estimates on NWB were viable. Neuroticism was significantly related to NWB at the mean level, such that greater overall Neuroticism was associated with more negative mental health. Variability in Extraversion and Conscientiousness across different relationships was associated with less negative mental health markers, potentially suggesting a buffering effect of differentially expressing these traits across close relationships.

In sum, while in the United States and China the mean level of trait indicators followed predictable patterns (with greater Neuroticism and lower Extraversion, Agreeableness, and Conscientiousness associated with more negative well-being indicators), in the Russian



sample, Neuroticism exerted a unique mean-level influence on negative well-being indices, and variability of Extraversion and Conscientiousness was further indicative of negative well-being.

A central purpose of this recent study was to demonstrate the relation of trait expression, autonomy support, and personal and relational outcomes across diverse cultural groups. We found evidence of stability as well as variability in trait expressions and linked these to autonomy support within relationships. In terms of outcomes, trait means showed greater power in predicting well-being over and above effects of variation, and this generally held across cultural groups. Stated differently, the costs to well-being are often subsumed by the trait experiences of greater Neuroticism, and lower Extraversion, Agreeableness, and Conscientiousness overall and are not generally indicated by variability *per se*. Notably, unlike prior studies examining the trait-to-well-being relationship, this study assessed each of the traits separately (rather than combined into a single index, such as SCD) and used separable outcomes for positive and negative well-being markers. Thus, this study begins to further differentiate trait mean and variability effects. Further, although it is not the first to examine trait expression in different cultural groups, it is the first to estimate trait mean and variability effects simultaneously on well-being. An understanding of cultural differences in these patterns remains unclear, although this again reserves room for future debate.

We have outlined a variety of issues in the debates about stability and variability that can be summarized as follows: First, it is clear that both individual differences and intra-individual variations are important topics of study. Second, past research has focused on variability and suggested that variability may itself be a negative predictor of well-being outcomes. Yet our analyses suggest that this negative effect of variability often may actually be the result of shared variance, such that when mean levels of traits are controlled, the variability effect disappears (see also Baird et al., 2006). Third, as we move beyond methodological concerns to substantive issues, we suggest that, to date, few researchers have forwarded theories of what specific factors within situations and relationships actually lead to or predict departures, positively or negatively, from one's trait levels of functioning. Yet, drawing on SDT, we point to growing evidence that the presence of autonomy support may be a critical psychological variable for predicting intra-individual variations in

trait expression as diverse as the Big Five, attachment security, or interpersonal trust and dependence, within and across cultural groups.

## CONCLUSIONS

Although people can be meaningfully described in terms of trait-like differences in personality functioning, it is clear that individuals vary considerably in the manifestations of these traits from setting to setting, or relationship to relationship. The fact of this evident intra-individual variability initially led some investigators to look at variability itself as a characteristic that predicts well-being. Initial evidence by Donahue et al. (1993), Sheldon et al. (1997), Suh (2002), and others led to the suspicion that variability is itself a problem in adjustment, even apart from one's mean-level trait expression. However, both our own data (e.g., La Guardia et al., 2000; La Guardia et al., 2007) and that of others (e.g., Baird et al., 2006) suggest that many of these variability effects are only apparent when the mean levels of the traits in question are not controlled. It is possible that for some traits (e.g., Neuroticism), mean level and variability may be closely related. Thus, once the mean is considered, variability is not a significant factor in the prediction of adjustment. At the same time, none of that evidence contradicts the fact that (a) there is considerable within-person variability in the expression of traits and (b) that variability is systematic rather than random.

We further asserted that, to date, despite the strong interest in identifying variability and its effects per se, there has been very little progress in providing a substantive account of this considerable within-person variability. In this regard, we reviewed the position of SDT, which suggests that contextual supports for autonomy play a critical role in determining the direction and magnitude of a person's variation away from his or her mean level of a given trait in a given context. As personality researchers, we might remind ourselves that our understanding of variability lies in the interpersonal context. Thus, variations in the expression of traits potentially reflects adaptation to the ambient autonomy support within relationships. Under more autonomy-supportive conditions, a person is more open, conscientious, extraverted, and agreeable relative to his or her own mean, and when they feel controlled, they become more closed, less

caring and agreeable, less outgoing and energetic, and more tense and neurotic. Similarly, with respect to other traits, we showed that when people are with an autonomy-supportive partner, they are more secure and trusting than their general security might indicate and more insecure with those who control them. When they are with an autonomy-supportive partner, people are also more willingly dependent than trait levels would suggest. Indeed, the evidence thus far suggests that autonomy support is associated with a more optimal level of trait functioning across a variety of trait attributes.

The importance of autonomy support is, of course, both simple and complex. Put simply, autonomy concerns the expression of self, and people are more apt to be more volitional and express themselves fully when their autonomy is being supported. By contrast, in settings where one feels controlled by others, people may be more likely to react by departing from more ideal trait expressions. Thus, when controlled, people may indeed feel less outgoing, open, and agreeable, and certainly less secure. In fact, we assert that when people think about their trait selves, they typically think of themselves as they are when they are acting autonomously, and thus there is greater discrepancy between general traits and situated trait expressions when the interpersonal setting fails to support autonomy.

While our discussion suggests that autonomy support may predict how traits are expressed, there is likely a bidirectional effect, such that trait expressions in a given relationship may also shape the support given by one's partner. Future models will need to test these bidirectional effects over time, across situations or relationships, using longitudinal methods. Further, much more research is needed to understand potential cultural differences in the relation of mean and variation in trait expression on a variety of well-being indices. Finally, much of the work reviewed here involves perceptions of the self-concept across a variety of situations or relationships. Future work should examine how these self-perceptions translate into actual behavioral engagement. While some work does focus on these behavioral signatures (e.g., Mischel & Shoda, 1998), we suggest that these models could be extended by examining needs as a potential organizing concept to explain behavioral variation as well.

In sum, the exploration of within-person variability has opened up some unique and intriguing puzzles in personality research. At this point, researchers have moved beyond pitting traits against situations, instead focusing more on the degree to which situational

behaviors reflect the stable traits that truly do describe people. As we understand more and more about the dynamic factors that move people to act either in accord with, or in contrast to, their abiding tendencies, we suggest the critical role played by psychological needs. It seems ever more clear that contexts that support autonomy and thus allow one to be oneself are those that allow people to exhibit their trait selves, and it is in such circumstances that people are able to function and experience well-being most optimally.

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