JOB COMPLEXITY, PERFORMANCE, AND WELL-BEING: WHEN DOES SUPPLIES-VALUES FIT MATTER?

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We extend person–job fit research by investigating job performance as a moderator of the supplies–values fit relationship with strain outcomes (somatic complaints and depression). Drawing on cybernetic stress and psychological centrality perspectives, we argue that supplies–values misfit relates to lower well-being levels when job performance is low but that this effect is attenuated when job performance is high. The results are consistent with this prediction across 3 studies that provide progressively more rigorous tests of the hypothesis. Implications of the results for theoretical and empirical person–job fit research are addressed.

There is consistent and compelling evidence that fit (or misfit) between individual preferences for various tasks characteristics and the characteristics actually present in the job is related to a variety of health and well-being outcomes (e.g., Caplan, Cobb, French, Harrison, & Pinneau, 1980; Edwards, 1996; Edwards & Parry, 1993; French, Caplan, & Harrison, 1982). The supplies–values (S–V) or needs–supplies fit approach to stress offers conceptual extensions over job demands (e.g., Cooper & Marshall, 1976) or psychophysiological response theories (e.g., Parker & DeCotiis, 1983) by incorporating both the situations an individual encounters in the environment (task characteristics, in this case) and the individual's preferences for, or interests in, jobs with these attributes. S–V fit is defined as

the congruence between the desired level of a certain task characteristic (values) and the level of that characteristic available in the job (supplies; Kristof, 1996). Values are the "conscious desires held by the person" (Edwards & Parry, 1993, p. 294) and are typically defined operationally as preferences or interests, although they can also include motives and goals (e.g., Kristof-Brown & Stevens, 2001). Supplies refer to the amount, frequency, or qualities of the job characteristic at issue—for this study, the amount of complexity on the job (e.g., French et al., 1982).

The general S–V fit prediction that strain increases as supplies fall short of values, or as supplies exceed values, is supported in a number of studies and contexts (e.g., Edwards, 1996; Edwards & Harrison, 1993). Despite calls for additional theoretical advancement (e.g., Kristof, 1996), substantial progress on the S–V fit approach to stress research was limited primarily to methodological fronts in the past decade (e.g., see Edwards, 1993). The basic relationship of S–V fit to strain is well established, but the conditions that strengthen or weaken this relationship still need theoretical clarification. For example, Kristof (1996) argued that the consequences of fit can be assessed adequately only in light of the context in which it occurs. In addition, although the "core process underlying S–V fit is the cognitive comparison of the perceived and desired" job conditions (Edwards, 1996, p. 294), little if any research assesses the robustness of this idea empirically by investigating the fit of task preferences with actual or objective exposures in the workplace. We address these theoretical and methodological issues here. First, we describe the theoretical underpinnings of S–V fit theory, especially as it relates to employee health and well-being. Second, we use cybernetic stress and psychological centrality arguments to define a theoretical moderator of the S–V fit/well-being relationship, i.e., job performance. Kasl's (1978) argument that the role of job performance in the study of work stress is generally unexplored remains largely true today. Third, we test our arguments across three studies that allow progressively more rigorous tests of the propositions.

The research reported here is circumscribed in several ways. One, we focus on the S–V perspective of person–job fit, rather than the demands-abilities (D–A) fit approach, because the conceptual linkages with well-being outcomes in the stress context are stronger for S–V fit. For instance, Edwards (1992) argues that D–A misfit produces stress only if it creates misfit between supplies and values; accordingly, S–V fit should be preferred "for both conceptual and empirical reasons" (Edwards & Parry, 1993, p. 302). Moreover, conceptual work (e.g., Kristof, 1996) and empirical evidence (e.g., Cable & DeRue, 2002) demonstrate that affective outcomes such as well-being are the proximal consequences of S–V fit, but variables like on-the-job performance and other related behaviors were the proximal outcomes of D–A misfit. Two, we focus on a single

job characteristic—job complexity—for substantive and practical reasons. Complexity, or job scope, is a central concept in the work stress literature (e.g., Schaubreock, Jones, & Xie, 2001; Schaubroeck & Merritt, 1997), exhibits power relationship with strain outcomes (Xie & Johns, 1995), and is among the strongest psychosocial predictors of physical health outcomes (e.g., Caplan et al., 1980; House, 1980). Complexity is also viewed as a general job characteristic comprising more specific aspects (e.g., variety, significance, autonomy, work load, and skill level; Adelmann, 1987; Xie & Johns, 1995). Three, we examine our predictions across two well-being outcomes—somatic complaints and depression—because they are central in the person–job fit and stress literature (e.g., Edwards & Harrison, 1993), they correlate well with related medical diagnoses (Kemmerer, 1990), and they are proximal rather than distal (e.g., coronary artery disease) outcomes of the stress process.

Supplies–Values Fit and Well-Being

In the person–job fit literature, the processes underlying the S–V model are the cognitive comparisons that individuals customarily make concerning the congruence between experienced and desired job characteristics. S–V misfit is expected to relate to strain outcomes when supplies exceed values (the job is more complex than one prefers) and when supplies fall short of values (the job is simpler than one prefers). Undersupply is the more common focus of the relationship between S–V fit and strain (e.g., Cummings & Cooper, 1979; French et al., 1982). Excess values increase psychological and physiological strain by creating emotional distress and arousal, eliciting too much cognitive rumination about the discrepancy, and activating defense mechanisms that can dampen mood (Beehr & Bhagat, 1985; Edwards, 1992). Oversupply, on the other hand, could also create emotional distress and cognitive ruminations, but it can also increase strain through depletion. Surplus could hinder future value fulfillment on the same dimension or on different job dimensions (Edwards & Parry, 1993).

Thus, the S–V fit perspective predicts that high levels of well-being (low somatic complaints and depression) occur with optimal S–V fit and that well-being erodes as supplies deviate from values in both directions. In a series of studies of S–V fit for job complexity, Edwards and colleagues obtained consistent support for this general prediction. For example, using response surface plots to show the relationship of S–V complexity fit and depression, Edwards and Harrison (1993) found that depression was at its lowest point and the slope essentially flat along the $S = V$ line from low supplies and values to high supplies and values. Higher levels of depression were evident as supplies deviated from values in both directions (see also,

Edwards & Parry, 1993). Following S–V fit theory and research, then, we predict:

> *Hypothesis 1*: Well-being (somatic complaints and depression) will be lower as supplied job complexity exceeds or falls short of valued job complexity.

The Role of Job Performance

A critical aspect of our research is the identification of contextual factors that affect the relationship proposed above. We argue that job performance is a contingency factor that either heightens or attenuates the impact of S–V misfit on well-being outcomes. As noted above, job performance is not a logical outcome of S–V fit or misfit, that is, it is reasonable that an individual could perform well or poorly regardless of whether supplies exceed values or values exceed supplies. We argue that job performance is one factor that can either heighten or lessen the cognitive attention that an individual pays to S–V misfit and that this attention relates to well-being outcomes. These arguments are grounded in cybernetic stress theory (Edwards, 1992) and the psychological centrality or salience literature (e.g., Thoits, 1991). As a matter of course, people make intuitive assessments of the congruence between their desires and their actual experiences on the job. The frequency, duration, and intensity of these assessments can be heightened when an individual's self-attention or self-focus is high, when the discrepancy concerns an important issue, or when the individual is cued in some way to engage in conscious comparison processes (Edwards, 1992). More frequent, longer duration, and higher intensity attention paid to discrepancies between one's desired and actual job situation is likely to exacerbate the effects of the discrepancy on well-being (Klein, 1989). A key issue then is the isolation of factors that may increase the amount and intensity of these comparison processes. We propose job performance to be significant in this context.

Performing poorly is likely to increase the number and duration of S–V comparisons, and furthermore to increase the *intensity* of these deliberations. In addition to cognitive comparisons initiated by the individual, it is not rare for poorly performing employees to receive comments such as "Is this really the type of job you want to be doing?" from coworkers or "Perhaps you would be happier in another line of work" from supervisors. Such comments cue employees to pay attention to S–V discrepancies and are likely to exacerbate the negative effects of S–V misfit. Indeed, the process of receiving negative performance feedback from a supervisor is an implicit cue to re-evaluate one's job experiences. Employees in negative performance situations are thus likely to wonder whether it is "worth it" intrinsically and extrinsically. Intrinsic evaluations necessarily entail

congruence between desired and actual job characteristics. By contrast, effective job performance should reduce signals for introspection, lower the perceived importance of the misfit, and curtail external cues that trigger cognitive rumination concerning the discrepancy. As a result, effective performance should lessen the negative effects of S–V misfit on well-being.

The cybernetic stress arguments are supported by the psychological centrality literature. According to this perspective, the impact of a particular occupational context on well-being depends "on its importance or unimportance, centrality or periphery, in the individual's cognitive structure" (Rosenberg & Pearlin, 1978; p. 67). Differential attention to a situation depends on whether it is relevant for one's self-esteem (Faunce, 1982). Attention to discrepancies is greater for more central (or esteem-relevant) dimensions than for more tangential dimensions (see also Gecas & Seff, 1989; 1990). Misfit between supplies and values should take a psychologically pivotal role in the cognitive structure of poor performing individuals because poor performance threatens self-esteem and self-identity. Such esteem threats direct one's attention to perceived inconsistencies between values and the environment. Effective employees, on the other hand, do not experience these threats. S–V misfit is thus likely to play a more peripheral role in their cognitive structures.

In short, cybernetic stress theory and the psychological centrality literature suggest that the relationship between desired and actual complexity fit on the one hand, and well-being on the other, is moderated by job performance. We argue that low job performance exacerbates the impact of S–V misfit on well-being by increasing frequency, duration, and intensity of cognitive deliberation concerning misfit, perhaps increasing the number of environmental cues that promote conscious deliberation on misfit, and increasing the psychological centrality or identity-relevance of S–V misfit. Thus:

> *Hypothesis 2*: The relationship of S–V misfit with well-being (somatic complaints and depression) will be stronger when job performance is low than when job performance is high.

We explore these predictions in three studies. The multiple examinations allow replications of the tests; they also represent incrementally more rigorous tests of the two hypotheses.

Study 1 Method

Sample

The population for this study was the highest ranking human resource (HR) or personnel managers in the largest (Class I and Class II) motor

carrier organizations in the U.S., as listed in the 1999 calendar-year version of the *TTS Blue Book of Trucking Companies (Blue Book).* A total of 1,041 organizations were in the Class I and II categories in this calendar year. A questionnaire was mailed after: (a) telephone contact was made with each organization to identify the top HR official; (b) a letter describing the study was mailed to the identified respondent; and (c) an encouraging phone call was made to the respondent. A month to 6 weeks following the initial mailing, a second questionnaire with an encouraging letter was sent to all respondents who had yet to return a completed questionnaire. In all, 380 completed questionnaires were returned—a 37% response rate. The average age of the participants was 47 years, 18% of the sample was female, the average tenure was 5 years, and the modal education level was "some college or technical training beyond high school."

A series of response bias checks yielded no significant differences between responders and nonresponders in terms of gender or job title (coded by organizational level) or across an array of employing–organization characteristics (number of employees, truckload or less-than-truckload organization, organizational age, operating ratio, total fringe benefits cost, total wages paid, average haul (in miles), total insurance costs, and tons per mile).

Measures

Job complexity. Perceptions of job complexity were assessed with three items adapted from Cammann, Fichman, Jenkins, and Klesh (1983). The items are: "My job is very complex;" "My job requires a lot of skill;" and "My job is such that it takes a long time to learn the skills required to do the job well." The items had 5 Likert-type response options from $1 =$ *strongly disagree* to $5 =$ *strongly agree* ($\acute{a} = .73$).

Preference for job complexity. This variable was assessed with responses on a 100-millimeter continuous dependent-response rating line (see Russell & Bobko [1992] for an analysis of the properties of these ratings formats). Respondents were instructed to place an "X" on the line that corresponded to their ideal job in terms of complexity. The rating line was anchored by "simple, all tasks are quite easy to do" on one end and "extremely complex, every task is very difficult to do" on the other.

Performance. Self-rated performance was assessed by having respondents rate their own job performance in the past year on a scale from $0 =$ *very poor performance* to $100 =$ *perfect performance*.

Well-being. *Somatic complaints* was assessed with a 14-item check-list ($\acute{\alpha} = .83$) based on the physical health problems scale from House (1980). Sample health problems include leg cramps, headaches, dizziness, trouble breathing, and chest tightness in the past month. *Depression* was assessed using the 6-item subscale from Derogatis' (1993) Brief Symptom Inventory ($\acute{\alpha} = .89$). An illustrative item is "feeling no interest in things." Depression and somatic complaints items had five response options from $1 = never$ to $5 = all\ the\ time$.

Control variables. Respondents' *age* (Ganster, Fox, & Dwyer, 2001), *gender* (Schaubroeck et al., 2001), and *tenure* (Duffy, Ganster, & Shaw, 1998) were controlled as these variables may relate to actual and perceived job complexity as well as to health outcomes. We also controlled for dispositional differences in *positive* and *negative affectivity* (PA and NA) that may bias reports of job characteristics and well-being (Costa & McCrae, 1980). We controlled for dispositional PA using the extraversion sub-scale ($\acute{\alpha} = .82$) and for NA using the neuroticism subscale ($\acute{\alpha} = .78$) from Goldberg's (1992) Big Five personality inventory. The markers were in semantic differential format (e.g., introverted–extraverted, unemotional–emotional) with nine response options. We also controlled for affective *organizational commitment* based on the following reasoning. We are interested in examining the dynamics of complexity fit and well-being, regardless of whether individuals in the study are committed to their organizations. Controlling for affective commitment precludes this potential confound from clouding the results and leading to spurious observed effects and rules out the possibility that general organizational attitudes could bias job-specific reports and well-being (Shaw, Duffy, Jenkins, & Gupta, 1999). This variable was assessed with seven items from the organizational commitment scale (Mowday, Steers, & Porter, 1979; $\acute{\alpha} = .88$).

Study 1 Results

Descriptive statistics, correlations, and coefficient alpha reliability information for all study variables are shown in Table 1. The correlations among Study 1 variables are shown below the main diagonal in the table. Regression results including the hypothesis tests are shown in the top panel of Table 2. We used a polynomial regression approach to test the hypotheses (e.g., Edwards, 1993; 1996). Because polynomial regressions require commensurate scales of measurement and because centering reduces nonessential multicollinearity, we standardized, that is, converted to *z*-scores, all variables used in the product terms (actual job complexity, preferred job complexity, and performance) before calculating these

TABLE 1

Study 1 and Study 2 Correlations and Descriptive Statistics

	Study 1			Study 2			1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
	M	SD	ά	M	SD	ά												
1. Age	46.77	10.14		25.66	6.50			.03	.41**	−.03	.05	−.13*	.22**	.21**	.11*	−.01	.17**	.17**
2. Gender	.18	.39		.43	.49		−.10*		−.01	.03	.05	−.10	−.16**	−.04	−.17**	−.03	.21**	−.13*
3. Tenure	4.97	1.95		3.72	3.95		.13**	−.07		−.02	−.04	−.05	.27**	.19**	.15**	.12*	−.02	.06
4. Positive affectivity	6.46	1.08	.81	3.74	.56	.85	−.02	.00	−.05		−.10*	.34**	.20**	.12*	.10	.20**	−.19**	−.47**
5. Negative affectivity	3.79	.96	.74	2.09	.59	.85	−.12*	.14**	−.03	−.21**		−.02	−.07	.07	−.10	−.17*	.42**	.34**
6. Affective commitment	5.52	1.01	.88	4.61	1.00	.87	.12**	−.07	.18**	.12*	−.15**		.30**	.13*	−.02	.11*	−.04	−.21**
7. Job complexity (self-report)	3.79	.61	.73	4.54	1.50	.90	.11*	−.05	.08	.11*	−.17**	.11*		.27**	.17**	.09	−.03	.00
8. Job complexity (O*Net)	n/a	n/a		2.57	.89	.99	n/a	n/a	n/a	n/a	n/a	n/a	n/a		.17**	−.02	.04	.06
9. Preference for Job complexity	64.19	24.56		61.78	17.91		−.13**	−.06	.12*	.14**	−.12*	−.06	.21**	n/a		.11*	−.16**	−.07
10. Job performance	87.80	7.71		85.89	11.79		.11*	.11*	.09	−.01	−.17**	.05	.14**	n/a	.07		−.09	−.17**
11. Somatic complaints	1.80	.49	.83	2.00	.45	.79	−.02	.13**	.02	−.11*	.26**	−.16**	.02	n/a	.01	−.01		.23**
12. Depression	1.75	.67	.89	3.07	1.37	.90	−.10	.01	−.03	−.18**	.32**	−.30**	.02	n/a	.00	−.11**	.60**	

Notes. Study 1 correlations below the main diagonal (*N* = 345–368) and Study 2 correlations above the main diagonal (*N* = 236–264).
*p < .05 **p < .01.

TABLE 2
Study 1 and Study 2 Hierarchical Regression Analyses

	Study 1					
	Somatic complaints			Depression		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Age	.00	.00	.00	.00	.00	.00
Gender	.04	.03	.05	−.03	−.04	−.02
Tenure	.00	.00	.00	.00	.00	.00
Positive affectivity	−.03	−.04	−.04	−.05	−.05	−.05
Negative affectivity	.14**	.14**	.13**	.22**	.22**	.21**
Affective commitment	−.05*	−.05*	−.05	−.17**	−.17**	−.18**
Job complexity (A)	.04	.04	.04	.11**	.12**	.12**
Preference for job complexity (B)	.01	−.01	−.02	.00	−.01	−.02
Job performance (C)	.00	.01	−.01	−.03	−.03	−.04
A * A		.01	.01		.01	.01
B * B		−.01	−.01		−.02	−.02
A * B		−.05	−.05		.03	.03
A * C		−.05*	−.05*		−.01	−.01
B * C		.02	.03		.02	.04
A * B * C			.06*			.06*
Total R^2	.12**	.13**	.15**	.23**	.23**	.24**
	Study 2 Self-Report Complexity					
Age	.01*	.01*	.01*	.04**	.05**	.05**
Gender	.19**	.17**	.19**	−.30**	−.32**	−.30**
Tenure	−.01	−.01	−.01	−.02	−.02	−.03
Positive affectivity	−.13**	−.13**	−.14**	−1.12**	−1.11**	−1.11**
Negative affectivity	.25**	.25**	.25**	.61**	.61**	.61**
Affective commitment	.01	.00	.00	−.10	−.09	−.09
Job complexity self-report (A)	.01	.02	.01	.11**	.12**	.12**
Preference for job complexity (B)	.00	.00	.00	.00	.00	.00
Job performance (C)	.00	.00	.00	−.01	−.01	−.01
A * A		.03	.03		−.01	−.01
B * B		−.01	−.02		−.06	−.07
A * B		−.04	−.05		−.04	−.03
A * C		.01	.03		−.10	−.07
B * C		.06*	.06*		.02	.02
A * B * C			.08**			.09
Total R^2	.27**	.30**	.32**	.44**	.45**	.45**

terms. The equations included: (a) the controls and the main effects of job complexity, preference for complexity, and job performance, (b) squared terms for complexity and preference for complexity and the set of two-way interaction terms, and (c) the three-way interaction term of job complexity,

TABLE 2 (continued)

	Study 1					
	Somatic complaints			Depression		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
	Study 2 O*Net Complexity					
Age	.01**	.01**	.01**	.04**	.04**	.04**
Gender	.18**	.17**	.16**	−.36**	−.37**	−.39**
Tenure	−.01	−.01	−.01	−.02	−.01	−.02
Positive affectivity	−.08	−.08**	−.08	−1.30**	−1.26**	−1.27**
Negative affectivity	.29**	.30**	.30**	.64**	.64**	.64**
Affective commitment	.02	.02	.02	−.03	−.02	−.02
Job complexity (O*Net) (A)	−.02	−.01	−.02	.07	.08	.05
Preference for job complexity (B)	.00	.00	.00	.00	.00	−.01
Job performance (C)	.00	.01	.01	.00	.00	.00
A ∗ A		.00	.00		−.07	−.06
B ∗ B		.02	.01		−.09	−.10
A ∗ B		−.04	−.04		−.11	−.12
A ∗ C		−.08**	−.07*		−.09	−.06
B ∗ C		.03	.04		−.01	.02
A ∗ B ∗ C			.04			.16*
Total R^2	.26**	.30**	.30**	.50**	.51**	.52**

Notes. $N = 331$ (Study 1 equations), $N = 230$ (Study 2, self-report complexity equations), and $N = 219$ (Study 2, O*Net complexity equations). Unstandardized regression coefficients are reported.

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

preference for complexity, and job performance, entered in this sequence. Excluding controls, the final equation is:

$$Y = b_0 + b_1 A + b_2 B + b_3 C + b_4 A^2 + b_5 B^2 + b_6 AB$$
$$+ b_7 AC + b_8 BC + b_9 ABC \qquad [1]$$

where A represents supplied job complexity, B represents preference for job complexity, and C represents job performance. As Edwards (1996) shows, a full polynomial equation that contains relationships among three independent variables (job complexity, preference for job complexity, and performance, in our case) should also include a consideration of the interaction of the moderator (job performance) with the quadratic terms of the S–V variables (job complexity squared and preference for job complexity squared), but inclusion of these terms can rapidly reduce power to detect significant effects. As a result, Edwards (1993) suggests that nonsignificant or empirically redundant higher-order terms can be dropped to preserve degree of freedom. As a check, we estimated equations including

these terms, that is, $A^2 \times C$ and $B^2 \times C$, but they failed to reach significance. Therefore, we eliminated these empirically redundant terms from the reported equations to conserve statistical power.

As the Study 1 somatic complaints equation in Table 2 shows, none of the main effects of job complexity, preference for job complexity, or job performance was significant. Step 2 contains the polynomial test of Hypothesis 1, including the quadratic complexity terms (i.e., $A \times A$ and $B \times B$) and the interaction of job complexity and preference for complexity (i.e., $A \times B$). None of these terms was significant, lending no support to Hypothesis 1. But the significant three-way interaction in Step 3 ($b = .06$, $p < .05$) suggests that the S–V fit relationship differs by levels of job performance. Thus, Step 3 is the appropriate step for interpreting the shape of the S–V fit relationship (Cohen, Cohen, West, & Aiken, 2003).

We used three-dimensional response surface graphs (see Figure 1) to examine this relationship. The top panel (Figure 1a) shows the implications of S–V fit predicting somatic complaints when job performance is high. Consistent with Hypothesis 2, the predicted-score plane is essentially flat across all combinations of the interaction of job complexity and job complexity preferences, that is, there is no support for the S–V fit perspective when job performance is high. Figure 1b shows the same relationship, but when job performance is low. Recall that Hypothesis 2 predicts that somatic complaints will be at their lowest level when S = V and will be higher as misfit increases in both directions. The figure shows that this prediction receives moderate support. The first line of interest in this graph is the line along the line where S = V (preferred job complexity equals perceived job complexity)—this runs from the front right corner of the graph (low preference for complexity and low perceived job complexity) to the back left corner (high preference for complexity and high perceived job complexity). The slope is not significant, although it is positive and slightly concave. The lowest levels of somatic complaints are observed when supplies and values are both low and when supplies and values are both high. Thus, S–V fit is generally associated with lower somatic complaints, but this finding is most apparent at the low–low and high–high poles of the S = V line. The other line of interest is the S = −V (or misfit) line which runs diagonally from the far left corner (high preference for job complexity and low perceived job complexity) to the far right corner (low preference for job complexity and high perceived job complexity). As the figure shows, somatic complaints are generally higher along this line compared to the S = V line, but the slope is linear and significantly positive from left to right, that is, the highest level of somatic complaints are observed among individuals who prefer a simple job but see their actual jobs as complex.
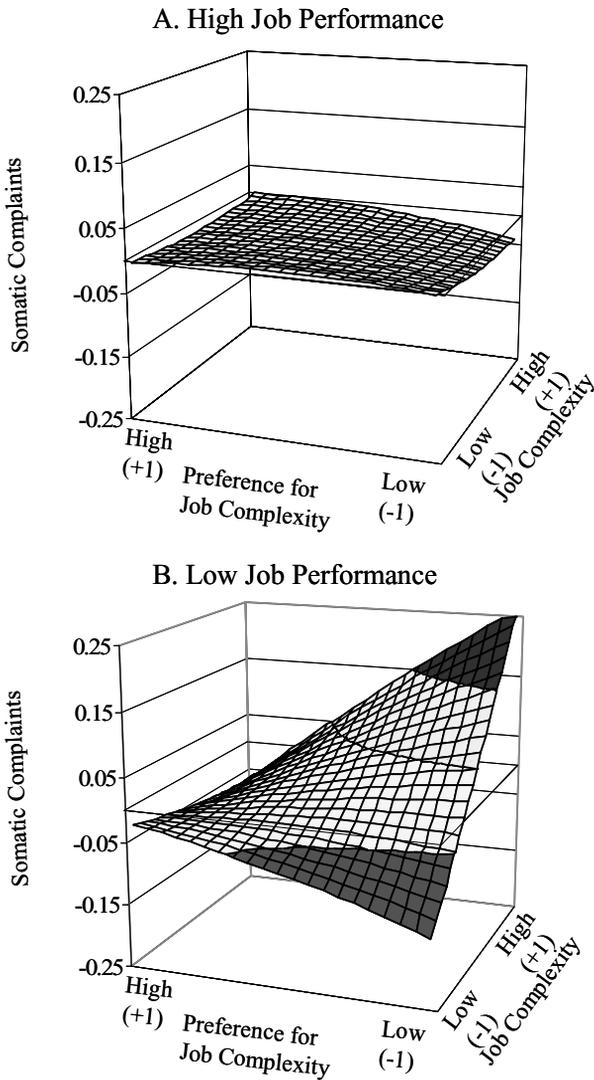
Figure 1: **Study 1 Polynomial Regression Results: Predicted Somatic Complaints Response Surfaces for Supplies–Values Fit by High (A) and Low (B) Levels of Job Performance.**

Table 2 also shows the results when depression is the dependent variable in Study 1. Job complexity ($b = .11$, $p < .01$) was a significant predictor of depression, but the other substantive main effects and the fit variables ($A \times A$, $B \times B$, and $A \times B$) were not significant. The three-way

interaction was significant ($b = .13$, $p < .05$), contributing an additional one percent to explained variance, and again suggesting that the S–V fit relationship differs by levels of job performance. A plot of this interaction (not shown) was similar in form to Figure 1. When job performance is high, the plane of predicted scores is essentially flat. When job performance is low, the slope of the line is not significant, but slightly concave, along the $S = V$ line. The lowest levels of depression are again observed at the low–low and high–high points and the highest levels of depression observed on the $S = -V$ line when job complexity is high and preference for complexity is low.

Thus, in Study 1 the S–V fit prediction (Hypothesis 1) was further qualified by job performance. Hypothesis 2 received modest support in this study, that is, S–V fit was not predictive of well-being when job performance was high. When job performance was low, deviations from fit were generally associated with lower well-being, but this effect was particularly apparent when supplies (high job complexity) exceeded values (low preference for job complexity).

Study 2 Method

Context and Methods Extensions

Study 1 was conducted among a sample of individuals with very similar job titles and duties working in very similar organizations, that is, they were the top HR managers in trucking companies. Although perceptions of job complexity differed considerably, the restricted range of job titles rendered this sample unsuitable for examinations using job analysis ratings of job complexity. In Study 2, we collected data in a context designed to maximize variation in job titles (working MBA students in a metropolitan area) to allow for the collection and analysis of an alternative job complexity measure. The S–V perspective assumes that fit is the "cognitive comparison of the perceived and desired amount, frequency, or quality of conditions or events experienced by the person" (Edwards, 1996, p. 294). That is, preferences and situational *perceptions*, not actual or objective situational characteristics, are central to the notion of fit. This reasoning is consistent with similar arguments in the work stress literature including Tetrick's (1992) conclusion that what has "become evident is that stress is a perceptual phenomenon" (p. 134) because "the cognitive or perceptual process is the means by which an individual attributes psychological meaning to the events occurring in the work environment" (p. 136). In line with these theoretical assumptions, empirical S–V research generally uses perceptual rather than objective measures of job-related characteristics (but see Caldwell & O'Reilly [1990] for tests of objective fit under

the D-A fit model). We do not challenge this underlying theoretical assumption. Still, examinations of the fit between complexity preferences and *objective* assessments of complexity would be advantageous for several reasons. First, introduction of actual exposures to complexity into the S–V model would represent a conservative test of the underlying theoretical premise, that is, it would provide information on the robustness of the S–V model across multiple operationalizations. Second, there is consistent evidence that stressful job characteristics can have direct and well as indirect effects on health and well-being outcomes (e.g., Ganster et al., 2001; Melamed, Ben-Avi, Luz, & Green, 1995). Third, focusing on alternative operationalizations of job complexity may yield findings that are more amenable to interventions designed to increase person–job fit and improve worker health. Schaubroeck points out that inclusion of measures of actual exposures increases the managerial relevance of stress research because a singular focus on self-reports "may less accurately reflect chronic, immutable (for the worker) demands" (1999, p. 755). Fourth, Caplan and Harrison (1993) argued that preventative intervention should be a goal of future fit research. This goal is arguably best pursued through an understanding of the role of actual exposures and their interaction with work preferences in predicting well-being outcomes. In this section, we report the results of Study 2, as well as the results of tests precisely paralleling those in Study 1.

Sample

Participants in this study were 272 full time and part time employees who were registered for graduate business courses at a university in a major metropolitan area in the U.S. Participation in the study was voluntary. Questionnaires were completed anonymously and during class time. Reported job titles were generally of a professional or white-collar nature (e.g., consultant, executive recruiter, general manager, accountant), but also included part time and blue-collar occupations (e.g., waiter, construction worker, customer service representative). The average age of participants was 26 years, 43% were women, average tenure was 4 years, and the average number of hours worked per week was 34.

Measures

The measures for *perceived job complexity* and *preference for job complexity*, self-rated *performance*, *somatic complaints*, and several of the control variables (*age* and *gender*) were identical to those used in Study 1. Measurement differences for this study are described below.

Job complexity. In addition to the assessment of perceived job complexity, we constructed a separate source measure of job complexity using job analysis ratings of work activities and work content from the Occupational Network (O*Net) database, a comprehensive system to describe occupations using common descriptors (e.g., Peterson et al., 2001; United States Department of Labor/Employment and Training Administration, 2001). O*Net replaced the Dictionary of Occupational Titles and is available online. Job titles reported by the participants were matched to job descriptions and codes in the O*Net database. We operationalized *O*Net job complexity* as the average of 31 complexity items from O*Net used by Kammeyer-Mueller and Glomb (2002) ($\acute{\alpha} = .99$). Sample items are: "updating and using relevant knowledge," "analyzing data or information," "developing objectives and strategies," "making decisions and solving problems," and "monitoring and controlling resources." The item scores were on a 5-point "level" scale. O*Net job complexity scores were available for 230 participants in this study.

Well-being. *Depression* was assessed using eight semantic differential-type bipolar adjectives from Quinn and Staines (1979). The adjective pairs (e.g., boring–interesting, full–empty, disappointing–rewarding) had nine response options ($\acute{\alpha} = .91$) and were coded such that higher scores indicated higher depression levels.

Control variables. In addition to the demographics (*age, gender,* and *tenure*), dispositional factors were controlled in this study using the *PA* ($\acute{\alpha} = .84$) and *NA* ($\acute{\alpha} = .85$) markers from the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). *Affective commitment* was controlled using nine items from the Mowday et al. (1979) Commitment scale ($\acute{\alpha} = .87$).

Study 2 Results

Table 1 shows correlations and descriptive statistics for Study 2 variables (above the main diagonal). Table 2 (middle and lower panels) shows the polynomial regression results using self-report job complexity and O*Net job complexity measures, respectively.

As in Study 1, we estimated the full polynomial equation including the interaction of job performance with the quadratic complexity terms ($A^2 \times C$ and $B^2 \times C$). Because these higher-order terms were not significant in any equation, we dropped them from the reported results to conserve power. In the Study 2 self-report complexity equations, none of the main effects for job complexity, preference for complexity, or job performance is significant in Step 1, and none of the polynomial regressions tests of S–V fit ($A \times A$, $B \times B$, or $A \times B$) is significant in step 2. Thus, Hypothesis 1 is not supported. The significant three-way interaction among
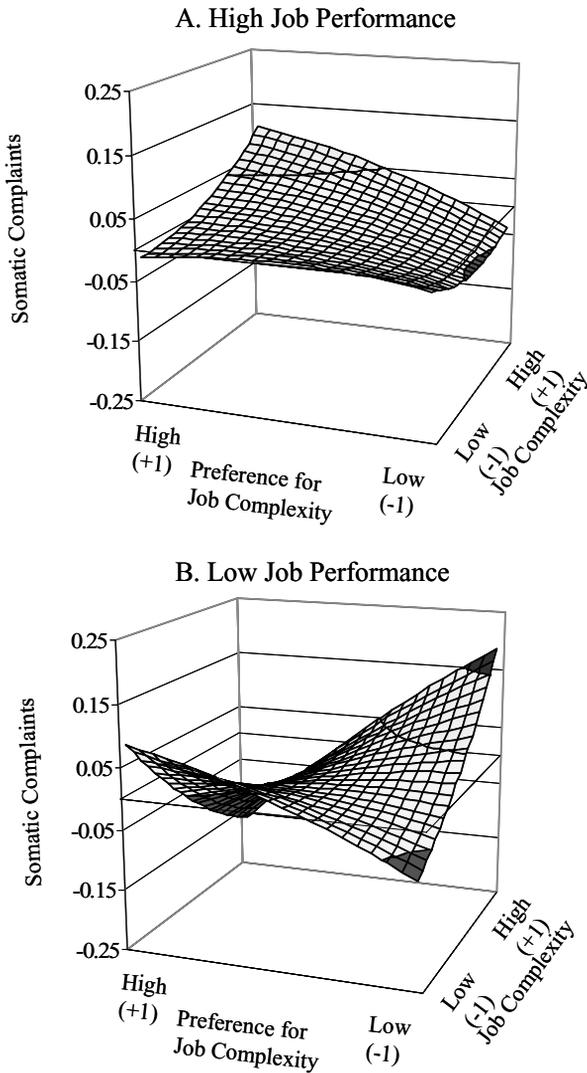
A. High Job Performance

B. Low Job Performance

Figure 2: **Study 2 Polynomial Regression Results: Predicted Somatic Complaints Response Surfaces for Supplies–Values Fit by High (A) and Low (B) Levels of Job Performance (*Self-Report* Complexity).**

job performance, self-report complexity and preference for job complexity is significant ($b = .08$, $p < .05$), explaining an additional 2% of the variance in somatic complaints. This suggests that the S–V fit relationship with somatic complaints differs by levels of job performance. A plot of the somatic complaints equation interaction is shown in Figure 2. This figure shows a high degree of correspondence with the Study 1 interactions.

When job performance is high, the plane is essentially flat across the predicted scores. When job performance is low, the $S = V$ fit line is again concave, although the slope is more strongly negative from front to back on graph, that is, the lowest levels of somatic complaints are observed when self-report job complexity and preference for complexity are both high. The slope is slightly convex, but positive along the $S = -V$ line from left to right, such that the highest levels of somatic complaints are observed when self-report complexity (high) exceeds preferences for complexity (low). Thus, the pattern observed in Study 1 is replicated with parallel measures in Study 2 for somatic complaints and some support is again found for Hypothesis 2. No support is found for Hypotheses 1 or 2 in the Study 2 self-report complexity equation for depression.

The bottom panel of Table 2 shows the regression results using the O*Net job complexity measure. As the table shows, neither Hypothesis 1 nor 2 is supported in the somatic complaints equation, but a similar pattern is evident in the depression equation. Once again, the three-way interaction among job complexity (assessed with the O*Net measure), preference for job complexity, and job performance is significant ($b = .13$, $p < .05$), suggesting that the effects of S–V fit differ across job performance levels. The polynomial results, split by low and high job performance, are shown in the Figure 3 surface plots. The top panel of the figure shows a concave, domed-shaped relationship and generally low levels of depression when job performance is high. In the bottom panel, the relationship along the $S = V$ line is a curvilinear and concave relationship where the lowest level of depression is observed when O*Net complexity and preference for complexity are both low. As with Figures 1 and 2, the slope along the $S = -V$ line from left to right is strongly positive such that the highest levels of depression are observed when O*Net job complexity is high and preference for job complexity is low.

In summary, Study 2 replicates the Study 1 results for self-report complexity when somatic complaints is the dependent variable, but the results were not replicated in the depression equation. The results also demonstrate the same pattern of relationships for depression, but not somatic complaints, using an independent (O*Net) measure of actual complexity. Thus, the moderating role of job performance on the S–V fit → well-being relationship receives substantial support across multiple operationalizations of job characteristics.

Study 3 Method

Context and Methodological Extensions

Study 2 provides some evidence of the robustness of the moderating role of job performance on the S–V fit→well-being relationship. Still,

A. High Job Performance
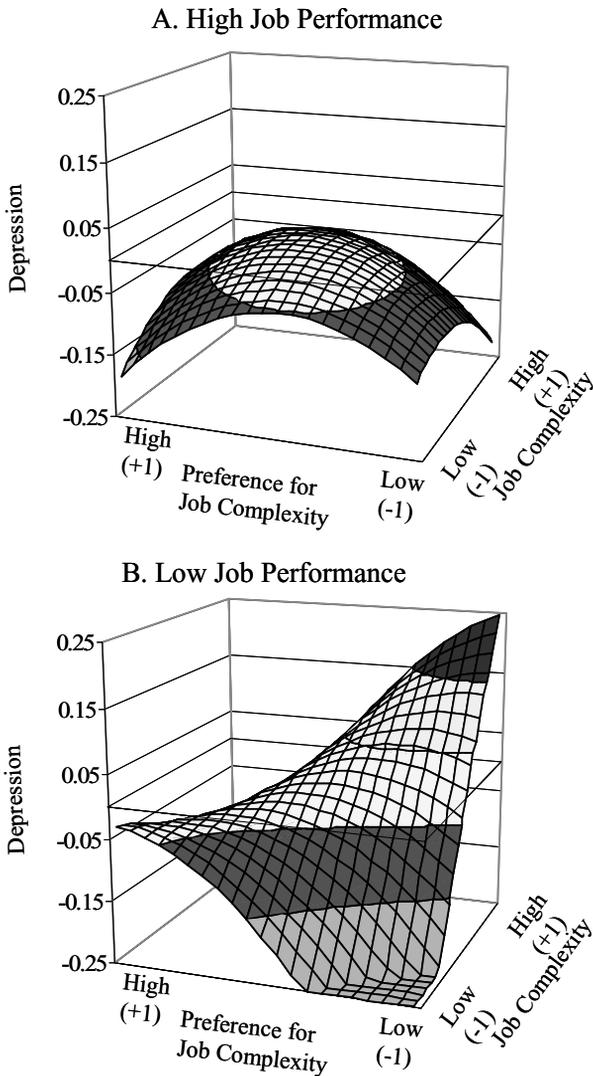

B. Low Job Performance

Figure 3: **Study 2 Polynomial Regression Results: Predicted Depression Response Surfaces for Supplies–Values Fit by High (A) and Low (B) Levels of Job Performance (*O**Net Complexity).**

Studies 1 and 2 were limited in several ways that we attempted to address in Study 3. First, Studies 1 and 2 were cross-sectional and therefore concerns about the underlying causal sequence cannot be addressed. Second, although a separate-source measure of complexity from O*Net was used,

the cross-sectional design in Studies 1 and 2 cannot completely rule out common method concerns. Third, the studies included only self-rated performance; independent measures of performance may not yield the same pattern of results. Fourth, although we used O*Net job analysis ratings for complexity in Study 2, this operationalization is limited in that it captures interjob title, but not intrajob title, differences in complexity. That is, O*Net scores capture differences in complexity across job titles (e.g., computer programmer vs. HR manager), but do not capture intrajob title variation in complexity (e.g., two nurses who share the same job title, but work on different shifts, face different patient loads, and/or work in differentially demanding areas of a hospital). Study 3 provides extension in these areas, that is, the hypotheses are tested across a 2-year window using supervisory ratings of job performance and an independent measure of actual job complexity (ratings from trained observers) that incorporates inter- and intrajob variations in complexity.

Sample

Data for the study were obtained by the Survey Research Center of the University of Michigan in two phases and from several different sources. Details on the sample and study in general can be found in Survey Research Center (1977). Data used in this study are from 163 employees from three organizations (a hospital and two automotive suppliers) who participated in the longitudinal aspects of the larger study and who held the same job at Time 1 and Time 2. The organizations represented a convenience sample, but within organizations, departments or units were selected based on several criteria including accessibility, range of jobs, and size. Within each department, all supervisors were included in the sample; nonsupervisory employees were sampled randomly. Respondents in the study held various types of jobs and were reasonably similar to the demographic profile of the national labor force at the time (Glick, Jenkins, & Gupta, 1986). Compared to Time 1 only participants, the longitudinal sample had higher proportions of male, older, less educated, or Black workers. For the analysis sample, the average age was 35 years, 53% were women, and the average tenure was 8 years.

Data were obtained through several sources in both phases, including interviews with participants, on-the-job observations, supervisory ratings of performance, and personnel records. In this study, we use data collected in the interviews, on-the-job observations, and supervisor performance ratings. In both Time 1 and Time 2 (2 years later), respondents were interviewed at home by professional interviewers using 90-minute semistructured interviews. Interviewers were trained and monitored throughout the study. Respondents were also observed on-the-job by trained observers.

Each respondent was observed for two 1-hour periods by different ob-
servers. Prior to conducting the observations, observers were intensively
trained to ensure the psychometric soundness of the observation data
(Jenkins, Nadler, Lawler, & Cammann, 1975). The content of the observa-
tions paralleled that of the interview. Data from multiple observations of
the same employee were averaged for analysis. Supervisory evaluations of
performance and additional information from organizational records (e.g.,
salary level) were also obtained. The specific measures and data collection
technique are described below.

Measures

   Job complexity (interviews and observations).   *Perceived* (self-report)
job complexity was assessed at Time 1 with two items ("My job requires
a high level of skill," and "My job requires a lot of mental effort") in
the structured interviews with participants ($\acute{a} = .85$). The items had four
response options from $1 = $ *not at all true* to $4 = $ *very true. Observed*
job complexity was operationalized at Time 1 using a 2-item scale from
ratings of trained observers of the participants work activities ($\acute{a} = .96$).
The item "To what extent does the job require the use of sophisticated or
complex skills?" had response options from $1 = $ *very little; no skills are
required that the average person would not already have* to $7 = $ *very much;
highly complex or sophisticated skills are needed to do the job.* The item
"How intellectually demanding is the job?" had response options from
$1 = $ *very little; the job is very routine and does not require any mental
effort* to $7 = $ *very much; the job is very nonroutine and involves a lot of
"thinking-through" or problem solving.*
   Preference for job complexity (interviews).   This variable was assessed
at Time 1 with the item, "How desirable to you is it that your work is
challenging?" The item had four response options from $1 = $ *not at all
desirable* to $4 = $ *very desirable.*
   Performance (supervisory evaluations). This variable was measured
through supervisory evaluations. The employee's immediate supervisor
rated the employee's performance using eight semantic differential-type
bipolar phrases (e.g., "does very high quality work–does very low quality
work," "very dependable–very undependable"), each with seven response
options ($\acute{a} = .89$).
   Well-being (Interviews).   The *somatic complaints* variable was as-
sessed at Time 2 with a 14-item checklist of health problems (e.g.,
skin trouble, stomach ulcers, trouble with your back or spine) simi-
lar to House's (1980) measure. Two yes/no response options were used
(K-R 20 reliability $= .81$). *Depression* was assessed using 10 semantic

differential-type bipolar adjectives with nine response options from Quinn and Staines (1979; $\acute{\alpha} = .89$).

Control variables (Time 1 interviews, personnel records). Demographic controls generally paralleled those used in Studies 1 and 2. *Age*, *gender*, and *tenure* were obtained in the Time 1 interview. Measures of trait positive disposition and affective commitment were not available in this study. Responses to a single item that captures some markers (anxiety and tension) of *negative affectivity* were included as a control. The item, "in the last year, how often did you feel nervous, fidgety, or tense," had four response options from $1 = never$ to $4 = often$.

Study 3 Results

Table 3 shows the descriptive statistics for, and correlations among, the variables in Study 3. The polynomial regression results are found in Table 4. As in Studies 1 and 2, we dropped the nonsignificant terms associated with the interaction of job performance with the quadratic complexity terms ($A^2 \times C$ and $B^2 \times C$) to conserve power. The top panel in Table 4 shows the results for self-report job complexity. In the somatic complaints equation, neither Hypothesis 1 nor Hypothesis 2 is supported. In the depression equation, the polynomial tests ($A \times A$, $B \times B$, and $A \times B$) for S–V fit were not significant providing no support for Hypothesis 1, but the three-way interaction is significant when predicting Time 2 depression ($b = .19, p < .05$), explaining an additional 2% of the variance. This suggests that the nature of S–V fit differs across job performance levels. A plot of this significant interaction (not shown) is very consistent with Figures 1–3, that is, the effects of S–V misfit on depression are attenuated when job performance is high but exacerbated under low job performance conditions. The highest depression levels are again observed when actual complexity (self-report) exceed valued complexity. Thus, some support is again found for Hypothesis 2 with self-report complexity.

The lower panel in Table 4 shows the regressions when job complexity is operationalized with trained observer ratings. No support is found for Hypothesis 1 or Hypothesis 2 in the somatic complaints equation. The significant three-way interaction in the depression equation ($b = .22, p < .05$), explaining an additional 3% of the variation, suggests the S–V fit→well-being relationship is contingent on job performance. A surface plot of this relationship (Figure 4) shows that there is a negative relationship between (observed) job complexity and depression when job performance is high. The bottom panel shows the predicted pattern of exacerbation by low job performance—the form of the plot is again very similar to that

TABLE 3

Study 3 Correlations and Descriptive Statistics

	M	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Age	35.34	12.00	#									
2. Gender	.53	.50	.02	#								
3. Tenure	8.21	6.29	.63**	.14*	#							
4. Negative affectivity	2.68	.85	.06	−.25**	−.05	#						
5. Job complexity (self-report)	3.01	.86	−.01	.35**	−.17*	.13*	(.83)					
6. Job complexity (observed)	3.50	1.59	−.07	.34**	−.11	.01	.62**	(.96)				
7. Preference for job complexity	3.63	.68	−.03	.13	−.06	−.03	.31	.26**	#			
8. Job performance	2.26	.86	−.02	−.15*	−.00	−.11	−.01	−.03	.01	(.89)		
9. Somatic complaints	1.77	.45	−.12	−.25**	.17*	−.39**	−.20	−.21	−.16*	−.03	(.81)	
10. Depression	2.17	.88	−.28**	−.02	.20**	−.04	−.07	−.02	−.03	−.02	.33**	(.89)

Notes. $N = 156–163$. Coefficient alpha reliabilities are reported in the main diagonal where appropriate.
$^*p < .05$ $^{**}p < .01$.

TABLE 4
Study 3 Hierarchical Regression Analyses

| | Study 3 (Self-report complexity) | | | | | |
| | Somatic complaints | | | Depression | | |
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Age	−.01*	−.01	−.01	−.03**	−.03**	−.02**
Gender	−.13*	−.12	−.12	.24*	.26*	.28*
Tenure	.00	.00	.00	.00	.00	.00
Negative affectivity	−.19**	−.20**	−.20**	−.03	−.02	−.01
Job complexity (self-report) (A)	−.06	−.06	−.06	−.18*	−.20*	−.18*
Preference for job complexity (B)	−.09*	−.02	−.02	−.09	−.34*	−.28*
Job performance (C)	−.01	−.01	−.01	.08	.09	.05
A * A		−.02	−.02		−.04	−.01
B * B		.03	.03		−.07	−.04
A * B		−.02	−.02		−.05	−.06
A * C		−.01	−.01		−.13	−.14*
B * C		.08*	.08*		.07	.15
A * B * C			.00			.19*
Total R^2	.25**	.27**	.27**	.15**	.19**	.21**
	Study 3 (Observed complexity)					
Age	−.01	.00	.00	−.02**	−.02**	−.02**
Gender	−.09	−.09	−.09	.04	.06	.07
Tenure	.00	−.01	−.01	.00	.00	.00
Negative affectivity	−.21**	−.22**	−.22**	−.07	−.05	−.04
Job complexity (observed) (A)	−.07*	−.08*	−.08*	−.03	−.06	−.12
Preference for job complexity (B)	−.08*	−.04	−.06	−.04	−.06	−.03
Job performance (C)	−.05	−.07*	.07*	−.03	−.17	−.06
A * A		−.05	−.05		−.07	−.06
B * B		.02	.02		−.05	−.05
A * B		.06	.07		−.12	−.12
A * C		−.04	−.04		−.18*	−.20**
B * C		.14*	.14**		.13	.21*
A * B * C			.01			.22*
Total R^2	.25**	.31**	.31**	.08**	.12*	.15*

Notes. $N = 163$ (self-report complexity equations) and $N = 153$ (observed complexity equations). Unstandardized coefficients are reported.
  *$p < .05$ **$p < .01$.

found in the prior studies. The S = V line is concave with the lowest levels of depression found at the low–low and high–high poles. A pronounced positive relationship is found along the S = −V line. As with the results of Studies 1 and 2, the lowest levels of well-being (highest depression levels) are observed when supplies exceed values.
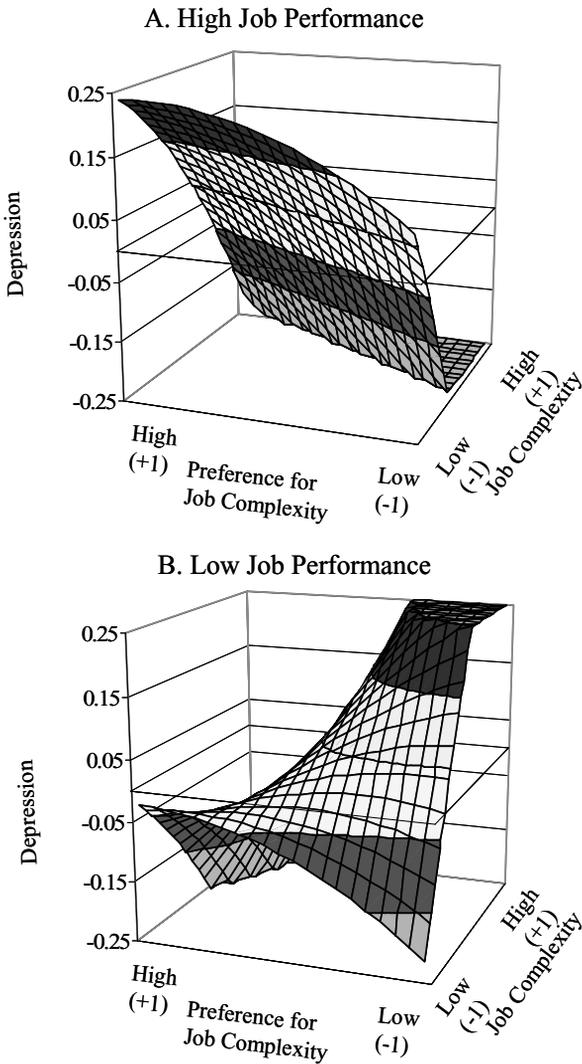
A. High Job Performance

B. Low Job Performance

Figure 4: **Study 3 Polynomial Regression Results: Predicted Depression
Response Surfaces for Supplies–Values Fit by High (A) and Low (B) Levels
of Job Performance (*Observed* Complexity).**

Discussion

The results of the three studies, taken together, offer keen insights into
the broad person–environment fit phenomenon. That fit affects well-being
is already established in the literature. Our results show a more nuanced

picture. Studies 1, 2, and 3 show that the harmful effects of S–V misfit are more severe when job performance is low. Misfit is related to lower levels of well-being when an individual is performing poorly, but, as Studies 1 and 2 show, these effects are attenuated when the individual is performing well. The results also demonstrate interesting effects at different levels of fit and misfit. These and other aspects of the study are discussed below.

A major substantive contribution of this research is the explication of the role of performance in affecting the complexity S–V fit/well-being relationship. Using cybernetic stress theory and psychological centrality research, we identified job performance as a theoretically potent moderator of this relationship (Edwards, 1992; Klein, 1989). Our three empirical examinations generally validated our predictions, especially in the low job performance condition. The strength of the S–V fit effects on well-being varied somewhat consistently with job performance, being more pronounced when performance was low than when it was high.

At least two observations arise from these results. One, this study focused on S–V fit only with respect to job complexity or job scope. Performance may similarly moderate the effects of misfit along other job dimensions as well. We encourage comprehensive examinations of this issue. Two, we focused globally on performance as a moderator of the S–V misfit/well-being relationship. Different aspects of performance (e.g., quantity of performance vs. customer service) could have similar or divergent effects. Precise work on the specifics of the performance domain thus seems in order. In this context, the fact that the results in the high job performance conditions varied across studies is noteworthy. When job performance was *self*-rated as high, that is, in Studies 1 and 2, there was a virtually flat plane across all combinations of actual and preferred complexity. But when *supervisor*-rated performance was high (Study 3), observed job complexity was negatively related to depression.

Why are the results different for self- and supervisor-rated performance? Both theoretical and methodological explanations come to mind. Accurate definition and measurement of the performance domain has long interested performance appraisal researchers (e.g., Bernardin & Beatty, 1984; Smith, 1976). Both supervisory and self-appraisals are likely subject to criterion contamination and criterion deficiency, and the two are likely to capture different portions of the criterion space. An interesting avenue of research is the relative potency of supervisory versus self versus peer versus objective versus other sources of performance information in the S–V fit/well-being dynamic. Performance *feedback* from others (as opposed to performance per se) may have a stronger impact in this context. Performance feedback from *supervisors* likewise may have stronger effects than performance feedback from clients, customers, and peers.

Differences in the results from Studies 1 and 2 versus Study 3 may reflect these diversities of performance measurement.

Alternatively, the supervisory ratings used in Study 3 had more relative variance than did the self-reports in Studies 1 and 2. The greater sensitivity facilitated by this variation may account for the detection of more complex dynamics. The intricacies of performance measurement, whether substantive or a methodological artifact, make it a particularly potent arena for future research.

The pattern of our results also points to the important role *uncertainty* may play in shaping observed dynamics. The highest levels of well-being were typically evident at the poles of the $S = V$ line, that is, when *both* the desire for job complexity and actual job complexity were either high or low. In the middle ranges of supplies and values, the picture is not so clear. For the most part, the S-V framework assumes that well-being would be highest and at constant levels along the $S = V$ line, that is, essentially the line would be flat. Some sketchy evidence suggests otherwise, indicating differential effects depending on the absolute levels of preferred and actual complexity. For example, Edwards and Harrison (1993) discovered that the $S = V$ line for complexity was concave (the same pattern we found) in the equation predicting anxiety (an alternative measure of well-being) but was essentially flat in the equation predicting depression (another well-being indicator). The authors explained these differences as being a possible function of uncertainty. Achieving fit at the poles (low–low or high–high) involves less uncertainty than achieving fit at moderate levels (see also Beehr & Bhagat, 1985). Differential effects of uncertainty may also account for the concave pattern seen in our results. In the aggregate, then, it is quite likely that an additional moderator—uncertainty—may be operating. We hope that future research focuses specifically on the role of uncertainty in shaping the S–V fit relationship with well-being.

The utility of cybernetic stress theory in our examinations raises additional issues. According to this theory, different levels of fit and misfit evoke different reactions through different levels of cognitive considerations. Employees' attention levels, as well as their rumination levels, should thus vary *measurably* under different conditions. This leads to a variety of interesting questions. For example, are the effects of frequency, duration, and intensity of attention equivalent or do they vary? Is intensity the most critical? Measuring and evaluating the salience of these cognitive processes in reactions to fit and misfit offers fertile research ground. It also poses concerns about the relative salience of these internal cues compared to external cues in assessments of and reactions to misfit. Many of the arguments for a moderating role of performance are based on external social and environmental cues stemming from poor performance.

But are coworker or supervisory comments more critical than internal ruminations? Do supervisory reactions indeed trigger these ruminations, in effect having temporal precedence? These kinds of questions have rarely been examined empirically, but could be a rich source of insights into the phenomena.

A focus on internal versus external cues highlights another virtually unexplored issue, the role of attributions in reactions to misfit. One of our anonymous reviewers suggested that Dweck's theory of attributions and intelligence may be relevant for future research in this area. Dweck and colleagues (e.g., Dweck & Leggett, 1988; Hong, Chiu, Dweck, Lin, & Wan, 1999) proposed that individuals hold different implicit self-theories; these implicit self-theories have different implications for how individuals explain their poor performance. Entity theorists believe their intelligence to be a relatively fixed personal attribute and "may explain negative performance in terms of their lack of ability than effort, which would render them vulnerable to helpless responses in the face of failure" (Hong et al., 1999, p. 589). Thus, an entity theorist would view poor performance as a reflection of a fixed attribute, would have difficulty responding to S–V misfit, and would therefore react in a helpless manner (e.g., by experiencing lower well-being or engaging in withdrawal behaviors), rather than reacting in a proactive manner designed to increase performance or to find ways of reducing the S–V discrepancy. By contrast, an incremental theorist believes that personal attributes are malleable and have the potential to be cultivated. An incremental theorist would be more likely to react to poor performance by undertaking remedial action designed to improve performance. Under conditions of S–V misfit and low performance, then, such an individual is more likely to view the misfit situation as a challenge to be overcome or an opportunity for self-improvement, not as a hopeless situation. Measures of implicit self-theories were not included in our data sets. We could not assess these arguments empirically, but we urge attention to this issue in future research.

Another fruitful area of inquiry is the effects of social networks on S–V fit/well-being dynamics. Social support is, of course, a key variable in stress research (e.g., Dormann & Zapf, 1999), but social network exchanges (e.g., Baldwin, Bedell, & Johnson, 1997) can offer further explanatory potential beyond social support issues. For example, the effects of S–V misfit may be stronger when the social network is weak than when it is strong, when the social network encompasses undermining as well as support patterns, when the focal person is an isolate rather than central to the network, and so forth (Duffy, Ganster, & Pagon, 2002; Duffy, Johnson, & Shaw, 2003). Social networks can also affect the moderating influence of performance by offering differing social and environmental cues and feedback about performance. In general, social network research has been

advancing rapidly; its incorporation into the S–V fit paradigm could be fruitful for theory and research.

Beyond these substantive issues, this study affords methodological rigor to observed S–V fit dynamics. Taking the three studies together, the general predictions were supported across three kinds of supplies measures (subjective, objective interjob, and objective intrajob), across two outcomes, across several data sets, within and across time frameworks, and with self-and supervisory reports of performance. Although our predictions were not supported in each and every test, there was sufficient consistency across data, especially in the low performance conditions, to provide substantial credibility to the robustness of underlying effects.

The results of our studies have many practical implications. In particular, we observed similar effects using perceptual and more objective measures of job complexity. Although the foundation for the S–V fit theory concerns psychological processes, our results suggest (albeit tentatively) that organizations may be successful in reducing discrepancies (and ameliorating well-being concerns) by modifying the objective characteristics of the work environment. Attempts to match employee preferences to *objective* characteristics of tasks may be successful in reducing depression and somatic complaints, especially for low performers. Changes in observed characteristics may also stimulate simultaneous perceptual changes. Our results point to the importance of different types of asymmetries as well. Too much complexity did not have diametrically opposite effects from those of too little complexity. Assuming further empirical support, when job performance is low, managing person–job fit is more appropriate and important if actual job complexity exceeds preferences because the converse (preferred complexity exceed actual complexity) does not have the same negative effect on well being.

The results contribute to the continuing debate in the stress literature concerning whether organizations should adopt a back-end approach for dealing with stressful work environment (by focusing on coping behaviors; Perrewé & Zellars, 1999) or a front-end approach (by focusing on eliminating actual or objective exposures to stressors in the workplace; e.g., Frese & Zapf, 1999). Our three studies indicate that a front-end approach can be useful. Most research in work stress is perceptual (e.g., Tetrick, 1992), but our focus on objective as well as subjective exposures provides initial evidence that managerial changes to objective characteristics of tasks may indeed be beneficial for employee health. We concur with the recent recommendations of Frese and Zapf (1999) and Schaubroeck (1999) to increase research on actual exposures, thereby enhancing the practical significance of stress research.

This research is limited in several ways. We examined only a single job attribute (complexity) because it is a central variable in S–V fit research

because it is often construed as a combination of multiple attributes, and because of the consistent relationship between it and well-being outcomes. Clearly, evaluations of jobs occur across a broad range of characteristics and outcomes; the implications of misfit along different dimensions could produce differential patterns (Edwards, 1996). We encourage future research on the S–V fit model across a variety of dimensions, and we encourage a focus on the moderating role of job performance across different dimensions and across different kinds of S–V misfit. We examined only two general well-being outcomes (somatic complaints and depression), and we used self-report measures of these outcomes. The general concept of well-being is broad and multidimensional; we hope future research explores these relationships across a broader array of outcomes, perhaps making differential predictions across outcomes. A limitation of S–V fit research in general is the lack of empirical evidence concerning misfit and other important organizational outcomes such as severe forms of physical and mental ill-health (e.g., Schaubroeck et al., 2001), health care costs (e.g., Ganster et al., 2001), and antisocial behaviors affecting both individual health and organizational health (e.g., Duffy, O'Leary-Kelly, & Ganster, 2003). We did not include these outcomes; we urge their inclusion in future research.

Another concern is that Study 3 data were collected some years ago. The results of Study 3 conform to the patterns found in Studies 1 and 2 and the measurement of key variables was quite similar across data sets. These factors alleviate the fear that the underlying dynamics changed over time. In this context, interested readers will note a similar consistency in S–V fit results reported by Edwards in recently collected data sets (e.g., Edwards, 1996) and in a reanalysis of the older French et al. (1982) data set. The underlying theoretical premise of the S–V framework is not predicated on time-sensitive dynamics. Indeed, fundamental human behaviors do not change substantially over time. Thus, the "dated" information in Study 3 does not negate its theoretical relevance.

Our controls for dispositional affectivity were limited in Studies 1 and 3. In Study 1, we used extraversion and neuroticism as proxies for disposition, but, although they share some construct space, they are not conceptually or operationally synonymous constructs. Only a single item proxy for *NA* was available in Study 3 (a corresponding proxy for *PA* was not available) and thus these confounds may not have been completely controlled statistically. The nonsignificant relationships between this measure of *NA* and the well-being outcomes may suggest that it was unreliable or that it was deficient. In addition, the results for depression and somatic complaints were generally, but not always, consistent. This limitation is likely a function of low power in the equations and the difficulty in detecting higher-order effects. In general, however, it is likely that

these and other limitations are counterbalanced by the use of three data sets involving overlapping and unique strengths.

In conclusion, this research furthers our knowledge about the implications of S–V fit and the well-being of individuals and makes several contributions to the person–job literature in general and the S–V fit perspective in particular. It offers substantive theoretical advancement by exploring the moderating role of job performance on the complexity fit and well-being relationship. It offers several methodological improvements over previous research by providing replications of findings across differential contexts, and by testing and finding support for the robustness of an underlying theoretical principle across multiple operationalizations of complexity. It provides strong evidence of the moderating role of job performance on the S–V fit relationship with well-being in contemporaneous as well as longitudinal tests. The results reported here should thus be instructive in further developments of the knowledge base regarding S–V fit.

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