THE MOVING WINDOW OF FIT:
EXTENDING PERSON-ENVIRONMENT FIT RESEARCH WITH TIME

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ABSTRACT

ABBIE J. SHIPP: The moving window of fit: Extending person-environment fit research
with time
(Under the direction of Jeffrey R. Edwards)

Person-environment (P-E) fit research considers the match between individual

characteristics and environmental characteristics (e.g., jobs, organizations, vocations). Most

P-E fit research considers person and environment at a moment in time. However, this

contemporaneous view overlooks the potential impact of an individual's past and future. We

can more meaningfully portray the relationship between P-E fit and outcomes if we consider

experiences from the past, present, and future. The inclusion of these three time frames

produces a "moving window of fit" that can be developed by incorporating research on the

temporal nature of the person, the environment, and well-being. In addition, to determine

how these elements of a temporal fit model are related, I consider research on the processes

of contrast and assimilation.

To conduct an initial test of the temporal P-E fit model, I consider a needs-supplies fit

framework that focuses on four job dimensions: autonomy, creativity, pay, and work

relationships. Using a sample of 187 working MBA students, I found that P-E fit

relationships become more complex when using a temporal context. Namely, how

individuals view fit at past jobs and future jobs conditions the effects of current fit. In

addition, the impact of several of these relationships depends upon several moderators:

temporal focus, temporal distance, and importance. As a result of these findings regarding

the moving window of fit, I discuss implications for practice and for future research.

ACKNOWLEDGEMENTS

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CHAPTER 1

INTRODUCTION

"The past preconditions the present and is responsible for its taken-for-granted nature;

the future is embedded in the present in terms of expectations, possibilities and

strivings…" George and Jones (2000, p. 659).

Recent management research has suggested that researchers should view phenomena

through a "temporal lens" (Ancona, Goodman, Lawrence, & Tushman, 2001). That is, we

should focus explicitly on the role of time and its various implications for our research

(Ancona et al., 2001; Bluedorn, 2002; Bluedorn & Denhart, 1988; George & Jones, 2000).

One method of focusing on time is to add a temporal context to existing theories (Rousseau

& Fried, 2004). A temporal context refers to the actual and subjective passage of time as a

boundary condition of when and how management theories operate (George & Jones, 2000;

Whetten, 1989).

Adding a temporal context is important because different experiences over time impact

current outcomes. For example, temporal comparison theory (Albert, 1977) suggests that

individuals evaluate current experiences based on their current standing relative to past or

future experiences. Thus, the difference between one's present standing and a past or future

experience impacts current well-being. Research on velocity (Hsee, Salovey, & Abelson,

1994) augments temporal comparison theory by suggesting that individuals not only consider

the size of the difference between current and past (or future) experiences, but the rate at

which this gap is being closed. Thus, research on temporal comparison, velocity, and other

temporal research focuses on change in experiences over time. A present experience is evaluated against an experience at another point in time as a standard of comparison.

Organizational behavior research has demonstrated that other standards for comparison for experiences are also important. One standard of comparison that has received substantial attention is highlighted in person-environment (P-E) fit theory (French, Rodgers, & Cobb, 1974; Harrison, 1978). P-E fit refers to the match between the environment (experience) and the person (personal standard) on dimensions such as environmental demands and personal abilities (Caldwell & O'Reilly, 1990; Kristof Brown, 2000), environmental rewards and personal needs (Dawis, 1992; Edwards & Harrison, 1993), and organizational and personal values (Adkins, Ravlin, & Meglino, 1996; Cable & Judge, 1996). Studies suggest that P-E fit has been related to important outcomes such as occupational choice, job satisfaction, organization commitment, and psychological and physical well-being (Edwards, 1991; Kristof, 1996; Spokane, Meir, & Catalano, 2000).

However, most P-E fit research frames the effects of P-E fit on outcomes as contemporaneous, based on the notion that a person considers his or her fit with the environment at a particular point in time and experiences outcomes based on the degree of fit. Although this premise is likely to capture basic aspects of the effects of P-E fit on outcomes, it overlooks the fact that P-E fit does not occur at an isolated moment in time, but instead is part of a continuous stream of experiences that encompasses the person and environment over time. Thus, existing P-E fit research does not address how past P-E fit and future P-E fit affect current well-being within a temporal P-E fit context.

To add a temporal context to current P-E fit research requires the integration of the research on time and research on P-E fit. Whereas the temporal literature focuses on

experiences over time, the P-E fit literature offers a personal standard for these experiences. Thus, evaluation of a current experience occurs by considering both one's own personal standard and the standard of experience over time. The integration of these two streams of literature develops a temporal P-E fit model that allows comparison within and between constructs over time, whether the actual passage of time and the subjective passage of time.

A temporal P-E fit model is important for several reasons. First, the model extends the dominant paradigm of existing P-E fit research and answers repeated calls for the addition of a temporal context to existing management theories. Second, the model augments the temporal literature by offering an additional standard of comparison. Finally, the model offers many practical implications as it more accurately portrays individuals' behaviors within a stream of experiences. This stream could be within a career as when individuals attempt to improve fit by changing positions or companies, or within a job as managers try to manage employees' fit through job design and the selection of assignments. Thus, the temporal P-E fit model has important implications for topics such as career management, job search, selection, job design, and motivation.

In this dissertation, I present an overview of the temporal research and the P-E fit research to describe the landscape of these two streams of literature. Building on these two components, I then introduce and describe the temporal P-E fit model. I develop specific hypotheses and report findings from a survey designed as an initial test of the temporal P-E fit model.

CHAPTER 2

OVERVIEW OF TEMPORAL RESEARCH

Past, present, and future time frames have received attention recently in the field of

management. In particular, there has been a call for more research on how existing theories

change when incorporating time (Bluedorn & Denhart, 1988; George & Jones, 2000; Zaheer,

Albert, & Zaheer, 1999). The consideration of timing within a theory has been likened to the

selection of the appropriate level of analysis of a theory. Just as a certain idea may not hold

at a different level of analysis, so might an idea not hold outside of the present moment or

with a different time interval between periods (Zaheer, et al., 1999). The movement to

question existing theories under the rubric of temporality dominated a recent special issue of

the Academy of Management Review (2001). The editors of the special issue suggested that

researchers should augment existing theory with temporal aspects and study the temporal

aspects themselves by using a "temporal lens" (Ancona, Goodman, Lawrence, & Tushman,

2001). The temporal aspects to which these authors refer are questions such as how

relationships among constructs change over time, how quickly these processes change, what

is the pattern of their trajectories, or how individual or group perspectives on time influence

their actions (Ancona et al., 2001). A temporal lens corrects the problem of "impoverished

theory" in which a theory makes no statements about when events occur or when and how

quickly they change (Mitchell & James, 2001; Whetten, 1989).

However, there is no overarching theory of time that guides the search for these temporal

aspects. Rather, principles of temporal issues exist that can be applied to different theoretical

views (Goodman, Lawrence, Ancona, & Tushman, 2001). To better understand the

principles of temporality, I provide an overview of the existing temporal views. These views describe categories of temporal research which assist in the extension of P-E fit into a temporal P-E fit model.

<div align="center">Categories of Temporal Research</div>

Temporal views may be organized by the patterns of relationships among the independent (X) and dependent (Y) variables. At the most basic level, X is presumed to precede Y although the lag between X and Y is rarely specified (Mitchell & James, 2001). From this basic model, I note additional temporal configurations. While this includes the oft-recommended "longitudinal research," this type of research is just one use of the temporal lens. Other perspectives on the role of time in organizational research are reviewed here. These temporal perspectives are summarized in Table 1.

Time-series Research

The first temporal category describes basic time-series research. This category includes research that investigates both cross-sectional repeated measures designs (for example, X_t leads to Y_t, X_{t+1} leads to Y_{t+1}, where *t* is the current time period) and longitudinal designs (for example, X_{t-1} leads to Y_t and X_t leads to Y_{t+1}; or X_t leads to Y_{t+1}, Y_{t+2}, Y_{t+3}). This type of research is typically intended to establish consistency in relationships, to reduce common method bias from cross-sectional measurement, and occasionally to support causality. While the additional periods of measurement offer empirical strengths, this type of research frequently overlooks the theoretical justification for the time lags or the duration of the relationship between X and Y (Mitchell & James, 2001). Nevertheless, this category of research substantially improves upon cross-sectional measurement.

Rate or Distance Research

A second category of temporal research describes research that considers time with respect to rate or temporal distance. Whereas the aforementioned time series designs incorporate time lags to alleviate concerns about causality or method bias, this second category of design gives theoretical importance to the lag itself or some characteristics of the lag (for example, X_t leads to Y_{t+z} and as z increases, the relationship between X and Y changes). As a practical example, the satisfaction with a pay raise at work may be stronger if the raise is given after a shorter amount of time since the last raise (6 months) than if the raise is given after a later time (1 year). Empirically, this has been demonstrated by research on diminishing confidence as the moment of performance approaches (Gilovich, Kerr, & Medvec, 1993); the difference in regret in the short and long-run (Gilovich & Medvec, 1995); the differences in magnitude of initial responses versus ongoing responses to positive and negative events (Taylor, 1991); the interpretation of recent versus distant events in the past (Strack, Schwarz, & Gschneidinger, 1985); and the differences in performance when expecting sudden versus gradual improvement (Brickman & Hendricks, 1975).

This line of thinking is also developed in Carver and Scheier's (1982) control theory. Carver and Scheier's basic proposition is that well-being will increase as a discrepancy is reduced. This notion of velocity, the rate at which the changes are made, is further explicated by Hsee, Salovey, and Abelson (1994) who state that the rate of change (quasi-acceleration) also drives satisfaction.

Retrospective or Predictive bias

The third category of temporal research includes the relationships between past, present, and future levels of a particular variable and describes how individuals misrepresent the past or the future through biases. For example, using an availability bias causes people to frame problems based on what information is cognitively available from the past (Tversky &

Kahneman, 1982). In addition, recent research on affective forecasting shows that individuals will consistently overestimate the magnitude and duration of feelings they expect for an event in the future (Gilbert, Gill, & Wilson, 2002; Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998). Such self-deception can be useful for the purpose of maximizing current well-being (Robinson & Ryff, 1999).

Temporal Focus

The fourth category of temporal research describes an individual's personal view of time and how this temporal focus changes the relationships between X and Y (Aspinwall & Taylor, 1997; Bluedorn & Denhart, 1988; Das, 1987; Lasane & Jones, 1999; Nuttin, 1985; Zimbardo & Boyd, 1999). The concept generally refers to individuals' tendency to focus on the past, present, and future stages of their lives (Shipp, Edwards, & Lambert, 2006). Focusing on the past, present, or future has direct effects on performance and well-being. For example, individuals with a future focus tend to perform better academically particularly through goal-setting efforts (Lasane & Jones, 1999; Zimbardo & Boyd, 1999) whereas individuals with a present focus tend to take more risks and experience more severe distress (Holman & Silver, 1998; Zimbardo, Keough, & Boyd, 1997). These findings also could be due to the conditioning effects of temporal focus on the relationships between X and Y. For instance, individuals with a present focus may choose to take more risks because they perceive the relationship between taking risks and serious consequences to be smaller than individuals with a future focus.

Temporal Context in the Present

The final category of temporal research describes the use of time as a context for subjectively evaluating the present. In this category, recollection of the past (X_{t-1}) and the anticipation of the future (X_{t+1}) are compared to the present event (X_t) to predict a current

outcome (Y_t). Recollections and anticipations may differ from the actual events of the past that have occurred and the actual events of the future which have not yet occurred. In this type of research, subjective perceptions of the past and future are considered as cognitively available in the present moment. The recollected past and the anticipated future may have direct effects on a current outcome, such as when a painful memory from the past continues to affect one's happiness, or when an exciting expectation for the future induces present satisfaction. For example, the mere act of having an expectation about an upcoming vacation leads people to presently be happier, even before taking the vacation (Elster & Loewenstein, 1992; Mitchell, Thompson, Peterson, & Cronk, 1997). Research has also shown that the death of a loved one in the past causes continuing distress when individuals continue to ruminate on the event in the present (Nolen-Hoeksema, McBride, & Larson, 1997).

The perceptions of past and future may also serve as standards against which the current experience is compared, a process called temporal comparison (Albert, 1977). In temporal comparison, the relationship between a present experience and an outcome depends upon what one remembers experiencing in the past or what one expects to experience in the future. For example, whereas most individuals would say the expectation of future progress is a positive experience, expected improvement may decrease satisfaction when compared to the present (Loewenstein, 1988). For instance, a salary increase associated with taking a new job may cause an individual to be less satisfied with the lower salary of one's current job. The knowledge that a better outcome is approaching causes the individual to become impatient with a current outcome.   Similarly, previous experience with job loss has been shown to increase the amount of distancing from current job loss, a coping mechanism associated with reduction in distress (Kinicki & Latack, 1990; Folkman & Lazarus, 1985).

The temporal categories I have reviewed here focus on the inclusion of the past, present, and future varieties of experiences as predictors of well-being. However, these models lack additional referents from the present that also condition well-being, such as the person component from the P-E fit model. Next, I review the P-E fit literature to examine this additional referent and to explore the P-E fit view of time.

CHAPTER 3

OVERVIEW OF PERSON-ENVIRONMENT FIT RESEARCH

A long standing belief in psychological and organizational behavior research is that behavior is best understood by examining both the situation and the individual [B = f (P, E); Lewin, 1943]. This well-established model of behavior has been a strong influence on many theoretical traditions including Perceived Quality of Life (Rice, McFarlin, Hunt, & Near, 1985), Theory of Work Adjustment (Dawis & Lofquist, 1984), and P-E Fit Theory (French et al., 1974), to name a few.

However, these theories add to the person-situation interaction the notion that a variety of outcomes are the result of a *comparison* between the person and the situation. For example, discrepancy theory (Locke, 1969) suggests that a discrepancy between what the environment provides and what the individual wants causes dissatisfaction. Similarly, person-environment fit theory (French et al., 1974) proposes that strain results from misfit between a person's desires and environment supplies or between a person's abilities and environmental demands. Thus, it is not the separate effects of person and situation that influence behavior, but the relative levels of each that are part of a comparison. Congruence between the individual and the environment has been used to explain many affective and behavioral outcomes (Edwards, 1991; Kristof, 1996; Spokane, Meir, & Catalano, 2000). As such, this body of research has made a considerable impact on the field of organizational behavior.

Supplementary versus Complementary Congruence

The congruence literature is commonly categorized into two types: supplementary research and complementary research. Supplementary research refers to situations in which the

person and environment are similar and enhance one another. Supplementary congruence research refers to the situation in which an individual "supplements, embellishes, or possesses characteristics which are similar to other individuals in this environment" (Muchinsky & Monahan, 1987, p. 269). One supplementary model of congruence is person-organization (P-O) fit. This research examines the similarity between organizational and individual goals, values, or personality/culture traits (Cable & Judge, 1996, 1997; Chatman, 1991; Judge & Cable, 1997; Lauver & Kristof-Brown, 2001). P-O fit predicts organizational attraction, job choice intentions, satisfaction, and turnover. Another supplementary model of congruence is person-vocation (P-V) fit. This line of research studies the fit of individuals with their chosen vocations. Similar the P-O fit literature, P-V fit is positively related to many affective and behavioral outcomes (Tokar & Subich, 1997).

In contrast, complementary research typically refers to situations in which the individual provides something the organization needs or the organization provides something the individual needs. In this way, the "weakness or need of the environment is offset by the strength of the individual, and vice versa" (Muchinsky & Monahan, 1987, p. 271). Perhaps the most well-developed complementary model of congruence is the model of person-environment fit (Figure 1; French et al., 1974; Harrison, 1978).

The P-E fit model examines how environmental characteristics supply what individuals want or need and individuals' characteristics supply what the environment demands. Thus, the complementary research model contains two further categorizations: demands-abilities fit and needs-supplies fit (Edwards, 1991; French et al., 1974).

Demands-Abilities Fit.

Demands-abilities fit describes the demands of a situation (for example, a job) and the corresponding employee abilities to fulfill those demands. The demands-abilities fit model

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suggests that environmental demands greater than individual abilities lead to strain (McGrath, 1976). Demands-abilities fit has also been used to predict job satisfaction, turnover, commitment, anxiety, and exhaustion (Chan, 1996; Livingstone, Nelson, & Barr, 1997; Ryska, 2002; Xie & Johns, 1995).

Needs-Supplies Fit

Needs-supplies fit describes the needs or desires that employees have and the organizational supplies that potentially meet those desires. A large body of (P-E) fit research considers how needs-supplies fit predicts well-being and work-related behaviors. For example, the comparison of needs and supplies for autonomy predicts job satisfaction, depression and somatic symptoms, and seeking out development opportunities (Edwards & Rothbard, 1999; Simmering, Colquitt, Noe, & Porter, 2003).

Needs-supplies fit has been studied more extensively than demands-abilities fit because needs-supplies fit purportedly mediates the relationship between demands-abilities fit and well-being (Edwards et al., 1998). Mediation is proposed because a misfit between organizational demands and individual abilities is likely to threaten the organizational supplies that the employee needs (French, Caplan, & Harrison, 1982; Harrison, 1978; McGrath, 1976). For example, having greater demands for performance as compared to one's abilities may place rewards such as salary increases or promotional opportunities at risk. With the risk of rewards being insufficient to meet one's needs, an individual may feel more anxious or dissatisfied. Therefore, needs-supplies fit is generally viewed as a more proximal predictor of affective outcomes than demands-abilities fit.

Objective versus Subjective Congruence

A further distinction in the P-E fit model is between objective and subjective amounts of demands, abilities, needs, and supplies (French et al., 1974). Both environment and person

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can be portrayed objectively as we look at the "true" amounts of both elements. However, individuals often perceive the environment or themselves differently from objective reality because of biases or distorted perceptions. Therefore, the environment and the person can also be portrayed subjectively. The accuracy of subjective perceptions is examined by comparing the subjective and objective values of the environment ("contact with reality") or the subjective and objective values of the person ("accuracy of self-assessment"; Harrison, 1978).

The distinction between objective and subjective person and environment also allows us to distinguish between two types of fit: objective fit between the objective person and objective environment, and subjective fit between the subjective person and subjective environment. Generally, subjective fit is viewed as a more proximal cause of well-being related outcomes given that a person must perceive a misfit in order to experience psychological outcomes (Edwards, Caplan, & Harrison, 1998; Harrison, 1978). Therefore, the P-E fit model portrays objective person and objective environment as indirectly relating to well-being through the mediating effects of subjective person and subjective environment.

<div align="center">Critique of Congruence Research</div>

Although the needs-supplies and demands-abilities versions of P-E fit have been substantially supported, one topic they do not sufficiently address is how P-E fit in other periods of one's life affects current outcomes. The vast majority of P-E fit research focuses on contemporaneous fit where person and environment are evaluated in a moment in time (Caplan, 1983). This premise contradicts early person-situation research which describes contemporaneous comparison between person and environment as inseparable from the past and future (Lewin, 1943; Murray, 1938). Lewin (1943) suggested that the person-situation

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model could be viewed only in the context of one's past experiences and one's future expectations. Lewin (1943) states:

> …the psychological field which exists at a given time contains also the views of that individual about his [sic] future and past. The individual sees not only his present situation; he has certain expectations, wishes, fears, and daydreams for his future. His views about his own past and that of the rest of the physical and social world are often incorrect, but nevertheless constitute, in his life space, the 'reality-level' of the past. (p. 303)

Lewin's ideas are echoed by Murray (1938) who writes:

> …by conserving some of the past and anticipating some of the future, a human being can, to a significant degree, make his [sic] behavior accord with events that have happened as well as those that are to come. Man is not a mere creature of the moment, at the beck and call of any stimulus or drive. What he does is related not only to the settled past but also to shadowy preconceptions of what lies ahead . . . time-binding makes for continuity of purpose. (p. 49)

These theoretical statements suggest that any moment in time is *always* in the context of past and future, what I refer to as a "moving window" of fit. We can take a snapshot of fit at a moment in time as existing P-E fit research does, but we can also move the window of fit backwards and forwards to examine other moments in time. However, this moving window of fit has not been explicitly represented in the P-E fit research that has dominated organizational behavior research in the last twenty years.

Existing P-E Fit Research Views on Time

Although time is not formally modeled in P-E fit research, the model does not preclude this extension. At the most general level, the P-E fit model appears simply to be silent on the issue of time. P-E fit theory generally makes no reference to any period except the present (French et al., 1974). The person and environment elements are portrayed in the present moment with no mention of past or future levels of these elements (Harrison, 1978). For example, the environment is described as what the individual currently experiences (whether

the demands of a job or the supplies an organization provides). But this description does not refer to the stability of these experiences over the past, present, and future.

On the other hand, the person is described as the "needs, values, abilities and other attributes which are more or less enduring" (Harrison, 1978, p. 177). Whereas the usage of the term "enduring" implies stability over time, the way in which Harrison describes how the person is operationalized is more ambiguous. For example, values can be considered stable and enduring (Rokeach, 1973), but individuals' psychological needs may change over time. Research on the "hedonic treadmill" suggests that individuals adjust their standards (or needs) upward as situations improve (Brickman & Campbell, 1971; Kahneman, 1999). In addition, P-E fit research under the demands-abilities dimension considers the person as the abilities one has to meet environmental demands (McGrath, 1976). Whereas these abilities could be stable, they may change as one ages and ability declines, or as one receives training and ability increases. Therefore, although Harrison (1978) and French et al. (1974) present the elements of the P-E fit model as present tense and stable, it is possible to interpret their language with a more dynamic view, particularly as the time frame extends.

Despite the present tense definitions of person and environment, a closer look into the logic of the P-E fit theory reveals that temporal effects are also implicitly and loosely introduced in several areas. For example, in his discussion of how subjective misfit affects strain, Harrison (1978) states that motive arousal is the mediating factor by which the mismatch between individual and environment affect strain. In describing this process, Harrison (1978) goes on to suggest that the "*expectation* of inadequate supplies for goals…will result in motive arousal similar to that produced by the *actual* condition of insufficient supplies" (p. 181, italics added). In other words, insufficient environmental supplies *or* the threat of insufficient supplies creates stress. He adds that the expectation of

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greater environmental supplies in the future also drives present behaviors. For example, an employee may accept a job based on what they expect the job will provide (Harrison, 1978). However, neither of these elements is explicitly included in the model Harrison presents, nor have these ideas been tested in subsequent P-E fit research.

Another dynamic element implicit in P-E fit theory is adjustment (French et al., 1974). Adjustment techniques include a) *coping* – efforts to change the objective person or environment, and b) *defense* – efforts to change the subjective person or environment. It is presumed that when misfit between person and environment leads to strain, individuals will either use coping tactics to change the environment or themselves, or they will use defense tactics to change their perception of the environment or themselves. The adjustment element of the theory implies a feedback loop from strain (or from the actual discrepancy evaluation) to person or environment to correct the source of the misfit.

Edwards (1992) explicitly modeled this feedback loop in his cybernetic model of stress, coping, and well-being. He suggests that misfit in the form of a discrepancy between person and environment leads to coping efforts directly or through changes in well-being. Although Edwards (1992) describes the ongoing evaluation of person and environment at a given time and how this evaluation relates to well-being at a given time, the model does not incorporate the simultaneous effects of recollected or anticipated person and environment on current well-being. Edwards'(1992) model also does not account for alternative pathways from elements in one period affecting the current period. For example, misfit from a previous period may predict current well-being in addition to current misfit due to the residual effects of previous misfit or from a comparison of previous misfit to current misfit.

Caplan's (1983) extension of P-E fit theory addresses some of these temporal issues. His article gives one of the few explicit theoretical statements about P-E fit within the context of

time. Caplan states that the dynamic concepts inherent in P-E fit theory are "perhaps the most important and certainly the most neglected part of [P-E fit] theory in terms of research." (p. 43). Using Lewin's (1951) notion that the present is always viewed within the context of the perceived past and perceived future, Caplan extends French et al.'s (1974) P-E fit model to include objective past, present, and future fit as well as subjective past and future fit in the present. Caplan suggests that the addition of past and future fit (both objective and subjective) provides a more comprehensive representation of individuals' flow of experiences.

Caplan's (1983) extended temporal view of P-E fit is an excellent introduction to viewing fit as the dynamic process described by Lewin (1943, 1951) and Murray (1938). Caplan's (1983) model extends P-E fit theory substantially by explicitly suggesting that temporal issues should have precedence in fit research. His model identifies many key issues regarding the nature of temporal fit in the past, present, and future.

However, given the early nature of P-E fit research at the time of his article, Caplan's (1983) model has several shortcomings that more recent research can answer. First, Caplan conceptualizes fit as a summary construct rather than identifying separate effects for person and environment. The latter approach to P-E fit research has recently been demonstrated to be more theoretically and empirically meaningful (Edwards, 1994). Although Caplan does discuss person and environment, it is only used as background to describe overall changes in fit as a whole.

A second issue with Caplan's (1983) model is due to an inherent assumption he makes. By primarily focusing on the summary fit construct rather than its separate components, Caplan's writing implies that fit is "good." This notion is also evident in his reasoning regarding the equifinality of multiple pathways to the same degree of fit. However, the well-

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being an individual experiences in these different paths varies. For example, if an individual wants more money than a job provides, she experiences misfit. As Caplan describes it, to obtain fit, she either decreases her desires for money or she persuades the environment to increase the amount of money paid. However, I surmise that an individual experiences more positive feelings about the latter option than the former option. Whereas decreasing desires or increasing pay brings the individual to the same level of fit as measured by a difference score, these are clearly not the same experiences. Only separate consideration of person and environment offers an accurate prediction of the well-being one might experience via these different paths to fit.

A third issue with Caplan's model is that it does not incorporate important moderators such as one's temporal focus (Shipp et al., 2006). A tendency to focus on different periods in one's life could explain why individuals feel differently about the same sequence of outcomes. For example, an individual who experiences a pay increase from the past to the present generally should feel happier due to the upward trend of pay relative to his desires. However, if this person tends to focus on the past more than the present, he may ruminate over the low amount of pay he received in the past (e.g., "If only I could have made more then, then I could have saved more/invested more/etc."). So although the individual may be better off presently, he may not feel as excited about a pay increase as someone who focuses more on the present or the future.

Finally, Caplan's model has not been extensively tested. Caplan, Tripathi, and Naidu (1985) and Sen (1992) both offer initial findings that retrospected and anticipated fit have direct effects on current well-being, but both papers test fit as a summary measure rather than separating the underlying effects of person and environment. Given that summary fit measures mask underlying effects (Edwards, 1994; Edwards, Cable, Williamson, Lambert, &

Shipp, 2006), additional research on these ideas must consider person and environment independent of the summary fit judgment.

As I have demonstrated, with the exception of Caplan (1983), most theoretical views of P-E fit do not model the effects of past or future person and environment. In addition, empirical tests of P-E fit typically do not specify the effects of other periods of fit. A few empirical articles on fit have investigated longitudinal research, but these authors do not theoretically specify past or future effects on current outcomes in addition to the present. Instead, the focus of these articles has been on predicting outcomes temporally distant from the assessment of P-E fit (e.g., Chatman, Caldwell, & O'Reilly, 1999; Fricko & Beehr, 1992), or on examining the stability or validity of fit perceptions (e.g., Cable & DeRue, 2002; Roberts & Robins, 2004; Taris & Feij, 2001).

In summary, whereas the P-E fit literature is ready for a temporal extension, we have yet to see this manifest in the literature. The lack of focus on temporal P-E fit is troubling as the underlying concepts of the moving window of fit have been present since the inception of P-E fit research (Lewin, 1935, 1943, 1951), and these concepts have been reiterated in the last 20 years (Caplan, 1983). However, current P-E fit research primarily focuses on the contemporaneous comparison of what one experiences versus a standard of what one desires. We need to extend that present moment by considering the context in which it exists: the past and the future.

Taken together, the temporal research and the P-E fit model provide a comprehensive view of how individuals evaluate particular experiences: individuals compare experiences to what they want in the present, and they compare experiences to what they had in the past or expect to have in the future. The P-E model brings the desires versus experiences comparison in the present whereas the temporal literature brings in the comparison of experiences from the

past, present, and future. However, the addition of these two perspectives is more than the

sum of their parts. Thus, I developed a temporal P-E fit model that incorporates objective

and subjective person and environment elements from the past, present, and future.

CHAPTER 4

A TEMPORAL PERSON-ENVIRONMENT FIT MODEL

George and Jones (2000, p. 659) stated that, "…people's existence in the present is intimately connected to their past and future and cannot be separated from them." Therefore, any model that does not consider the role of time neglects a conceptually important aspect of human experiences. However, as I stated earlier, existing P-E fit research primarily focuses on a moment in time. In this moment, environmental supplies or demands are evaluated in comparison to an individual's desires or abilities. Focusing solely on the present moment misses the fact that P-E fit is ongoing and temporal, incorporating past and future fit (Caplan, 1983; Lewin, 1943).

While the P-E fit literature does not incorporate the notion of temporality, it is reflected in other areas of research (Albert, 1977; George & Jones, 2000; Mitchell & James, 2001). For example, other research considers the temporal nature of one's needs and desires (e.g., Brousseau, 1983) and the temporal nature of experiences (e.g., Hsee et al., 1994; Loewenstein, 1988). I look to this research to examine the temporal nature of the person, environment, and well-being components of the fit model separately, and then I integrate these ideas to develop my temporal P-E fit model.

Person over Time

The temporality of individual needs (the person component of the P-E fit model) has been illustrated in several streams of research. For example, Brousseau (1983) suggests that individual needs are inherently time dependent, changing over the course of a job or a career. These changes could occur because of life changes, organizational socialization, or the

fulfillment of past needs. Changing needs over time in response to past need fulfillment is also addressed in research on goals. This research describes how a past goal (a desire for performance) may be increased in the next period once the goal was achieved (e.g., Vancouver, 1997). For example, individuals frequently increase their desired level of pay as their actual pay increases over time. Conversely, needs may be changed in response to needs going unfulfilled, a notion addressed in research on coping. This research describes how individuals who experience strain as a result of unfulfilled needs may change their perceived needs in a subsequent period to lessen the strain (e.g., Edwards, 1992). Although most of the research I have covered acknowledges that needs change over time, there is typically little reference to how quickly needs may change. Interestingly, recent work by Simmering et al. (2003) demonstrated that measures of perceived needs for autonomy separated by only six months were correlated at .53. Thus, perceived needs may change substantially in as little as a few months. Taking all these findings together, I conclude that the person component of the P-E fit model extends beyond the present.

<div align="center">Environment over Time</div>

The environment component of the P-E fit model is also a temporal concept. Life and work circumstances are always changing whether through job changes, organization changes, or through the variability associated with the process of a work experience. For instance, the socialization literature studies the progression of stages by which individuals experience a new work environment (Bauer, Morrison, & Callister, 1998; Katz, 1980). Rather than assuming that the newly hired employees experience things identically to longer tenured employees, this literature attempts to categorize the progression of an employee upon organizational entry. Similarly, temporal cycles underlie many different life experiences such as one's physiological "clock," the life cycle, or the circadian rhythm (Hassard, 1991).

Therefore, several areas of management research view present experiences in the context of a stream of experiences that stretch from past to present to future. In this way, individuals experience present events by relating them to what has been and what will be (Butler, 1995; Elster & Loewenstein, 1992).

The temporality of the environment (past, present, or future experiences) can directly affect current well-being or provide a standard against which the present experience is compared. For example, direct effects are observed when cumulative or lagged effects of negative past events affect well-being (Holahan, Moos, Holahan, & Cronkite, 1999) or when the anticipation of an exciting future vacation influences current happiness (Elster & Loewenstein, 1992; Mitchell et al., 1997). But past and future experiences also serve as the context in which the present experience is evaluated. For example, the way in which a past event is framed affects how positively one feels about a current event (Strack et al., 1985). Sometimes a negative past event makes a present event seem more pleasant by comparison (Fuller, Stanton, Fisher, Spitzmuller, Russell, & Smith, 2003).

Because experiences over time can be viewed as a continuous stream of events, people have preferences for how they would like these sequences of events to unfold. In general, individuals like to see improving experiences over time so that the present is more positive than the past, and the future promises to be more positive than the present (Loewenstein & Prelec, 1993). But other elements about the change between periods are equally as important. For instance, if the same amount of improvement was expected in two sequences of events but one sequence portrayed this improvement occurring faster, individuals will typically prefer the faster rate of improvement (Hsee et al., 1994). Individuals prefer a faster rate because they like to maximize the present value of an experience (Matsumoto, Peecher, & Rich, 2000; Parasuraman, Greenhaus, Linnehan, 2000). Individuals also look at other

details in a sequence of outcomes. For example, individuals are influenced by the starting, peak, and ending levels of an event (Ariely & Zauberman, 2000; Frederickson, 2000). Taking these findings together, I conclude that it is important to consider experiences within the context of time given their temporal nature.

Despite the accumulating research on the temporality of the person and the environment over time, little research considers these elements together, particularly not from a P-E fit perspective. Given that the P-E fit model has found substantial support in its view of how individuals evaluate the environment based on their desires or abilities, the P-E fit model can be extended temporally. That is, we can combine the temporality of the person with the temporality of the environment to extend P-E fit theory.

<center>A Temporal Person-Environment Fit Model</center>

I present a temporal model of P-E fit that incorporates time in two ways. First, I consider the *actual passage of time*. By this, I mean that there is an objective and continuous passage of time from past to present to future. Focusing on the actual passage of time allows the basic components of the P-E fit model (Figure 2a) to be replicated in each time period where the person, the environment, and the outcome of interest are represented in the past, present, and future (Figure 2b). Second, I consider the *subjective passage of time*. Subjective time represents an individual's current recollections of the past and anticipations of the future. Whereas people experience the ongoing stream of actual time, at any given moment they are likely to have recollections about what occurred in the past as well as expectations about what will occur in the future. In this way, the P-E fit model can be extended within a time period to incorporate perceptions of other time periods (Figure 2c). Taking these two extensions of the P-E fit model together, we obtain a temporal model of P-E fit that incorporates both the actual passage of time and the subjective passage of time in past,

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present, and future time periods (Figure 3). The temporal model of P-E fit can be used to test any of the research questions addressed by the temporal categories I reviewed in Chapter 2.

To illustrate my temporal P-E fit model, I choose a single type of P-E fit model. I focus on affective outcomes that I identify broadly as *well-being*, and I focus on a subjective needs-supplies type of P-E fit. Needs-supplies fit is one perspective of P-E fit which compares individual needs and environmental supplies. In addition, I consider subjective P-E fit rather than objective P-E fit as research has proposed that misfit must be subjectively perceived to influence affective outcomes (Edwards et al., 1998; Harrison, 1978). As I will discuss later, the temporal model of P-E fit can be extended to include demands-abilities fit, objective P-E fit, and other related outcomes. I simply use the subjective needs-supplies type of P-E fit as a first step in illustrating the model.

Needs-Supplies Fit in the Actual Passage of Time

Viewing needs-supplies fit over the actual passage of time portrays needs, supplies and outcomes in the past, present, and future. Specifically, individuals have present needs, but these needs are within the context of past needs and future needs. Similarly, environments provide supplies to the individual in the present time period, but these supplies are within the context of past supplies and future supplies. Finally, outcomes such as satisfaction or psychological well-being are the result of needs-supplies fit in the present, but these outcomes are within the context of past outcomes and future outcomes.

Because the actual passage of time presents needs, supplies, and outcomes in the past, present, and future, we can view the relationships among these variables in two ways. First, *within-construct* effects describe how the prior amount of each component leads to a subsequent level. For example, past needs lead to present needs, as when changes in needs are contingent upon the starting values of these needs. Similarly, past supplies lead to

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present supplies, as when current pay is based upon past pay. Finally, present well-being leads to future well-being, as when the cumulative and prolonged effects of past strain result in exhaustion (Selye, 1983).

A second way to view the relationships between past, present, and future needs, supplies, and outcomes is with *between-construct* effects. In this case, prior levels of one or more components affect subsequent levels of a different component. For example, literature on the "hedonic treadmill" suggests that individual needs are partially based on previous supplies (Brickman & Campbell, 1971; Kahneman, 1999). For example, an individual may base their current desires for pay on past pay supplies. As the environment continues to increase pay supplies, individuals typically shift their desires upward. Other literature refers to between-construct effects when describing how the environment socializes (changes) the individual over time (Ashforth & Saks, 1996; Bauer, Morrison, & Callister, 1998; Van Maanen & Schein, 1979), or how the individual proactively changes the environment over time (Ashford & Black, 1996; Crant, 2000).

Another form of between-construct effect occurs when the combined effects of two components in a previous period may lead to changes in a different variable in a subsequent period. For example, the fit between individual needs and environmental supplies in the past may have residual effects on current well-being. Residual effects occur when individuals ruminate over the past and as a result, continue to experience this affect in the present (Holman & Silver, 1998; McIntosh & Martin, 1992; Nolen-Hoeksma, McBride, & Larson, 1997).

Past fit may also condition the effect of current fit on well-being, such that past misfit may make current misfit more or less tolerable (Caplan, 1983). A conditioning effect is obvious when individuals are unhappy with current misfit but take note that the misfit was worse in

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the past. This is an example of a *contrast effect,* where the past is evaluated against the present so that the present looks better by comparison (Markman & McMullen, 2003; Strack et al., 1985; Tversky & Griffin, 1991). Individuals may also experience an *assimilation effect,* where individuals' current well-being worsens by the realization that the past fit was also poor (Markman & McMullen, 2003; Strack et al., 1985; Tversky & Griffin, 1991).

Needs-Supplies Fit in the Subjective Passage of Time

Viewing needs-supplies fit in the subjective passage of time adds another level of complexity to these relationships. The subjective part of the temporal P-E fit model presents needs, supplies, and outcomes in the present time period, but introduces current, retrospected, and anticipated versions of each. That is, within any given moment, individuals have current needs but also recall what they needed in the past and what they expect to need in the future. Similarly, within any given moment, the environment provides current supplies to individuals, but individuals also recall what supplies they received in the past, and anticipate what supplies they will receive in the future.   Finally, individuals experience present well-being, but also recall the well-being they experienced in the past and anticipate well-being they will experience in the future.

The relationships among these retrospected, current, and anticipated components are similar to those components in the actual passage of time where there are within-construct and between-construct effects. Considering within-construct effects in the subjective passage of time, we see effects of retrospected or anticipated constructs on the corresponding current construct.   For example, current needs may be influenced by retrospected needs, a process referred to as anchoring (Tversky & Griffin, 1991). Alternatively, current supplies may be compared to retrospected supplies such that current satisfaction is greater when individuals

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perceive these experiences to be on an upward trajectory (Albert, 1977; Ariely & Carmon, 2000; Loewenstein & Prelec, 1993)

A second way to view the relationships between retrospected, current, and anticipated needs, supplies, and outcomes is with between-construct effects. In this case, retrospected, current or anticipated levels of one or more components affect current levels of a different component. For example, the recollection of pleasant outcomes in the past or the expectation of pleasant outcomes in the future induces current positive affect (Elster & Loewenstein, 1992; Mitchell et al., 1997; Rice et al., 1985). This process is commonly referred to as an assimilation effect where recollected events can generate affect through nostalgia and future expectancies generate affect through savoring (Elster & Loewenstein, 1992). Alternatively, with a contrast effect, recollected or anticipated events may generate current affect by the contrast with current events. For example, the expectation of taking a better job may cause an individual's current job to seem less pleasurable (Loewenstein, 1988). As another example of the contrast effect, individuals who are satisfied with current supplies, needs or the fit between them, may revise their recollections of past supplies, needs, or fit downward to provide a sense of improvement over time (Taylor, 1991; Wilson & Ross, 2001).

Relationships between the Objective and Subjective Passage of Time

These examples demonstrate that there are many different relationships within the actual and subjective dimensions of the temporal model of P-E fit. In addition, when considering the actual and subjective dimensions simultaneously, I expect relationships between the dimensions. For example, the level of the retrospected components in the present is likely dependent upon the actual levels of their counterparts in the past. This "accuracy of recall" may be the temporal counterpart to the concept of "contact with reality"/"accuracy of self-assessment" in the existing P-E fit model (Caplan, 1983; Edwards et al., 1998; Harrison,

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1978). Similarly, the "accuracy of forecasting" can be determined by the strength of the

relationship between the anticipated amounts of each component and the subsequent actual

amounts (Caplan, 1983). Given that individuals consistently forecast future events and well-

being inaccurately (Gilbert et al., 1998), the relationship between these expectancies and

their actual counterparts may be smaller than the relationship between actual experiences and

their recollected counterparts. The latter is based on an actual occurrence whereas the former

is based on more ambiguous information. This idea is considered in research on realistic job

previews and met expectations (e.g., Hom, Griffeth, Palich, & Bracker, 1999; Phillips, 1998;

Wanous, Poland, Premack, & Davis, 1992). Research on realistic job previews discusses

how setting expectations in a previous period (E_{a-1}) directly affect a current outcome (WB_{c0}) ,

whereas research on met expectations discusses how previous expectations are compared to

current experiences (E_{a-1} compared to E_{c0}). However, neither literature encompasses

comparisons between commensurate constructs over time or between supplies and the

standard of needs as I have proposed here.

However, the relationship between the actual and subjective passage of time can be viewed

in a broader fashion. Just as objective elements of the traditional P-E fit model affect

outcomes only when they are perceived (Edwards et al., 1998; Harrison, 1978), so too may

the effects of the actual past be transmitted through the subjective past. Although this is

unlikely to result in full mediation, it is reasonable to expect that these constructs will be

related. However, I note that the effect of subjective anticipated elements on current

outcomes is unrelated to the actual occurrence of these events because the effect of

expectancies on current well-being occurs temporally prior to the actual future event. As

such, the future can only affect current well-being through the expectancies one holds in the

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present moment whereas the past can affect current well-being through the effects of the actual past or through the subjective past (Bluedorn, 2002).

Moderators

   Temporal focus. The nature of the relationships among needs, supplies, and outcomes over time depends upon several moderating influences. One moderator of the relationships among needs, supplies, and well-being over time is *temporal focus*.   Temporal focus refers to individuals' predisposition to focus their attention on the past, present, and future (Shipp et al., 2006). For example, people differ in the how much they "enjoy reliving old love affairs [or] dread going to the dentist," (Elster & Loewenstein, 1992, p. 220). Thus, when considering the past, present, and future, I expect that individuals will place more emphasis on time periods that are personally more salient.

   Temporal distance. A second moderator is the *temporal distance* or lag between any two of the periods whether actual or perceived past, present, and future (Bluedorn, 2002). There are two ways in which temporal distance will affect these relationships. First, the more distant the past or the future, the less likely either past or future will impact current outcomes (Strack et al., 1985). For example, a former job may be a source of comparison to a new job when a job change is recent, but the former job is less relevant as a comparison standard as tenure on the new job increases.

   Second, temporal distance may change the relationship between the temporal periods. For example, individuals are more likely to discount the distant past rather than the recent past because the recent past is more likely to be assimilated into the current evaluation (Wilson & Ross, 2001). Similarly, anticipations are sensitive to how distant into the future the expectation extends (Gilbert et al., 2002b). The more imminent the future event, such as an expected job change, the more intense the appraisal of the current situation (Lazarus &

Folkman, 1984). That is, the proximal expectation will have a greater influence on current well-being because a very distant expectation may not change an individual's view of the present.

Although I have described a general model of temporal fit, I have simply begun with an example of a temporal model of subjective, needs-supplies fit. I believe this model can be adapted to incorporate the objective elements of the general temporal P-E fit model so that a distinction can be made between individuals' subjective perceptions of the actual events and the objective amounts of these actual events in the past, present, and future (Caplan, 1983). In addition, this model can be used to extend other types of P-E fit frameworks, such as the demands-abilities framework. For example, the relationship between current demands and current abilities may be augmented by demands or abilities in the past (whether actual or perceived) or the future. Perhaps individuals are better able to handle excessive demands if they perceive that their abilities have increased from the past or will increase in the future through training. This temporal model of P-E fit may also apply to models of similarity between individuals and their groups, supervisors, or organizations. For example, similarity between an individual and an organization may be even more satisfying if it was preceded by dissimilarity at a previous organization. This premise may offer a nice complement to the attraction-selection-attrition framework which suggests that the fit between individuals and organizations is inherently dynamic (Schneider, 1987; Schneider, Goldstein, & Smith, 1995).

CHAPTER 5

HYPOTHESES

Because of the breadth and complexity of the relationships I have discussed between needs, supplies, and outcomes in the actual and subjective passage of time, my dissertation proposes an initial test of the model that focuses on between-construct relationships of needs-supplies fit within the subjective passage of time. By this I mean the effect of retrospected, current, and anticipated needs and supplies on well-being within the current moment. I will focus on the subjective aspect of the larger model because as I have argued earlier, subjective components of this model are presumed to be more proximal predictors of current well-being (Edwards et al., 1998; Harrison, 1978). If individuals' perceptions of past and future needs and supplies significantly predict current well-being, then we have reason to investigate the actual occurrence of needs and supplies in temporal periods outside of the present. In addition, I will focus on between-construct relationships where needs and supplies affect well-being rather than looking at relationships within each component (e.g., current needs leading to the perception of anticipated needs). I choose this strategy because between-construct relationships are the focus of the P-E fit model and this enables my work to extend existing views on fit.

Generating Hypotheses about P-E Fit

When needs-supplies relationships are studied, we must specify the functional form we expect to find and the content dimension where we expect to find this form. I describe each in turn.

Functional Forms

The functional form of the relationship between needs, supplies, and outcomes describes the shape of a three-dimensional surface where supplies and needs are on the X- and Y-axes and an outcome is on the Z-axis. Hypotheses regarding functional form can be organized along the misfit line and the fit line. First, predictions are made regarding the nature of the relationship on the *misfit line*. For the misfit line, the hypothesis focuses on the relationship between well-being and the relative levels of needs and supplies. This line ranges from supplies less than needs to supplies greater than needs. I consider three functional forms along the misfit line: monotonic, parabolic, and asymptotic (Harrison, 1978). The hypothetical shapes of these forms are shown in Figure 4.

Curve A, the *monotonic* form, suggests that as environmental supplies approach individual needs, the relationship between that dimension and well-being will increase. In addition, supplies that are greater than needs will continue to increase well-being because the excess supplies are available for *carryover* to fulfill needs on other dimensions, or for *conservation* for future fulfillment of the same need (Edwards, 1996). Therefore, with the monotonic form, increasing supplies relative to needs are linearly related to well-being.

Curve B, the *parabolic* form, suggests that as environmental supplies approach individual needs, well-being will increase. However, as supplies exceed needs, well-being will decrease because excess supplies cause *depletion* of future supplies, or cause *interference* of needs-supplies fit on other dimensions (Edwards, 1996). Thus, for the parabolic form, supplies that deviate from needs in either direction decrease well-being.

Finally, curve C, the *asymptotic* form, suggests that, as environmental supplies approach individual needs, well-being will increase, but excess supplies will have little to no effect on well-being. In other words, excess supplies cannot be conserved for future use or carried over to meet other desires, nor do they deplete future supplies or interfere with meeting other

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desires. As such, with the asymptotic form, supplies that exceed needs have no effect on well-being.

In addition to predictions along the misfit line, predictions are also made along the *fit line*. The fit line compares fit at different levels of matched needs and supplies and ranges from low supplies matched with low needs to high supplies matched with high needs. Historically, the fit line was presumed to be flat such that achieving any level of fit would generate the same level of well-being. However, some research questions this assumption (Edwards, 1996; Edwards et al., 1998; Harrison, 1978). Specifically, this research suggests that the experience of wanting and acquiring a high level of a particular dimension is different from wanting and receiving a low level of the same dimension. Varying reactions to different levels of fit could result because high needs and supplies enable need fulfillment on other dimensions, such as the need for self-actualization (Edwards et al., 1998). Thus, the level of well-being generated from high needs and high supplies differs from the level of well-being generated from low needs and low supplies (Edwards & Rothbard, 1999; Imparato, 1972). Therefore, tests of needs-supplies models should specify the slope of the function along the fit line.

Content Dimensions

A second factor we must specify when testing P-E fit hypotheses is the content dimension of interest. There is empirical and conceptual evidence that the functional form of the relationship between P-E fit and well-being depends upon the dimension being tested (Edwards, 1996; Edwards et al., 1998). That is, the dimension selected dictates the nature of the relationship along the fit and misfit lines. In this study, I select four dimensions: autonomy, creativity, pay, and relationships at work. As I will demonstrate, these facets imply a monotonic relationship between well-being, needs, and supplies. The selection of

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dimensions that represent a single functional form is intentional. Because this is the first test of my temporal P-E fit model, it is most appropriate to limit the complexity of the relationships I predict to a single functional form. The monotonic functional form is the simplest form to predict as it specifies a linear relationship between needs, supplies and well-being. A linear form is easier to predict as compared to the more complex, curvilinear forms of the parabolic and asymptotic dimensions. Therefore, in this dissertation, I examine four facets of P-E fit that should follow the monotonic functional form.

<div align="center">Hypotheses</div>

Current Needs and Supplies

Autonomy. Autonomy is the degree to which an individual has discretion in the scheduling and implementation of his or her work (Hackman & Oldham 1976). In general, autonomy is a fundamental work value because it represents control over one's activities (Bolton, 1980; Schwartz, 1994). Previous research has found that individuals who perceive less control than they desire are more likely to experience depression and strain (Burger, 1984; Elsass & Veiga, 1997), but individuals that perceive adequate control relative to their needs are more likely to experience psychological well-being and satisfaction (Fried & Ferris, 1987; Hackman & Oldham 1976; Ryff & Keyes, 1995). Therefore, as supplies of autonomy approach desired levels of autonomy, I expect well-being to increase as this indicates a gain in control relative to one's needs.

However, if individuals receive more autonomy than they want, well-being may continue to increase because excess autonomy can have carryover effects to other dimensions (Edwards & Rothbard, 1999). Excess autonomy indicates that individuals have more control than they need. This excess supply may carryover to meet the supplies for other dimensions such as responsibility or coping ability. When individuals perceive that they have a good

deal of control, they may perceive that they also have experienced responsibility (Fried & Ferris, 1987). In addition, when individuals sense psychological control, they may feel more equipped to cope with problems (Aspinwall & Taylor, 1992). Therefore, I expect that as autonomy supplies increase in excess of autonomy needs, well-being will continue to increase. The combination of the effects of excess and deficiency imply that current supplies will be positively related to current well-being and current needs will be negatively related to well-being.

> *Hypothesis 1: For autonomy, current well-being will increase as current supplies approach current needs and will continue to increase as current supplies exceed current needs.*

Well-being will also be greater when current needs and supplies of autonomy are matched at high levels than when current needs and supplies of autonomy are matched at low levels. That is, the slope along the fit line should be positive because needing and receiving high supplies of autonomy likely indicates to the individual that they hold a prestigious job. If a person desires this level of prestige, they are more likely to be satisfied. In addition, individuals who want and receive a high level of autonomy are likely to feel the satisfaction of having achieved the challenging goal of meeting their high desires for autonomy. This accomplishment is likely to carryover to fulfill needs for achievement. Individuals who want and receive low supplies of autonomy will have a different reaction. Although these individuals receive what they desire, the job these individuals hold may seem less prestigious and not as satisfying given that their low level of autonomy was not difficult to obtain. Previous research has demonstrated that this is indeed the case as well-being increased as individuals achieved higher levels of autonomy fit (Edwards & Cable, 2002; Edwards & Rothbard, 1999).

Hypothesis 2: For autonomy, current well-being will be greater when current needs and supplies are both high than when both are low.

Creativity. The second content dimension I considered is creativity. Creativity is defined as production of novel and useful ideas (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Woodman, Sawyer, & Griffin, 1993). Creativity is a basic work need regarding the challenge of meeting new problems with initiative and inventiveness (Schaffer, 1953). Previous research has shown that a lack of fit between individual's preferences for creativity and the creative climate of the organization was perceived as stressful (Nicholson & West, 1988). Other research has shown that as supplies for creativity (e.g., opportunity to be creative at work) increase towards desires of creativity, satisfaction increases (Livingstone et al., 1997). Because individuals perceive that their needs are being fulfilled by the organization, I expect well-being to increase as supplies for creativity approach needs for creativity.

If individuals receive more opportunity for creativity than they desire, well-being may continue to increase because excess creativity may carryover to other dimensions such as power or autonomy (Livingstone, et al., 1997). When individuals have excess opportunities for creativity, they are given the latitude to decide exactly how creative they want to be in performing their job. This excess supply may carryover as a supply for autonomy, thus fulfilling needs for autonomy. Thus, I expect that as creativity supplies increase in excess of creativity needs, well-being will continue to increase. This line of thinking suggests that current supplies of creativity will be positively related to current well-being and current needs of creativity will be negatively related to current well-being.

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Hypothesis 3: For creativity, current well-being will increase as current supplies approach current needs and will continue to increase as current supplies exceed current needs.

Well-being will also be greater when current needs and supplies of creativity are at high levels than when current needs and supplies of creativity are at low levels. Needing and receiving high levels of creativity implies that an individual has achieved a goal of working in a job with extremely high creative license. Holding job with such creative freedom may fulfill needs for achievement or prestige. Conversely, while receiving low levels of creativity may be satisfying when it matches an individual's low need for creativity, there is no achievement or prestige associated with such a job. Previous research has confirmed that satisfaction does increase along the fit line when comparing creativity needs and supplies (Livingstone, et al., 1997).

Hypothesis 4: For creativity, current well-being will be greater when current needs and supplies are both high than when both are low.

Pay. Pay is the amount of an employee's salaries and wages (Gerhart & Milkovich, 1990; Locke, 1976). I focus on pay in salaries and wages as opposed to indirect pay (e.g., benefits or stock options) because direct pay constitutes on average 72% of total compensation (Gerhart & Milkovich, 1990). Because pay is such a large part of individuals' compensation, it is cited as one of the most important factors in a job (Jurgensen, 1978). The desire for pay represents a fundamental desire to satisfy physical needs (e.g., food, shelter, or clothing) by providing the monetary means to purchase necessary goods (Locke, 1976). Pay is also desirable because it symbolizes achievement and status in our society (Gerhart & Milkovich, 1990; Locke, 1969). When the level of pay received is less than the level of pay desired, individuals tend to feel dissatisfied (Locke, 1976), and this dissatisfaction with pay

frequently leads to absenteeism and turnover (Motowidlo, 1983; Weiner, 1980). Therefore, as supplies of pay approach desired levels of pay, I expect well-being to increase as this indicates a gain in the monetary ability to meet one's needs.

However, if the level of pay received is more than the level of pay desired, well-being may continue to increase through the process of conservation and carryover. Excess pay is valuable because it can be conserved (i.e., saved) for future use. In addition, excess pay may be beneficial because it carries over to meet other needs such as needs for recognition and prestige (Locke, 1969; McClelland, 1961). The combination of excess and deficiency for the pay dimension leads to the conclusion that current supplies will be positively related to current well-being and current needs will be negatively related to current well-being.

> *Hypothesis 5: For pay, current well-being will increase as current supplies approach current needs and will continue to increase as current supplies exceed current needs.*

Well-being will also be higher when current needs and supplies of pay are both at high levels than when they are both at low levels. Wanting and receiving high levels of pay signals to an individual that he or she has achieved the prestige of acquiring a high paying position. This accomplishment carries over to provide supplies that fulfill need for achievement. Contrast this situation with the individual who wants a lower level of pay and receives this amount. While this individual is likely satisfied to receive the desired level of pay, the type of job that pays a low level is unlikely to provide any additional supplies such as prestige or a sense of achievement.

> *Hypothesis 6: For pay, current well-being will be greater when current needs and supplies are both high than when both are low.*

Relationships. Relationships are the interpersonal associations with other individuals at work. Maintaining personal relationships with other individuals is a basic motive for all

individuals (Alderfer, 1972; Baumeister & Leary, 1995). When individuals acquire the relationship supplies they desire, they are more likely to experience satisfaction, self-acceptance, and positive affect, and they are less likely to experience depression (Ryff & Keyes, 1995; Watson, Clark, McIntyre, & Hamaker, 1992). This could be because having relationships with others provides resources not available when an individual is operating alone (Baumeister & Leary, 1995). One relational resource that has been extensively studied is social support and its positive relationship with coping and mental health (Cohen & Wills, 1985; Kahn & Quinn, 1970; Holahan & Moos, 1987). When individuals receive the social support they desire from their relationships, they are better able to cope with situational stressors and receive the assistance and guidance they need (Holahan & Moos, 1987). For this reason, I expect that as relationship supplies at work increase toward relationship needs, well-being will increase.

Having excess relationship supplies is also positive because supplies greater than one wants can be conserved for future use. In this case, having excess supplies for relationships will enable to person to use their social support network in future times of need. In addition, having one resource is often connected to other resources, a concept called a "resource caravan" (Hobfall, 2001). Individuals may find that having higher levels of relationships with certain people (e.g., a supervisor) enables them to receive valuable information or preferential treatment such as more positive performance evaluations (Judge & Ferris, 1993). This carryover effect may fulfill needs for supervision or achievement. Although some have postulated that receiving more relationship supplies than one desires can interfere with other dimensions, such as privacy (Harrison, 1978), relationships are consistently associated with increased well-being (Cohen & Wills, 1985). The detrimental effects of excess relationship supplies as compared to relationship needs has been shown to only occur when the amount of

supplies have greatly exceeded needs (Edwards & Rothbard, 1999). Therefore, I expect that excess supplies will continue to increase well-being. The combination of the effects of excess and deficiency imply that current supplies will be positively related to current well-being and current needs will be negatively related to well-being.

> *Hypothesis 7: For relationships, current well-being will increase as current supplies approach current needs and will continue to increase as current supplies exceed current needs.*

I also expect that well-being will be greater when current needs and supplies of relationships are matched at high levels than when current needs and supplies of relationships are matched at low levels. Needing and receiving high supplies of relationships likely suggests to the individual that they have achieved a basic need for relating to others and will receive the benefits of such relationships (Alderfer, 1972; Cohen & Wills, 1985). Individuals who want and receive low supplies of relationships will have different reactions. Although these individuals have experienced relationship supplies consistent with their relationship needs, these individuals may not experience the benefits of using a social support network. Previous research has demonstrated that relationship as well-being increased as individuals achieved higher levels of relationship fit (Edwards & Cable, 2002; Edwards & Rothbard, 1999).

> *Hypothesis 8: For relationships, current well-being will be greater when current needs and supplies are both high than when both are low.*

For all the dimensions, the misfit line implies a positive effect for supplies and a negative effect for needs. That is, as supplies are greater than needs, well-being will increase. However, the fit line implies a positive effect for supplies and a positive effect for needs. That is, as needs and supplies are higher, well-being will increase. Because these two effects

are simultaneously estimated, the effect of supplies will be positive and large and the effect for needs will be nil. For example, if the equation for the misfit line for well-being was a function of needs and supplies, it would appear as:

$$WB = +S - N \qquad\qquad (1)$$

where WB represents well-being, S represents supplies, and N represents needs and there is a positive coefficient on supplies and a negative coefficient on needs. The equation for the fit line would appear as:

$$WB = +S + N \qquad\qquad (2)$$

Taking the sum of these two equations results in the following equation for well-being:

$$WB = +2S \qquad\qquad (3)$$

As the reader can see, the effect of supplies on well-being will be large and positive and the effect of needs on well-being will be zero. However, I feel that this is unlikely. This canceling effect would require that the magnitude of the coefficients from equations 1 and 2 would be equal in size. Previous empirical studies have demonstrated that the coefficients along the misfit line are typically larger than the coefficients along the fit line (Edwards & Rothbard, 1999). As a result, the slope of the misfit line predicting well-being should be stronger than the slope of the fit line predicting well-being. This difference in magnitude could be because misfit influences well-being directly, whereas different levels of fit influence well-being through the activation of other dimensions (Harrison, 1978). That is, fulfilling the standards of high needs with high supplies may increase well-being because it fulfills other needs such as self-actualization (Edwards et al., 1998). As such, I expect that the magnitude of this indirect effect on well-being will be smaller. Therefore, I expect that the coefficients in the full equation that combine the effects of misfit and fit will demonstrate a larger effect for supplies than for needs, but that both effects will be significant.

Effects of Retrospected and Anticipated Needs and Supplies on Current Well-being

To this point, I have only discussed the effects of current needs and supplies on current well-being. However, there are likely to be influences on well-being from other periods in one's life. Specifically, I propose that retrospected and anticipated needs and supplies also influence current well-being.

There are two ways in which retrospected and anticipated needs and supplies might influence current well-being: through assimilation or through contrast. These two processes predict opposite outcomes for the effects of needs and supplies from other temporal periods on present well-being. Assimilation describes the process where the relative standing at another period in time is positively related to an evaluation, whereas contrast describes the process where this relative standing is negatively related to an evaluation (Markman & McMullen, 2003).

Different research traditions support contrast or assimilation, and some literature suggests that both are plausible. For example, contrast predictions are offered in the research on control theory (Carver & Scheier, 1982), adaptation-level theory (Helson, 1964), and relative deprivation theory (Crosby, 1976). These theories suggest that the perception of improvement from the past is most gratifying and that the expectation of change in the future can make the present appear less satisfying by comparison. Assimilation predictions are offered by other research traditions such as perceived quality of life, in which it is suggested that current well-being will increase to the extent that pleasure is recalled or anticipated (Rice et al., 1985). Similarly, the possible selves literature describes how expected selves motivate present actions because these future expectancies generate current affect (Markus & Nurius, 1986).

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Recent research on the processes of contrast and assimilation suggests that both processes are possible, but that different conditions enact one process over the other. For example, Wilson and Ross (2000) suggest that individuals' objective for an appraisal (accuracy or enhancement) will dictate whether they use contrast or assimilation processes. Strack et al. (1985) suggest that the way in which an event is presently described (detailed or vague) will also determine whether individuals assimilate or contrast the event. However, in much of the research that compares contrast and assimilation, researchers typically manipulate individuals' evaluations by priming them to consider or directly compare two objects in order to observe which process is primary. This strong situation exerts control over the way in which individuals interpret different periods of their lives. A recent review of this literature by Markman & McMullen (2003) suggests that researchers should instead set up competing hypotheses for contrast and assimilation to observe what individuals naturally do.

Because contrast and assimilation processes have been neglected in the context of P-E fit, I develop hypotheses for both processes to examine which one more accurately represents the role of retrospected and anticipated needs and supplies. I use the research that supports contrast processes and the research that supports assimilation processes to generate competing predictions. However, later in the paper, I offer additional theoretical predictions for when an individual would contrast or assimilate by specifying moderators of these relationships.

In addition, it should be noted that each of the following competing contrast and assimilation hypotheses for retrospected and anticipated fit are proposed after first controlling for the effects of current needs and supplies. Current needs and supplies should have a stronger effect on current well-being than other more distal predictors such as retrospected or anticipated needs and supplies. Thus, the value of retrospected and

anticipated needs and supplies should be considered after first eliminating the variance explained by the current predictors. In addition, in the case of contrast, controlling for current is necessary because a contrast effect requires comparison between an object and its standard(s). Much the same way as supplies are compared to the standard of needs for current fit, retrospected or anticipated needs and supplies can be compared to current needs and supplies, a comparison that requires all the requisite variables in the model at once. Although an assimilation effect does not involve comparison, but instead a vicarious effect, controlling for the effects of current needs and supplies presents a strong test of my hypotheses by isolating the effect of retrospected or anticipated needs and supplies after taking account of the more proximal effect of current needs and supplies.

Retrospected Needs and Supplies

Retrospected needs and supplies are the needs and supplies than an individual recalls from the past. These recollections are experienced in the present moment. When considering retrospected needs and supplies, individuals may assimilate the relative standing of their recollected needs and supplies into their current evaluations of well-being. Assimilation occurs when evaluations are positively related to one's relative standing in another period (Markman & McMullen, 2003; Tversky & Griffin, 1991). When the relative standing one considers is the memory of the past, the recollection of pleasant experiences in the past induces current pleasant affect because people vicariously experience past events (Elster & Loewenstein, 1992; Mitchell et al., 1997; Rice et al., 1985). For example, the memory of a pleasant vacation can have lasting effects on one's current happiness (Mitchell et al., 1997). Similarly, older individuals enjoy reliving memories of the past because the nostalgia of youth is presently satisfying (Bortner & Hultsch, 1972).

Because vicariously experiencing a positive past increases current well-being, the sign of the relationship between the retrospected past and current well-being is the same as the relationship between the present and current well-being. In this way, similar to the present, the better the past, the greater well-being will be in the current moment. When I described the simultaneous effects of current needs and supplies, I predicted that current supplies would be positively related to well-being and current needs would be negatively related to well-being. Similarly, when individuals assimilate their recollection of past needs and supplies, I expect that retrospected supplies will be positively related to current well-being and retrospected needs will be negatively related to well-being. Again, the recollection of higher supplies in the past demonstrates to the individual that they have received valuable outcomes in the past, whereas the recollection of higher past needs signifies a higher standard against which past supplies are compared.

Taking these predictions simultaneously, we can make predictions about retrospected amounts of autonomy, creativity, pay, and relationships. I hypothesized that as supplies for these dimensions approach needs, well-being would increase. Similarly, when individuals vicariously experience the past, current well-being should be greater as recollected supplies approached recollected needs because the individual can recall supplies that attempted to meet their recollected needs. The more retrospected supplies approached retrospected needs, the less likely it is that the individual experienced past needs that went unfulfilled by past supplies.

When individuals recollect excess supplies of autonomy, creativity, pay, or relationships, that is, supplies that exceeded their needs in the past, current well-being should continue to increase. This increase in well-being should occur because the excess supplies should be

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available for use in the present due to conservation, or these excess supplies should have facilitated the need fulfillment of other dimensions in the retrospected past.

Hypothesis 9a: For autonomy, controlling for current needs and supplies, current well-being will increase as retrospected supplies approach retrospected needs and will continue to increase as retrospected supplies exceed retrospected needs.

Hypothesis 9b: For creativity, controlling for current needs and supplies, current well-being will increase as retrospected supplies approach retrospected needs and will continue to increase as retrospected supplies exceed retrospected needs.

Hypothesis 9c: For pay, controlling for current needs and supplies, current well-being will increase as retrospected supplies approach retrospected needs and will continue to increase as retrospected supplies exceed retrospected needs.

Hypothesis 9d: For relationships, controlling for current needs and supplies, current well-being will increase as retrospected supplies approach retrospected needs and will continue to increase as retrospected supplies exceed retrospected needs.

A second way that the retrospected past can influence current well-being is through contrast. A contrast effect occurs when judgments are negatively related to one's relative standing at another point in time (Markman & McMullen, 2003; Tversky & Griffin, 1991). When the relative standing is one's recollection of the past, the recollection of pleasant experiences in the past induces current negative affect. In this case, individuals are more satisfied when recollections of the past are worse than the present because it demonstrates improvement over time (Hsee et al., 1994). For example, when an individual has greater autonomy in her current job than the amount of autonomy she recollects from a past job, she is more likely to be satisfied because she feels the situation has improved. To generate the perception of improvement, individuals will select sequences of outcomes over time simply

to maximize present well-being (Loewenstein & Prelec, 1993; Matsumoto, Peecher, & Rich, 2000). In addition, individuals will also revise their retrospections of the past downward so that current experiences appear more satisfying for the same purpose (Taylor, 1991; Wilson & Ross, 2001).

Because contrast implies that experiencing a positive past decreases current well-being, the sign of the relationship between the retrospected past and current well-being is the opposite of the relationship between the present and current well-being. Counter to the effects of the present, the worse the past, the greater well-being will be in the current moment. I predicted that current supplies would be positively related to well-being and current needs would be negatively related to well-being. Therefore, the opposite effect for contrast suggests that retrospected supplies will be negatively related to current well-being and retrospected needs would be positively related to well-being. This is because the greater the supplies and the lower the needs in the past, the higher the standard that present needs and supplies must cross to demonstrate improvement.

Taking these predictions simultaneously, we can make predictions about retrospected amounts of autonomy, creativity, pay, and relationships. When individuals remember the past, current well-being should be greater as recollected supplies of these dimensions diverged from recollected needs because the individual recalls that supplies that did not meet their recollected needs. Although this experience may have generated negative well-being in the past, it will currently generate positive well-being because it is a lower standard for present needs and supplies to pass. This potential for improvement implies that the discrepancy between needs and supplies was reduced when progressing from the past to the present, an experience which will influence current well-being (Carver & Scheier, 1982, 1990).

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When individuals recollect excess supplies, that is, supplies that exceeded their needs in the past, current well-being should continue to decrease. Although these retrospected excess supplies may be available for use in the present due to conservation, the comparison of this retrospected windfall in the past may not be matched by excess supplies in the present. Thus, individuals may perceive that the present is not as satisfying as the excess they experienced in the past. As the recollections of the past increase, it continues to generate a higher standard for current needs and supplies.

> *Hypothesis 10a: For autonomy, controlling for current needs and supplies, current well-being will decrease as retrospected supplies approach retrospected needs and will continue to decrease as retrospected supplies exceed retrospected needs.*
>
> *Hypothesis 10b: For creativity, controlling for current needs and supplies, current well-being will decrease as retrospected supplies approach retrospected needs and will continue to decrease as retrospected supplies exceed retrospected needs.*
>
> *Hypothesis 10c: For pay, controlling for current needs and supplies, current well-being will decrease as retrospected supplies approach retrospected needs and will continue to decrease as retrospected supplies exceed retrospected needs.*
>
> *Hypothesis 10d: For relationships, controlling for current needs and supplies, current well-being will decrease as retrospected supplies approach retrospected needs and will continue to decrease as retrospected supplies exceed retrospected needs.*

Determining the slope along the fit line for retrospected needs-supplies fit depends upon whether an individual assimilates or contrasts retrospected needs and supplies. If an individual assimilates retrospected needs and supplies, their relationship with well-being should be in the same direction as the relationship between current needs and supplies and

well-being. Earlier, I predicted that current needs and supplies would produce a positive slope along the fit line, indicating greater satisfaction as an individual achieves higher levels of fit. If retrospected needs and supplies are assimilated, then I expect the same positive slope along the fit line for retrospected needs-supplies fit.

> *Hypothesis 11: When individuals assimilate retrospected needs-supplies fit, current well-being will be greater when retrospected needs and supplies are both high than when both are low.*

However, if an individual contrasts retrospected needs and supplies, their relationship with well-being will be in the opposite direction as the relationship between current needs and supplies and well-being. Thus, if retrospected needs and supplies are contrasted, then the slope along the fit line for retrospected needs-supplies fit would be negative. A negative slope along the fit line means that higher levels of retrospected fit would be presently less satisfying because it represents a higher standard for current fit.

> *Hypothesis 12: When individuals contrast retrospected needs-supplies fit, current well-being will be lower when retrospected needs and supplies are both high than when both are low.*

I have described the competing hypotheses regarding contrast and assimilation of retrospected needs and supplies on current well-being. However, these predictions are also relevant when considering anticipated needs and supplies. Next, I predict the competing hypotheses regarding the influence of anticipated needs and supplies on current well-being.

Anticipated Needs and Supplies

Anticipated needs and supplies are the needs and supplies than an individual expects in the future. Similar to retrospected needs and supplies, anticipated needs and supplies are experienced in the present moment and can influence the present through assimilation or

contrast. First, individuals may assimilate anticipated needs and supplies into their current evaluations of well-being. As stated earlier, assimilation occurs when evaluations are positively related to relative standing at another point in time (Markman & McMullen, 2003; Tversky & Griffin, 1991). When the relative standing involves anticipations of the future, the anticipation of pleasant experiences in the future induces current pleasant affect because people savor upcoming events (Elster & Loewenstein, 1992; Mitchell et al., 1997; Rice et al., 1985). For example, the expectation of a planned vacation can cause an individual to be presently happy even though the experience has yet to occur (Elster & Loewenstein, 1992; Mitchell et al., 1997).

Because vicariously experiencing a positive future increases current well-being, the sign of the relationship between the anticipated future and current well-being is the same as the relationship between the present and current well-being. In this way, the better the future, the greater present well-being will be. When individuals assimilate their expectation of needs and supplies, I expect that anticipated supplies will be positively related to current well-being and anticipated needs would be negatively related to well-being. Again, the forecast of higher supplies in the future demonstrates to the individual that they can expect to receive valuable outcomes, whereas the forecast of higher future needs signifies a higher standard against which future supplies will be compared.

Using this same logic, we can make predictions about anticipated amounts of autonomy, creativity, pay, and relationships. I hypothesized that as current supplies for these dimensions approach needs, well-being would increase. Similarly, when individuals vicariously experience the future, current well-being should be greater as anticipated supplies of these dimensions approach anticipated needs because the individual expects that future

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supplies will approach their future needs. The more that future supplies approach future needs, the less likely an individual is to experience future needs that are unmet by supplies.

When individuals anticipate excess supplies, that is, supplies that will exceed their future needs, current well-being should continue to increase. This is because the excess supplies should be available for future conservation as they are in the present, or these excess future supplies should enable need fulfillment of other dimensions in the anticipated future.

Hypothesis 13a: For autonomy, controlling for current needs and supplies, current well-being will increase as anticipated supplies approach anticipated needs and will continue to increase as anticipated supplies exceed anticipated needs.

Hypothesis 13b: For creativity, controlling for current needs and supplies, current well-being will increase as anticipated supplies approach anticipated needs and will continue to increase as anticipated supplies exceed anticipated needs.

Hypothesis 13c: For pay, controlling for current needs and supplies, current well-being will increase as anticipated supplies approach anticipated needs and will continue to increase as anticipated supplies exceed anticipated needs.

Hypothesis 13d: For relationships, controlling for current needs and supplies, current well-being will increase as anticipated supplies approach anticipated needs and will continue to increase as anticipated supplies exceed anticipated needs.

A second way that the anticipated future can influence current well-being is through contrast. As I described earlier, a contrast effect occurs when judgments are negatively associated with the relative standing at a different point in time (Markman & McMullen, 2003; Tversky & Griffin, 1991). When the relative standing is one's anticipation of the future, the expectation of pleasant experiences in the future induces current negative affect because people contrast this to their present experiences. In this instance, individuals will be

presently less satisfied when they expect the future to bring improvement. Although this seems counterintuitive at first glance, a simple example demonstrates its plausibility. For example, the expectation of taking a new job that provides greater supplies relative to one's needs is generally a positive experience. However, when the individual must remain in the current job while they give their formal notice, they may become presently dissatisfied and impatient to take the better job. Thus, the expectation of future progress contrasts with the current worse-off state to make the present look worse by comparison (Loewenstein, 1988). This finding is corroborated in the relative deprivation literature which demonstrates that well-being can worsen when circumstances are expected to improve (Crosby, 1976) or de Toqueville's notion that revolutions occur just when conditions are on the verge of improving (as cited in Loewenstein, 1988).

Because contrast implies that anticipating a positive future decreases current well-being, the sign of the relationship between the anticipated future and current well-being is the opposite of the relationship between the present and current well-being. Contrary to the effects of the present, the worse the future, the greater well-being will be in the current moment. I predicted that current supplies would be positively related to well-being and current needs would be negatively related to well-being. Therefore, the reverse effect for contrast suggests that anticipated supplies will be negatively related to current well-being and anticipated needs will be positively related to well-being. The greater the supplies and the lower the needs in the future, the more dismal that present needs and supplies appear.

Taking these predictions simultaneously, we can make predictions about anticipated amounts of autonomy, creativity, pay, and relationships. When individuals forecast into the future, current well-being should be greater as anticipated supplies of these dimensions decline from anticipated needs because the individual expects that future supplies will not

meet their anticipated needs. Although this experience may generate negative future well-being, it will currently generate positive well-being because it is a lower standard for present needs and supplies to exceed.

When individuals anticipate excess supplies, that is, supplies that will exceed their future needs, current well-being should continue to decrease. Although anticipated excess supplies may be available for future conservation or carryover, these excess supplies are not available in the present. The comparison of the anticipated excess to the present may cause the present to be viewed more negatively. As the expectations of the future increase, they continue to generate a higher standard for current needs and supplies.

> *Hypothesis 14a: For autonomy, controlling for current needs and supplies, current well-being will decrease as anticipated supplies approach anticipated needs and will continue to decrease as anticipated supplies exceed anticipated needs.*
>
> *Hypothesis 14b: For creativity, controlling for current needs and supplies, current well-being will decrease as anticipated supplies approach anticipated needs and will continue to decrease as anticipated supplies exceed anticipated needs.*
>
> *Hypothesis 14c: For pay, controlling for current needs and supplies, current well-being will decrease as anticipated supplies approach anticipated needs and will continue to decrease as anticipated supplies exceed anticipated needs.*
>
> *Hypothesis 14d: For relationships, controlling for current needs and supplies, current well-being will decrease as anticipated supplies approach anticipated needs and will continue to decrease as anticipated supplies exceed anticipated needs.*

Determining the slope along the fit line for anticipated needs-supplies fit depends upon assimilation or contrast of retrospected needs and supplies. If an individual assimilates anticipated needs and supplies, their relationship with well-being should be in the same

direction as the relationship between current needs and supplies and well-being. Therefore, if anticipated needs and supplies are assimilated, then I expect the same positive slope along the fit line as for current needs-supplies fit.

> *Hypothesis 15: When individuals assimilate anticipated needs-supplies fit, current well-being will be greater when anticipated needs and supplies are both high than when both are low.*

However, if an individual contrasts anticipated needs and supplies, their relationship with well-being will be in the opposite direction as the relationship between current needs and supplies and well-being. Thus, under the condition of contrast, the slope along the fit line for anticipated needs-supplies fit would be negative. A negative slope along the fit line means that higher levels of anticipated fit would be presently less satisfying because it represents a higher standard for current fit.

> *Hypothesis 16: When individuals contrast anticipated needs-supplies fit, current well-being will be lower when retrospected needs and supplies are both high than when both are low.*

I have suggested several different sets of competing hypotheses regarding the effects of retrospected, current, and anticipated needs and supplies. Several moderators of these relationships may help predict when these relationships will vary in strength, or when contrast or assimilation would occur. In the section that follows, I develop hypotheses about the conditioning effects of individual and situational differences.

Moderators

Temporal focus. The strength of each of these relationships I have predicted is likely to depend upon one's temporal focus. Temporal focus refers to an individual's predisposition to focus on different periods of one's life (Shipp et al., 2006). Individuals vary in how much

attention they give to the past, present or future. Some individuals focus on the past through nostalgia or regret, whereas other individuals focus on the future through hope or worry. The focus on each time period is largely independent of the others, meaning that a person can have a high focus on one time period without implying the level of focus on the other time periods (Shipp et al., 2006).

I hypothesize that individuals who pay more attention to the present will have stronger relationships between present P-E fit and current well-being because present needs and supplies are more salient to present-focused individuals. For these individuals, their focus will be on the present moment and any current experiences will be strongly related to current well-being. Therefore,

> *Hypothesis 17: Current needs and supplies will have a stronger relationship with*
> *well-being when present temporal focus is higher.*

Similarly, past-focused individuals are likely to focus their attention more strongly on retrospected needs and supplies because recollected experiences are more salient and more likely to be used for present evaluations (Holman & Silver, 1988; Zimbardo & Boyd, 1999). That is, past-focused individuals are likely to give attention to the retrospected past and experience its lasting effects on current well-being (Holman & Silver, 1998). Because past-focused individuals focus more heavily on past information than individuals low on this dimension and because past information is more cognitively available, I expect past-focused individuals to rely more strongly on past needs and supplies in evaluating well-being. Therefore,

> *Hypothesis 18: Controlling for current needs and supplies, retrospected needs and*
> *supplies will have a stronger relationship with well-being when past temporal focus is*
> *higher.*

A strong past focus causes an individual to think more frequently about past events, and as a result, these past experiences become more available in one's mind. Events that are more available are often relied upon more heavily in evaluation (Tversky & Kahneman, 1982). In addition, because recollections are more cognitively available, more detail is available about these past experiences and they can be as vivid and realistic as a present day event. This vividness causes individuals to vicariously experience (i.e. assimilate) past experience, hence, the recollected experience continues to influence current well-being (Strack et al., 1985). An assimilation effect for past temporal focus was confirmed with research that demonstrated how individuals who focus more on past positive events report greater life satisfaction and individuals who focus more on past negative events report lower life satisfaction (Zimbardo & Boyd, 1999). Therefore, I expect that individuals with a higher past temporal focus will be more likely to assimilate than contrast retrospected needs and supplies into their evaluation of current well-being, because the relative standing of retrospected needs and supplies will be a source of prolonged affective reactions.

> *Hypothesis 19: Controlling for current needs and supplies, individuals with a higher*
> *past temporal focus will be more likely to assimilate than to contrast retrospected*
> *needs and supplies.*

Finally, future-focused individuals are those persons for whom the future is more salient. Individuals high on this dimension of temporal focus spend time thinking about their expectations, hopes, fears, and plans for the future (Bird, 1988; Das, 1987; Zimbardo & Boyd, 1999). Because future-focused individuals are likely to enjoy thinking about the future, they will tend to emphasize this information in evaluating their current well-being (Nuttin, 1985). For example, if an individual anticipates a positive future event such as an upcoming vacation, the relationship between that event and current well-being will be even

stronger when the individual is future-focused because he or she is predisposed to focus on future events, and therefore places more emphasis on them. Thus:

> *Hypothesis 20: Controlling for current needs and supplies, anticipated needs and*
> *supplies will have a stronger relationship with well-being when future temporal focus*
> *is higher.*

Individuals with a high future temporal focus reflect upon the future more often than individuals with a low future temporal focus, making anticipations more readily available. Because these individuals think heavily about their anticipations of the future, these expectations will seem as detailed and realistic as their current experiences (Strack et al., 1985; Tversky & Kahneman, 1982). Given this, future expectations will be perceived as currently relevant and will be incorporated into an evaluation of current well-being, producing an assimilation effect (Markman & McMullen, 2003). Therefore, I expect that individuals with a higher future temporal focus will be more likely to assimilate than contrast anticipated needs and supplies, because the expectation of anticipated needs and supplies will be a source of current affective reactions.

> *Hypothesis 21: Controlling for current needs and supplies, individuals with a higher*
> *future temporal focus will be more likely to assimilate than to contrast anticipated*
> *needs and supplies.*

Temporal distance. Temporal focus is an individual difference in cognition about the passage of time. However, there is also a situational cue that is likely to influence the attention given to needs and supplies from other temporal periods. Specifically, the temporal distance of an event from the present is likely to change the amount of attention devoted to another period (Bluedorn, 2002; Caplan et al., 1985; Nussbaum, Trope, & Liberman, 2003; Wilson & Ross, 2001).

When the past is more distant from the present, it can be perceived as less salient to one's current well-being (Strack et al., 1985). As such, the temporal distance of the past may cause individuals to rely less on the retrospected past as a temporal comparison standard for the present. Therefore, I expect that when the retrospected past is closer in temporal proximity to the present, retrospected needs and supplies will be more likely to influence current well-being. Therefore,

> *Hypothesis 22: Controlling for current needs and supplies, retrospected needs and supplies will have a stronger relationship with well-being when temporal distance to the past is shorter than when temporal distance is longer.*

In addition, individuals are more likely to contrast when the temporal distance to the past is greater (Wilson & Ross, 2001), because recent experiences are more likely to reflect on one's current self-concept. Therefore, individuals are more likely to discount (contrast) the recollected past the more distant it is because they can detach themselves from their retrospections.

> *Hypothesis 23: Controlling for current needs and supplies, the greater the temporal distance to retrospected needs and supplies, the more likely an individual will be to contrast rather than assimilate.*

The temporal distance between the anticipated future and the present is also a meaningful gauge for how likely individuals will be to rely on their expectations. When the time to the future expectation is shorter, the event is considered more imminent. In general, the more imminent an event, the more intense one's appraisal will be (Lazarus & Folkman, 1984). This is because an expectation in the near future is likely to be more definite than an expectation in the distant future (Loewenstein & Schkade, 1999; Robinson & Ryff, 1999).

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Thus, when temporal distance to anticipated needs and supplies is shorter, individuals will be more likely to rely on these components to generate well-being.

> *Hypothesis 24: Controlling for current needs and supplies, anticipated needs and supplies will have a stronger relationship with well-being when temporal distance to the anticipated future is shorter than when temporal distance is longer.*

For the temporal distance of retrospected needs and supplies, I predicted that contrast would be more likely as the temporal distance increased. However, less research has considered the effect of future temporal distance on the likelihood of contrast or assimilation. Some research suggests that future expectations are typically skewed upward so that an individual can expect improvement. This line of reasoning suggests that individuals can be "self-deceptive" in order to maximize current happiness (Robinson & Ryff, 1999). That is, they use the ambiguity associated with the future to construct optimistic forecasts that enhance their current self-evaluation (Taylor, Neter, & Wayment, 1995). However, the greater the distance into the future, the less detail that individuals have about future expectancies. As with temporal focus, when events are less detailed, they are more likely to induce contrast effects because the event is temporally distant and unknown. Therefore, I expect that anticipated needs and supplies will be more likely to be contrasted when temporal distance is greater.

> *Hypothesis 25: Controlling for current needs and supplies, the greater the temporal distance to anticipated needs and supplies, the more likely an individual will be to contrast rather than assimilate.*

Importance. Importance is the degree to which a particular dimension is considered central to one's job (Edwards, 1992; Locke, 1969; Rice et al., 1985). Several studies of needs-supplies fit have suggested that the level of importance an individual feels about a

particular dimension may change the relationship observed (Edwards, 1996; Edwards & Rothbard, 1999). For example, as autonomy is more highly valued by individuals, the amount of dissatisfaction they feel regarding deficient supplies relative to needs may increase. This change in satisfaction results because misfit on a particular dimension has greater consequences for those individuals who attribute greater importance to that dimension (Edwards, 1992; Locke, 1976; Rice et al., 1985). Therefore, I expect that the relationship of needs and supplies and well-being will depend upon the level of facet importance. I expect that this should hold for autonomy, creativity, pay, and relationships, regardless of whether the needs and supplies are current, retrospected, or anticipated.

Hypothesis 26: As importance increases, the relationship of needs and supplies in predicting well-being will become stronger.

CHAPTER 6

METHOD

Sample

Participants were recruited from the Executive MBA (EMBA) program at the University of North Carolina. EMBA students are employed full-time and complete their studies in one of three programs: evening, weekend, or a global program that meets monthly. This particular population is appropriate for this study as Executive MBA students have substantial work experience (retrospected jobs), are currently employed (current jobs), and many anticipate changing jobs upon completion of the MBA (anticipated jobs).

A total of 476 EMBA students from three classes (2005, 2006, and 2007) were contacted between July 2005 and February 2006 to participate in the study. Of these students, 188 individuals completed and returned surveys, yielding a 40% response rate. One survey was eliminated due to substantial missing data. Therefore, the effective sample size is 187.

Participants were 34 years old on average (range 25 to 52 years old) and were 15% were female. The majority (70%) were Caucasian, with the remainder being Asian (14%), African American (8%), Hispanic (6%), or other racial categories (2%). Respondents had 12 years of work experience on average (range 4 to 31 years), and tenure at their current jobs averaged 2.6 years.

Procedure

EMBA students received an introductory email from the director of the EMBA program announcing the "Career Transitions Study." The email stated that students could expect to receive a survey assessing individuals' work experiences over time and asked for their

participation. The survey was distributed by campus mailbox to the 2006 and 2007 Evening and Weekend MBA students, by postal mail to OneMBA students outside of North Carolina, and by postal mail to 2005 Evening and Weekend classes who had just completed their coursework when the study began. To increase the response rate, reminder emails were sent one week and two weeks after receiving the survey, and class announcements were made to the 2006 and 2007 classes by me and the EMBA staff.

Participants who completed the survey first reported general demographic and personal information (e.g., age, race, personality questions), and what criteria they find important about a job. Next, they described their past, present, and future work experiences and their past, present, and future aspirations. Participants were directed to consider their last job, their current job, and the next job they anticipate holding. The order of these three sections of the survey was counterbalanced to eliminate order effects. To ensure that individuals were focusing only on the time frame associated with a set of questions, I asked respondents to describe each position in detail by reporting the job title, job level, tenure, and a brief job description. The last section of the survey assessed the well-being outcomes. Participants were given a self-addressed envelope to return the anonymous survey directly to me.

<div align="center">Measures</div>

Needs and Supplies

For all needs and supplies items, the characteristic described by each item was the same throughout the three time frames, but the question stem varied according to the time frame. For the current job, respondents reported how much of each characteristic exists and how much they feel is adequate. I used the term "adequate" rather than "ideal" to avoid ceiling effects in respondents' desires (Locke, 1969). For the retrospected job, respondents reported how much of each characteristic existed at the last job and how much they felt was adequate

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at that time. For the anticipated job, respondents reported how much of each characteristic will exist at the next job and how much they feel will be adequate at that time. All response scales ranged from 1 to 7 (1 = None at all, 4 = A moderate amount, 7 = A tremendous amount)

Autonomy. To measure needs and supplies of autonomy, I used the autonomy items from Cable and Edwards (2004). Three items describe this characteristic: "Choosing the way my work is done," "Deciding how I do my work," and "Making my own decisions."   Thus, there are three items each to measure current needs, current supplies, retrospected needs, retrospected supplies, anticipated needs, and anticipated supplies. This generated 18 items to assess retrospected, current, and anticipated autonomy needs and supplies.

Creativity. To measure needs and supplies of creativity, I used the creativity items from Livingstone et al. (1997). Three items describe this characteristic: "Trying out new ideas and suggestions," "Creating something new," and "Contributing new ideas."   Similar to autonomy, a total of 18 items was used to assess retrospected, current, and anticipated creativity needs and supplies.

Pay. To measure needs and supplies of pay, I used the pay items from Cable and Edwards (2004). Three items describe this characteristic: "Salary level," "The amount of pay," and "Total money earned." A total of 18 items was used to assess retrospected, current, and anticipated pay needs and supplies.

Relationships. To measure needs and supplies of relationships, I used the relationship items from Cable and Edwards (2004). Three items describe this characteristic: "Being friendly with coworkers," "Getting to know your fellow workers quite well," and "Developing close ties with coworkers." A total of 18 items was used to assess retrospected, current, and anticipated relationship needs and supplies.

Importance of Needs and Supplies

I also measured the importance of autonomy, creativity, pay, and relationships. I used the same items to describe each characteristic, but changed the question stem to reflect how important each of the characteristics were to the respondent (1 = Not at all important; 3 = Somewhat important; 5 = Quite important; 7 = Extremely important). There were three questions per characteristic, generating a total of 12 items to assess importance.

Well-being

I assessed multiple dimensions of well-being that were both general and specific to the content dimension. Content-specific *facet satisfaction* was measured with three items per characteristic using the question stems for each facet characteristic listed above. Respondents reported how satisfied they were with each question stem (-3 = Completely dissatisfied; +3 = Completely satisfied), for a total of 12 items.

General *overall job satisfaction* was measured with three items from Edwards and Rothbard (1999). Respondents reported how much they agreed or disagreed (-3 = Strongly disagree; +3 = Strongly agree) with the following statements: "In general, I am satisfied with this job," "All in all, this job is great," and "This job is very enjoyable to me."

Turnover intent was measured with three items from Lauver and Kristof-Brown (2001). Respondents reported how much they agreed or disagreed (-3 = Strongly disagree; +3 = Strongly agree) with the following statements: "I would prefer another job to the one I have now," "If I have my way, I won't be working for this company a year from now," and "I have seriously thought about leaving this company."

Commitment was measured with Meyer, Allen, and Smith's (1993) three factor model of commitment. *Affective commitment* was measured with six items including, "I really feel as if this organization's problems are my own." *Normative commitment* was measured with six

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items including, "This organization deserves my loyalty." *Continuance commitment* was measured with six items including, "I feel that I have too few options to consider leaving this organization." Respondents reported how much they agreed or disagreed (-3 = Strongly disagree; +3 = Strongly agree) with each of the commitment items.

Temporal Focus

   To measure the degree to which an individual focuses on past, present, and/or future, I used the 12-item Temporal Focus Scale (Shipp et al., 2006). Respondents reported how frequently they thought about the past, present, and future (1 = Never; 3 = Sometimes; 5 = Frequently; 7 = Constantly). Sample items include, "I think about things from my past," "I focus on what is currently happening in my life," and "I imagine what tomorrow will bring for me."

Temporal Distance

   Temporal distance was assessed by asking respondents to report how much time (years and months) has passed since holding the previous job, and how much time (years and months) will pass before taking the next job.

Confidence in Retrospections and Anticipations

   Because respondents reported on recollected and forecasted events, there is a possibility that lack of confidence about the recollections or anticipations could influence how strongly they relied on these events. To assess the confidence with which respondents reported needs and supplies from other time periods, I asked them to report how confident they were about their answers. One item each was used to measure confidence in retrospections and anticipations based on a single item measure of confidence used by Robinson, Johnson, and Herndon (1997). The response scale ranged from 1 to 7 (1 = Not at all confident; 7 = Completely confident).

Demographics

    Respondents completed voluntary information regarding age, gender, race, year in the

EMBA program, work experience (years and months), and annual salary.

CHAPTER 7

RESULTS

Descriptive Statistics

Table 2 presents the means, standard deviations, reliabilities, and correlations for all of the measures. Most of the measures demonstrated adequate reliability with alphas ranging from .73 to .97. Only one measure (continuance commitment) had an alpha value ($\alpha = .68$) which did not exceed the .70 criterion for sufficient reliability (Nunnally, 1978).

Individuals' retrospected jobs were held an average of 2.8 years ago (range 0-21 years). Confidence in these retrospections was quite high (5.4 out of 7 on average). Mean levels of the retrospected needs and supplies were generally lower than the corresponding levels of current needs and supplies. Individuals' anticipated jobs were expected to begin in an average of 2.4 years (range 0-10 years). Confidence in these forecasts was also high (5 out of 7 on average). Mean levels of anticipated needs and supplies were generally higher than the corresponding levels of current needs and supplies.

Confirmatory Factor Analyses

To assess the psychometric properties of the measures, I conducted several confirmatory factor analyses using LISREL 8.54 (Joreskog & Sorbom, 2003). First, for each of the four facets measuring needs-supplies fit, I created a seven factor model that contained current supplies, current needs, retrospected supplies, retrospected needs, anticipated supplies, anticipated needs, and facet satisfaction. By including all of the temporal measures within one analysis, I was able to test if the measures of needs and supplies from each time period were distinct. Each model produced high standardized factor loadings that ranged from .73

to .99 and very few significant standardized residuals or modification indices which would indicate misfit. Table 3 presents fit statistics for each of the four models. Based on the high fit statistics and the pattern of results for standardized factor loadings, standardized residuals, and modification indices, I concluded that the autonomy, creativity, pay, and relationships measures were quite strong.

Due to the sample size, I had to conduct a separate CFA for the moderators. The moderator CFA contained 28 indicators for 11 factors: past, present, and future temporal focus (four indicators each); importance of autonomy, creativity, pay, and relationships (three indicators each); retrospected temporal distance (single indicator); anticipated temporal distance (single indicator); confidence in retrospections (single indicator); confidence in anticipations (single indicator). For the single item measures I set the loading to the square root of α, and the error value to $(1 - \alpha)$, a technique appropriate when using correlation matrix in structural equation modeling. I estimated the alpha of retrospected job distance as .90 given that respondents reported factual information in quantifiable terms (years and months since the last job). I estimated that the alpha of anticipated job distance would be slightly lower at .80, given that the time to the next job was an expectation of a future event. Because confidence in retrospections and anticipations were less concrete and opinion-based, I used an alpha value of .70.

I found moderate to high standardized loadings ranging from .62 to .97. To examine misfit within the model, I looked for significant standardized residuals and significant expected changes in the modification indices. No clear pattern emerged for the significant standardized residuals. The expected changes from the $lambda_x$ modification index showed that 13 items would have significant loadings if allowed to cross-load on another factor. However, the standardized expected loadings were all less than .25 in absolute magnitude,

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and did not demonstrate any particular pattern. The fit indices for this CFA are presented in Table 3. The RMSEA value was .05, less than the .08 criterion for reasonable errors of approximation (Browne & Cudeck, 1993), and the CFI and IFI values both were .95 demonstrating good fit (Hu & Bentler, 1999). Taking all of these results into account provides support for the measurement model used for the moderator variables.

Power Analysis

I conducted a post-hoc power analysis using GPOWER (Faul & Erdfelder, 1992). Although the effective sample size is 187, there were small amounts of missing data at the item level (for example, several individuals had not held a previous job). Using listwise deletion within any given equation resulted in N's ranging from 166 to 178. With the smallest N, power is .99 to detect a medium effect size ($f^2 = .15$ or $R^2 = .13$) for a regression equation with 2 predictors and .98 for an equation with 5 predictors. However, power is only .34 to detect a small effect size ($f^2 = .02$ or $R^2 = .02$) for a regression equation with 2 predictors, and power is only .24 for an equation with 5 predictors. Thus, I anticipated that the power to detect small effect sizes (such as those found for interactions) may not be sufficient. I will discuss the limitations of the sample size later in the paper.

Outliers and Influential Cases

For all analyses I considered the presence of outliers and influential cases using three measures: Cook's D, studentized residuals, and leverage values (Bollen & Jackman, 1990). All equations were run with and without cases which exceeded the criteria of all three measures of influence. However, there was no substantial difference in interpretation between the two analyses. Therefore, I retained all cases in the analyses that follow to keep the sample size as large as possible.

Results of Main Effect Hypotheses

To analyze my data and to test the surfaces that follow, I used multiple regression analysis in SYSTAT and response surface methodology (Edwards & Parry, 1993). Each hypothesis was tested with all six well-being outcomes (e.g., facet satisfaction, overall satisfaction, affective commitment, continuance commitment, normative commitment, and turnover). However, I expected that the strongest relationships would emerge for the predictors of facet satisfaction. Weaker relationships were expected for the other five outcomes because they represent more general, overarching reactions to jobs than dimension-specific facet satisfaction. For example, overall satisfaction might include many different antecedents from multiple facets, but facet satisfaction would be more directly tied to a single facet antecedent. Therefore, to simplify the presentation of my results, I focus here on the facet satisfaction equations. Tables 4, 5 and 6 present the results for the regression analyses for the current, retrospected, and anticipated equations.

For Hypotheses 1-8, the monotonic effect of current needs-supplies fit on facet satisfaction is represented in the following equation:

$$FS = b_0 + b_1 S_c + b_2 N_c + e \qquad\qquad (4)$$

where FS is facet satisfaction, S_c is the individual's current supplies for autonomy, creativity, pay, or relationships, and N_c is the individual's current needs for autonomy, creativity, pay, or relationships. To support Hypotheses 1, 3, 5, and 7, I expected that the difference between b_1 and b_2 in Equation 4 would be greater than zero, indicating a positive slope along the misfit line. Table 4 presents this difference as a_1 under the misfit line (E = -P). For all four dimensions, this difference was positive and significant ($p < .01$), ranging from .41 for autonomy to .70 for pay. These positive values demonstrate that well-being increases as supplies approach and then exceed needs. Thus, Hypotheses 1, 3, 5, and 7 are *supported*.

To support Hypotheses 2, 4, 6, and 8, I expected that the sum of b_1 and b_2 in Equation 4 would be positive, indicating a positive slope along the fit line. As seen in Table 4, the slope was positive and significant for all four dimensions, ranging from .64 for relationships to .90 for pay. These positive values demonstrate that achieving high levels of fit is more satisfying that achieving low levels of fit. Thus, Hypotheses 2, 4, 6, and 8 are *supported*.

Although the evidence supports Hypotheses 1-8 regarding the slopes along the fit and misfit lines, I also considered the separate coefficients on needs and supplies to determine the direction of these independent effects. This approach provides more insight into the combined effects of needs and supplies that I identified in equations 1 through 3. I expected that $b_1 > 0$ and $b_2 < 0$, indicating a positive effect for supplies and a negative effect for needs. For all four facets, b_1 was positive indicating that satisfaction increased as current supplies of autonomy ($b_1 = .62$; $p < .01$), creativity ($b_1 = .72$; $p < .01$), pay ($b_1 = .80$; $p < .01$), and relationships ($b_1 = .54$; $p < .01$) increased. However, I did not find that b_2 was negative for any of the facets. For creativity, pay, and relationships, the coefficient on current supplies was not significant, and for autonomy, the coefficient on current supplies was positive ($b_2 = .21$; $p < .01$). Thus, although the slopes along the misfit line and fit lines confirmed my hypotheses, it should be noted that these findings are primarily due to the strong positive effect of supplies on well-being.

Equation 4 can be expanded to include the retrospected past. For Hypotheses 9a-d and 10a-d, the monotonic effect of retrospected needs-supplies fit on facet satisfaction is represented in the following equation:

$$FS = b_0 + b_1 S_c + b_2 N_c + b_3 S_r + b_4 N_r + e \qquad (5)$$

where S_r is the individual's retrospected supplies, and N_r is the individual's retrospected needs.

To support the hypotheses for retrospected assimilation effects (Hypotheses 9a-9d), I expected that the slope along the misfit line would be positive. Thus, retrospected needs and supplies would affect facet satisfaction in the same manner as current needs and supplies. Similar to the expected effects of current supplies and needs, I expected that the separate effects of retrospected supplies and needs would produce the following coefficients: $b_3 > 0$, and $b_4 < 0$. However, I found *no support* for these assimilation hypotheses.

To support the hypotheses for retrospected contrast effects (Hypotheses 10a-10d), I expected that the slope along the misfit line would be negative. Thus, retrospected needs and supplies would affect facet satisfaction in the opposite direction as current needs and supplies. Whereas retrospected autonomy, creativity, and relationships had no significant slope along the misfit line, retrospected pay had a negative slope along the misfit line. In addition, I expected that that separate effects of retrospected needs and supplies would produce the following coefficients: $b_3 < 0$, and $b_4 > 0$. Controlling for current needs and supplies, retrospected supplies ($b_3 = -.21$; $p < .05$) and needs ($b_4 = .23$; $p < .05$) for pay produced the expected coefficients, demonstrating a contrast effect between retrospected fit and current fit on pay. This finding means that controlling for the effect of current needs-supplies fit on pay, higher retrospected supplies relative to retrospected needs produces lower satisfaction with current pay. Thus, while Hypotheses 10a, 10b, and 10d were *not supported*, Hypothesis 10c regarding contrast of retrospected pay was *supported*.

To support Hypothesis 11 which describes the slope of the fit line under the condition of assimilation, the sum of the coefficients on retrospected needs and supplies ($a_1 = b_3 + b_4$) should be greater than zero. If this sum were less than zero, this finding would instead support Hypothesis 12 which describes the slope of the fit line under the condition of contrast. As seen in Table 5, the slope of the fit line was positive for retrospected autonomy

($a_1 = .04$, n.s.) and pay ($a_1 = .02$, n.s.), negative for retrospected relationships ($a_1 = -.03$, n.s.), and zero for retrospected creativity. However, none of these values reached significance meaning that there was no slope along the fit line. Thus, I found *no support* for Hypothesis 11 or 12.

Equation 4 can also be expanded to represent the anticipated future. For Hypotheses 13a-d and 14a-d, the monotonic effect of anticipated needs-supplies fit on facet satisfaction is represented in the following equation:

$$WB = b_0 + b_1 S_c + b_2 N_c + b_3 S_a + b_4 N_a + e \qquad (6)$$

where S_a is the individual's anticipated supplies, and N_a is the individual's anticipated needs.

To support the hypotheses for anticipated assimilation effects (Hypotheses 13a-13d), I expected that the slope along the misfit line would be positive. Thus, anticipated needs and supplies would affect facet satisfaction in the same manner as current needs and supplies. Similar to the expected effects for current supplies and needs, I expected that the separate effects of retrospected supplies and needs would produce the following coefficients: $b_3 > 0$, and $b_4 < 0$. However, I found *no support* for these assimilation hypotheses.

To support the hypotheses for anticipated contrast effects (Hypotheses 14a-14d), I expected that the slope along the misfit line would be negative. Thus, anticipated needs and supplies would affect facet satisfaction in the opposite direction as current needs and supplies. I expected that the separate effects of retrospected supplies and needs would produce the following coefficients: $b_3 < 0$, and $b_4 > 0$. However, I found *no support* for these contrast hypotheses.

To support Hypothesis 15 which describes the slope of the fit line under the condition of assimilation, the sum of the coefficients on anticipated needs and supplies ($a_1 = b_3 + b_4$) should be greater than zero. If this sum were less than zero, this finding would instead

support Hypothesis 16 which describes the slope of the fit line under the condition of contrast. As seen in Table 6, the slope of the fit line was negative for all four dimensions, but only significant for anticipated pay ($a_1 = -.27$; $p < .05$) and relationships ($a_1 = -.18$; $p < .05$). A negative slope along the fit line implies that higher levels of anticipated fit are presently less satisfying, supporting a contrast effect along the fit line. Thus, I found *no support* for Hypothesis 15, but *partial support* for Hypothesis 16.

It is interesting to note that a number of the coefficients for retrospected and anticipated needs and supplies were not significant when controlling for current needs and supplies. One possibility is that current needs and supplies mediate the effects of retrospected or anticipated needs and supplies so that these coefficients become non-significant after controlling for the effects of current needs and supplies. This explanation is logical for retrospected needs and supplies which should occur temporally prior to current needs and supplies. Thus, an individual's current needs and supplies may be a function of past needs and supplies. Less logical is the possibility that anticipated needs and supplies would be mediated by current needs and supplies. Anticipated needs and supplies are expected to occur after current needs and supplies. However, it is possible that the expectation of particular levels of future needs and supplies may influence what an individual perceives in the present. To search for mediation, I tested for the effects of retrospected and anticipated needs and supplies independent of current needs and supplies. The coefficients for retrospected needs and supplies alone are presented in Table 7 and the coefficients for anticipated needs and supplies alone are presented in Table 8.

As seen in Table 7, the monotonic equations for retrospected needs-supplies fit produced significant R^2 values for creativity, pay, and relationships. To support an assimilation effect, I expected that the coefficient on supplies would be positive and the coefficient on needs

would be negative. To support a contrast effect, I expected that the coefficient on supplies would be negative and the coefficient on needs would be positive. I found only partial support for either contrast or assimilation. For creativity, the coefficient on retrospected supplies was positive ($b_1 = 0.18$, $p < .05$), but the coefficient on retrospected needs was not significant. Thus, a partial assimilation effect emerged for past supplies of creativity. For pay and relationships, the coefficient on retrospected needs was positive ($b_1 = 0.42$, $p < .01$; $b_1 = 0.26$, $p < .05$, respectively), but the coefficients on retrospected supplies for pay and relationships were not significant. Thus, a partial contrast effect emerged for past needs for pay and relationships. Given that the coefficients for retrospected creativity supplies, pay needs, and relationships needs were significant only before controlling for current needs and supplies, I concluded that these effects are mediated by current needs and supplies. However, the coefficient on retrospected pay supplies was significant only when controlling for current needs and supplies, thus, I detected a suppression effect.

   As seen in Table 8, the monotonic equations for anticipated needs-supplies fit produced significant R^2 values for autonomy, pay, and relationships. I found only partial support for assimilation in the relationships facet. The coefficient on anticipated supplies was positive ($b_1 = 0.28$, $p < .05$), but the coefficient on anticipated needs was not significant. Thus, a partial assimilation effect emerged for future supplies of relationships. This effect was not present when controlling for current needs and supplies, thus, the effect of retrospected relationship supplies on facet satisfaction is mediated by current needs and supplies. Although no other coefficients for anticipated needs or supplies were significant, it is worth noting that the size of the standard errors for these coefficients were all quite large (a result of a moderately small sample size). Because the standard errors are used to calculate the t-statistic for significance, their small size has depressed the p-value that is calculated. As a

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result, even moderate coefficients (e.g., 0.28 for anticipated supplies of autonomy) were non-significant. I will return to this point in the discussion section.

Test of Monotonic Assumption

To test my assumption that the needs-supplies fit equations followed a monotonic form, I tested higher-order fit equations (Edwards & Parry, 1993). A parabolic form for current fit is detectable with a quadratic equation using five variables: current needs, current supplies, the squared terms for current needs and supplies, and the interaction term between current needs and supplies. When adding these higher-order terms to the monotonic equation produces a significant increase in R^2, a more complex form than a monotonic is detected (Edwards, 1994). A parabolic form is suggested when the coefficients on the squared terms for needs and supplies (b_3 and b_5) are negative and the coefficient on the interaction between needs and supplies (b_4) is positive (Edwards, 2002).

A parabolic form for retrospected fit is detectable with a quadratic equation the five variables in the quadratic equation of current needs-supplies fit, plus five additional variables: retrospected needs, retrospected supplies, the squared terms for retrospected needs and supplies, and the interaction term between retrospected needs and supplies. Whether an individual uses assimilation or contrast is obvious by the sign of the coefficients on the retrospected terms being in the same or opposite pattern as those expected for the current terms.

A parabolic form for anticipated fit is detectable with a quadratic equation the five variables in the quadratic equation of current needs-supplies fit, plus five additional variables: anticipated needs, anticipated supplies, the squared terms for anticipated needs and supplies, and the interaction term between anticipated needs and supplies. Whether an individual uses assimilation or contrast is obvious by the sign of the coefficients on the

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anticipated terms being in the same or opposite pattern as those expected for the current terms.

All parabolic results are reported in Tables 4, 5, and 6 directly following the respective monotonic equations. For current fit, the higher-order terms for all four facets produced significant changes in R^2 over the monotonic models, ranging from 3.3% to 5.9%, which suggests that the monotonic assumption for current fit was not supported. Graphs of these relationships are shown in Figure 5. As I stated earlier, to support a parabolic form, the coefficients for the interaction between needs and supplies should be positive, while the coefficients on the squared terms for needs and supplies should be negative. This pattern of coefficients was supported for almost all of the coefficients in the four facets. Only the squared current supplies term for autonomy and pay were non-significant.

As seen in Table 4, in all four dimensions there is significant negative curvature along the misfit line ($a_2 = b_3 - b_4 + b_5$), ranging from -.27 to -.54. The negative curvature indicates that receiving supplies that are either more or less than desired is dissatisfying. For autonomy, creativity, and relationships, the slope at the (0, 0) point of the misfit line is not significant, which demonstrates that the peak of the misfit function is centered at the fit line. However, for pay, the slope at this point of the misfit line is positive ($a_1 = .43$, $p < .01$), which denotes increasing satisfaction even as pay supplies slightly exceed pay needs. The value of misfit at which satisfaction is maximized (i.e., the slope is zero) is computed by taking the first derivative of the misfit line. The equation for the misfit line is $Z = a_0 + a_1 X + a_0 X^2$, where $a_1 = b_1 + b_2$ and $a_2 = b_3 - b_4 + b_5$. Setting $Z = 0$, taking the first derivative, and solving for X leaves: $X = -(b_1 + b_2) / 2(b_3 - b_4 + b_5)$, which produces a value of .83 for X. Therefore, satisfaction is maximized when supplies are .83 units greater than needs. To test for any significant rotation of the curves, I tested whether b_3 and b_5 differed (Edwards, 2006). Only

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for the pay dimension were these coefficients significantly different. Figure 5c demonstrates that the pay curve is slightly rotated clockwise so that satisfaction decreases when supplies for pay deviate from needs for pay, but the decrease in satisfaction is stronger when supplies are deficient than when supplies are excessive. In all four dimensions, there is significant positive slope (but no curvature) along the fit line ($a_1 = b_1 + b_2$), ranging from .65 to .83. Positive slope demonstrates increasing satisfaction as fit between needs and supplies is achieved at higher levels.

To ensure that the parabolic equation was the highest order detectable, I also tested a cubic equation by adding the cubic terms and three-way interactions. The F-tests of the set of higher order terms within the cubic equation were not significant for any of the facets. Given this pattern of results, I rejected the monotonic form and supported the parabolic form for current autonomy, creativity, pay, and relationships needs-supplies fit.

Graphs of the retrospected needs-supplies fit models are shown in Figure 6 and the associated statistics are shown in Table 5. The change in variance explained after adding the higher order terms was not significant for any of the four facets. In addition, none of the retrospected coefficients reached significance after controlling for the quadratic current equation, and there was no significant slope or curvature along the fit or misfit lines. Thus, the monotonic assumption is supported for retrospected need-supplies fit.

Graphs of the anticipated needs-supplies fit models are shown in Figure 7 and the associated statistics are shown in Table 5. The change in variance explained by adding the higher order terms was not significant for any of the four facets. In addition, all but one of the anticipated coefficients (the squared anticipated needs term for creativity) were non-significant after controlling for the quadratic current equation. Similarly, the slope and

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curvature along the fit and misfit lines were not significant. Thus, the monotonic assumption is supported for anticipated need-supplies fit.

Results of Moderated Hypotheses

I also predicted that each of the equations would depend upon the moderating influences of temporal focus, temporal distance, and facet importance. For each equation, I added the main effects of the moderator and its interactions with all the other variables. I used the base equation for each variable that matched the highest order form that I detected. Therefore, I tested moderated versions of the parabolic form for current needs-supplies fit, and moderated versions of the monotonic form for retrospected and anticipated needs-supplies fit.

Hypothesis 17 describes the moderating effect of present temporal focus on current needs and supplies. To support this hypothesis, I expected that 1) the overall set of moderated terms would be significant, and 2) the coefficients on the interaction term for current supplies would be positive, the coefficient on the interaction term for current needs would be negative, and the coefficients on the higher order terms would be negative, positive, and negative, respectively. This pattern of coefficients would demonstrate that present temporal focus strengthened the curve of the needs-supplies fit surface. However, none of the current needs or supplies terms significantly interacted with current temporal focus as a set or individually. Thus, Hypothesis 17 is *not supported*.

Hypothesis 18 describes the moderating effect of past temporal focus on retrospected needs and supplies. To support this hypothesis, I expected that 1) the overall set of moderated terms would be significant, and 2) the pattern of coefficients for the moderated terms would support either a pattern of assimilation or contrast. Under the condition of assimilation, I expected that the coefficients on the interaction term for supplies would be positive and the coefficient on the interaction term for needs would be negative,

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demonstrating that temporal focus strengthened the upward slope of the monotonic needs-supplies fit surface. Under the condition of contrast, I expected that the coefficients on the interaction term for supplies would be negative and the coefficient on the interaction term for needs would be positive, demonstrating that temporal focus strengthened the downward slope of the monotonic needs-supplies fit surface.

The only retrospected facet that produced a significant set of interaction terms with temporal focus was retrospected pay. For retrospected pay needs and supplies, the pattern of coefficients supported the contrast condition, producing an interaction term with retrospected supplies that was negative (-.092; n.s.), and an interaction term with needs that was positive (.049; n.s.). Therefore, Hypothesis 18 is *partially supported*. The moderated surface for past temporal focus and retrospected pay is graphed in Figure 8 and is discussed with Hypothesis 19.

Hypothesis 19 proposes that past temporal focus will make individuals more likely to assimilate retrospected needs and supplies. Assimilation would be apparent based on the coefficients of the retrospected needs and supplies terms being in the same direction as those on current needs (negative) and supplies (positive). Under the test of Hypothesis 18, the only significant interaction I found was between past temporal focus and retrospected pay. But, as shown in Figure 8b, when past temporal focus was high, individuals were more likely to contrast rather than assimilate retrospected pay, which was opposite of my predictions. The coefficients on supplies and needs of retrospected pay when past temporal focus was low were -.05 and .17, respectively, yielding a slope of -.12 along the fit line and a slope of -.22 along the misfit line. The coefficients on supplies and needs of retrospected pay when past temporal focus was high were -.23 and .27, respectively, yielding a slope of .04 along the fit line and a slope of -.50 along the misfit line.   Thus, when individuals focus more on the

past, the recollection of greater supplies of pay relative to needs decrease current satisfaction by strengthening a contrast effect. Therefore, Hypothesis 19 is *not supported*.

Hypothesis 20 describes the moderating effect of future temporal focus on anticipated needs and supplies. To support this hypothesis, I expected that 1) the overall set of moderated terms would be significant, and 2) the pattern of coefficients for the moderated terms would support either a pattern of assimilation or contrast. Under the condition of assimilation, I expected that the coefficients on the interaction term for supplies would be positive and the coefficient on the interaction term for needs would be negative, demonstrating that temporal focus strengthened the upward slope of the needs-supplies fit surface. Under the condition of contrast, I expected that the coefficients on the interaction term for supplies would be negative and the coefficient on the interaction term for needs would be positive, demonstrating that temporal focus strengthened the downward slope of the needs-supplies fit surface.

The only anticipated facet that produced a significant set of interaction terms with temporal focus was anticipated creativity. For anticipated creativity needs and supplies, the pattern of coefficients supported the assimilation condition, with the supplies interaction term as positive ($.465$; $p < .05$) and the needs interaction term as negative ($-.362$; $p < .05$). Thus, Hypothesis 20 is *partially supported*. The moderated surface for future temporal focus and anticipated creativity is shown in Figure 9 and is discussed below with Hypothesis 21.

Hypothesis 21 proposes that future temporal focus will make individuals more likely to assimilate anticipated needs and supplies. This logic implies that when future temporal focus is high, the coefficients for the anticipated supplies terms would be positive and the anticipated needs terms would be negative. For anticipated creativity, the interaction with future temporal focus was significant and when controlling for temporal focus, a contrast

effect emerged for anticipated supplies. A contrast effect means that when temporal focus is low (Figure 9a), individuals who anticipate greater supplies of creativity relative to needs in a future job are less satisfied with creativity in their current job. The coefficients on supplies and needs of anticipated creativity when future temporal focus was low were -.63 and .24 respectively, yielding a slope of -.36 along the fit line and slope of -.87 along the misfit line. The coefficients on supplies and needs of anticipated creativity when future temporal focus was high were .13 and -.35 respectively, yielding a slope of -.22 along the fit line and slope of .48 along the misfit line. Thus, when individuals focus more on the future, the expectation of greater supplies of creativity relative to needs increases current facet satisfaction by changing a contrast effect to an assimilation effect (Figure 9b). Thus, Hypothesis 21 is *partially supported.*

Hypothesis 22 suggests that the greater the temporal distance to the retrospected past, the weaker the effect of retrospected needs and supplies on facet satisfaction. To support this hypothesis under the condition of assimilation, 1) the overall set of moderated terms should be significant, and 2) the coefficients for the interaction terms with supplies should be negative and with needs should be positive, demonstrating a weakening effect on the positive slope. To support these hypotheses under the condition of contrast, 1) the overall set of moderated terms should be significant, and 2) the coefficients for the interaction terms with supplies should be positive and with needs should be negative, demonstrating a weakening effect on the negative slope.

The only retrospected facet that produced a significant set of interaction terms with temporal distance was retrospected relationships, and the pattern of coefficients supported the assimilation condition. No other interaction terms for the retrospected dimensions or the anticipated dimensions reached significance. Thus, Hypothesis 22 receives *partial support*.

The moderated surface for temporal distance and retrospected relationships is shown in Figure 10 and is discussed below with Hypothesis 23.

Hypothesis 23 proposes that individuals will be more likely to contrast distant needs and supplies from retrospections. This statement implies that when temporal distance is high, the coefficients on the retrospected supplies and needs coefficients will be negative and positive, respectively. As mentioned earlier, the only significant interaction found was for temporal distance and retrospected relationships. After controlling for distance, an assimilation effect emerged, meaning that when temporal distance is low (Figure 10a), individuals who recollect greater relationship supplies relative to needs at a past job are more satisfied with current relationships. The coefficients on supplies and needs when temporal distance was low were .34 and -.19, respectively, yielding a slope of .15 along the fit line and a slope of .53 along the misfit line. In addition, when temporal distance is high (Figure 10b), individuals are more likely to contrast retrospected needs and supplies of relationships. The coefficients on supplies and needs when temporal distance was high were -.30 and .08, respectively, yielding a slope of -.22 along the fit line and a slope of -.38 along the misfit line. Thus, when temporal distance to the past is greater, the recollection of greater supplies relative to needs for relationships changes from an assimilation effect (Figure 10a) to a contrast effect (Figure 10b). Thus, Hypothesis 23 is *partially supported.*

Hypothesis 24 suggests that the greater the temporal distance to the anticipated future, the weaker the effect anticipated needs and supplies on facet satisfaction. To support this hypothesis under the condition of assimilation, 1) the overall set of moderated terms should be significant, and 2) the coefficients for the interaction terms with supplies should be negative and with needs should be positive, demonstrating a weakening effect on the positive slope. To support these hypotheses under the condition of contrast, 1) the overall set of

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moderated terms should be significant, and 2) the coefficients for the interaction terms with supplies should be positive and with needs should be negative, demonstrating a weakening effect on the negative slope. However, no anticipated facets produced significant interactions with temporal distance. Therefore, Hypothesis 24 is *not supported*.

Hypothesis 25 proposes that individuals will be more likely to contrast distant needs and supplies from anticipations. This statement implies that when temporal distance is high, the coefficients on the anticipations supplies and needs coefficients will be negative and positive, respectively. As mentioned earlier, none of the anticipated equations had significant moderation. Therefore, Hypothesis 25 receives *not support.*

Finally, Hypothesis 26 describes the moderating effect of importance on the relationships between current, retrospected, and anticipated needs-supplies fit and satisfaction. To support this hypothesis for current fit, I expected that 1) the overall set of moderated terms would be significant, and 2) the coefficients on the interaction term for current supplies would be positive, the coefficient on the interaction term for current needs would be negative, and the coefficients on the higher order terms would be negative, positive, and negative respectively. This pattern of coefficients would strengthen the curve of the parabolic form of current needs-supplies fit.

The set of interaction terms for importance with current autonomy, creativity, and relationships were not significant. Even though I found that the set of importance terms were significant for current pay, the coefficients were not in the direction I had predicted. These relationships are graphed in Figures 11a and 11b. When importance is low (Figure 11a), satisfaction increases as current pay supplies approach and then exceed current needs for pay. This finding is evident from the positive slope (.82) along the misfit line. However, the relationship changes when importance is high (Figure 11b). In this case, satisfaction

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increases as current pay supplies approach current needs for pay, but as supplies exceed needs, satisfaction decreases. The slope along the misfit line for high importance is positive (.32) and the curvature is negative (-.27). Thus, when an individual feels that pay is important, receiving more pay than desired is satisfying so long as the excess pay isn't too great. But as pay supplies continue to exceed needs for pay, satisfaction decreases. Thus, Hypothesis 26 is not supported for the current facets.

To support Hypothesis 26 for retrospected or anticipated fit under the condition of assimilation, I expected that 1) the overall set of moderated terms would be significant, and 2) the coefficients on the interaction terms between importance and supplies would be positive and the coefficients on the interaction terms between importance and needs would be negative. This pattern of coefficients would cause the positive slope of the misfit line to become steeper, indicating that as misfit moves from deficiency to excess, the more important the retrospected or anticipated facet, the greater the increase in current satisfaction. To support this hypothesis for retrospected or anticipated fit under the condition of contrast, I expected that 1) the overall set of moderated terms would be significant, and 2) the coefficients on the interaction terms between importance and supplies would be negative and the coefficients on the interaction terms between importance and needs would be positive. This pattern of coefficients would cause the negative slope of the misfit line to become steeper, indicating that as misfit moves from deficiency to excess, the more important the retrospected or anticipated facet, the greater the decrease in current satisfaction.

Seven of the eight retrospected and anticipated functions significantly interacted with importance. Retrospected creativity, anticipated creativity, retrospected relationships and anticipated pay supported the assimilation pattern. Retrospected autonomy, anticipated autonomy, and anticipated relationships supported the contrast pattern.

To illustrate one of the assimilation patterns of moderation, I will describe in detail the interaction between importance of pay and anticipated pay. When importance of pay is low (Figure 12a), individuals who anticipate greater pay relative to needs at a future job are less satisfied with current pay, which demonstrates a contrast effect. The coefficients on supplies and needs when importance was low were -.70 and .63, respectively, yielding a slope of -.07 along the fit line and a slope of -1.33 along the misfit line. Conversely, when importance is high (Figure 12b), individuals are more likely to assimilate anticipated needs and supplies for pay. The coefficients on supplies and needs when importance was high were .63 and -.51, respectively, yielding a slope of .12 along the fit line and a slope of 1.14 along the misfit line. Thus, when pay is more important to an individual, the anticipation of greater supplies for pay relative to needs changes from a contrast effect (Figure 12a) to an assimilation effect (Figure 12b).

To illustrate one of the contrast patterns of moderation, I will describe in detail the interaction between importance of autonomy and anticipated autonomy. When importance of autonomy is low (Figure 13a), individuals who anticipate greater autonomy relative to needs at a future job are more satisfied with current autonomy, which demonstrates an assimilation effect. The coefficients on supplies and needs when importance was low were .25 and -.27, respectively, yielding a slope of -.02 along the fit line and a slope of .52 along the misfit line. Conversely, when importance is high (Figure 13b), individuals are more likely to contrast anticipated needs and supplies for autonomy. The coefficients on supplies and needs when importance was high were -.19 and .16, respectively, yielding a slope of -.03 along the fit line and a slope of -.35 along the misfit line. Thus, when autonomy is more important to an individual, the anticipation of greater supplies for autonomy relative to needs changes from an assimilation effect (Figure 13a) to a contrast effect (Figure 13b).

Considering all the findings for the moderating effect of importance on current, retrospected, and anticipated needs and supplies, Hypothesis 26 is *partially supported*.

Finally, although not formally hypothesized, I also tested the moderating effects of confidence to determine if memories or forecasts reported with more confidence differentially affected satisfaction. None of the four dimensions produced a significant interaction between confidence and retrospected or anticipated needs or supplies.

CHAPTER 8

DISCUSSION

My dissertation proposed an integration between research on person-environment fit and research on time. I proposed that recollections and forecasts of needs-supplies fit in other time periods would provide a context in which current needs-supplies fit would be evaluated. I found some support for my hypotheses, but uncovered even more complex relationships within the data.

In the context of my temporal hypotheses, I found preliminary support that retrospected and anticipated needs and supplies monotonically influence current well-being. In support of the contrast logic, I found that retrospected needs-supplies fit for pay is contrasted against current needs-supplies fit to predict current satisfaction. The higher retrospected pay supplies were as compared to retrospected pay needs, the more dismal current needs and supplies seemed by comparison. Temporal research, which compares only supplies over time, would have missed the significant impact of retrospected and current needs. Incorporating the current and retrospected needs terms nets a change in R^2 of 2.3% (p = .02). P-E fit literature, which compares only current needs and supplies, would have missed the significant impact of retrospected needs and supplies. Incorporating the retrospected needs and supplies terms nets a change in R^2 of 1.6% (p = .06). Thus, the temporal P-E fit model produces more complex relationships that are undetectable with either existing approach.

Although I found a strong contrast effect for retrospected pay, many of the other retrospected and anticipated facets did not produce significant effects. However, the direction of the coefficients and the slope along the misfit line for each of these facets are

rather interesting. Similar to retrospected pay, retrospected autonomy produced a small

contrast effect (negative effect of supplies and positive effect for needs) with a negative slope

along the misfit line. However, retrospected creativity and relationships produced small

assimilation effects (positive effect of supplies and negative effect for needs) with a positive

slope along the misfit line. I had not predicted differing effects for the four facets I

measured, but it is interesting to note that retrospected fit produced two contrast effects (one

significant) and two assimilation effects. For anticipated fit, all of the coefficients were non-

significant, but it is noteworthy that the coefficients for anticipated needs and supplies were

all negative. This implies that it may be possible to contrast supplies while assimilating

needs rather than contrasting or assimilating both. In addition, when testing retrospected and

anticipated needs and supplies without controlling for current needs and supplies, I found

significant effects for needs or supplies but not both as I had predicted. Although I had

predicted patterns of coefficients on both needs *and* supplies would indicate contrast or

assimilation, future research may consider that individuals can contrast or assimilate needs,

supplies, or both simultaneously. Thus, rather than having one strong form of contrast or

assimilation, there may be degrees of contrast or assimilation. A strong form would support

all the expected effects: slope along the misfit line, slope along the fit line, and the expected

pattern of coefficients for contrast or assimilation. A weak form where partial contrast or

assimilation occurs may support only one of these three conditions. Reactions to these

degrees of contrast or assimilation may differ, adding more complexity to the hypotheses

presented here.

   I also tested higher order forms to determine if the monotonic models adequately

represented the data. For current autonomy, creativity, pay, and relationships, the data

supported a parabolic form of needs-supplies fit. I found that for current fit, individuals were dissatisfied as the supplies they received deviated from what they wanted in either direction.

   Although I had predicted that excess supplies would be satisfying when they could be conserved for future use or carried over to fulfill needs for other dimensions, the parabolic curves demonstrate that this is not the case. For parabolic dimensions, the downward curvature on the right side of the graph indicates that excess supplies interfere with the fulfillment of other needs, or threaten to deplete future supplies (Edwards & Rothbard, 1999). For the facets in this study, this could mean that excess autonomy prohibits the fulfillment of needs for supervision, as when high autonomy leaves people feeling alienated and lacking direction. Similarly, excess creativity supplies may interfere with the need for task mastery, such as when working on too many new things prevents mastery through repetition. Finally, excess relationships may prohibit the need for time to complete one's job, such as when a chatty officemate may interfere with the completion of a task. Based on this logic, the facets of autonomy, creativity, and relationships could conceivably support a parabolic form. However, less intuitive is the fact that the pay facet also supported a parabolic form. In this case, individuals who received slightly more pay than they wanted (.82 units) were still satisfied, but as pay continued to exceed their individual desires, satisfaction decreased. Although I had predicted that excess pay would be satisfying because it could be conserved for future use, the parabolic form suggests that excessive overpayment generates negative emotional reactions. One possibility is that being paid a much higher amount than desired may create a perception that more work is expected. Alternately, receiving much more pay than one desires could generate a feeling that the overpayment is undeserved, causing a feeling of guilt to dampen pay satisfaction. The discovery of a parabolic form for current pay should be considered in future research.

Whereas the monotonic form was rejected and the parabolic form was supported for the current surfaces, the retrospected and anticipated surfaces all supported the monotonic functional form. However, it is interesting to note that the monotonic assumption was confirmed despite obvious curvilinearity in the surfaces as demonstrated in Figures 6 and 7. The slight curvilinear surfaces for retrospected autonomy, creativity, and relationships present assimilation effects in which retrospected needs and supplies operate in the same fashion as current needs and supplies. While the curvature along the misfit line was not as strong as the current surfaces, it is worth noting that the autonomy, creativity, and relationships curves all produced negative curvature (-.18, -.13, and -.13, respectively). This shape means that current satisfaction was lower to the extent that retrospected supplies of autonomy, creativity, or relationships differed from retrospected needs. However, for retrospected pay, the surface presents a contrast effect. The curvature along the misfit line was positive (.10) indicating that current satisfaction was higher to the extent that retrospected supplies of pay differed from retrospected needs. The anticipated fit surfaces produce even more striking evidence to suggest a parabolic form. The curvilinear surfaces for anticipated autonomy, creativity, and pay present assimilation effects where anticipated needs and supplies operate in the same fashion as current needs and supplies. In addition, the curvature along the misfit line for these three facets (-.40, -1.01, and -.75, respectively) was even stronger than the curvature of the current surfaces. This shape means that current satisfaction was lower to the extent that anticipated supplies of autonomy, creativity, or pay differed from retrospected needs. However, for retrospected relationships, the surface presents a contrast effect. The curvature along the misfit line was positive (.40) indicating that current satisfaction was higher to the extent that anticipated supplies of relationships differed from retrospected needs.

One reason why I may not have supported parabolic forms in the retrospected or anticipated surfaces is that the moderately small sample size may not have produced enough power to detect significant higher-order terms (e.g., curvilinear terms) with the additional temporal predictors. A larger sample size may have uncovered that the retrospected and anticipated surfaces also violate the monotonic assumption and are better represented by a parabolic form. Future research should consider this possibility.

Despite some concerns over power, I was able to detect several interactions, which uncovered significant contrast and assimilation effects not visible in the main effects models. For temporal focus, I found that individuals who are future-focused had a stronger relationship between satisfaction and anticipated creativity. Individuals who didn't focus on the future contrasted anticipated creativity such that higher levels of expected creativity were negatively related to current satisfaction. That is, to the extent that high supplies of creativity were anticipated, current satisfaction was lower by contrast for the low future temporal focus individual. But when individuals focused more strongly on the future, this contrast effect changed into an assimilation effect. Thus, individuals are currently less satisfied as they expect to receive higher levels of creativity in the future, unless they focus more heavily on the future. If temporal focus is high, individuals are able to vicariously enjoy anticipated supplies of creativity coming in a future job.

For temporal distance, I found that the greater the recollected distance to the past job, the less that individuals emphasize retrospected needs and supplies of relationships. For recent jobs, retrospected supplies of relationships were assimilated into current satisfaction such that higher levels of retrospected relationship supplies compared to needs were positively associated with current satisfaction. But when the distance to the past job increased, the assimilation effect changed to a contrast effect. Thus, individuals find it currently satisfying

to recall jobs in which they had good relationship supplies relative to their needs, but the further into the distance these recollections, the more of a negative experience current needs and supplies appear by comparison.

Finally, in some cases, I found that the more important the facet, the more that individuals reacted to changes in needs and supplies. For current needs and supplies of pay, I found that as importance of pay increased, excess supplies relative to needs became less satisfying. Apparently, when individuals place a high degree of importance on pay, receiving too much pay relative to their needs is a negative experience. However, individuals for whom pay is less important are satisfied monotonically, such that increasing supplies of pay relative to needs is always satisfying. Individuals for whom pay is very important may be particularly tuned into the consequences of receiving overpayment (e.g., expectation of higher work, or inability to find a different job that can match the high salary).

In addition, I found that the effect of importance on retrospected or anticipated needs and supplies depended upon whether the individual used a process of contrast or assimilation. Assimilation was found for retrospected creativity, anticipated creativity, retrospected relationships and anticipated pay. As the example of anticipated pay demonstrated, after incorporating importance, a contrast effect emerged. However, when importance for pay was high, the contrast effect changed to an assimilation effect. Thus, individuals for whom pay is important can be currently satisfied when they anticipate better supplies relative to needs for future pay. But individuals for whom pay is less important find that anticipating better supplies relative to needs for future pay makes needs-supplies fit on current pay seem less satisfying by comparison.

Contrast was found for the interaction of importance and retrospected autonomy, anticipated autonomy, and anticipated relationships. As the example of anticipated autonomy

demonstrated, when individuals believed that autonomy was unimportant, expecting greater autonomy supplies relative to needs led to higher satisfaction with current autonomy, yielding an assimilation effect. But when individuals believed that autonomy was very important, the anticipation of greater supplies for autonomy relative to needs was currently less satisfying, which is a contrast effect. Thus, individuals who place a high value on autonomy may feel impatient when expecting higher levels of autonomy relative to their needs, and currently dissatisfied.

Finding that the temporal P-E fit model depends upon temporal focus, temporal distance, and facet importance suggests that researchers must not only incorporate time into the fit model, but also the conditioning effects of personal and situational variables. Simply adding the effects of retrospected and anticipated needs and supplies to the P-E fit model is not sufficient to represent how individuals evaluate these additional temporal predictors of satisfaction. Therefore, future use of the moving window of fit must refer to the moderating effects of temporal focus, temporal distance, and facet importance.

Future research must also consider several of the findings that were unanticipated. First, I noticed differences in the impact of retrospecting versus anticipating. I had expected (though not formally hypothesized) that effects for retrospections would be larger than anticipations because retrospections are based on the actual past whereas anticipations are based on the yet-to-occur future. However, I found the opposite to be true. Although not significant, the size of the coefficients for anticipated needs and supplies were larger than those for retrospected needs and supplies. Perhaps individuals draw more heavily upon their anticipations because they can more freely bias expectations of an uncertain future than can bias recollections of a certain past. Another reason why anticipations may receive more weight than retrospections is that the past is gone, but the future must still be encountered.

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Thus, people can mentally sever ties to the past, but they can't avoid what is yet to come. Second, I found unexpected differences among the four facets. In some of the equations, only one facet emerged as a significant predictor of satisfaction (e.g., anticipated creativity interacting with future temporal focus, or retrospected relationships interacting with future temporal distance). It is possible that these facets may operate differently over the course of time so that different facets are weighted more heavily when considering past or future jobs. It is interesting to note that the pay facet was critical for all three time periods. Perhaps the concrete nature of this facet produced stronger reactions to pay whether retrospected, current, or anticipated pay. These findings suggest that past, present, and future experiences may differ, particularly when considering different elements of the work environment.

Finally, my findings on retrospected and anticipated fit, temporal focus, and temporal distance may be ripe for integration with existing research which considers individuals' prior expectations, previous experiences, and/or subsequent experiences. Research on topics such as realistic job previews (e.g., Hom et al., 1999), socialization (e.g., Ashforth & Saks, 1996), or psychological contracts (e.g., Lambert, Edwards, & Cable, 2003) may benefit from the principles established in my temporal P-E fit model. Utilizing a temporal lens by applying the moving window to other research is a natural next step for this research.

Limitations

As noted earlier, one of the primary limitations of the study is the level of power in my sample based on my moderate sample size. A higher level of power would have allowed more of the coefficients to achieve significance and to potentially to support my hypotheses, particularly for the higher order equations. Given that several of the interactions that were significant were strong enough to move a contrast effect to an assimilation effect (or vice versa), additional interactions may have been present but simply more subtle. Greater power

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may have also uncovered additional curvilinear functional forms for retrospected and anticipated needs-supplies fit. Although the monotonic functional form was supported for the retrospected and anticipated facets, examination of the graphs in Figures 6 and 7 visually portray curvilinearity in almost every case. Adding additional participants (e.g., another class of EMBA students) in the future may generate the higher level of power needed to detect these more complex relationships.

A second limitation of my sample is the cross-sectional, self-report nature of the data collection. While at first glance it may appear that a longitudinal study would be a stronger design, I was explicitly targeting the interpretation of recollections and anticipations in the present moment. Current, retrospected, and anticipated needs and supplies are predictors of current satisfaction, but only at the moment in time in which they are cognitively active. While retrospective and prospective bias may typically be labeled a limitation, the contrast and assimilation logic in my model demonstrate that this bias is natural, and even desirable to support my hypotheses. By mentally framing the recollected past or the anticipated future upward or downward, individuals are able to support their own unique perception of their career trajectories over time, perhaps independently of what actually occurred in the past, or what will occur in the future. Thus, while the cross-sectional design is a limitation for inferring causality, it is a necessity in assessing the subjective aspect of the temporal P-E fit model. In addition, any attempts to avoid same-source bias by gathering perceptual data from a separate source at a different point in time could have inaccurately reflected respondents' perceptions in the current moment. Such alternative sources can be inaccurate and unable to control for all forms of bias, such as shared biases (Spector, 2006). Future research may align the cross-sectional design I used to assess individual perceptions with repeated measures designs. Repeated measures data collection may at least identify the

causality inherent in the cross-period effects and lessen critics' concerns over cross-sectional, single-source data.

Despite these limitations, the findings of this study offer evidence that individuals think about experiences beyond the present moment. The results of my study are valuable to P-E fit research by demonstrating that individuals rely on retrospections and forecasts to generate current affect, and these relationships are subject to the influence of personal and situational characteristics such as temporal focus, temporal distance, and facet importance. The results of my study are also valuable to temporal research by demonstrating that individuals naturally contrast or assimilate depending upon different conditions, and this occurs with tangible facets of work that are meaningful across time periods. Testing my hypotheses with actual facets of jobs rather than hypothetical situations (e.g., how would I feel if expecting a fancy French dinner in the future) strengthens previous research on time by extending this work into an applied setting.

In addition, this work has several practical implications for managers. First, it is important for managers to recognize that employees view their current jobs within an ongoing stream of experiences that includes past and future jobs. Past and future jobs generate current affect through vicarious effects and they also provide a standard against which current fit is evaluated. Understanding that employees naturally consider experiences at another point in time may help managers addressing issues such as selection, promotion, job redesign, or sequencing of assignments. For example, when receiving an offer of employment, a job candidate is likely to consider facets of the job offer relative to past and anticipated positions. Similarly, current employees may evaluate current assignments by the stream of assignments they have received in the past, and the future assignments they expect to receive. To the extent that managers can acquire this information in advance, they can frame a job offer or

new job assignment appropriately to allow a favorable evaluation. Second, managers must

also consider that individuals have differing reactions to situations over time because of

individual differences in temporal focus and situational differences such as temporal distance

to past or future jobs. Whether a retrospected or anticipated situation induces contrast or

assimilation depends upon how much an individual focuses on different time periods, and

how far into the past or future the situation is. Therefore, managers may consider

individually framing decisions to address individual differences in perception and

experience.

CHAPTER 9

CONCLUSION

Time is an important element of human existence and the study of time is receiving increasing attention in the field of management. My dissertation demonstrated that a long-standing area of organizational behavior research, P-E fit, was viewed differently when approached with a temporal lens. My initial test of the temporal fit model demonstrated that fit doesn't occur at a moment in time, but rather at many moments in time, all of which concurrently reside in the mind of an individual. In addition, temporal focus, temporal distance, and facet importance help to uncover even more complex relationships between satisfaction and retrospected and anticipated needs-supplies fit. Future P-E fit research and organizational behavior research in general should seek to uncover more interesting relationships by using this moving window of fit.

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Table 1. Categories of Temporal Views[a]

	PAST	PRESENT	FUTURE

I. Time-series research.

    A. Repeated cross $X_1 \rightarrow Y_1$
    sectional-measures $X_2 \rightarrow Y_2$

    B. Longitudinal
        1. repeated measures X_1 $\rightarrow$ Y_1
                              X_2 $\rightarrow$ Y_2

        2. lagged effects X_1 $\rightarrow$ Y_1 $\rightarrow$ Y_2

II. Rate or duration research. X_1 $\rightarrow$ Y_{1+t}
where t moderates the relationship between X & Y.

III. Retrospective or Predictive Bias. X_1 $\rightarrow$ X_2 $\rightarrow$ X_3
Looks like this could also represent serial effects

IV. Temporal focus. $X_1 \rightarrow Y_1$
where temporal focus moderates the relationship
between
X & Y.

V. Temporal context in the present. X_{1r}
                                  $X_1 \rightarrow Y_1$
                                  X_{1a}
where retrospected and anticipated experiences directly affect Y_1 and also
moderate the relationship between X_1 & Y_1.

[a]Subscripts refer to the number of measurements of a variable. For example X_1 is the first time the X variable is measured, whereas Y_2 is the second time the Y variable is measured.

Table 2. Descriptive Statistics

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
Retrospected														
1. E_{rAUT}	4.75	1.28	(0.90)											
2. E_{rCRE}	4.63	1.44	0.65**	0.93										
3. E_{rPAY}	4.31	1.34	0.23**	0.26**	0.92									
4. E_{rREL}	4.95	1.17	0.19*	0.30**	0.15	0.92								
5. P_{rAUT}	4.97	1.09	0.48**	0.44**	0.23**	0.16	0.86							
6. P_{rCRE}	4.89	1.25	0.25**	0.52**	0.20*	0.08	0.68**	0.92						
7. P_{rPAY}	4.41	1.39	0.02	0.05	0.70**	0.19*	0.29**	0.32**	0.95					
8. P_{rREL}	4.90	1.24	0.05	0.17	0.21*	0.73**	0.25**	0.23**	0.38**	0.95				
Current														
9. E_{cAUT}	5.39	1.14	0.14	0.11	0.06	0.03	0.09	0.12	0.09	0.06	0.87			
10. E_{cCRE}	5.01	1.36	0.10	0.22*	0.14	0.09	0.10	0.25**	0.19*	0.16	0.68**	0.91		
11. E_{cPAY}	4.80	1.38	-0.04	-0.04	0.32**	-0.03	0.00	0.00	0.39**	0.09	0.33**	0.37**	0.97	
12. E_{cREL}	4.94	1.26	0.00	0.09	0.19*	0.46**	0.09	0.06	0.22*	0.57**	0.30**	0.36**	0.23**	0.95
13. P_{cAUT}	5.48	1.04	0.05	0.11	0.18*	0.01	0.29**	0.31**	0.21*	0.08	0.58**	0.40**	0.13	0.18*
14. P_{cCRE}	5.26	1.18	0.06	0.14	0.14	0.03	0.33**	0.45**	0.24**	0.12	0.36**	0.56**	0.05	0.23**

	M	SD												
15. P_{cPAY}	4.91	1.38	-0.05	-0.05	0.30**	0.06	0.18*	0.21*	0.55**	0.12	0.16	0.20*	0.47**	0.14
16. P_{cREL}	4.97	1.16	-0.08	0.03	0.17	0.44**	0.08	0.12	0.33**	0.63**	0.13	0.25**	0.16	0.75**
Anticipated														
17. E_{aAUT}	6.05	0.70	0.08	0.04	0.18*	-0.01	0.02	0.12	0.17	0.07	0.33**	0.29**	0.07	0.23**
18. E_{aCRE}	6.04	0.77	0.09	0.13	0.04	-0.03	0.15	0.25**	0.06	-0.04	0.20*	0.37**	0.03	0.06
19. E_{aPAY}	5.90	0.88	-0.12	-0.09	0.18*	0.05	-0.12	-0.02	0.20*	0.11	0.19*	0.11	0.31**	0.07
20. E_{aREL}	5.22	1.09	0.06	0.03	0.11	0.41**	0.10	0.10	0.23**	0.49**	0.05	0.18*	0.09	0.65**
21. P_{aAUT}	5.94	0.70	0.06	0.12	0.20*	0.03	0.30**	0.28**	0.23**	0.18*	0.31**	0.27**	0.05	0.18*
22. P_{aCRE}	5.84	0.77	0.10	0.24**	0.14	0.01	0.32**	0.41**	0.17	0.09	0.14	0.31**	-0.01	0.07
23. P_{aPAY}	5.79	0.93	-0.09	-0.01	0.27**	0.10	-0.04	0.02	0.25**	0.15	0.13	0.05	0.35**	0.06
24. P_{aREL}	5.19	1.14	0.11	0.11	0.13	0.42**	0.12	0.16	0.22*	0.52**	0.11	0.20*	0.11	0.51**
Well-being														
25. FS_{AUT}	1.14	1.25	0.05	0.10	0.01	0.04	0.10	0.06	0.07	0.14	0.68**	0.44**	0.24**	0.31**
26. FS_{CRE}	0.84	1.43	0.13	0.20*	0.07	0.14	0.12	0.17	0.11	0.28**	0.58**	0.64**	0.24**	0.46**
27. FS_{PAY}	0.23	1.65	-0.04	-0.09	0.21*	-0.08	-0.02	-0.04	0.40**	0.02	0.29**	0.29**	0.75**	0.25**
28. FS_{REL}	1.10	1.23	-0.04	-0.02	0.13	0.30**	0.08	0.02	0.19*	0.35**	0.27**	0.32**	0.22*	0.63**
29. SATIS	0.11	1.55	0.07	0.11	0.15	0.08	0.14	0.08	0.23**	0.14	0.54**	0.49**	0.42**	0.40**
30. CMT_{CON}	-0.29	1.15	-0.10	-0.07	-0.09	-0.08	-0.11	-0.10	0.01	-0.08	-0.15	-0.16	-0.08	-0.11
31. CMT_{AFF}	-0.04	1.39	0.11	0.10	0.05	0.16	0.17	0.15	0.19*	0.21*	0.32**	0.34**	0.19*	0.36**
32. CMT_{NOR}	-0.60	1.42	0.03	0.04	0.08	0.00	0.09	0.04	0.22	0.06	0.22*	0.32**	0.31**	0.21*

	Mean	SD												
33. TURN	0.83	1.56	-0.12	-0.11	-0.16	-0.04	-0.14	-0.06	-0.27**	-0.14	-0.31**	-0.37**	-0.35**	-0.26**
Moderators														
34. $CONF_r$	5.41	1.16	0.30**	0.29**	0.06	0.02	0.34**	0.33**	0.01	0.11	0.08	0.07	-0.07	-0.02
35. $CONF_a$	5.01	1.11	0.20*	0.22*	0.05	0.10	0.21*	0.18*	-0.07	0.14	0.18*	0.08	0.09	0.08
36. $DIST_r$	2.77	2.77	-0.10	-0.11	-0.25**	-0.06	-0.21*	-0.15	-0.16	-0.10	-0.08	-0.10	-0.04	-0.08
37. $DIST_a$	2.37	2.08	-0.12	-0.14	0.06	-0.04	-0.04	-0.03	0.23**	0.10	0.18*	0.24**	0.25**	0.13
38. TFS_P	4.03	1.00	0.06	0.07	0.06	-0.03	-0.05	0.00	0.09	0.00	-0.01	0.01	0.00	-0.09
39. TFS_C	5.10	0.72	0.11	0.13	0.21*	0.27**	0.15	0.13	0.07	0.18*	0.00	-0.05	0.00	0.08
40. TFS_F	5.48	0.82	-0.17	0.03	0.05	0.21*	-0.03	0.07	0.09	0.13	0.03	0.11	0.08	0.10
41. IMP_{AUT}	5.66	0.80	0.15	0.16	0.11	0.17	0.27**	0.28**	0.07	0.15	0.14	0.09	-0.02	0.08
42. IMP_{CRE}	5.78	0.85	0.10	0.16	0.07	0.02	0.26**	0.37**	0.10	0.03	0.06	0.23**	0.08	0.07
43. IMP_{PAY}	5.64	1.01	-0.02	0.02	0.16	0.21*	-0.12	-0.09	0.06	0.16	-0.02	-0.02	0.11	0.12
44. IMP_{REL}	4.85	1.22	0.11	0.16	0.15	0.61**	0.07	0.09	0.21*	0.58**	0.07	0.22	0.12	0.58**

Note: For correlations, N = 127 using listwise deletion. For means and standard deviations, N ranges from 155 to 187. AUT = autonomy, CRE = creativity, PAY = pay, REL = relationships, E_r = Retrospected supplies, P_r = Retrospected needs, E_c = Current supplies, P_c = Current needs, E_a = Anticipated supplies, P_a = Anticipated needs, FS = Facet satisfaction, SATIS = Overall satisfaction, CMT_{CON} = Continuance Commitment, CMT_{AFF} = Affective Commitment, CMT_{NOR} = Normative Commitment, TURN = Turnover Intent, $CONF_r$ = Confidence in retrospections, $CONF_a$ = Confidence in anticipations, $DIST_r$ = Temporal distance to retrospected job, $DIST_a$ = Temporal distance to anticipated job, TFS_P = Past Temporal Focus, TFS_C = Current Temporal Focus, TFS_F = Future Temporal Focus, IMP = Importance. A response scale ranging from 1 to 7 was used for retrospected, current,

and anticipated supplies and needs of each facet, facet importance, and temporal focus. A response scale ranging from -3 to +3 was used for facet

satisfaction, overall satisfaction, turnover intent, and continuance, affective, and normative commitment. Temporal distance was measured in years.

** p < .01, * p < .05

	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
13. P_{cAUT}	0.87														
14. P_{cCRE}	0.75**	0.91													
15. P_{cPAY}	0.39**	0.39**	0.95												
16. P_{cREL}	0.24**	0.30**	0.25**	0.94											
17. E_{aAUT}	0.42**	0.27**	0.19*	0.19*	0.85										
18. E_{aCRE}	0.25**	0.39**	0.17	0.07	0.55**	0.87									
19. E_{aPAY}	0.13	0.02	0.25**	0.11	0.36**	0.24**	0.95								
20. E_{aREL}	0.08	0.15	0.13	0.66**	0.21*	0.19*	0.09	0.91							
21. P_{aAUT}	0.50**	0.40**	0.20*	0.24**	0.62**	0.51**	0.32**	0.18*	0.85						
22. P_{aCRE}	0.41**	0.53**	0.22**	0.15	0.37**	0.71**	0.15	0.19*	0.67**	0.85					
23. P_{aPAY}	0.13	0.00	0.22*	0.06	0.26**	0.19*	0.80**	0.07	0.40**	0.27**	0.95				
24. P_{aREL}	0.17	0.21*	0.10	0.60**	0.16	0.23**	0.19*	0.83**	0.29**	0.30**	0.24**	0.92			
25. FS_{AUT}	0.46**	0.34**	0.24**	0.18*	0.21*	0.08	0.07	0.00	0.19*	0.01	0.08	0.06	0.89		
26. FS_{CRE}	0.39**	0.45**	0.21*	0.29**	0.25**	0.11	0.06	0.16	0.17	0.11	0.02	0.14	0.70**	0.92	
27. FS_{PAY}	0.16	0.06	0.50	0.17	0.13	-0.07	0.22*	0.07	-0.01	-0.12	0.17	0.03	0.32**	0.31**	0.97
28. FS_{REL}	0.28**	0.33**	0.25**	0.58**	0.23**	0.12	-0.02	0.35**	0.19*	0.09	0.01	0.29**	0.46**	0.42**	0.25**

Variable															
29. SATIS	0.40**	0.35**	0.37**	0.26**	0.29**	0.17	0.12	0.15	0.26**	0.11	0.10	0.14	0.68**	0.60**	0.45**
30. CMT$_{CON}$	-0.21*	-0.18*	-0.13	-0.08	-0.15	-0.10	-0.12	-0.10	-0.08	-0.10	0.00	-0.16	-0.09	-0.12	-0.08
31. CMT$_{AFF}$	0.23**	0.28**	0.21*	0.27**	0.15	0.11	0.00	0.23**	0.19*	0.07	0.05	0.19*	0.49**	0.49**	0.23**
32. CMT$_{NOR}$	0.12	0.19	0.28**	0.23**	0.06	-0.02	-0.05	0.10	0.00	-0.10	-0.01	0.05	0.43**	0.40**	0.39**
33. TURN	-0.20*	-0.20*	-0.35**	-0.23**	-0.15	-0.11	-0.06	-0.17	-0.15	-0.11	-0.11	-0.10	-0.49**	-0.46**	-0.44**
34. CONF$_r$	0.10	0.13	-0.02	-0.09	0.00	0.12	0.10	-0.04	0.13	0.16	0.12	0.06	0.13	0.13	-0.12
35. CONF$_a$	0.25**	0.17	0.06	0.00	0.09	0.04	0.06	0.01	0.22*	0.18*	0.10	0.08	0.21*	0.21*	0.04
36. DIST$_r$	-0.12	-0.14	-0.15	-0.09	-0.13	-0.04	-0.16	-0.01	-0.23**	-0.12	-0.15	-0.17	-0.11	-0.18*	-0.12
37. DIST$_a$	0.11	0.07	0.19*	0.14	0.20*	0.09	0.23**	0.11	0.10	0.01	0.13	0.13	0.23**	0.22**	0.27**
38. TFS$_P$	-0.04	-0.02	0.02	-0.09	0.08	0.08	0.09	-0.03	-0.05	0.06	0.10	0.01	0.03	-0.04	-0.02
39. TFS$_C$	0.17	0.17	0.14	0.05	0.11	0.20**	0.17	0.15	0.20*	0.22*	0.24**	0.17	0.06	0.01	-0.18*
40. TFS$_F$	0.16	0.16	0.15	0.16	0.10	0.28**	0.25**	0.21*	0.16	0.24**	0.20*	0.29**	0.00	0.02	-0.03
41. IMP$_{AUT}$	0.34**	0.30**	0.01	0.02	0.39**	0.36**	0.11	0.08	0.39**	0.36**	0.17	0.10	0.06	0.02	-0.11
42. IMP$_{CRE}$	0.08	0.25**	0.19*	0.05	0.25**	0.61**	0.13	0.12	0.37**	0.55**	0.11	0.12	-0.15	-0.03	-0.02
43. IMP$_{PAY}$	-0.09	-0.02	0.05	0.17	-0.04	0.08	0.54**	0.14	0.03	0.05	0.46**	0.25**	-0.03	-0.07	-0.09
44. IMP$_{REL}$	0.04	0.13	0.13	0.67**	0.08	0.14	0.03	0.71**	0.13	0.19	0.11	0.63**	0.05	0.17	0.07

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	28	29	30	31	32	33	34	35	36	37	38	39	40	41
28. FS_{REL}	*0.95*													
29. SATIS	0.44**	*0.91*												
30. CMT_{CON}	-0.25**	-0.15	*0.68*											
31. CMT_{AFF}	0.51**	0.64**	-0.04	*0.81*										
32. CMT_{NOR}	0.25**	0.55**	0.11	0.59**	*0.86*									
33. TURN	-0.30**	-0.62**	0.01	-0.53**	-0.66**	*0.76*								
34. $CONF_r$	-0.03	0.03	-0.16	-0.02	-0.14	0.04	*n/a*							
35. $CONF_a$	0.08	0.20*	-0.12	0.18*	0.08	-0.14	0.31	*n/a*						
36. $DIST_r$	-0.13	-0.15	0.24**	-0.04	-0.11	0.14	-0.14	-0.14	*n/a*					
37. $DIST_a$	0.20*	0.24**	-0.04	0.15	0.21*	-0.38**	-0.19*	-0.07	0.01	*n/a*				
38. TFS_P	-0.28**	-0.11	0.13	-0.20*	-0.03	0.06	0.12	-0.22*	-0.01	0.07	*0.89*			
39. TFS_C	0.11	0.08	-0.17	0.09	-0.15	0.02	0.18*	0.05	-0.08	-0.01	0.05	*0.73*		
40. TFS_F	0.10	0.07	-0.17	0.06	0.04	0.04	0.04	0.00	0.04	-0.12	0.07	0.21**	*0.85*	
41. IMP_{AUT}	0.05	0.07	-0.09	0.01	-0.16	0.06	0.19*	0.06	0.03	-0.04	0.06	0.35**	0.17	*0.74*
42. IMP_{CRE}	0.07	-0.01	-0.20*	0.04	-0.16	0.05	0.17	0.12	-0.11	-0.07	0.03	0.18*	0.15	0.35**
43. IMP_{PAY}	0.08	-0.10	-0.09	-0.10	-0.11	0.07	0.12	0.00	-0.04	-0.15	0.07	0.25**	0.32**	0.11
44. IMP_{REL}	0.44**	0.18*	-0.03	0.22*	0.09	-0.13	-0.02	-0.01	0.02	-0.04	-0.09	0.21*	0.20*	0.12

	42	43	44
42. IMP_{CRE}	*0.81*		
43. IMP_{PAY}	0.09	*0.93*	
44. IMP_{REL}	0.20*	0.15	*0.91*

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TABLE 3

Model Fit Indices

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	χ2	RMSEA	RMSEA C.I.	CFI	IFI
Autonomy	268.81**	.058	(.044; .072)	.976	.976
Creativity	264.16**	.057	(.043; .071)	.981	.982
Pay	280.10**	.059	(.044; .073)	.983	.983
Relationships	259.44**	.056	(.041; .070)	.989	.989
Moderators	395.43**	.047	(.030; .060)	.948	.950

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Note: df = 168 for Autonomy, Creativity, Pay, and Relationships models; df = 299 for

Moderator model which included factors for Temporal Focus; Retrospected Temporal

Distance; Anticipated Temporal Distance; Importance for Autonomy, Creativity, Pay, and

Relationships; Confidence in Retrospections; and Confidence in Anticipations.

**p < .01

Table 4. Regression Results for Current Fit

FACET	constant	E_c	P_c	E_c^2	E_cP_c	P_c^2	R^2	ΔR^2	$E_c = P_c$		$E_c = -P_c$	
									a_1	a_2	a_1	a_2
AUT	-0.02	0.62**	0.21**	-	-	-	0.45**	0.45**	0.82**	-	0.41**	-
	0.17	0.51**	0.31	-0.06	0.18**	-0.15**	0.49**	0.03*	0.83**	-0.03	0.20	-0.39**
CRE	0.06	0.72**	0.04	-	-	-	0.46**	0.46**	0.76**	-	0.68**	-
	0.29	0.44**	0.21*	-0.10*	0.28**	-0.16**	0.52**	0.06**	0.65**	0.02	0.23	-0.54**
PAY	-0.53**	0.80**	0.10	-	-	-	0.51**	0.51**	0.90**	-	0.70**	-
	-0.38**	0.61**	0.18*	0.02	0.15**	-0.13**	0.55**	0.04*	0.79**	0.04	0.43**	-0.27**
REL	0.50**	0.54**	0.10	-	-	-	0.39**	0.39**	0.64**	-	0.44**	-
	0.66**	0.39**	0.28*	-0.07	0.24**	-0.22**	0.42**	0.03*	0.68**	-0.05	0.11	-0.53**

Note: **$p < .01$; *$p < .05$. N = 178. AUT = Autonomy, CRE = Creativity, PAY = Pay, REL = Relationships. E_c = Current Supplies, P_c = Current Needs.

Slope of the fit line is represented by a_1 for $E_a = P_a$ ($b_1 + b_2$), and slope of the misfit line is represented by a_1 for $E_a = -P_a$ ($b_1 - b_2$). Curvature of the fit

line is represented by a_2 for $E_a = P_a$ ($b_3 + b_4 + b_5$), and curvature of the misfit line is represented by a_2 for $E_a = -P_a$ ($b_3 - b_4 + b_5$).

Table 5. Regression Results for Retrospected Fit (Controlling for Current Fit)

FACET	constant	E_c	P_c	E_c^2	E_cP_c	P_c^2	E_r	P_r	E_r^2	E_rP_r	P_r^2	R^2	ΔR^2_{retro}[1]	ΔR^2_{para}[2]
AUT	0.00	0.62**	0.18*	-	-	-	-0.03	0.07	-	-	-	0.45**	0.00	-
	0.27	0.53**	0.26	-0.06	0.17*	-0.13	-0.10	0.16	-0.06	0.07	-0.05	0.50**	0.01	0.05
CRE	0.10	0.65**	0.10	-	-	-	0.09	-0.09	-	-	-	0.44**	-0.02	-
	0.32*	0.41**	0.24*	-0.11	0.27**	-0.13*	-0.03	-0.02	0.03	0.07	-0.08	0.51**	-0.01	0.07
PAY	-0.54**	0.81**	0.05	-	-	-	-0.21*	0.23*	-	-	-	0.54**	0.03	-
	-0.44**	0.64**	0.16**	0.01*	0.15	-0.11	-0.18	0.17	0.09	-0.06	-0.05	0.58**	0.03	0.04
REL	0.50**	0.50**	0.19*	-	-	-	0.05	-0.07	-	-	-	0.43**	0.04	-
	0.61	0.41**	0.33**	-0.05	0.19	-0.18*	0.26	-0.23	-0.13	0.06	0.06	0.46**	0.04	0.04

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	$E_r = P_r$		$E_r = -P_r$	
FACET	a_1	a_2	a_1	a_2
AUT	0.04	-	-0.10	-
	0.06	-0.03	-0.26	-0.18
CRE	0.00	-	0.18	-
	-0.06	0.01	-0.01	-0.13
PAY	0.02	-	-0.43*	-
	-0.01	-0.02	-0.35	0.10
REL	-0.03	-	0.12	-
	0.03	-0.02	0.49	-0.13

Note: **$p < .01$; *$p < .05$. N = 166. AUT = Autonomy, CRE = Creativity, PAY = Pay, REL = Relationships. E_c = Current Supplies, P_c = Current Needs, E_r = Retrospected Supplies, P_r = Retrospected Needs. Slope of the fit line is represented by a_1 for $E_a = P_a$ ($b_6 + b_7$), and slope of the misfit line is represented by a_1 for $E_a = -P_a$ ($b_6 - b_7$). Curvature of the fit line is represented by a_2 for $E_a = P_a$ ($b_8 + b_9 + b_{10}$), and curvature of the misfit line is represented by a_2 for $E_a = -P_a$ ($b_8 - b_9 + b_{10}$).

[1] Change in R^2 when adding retrospected terms to monotonic and parabolic equations.

[2] Change in R^2 when adding parabolic terms to monotonic equation.

Table 6. Regression Results for Anticipated Fit (Controlling for Current Fit)

FACET	constant	E_c	P_c	E_c^2	E_cP_c	P_c^2	E_a	P_a	E_a^2	E_aP_a	P_a^2	R^2	ΔR^2_{antic} [1]	ΔR^2_{para} [2]
AUT	0.17	0.65**	0.22*	-	-	-	-0.07	-0.06	-	-	-	0.46**	0.01	
	0.62	0.54**	0.32*	-0.04	0.16*	-0.15*	-0.62	0.20	0.04	0.24	-0.20	0.50**	0.02	0.04
CRE	0.47*	0.76**	0.09	-	-	-	-0.24	-0.01	-	-	-	0.48**	0.02	
	0.94	0.50**	0.18	-0.09	0.25**	-0.12*	0.06	-0.66	-0.31	0.56	-0.15*	0.55**	0.03	0.07
PAY	-0.13	0.86**	0.14	-	-	-	-0.09	-0.19	-	-	-	0.54**	0.03*	
	-0.14	0.68**	0.17*	0.03	0.14*	-0.08	-0.03	0.14	-0.19	0.30	-0.27	0.59**	0.04*	0.04
REL	0.61**	0.58**	0.16	-	-	-	-0.16	-0.02	-	-	-	0.40**	0.01	
	0.67	0.42**	0.32**	-0.07	0.22*	-0.21**	0.19	0.15	0.12	-0.18	0.11	0.44**	0.01	0.03

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FACET	$E_a = P_a$		$E_a = -P_a$	
	a_1	a_2	a_1	a_2
AUT	-0.13	-	-0.01	-
	-0.42	0.07	-0.82	-0.40
CRE	-0.26	-	-0.23	-
	-0.59	0.11	0.72	-1.01
PAY	-0.27*	-	0.10	-
	0.11	-0.16	-0.17	-0.75
REL	-0.18*	-	-0.15	-
	0.34	0.05	0.04	0.40

Note: **$p < .01$; *$p < .05$. N = 176. AUT = Autonomy, CRE = Creativity, PAY = Pay, REL = Relationships. E_c = Current Supplies, P_c = Current Needs, E_a = Anticipated Supplies, P_a = Anticipated Needs. Slope of the fit line is represented by a_1 for $E_a = P_a$ ($b_6 + b_7$), and slope of the misfit line is represented by a_1 for $E_a = -P_a$ ($b_6 - b_7$). Curvature of the fit line is represented by a_2 for $E_a = P_a$ ($b_8 + b_9 + b_{10}$), and curvature of the misfit line is represented by a_2 for $E_a = -P_a$ ($b_8 - b_9 + b_{10}$).

[1] Change in R^2 when adding anticipated terms to monotonic and parabolic equations.

[2] Change in R^2 when adding parabolic terms to monotonic equation.

Table 7. Regression Results for Retrospected Fit (without Controlling for Current Fit)

FACET	constant	E_r	P_r	E_r^2	E_rP_r	P_r^2	R^2	ΔR^2	$E_r = P_r$		$E_r = -P_r$	
									a_1	a_2	a_1	a_2
AUT	1.00**	0.08	0.13	-	-	-	0.03	0.03	0.20	-	-0.05	-
	1.10**	-.06	0.27	-0.06	0.14	-0.10	0.05	0.02	0.21	-0.02	-0.32	-0.29
CRE	0.65**	0.18*	0.12	-	-	-	0.07**	0.07**	0.30	-	0.06	-
	0.58**	0.04	0.17	0.05	0.09	-0.07	0.09**	0.02	0.21	0.07	-0.13	-0.11
PAY	0.04	-0.06	0.42	-	-	-	0.10**	0.10**	0.35	-	-0.48*	-
	0.30	-0.12	0.49**	-0.14	0.26	-0.19*	0.13**	0.03	0.38	-0.07	-0.61*	-0.59*
REL	0.81**	0.10	0.26**	-	-	-	0.11**	0.11**	0.35	-	-0.16	-
	0.88**	0.03	0.30*	-0.05	0.16	-0.10	0.13**	0.12	0.33	0.01	-0.27	-0.30

Note: **$p < .01$; *$p < .05$. N = 168. AUT = Autonomy, CRE = Creativity, PAY = Pay, REL = Relationships. E_r = Retrospected Supplies, P_r = Retrospected Needs. Slope of the fit line is represented by a_1 for $E_a = P_a (b_1 + b_2)$, and slope of the misfit line is represented by a_1 for $E_a = -P_a (b_1 - b_2)$. Curvature of the fit line is represented by a_2 for $E_a = P_a (b_3 + b_4 + b_5)$, and curvature of the misfit line is represented by a_2 for $E_a = -P_a (b_3 - b_4 + b_5)$.

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Table 8. Regression Results for Anticipated Fit (without Controlling for Current Fit)

FACET	constant	E_a	P_a	E_a^2	E_aP_a	P_a^2	R^2	ΔR^2	$E_a = P_a$		$E_a = -P_a$	
									a_1	a_2	a_1	a_2
AUT	0.03	0.28	0.27	-	-	-	0.08**	0.08**	0.55**	-	0.01	-
	0.51	0.25	-0.14	-0.20	0.39	-0.09	0.09**	0.01	0.12	0.10	0.39	-0.68
CRE	0.05	0.12	0.29	-	-	-	0.04*	0.04*	0.41**	-	-.16	-
	0.74	0.08	-.50	-.30	0.70*	-0.17	0.08*	0.04	-0.42	0.23	0.58	-1.17
PAY	-0.09	0.02	0.16	-	-	-	0.01	0.01	0.17	-	-0.14	-
	-0.17	-0.18	0.86	-0.19	0.54	-0.54	0.04	0.03	0.67	-0.18	-1.04	-1.26
REL	0.68**	0.28*	0.7	-	-	-	0.09**	0.09**	0.35**	-	0.22	-
	0.60	0.23	-0.07	0.11	-0.13	0.13	0.11**	0.02	0.16	0.11	0.30	0.36

Note: **$p < .01$; *$p < .05$. N = 177. AUT = Autonomy, CRE = Creativity, PAY = Pay, REL = Relationships. E_a = Anticipated Needs. Slope of the fit line is represented by a_1 for $E_a = P_a$ ($b_1 + b_2$), and slope of the misfit line is represented by a_1 for $E_a = -P_a$ ($b_1 - b_2$). Anticipated Needs. P_a = Anticipated Supplies, P_a = Anticipated Needs. Curvature of the fit line is represented by a_2 for $E_a = P_a$ ($b_3 + b_4 + b_5$), and curvature of the misfit line is represented by a_2 for $E_a = -P_a$ ($b_3 - b_4 + b_5$).

FIGURE 1

A Model of Person-Environment Fit (Edwards, Caplan, & Harrison, 1998)
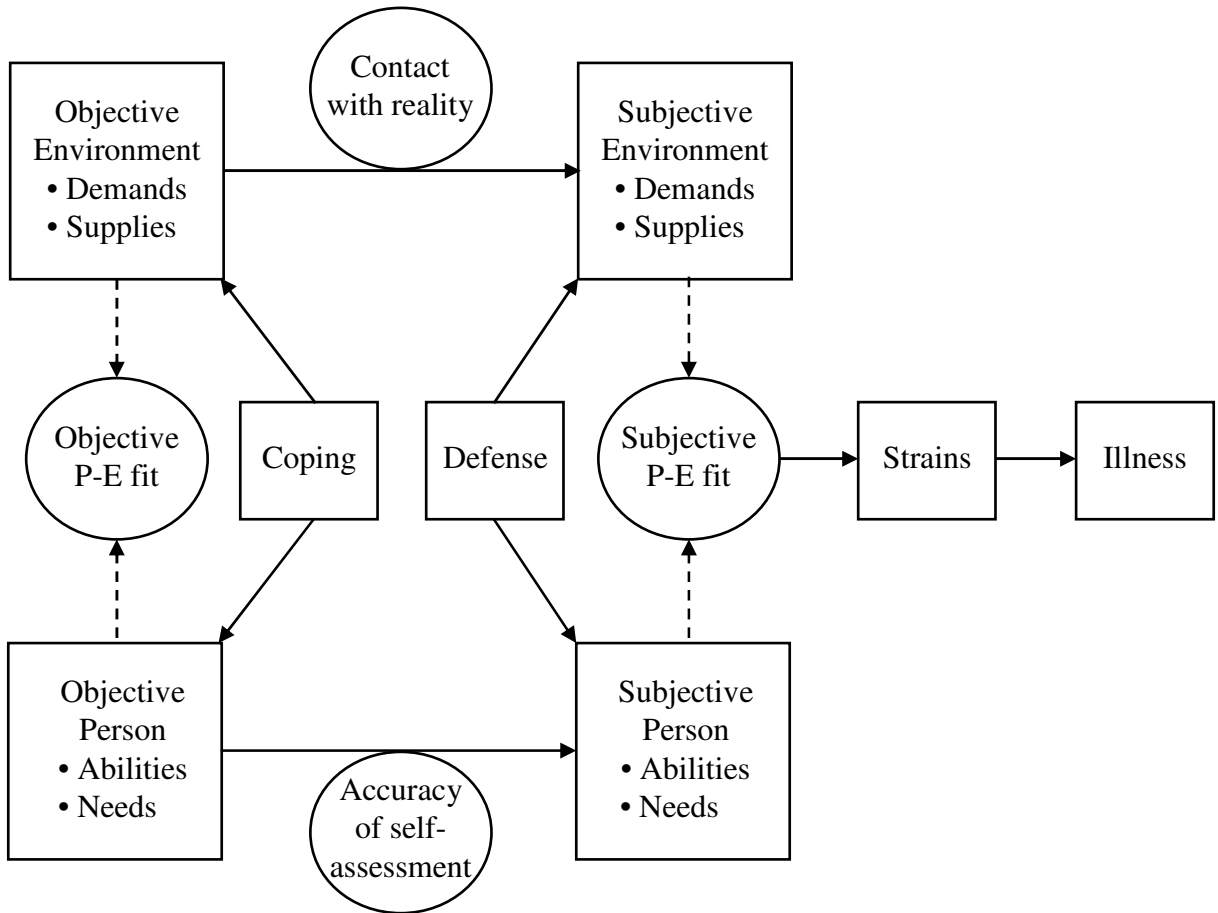
FIGURE 2

Extending P-E fit with the Actual and Subjective Passage of Time.

E_{C0}

O_{C0}

P_{C0}
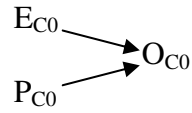
a. P-E fit in a Moment in Time

E_{C-1} E_{C0} E_{C+1}

O_{C-1} O_{C0} O_{C+1}

P_{C-1} P_{C0} P_{C+1}

b. P-E Fit in the Actual Passage of Time

E_{R0}

O_{R0}

P_{R0}

E_{C0}

O_{C0}

P_{C0}

E_{A0}

O_{A0}

P_{A0}
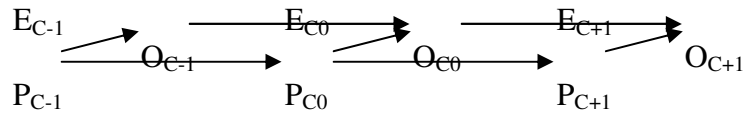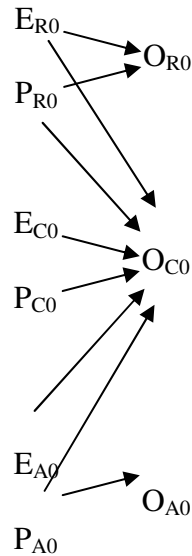
c. P-E Fit in the Subjective Passage of Time

Note: P – Person; E – Environment; R – Retrospected; C – Current; A – Anticipated; 0 indicates the current period, -1 indicates the past period; +1 indicates the future period.

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FIGURE 3

A Temporal Model of P-E Fit.

Past

Present

Future

P_{R-1}

O_{R-1}

P_{R0}

O_{R0}

P_{R+1}

O_{R+1}

E_{R-1}

E_{R0}

E_{R+1}

P_{C-1}

P_{C0}

P_{C+1}

O_{C-1}

O_{C0}

O_{C+1}

E_{C-1}

E_{C0}

E_{C+1}

P_{A-1}

P_{A0}

P_{A+1}

O_{A-1}

O_{A0}

O_{A+1}

E_{A-1}

E_{A0}

E_{A+1}
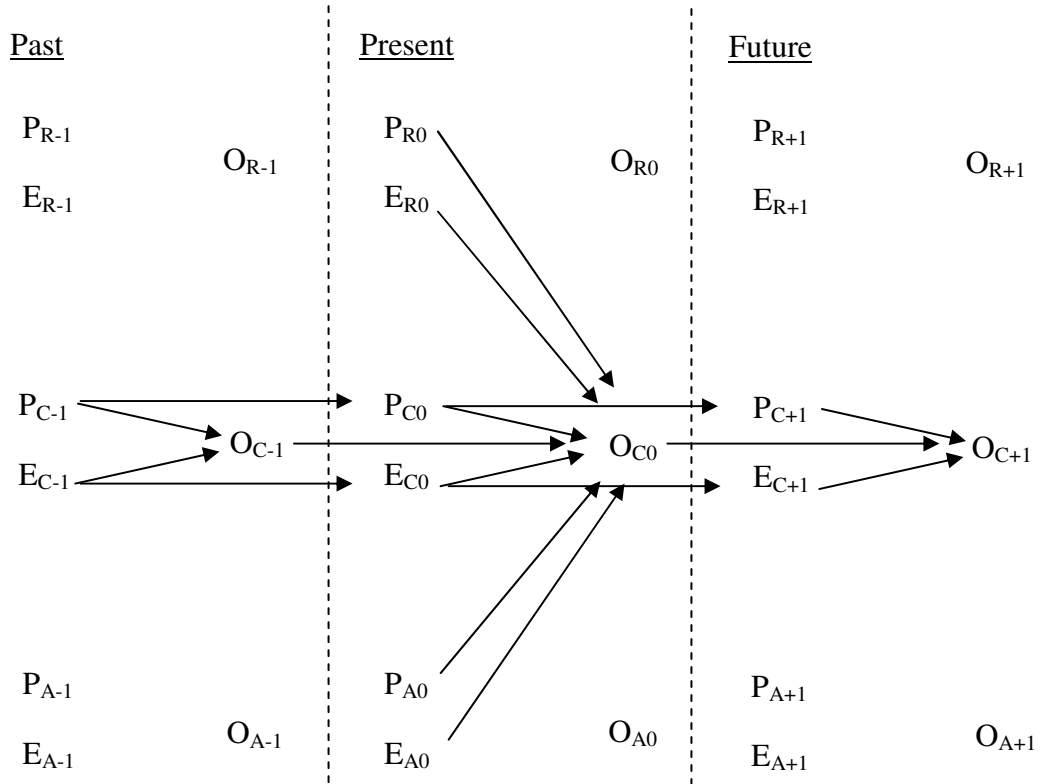
FIGURE 4

Functional Forms of P-E Fit (adapted from Harrison, 1978).

Person-Environment Fit on Needs-Supplies Dimensions
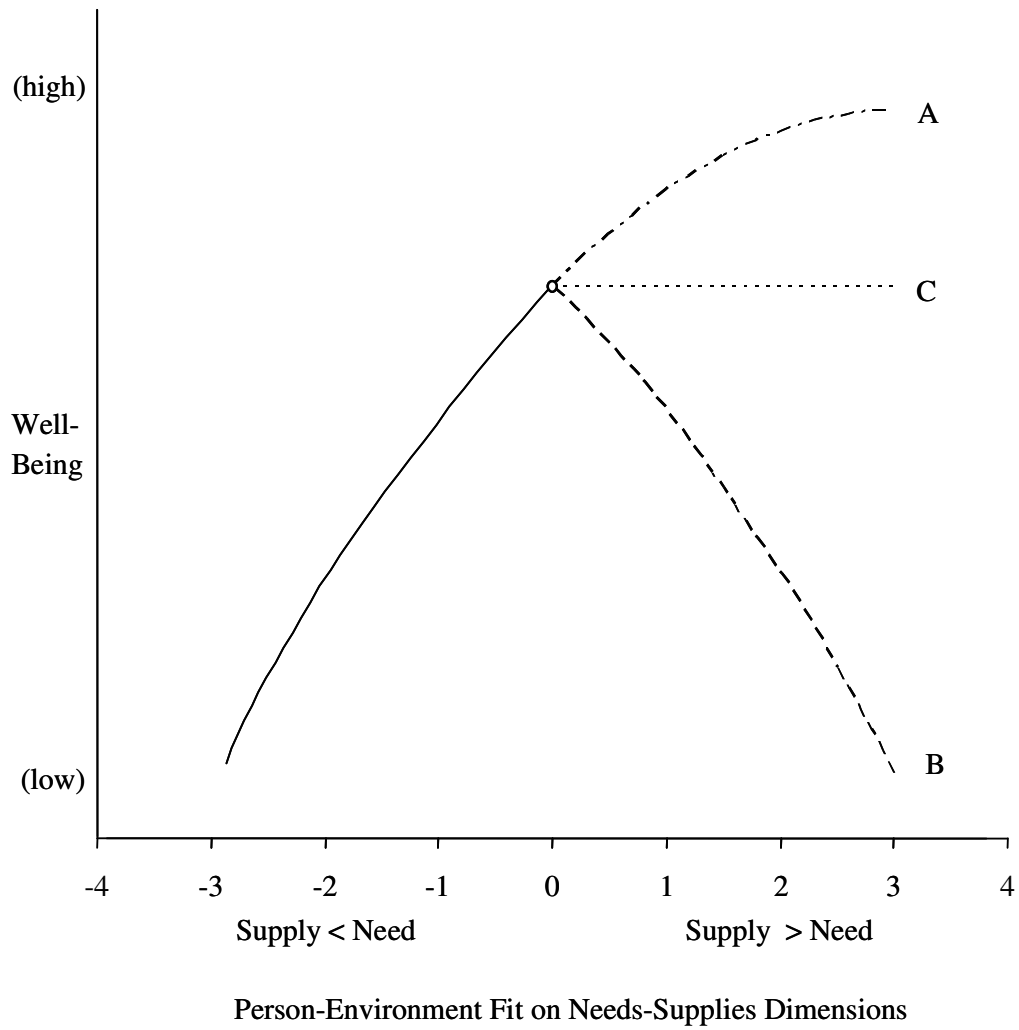
FIGURE 5

Parabolic Current P-E Fit Surfaces
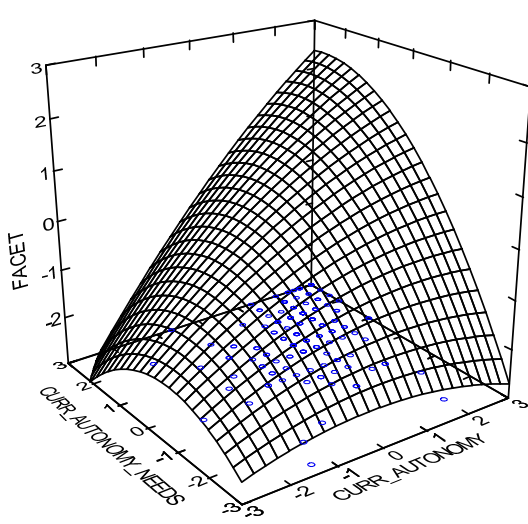
a. Current Autonomy Fit
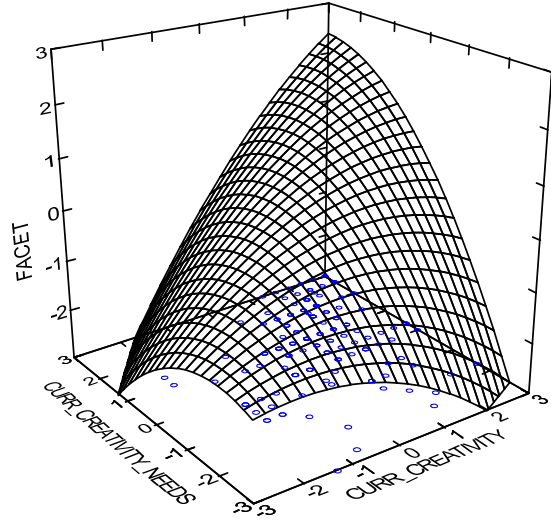
b. Current Creativity Fit
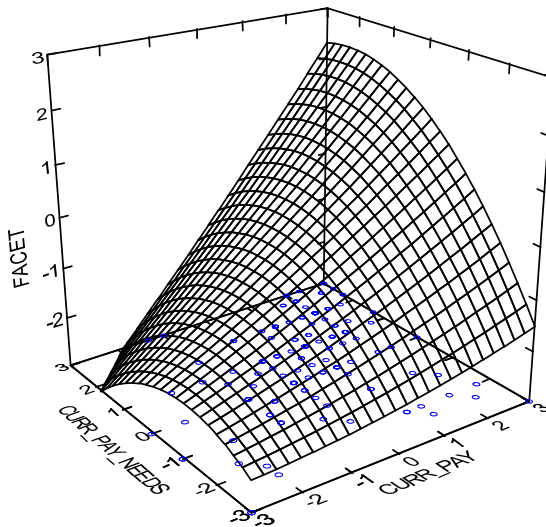
c. Current Pay Fit
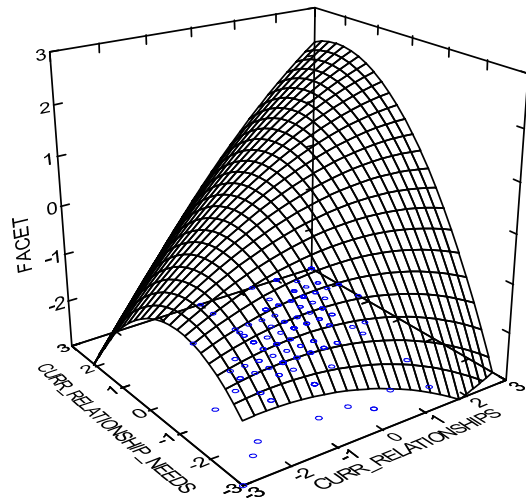
d. Current Relationships Fit

FIGURE 6

Parabolic Retrospected P-E Fit Surfaces
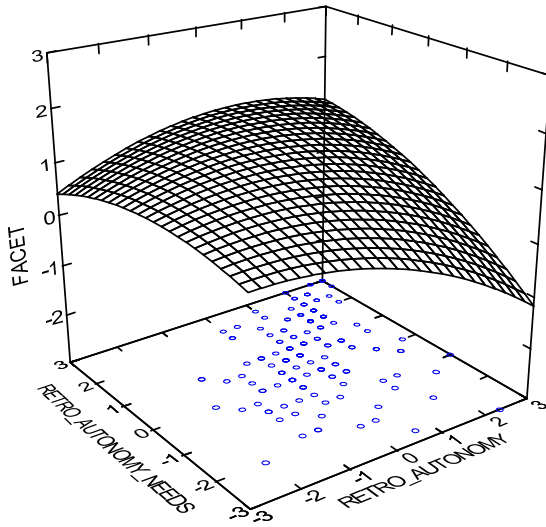
a. Retrospected Autonomy Fit
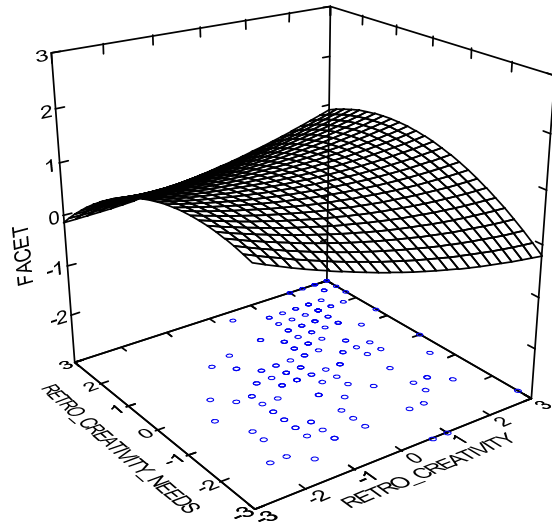
b. Retrospected Creativity Fit
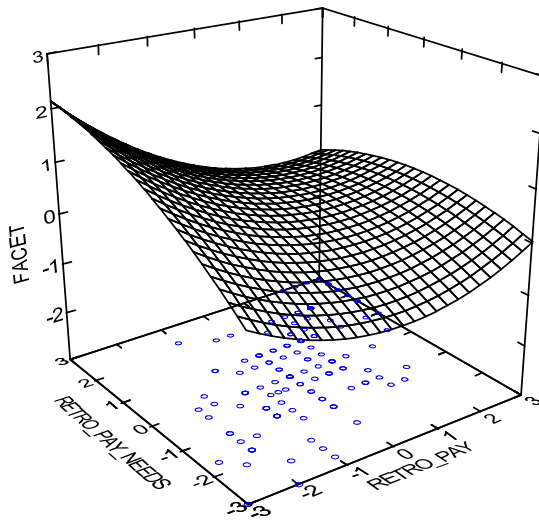
c. Retrospected Pay Fit
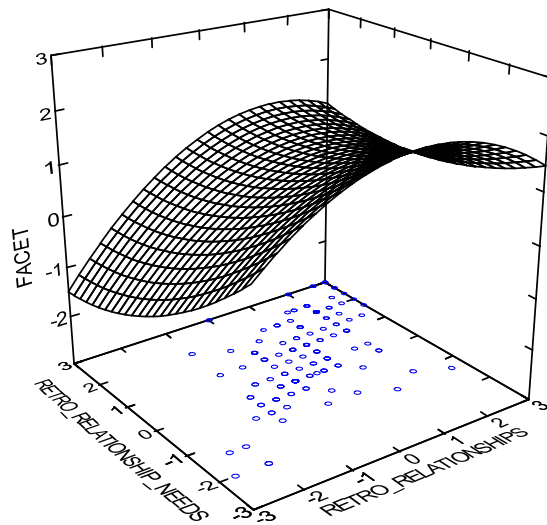
d. Retrospected Relationships Fit

FIGURE 7

Parabolic Anticipated P-E Fit Surfaces
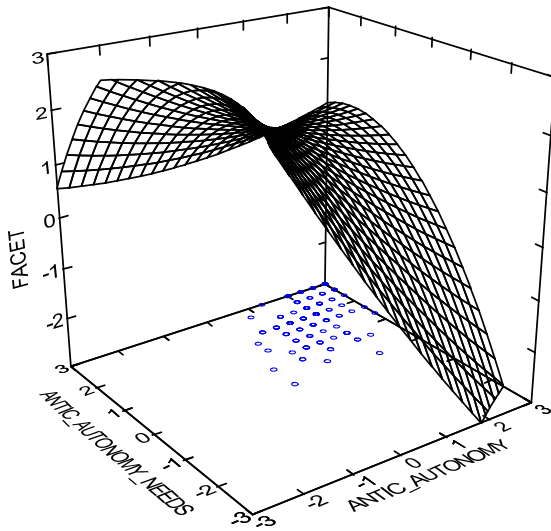
a. Anticipated Autonomy Fit
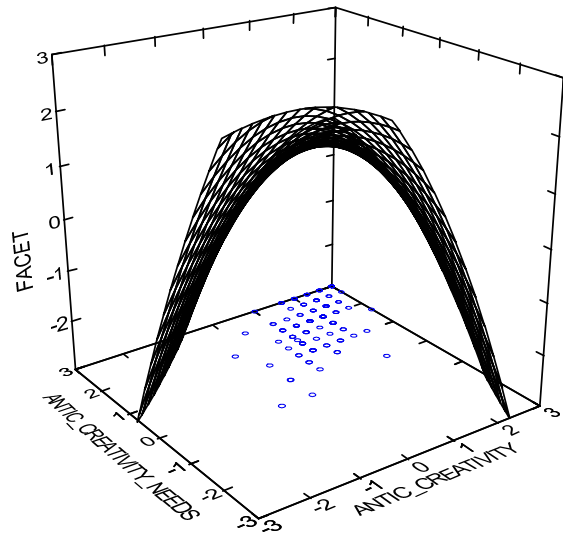
b. Anticipated Creativity Fit
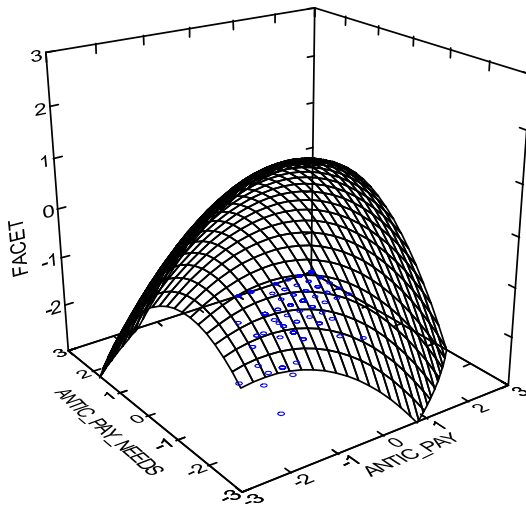
c. Anticipated Pay Fit
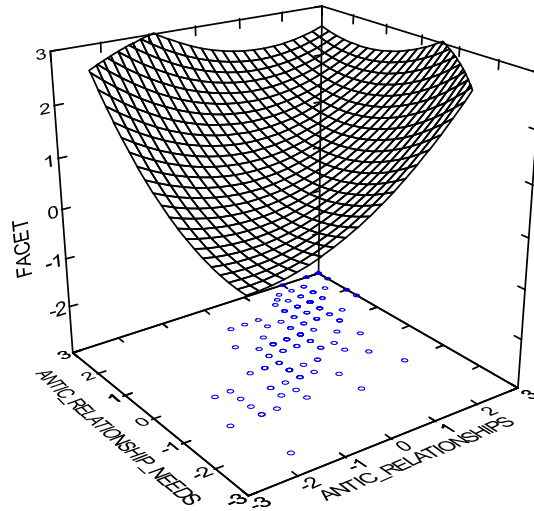
d. Anticipated Relationships Fit

FIGURE 8

Interaction between Past Temporal Focus and Retrospected Pay
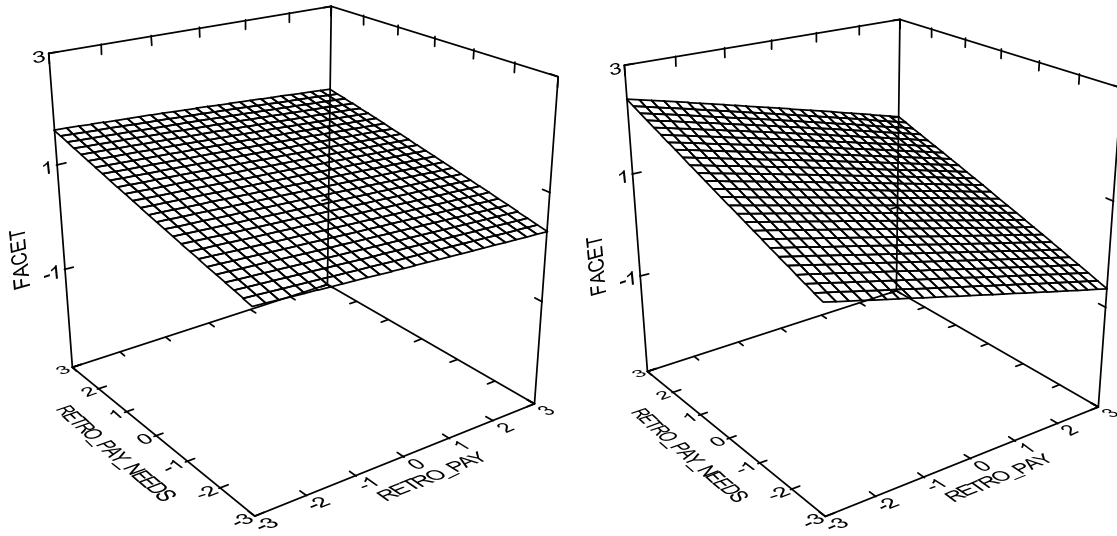
a. Low Past Temporal Focus   b. High Past Temporal Focus

FIGURE 9

Interaction between Future Temporal Focus and Anticipated Creativity
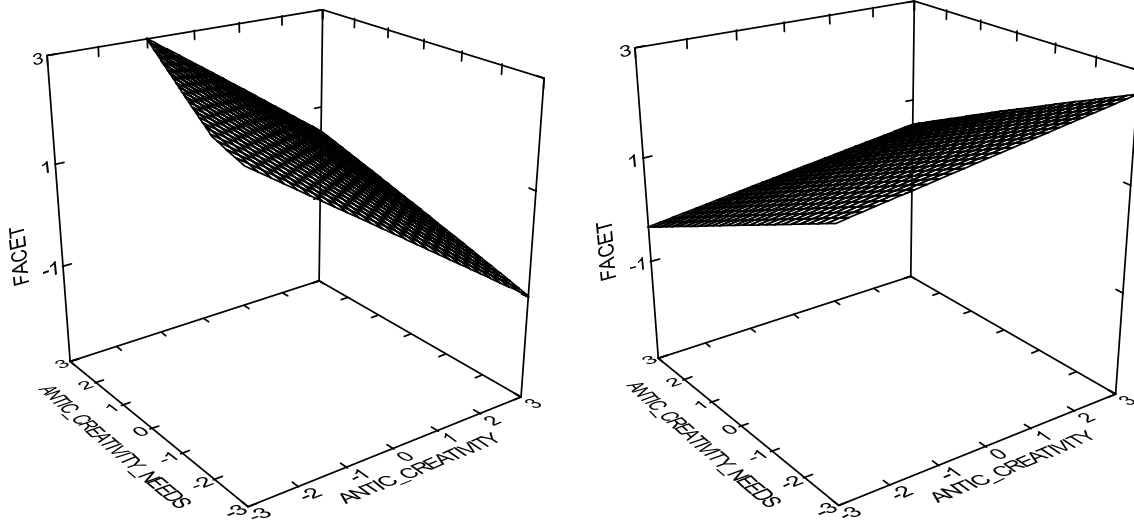
a. Low Future Temporal Focus   b. High Future Temporal Focus

FIGURE 10

Interaction between Temporal Distance and Retrospected Relationships
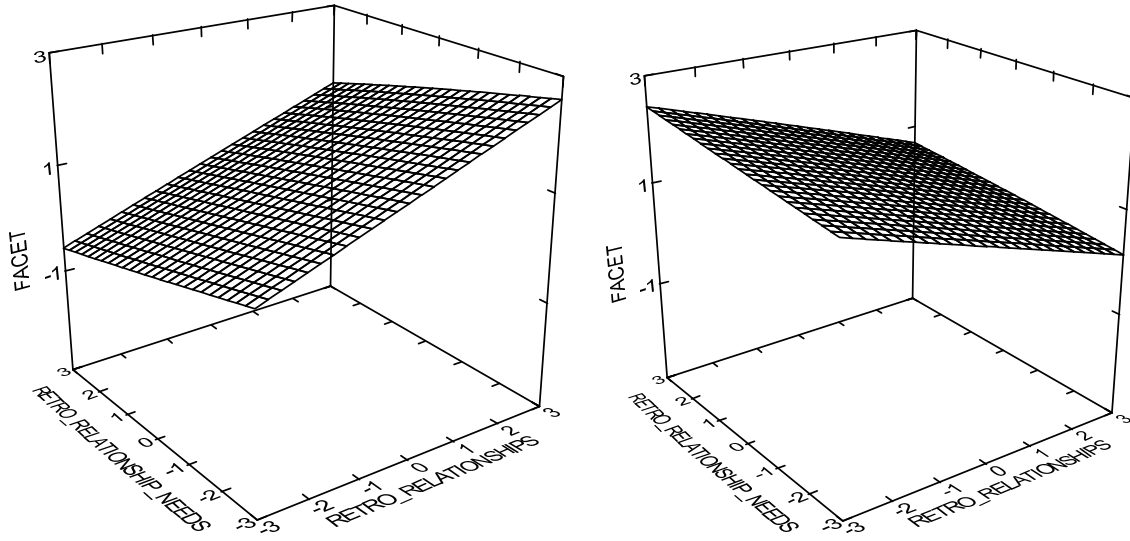
a. Low Temporal Distance   b. High Temporal Distance

FIGURE 11

Interaction between Importance and Current Pay in Parabolic Form
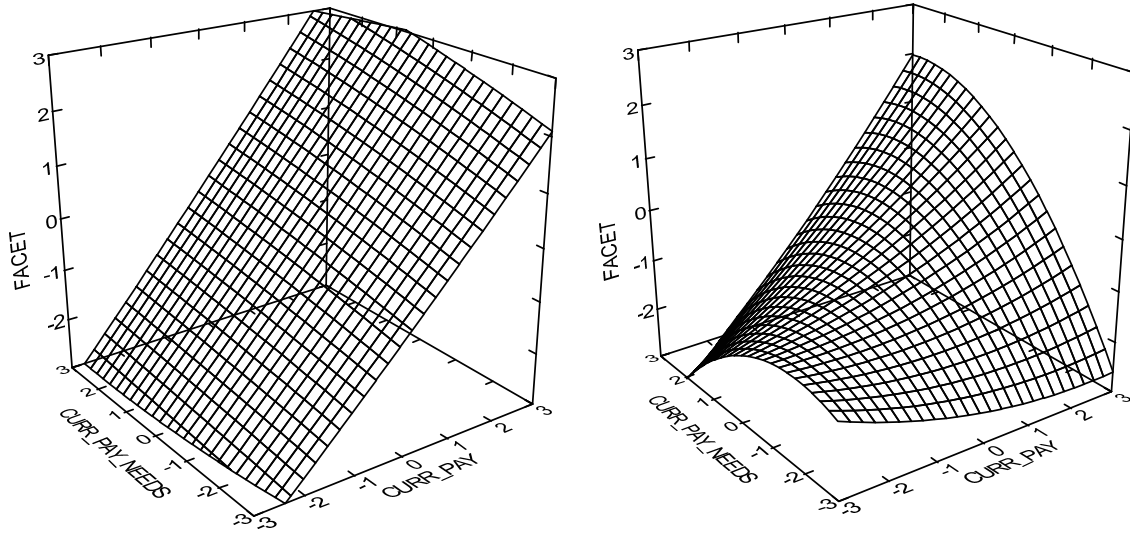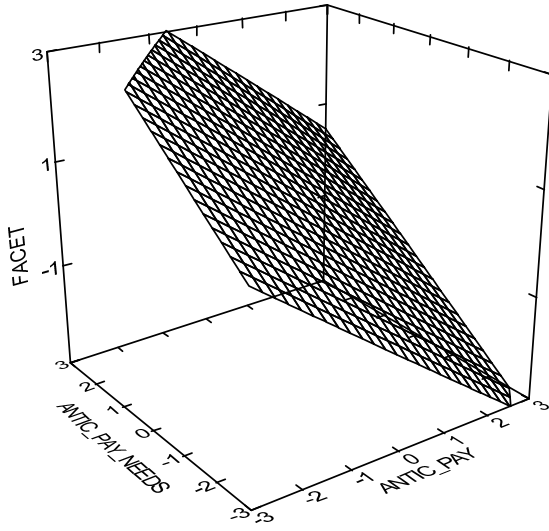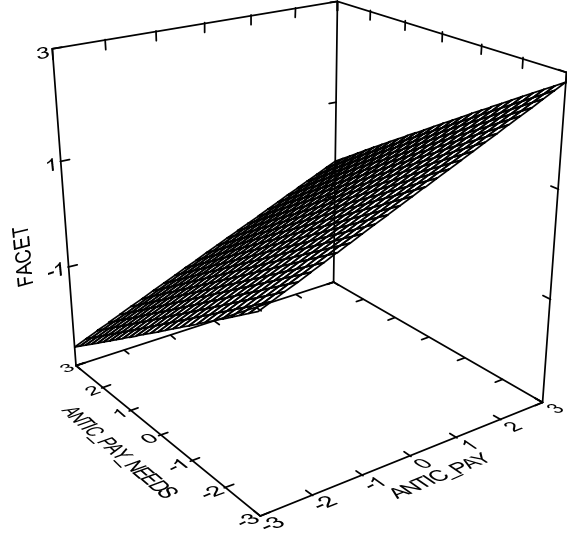

a. Low Importance of Pay   b. High Importance of Pay

FIGURE 12

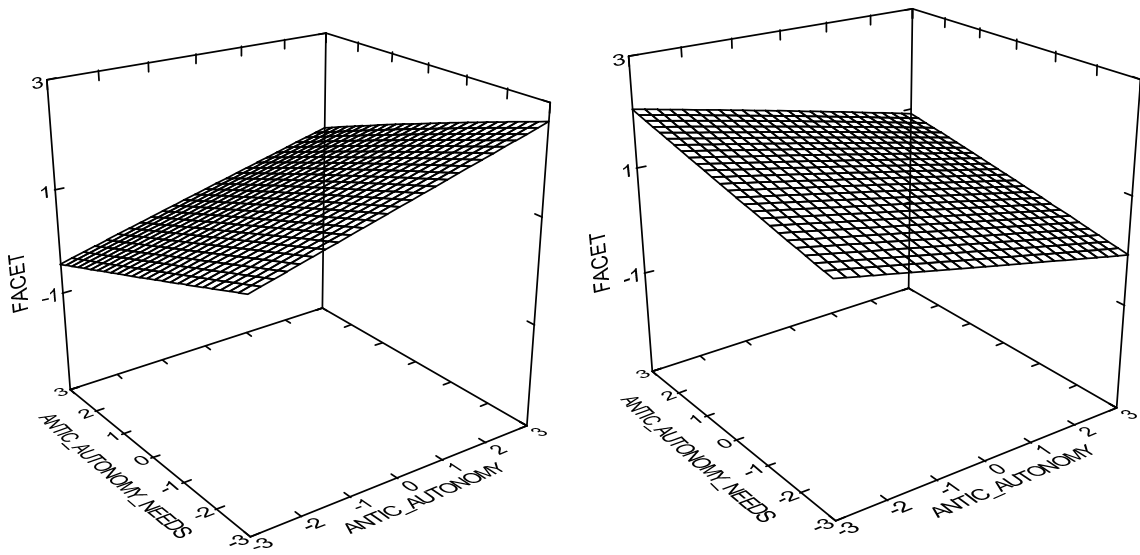## Interaction between Importance and Anticipated Pay

a. Low Importance of Pay

b. High Importance of Pay

FIGURE 13

Interaction between Importance and Anticipated Autonomy

a. Low Importance of Autonomy   b. High Importance of Autonomy