The same person acts differently on different occasions and in different situations (Fleeson, 2004a; Mischel & Shoda, 1995; Nesselroade, 1991). This simple truth has been one of the greatest challenges for personality psychologists to explain, because the more that the typical individual acts differently from occasion to occasion, the less useful it is to label him or her as acting a particular way, that is, to describe his or her personality. This chapter describes a new theory of personality that organizes and interprets the implications of intraindividual variability for personality and for personality development. In particular, it describes how intraindividual variability, slowly but finally, has been transformed from a challenge into an opportunity for new research directions and discoveries in both personality (Brown & Moskowitz, 1998; Epstein, 1982; Fleeson, 2001; Larsen, 1989; Mischel & Shoda, 1995) and adult personality development (Larson, Moneta, Richards, & Wilson, 2002; Nesselroade, 1991).

The chapter first reviews recent findings determining the extent to which individuals act differently or similarly across occasions (Epstein, 1979; Fleeson, 2001; Mischel, 1968), describes a new approach to incorporate intraindividual variability into the model of personality (Fleeson, 2001), and discusses three important implications of these findings. First, these findings have engendered a new view of personality as a flexible resource that supports adaptation to the moment but resiliently returns to its general contours. Second, they help bring an end to the person–situation debate, allowing personality psychology to move forward (Epstein, 1994;
Fleeson, 2004a; Funder, 2001; Mischel & Shoda, 1995). Finally, these findings open up new questions in personality about the causes of, consequences of, and individual differences in intraindividual variability.

Next, the chapter assesses the implications of intraindividual variability for adult personality development. There are at least three reasons intraindividual variability is particularly important in adult personality development. First, this is an approach to personality that is inherently developmental from the start, because the amount of, nature of, and reasons for intraindividual variability are all likely to vary across the life span (Nesselroade, 2001). Also, such an approach adds two new classes of personality variables to examine for personality development—amounts of and contingencies of variability—that expand the traditional exclusive focus on development of individuals’ trait levels only (Berry & Jobe, 2002; Hooker, 2002; Nesselroade, 1991). Third, this approach discovers what is happening at the very interface of person and context—everyday behavior in situations—where many developmental theories locate the processes of adult development (Caspi & B. W. Roberts, 2001).

THE CHALLENGE AND THE OPPORTUNITY OF INTRAINDIVIDUAL VARIABILITY

A leading definition of traits is as “dimensions of individual differences in tendencies to show consistent patterns of thoughts, feelings, and actions” (McCrae & Costa, 1990, p. 23). This definition captures the powerful intuition that different individuals have different characteristic ways of acting, feeling, and thinking. This definition also highlights the fact that some type of consistency in behavior is required for most concepts of personality. If the typical individual acts similarly across occasions, then he or she has a characteristic way of acting which can be described as his or her personality. In contrast, if the typical individual acts very differently across occasions, then he or she does not have a characteristic way of acting that can be usefully described with traits. Thus, the possibility that the same individual may act in different ways on different occasions (i.e., intraindividual variability) represents a challenge: the more intraindividual variability, the less regularity, the less personality, and the less personality development. Indeed, initial studies found surprisingly low degrees of consistency in select behaviors (reviewed in Mischel, 1968).

Density Distributions

The density distributions approach to personality was developed to obtain and interpret the first direct evidence of just how much intraindividual behavioral variability there is (Fleeson, 2001). Such evidence requires observing many behaviors of the same individual (Larsen, 1989), measuring those behaviors on a dimension that allows comparing them to each other, and then quantifying the amount of variability or similarity on that dimension.

The density distributions approach to personality (Fleeson, 2001) was developed also as a new way to describe personality that is rooted in the accumulation of the everyday behavior of an individual. Behavior is emphasized because it is the manifestation of personality; when describing personality, one of the things that should be described is behavior. Accumulation is emphasized because the assumption is that although some singular acts can define an entire personality, it is more often the patterns and frequen-
cies of behaviors that reveal the individual. Everyday is emphasized because it is the life as lived and in context that the theory describes (Allport, 1937; Buss & Craik, 1983).

The central assumption is that, just as people have personality traits, they also have personality states (Nesselroade, 1991). A personality state is the person's personality at a given moment, described in the same terms as are personality traits. For example, how extraverted individuals are acting at the moment are their extraverted states. States are assessed just like traits, with rating scales, except that the respondents are instructed to describe how they are at the moment rather than what they are like in general. For example, a score of 5 on a 7-point extraversion dimension means that the individual is acting moderately extraverted at the moment.

The accumulation of many personality states over a period of time creates a density distribution recording the frequency with which the individual was in each state. The proposal is that the way to characterize an individual on a trait is not by a certain level on that trait (e.g., highly extraverted), but rather by the distribution of corresponding states in its entirety. A narrow distribution means that the individual is frequently in similar states, that is, acts very similarly across occasions. A wider distribution means the individual regularly and routinely is in all states, that is, acts very differently from occasion to occasion.

To obtain distributions for several individuals, experience-sampling methodology (ESM) was employed (Larson & Csikszentmihalyi, 1983). College students carried Palm Pilots for a couple of weeks and every few hours they described their current behavior using about 25 trait adjectives. The resulting data provided a quantified distribution of an extensive sample of each individual's behavior, directly translated into trait terms. This was the first opportunity for personality psychologists to observe and quantify how similar one individual's behaviors are to each other across multiple occasions.

Variability as a Threat

To quantify amount of variability, Fleeson (2001) calculated the standard deviations of each person's distribution for each trait. Although standard deviations differed by trait, the typical individual had a standard deviation on each trait of about 1.0. On a 7-point dimension, a standard deviation of 1.0 is about as large as a distribution can be and still be normal, meaning that individuals were quite variable in their behavior. Comparing this standard deviation to other comparison standard deviations buttressed this conclusion. The amount that one typical individual varied in his or her behavior across 2 weeks (a) was almost as much as the total amount that behavior varied in the entire sample both between and within individuals, meaning that knowing who is acting adds little information about how the person is acting; (b) about the same as the amount of within-person variation in affect, something that is commonly known to vary so much that affect is thought of first as a temporary state and only occasionally as a stable trait; and (c) more than the amount of variability between individuals, meaning that individuals differ from themselves more than they differ from others. This high degree of intraindividual variability makes it clear that there is very little regularity in behavior and the same person changes his or her behavior quite rapidly and quite frequently, presumably in response to changing situations.
Thus, when it comes to the Big Five and to single behaviors, person-focused regularity is not a prominent feature of behavior. Rather, the typical individual’s states make up a relatively wide distribution, routinely and regularly covering the whole range of possible behaviors.

Looking Elsewhere for Consistency

It is possible to acknowledge this variability in single behaviors but to nonetheless find substantial consistency in personality-relevant behavior. Following Nesselroade (1991), Epstein (1979), and others, Fleeson (2001) looked for consistency not in individual behaviors but rather in the parameters of the distributions of behaviors. That is, the notion of the entire distribution draws attention away from single behaviors and focuses it on parameters such as the distribution’s central point, its width, and its shape.

The first parameter of a distribution is its central point, representing the individual’s mean personality state averaged across several moments from a large time period (e.g., from a week). Stability of the mean would be indicated when successive center points from successive long time periods are similar to each other. Fleeson (2001) split the data in half and calculated two central points for each individual, one for each half, and then correlated them to learn how similar they were to each other. The remarkably high resulting correlations (around .90 for each trait) meant that successive center points were nearly identical to each other and that differences between individuals in their average tendencies were highly stable and highly predictable. This finding has also been demonstrated several times and is no longer a matter of dispute (Epstein, 1979; Mischel & Shoda, 1995). Thus, individuals do act very similarly to themselves from one longer time period to the next, showing consistency.

A second parameter is the distribution’s width—variability itself may be a consistent aspect of personality (Bem & Allen, 1974; Fiske, 1961). A similar analysis showed that each individual’s standard deviations were also found to be similar across successive time points, although the stability correlations were smaller than for the central point (around .50). Thus, individual differences in variability exist and are consistent aspects of personality as well. Shape parameters, represented by skew and kurtosis, even showed some week to week stability.

IMPLICATIONS OF INTRAINDIVIDUAL VARIABILITY FOR PERSONALITY

There are at least three important implications of the fact that sizable intraindividual variability and sizable stability coexist comfortably. The first implication is that behavior is both inconsistent and consistent (Epstein, 1994; Fleeson, 2004a; Funder, 2001; Mischel & Shoda, 1995). A person’s momentary behaviors are indeed very different from each other, so not very consistent from moment to moment. A person’s averages from larger occasions are nonetheless very similar to each other, so very consistent from week to week. Personality can move forward studying both approaches.

The second implication is the possibility of a new view of traits. Rather than only the level being used to characterize an individual’s standing on a trait, the entire dis-
tribution can be seen as a useful way to characterize the individual’s trait. Most individuals demonstrate a wide range of extraversion states routinely and flexibly, presumably representing adaptive responses to shifting contexts. Even highly introverted individuals regularly acted extraverted and even highly extraverted individuals regularly acted introverted. However, each individual's range is centered at a different location on the dimension, so it is possible to describe what a person is like in general. The way to do so is in terms of the distribution as a whole.

The third implication is that variability can itself be an exciting topic of study for personality psychologists. Why does the same person act so differently on different occasions, rather than acting more in character? Why do people differ in how variable they are? For that matter, what enables maintaining a unique central point across successive time periods? Finally, individuals may differ not only in their amount of variability but also in the contingencies of their variability (Mischel & Shoda, 1995). That is, individuals may differ in when and under what conditions they change their behavior and in how strongly they do so. Such contingent personality variables are a potentially rich source of individual differences (Hooker, 2002), may provide insight into individuals' adaptivity and functioning, and have potential for elucidating adult personality development (Larsen, 1989).

EXPLAINING INA WEEK INDIVIDUAL VARIABILITY

Rather than take a traditional top-down approach to answering these questions, by using broad and abstract personality characteristics as explanatory variables, this chapter proposes using a bottom-up approach. A bottom-up approach tries to identify processes explaining the level of a personality state at the moment, and then builds up explanations of broader characteristics from these basic processes (Allport, 1937; Mischel & Shoda, 1995). The following paragraphs outline a theory of adult development of within-person variability in personality states. Six propositions form the theory's framework, as shown in Table 3.1. It begins with explaining an individual's current state by identifying causes of that state. It ends with a prediction of declining but high within-person variability across the life span. Indeed, a basic element of the theory is the characterization of individuals as actively trying to make the best of their shifting circumstances to improve the quality of their lives.

Proposition 1 identifies six potential influences on an individual's current personality state. The Cognitive-Affect Personality System (CAPS) approach (Mischel & Shoda, 1995) argues for the hypothesis that behavior is a result of cognitive-affective units (e.g., encodings, expectancies) triggered by situations and by individual differences in those cognitive-affective units. Applying this to the states that manifest traits suggests interpretations of situations as one influence, that is, variability in trait-manifesting states partially represents flexible and discriminative changes in behavior due to interpretations of changing situations.

Second, purposes include goals, motives, desired identities, and other teleological variables (Cantor & Fleeson, 1994). Although purposes involve cognitive-affective processing, they appear as a separate influence, because they may play a special role in influencing behavior. Specifically, all courses of action may ultimately be evaluated in terms of their impact on purposes. Temporal trends refers to the fact that states may continue over time, and processes such as inertia or cycles may result in individuals acting a given way
TABLE 3.1
Outline of a Theory Regarding Adult Development of Intraindividual Variability in Personality States

Proposition 1: Six potential influences on an individual's current personality state include:

- Psychologically active elements of situations
- Purposes
- Temporal trends
- Stabilizing forces
- Resource availability
- Error

Proposition 2: Individual differences in amount of variability on a trait arise from individual differences in the strength or variability of one of the influences on states (as described in Prop. 1).

Proposition 3: Five mechanisms underlie adult personality development:

- Genetics
- Environment
- Learning
- Identity
- Developmental regulation

Proposition 4: Age differences in amount of variability on a trait arise from age differences in the strength or variability of one of the influences on states (as described in Prop. 1).

Proposition 5: Developmental mechanisms (Prop. 3) affect variability by affecting the strength or variability of one of the influences on states (as described in Prop. 1).

Proposition 6: Amount of variability in all five traits will decline slightly over adulthood (declining due to environment, identity, and learning, but staying high due to self-improvement, environment, and genetics), as individuals engage in a lifelong effort to actively adapt to changing circumstances in the pursuit of important personal goals.

because they were acting that way in the recent past (Brown & Moskowitz, 1998; Hemenover, 2003; Larsen, 1989). Stabilizing forces refers to possible internal physiological or cognitive structures that serve to return states toward a certain more-or-less fixed level, perhaps through homeostatic processes (Caspi & B. W. Roberts, 2001; Gallagher, 2005). Resource availability refers to skills, emotions, or psychopharmacology that may temporarily or permanently prevent certain behaviors (Paulhus & Martin, 1987). Finally, error refers to the fact that some states are unpredictable to some extent (Epstein, 1979), reflecting true mistakes or capriciousness. Identifying the steps and mechanisms through which each of these influence trait-manifesting states is the first theoretical task.
3. DEVELOPMENT OF INTRAINDIVIDUAL VARIABILITY


to be undertaken. Demonstrating that states do indeed covary with these influences is the first empirical task to be undertaken.

**Identifying the Psychologically Active Elements of Situations**

Because of the situation's history as a foil to traits, it was intriguing to begin by testing situations as an explanation for trait-manifesting states. The first task was to determine whether trait-manifesting states indeed covary with situations. This in turn required identifying the elements of situations that are psychologically active for each trait (Mischel & Shoda, 1995; Shoda & Lee-Tiernan, 2002). Focusing on the elements of a situation that are active is in contrast to the more usual focus on the “nominal” or “categorical” characterization of situations. Normally, situations are classified by their type, category, or physical surround (e.g., as “social,” “academic,” “family,” “classroom,” or “house”). The goal behind the density distributions approach is to identify what is psychologically meaningful about, for example, a classroom, that triggers particular behavior on the part of the individual (Shoda & Lee-Tiernan, 2002).

CAPS provides an important and useful meta-theoretical guide to developing social-cognitive theories of personality (Mischel & Shoda, 1995), so its features were incorporated in this endeavor. Identifying the elements that trigger a given state may be facilitated by an analysis of the state: the kind of behavior, the consequences of acting that way on the self, the effects acting that way has on the situation (including other people), the vulnerabilities created by acting that way, and the resources expended and needed to act that way. Unfortunately, very little is known about this for most traits; this kind of analysis therefore likely will also expand understanding of the basic nature of and processes underlying traits. The state of extraversion, for example is active, loud, and impactful; it increases positive affect, raises status, and accomplishes more goals; it grabs others attention; it opens one up to ridicule or even retaliation; and it requires energy. Situation elements that reward or encourage this type of behavior provide resources for it, and minimize the vulnerabilities are likely to trigger those behaviors. For extraversion, such situations are those in which happiness is relevant, there is an opportunity to accomplish relevant goals, energy is conveyed to the individual, and there is a low chance of ridicule or retaliation. The situation elements of others' friendliness, interestingness, others status, and the number of people may characterize such situations.

In one experience sampling study, participants rated the degree to which several situation elements were present at the moment and also their current state on each of the Big Five, as they navigated through many situations in a few weeks of their daily lives. Multilevel linear model (MLM) analyses were then conducted separately for each potential trait-element contingency: For each subject, a regression predicted the current state from the degree to which the situational element was present (Fleeson, in press). The resulting betas indicated how much each subject varied that state with the occurrence of that situation element. For example, MLM indicates for each individual how much and in which direction his or her level of extraversion state is contingent on the friendliness of others in the situation. MLM provides a significance test on the average of these betas; a significant and positive beta indicates that the typical individual increases his or her level of the given trait when the element is present in the situation.
MLM revealed a large beta for friendliness of others, $\beta = .43$, meaning that the typical individual's extraversion is strongly related to the friendliness of others. The beta for interestingness of the situation was .32, meaning that individuals indeed became more extraverted as the situation became more interesting. Importantly, this is a within-person function, describing the ongoing psychological functioning of individuals. Specifically, the comparison is within one person at a time; the typical individual was more extraverted on those occasions in which the situation was interesting than on those occasions in which the situation was not so interesting. The beta for number of others was also .32, meaning the number of others is a psychologically active element of situations for the trait of extraversion. Finally, the status of others had a nonsignificant beta of .10, meaning being with high status others, contrary to predictions, is not related to reduced levels of extraversion. These results show successful identification of some situation elements that are active for extraversion, specifically, friendliness of others, number of others, and the interestingness of the situation.

MLM also provides significance tests on the individual differences in contingencies, and all four of these contingencies differed significantly between individuals in their strength or direction. These individual differences are a new method for testing interactionism and if-then contingencies (Mischel & Shoda, 1995). For example, the individual differences in the potency of others' friendliness for extraversion means that for some individuals, extraversion is not contingent on others' friendliness or even may be negatively contingent. An advantage to this approach is that it may help rejuvenate interactionism (Endler & Parker, 1992). Although nearly all developmental, social, and personality psychologists claim to be interactionists, very few actually carry it out in practice (Endler & Parker, 1992). Partly this is due to identified problems with the methods people have applied to date; the current approach provides a new method that may not suffer from these problems (Fleeson, in press).

**Individual Differences in Amount of Variability**

The second proposition concerns how understanding the influences on the current state in turn can be used to explain individual differences in variability. This begins the move up from the bottom level of in-the-moment states to explaining higher level personality characteristics. Individual differences in variability turn out to be stable and to vary across traits within an individual. This class of personality variables has just begun to be studied and may be very relevant to life outcomes, mental health disorders, and adaptivity (Ghisletta, Nesselroade, Featherman, & Rowe, 2002). Furthermore, flexibility may develop in adulthood in theoretically meaningful ways. Specifically, Proposition 2 states that individual differences in amount of variability arise in individual differences in the strength or variability of one or more of the six influences on the current state. The stronger an influence, the more impact it will have on variability when it varies. For example, individuals who have stronger contingencies among situational elements and states will have more state variation in reaction to situation variation. Similarly, individuals with stronger stabilizing forces are likely to have less intraindividual variability. Similarly, the more variable an influence, the more variable the triggered behaviors. For example, an individual who experienced more variability in extraversion-relevant situation ele-
ments would thereby exhibit more variability in extraversion. Similarly, individuals who pursued more variable goals would likely exhibit more variable states.

The previous study tested whether individual differences in variability on a trait were in fact associated with individual differences in strengths of contingencies for that trait. The correlations were very strong, meaning that one strong predictor of who is more flexible on a trait is how much the individual’s behavior on that trait is contingent on variability in the relevant situation elements. However, tests of this proposition are in only the initial stages.

In sum, density distributions theory provides the elusive defacto integration of person/structure and situation/process, by showing that the structural variables (traits) are manifest (made real) by the operation of cognitive processes, of reaction to situations and of physiological resources. Thus, this theory organizes many diverse approaches to personality psychology into one framework. It also demonstrates and then explains the variability and adaptiveness of human beings in their everyday behavior. And it does so in a way that may be intriguing to adult developmental theory.

PERSONALITY DEVELOPMENT ACROSS THE LIFE SPAN

As this volume attests, the last two decades have witnessed considerable interest in whether personality changes or is stable across the adult life span (Berry & Jobe, 2002; Caspi & B. W. Roberts, 2001). This section considers the implications of intraindividual variability for adult personality development, and in particular how it stands as an opportunity rather than a challenge in this domain as well. Much of our thinking in these matters develops from the work of the pioneers in intraindividual variability in adulthood and adolescence, John Nesselroade and Reed Larson and their colleagues.

Intraindividual variability in trait-relevant behavior may be particularly interesting to adult developmentalists as they move into second generation questions (Berry & Jobe, 2002) for at least four reasons: Variability and the contingencies of variability are two new classes of variables essential to personality so a full account of adult personality development will include reference to variability; intuitions about personality differences across adult ages may refer to amounts of variability as much as to levels of any particular traits; intraindividual variability inherently conceives of the person in context, an important concern of developmentalists; and behavior in reaction to situation is the crucible for many theorized mechanisms of development. That is, just as the nature of personality is crucial to determining how the person develops, development is crucial to determining the nature of personality (B. W. Roberts & Pomerantz, 2004). Next is a very brief review of accumulated findings and underlying developmental mechanisms as used to characterize adult development of trait levels. Those mechanisms are then applied to make predictions about the adult development of variability in traits. These predictions show the potential for research on the development of variability.

Personality Development—Trait Levels

There is evidence of universal mean level changes in the Big Five traits from young to older adulthood—including decreases in neuroticism, extraversion, and open-
ness, along with increases in agreeableness and conscientiousness—although most authors consider the magnitude of change small (Field & Millsap, 1991; McCrae et al., 1999). From comparisons of individual trait items, the changes found are due to more active thrill-seeking in young adulthood and more modesty and self-discipline in older adulthood. Block (1971) noticed increases in ego control, the delay of gratification, and ego resiliency, the ability to adapt personal level of ego control, during this same period of adulthood. Positive affect, negative affect, and life satisfaction also show improvements at least through the 60s (Fleeson, 2004b; Mroczek & Kolarz, 1998; Mroczek & Spiro, 2003). With age, people become more agreeable and conscientious and better at adapting their behavior in context.

In their meta-analysis, B. W. Roberts and DelVecchio (2000) provided a comprehensive account of rank-order changes in personality. Findings from over 152 longitudinal studies led the authors to conclude that 7-year stability correlations increase from childhood into old age, where they reach a plateau around the ages of from 50 to 70 at about .74. The authors' second conclusion was that the peak level of rank-order consistency is below what would be expected of complete personality stability, so traits remain susceptible to change throughout adulthood. Thus, both continuity and change describe adult development (Helson, 1993). Furthermore, individuals differ in the extent to which they change (Jones & Meredith, 2000; Mroczek & Spiro, 2003).

Developmental Mechanisms Underlying Stability and Change

Research has shown the potential for continuity and change in personality development, so the second question psychologists must answer concerns why these patterns occur. Although there has been much less emphasis on explaining than on documenting patterns of stability and change, we have identified in the literature five mechanisms that have been proposed to account for adult personality development and that may be particularly relevant for development of variability: genetics, environment, learning, identity, and developmental regulation (Bertrand & Lachman, 2003; Caspi & B. W. Roberts, 2001).

First, there is evidence that personality is heritable (Shiner, 1998; Turkheimer, 1998). To the extent that gene effects remain constant throughout life, this is a strong force contributing to stability rather than change. However, two genetic forces may lead to increased rather than dampened change. Maturation, the unveiling of the complete organism over time, may mean that some genetic effects on personality are not evident until adulthood. Similarly, evidence from twin studies reveals that the amount of change in personality is heritable (Dworkin, Burke, Maher, & Gottesman, 1976), meaning genes can prescribe a person's susceptibility to change.

A second mechanism driving development is the environment, a broad category that includes immediate situations, other individuals, roles, major life events, norms, community, and the culture as a whole (Casi & B. W. Roberts, 2001; Helson, Jones, & Kwan, 2002). Each aspect of the environment likely exerts some influence over personality; in fact, one of the main wellsprings of interest in adult personality development is the question of how and how much such environmental events shape personality (B. W. Roberts, 1997; B. W. Roberts & Helson, 1997). Environment can be a source of stability in personality when environments and their effects do not change...
over adulthood. For example, adults typically stay in the same job and marriage for extended periods. But when environments change, personality may change as well, as when work experiences are associated with increased agency (B. W. Roberts, 1997) or childrearing is associated with increased self-confidence in women (Wink & Helson, 1993). When there are major life events in a person’s environment, such as marriage, parenthood, or death, then that person may respond with changes in personality (Helson et al., 2002). It is also the case that environmental effects are not unidirectional, from environment to the individual, but transactional, such that individuals select and evoke situations as well as react to them (Buss, 1987; Caspi & B. W. Roberts, 2001), and the results are likely to influence development. The pathways by which environment influences personality are just beginning to be assessed and will be a high interest topic for new adult personality research (Berry & Jobe, 2002).

The third mechanism underlying adult personality development is one of the larger topics in the history of psychology. Learning refers to learning stimulus–response contingencies through direct experience but also to social learning and reflected or symbolic learning (Caspi & B. W. Roberts, 2001). As individuals grow older, they accumulate larger and larger stores of knowledge, both factual declarative knowledge and procedural knowledge. Such learning is primarily associated with change: As individuals learn something new, their behavior and thus perhaps their personality may change. However, learning also can be a powerful force for stability. Once learned, a habit may be maintained for decades, and the longer individuals have lived, the greater weight of the prior learning to overcome by anything new.

Identity processes make up an important fourth mechanism underlying development (Erikson, 1963; Marcia, 2002; Pals, 2001; Whitbourne, Sneed, & Skultey, 2002). Typically, identity is described as an exploratory process during individuals’ adolescence and early adulthood, followed by commitments to established ways of being and beliefs about themselves. Thus, these processes would predict more change in early adulthood followed by more stability in later adulthood, echoing the conclusion concerning mean levels (B. W. Roberts & DelVecchio, 2000).

Finally, development can be directed, as individuals not only are the products, but are also the producers of their own development; a fifth mechanism underlying adult development is developmental regulation, or the intentional effort at self-improvement (Fleeson & Baltes, 1998; Freund & Baltes, 2002; Heckhausen, 2002). In childhood, such efforts are universal and formal, such as education. As individuals age, these efforts often become more individualized and less formal, such as getting promotions, soliciting therapy or other treatment, improving relationships, timing childrearing, developing hobbies, self-improvement such as getting more organized, and lifestyle changes involving health, work style, or eating habits. Self-improvement can also be a powerful force for stability when individuals make deliberate efforts to maintain already desirable aspects of their lives, such as trying to maintain positive relationships, hold the line on their weight, or maintain physical competencies as they age.

ADULT DEVELOPMENT OF INTRINDIVIDUAL VARIABILITY IN TRAIT BEHAVIOR

The preponderance of research on adult personality development has focused on the development of individuals’ trait levels, that is, on whether individuals’ levels of
a trait change as the individuals develop. This chapter proposes that the amount an individual varies on a trait is also an important part of personality, which may develop across the life span in interesting ways. In fact, such differences may be behind some of the intuitions about what changes in personality in adulthood. For example, intuitions about stormy adolescence or stable midlife may refer to the amount of within-person variability in behavior at the different ages, rather than referring to the mean levels of any particular traits. Furthermore, considering adult personality development from a variability standpoint is particularly appealing because variability is inherently contextual. That is, such an approach directly addresses the person developing in context (Berry & Jobe, 2002; Endler & Parker, 1992). Because variability is defined as state changes across occasions, characteristics of the occasions (e.g., the situations) are directly implicated in the concept of within-person variability. Thus, this approach provides a naturalistic laboratory for investigating the processes presumed to underlie development.

Nesselroade, Featherman, and their colleagues have pushed such research into development of within-person variability, and have demonstrated systematic individual differences among older adults in amount of variability of health and activity (Ghisletta et al., 2002), social relationships and self-efficacy (Lang, Nesselroade, & Featherman, 1997), worldviews (Kim, Nesselroade, & Featherman, 1996), depression (Nesselroade & Featherman, 1991), and self-definition (Freund & Smith, 1999). Furthermore, amount of within-person variability has been shown to predict mortality rates and mental abilities (Eizenman, Nesselroade, Featherman, & Rowe, 1997; Li, Aggen, Nesselroade, & Baltes, 2001). The density distribution approach builds on this work by examining within-person variability in the traits of the central model of traits (i.e., the Big Five) and by developing a model of how developmental mechanisms may influence amount of intraindividual variability across the life span.

Investigating development of amount of variability on a trait is analogous to investigating development of level on a trait, except variability rather than level is the outcome. For example, just as researchers have investigated whether level of responsibility increases during early adulthood, research can investigate whether amount of variability in responsibility increases, decreases, or stays the same during early adulthood. A decrease in variability would mean that a typical young adult swings between the extremes of low and high responsibility over the course of a few days whereas a typical older adult would swing less extremely and stay closer to whatever his or her usual level of responsibility is.

Amount of intraindividual variability can change in the same ways as level and is assessed with the same basic methodological and statistical tools as is trait level. First, as amount of variability is a class of variables rather than a single variable, multidirectionality of development is as likely for amount of variability as is the case for levels (Baltes, 1987). That is, some traits may show developmental increases in amount of variability, whereas others show decreases or no change. Second, amounts of variability can be investigated both for mean-level, or group-normative, change and correlation, or rank-order, change. Normative change would be evident when a cross-sectional or longitudinal study revealed that the average person's amount of variability differed across ages; rank-order change would be evident when a longitudinal study revealed low correlations of amount of variability across ages. This chapter focuses predictions on mean-level,
or normative, changes across adulthood in the amount of variability as we are at an early stage in investigation of variability phenomena.

It is worth noting that there is another class of variables that may develop across adulthood, specifically, the situation element-trait contingencies that determine momentary states. For example, the contingency of rudeness on other individuals' rudeness may weaken as individuals age and learn to personalize less. Predictions would need to be made for each contingency individually, a task that will wait until there is more information about intraindividual variability across the life span. However, the rich possibilities of such theories points out the potential created by taking as a starting point that individuals vary their behavior considerably from hour to hour.

Propositions 4 and 5 guide the predictions. Proposition 4 is that age differences in amount of intraindividual variability on a trait are due to age differences in the variability or strength of the influences on states. For example, age differences in the strength or variability of everyday situations would result in age differences in variability in states. Proposition 4 is the age-relevant corollary of Proposition 2: For variability to change, the states must change, and the way for states to change is via one of the influences on states. Proposition 5 is that the mechanisms of development affect intraindividual variability by affecting the variability and strength of the influences on states. Because the route to affect variability is via the five influences on states, developmental mechanisms will work their effects through that route. The theory accordingly develops our predictions by considering how developmental mechanisms may impact one or more of the six determinants of personality states. For example, genetics may maintain the strength of the stabilizing force throughout adulthood and thereby serve to maintain the amount of intraindividual variability at a constant level throughout adulthood.

A difficulty to keep in mind is that the mechanism must work by affecting the amount that different states from one or two days differ from each other. For example, a decrease in the intraindividual variability of agreeableness has to be brought about by decreasing the amount that states in the course of a couple of days differ from each other in their agreeableness (e.g., by reducing the amount that the individual's agreeableness is contingent on changing situational elements).

Applying the Five Developmental Mechanisms to the Five Determinants of States

In this regard, genetics is primarily a force for stability. Individual differences in intraindividual variability are most likely heritable (Turkheimer, 1998), meaning that individuals are likely to stay near their personal amounts of variability as they age. Furthermore, genetics may represent the stabilizing forces influence on current personality state (Fraley & Roberts, 2005). That is, genetics may represent the influence that acts as a counterweight to situational or other influences and that pulls the individual towards his or her average state. As long as the strength of this force does not vary across the life span, genetics will lead to stability in the amount of intraindividual variability across the life span. There are not yet expectations that genetics will alter the strength or variability of any of the other influences on current personality states.
The environment is where many effects on the adult development of intraindividual variability are expected. In particular, situations, roles, and life events are all expected to decline in variability after young adulthood or adolescence. The immediate situation likely varies more during the course of an adolescent’s than an adult’s day (Almeida & McDonald, 1998; Csikszentmihalyi, Larson, & Prescott, 1977). Compare the student athlete, who has to balance school work, practice, employment, and relationships, with a retired person who does not work, participate in sports, or attend school, or a middle-aged adult for whom workplace and home make up the bulk of the situational contexts. As a result, retired and midlife individuals may vary less than adolescents in their behavior from day to day and from hour to hour (Brown & Moskowitz, 1998). Thus, environment should serve to reduce intraindividual variability across adulthood by reducing the variability in the situations that affect personality states. However, situations should remain at least moderately variable, so personality states should remain correspondingly at least moderately variable (Almeida & McDonald, 1998).

Another way in which the environment may affect the adult development of intraindividual variability is by the concentration of major life events. There may be a sharp increase in intraindividual variability during young adulthood (at least in Western culture) when there is the highest rate of major life events (Glenn, 1980). During young adulthood, many individuals choose a career/job, partner, home, family, and so on. These major life events create a disruption in the prior life course and potentially in the daily schedule. While trying to adjust, people will probably vary in their reactions. That is, such events are likely to increase the daily variability of situations, of personal goals, and of error (erratic responding).

Learning likely has at least three effects on the development of variability. As individuals age, they may develop stronger connections among situations and states. This would increase variability in behavior by increasing the strength of situations. From this perspective, intraindividual variability is adaptive because it allows individuals to respond appropriately to a variety of situations, and the ability to adapt may be enhanced with experience. Conversely, age may lead to decreased error in responding to situation elements as individuals become more effective at matching their behavior to situational elements, thereby reducing the amount of variability (Caspi & B. W. Roberts, 2001; M. L. Roberts & Nesselroade, 1986). A third way in which learning may affect variability is by reducing extreme responding. Novices may respond more extremely to slight variations but temper this propensity with training. The same pattern may be true of responding to situation elements with behavior. For example, mood varies more rapidly and to further extremes in adolescence than adulthood (Buchanan, Eccles, & Becker, 1992; Larson et al., 2002). The net effect of these processes, because error reduction may be the most powerful, may be a slight reduction in overall intraindividual variability across the life span.

Identity, the fourth developmental mechanism, is the only mechanism that is commonly elucidated in terms of variability. To learn who one is, a major task of adolescence, a person will try several different roles, activities, and goals, each corresponding to particular personality behaviors (Erikson, 1963; Marcia, 2002; Pals, 2001; Whitbourne et al., 2002). Another way individuals may experiment is by reacting to a greater variety of situations, thus increasing variability (Whitbourne et al., 2002). Experimentation is likely to also mean less consistent and more arbitrary
responding to the same situation element at different times (Whitbourne et al., 2002). Such increased error variance in behavior adds to the total intraindividual variation. Experimentation is also likely to be manifest in shifting personal goals. Although most of those shifts will occur over longer periods than described by intraindividual variability (e.g., weeks or months), some will occur more rapidly over a matter of days, in which case personality state variability would again be increased in adolescence. And to the extent that beliefs about oneself contribute to the stabilizing force and are less firm in adolescence, the stabilizing force will be weaker in early adulthood and thus allow greater variability (Neugarten & Associates, 1964). In sum, identity processes suggest that intraindividual personality state variability will be higher in adolescence and early adulthood, due to a wider variety of powerful situations, more varying purposes, weaker stabilizing forces, and more error in responding. As the individual commits to an identity, intraindividual variability should ease somewhat, but not completely (Freund & Smith, 1999).

Self-improvement is the final mechanism underlying adult personality development. Although self-improvement efforts become less formal and universal as individuals age, and more so for some than for others, individuals nearly always have multiple developmental goals at once (Fleeson & Baltes, 1998; Freund & Baltes, 2002; Heckhausen, 2002). The more goals individuals have, the more they will switch between them in the course of a few days and thus the more their relevant states will vary. Fewer developmental goals with age may reduce variability to some extent. On the other hand, individuals may get more efficient at switching their behavior to more effectively accomplish their goals (Caspi & Roberts, 2001); such increased strength of goals in influencing states may counteract any drop in variability due to having fewer goals.

FUTURE RESEARCH DIRECTIONS

Intraindividual variability has long been considered a challenge to the existence of personality: Individuals cannot have a personality if their personality changes substantially every moment. However, as argued by Nesselroade (1991), Cattell (1973), Larsen (1989), Mischel and Shoda (1995), and others, intraindividual variability can now be seen as an opportunity for personality: An individual's personality is not contrary to the personality changes but in fact consists of the personality changes. That is, personality may be the accumulation of personality states combined into a unique distribution (Fleeson, 2001). This new view of within-person variability can help put an end to the person–situation debate and point to some next topics in personality psychology. The person–situation debate can end because psychologists recognize that, due to human flexibility, traits do not predict momentary behaviors very well but that traits predict trends in behavior exceedingly well. The next topics to address include explaining variability, individual differences in variability, and individual differences in the contingencies of variability; each is a rich road to understanding how individuals try their best to adapt to situations in ways that makes progress toward or sometimes undermine their meaningful personal goals.

Intraindividual variability is also an opportunity for adult personality development, as pushed by Nesselroade (1991). This is especially true given the timing; now that consensus is being reached about how levels of traits develop, adult
developmentalists are moving to second generation questions (Berry & Jobe, 2002), such as identifying the mechanisms of development (Casi & B. W. Roberts, 2001; Hooker, 2002), and addressing the development of other parameters of trait distributions. Intraindividual variability may prove useful for both of these endeavors in that amount of intraindividual variability has been shown to be an individual differences characteristic that is likely to develop in interesting ways across the life span, and intraindividual variability is in the crucible of development. That is, much of development is likely to start with behavioral changes, typically in response to situations or in pursuit of goals.

A particularly exciting design for studying these issues may be the “measurement burst” design (Nesselroade & Boker, 1994) in which individuals’ density distributions and contingencies are assessed more than once. This would allow useful longitudinal analysis of questions about variability and its contingencies.

A new theory was outlined leading to the proposition that developmental mechanisms affect amount of intraindividual variability by affecting the strength or variability of the influences on personality states. The overall expectation is that there will be high levels of intraindividual variability throughout life, because genetic, environmental, learning, and self-improvement mechanisms will continue to operate throughout life, but some reduction in variability is expected as adults age, due to establishing an identity, reduced environmental variation, accumulated learning of contingencies, and progressively less effort into self-improvement. That is, adults throughout the life span will remain active, flexible creators who change their behavior appropriately and effectively in the pursuit of personally meaningful goals, although they may become more efficient and less erratic in that variability.

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