Job Pressure and SES-contingent Buffering

2 authors:

Jonathan Koltai
Università commerciale Luigi Bocconi
11 PUBLICATIONS **65** CITATIONS

SEE PROFILE

Scott Schieman
University of Toronto
126 PUBLICATIONS **4,922** CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:

Project   The Canadian Work, Stress, and Health Study (CAN-WSH) View project

Project   Religion, Control, and Well-Being View project

Job Pressure and SES-contingent Buffering: Resource Reinforcement, Substitution, or the Stress of Higher Status?

Jonathan Koltai[1] and Scott Schieman[1]

Abstract
Analyses of the 2008 National Study of the Changing Workforce demonstrate that job pressure is associated with greater anxiety and job dissatisfaction. In this paper we ask, What conditions protect workers? The conventional buffering hypothesis in the Job-Demands Resource (JD-R) model predicts that job resources should attenuate the relationship. We test whether the conventional buffering hypothesis depends on socioeconomic status (SES). Support for conventional buffering is evident only for job dissatisfaction—and that generalizes across SES. When anxiety is assessed, however, we observe an SES contingency: Job resources attenuate the positive association between job pressure and anxiety among workers with lower SES, but exacerbate it among those with higher SES. We discuss the implications of this SES-contingent pattern for theoretical scenarios about "resource reinforcement," "resource substitution," and the "stress of higher status." Future research should consider SES indicators as potential contingencies in the relationship between job conditions and mental health.

Workers who experience high levels of job pressure tend to encounter more negative personal and social outcomes, including risks to their health and well-being (Ducharme and Martin 2000; Galinsky et al. 2005; Schieman, Milkie, and Glavin 2009). In this study we ask: Under what conditions are workers more or less protected from the downsides associated with job pressure? One long-standing thesis underscores the ways that job-related resources attenuate the relationship between job pressure and forms of distress such as anxiety. This has been referred to as the *buffering hypothesis* in work-specific research framed around the tenets of the Job Demands-Control (JD-C) model (Karasek 1979) and the Job Demand-Resources (JD-R) model (Bakker, Demerouti, and Euwema 2005), as well as in the sociological study of stress literature, particularly in reference to coping (Pearlin and Bierman 2013).

In the JD-R model, two key attributes of all jobs—demands and resources—are identified as impactful for role functioning and well-being (Demerouti and Bakker 2011). Our first objective is to test the conventional buffering hypothesis by situating one prominent job demand (pressure) alongside two job resources (job autonomy and challenging work). We analyze data from a large representative sample of the American workforce—the 2008 National Study of the Changing Workforce (NSCW)—to assess the buffering potency of these

[1]University of Toronto, Toronto, ON, Canada

Corresponding Author:
Jonathan Koltai, Department of Sociology, University of Toronto, 725 Spadina Ave, Toronto, ON M5S 2J4, Canada.
E-mail: jon.koltai@mail.utoronto.ca

job resources for two outcomes: *anxiety* and *job dissatisfaction.* In accordance with well documented calls for assessing multiple outcomes in stress research (Thoits 2010), we focus on both anxiety and job dissatisfaction because the former represents a highly salient and generalized form of psychological distress and the latter represents a standard domain-specific facet of subjective well-being (Mirowsky and Ross 2003a; Ross and Van Willigen 1997).

Our second objective seeks to elaborate on the conventional buffering hypothesis by assessing possible variations across socioeconomic status (SES). Scholars in the sociology of mental health have underscored the significance of SES—especially education and income—for stress exposure and vulnerability, as well as for the distribution of job demands and resources (Mirowsky and Ross 2003a, 2003b; Schieman 2013; Tausig 2013). Although the conventional buffering hypothesis in studies of job strain has a long history that dates back to Karasek's (1979) JD-C model, its theoretical development and empirical evaluation across key dimensions of SES is limited. In literature on the JD-C and JD-R models (De Lange et al. 2003; Schaufeli and Taris 2014; Van der Doef and Maes 1999), few studies adequately elaborate on the usual two-way interactions between job demands and job resources (for exceptions, see Lynch et al. 1997; Toivanen 2011; Wege et al. 2008).[1] Specifically, much prior research seems to assume that the predictions of the buffering hypothesis generalize across SES—that is, workers with lower SES should experience similar protective benefits of job resources as their higher SES peers. We are skeptical of this view and instead propose that the buffering effect might be more potent for some groups relative to others.

The assumption that the potency of buffering generalizes across SES may be inaccurate for several reasons. First and foremost, stress process theory underscores the ways that systems of stratification shape exposure and vulnerability to stressors (Pearlin and Bierman 2013). From a social epidemiological perspective, SES embodies what Link and Phelan (1995) referred to as a "fundamental cause" of population-based health disparities. Moreover, as Tausig (2013) contended, workers have different chances of being filtered into "good" and "bad" jobs based partly on social statuses—and that "social stratification affects exposure to stressful job conditions and may be regarded as one mechanism that links work related distress to the observed gradient in health" (p. 442). Investigations

of buffering effects should therefore be cognizant of positional location. Workers of different levels of SES may vary not only in the *availability* of job resources but also in the *effectiveness* of those resources in coping with job pressure. These ideas represent a previously untested qualification of the conventional buffering hypothesis that predicts different "returns" of job resources through their modification of job pressure. Before outlining different scenarios for this SES-based moderation, we first identify the conceptualization and importance of job pressure and further articulate the underlying features of the conventional buffering hypothesis.

BACKGROUND

The Conceptualization and Importance of Job Pressure

Workers who report excessive job pressure feel overwhelmed by their workload, lack sufficient time to complete their job tasks, and are often required to work on too many tasks at the same time (Schieman 2013). These conditions are implicated in the stress of the discrepancy between the quantity of work to complete and the time allotted for it. Job pressure has been a central feature in research on work stress and its impact from Karasek's (1979) JD-C model to the more recent formulations of the JD-R model (Demerouti and Bakker 2011). In the stress process model, job pressure approximates Pearlin's concept of *role overload*: a "condition that exists when demands on energy and stamina exceed the individual's capacities" (1989:245).

The centrality of job pressure in work-stress research corresponds to its well-documented pervasiveness in the population. Galinsky and colleagues (Galinsky, Kim, and Bond 2001; Galinsky et al. 2005:2) observed that approximately 9 in 10 American workers agreed *somewhat* or *strongly* that they experienced one or more of the following: "my job requires that I work very fast," "my job requires that I work very hard," or "I never have enough time to get everything done on my job," while approximately one-third of American workers "can be viewed as chronically overworked." Similarly, in a 2011 study of Canadian workers, Schieman (2013) found that approximately one-third reported that they frequently felt that the demands of their job exceeded the time to do it; another 40% of Canadian workers were frequently required to work on too many tasks simultaneously.

A series of population-based studies also connected forms of job pressure to workers' health and

well-being. For example, Galinsky and colleagues (2005) demonstrated the link to higher levels of stress, symptoms of clinical depression, poorer self-rated health, and neglect of self-care. Likewise, Glavin, Schieman, and Reid (2011) found that job pressure was associated with more guilt and distress. In a national sample of full-time American workers, Ducharme and Martin (2000) documented a negative relationship between job pressure and job satisfaction. Schieman and colleagues (2009) demonstrated that job pressure was related to greater work-home interference—a key stressor shown to detract from health and well-being. Collectively, the evidence of a consistent relationship between job pressure and unfavorable health-related outcomes leads us to ask: Under what conditions might that association be weakened? The JD-C and JD-R models provide clues that form the basis of our hypotheses.

Job-related Resources and the Conventional Buffering Hypothesis

Job strain, which specifically refers to a context of high job demands and low job control, is hypothesized to generate mental strain (e.g., distress). A central tenet of the JD-C model is that the opportunity to use skills, make decisions, and engage in more stimulating challenges should reduce the undesirable effects of job demands (Karasek 1979). Similarly, the core hypotheses of JD-R model, which are mostly consistent with the JD-C model, propose that factors related to job stress fall into two general categories: demands and resources (Demerouti and Bakker 2011). Job demands refer to "those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs" (Bakker et al. 2005:170). In contrast to the JD-C model's focus on "job control," the JD-R model accounts for a wider range of job resources as part of the buffering hypothesis. These resources refer to the "physical, psychological, social, or organizational aspects of the job that (a) are functional in achieving work goals, (b) reduce job demands and the associated physiological and psychological costs, or (c) stimulate personal growth and development" (Bakker et al. 2005:170).

The middle part of that definition—job resources reduce the psychological costs of job demands—is at the heart of the conventional buffering hypothesis: Job pressure should be associated less positively with anxiety and job dissatisfaction among individuals who have greater job autonomy

and challenging work. However, while some studies provide tentative support for the buffering hypothesis, evidence for two-way interaction effects between job demands and resources in both the JD-C and JD-R models remains spotty at best (De Lange et al. 2003; Hu, Schaufeli, and Taris 2011; Van der Doef and Maes 1999).

SES-contingent Buffering: Resource Reinforcement or Substitution?

In recent reviews of research guided by the JD-R model, scholars involved in the original formulation of the model have encouraged further investigation of *individual* resources as additional contingencies (Schaufuli and Taris 2014). Demerouti and Bakker (2011) recommended that future inquiry "examine whether the complex interaction of individual resources with the work environment may take the form of three-way interactions between job demands, job resources, and personal resources so that personal resources qualify the two-way interactions between job demands and job resources" (pp. 3–4). We integrate and elaborate on this idea to develop hypotheses about the education and income-contingent buffering of job resources.

The resource elements of education and income are empirically related but conceptually distinct. Education, for example, "is a special resource, because it indicates resourcefulness, or the general ability to meet situations effectively" (Ross and Mirowsky 2010:3). The resource advantages of education partly reflect the development of human capital (Becker 1964) as well as the acquisition of skills, knowledge, cognitive flexibility, and social connections—all features that improve health and might help individuals cope with stress (Mirowsky and Ross 2005). Higher education has been linked with less distress (Everson et al. 2002; Mirowsky and Ross 2003a, 2003b), and although this sometimes occurs indirectly via education's positive relationship with other factors like nonroutine work, economic resources, and the sense of control (Ross and Van Willigen 1997), research has demonstrated that education is linked to better health net of work and economic conditions, social-psychological resources, and health lifestyle (Ross and Wu 1995).

The human capital–based resources embedded within education are largely distinct from the mechanisms that link personal income with classic forms of capital. However, like education, higher income might enhance personal agency, choice, and control in ways that amplify the protective potency of other

resources. For example, higher earnings might "reinforce a sense of mastery, instrumentalism, and self-efficacy, in which individuals feel responsible for the good and bad events and outcomes in their lives, able to correct mistakes and avoid them in the future, and able to do things they set their minds to" (Mirowsky and Ross 2003b:95). Moreover, in the workplace context, higher earnings are associated with more power and control over other kinds of resources (e.g., monetary, personnel) (Ross and Reskin 1992; Spaeth 1985). The meaning of job pressure might therefore depend on the ways that workers view higher earnings as a reward linked to responsibilities, organizational commitment, and being the "ideal worker" (Blair-Loy 2003; DeVoe and Pfeffer 2011).

Starting with the core tenet of the conventional buffering hypothesis, we identify three scenarios for SES-based contingencies. As Panel A of Figure 1 illustrates, the buffering potency of job resources may be stronger among workers with higher levels of SES. This scenario originates from Ross and Mirowsky's (2010:2–3) arguments about the dynamics embedded in the "reinforcement of advantage" or "resource multiplication" in which "advantaged groups gain most from the resources they have, so that their resources multiply to reinforce their advantage." However, Ross and Mirowsky also contended that "one definition of a disadvantaged status is that returns to resources are smaller among the disadvantaged group and larger among the advantaged group" (2010:3). This view implies that we might simultaneously observe a null or marginal buffering effect of job resources among those with lower SES. Taken together, these ideas provide the rationale for the *resource reinforcement* hypothesis: While the conventional buffering hypothesis predicts that job resources should weaken the association between job pressure and both anxiety and job dissatisfaction, the resource reinforcement hypothesis predicts this buffering effect should be stronger among those with higher education and income.

Alternatively, as Panel B of Figure 1 illustrates, the *resource substitution* hypothesis predicts that the buffering potency of job resources should be stronger among those with lower SES. This scenario is also based on Ross and Mirowsky's (2010:3) theoretical model in which "the effect of having a specific resource is greater for those who have fewer alternative resources" and "that each has less of an effect if the other is present." Resources might therefore substitute for each other in their buffering of job pressure. In this view, simultaneously possessing multiple resources (i.e., more job autonomy *and* higher education) makes outcomes less dependent on any one resource. For individuals with lower levels of education or income, the buffering effect of job resources should be amplified. As we described above, workers with lower levels of education and income tend to possess fewer personal and social resources. In that context, the buffering potency of job resources should be stronger. The resource reinforcement and resource substitution hypotheses therefore both predict a pattern consistent with buffering, but they do so differently depending on SES. Resource reinforcement predicts that the *Pressure × Resource* coefficient will be more negative among those with higher SES; resource substitution predicts that the *Pressure × Resource* coefficient will be more negative among those with lower SES. Both views elaborate on the conventional buffering hypothesis, albeit in divergent forms.

The Stress of Higher Status

The conventional buffering hypothesis assumes that job resources attenuate the harmful impact of pressure. It is possible, however, that some resources exacerbate it. The rationale for this scenario evolves from the *stress of higher status* hypothesis, which questions the claim that job resources uniformly reduce exposure to job demands and their consequences (Schieman, Whitestone, and Van Gundy 2006). The stress of higher status hypothesis problematizes the conventional interpretation of the "job demands–job resources" binary, suggesting that some job resources elevate exposure to job demands and stressors in the work-family interface (Schieman and Reid 2009). In an empirical test of this view, Schieman (2013) observed divergent patterns among four traditional job-related resources: Job autonomy and schedule control were associated with less exposure to job pressure, but challenging work and job authority increased it.

While there is no question that higher status work conditions are often associated with desirable outcomes (Tausig 2013), evidence also demonstrates the downsides of these conditions for some forms of stress (Moen et al. 2013; Wharton and Blair-Loy 2006). To be clear, the stress of higher status hypothesis does not posit that workers with more job resources are *worse off* than lower status workers in terms of health and well-being—but rather that the more favorable outcomes observed among higher status workers should not be taken to imply an absence of exposure to health-harming stressors. As an example, Schieman and Reid
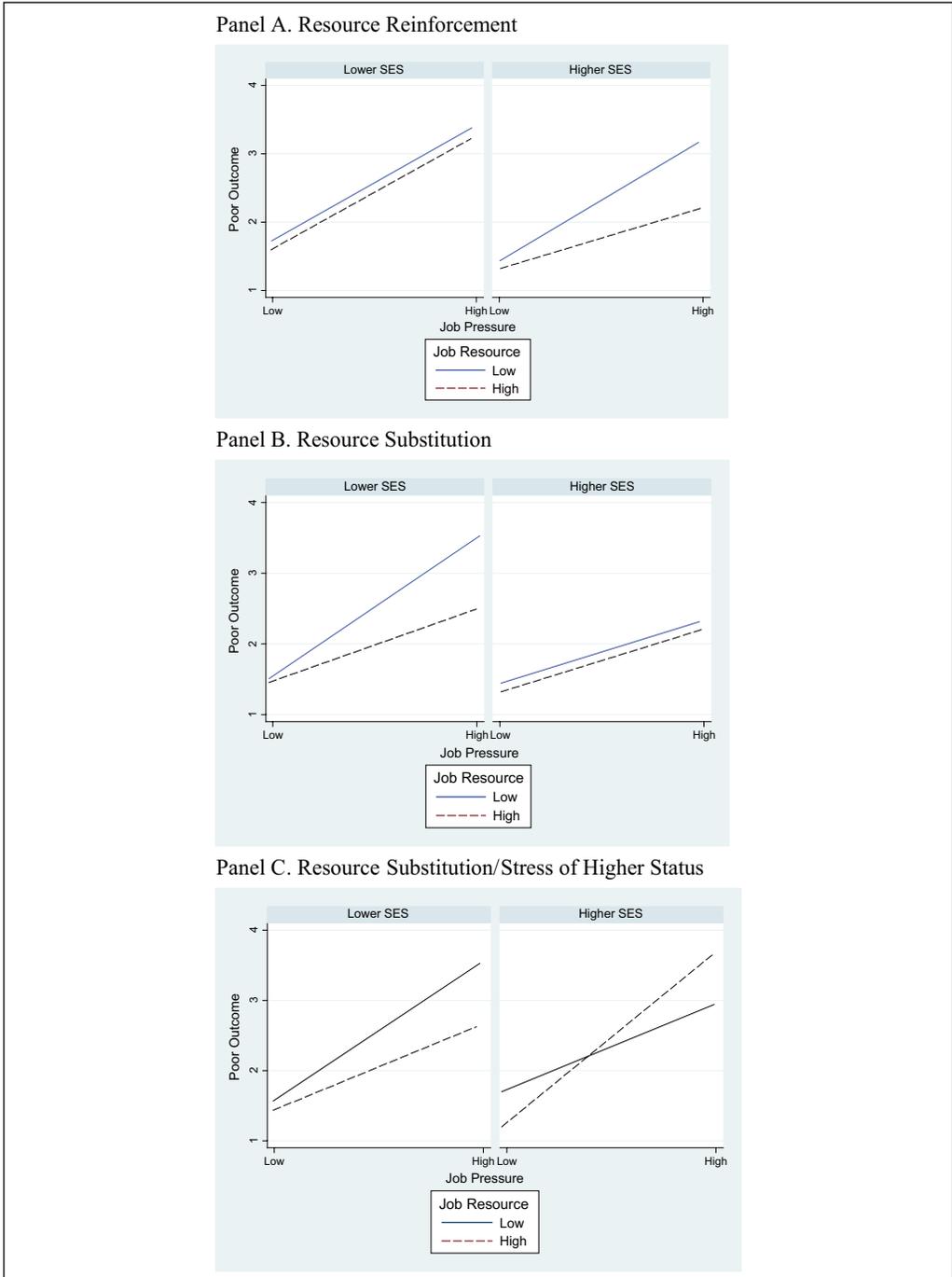
Panel A. Resource Reinforcement

Panel B. Resource Substitution

Panel C. Resource Substitution/Stress of Higher Status

Figure 1. Hypothetical Scenarios for Interaction Tests.

(2009) demonstrated the consequences of this exposure, showing that job authority—a "coveted job resource" linked to greater job control and economic rewards (Smith 2002)—elevates the risk of interpersonal conflict in the workplace and work-family interference. Elevated stress exposure, in turn, suppresses the health-enhancing benefits of job authority and thereby produces an overall null

association between job authority and health (Mirowsky and Ross 2003b). Likewise, research shows that workers with more decision latitude, skill, and authority and better pay encounter more work-family role-blurring or interference (Schieman et al. 2009; Schieman and Young 2015).

In sum, as Panel C of Figure 1 illustrates, the stress of higher status hypothesis provides an alternative to the resource reinforcement hypothesis by predicting that job resources exacerbate the positive association between job pressure and anxiety or job dissatisfaction among workers with higher SES. While the focal point of this hypothesis is the moderating effect of job resources at higher levels of SES, resource substitution might still be operative for lower SES workers. In analytical terms, the *Job Pressure × Job Resources* coefficients should be more positive among those with higher SES—a challenge to the predictions of resource reinforcement.

DATA AND METHODS

Sample

To test the hypotheses outlined above, we analyzed data from the 2008 National Study of the Changing Workforce (NSCW), a nationally representative sample of the labor force in the United States (conducted on behalf of the Families and Work Institute). The NSCW replicates and expands upon many of the questions in Quinn and Staines' (1977) Quality of Employment Study (QES). As such, unless otherwise noted, the items used to measure the focal variables in this study are similar or identical to those asked in the QES. It is also worth noting that Karasek (1979) used data from an earlier version of the QES (conducted in 1972) to measure job demands and decision latitude in his original formulation of the JD-C model. We drew from the Families and Work Institute's (2010) guide to public use files for the following sample description and procedures. Interviews were completed by telephone between November 12, 2007, and April 20, 2008. Eligibility was limited to individuals who (1) worked at a paid job or operated an income-producing business; (2) were aged 18 years or above; (3) were employed in the civilian work force; (4) resided in the contiguous 48 states; and (5) lived in a noninstitutional residence (i.e., household) with a telephone. In households with more than one eligible person, one individual was randomly selected for the interview. Up to 60 calls were made to each potentially eligible household, and escalating cash incentives were used to obtain interview completions. Additional calls were made if eligible people were identified and requested callbacks. In the event that 25 consecutive calls were made to numbers that produced no answers and no busy signals—and no other dialing outcome—these numbers were considered nonresidential, nonworking numbers or non–voice communication numbers. Three to five attempts were made to convert individuals who initially refused to participate. The final full sample was 3,502, with a response rate of 54.6% for potentially eligible households. Composition of the total sample of 3,502 study participants was as follows: 2,769 were wage and salaried workers who worked for someone else, and 733 respondents worked for themselves. Among those who worked for themselves, 255 individuals were small business owners who employed others, while 478 were independent self-employed workers who did not employ anyone else. After we removed cases with missing values on focal measures and applied sample weights, the analytical sample used here included 3,218 cases for analyses of job dissatisfaction and 3,284 cases for analyses of anxiety.

Focal Measures

Job Dissatisfaction. We used responses to three items to create the job dissatisfaction index. The first item asked, "All in all, how satisfied are you with your job?" Response choices were coded (1) "very satisfied," (2) "somewhat satisfied," (3) "not too satisfied," and (4) "not satisfied at all." The second item asked, "Knowing what you know now, if you had to decide all over again whether to enter the same line of work you are in now, what would you decide?" Response choices were coded (1) "Take same job again without hesitation," (2) "Have second thoughts," and (3) "Definitely not take job." The third item asked, "If a good friend of yours told you that he or she was interested in working in a job like yours, what would you tell your friend?" Response choices were coded (1) "Strongly recommend it," (2) "Have doubts about recommending it," and (3) "Advise him or her against it." To create the index, we first standardized the items (because of the different response choices) and then averaged them; higher scores reflected more job dissatisfaction (α = .76). The index ranged from –.66 to 3.07.

Anxiety. We used responses to five items that asked respondents the frequency with which they experienced the following symptoms of anxiety in the last month: (1) "How often have you felt nervous and stressed?" (2) How often have you been bothered by minor health problems such as headaches, insomnia, or stomach upsets?" (3) "How often have you

had trouble falling asleep when you go to bed?" (4) "How often have you awakened before you wanted to and had trouble falling back asleep?" and (5) "How often have you had trouble sleeping to the point that it affected your performance on and off the job?" Response choices included (1) "never," (2) "almost never," (3) "sometimes," (4) "fairly often," and (5) "very often." Responses were averaged to create the index such that higher scores indicate more anxiety ($\alpha = .80$). The first item was derived from Cohen, Kamarck, and Mermelstein's (1983) Global Measure of Perceived Stress. Items 2 and 5 were combined to form part of a perceived stress measure by Voydanoff (2005) and were analogous to questions that appear to have been developed, as far as we are aware, by the NSCW research team for use in the 1997 and 2002 versions of the survey, respectively. Finally, items 3 and 4 were similar to questions asked in the QES. The Pearson's correlation coefficient between anxiety and job dissatisfaction was positive and significant, although relatively weak ($r = .273$, $p < .0001$).

Job Pressure. We used responses to three items to create the job pressure index. The first question asked the extent to which respondents agreed with the following: "I have enough time to get the job done." Response choices were (1) "very true," (2) "somewhat true," (3) "a little true," and (4) "not at all true." The second item asked, "How often have you felt overwhelmed by how much you had to do at work in the last three months?" The third item asked, "During a typical workweek, how often do you have to work on too many tasks at the same time?" Responses to the second and third items were coded (1) "never," (2) "rarely," (3) "sometimes," (4) "often," and (5) "very often." We standardized the items (because of different response choices) and then averaged them to create the index; higher scores indicated more job pressure ($\alpha = .73$). The index ranged from -1.45 to 1.83.

Job Autonomy. We used three items to measure job autonomy. Respondents were asked the extent that they agreed or disagreed with the following statements: "I have the freedom to decide what I do on my job," "It is basically my own responsibility to decide how my job gets done," and "I have a lot of say about what happens on my job." Response choices were coded (1) "strongly disagree," (2) "somewhat disagree," (3) "somewhat agree," and (4) "strongly agree." We averaged the responses to create the index; higher scores reflected more job autonomy ($\alpha = .77$).

Challenging Work. Five items were used to measure challenging work. Participants were asked the extent to which they agreed or disagreed with the following statements: "My job requires that I keep learning new things," "My job requires that I be creative," "The work I do on my job is meaningful to me," "My job lets me use my skills and abilities," and "I get to do a number of different things on my job." Items were coded (1) "strongly disagree," (2) "somewhat disagree," (3) "somewhat agree," and (4) "strongly agree." We averaged the responses to create the index; higher scores reflect more challenging work ($\alpha = .75$). Factor analyses (not shown) demonstrated that the job autonomy and challenging work items reflected distinct constructs. As previously mentioned, the items we used to measure challenging work were derived from the QES. The specific combination of questions used here aligns closely with Karasek's conceptualization of *skill discretion* and blends interrelated themes that scholars refer to as "creative work," "nonroutine work," "skill utilization," "learning possibilities," or "opportunities for professional development" (Bakker and Geurts 2004; Bakker et al. 2003; Hackman and Oldham 1975; Karasek et al. 1998; Mirowsky and Ross 2003a; Schieman 2013).

Higher Education. To assess higher educational degree, we created a dummy variable with a four-year bachelor's/university degree or more coded '1' and all others coded '0'. We evaluated different coding schemes for education before deciding to use the dichotomy. Three issues provide a basis for this decision. First and foremost, interpretation and presentation of three-way interaction coefficients are notoriously difficult. After conducting separate additional analyses (not shown but available upon request), we concluded that collapsing education into a substantively meaningful binary variable provided the most reasonable compromise between parsimonious presentation and interpretation, on one hand, and testing complex three-way interactions, on the other. Second, there is strong evidence that individuals who have attained at least a four-year college or university degree tend to be happier, healthier, and more likely to have above-average incomes than their counterparts with less education (Hout 2012; Mirowsky and Ross 2003a). Third, small cell sizes present challenges for the interpretation of three-way interactions, especially in the presence of influential values. In our analyses, individuals with less than a four-year university degree comprised 54.7% of the sample, while those with a

four-year degree or higher comprised 45.3% of our sample. Therefore, by dichotomizing education at this approximate mid-point, we were able to minimize the risks associated with small cell sizes.

Higher Income. We used responses to the following question: "How much did you personally earn in all of last year, including bonuses, from all paid employment before taxes?" To assess higher versus lower levels of income, we coded individuals above the median income ($40,000) as "higher income" (coded '1') versus those at or below the median (coded '0'). Similar to our rationale for dichotomizing education, we dichotomized income at the median because this provides sufficient cases in lower versus higher income groups to assuage concerns about small cell sizes in three-way interaction terms. The use of other cut-points might produce different patterns, but in our view the analyses with this standard measure of central tendency for income reflect substantively meaningful standards for "lower" versus "higher" SES (see Lynch et al. 1997; Ross, Mirowsky, and Pribesh 2001; Toivanen 2011; Walsemann, Gee, and Geronimus 2009; and Wege et al. 2008; as examples of other analyses that also use dichotomized income).

Control Variables. All analyses adjusted for gender, age, race, marital status, whether the participant had more than one paid job, weekly work hours, employment type (wage and salaried worker versus business owners or self-employed workers),[2] region of residence, and occupation (professional-managerial versus technical, sales, administrative support, service, and production),[3] and a set of dummy variables comparing those with no children under the age of 18 at home to those with children under 6, and those with children aged 6–12 and 13–17.

Plan of Analyses

In Model 1, we regressed either job dissatisfaction or anxiety on job pressure, job resources, and SES. While all analyses adjusted for the control variables, for the sake of space we decided to not report their coefficients in the tables (available upon request). Subsequent models then tested the buffering hypothesis by separately adding interaction terms for *Pressure × Autonomy* (Model 2) and *Pressure × Challenging Work* (Model 3). Following Mirowsky's (2013) analytical approach and others (Bakker et al. 2005), we centered the continuous variables by subtracting each score from the mean score to reduce multicollinearity between interaction coefficients and lower-order terms. Finally, we also tested whether any two-way interactions differed for (1) individuals at lower versus higher education and (2) individuals at lower versus higher income. To ease interpretation of statistically significant three-way interaction coefficients, we present figures. Descriptive statistics for all study variables are presented in Appendix A.

To test our hypotheses for job dissatisfaction (Table 1) and anxiety (Table 2), we used robust regression with the *rreg* command in Stata 12.1. Robust regression techniques are appropriate because of the risk of smaller cell sizes produced by three-way interaction terms. Outliers can be especially problematic in the context of small cell sizes. Robust regression downweights influential values (Hamilton 2009). The use of robust regression analyses also allows for more clarity in the interpretation and presentation of three-way interactions compared with other frameworks such as structural equation modeling (SEM).

RESULTS

Job Dissatisfaction

Model 1 in Table 1 shows that job pressure was associated positively with job dissatisfaction. By contrast, job autonomy and challenging work were associated negatively (and independently) with job dissatisfaction. However, higher education and higher income were not significantly related to job dissatisfaction. As shown in Models 2 and 3, all of the *Pressure × Resource* coefficients were negative and statistically significant. These patterns support the conventional buffering hypothesis—that is, the positive association between pressure and job dissatisfaction in Model 1 was weaker among those with more job autonomy (Model 2) and challenging work (Model 3).

We also tested three-way interaction terms to assess whether the size or direction of those two-way coefficients varied by education and income. To reiterate, this evaluates the hypothesis that SES modifies the buffering potency of job resources. Neither of the three-way interaction terms (*Pressure × Autonomy × SES* or *Pressure × Challenging Work × SES*) was statistically significant. Therefore, the potency of buffering for job autonomy and challenging work did not vary by SES—at least when job dissatisfaction was considered as the focal dependent variable.

Anxiety

Table 2 shows results for anxiety as the focal dependent variable. Model 1 indicates that job pressure was associated positively with anxiety. By contrast,

Table 1. Job Dissatisfaction Regressed on Job Pressure, Job-related Resources, Socioeconomic Status, and Interactions (*N* = 3,218).

	Model 1	Model 2	Model 3
Job pressure			
Job pressure	.309***	.306***	.310***
Job-related resources			
Job autonomy	−.144***	−.144***	−.136***
Challenging work	−.553***	−.546***	−.558***
Socioeconomic status			
High education	.050	.046	.050
High income	−.016	−.016	−.012
Interaction terms			
Job Pressure × Autonomy	—	−.127***	—
Job Pressure × Challenging Work	—	—	−.199***
Constant	−.084	−.088	−.091

Note: Unstandardized regression coefficients are reported. All models include controls for gender, age, race, marital status, employment type, work hours, whether the study participant had more than one paid job, region, and occupation, and a set of dummy variables comparing those with no children under the age of 18 at home to those with children under 6, and those with children aged 6–12 and 13–17.
*$p < .05$, **$p < .01$, ***$p < .001$ (two–tailed test).

job autonomy and challenging work were associated negatively and independently with anxiety. Both education and income were related to anxiety: Individuals with higher levels of education and income reported less anxiety compared with those with lower levels of education and income.

We then tested interaction terms between job pressure and each of the job-related resources—essentially replicating the steps in our analyses of job dissatisfaction in Table 1. In sharp contrast to our findings for job dissatisfaction, however, none of the two-way coefficients were statistically significant—that is, job autonomy and challenging work did not appear to attenuate the positive association between job pressure and anxiety. In these two-way interaction tests, the conventional buffering hypothesis was not supported.

As Table 2 shows, a different picture emerged when we assessed whether the size or direction of the two-way interaction coefficients varied by SES.[4] First, Model 2 showed a positive coefficient representing the *Job Pressure × Job Autonomy × High Education* term ($b = .105$, $p < .05$). Likewise, Model 3 showed a positive coefficient representing the *Job Pressure × Challenging Work × High Education* term ($b = .193$, $p < .01$). Taken together, these patterns indicate that job autonomy and challenging work moderated the association between job pressure and anxiety differently for individuals with low versus high education. As Panel A of Figure 2 illustrates, the positive three-way coefficients indicate that having

more job autonomy attenuated the positive association between job pressure and anxiety among workers with lower education (left) while exacerbating the association between job pressure and anxiety among those with higher education (right). Panel B in Figure 2 shows similar patterns for challenging work.

Models 4 and 5 in Table 2 demonstrate that income moderated the buffering effect of the job resources. First, Model 4 shows a positive coefficient representing the *Pressure × Autonomy × High Income* term ($b = .094$, $p < .05$). Model 5 shows a positive coefficient representing the *Pressure × Challenging Work × High Income* term ($b = .173$, $p < .05$). Panels A and B of Figure 3 depict the autonomy and challenge work interactions, respectively, at high versus low income. The positive three-way coefficients suggest that among those with low income, job resources weakened the positive association between pressure and anxiety; by contrast, among those with higher income, having greater job autonomy and challenging work exacerbated it. Collectively, these patterns indicate that job autonomy and challenging work moderated the association between job pressure and anxiety differently for individuals with lower versus higher income.

DISCUSSION

Workers who face more job pressure tend to experience more job dissatisfaction and anxiety than their peers in less pressured work roles. Our study provides

Table 2. Anxiety Regressed on Job Pressure, Job-related Resources, Socioeconomic Status, and Interactions (*N* = 3,284).

	Model 1	Model 2	Model 3	Model 4	Model 5
Job pressure					
Job pressure	.352***	.341***	.343***	.333***	.336***
Job-related resources					
Job autonomy	−.094***	−.116***	−.096***	−.113***	−.096***
Challenging work	−.126***	−.128***	−.176***	−.127***	−.128**
Socioeconomic status					
High education	−.112**	−.106**	−.118**	−.114**	−.111**
High income	−.089*	−.090*	−.088*	−.081*	−.095*
Interaction terms					
Job Pressure × Job Autonomy	—	−.050	—	−.047	—
Job Pressure × High Education	—	−.018	.007	—	—
Job Autonomy × High Education	—	−.040	—	—	—
Job Pressure × Job Autonomy × High Education	—	.105*	—	—	—
Job Pressure × Challenging Work	—	—	−.073	—	−.067
Challenging Work× High Education	—	—	.099	—	—
Job Pressure × Challenging Work × High Education	—	—	.193**	—	—
Job Pressure × High Income	—	—	—	.024	.017
Job Autonomy × High Income	—	—	—	.027	—
Job Pressure × Job Autonomy × High Income	—	—	—	.094*	—
Challenging Work × High Income	—	—	—	—	−.013
Job Pressure × Challenging Work × High Income	—	—	—	—	.173*
Constant	2.411***	2.403***	2.428***	2.398***	2.415***

Note: Unstandardized regression coefficients are reported. All models include controls for gender, age, race, marital status, employment type, work hours, whether the study participant had more than one paid job, region, and occupation, and a set of dummy variables comparing those with no children under the age of 18 at home to those with children under 6, and those with children aged 6–12 and 13–17.
*p < .05, **p < .01, ***p < .001 (two-tailed test).

new insights about this relationship by asking: Do job resources moderate those associations—and does SES function as an additional contingency? Three contributions emerged. First, we differentiated the moderating role of two job resources: job autonomy and challenging work. Consistent with the conventional buffering hypothesis, these resources attenuated the positive association between job pressure and job dissatisfaction. By contrast, we did not replicate these same two-way interaction effects for anxiety. Second, we found that education and income are additional contingencies that elaborate on the two-way buffering effects, but only when anxiety was assessed as the outcome. Third, while our findings provided partial support for the conventional buffering hypothesis, the three-way interactions challenged the resource reinforcement hypothesis. While the buffering potency of job resources was greater among workers with lower SES, the more surprising pattern was that these same job-related resources *amplified* the positive association between job pressure and anxiety for workers with higher SES. In this respect, our findings provide a mixture of support for the resource substitution and the stress of higher status hypotheses.

Conventional Buffering versus SES-contingent Buffering

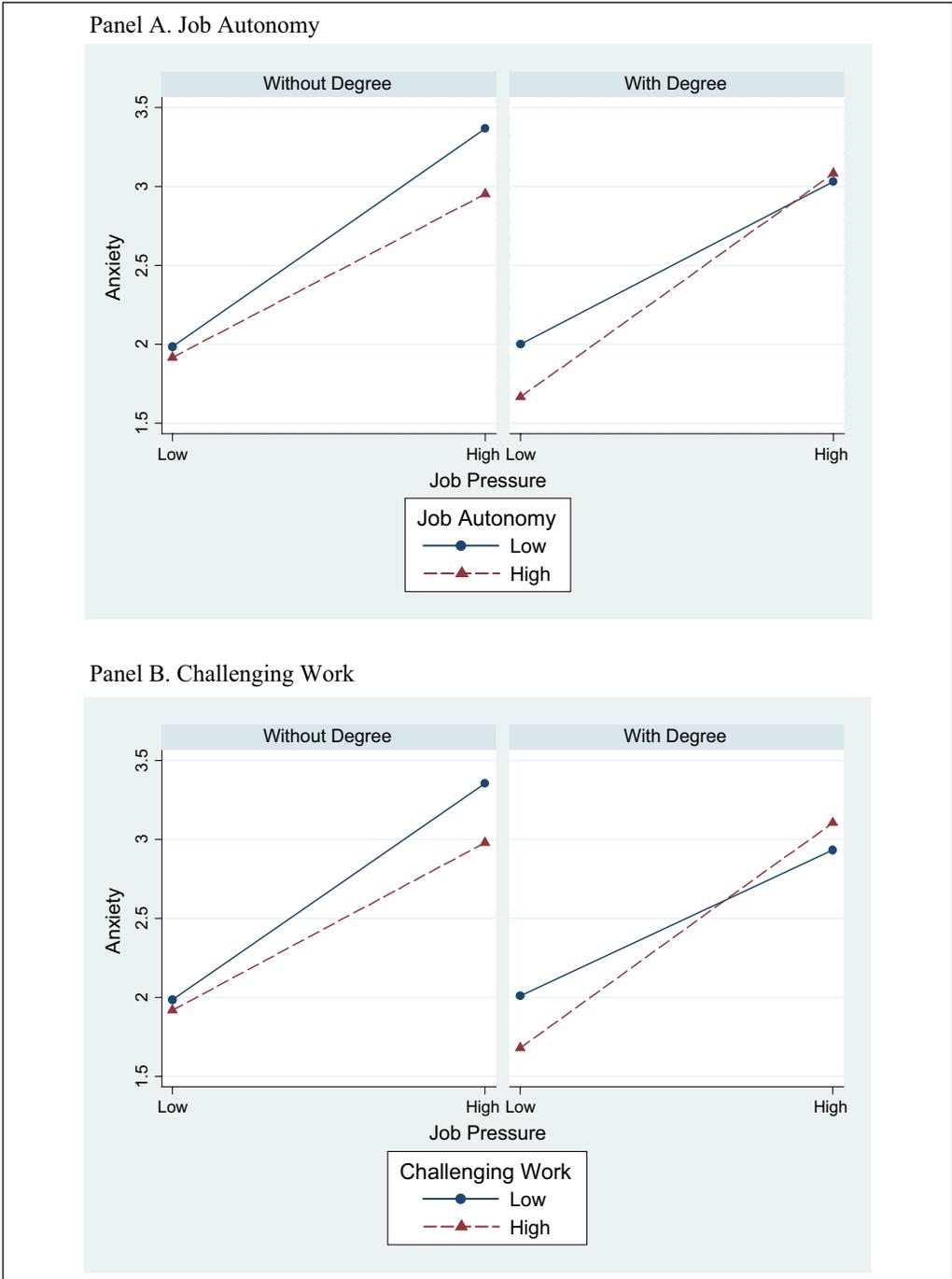In analyses of job dissatisfaction we documented support for the conventional buffering hypothesis—that

Figure 2. Job Resources as Moderators of the Relationship between Job Pressure and Anxiety at Lower versus Higher Levels of Education.

is, the positive association between pressure and job dissatisfaction was weaker among workers with greater autonomy and challenging work. These

resources therefore appear to function as predicted by the conventional buffering hypothesis. By contrast, when we assessed anxiety as the outcome, in no
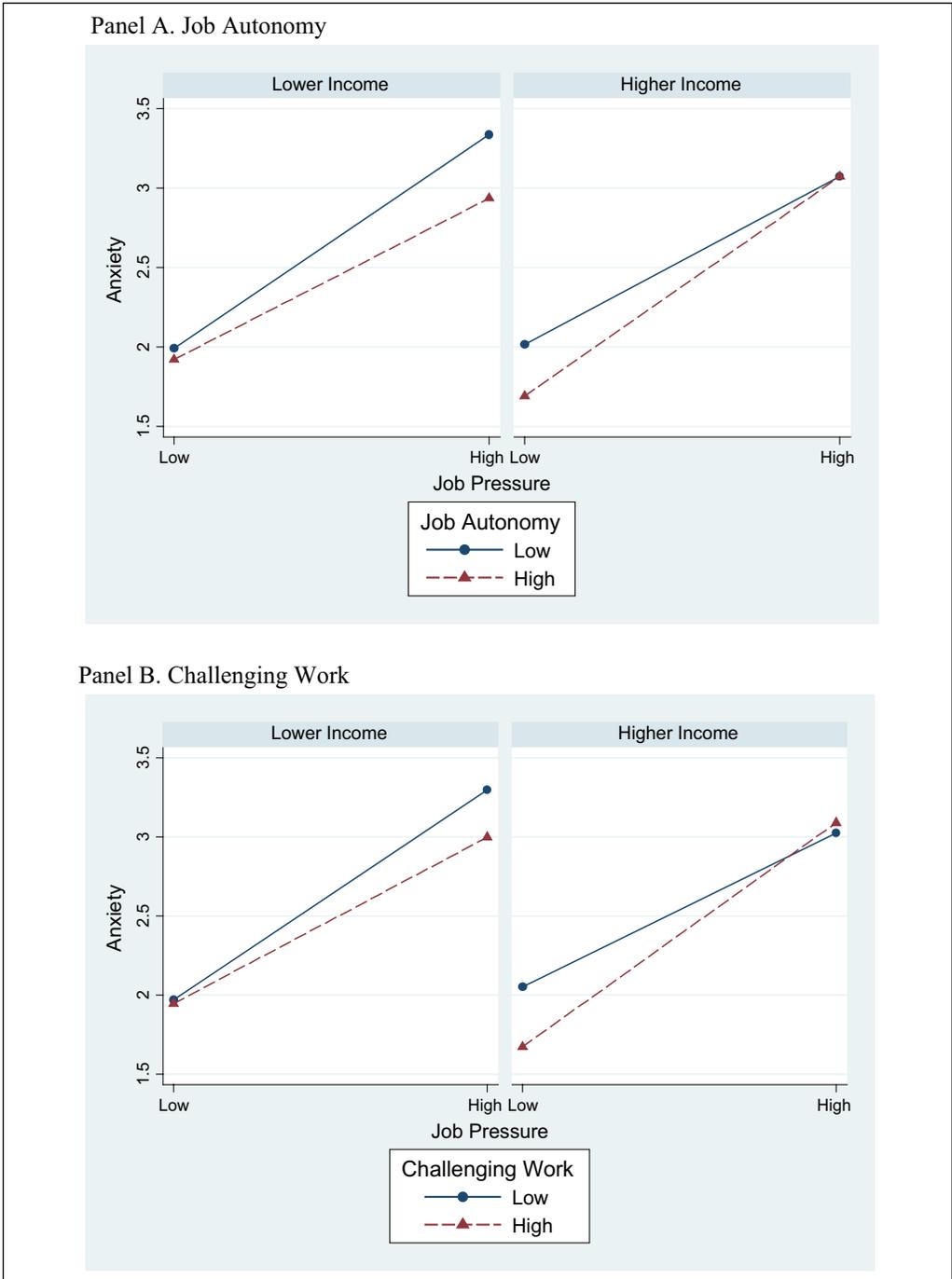
Panel A. Job Autonomy

Panel B. Challenging Work

Figure 3. Job Resources as Moderators of the Relationship between Job Pressure and Anxiety at Lower versus Higher Levels of Income.

instance did we observe patterns consistent with the conventional buffering hypothesis. These divergent observations represent one of the main contributions

of our study: If we had limited analyses to two-way interaction terms (e.g., *Pressure × Autonomy*), we would have concluded that the buffering potency of

job resources is limited to job pressure and job dissatisfaction and that the moderating effects of these resources do not generalize to anxiety. However, our main objective was to probe the possibility of SES-contingent buffering. We discovered education and income-based differences in the moderating effects of job resources—but only when anxiety was considered. All of the three-way interaction terms were positive and statistically significant. Among workers with less education and income, job resources *attenuated* the positive association between job pressure and anxiety; by contrast, among higher SES workers, job resources *exacerbated* that positive association.

Taken together, these opposing patterns cancel each other out when analyses are restricted to two-way interactions. This underscores the substantive importance of divergent SES-based moderators and may speak to the fact that interactions between job demands and job resources are often weak and sometimes inconsistent (see Hu et al. 2011). One reason for this might be that divergent experiences for workers with lower versus higher SES produce overall null effects. These findings emphasize the value of probing for SES-based contingencies regardless of the presence or absence of two-way interactions between demands and resources.

Resource Reinforcement, Substitution, or Stress of Higher Status?

When anxiety was assessed, we observed support for the resource substitution hypothesis among workers with lower SES. That is, job resources were more protective for workers with less education and income. By contrast, the patterns among workers with high SES were consistent with the stress of higher status hypothesis: The positive association between job pressure and anxiety is stronger among higher SES workers with more job resources. However, we did not observe any support for the resource reinforcement hypothesis. What might explain these divergent findings?

On average, individuals with lower levels of education and income are more likely to experience monotonous, closely supervised jobs that give the worker little control over tasks (Mirowsky and Ross 2007). These jobs rarely allow workers to use their skills as they see fit and do not reward individuals with a sense that their job is meaningful to them (Kalleberg 2012). Ross and Van Willigen (1997:275) maintained that "work that gives people the freedom from routinization, monotony, and external control on the one hand, and a chance to use their skills, develop as a person, and learn new

things on the other, theoretically increases subjective well-being, in part by increasing perceived control." For example, challenging work entails doing a variety of tasks and problem solving. As these conditions enhance cognitive flexibility, it is unsurprising that autonomous, challenging work is associated positively with psychosocial resources like mastery (Ross and Wright 1998). Because lower SES individuals tend to enjoy fewer psychosocial resources that reduce distress and anxiety relative to their higher SES counterparts, conditions that give rise to these resources may be especially potent for them.

It is plausible that resource substitution among lower SES workers reflects a process of *resource proliferation*. This interpretation is consistent with three well-documented patterns in the literature: (1) lower SES is associated with fewer psychosocial resources and higher levels of anxiety; (2) job-related resources are positively related to psychosocial resources; and (3) certain psychosocial resources both mediate and moderate the associations between stressors and distress, and between SES and distress (Mirowsky and Ross 2003a). As previous research has demonstrated a link between job-related resources and psychosocial resources, lower SES workers in possession of job resources may also benefit from secondary personal resources that protect these individuals from stressors associated with their jobs and lower SES more generally—and also enhance their psychological well-being directly.

For workers with higher education and income, job autonomy and challenging work *exacerbated* the positive association between job pressure and anxiety. These findings go against the grain of research that identifies an inverse relationship between SES and distress and contradict the conventional buffering hypothesis. What might explain these patterns? Recent efforts reveal complexities in the relationship between SES and health by directing attention to stressors that are disproportionately experienced by individuals with higher status (Link, Carpiano, and Weden 2013; Schieman and Reid 2009). This stress of higher status perspective helps interpret our findings by complicating the conventional conceptualization of "resources"—specifically, it demonstrates that some job resources are associated with exposure to more job demands and work-family stressors (Schieman et al. 2009).

By drawing upon the stress of higher status view to interpret the weakened buffering potency of job resources, we are not claiming that higher status

workers—in general—are worse off than lower status workers. Higher status workers undoubtedly enjoy better health than their lower status counterparts. We are instead suggesting a more nuanced analysis of the intersection of job conditions and social stratification that acknowledges patterns that deviate from those predicted by conventional hypotheses about the relationships among SES, stressors, and well-being. It motivates us to question why, in the face of higher levels of job pressure, those workers with high SES and more autonomy appear to be no better off in terms of anxiety levels than their peers with less autonomy. Is it that high pressure overrides the resource—or is it possible that something about what we have assumed to be a resource actually enables some threads of the harms that come with greater pressure? These processes may also reflect what Lutfey and Freese (2005:1365) called *countervailing mechanisms*: "Fundamental relationships do not require that all of the pathways between X and Y support the relationship. Countervailing mechanisms may work in the other direction; indeed, the only requirement is that the effects of such mechanisms are cumulatively smaller than the mechanisms producing the fundamental relationship." This logic is relevant for our observations about SES contingencies. In the same way that identifying the exposures to health-harmful circumstances at higher levels of SES does not imply that higher SES individuals are collectively worse off than their lower SES peers, identifying beneficial circumstances at lower levels of SES in no way suggests that lower SES individuals are collectively better off. Instead, these observations are best interpreted in the context of the experience of work at lower versus higher levels of education and income. The discovery of patterns consistent with the stress of higher status does not negate the detrimental impact of the stressors associated with lower status. If anything, this view provides a more complete portrait of the nature of job pressures—and the various forms of SES contingencies in resource modification.

One final puzzle in our findings requires some reflection: The buffering potency of job resources was uniform across SES levels when we considered job dissatisfaction. Why is job dissatisfaction different from anxiety in this regard? One possible explanation points to the nature of the survey questions and their associated constructs. The three items that assessed job dissatisfaction oriented workers to specifically appraise their current job conditions. For example, when a study participant was asked, "All in all, how satisfied are you with your job?" it is possible that his or her response reflected the totality and intersection of conditions specific to the domain of work and that these conditions were the most salient predictors of job satisfaction regardless of education or income level. In other words, the conventional buffering idea embedded in the JD-R model seems to "work" here: Job resources *reduce* the psychological costs of job demands when those costs involve dissatisfaction. Apparently, however, there is something qualitatively different about the concurrent experience of job pressure and job resources that leads to SES-based differences in anxiety. One interpretation of these divergent patterns—where higher SES workers are concerned—is that more challenging and autonomous work in the face of high job pressure may actually result in more work-family spillover, greater role responsibilities, and the internalization and enactment of excessive workplace expectations. Although these conditions may heighten generalized anxiety for higher SES workers, they may not increase job-specific dissatisfaction—particularly if these conditions are accompanied with assurances of greater monetary rewards or upward mobility in the future.

Study Limitations

Several study limitations deserve brief mention. First, the cross-sectional design limits claims about causal direction. However, three arguments help assuage such concerns. First, the language that frames the conventional buffering hypothesis in the JD-C and JD-R models implies a concurrent-context model in which high demands should be more detrimental for workers with low control—that is, job pressure should be less problematic when workers *simultaneously* possess job resources. Second, longitudinal studies reinforce patterns in cross-sectional analyses, showing that job demands and resources influence burnout, depression, and strain even after testing for reverse causation (Schaufeli and Taris 2014). Third, while the 2008 NSCW is only a one-time snapshot, it is a highly reputable, nationally representative sample of American workers that contains many of the job conditions necessary to test our research questions. It allows the assessment of patterns and contingencies in the ways that job conditions influence well-being.

Another limitation involves the restriction to individual-level data in one country. Contextual variables like employment protection or degree of unionization might be important in determining

exposure and vulnerability to job pressure. Given that unemployment and job insecurity are associated with health (Sverke, Hellgren, and Näswall 2002) and that levels of employment protection influence exposure to these conditions (McLeod et al. 2012), employment protection at the state or national level may influence the relationship between job conditions and anxiety. In particular, job pressure might have different meanings for those with employment protection. These ideas are consistent with McLeod and colleagues' (2012) assertion that work experiences are phenomena embedded in a wider system of structural arrangements. Finally, we acknowledge that other social statuses (e.g., gender, race-ethnicity, or age) might function as contingencies. However, each requires a different and complex set of theoretical rationales. If observed, these additional contingencies would indicate that the joint effects of demands and resources vary for women versus men, for younger versus older workers, or across racial-ethnic groups—certainly possibilities deserving of future consideration.

CONCLUSION

Job pressure is a major concern for workers' health. The conventional buffering hypothesis predicts that job-related resources should protect workers from the deleterious consequences of job pressure. For the subjective assessment of job satisfaction, this holds true. However, when anxiety is considered, the picture is complicated by SES variations. While conventional buffering appears to hold for workers with less education and income, the reverse is true for those with higher SES. Collectively, these observations encourage conceptual and theoretical refinements about job resources—especially as they are articulated in the JD-R model.

Finally, we wish to conclude by underscoring that individuals with fewer resources and lower SES undoubtedly encounter more daunting disadvantages than their peers with greater resources and higher SES. That said, those with lower SES might experience greater benefits when resources are available. By contrast, resources might function differently for higher status workers—in some cases potentially amplifying the demands associated with job pressure. Scholars have acknowledged, yet rarely tested, the possibility that the *meaning* and thus *effects* of job characteristics differ across social groups (Karasek et al. 1998; Rugulies 2012). The next step for research is to more thoroughly treat SES and other social statuses as potential contingencies—rather than mere confounders—in evaluations of the physical and psychological consequences of working life. This would enhance our understanding of the full range of socioeconomic gradients in health.

Appendix A. Descriptive Statistics for Study Variables.

Variable	Mean	Standard Deviation
Focal outcomes		
Job dissatisfaction	.002	.814
Anxiety	2.494	.926
Job conditions		
Job pressure	.008	.805
Job autonomy	3.131	.793
Challenging work	3.495	.552
Socioeconomic status		
High education	.453	—
High income	.515	—
Controls		
Female	.524	—
Age	46.857	12.489
White	.824	—
African-American	.078	—
Hispanic	.052	—
Other race-ethnicity	.046	—
Married	.607	—
Never married	.140	—

Appendix A. (continued)

Variable	Mean	Standard Deviation
Divorced	.135	—
Separated	.021	—
Widowed	.033	—
Not married but cohabitating	.063	—
No kids at home	.603	
Kids under 6	.152	—
Kids 6–12	.132	—
Kids 13–17	.113	—
One job only	.809	—
Work hours	40.530	13.331
Wage and salaried	.795	
Small business owner	.072	—
Self-employed/independent	.133	—
Northeast region	.188	—
South region	.324	—
Midwest region	.303	—
West region	.186	—
Executives, managers, and professionals	.440	—
Technical	.037	—
Sales	.115	—
Administrative support	.122	—
Service	.110	—
Production	.177	—

Note: Proportions presented for categorical variables. All descriptives based on unweighted data.

NOTES

1. Although these studies consider the role of SES as a contingency in the job conditions literature, these authors do not explicitly test SES-based three-way interaction terms.

2. Some readers might wonder whether owners and self-employed workers should be excluded because they might experience demands and resources differently than other employees. In separate analyses, their exclusion revealed no substantial changes in the direction or significance of the three-way interactions documented with the full sample.

3. While other studies of SES and health focus exclusively on education and income (e.g., Herd, Goesling, and House 2007; House et al. 1994), some might wonder why we do not include occupation as another SES indicator. In separate analyses (not shown), occupation does not function as a moderator. We therefore decided to include occupation among the control variables.

4. For the sake of presentation, we only report statistically significant three-way coefficients and the two-way coefficients necessary to interpret them.

REFERENCES

Bakker, Arnold B., Evangelia Demerouti, and Martin C. Euwema. 2005. "Job Resources Buffer the Impact of Job Demands on Burnout." *Journal of Occupational Health Psychology* 10(2):170–80.

Bakker, Arnold B., Evangelia Demerouti, Toon W. Taris, Wilmar B. Schaufeli, and Paul J. G. Schreurs. 2003. "A Multigroup Analysis of the Job Demands-resources Model in Four Home Care Organizations."

International Journal of Stress Management 10(1):16–38.

Bakker, Arnold B., and Sabine A. E. Geurts. 2004. "Toward a Dual-process Model of Work-home Interference." *Work and Occupations* 31(3):345–66.

Becker, Gary S. 1964. *Human Capital: A Theoretical Analysis with Special Reference to Education*. National Bureau for Economic Research, New York and London: Columbia University Press (NY).

Blair-Loy, Mary. 2003. *Competing Devotions*. Cambridge, MA: Harvard University Press.

Cohen, Sheldon, Tom Kamarck, and Robin Mermelstein. 1983. "A Global Measure of Perceived Stress." *Journal of Health and Social Behavior* 24(4):385–96.

Demerouti, Evangelia and Arnold B. Bakker. 2011. "The Job Demands-resources Model: Challenges for Future Research." *Journal of Industrial Psychology* 37(2):1–9.

De Lange, Annet H., Toon W. Taris, Michiel A. J. Kompier, Irene L. D. Houtman, and Paulien M. Bongers. 2003. "'The Very Best of the Millennium': Longitudinal Research and the Demand-control-(support) Model." *Journal of Occupational Health Psychology* 8(4):282–305.

DeVoe, Sanford E. and Jeffrey Pfeffer. 2011. "Time Is Tight: How Higher Economic Value of Time Increases Feelings of Time Pressure." *Journal of Applied Psychology* 96(4):665.

Ducharme, Lori J. and Jack K. Martin. 2000. "Unrewarding Work, Coworker Support, and Job Satisfaction: A Test of the Buffering Hypothesis." *Work and Occupations* 27(2):223–43.

Everson, Susan A., Siobhan C. Maty, John W. Lynch, and George A. Kaplan. 2002. "Epidemiologic Evidence for the Relation between Socioeconomic Status and Depression, Obesity, and Diabetes." *Journal of Psychosomatic Research* 53(4):891–95.

Families and Work Institute. 2010. *National Study of the Changing Workforce: Guide to Public Use Files*. New York: Families and Work Institute.

Galinsky, Ellen, Stacy S. Kim, and James T. Bond. 2001. *Feeling Overworked: When Work Becomes Too Much*. New York: Families and Work Institute.

Galinsky, Ellen, James T. Bond, Stacey S. Kim, Lois Backon, Erin Brownfield, and Kelly Sakai. 2005. *Overwork in America: When the Way We Work Becomes Too Much*. New York: Families and Work Institute.

Glavin, Paul, Scott Schieman, and Sarah Reid. 2011. "Boundary-spanning Work Demands and Their Consequences for Guilt and Psychological Distress." *Journal of Health and Social Behavior* 52(1):43–57.

Hackman, J. Richard and Greg R. Oldham. 1975. "Development of the Job Diagnostic Survey." *Journal of Applied Psychology* (60)2:159–70.

Hamilton, Lawrence. 2009. *Statistics with STATA: Version 10*. Boston: Cengage Learning.

Herd, Pamela, Brian Goesling, and James S. House. 2007 "Socioeconomic Position and Health: The Differential Effects of Education versus Income on the Onset versus Progression of Health Problems." *Journal of Health and Social Behavior* 48(3):223–38.

House, James S., James M. Lepkowski, Ann M. Kinney, Richard P. Mero, Ronald C. Kessler, and A. Regula Herzog. 1994. "The Social Stratification of Aging and Health." *Journal of Health and Social Behavior* 35(3):213–34.

Hout, Michael. 2012. "Social and Economic Returns to College Education in the United States." *Annual Review of Sociology* 38:379–400.

Hu, Qiao, Wilmar B. Schaufeli, and Toon W. Taris. 2011. "The Job Demands–resources Model: An Analysis of Additive and Joint Effects of Demands and Resources." *Journal of Vocational Behavior* 79(1):181–90.

Kalleberg, Arne L. 2012. "Job Quality and Precarious Work Clarifications, Controversies, and Challenges." *Work and Occupations* 39(4):427–48.

Karasek, Robert A. 1979. "Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign." *Administrative Science Quarterly* 24(2):285–308.

Karasek, Robert, Chantal Brisson, Norito Kawakami, Irene Houtman, Paulien Bongers, and Benjamin Amick. 1998. "The Job Content Questionnaire (JCQ): An Instrument for Internationally Comparative Assessments of Psychosocial Job Characteristics." *Journal of Occupational Health Psychology* 3(4):322–55.

Link, Bruce G., Richard M. Carpiano, and Margaret M. Weden. 2013. "Can Honorific Awards Give Us Clues about the Connection between Socioeconomic Status and Mortality?" *American Sociological Review* 78(2):192–212.

Link, Bruce G. and Jo Phelan. 1995. "Social Conditions as Fundamental Causes of Disease." *Journal of Health and Social Behavior* 35(Extra Issue):80–94.

Lutfey, Karen and Jeremy Freese. 2005. "Toward Some Fundamentals of Fundamental Causality: Socioeconomic Status and Health in the Routine Clinic Visit for Diabetes." *American Journal of Sociology* 110(5):1326–72.

Lynch, John, Niklas Krause, George A. Kaplan, Jaakko Tuomilehto, and Jukka T. Salonen. 1997. "Workplace Conditions, Socioeconomic Status, and the Risk of Mortality and Acute Myocardial Infarction: The Kuopio Ischemic Heart Disease Risk Factor Study." *American Journal of Public Health* 87(4):617–22.

McLeod, Christopher B., Peter A. Hall, Arjumand Siddiqi, and Clyde Hertzman. 2012. "How Society Shapes the Health Gradient: Work-related Health Inequalities in a Comparative Perspective." *Annual Review of Public Health* 33:59–73.

Mirowsky, John. 2013. "Analyzing Associations between Mental Health and Social Circumstances." Pp. 143–65 in *Handbook of the Sociology of Mental Health*, edited by C. S. Aneshensel, J. C. Phelan, and A. Bierman. New York: Springer.

Mirowsky, John and Catherine E. Ross. 2003a. *Social Causes of Psychological Distress*. Piscataway, NJ: Transaction Publishers.

Mirowsky, John and Catherine E. Ross. 2003b. *Education, Social Status, and Health*. Piscataway, NJ: Transaction Publishers.

Mirowsky, John and Catherine E. Ross. 2005. "Education, Cumulative Advantage, and Health." *Ageing International* 30(1):27–62.

Mirowsky, John and Catherine E. Ross. 2007. "Life Course Trajectories of Perceived Control and Their Relationship to Education." *American Journal of Sociology* 112(5):1339–82.

Moen, Phyllis, Jack Lam, Samantha Ammons, and Erin L. Kelly. 2013. "Time Work by Overworked Professionals Strategies in Response to the Stress of Higher Status." *Work and Occupations* 40(2):79–114.

Pearlin, Leonard I. 1989. "The Sociological Study of Stress." *Journal of Health and Social Behavior* 30(3):241–56.

Pearlin, Leonard I. and Alex Bierman. 2013. "Current Issues and Future Directions in Research into the Stress Process." Pp. 325–40 in *Handbook of the Sociology of Mental Health*, edited by C. S. Aneshensel, J. C. Phelan, and A. Bierman. New York: Springer.

Quinn, Robert and Graham Staines. 1977. *Quality of Employment Survey, 1977: Cross-section*. ICPSR07689-v1. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor]. Retrieved December 22, 2014 (http://doi.org/10.3886/ICPSR07689.v1).

Ross, Catherine E. and John Mirowsky. 2010. "Gender and the Health Benefits of Education." *The Sociological Quarterly* 51(1):1–19.

Ross, Catherine E., John Mirowsky, and Shana Pribesh. 2001. "Powerlessness and the Amplification of Threat: Neighborhood Disadvantage, Disorder, and Mistrust." *American Sociological Review* 66(4):568–91.

Ross, Catherine E. and Barbara F. Reskin. 1992. "Education, Control at Work, and Job Satisfaction." *Social Science Research* 21(2):134–48.

Ross, Catherine E. and Marieke Van Willigen. 1997. "Education and the Subjective Quality of Life." *Journal of Health and Social Behavior* 38(3):275–97.

Ross, Catherine E. and Marylyn P. Wright. 1998. "Women's Work, Men's Work, and the Sense of Control." *Work and Occupations* 25(3):333–55.

Ross, Catherine E. and Chia-ling Wu. 1995. "The Links between Education and Health." *American Sociological Review* 37(1):719–45.

Ross, Catherine E. and Chia-ling Wu. 1996. "Education, Age, and the Cumulative Advantage in Health." *Journal of Health and Social Behavior* 37(1):104–20.

Rugulies, Reiner. 2012. "Invited Commentary: Structure and Context Matters—The Need to Emphasize 'Social' in 'Psychosocial Epidemiology.'" *American Journal of Epidemiology* 17(7):620–4.

Schaufeli, Wilmar B. and Toon W. Taris. 2014. "A Critical Review of the Job Demands-resources Model: Implications for Improving Work and Health." Pp. 43–68 in *Bridging Occupational, Organizational and Public Health*, edited by G. F. Bauer and O. Hammig. New York: Springer.

Schieman, Scott. 2013. "Job-related Resources and the Pressures of Working Life." *Social Science Research* 42(2):271–82.

Schieman, Scott, Melissa A. Milkie, and Paul Glavin. 2009. "When Work Interferes with Life: Work-nonwork Interference and the Influence of Work-related Demands and Resources." *American Sociological Review* 74(6):966–88.

Schieman, Scott and Sarah Reid. 2009. "Job Authority and Health: Unraveling the Competing Suppression and Explanatory Influences." *Social Science & Medicine* 69(11):1616–24.

Schieman, Scott, Yuko Kurashina Whitestone, and Karen Van Gundy. 2006. "The Nature of Work and the Stress of Higher Status." *Journal of Health and Social Behavior* 47(3):242–57.

Schieman, Scott and Marisa Young. 2015. "Who Engages in Work-family Multitasking? A Study of Canadian and American Workers." *Social Indicators Research* 120:741–67.

Smith, Ryan A. 2002 "Race, Gender, and Authority in the Workplace: Theory and Research." *Annual Review of Sociology* 28:509–42.

Spaeth, Joe L. 1985 "Job Power and Earnings." *American Sociological Review* 50(5):603–17.

Sverke, Magnus, Johnny Hellgren, and Katharina Näswall. 2002. "No Security: A Meta-analysis and Review of Job Insecurity and Its Consequences." *Journal of Occupational Health Psychology* 7(3):242.

Tausig, Mark. 2013. "The Sociology of Work and Well-being." Pp. 433–55 in *Handbook of the Sociology of Mental Health*, edited by C. S. Aneshensel, J. C. Phelan, and A. Bierman. New York: Springer.

Thoits, Peggy A. 2010. "Stress and Health Major Findings and Policy Implications." *Journal of Health and Social Behavior* 51(1):S41–53.

Toivanen, Susanna. 2011. "Exploring the Interplay between Work Stress and Socioeconomic Position in Relation to Common Health Complaints: The Role of Interaction." *American Journal of Industrial Medicine* 54(10):780–90.

Van der Doef, Margot and Stan Maes. 1999. "The Job Demand-control (-support) Model and Psychological Well-being: A Review of 20 Years of Empirical Research." *Work and Stress* 13(2):87–114.

Voydanoff, Patricia. 2005 "Consequences of Boundary-spanning Demands and Resources for Work-to-family Conflict and Perceived Stress." *Journal of Occupational Health Psychology* 10(4):491–503.

Walsemann, Katrina M., Gilbert C. Gee, and Arline T. Geronimus. 2009. "Ethnic Differences in Trajectories of Depressive Symptoms: Disadvantage in Family Background, High School Experiences, and Adult Characteristics." *Journal of Health and Social Behavior* 50(1):82–98.

Wege, Natalia, Nico Dragano, Raimund Erbel, Karl-Heinz Jöckel, Susanne Moebus, Andreas Stang, and Johannes Siegrist. 2008. "When Does Work Stress Hurt? Testing the Interaction with Socioeconomic Position in the Heinz Nixdorf Recall Study." *Journal of Epidemiology and Community Health* 62(4):338–41.

Wharton, Amy S. and Mary Blair-Loy. 2006. "Long Work Hours and Family Life: A Cross-national Study of Employees' Concerns." *Journal of Family Issues* 27(3):415–36.

AUTHOR BIOGRAPHIES

Jonathan Koltai is a doctoral student in the department of sociology at the University of Toronto. His research interests broadly focus on the physical and mental health consequences of social inequality. His dissertation examines the ways that social stratification shapes the relationship between workplace conditions and health and how these processes change over time.

Scott Schieman is professor and Canada Research Chair in the department of sociology at the University of Toronto. His research focuses on the social psychology of inequality and its relationship to health outcomes. He is the lead investigator of the Canadian Work, Stress, and Health study (CANWSH), a national longitudinal study of workers.