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Control in the Face of Uncertainty: Is Job Insecurity a Challenge to the Mental Health Benefits of Control Beliefs?

Paul Glavin¹ and Scott Schieman²

Abstract

The mental health benefits of the sense of personal control are well documented, but do these benefits persist in social contexts of powerlessness and uncertainty? Drawing from two national panel surveys of American and Canadian workers, we examine whether the association between perceived control and reduced distress is undermined by the uncertainty of threatened employment. While we find evidence that higher levels of perceived control are associated with reduced distress, the association is curvilinear among insecure workers, such that subsequent increases in control produce diminishing reductions in distress for workers reporting the threat of job loss. This curvilinear pattern is particularly prominent among American insecure workers, with higher than moderate levels of control associated with more rather than less distress for this group. We draw from Mirowsky and Ross's "instrumental realism" model to interpret these patterns and suggest that high control beliefs may be less beneficial for mental health in uncertain role contexts.

Keywords

perceived control, job insecurity, distress, mental health, stress process

INTRODUCTION

Individuals with a high sense of personal control perceive that the events and outcomes in their lives are a result of their own actions rather than the consequence of chance or outside forces (Pearlin and Schooler 1978). An extensive body of research demonstrates that these perceptions are linked with favorable mental health outcomes—especially lower levels of psychological distress (for a review, see Ross and Mirowsky 2013). In addition to exhibiting fewer mental health problems, individuals who report high levels

of perceived control fare better when faced with a variety of chronic and acute role stressors (Thoits 1995; Wheaton 1983). As such, perceived control is considered a key personal resource for fostering proactive health behaviors and

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a resilience to daily life hassles and other more serious role stressors (Wheaton 1999).

Despite theory and research that squarely locates perceived control as a psychosocial resource within the stress process (Pearlin and Bierman 2013), questions remain regarding the extent and particular nuances of its benefits for mental health. For example, some research suggests that there may be an optimal level of perceived control—or even a potential downside for mental health to having unrealistically high levels of perceived control (Kiecolt, Hughes, and Keith 2009; Mirowsky and Ross 1990, 2003; Wheaton 1985). Research has also considered whether the health returns from perceived control may be dampened or reversed by social and economic circumstances that involve varying degrees of powerlessness (Heidemeier and Göritz 2013; Kiecolt et al. 2009; Mirowsky and Ross 1990, 2003; Whelan 1992). We seek to build upon and expand the scope of these prior studies by investigating the relationship between perceived control and psychological distress among individuals who experience different levels of a common (and consequential) labor market phenomenon: job insecurity (Fullerton and Wallace 2007; Hollister 2011).

To our knowledge, little research has examined whether perceived control continues to operate as a resource—that is, by being associated with less distress—in a stressful role context that corresponds with a high degree of uncertainty and instability (for an exception, see Bierman and Kelty 2014). Most research examining perceived control overlooks situations that involve the anticipation of an event—in this case, the specific threat of job loss. According to Pearlin (1983), the loss of a major institutionalized social role—like the work role—is among the most influential sources of chronic role

strain. Indeed, the mere threat of job loss may constitute a stressor in the same way as the event itself (Lazarus and Folkman 1984; Wheaton 1999). Job insecurity and the uncertainty of future employment therefore represent a potentially revealing role context in which to consider if there are limits to perceived control as a resource. Given that perceived control is a belief that is grounded in the sense that one can influence and predict future events with a good degree of certainty, is it possible that when opportunities for exercising control are limited, strong attitudes toward one's personal agency may actually create feelings of frustration and self-blame that undermine the benefits that typically accompany these beliefs?

To investigate this possibility, we draw from Mirowsky and Ross's (1990) "instrumental realism" model, which suggests that there is an optimal level of perceived control that balances healthy levels of optimism and realism. Guided by this model, we examine whether there are diminishing benefits to increasing levels of perceived control using two national panel studies of workers: the Work, Stress, and Health Study is a two-wave national study of American workers conducted in 2005 and 2007, while the Canadian Work, Stress, and Health Study is a national panel study of Canadians workers in 2011 and 2013. In the following sections, we review the literature on the mental health benefits of personal control beliefs, along with potential limitations to this personal resource.

LITERATURE REVIEW

Perceived Control as a Personal Resource

Research and theory suggest that perceived control bestows psychological benefits in part because it serves to create a more positive outlook toward both successes and challenges in life (Pearlin and

Schooler 1978). Individuals who have strong beliefs about personal control tend to view stressful events as exceptional occurrences that can be dealt with and avoided in the future. In contrast, those with low perceived control may consider these events as normative and unavoidable (Mirowsky and Ross 2003). For this reason, individuals with a low sense of control are more likely to dwell on negative experiences, infusing them with greater salience and emotional affect (Pearlin 1999); they may also diminish positive experiences since they are less likely to see a connection between their actions and those events (Ross and Mirowsky 2013).

Beliefs about personal control are advantageous beyond their interpretative influence; they also encourage proactive behaviors and problem-solving strategies that are designed to cope with and resolve undesirable experiences (Menaghan 1983). Individuals who emphasize external forces rather than personal agency, on the other hand, see little reason to act when faced with such events (Wheaton 1985). As a result, perceived control may influence both the duration that stressful events are experienced and the likelihood that they will grow into greater problems with more serious implications for mental health. From the perspective of the stress process model, perceived control is therefore framed as a “buffering resource” with “the capacity to hinder, prevent, or cushion the development of the stress process and its outcomes” (Pearlin 1999:405). Decades of community studies have consistently supported these arguments, revealing a robust association between perceived control and reduced depressive symptoms and lower levels of psychological distress (Aneshensel 1992; Gecas 1989; Ross and Mirowsky 2013; Schieman and Plickert 2008; Wheaton 1980). Some research also finds that perceived control alleviates the extent that role stressors are distressing,

including Wheaton (1983), who finds that it weakens the effect of acute and chronic stressors on depressive and schizophrenic symptoms (see also Avison 2001).

Potential Limits to the Benefits of Perceived Control

A common assumption is that the mental health benefits of perceived control operate irrespective of social position or personal circumstances (Kiecolt et al. 2009). In other words, this view assumes that it matters not whether one is able to demonstrate agency with successful results; what matters is that one *believes* he or she can act to achieve intended outcomes. Wheaton (1985) addressed this issue by asking: Can one have too much perceived control? Arguing that the mental health benefits of control come from effectively accomplishing one’s goals, Wheaton suggests that an extremely high level of perceived control might be problematic because it assumes an almost perfect correspondence between one’s actions and intended outcomes—a potentially unrealistic appraisal that may produce dissonance, frustration, and disappointment (Festinger 1957). According to Wheaton (1985:148), “perceptions of control may become so pervasive that they are universally applied even in situations which obviously do not suggest control is possible.” A number of studies find evidence that a “threshold of dysfunction” exists for perceived control. After a threshold point in the level of perceived control is reached—roughly between the 80th and 95th percentiles—higher levels of perceived control are associated with higher levels of depression, though this increase tends to be rather small in magnitude (Mirowsky and Ross 1990; Wheaton 1985; Whelan 1992).

The parabolic relationship between perceived control and depression is consistent with Mirowsky and Ross’s (1990)

instrumental realism model, which predicts that while there is no limit to the benefits of perceived control resulting from status, there is nevertheless an optimal level of control that balances healthy levels of realism and optimism. Mirowsky and Ross (1990:519) suggest that this point should vary according to one's level of power and exists where: "[t]he incremental gain in effectiveness due to increasing optimism is canceled by the incremental loss due to decreasing realism." Mirowsky and Ross (1990) and Kiecolt and colleagues (2009) demonstrate support for this model by examining whether the optimal level of control varies by socioeconomic status, a status that generally confers access to personal and economic resources that are useful to successful action (Wheaton 1999). Collectively, these studies demonstrate that while higher levels of perceived control are associated with lower levels of distress for individuals across the socioeconomic spectrum, there are diminishing returns to the component of a high sense of control that is not predicted by socioeconomic status. Mirowsky and Ross (1990) find evidence of a socioeconomic status (SES)-dependent threshold for unrealistic levels of control, after which distress increases; Kiecolt and colleagues (2009) show only diminishing returns from unrealistic levels of control.

In summary, while some research suggests limits to the mental health benefits of perceived control, the literature generally finds that it is associated negatively with distress for all individuals, except those with the very highest levels of perceived control. When levels of control exceed a certain threshold and perhaps become unrealistic appraisals, the mental health benefits—in terms of lower distress—seem to be diminished, and the point at which this occurs is shaped by status constraints. Notable gaps in the literature remain, however. Specifically,

previous research has been limited in its examination of unrealistic control perceptions, inasmuch that it focuses on the discrepancy between SES—a relatively stable status—and perceived control. Role contexts that may create problematic discrepancies with control have received less attention. Additionally, research has rarely addressed the association between unrealistic control beliefs and distress using panel data. Most analyze cross-sectional datasets that make it difficult to establish causal order. To tackle these issues, we evaluate whether the benefits of perceived control are neutralized or reversed by a chronic strain that can be encountered by individuals across the SES spectrum. Specifically, we argue that the focus on job insecurity is ideal for these purposes because it (a) is an increasingly common labor market experience across all levels of SES (Kalleberg 2011), (b) represents a role stressor that individuals may transition in and out of (in contrast to the more stable opportunities or constraints associated with SES), and (c) taps into uncertainty, instability, and powerlessness in a major institutionalized social role—and the qualities of this chronic strain would appear to be distinctly at odds with perceived control.

***Control in the Face of Uncertainty:
Job Insecurity as a Challenge to
Control Beliefs***

Organizational downsizing and the growth of nonstandard work arrangements have led to a decline in job security and the erosion of the guarantee of long-term, stable employment in North America (Kalleberg 2011; Vosko 2006). While job insecurity has long been an experience of those with low levels of human capital (Farber 2010), firms' widespread pursuit of "lean" and "mean" organizational strategies in recent decades has exposed workers from a wide variety of

backgrounds to insecurity—including professionals and other traditionally protected workers (Hollister 2011; Kalleberg 2011). The growth of these organizational strategies means that job insecurity is therefore no longer an experience of a minority of workers or one that is limited to recessionary periods (Fullerton and Wallace 2007; Kalleberg 2011).

Given its proliferation in the labor force, not to mention the 2008 Great Recession that resulted in historic levels of unemployment and labor market instability (Goodman and Mance 2011), the issue of job insecurity is now attracting widespread interest—not just in terms of its economic and political implications but also its social psychological consequences. Research on the personal consequences of job insecurity tends to focus on the extent that workers consider their job as insecure, often referred to as “perceived job insecurity” and defined as “one’s powerlessness to maintain desired continuity in a threatened job” (Greenhalgh and Rosenblatt 1984:438). While perceptions of job insecurity represent an individual’s subjective appraisal of the security of their current employment, research has demonstrated that these perceptions are correlated with more objective indicators of insecurity, including future job loss and wage growth (Campbell et al. 2007; Elman and O’Rand 2002; Klandermans, Hesselink, and van Vuuren 2010). Additionally, workers who report job insecurity tend to experience other forms of powerlessness related to their job, including increased job pressures and reduced decision-making latitude (Glavin 2013; Russell and McGinnity 2013). As such, job insecurity is considered one dimension of a broader experience of job degradation or “precariousness” (Kalleberg 2011) that threatens worker agency and control (Greenhalgh and Rosenblatt 1984; Sverke and Hellgren 2002).

The recent growth of research on job insecurity has clarified its links to well-being (Burgard, Brand, and House 2009; Burgard, Kalousova, and Seefeldt 2012; Ferrie et al. 2002). Theoretical explanations for these links characterize job insecurity as a chronic role stressor due to its tendency to create anticipatory anxiety over the potential loss of valued economic and social resources that typically come with employment (Jahoda 1982; Sverke and Hellgren 2002; Wheaton 1999). In addition to the anticipatory nature of the experience, the uncertainty over the timing and manner of a future job loss may make job insecurity particularly stressful, because these characteristics often undermine coping strategies (Burgard et al. 2009; Lazarus and Folkman 1984). Qualitative studies of workers surviving job loss in firms that have downsized validate these theoretical accounts (Greenhalgh and Rosenblatt 1984; Jick and Greenhalgh 1989). Recurring themes underscore workers’ stress about the uncertainty over their employment and the associated feelings of helplessness. Likewise, a growing body of quantitative evidence demonstrates that job insecurity harms the mental and physical health of workers from diverse occupational backgrounds and job sectors (Burgard et al. 2009; Ferrie et al. 1995; Fullerton and Anderson 2013).

Beyond the direct negative mental health consequences of job insecurity, we contend that its special connection to uncertainty and threat makes the perceived risk of job loss a revealing context in which to investigate the potential limitations associated with personal control beliefs. Guided by the instrumental realism model, we suggest that the uncertainty created by the threat to one’s economic well-being and social status may undermine the benefits of perceived control since these experiences should be dissonant (and therefore distressing) for

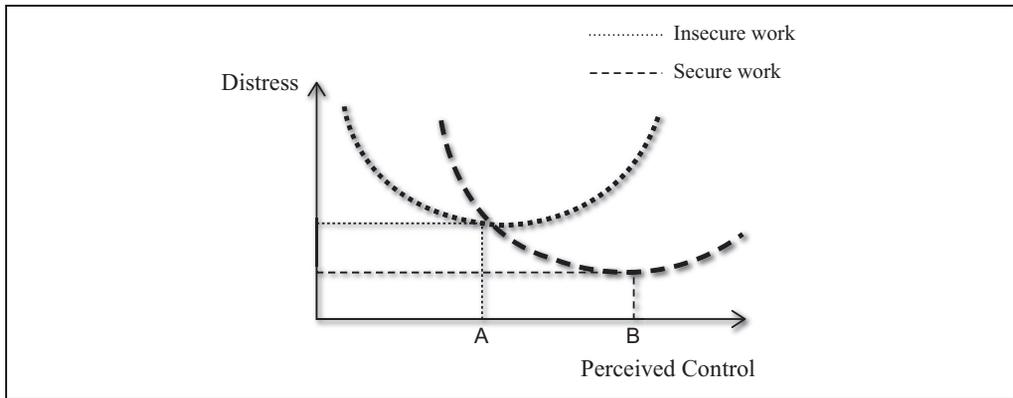


Figure 1. Job Insecurity and the Instrumental Realism Model

Note: From Mirowsky and Ross's (1990) instrumental realism model. A and B represent the optimal levels of perceived control (for distress) for those reporting insecure and secure work, respectively.

those who strongly believe that the events and outcomes in their lives are a result of their own actions (Mirowsky and Ross 2003; Wheaton 1985).¹ Indeed, some unemployment research is suggestive of this possibility, including a study by Heidemeier and Göritz (2013), who found that laid-off German workers reported a greater decline in life satisfaction if they had higher control beliefs prior to the job loss. We know of no study, however, that has examined whether the threat of job loss may alter the mental health benefits associated with perceived control.

We use Mirowsky and Ross's (1990) instrumental realism model to make several predictions about the relationship between perceived control and psychological distress across varying levels of perceived job insecurity (illustrated in

Figure 1). First, the model suggests that among all workers there should be diminishing mental health returns associated with increasing levels of perceived control; that is, the potency of perceived control for reducing levels of distress should become weaker at higher levels of control. As beliefs about control become progressively optimistic, the associated mental health benefits may eventually be outweighed as they become unrealistic and discordant with reality (Mirowsky and Ross 1990; Wheaton 1985). Second, since the benefits of control are a result of effective action and a balance between optimism and realism, for secure and insecure workers there should be a different optimal level of control that, if exceeded, no longer reduces distress. The uncertainty and powerlessness associated with insecure work should therefore *lower* the optimal level of control among those reporting job insecurity (point A in Figure 1), in contrast to those with secure work (point B in Figure 1). Stated differently, the point at which beliefs about perceived control become unrealistic, and therefore no longer beneficial, should come earlier on the control continuum for insecure workers. After this optimal point is

¹While we cannot disregard the "perceived" nature of the job insecurity construct, we argue that it taps into the psychosocial experiences of uncertainty and powerlessness in a similar manner as perceived discrimination (Kessler, Mickelson, and Williams 1999) and relative versus absolute deprivation (Walker and Smith 2001) tap into experiences of discrimination and inequality, respectively—experiences that are, at some level, necessarily subjective.

reached, subsequent increases in levels of perceived control should be associated with increased distress.

To reiterate, we expect that (1) for all workers there should be a negative effect of perceived control on distress that diminishes with increasing levels of control and an optimal level that if exceeded increases distress and (2) the point at which the benefits of increasing control diminish to zero, and subsequently create more rather than less distress, should be lower for workers reporting job insecurity and the threat of job loss.

METHODS

To test the predictions summarized previously, we use two complementary panel studies of workers in the United States and Canada. The Work, Stress, and Health study (WSH) is a national telephone survey of adults in the 50 United States conducted in 2005 (Wave 1) and 2007 (Wave 2). To obtain the original sample, a list-assisted random-digit-dialing (RDD) selection was used and drawn proportionally from all 50 states from GENESYS Sampling Systems. Eligible respondents are 18 years of age or older and participating in the paid labor force. At Wave 1, 71 percent of eligible individuals were successfully interviewed, yielding a sample of 1,800 adults. Follow-up interviews with those respondents who were in the labor force approximately 18 to 20 months after the initial interview were conducted as part of Wave 2 of the study, yielding a sample of 1,286 adults (71 percent follow-up response rate). Sample characteristics for the WSH study are similar to the population estimates of the U.S. Census Bureau's 2005 American Community Survey (ACS). The second dataset that we analyze is the Canadian Work, Stress, and Health study (CANWSH), which involved telephone interviews with

a national sample of working Canadians in 2011 (Wave 1) and 2013 (Wave 2). Calls were made to a regionally stratified unclustered random probability sample generated by RDD methods, and interviews were conducted in English or French. The final sample was 6,004, with a response rate of approximately 40 percent. Follow-up interviews with respondents were conducted 24 months after the initial interview, yielding a sample of 4,423 adults (74 percent follow-up response rate). The analytical sample includes non-self-employed workers between the ages of 18 and 60 who participated in both interviews, yielding 860 participants in the WSH study and 2,361 participants in the CANWSH study.²

Measures

Psychological distress. We measure distress in the WSH study using a modified version of the Center for Epidemiological Studies Depression Scale (CES-D; see Radloff 1977; Ross and Mirowsky 1984). Respondents were asked the following eight items: "In the last seven days, on how many days have you . . . felt sad; felt like you just couldn't get going; felt unable to shake the blues; felt like everything was an effort; had trouble keeping your mind on what you were doing; worried a lot about little things; felt anxious or tense; had trouble getting to sleep or staying asleep." Responses are coded in days per week from 0 to 7. The distress scale is the mean response to the eight items and has an alpha reliability of .84. In the CANWSH study, distress is measured using seven items of generalized psychological distress from the K10 index developed by Kessler and colleagues

²We limit the analytical sample to those under the age of 60 given that the meaning of job insecurity in later work life likely changes as individuals approach retirement.

(2002). These items ask about the frequency of the following symptoms in the past month: “anxious or tense,” “nervous,” “worry a lot about little things,” “had trouble keeping your mind on what you were doing,” “restless or fidgety,” “sad or depressed,” and “hopeless.” Response choices are all of the time (1), most of the time (2), some of the time (3), a little of the time (4), and none of the time (5). We reverse-coded these responses and averaged the items to create the index; higher scores indicate greater levels of psychological distress ($\alpha = .83$)

Perceived control. In the WSH study we use Mirowsky and Ross’s (2003) 2×2 index of perceived control. It asks respondents to report their level of agreement or disagreement with eight statements; there are two statements in each of the four categories. Statements that measure the level that individuals claim control over good outcomes include: (1) “I am responsible for my own successes,” and (2) “I can do just about anything I really set my mind to.” Items that measure claims of control over bad outcomes include: (3) “My misfortunes are the result of mistakes I have made,” and (4) “I am responsible for my failures.” Items that assess the extent that individuals deny control over good outcomes are: (5) “The really good things that happen to me are mostly luck” and (6) “There’s no sense planning a lot—if something good is going to happen it will.” The last two statements measure the denial of control over bad outcomes: (7) “Most of my problems are due to bad breaks” and (8) “I have little control over the bad things that happen to me.” Responses to statements 1 through 4 are coded strongly disagree = -2 , disagree = -1 , neutral = 0 , agree = 1 , and strongly agree = 2 . Responses to statements 5 through 8 are coded strongly disagree = 2 , disagree = 1 , neutral = 0 , agree = -1 , and strongly

agree = -2 . We averaged responses; higher scores indicate a greater perceived control ($\alpha = .57$).³ Several other studies have demonstrated the psychometric properties of this scale, and it has been used in a variety of analyses (Mirowsky 1995; Mirowsky and Ross 2003; Ross and Mirowsky 2013; Schieman and Plickert 2008). To measure perceived control in the CANWSH study, we use Pearlman and Schooler’s (1978) mastery scale. Participants are asked the extent they agree with the following five statements: “You have little control over the things that happen to you,” “There is really no way you can solve some of the problems you have,” “You often feel helpless in dealing with problems of life,” “Sometimes you feel that you are being pushed around in life,” and “You can do just about anything you really set your mind to.” Response choices included: strongly agree = 1 , agree = 2 , disagree = 3 , and strongly disagree = 4 . Responses for the fifth statement were reverse-coded then summed and averaged with the remaining four statements; higher scores indicate a higher sense of mastery ($\alpha = .67$).

Perceived job insecurity. To measure perceived job insecurity in the WSH study, we asked respondents: “In the next two years, how likely is it that you will lose your job or be laid off?” Response choices were coded as follows: not at all likely = 1 , somewhat likely = 2 , and very likely = 3 . In the CANWSH study we

³The sense of personal control scale balances statements about control against those denying control and statements about good outcomes against those about bad outcomes. This balanced 2×2 structure is designed to eliminate defense and agreement bias from the measure (for a detailed description of the scale, see Mirowsky and Ross 2003). A variety of studies have shown that the scale has acceptable stability for use in cross-sectional and longitudinal studies of personal control. Wolinsky et al. (2004), for example, demonstrate this with test-retest interviews.

use a similar question: “How likely is it that during the next couple of years you will lose your present job and have to look for a job with another employer (or find a different line of work)?” Response choices were coded as follows: not at all likely = 1, not too likely = 2, somewhat likely = 3, and very likely = 4. This question has been used in the General Social Survey and the National Study of the Changing Workforce and in recently published research (Burgard et al. 2009). To ensure the job insecurity measure is comparable across the two studies, we collapsed the not at all likely and not too likely categories in the CANWSH sample. We then created three dummy variables to indicate a low (not at all/not too likely), moderate (somewhat likely), and high (very likely) chance of job loss. We include the moderate and high dummy variables in all analyses and contrast with low—the reference group.⁴

Control Variables

Job pressures. In the WSH study, job pressures are assessed with responses to the following item: “How often do the demands of your job exceed those doable in an 8-hour workday?” Response categories are never = 1, rarely = 2, sometimes = 3, and frequently = 4. In the CANWSH study, three items ask about the frequency that participants experienced the following in the past 3 months: “How often did you feel overwhelmed by how much you had to do at work?” “How often

did you have to work on too many tasks at the same time?” and “How often did the demands of your job exceed the time you have to do the work?” Response choices are coded: never = 1, rarely = 2, sometimes = 3, often = 4, and very often = 5. These items are averaged so that higher scores indicate more job pressure ($\alpha = .85$).

Job autonomy. WSH participants were asked: “In your current job, how often does someone else decide how you do your work?” Response categories are never = 1, rarely = 2, sometimes = 3, and frequently = 4. We reverse-coded the responses, such that higher responses indicate more autonomy. CANWSH participants were asked the extent that they agree or disagree 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 are coded strongly disagree = 1, somewhat disagree = 2, somewhat agree = 3, and strongly agree = 4. We averaged responses; higher scores reflect more job autonomy ($\alpha = .78$).

Work hours. We use a continuous measure of work hours. WSH and CANWSH participants were asked: “How many hours do you work in a typical week at your main job?”

Personal income. Personal income is assessed with the question: “For the complete year of 2004 (2011), what was your personal income, including income from all of your paid jobs, before taxes?”

Job sector. We create dummy variables to indicate whether respondents are employed in either the public sector = 1 or the private sector = 0.

Occupation. To assess occupation for WSH participants, we asked about the

⁴In additional analyses, we tested a binary indicator for perceived job insecurity with “somewhat likely” and “very likely” responses indicating the presence of job insecurity (1). This modeling strategy produced similar results as those presented here. However, we opted for the current coding strategy given the improved model fit that we achieved with this approach and our ability to examine the perceived control-distress association at different levels of insecurity.

job title of the “main job at which you worked last week” and some of their main duties in order to more accurately code responses into five main categories in accordance with the Bureau of Labor Statistics codes. These include: professional (managerial and professional specialty occupations), administrative (technical, sales, and administrative support occupations), service (service occupations), craft (precision production, craft, and repair occupations), and labor (operators or laborers). In regression analyses, we use professional as the omitted reference category. For CANWSH participants we asked: “What kind of work do you do? That is, what is your occupation?” This question refers to their main place of employment—that is, the one at which participants spend most of their time. Additional questions were asked about their main duties in order to more accurately code responses. Using the open-ended information provided, occupations were coded into 33 categories using the 2006 Canadian National Occupation Classification. Codes were collapsed into seven groups in accordance with the U.S. Bureau of the Census three-digit occupation (SOC) and industry (SIC) classifications. These groups are as follows: executives, professionals, technical, service, sales, administrative, and production. Professional serves as the reference group in all analyses.

Changed jobs. We include a dichotomous measure indicating whether participants changed jobs between waves = 1 versus no change in their employment = 0.

Control variables. We use dummy codes for men = 0 and women = 1. Marital status is coded as married = 1 versus all other categories = 0. Age is modeled as a continuous variable. We use dummy codes for respondents’ race/ethnicity, with the categories of white and other race/ethnicity contrasted with the

reference category black. Education is coded as an ordinal variable with the following categories: less than high school, high school or GED, some college or associate degree, four-year college degree, and graduate or professional degree. Children in the household is coded 1 as the presence of children under 18 living in the household and 0 for no children in the household. We adjust for these control variables because they may influence our focal associations. Age, gender, marital status, and children at home are basic control measures found in most work and health research. In addition, education, occupation, and job conditions may influence the measures involved in our hypothesized focal associations. For example, the well educated and professionals tend to report lower levels of job insecurity and distress (Burgard et al. 2009; Mirowsky and Ross 2003). We also control for job pressures and job autonomy to rule out a spurious association between insecurity and mental health; that is, workers in insecure jobs tend to experience higher levels of pressures and less autonomy at work (Glavin 2013)—conditions that are associated with reduced mental health (Tausig 2013). Tables 1 and 2 report descriptive statistics for all variables examined in the multivariate analyses.

Plan of Analyses

Our analytical strategy is designed to assess the ways that perceived job insecurity influences the association between perceived control and distress. Given that our data contain repeated observations across participants, we use a fixed-effects regression specification to examine within-person change in our focal variables. A problem of panel data is that repeat measures on the same individual tend to produce estimated standard errors that are too low, thereby increasing

Table 1. Means/Proportions of Study Variables for Baseline Sample and Panel Sample (at Wave 1)

	WSH study		CANWSH study	
	Total sample	Panel sample	Total sample	Panel sample
Psychological distress	1.979 (1.611)	1.816 (1.538)	2.185 (.706)	2.143 (.668)
Perceived control	.832 (.451)	.856 (.446)	2.958 (.533)	2.983 (.518)
<i>Perceived job insecurity</i>				
Low chance of job loss	.798	.820	.766	.796
Moderate chance of job loss	.156	.145	.148	.133
High chance of job loss	.046	.035	.086	.071
Job pressures	2.979 (.977)	2.976 (.959)	3.127 (1.104)	3.144 (1.087)
Job autonomy	2.495 (.982)	2.492 (.962)	2.804 (.782)	2.826 (.769)
Work hours (weekly)	43.036 (12.975)	43.349 (13.086)	39.175 (11.122)	39.398 (10.526)
Public sector	.243	.264	.365	.392
Personal income	40,630 (33,063)	44,292 (33,748)	57,325 (35,374)	60,043 (37,172)
<i>WSH occupations</i>				
Administrative	.367	.395	—	—
Service	.147	.141	—	—
Labor	.105	.082	—	—
Craft	.064	.062	—	—
Professional	.317	.320	—	—
<i>CANWSH occupations</i>				
Administrative	—	—	.100	.096
Sales	—	—	.067	.058
Technical	—	—	.155	.157
Production	—	—	.131	.119
Executives	—	—	.095	.099
Professional	—	—	.318	.352
Occupation unknown	—	—	.134	.119

(continued)

Table 1. (continued)

	WSH study		CANWSH study	
	Total sample	Panel sample	Total sample	Panel sample
Changed jobs between interviews	—	.193	—	.161
Female	.610	.604	.611	.618
Married	.545	.591	.501	.539
Children in the household	.482	.484	.471	.501
Age	40.777 (11.445)	42.488 (10.692)	42.112 (10.432)	43.021 (9.734)
White	.721	.762	.882	.881
Black	.161	.130	.023	.020
Other race/ethnicity	.118	.110	.092	.099
Less than high school	.049	.030	.072	.049
High school	.283	.252	.170	.157
Associate's degree/some college	.329	.327	.228	.244
College	.213	.240	.380	.388
Graduate degree	.126	.151	.158	.157
N	1,479	860	3,950	2,361

Note: Standard deviations in parentheses. WSH = Work, Stress, and Health study. CANWSH = Canadian Work, Stress, and Health study.

Table 2. Fixed Effects Regressions Predicting Distress in the Work, Stress, and Health (WSH) Study (N = 1,720)

	Model 1	Model 2	Model 3
Perceived control	-.107 (.245)	-.112 (.245)	.319 (.286)
Perceived control squared	.013 (.133)	.007 (.134)	-.217 (.151)
<i>Perceived job insecurity</i>			
Moderate chance of job loss ^a	—	.100 (.115)	.469* (.239)
High chance of job loss ^a	—	.113 (.229)	.366 (.397)
<i>Interactions</i>			
Perceived control × moderate chance of job loss ^a	—	—	-1.338** (.513)
Perceived control ² × moderate chance of job loss ^a	—	—	.797** (.302)
Perceived control × high chance of job loss ^a	—	—	-1.840* (.933)
Perceived control ² × high chance of job loss ^a	—	—	1.176* (.593)
<i>Work conditions</i>			
Job pressures	—	.040 (.045)	.042 (.045)
Job autonomy	—	.002 (.045)	.001 (.046)
Work hours (weekly)	—	.005 (.004)	.006 (.004)
Employed in public sector	—	.084 (.093)	.087 (.093)
<i>Occupation</i>			
Administrative ^b	—	-.038 (.099)	-.038 (.099)
Service ^b	—	.240 (.150)	.255 (.151)
Labor ^b	—	-.172 (.167)	-.180 (.168)
Craft ^b	—	-.105 (.188)	-.105 (.188)
Changed jobs between interviews	—	.329** (.101)	.323** (.102)
<i>Demographics</i>			
Female	.381*** (.082)	.383*** (.087)	.384*** (.087)
Married	-.272** (.087)	-.189* (.086)	-.184* (.086)
Children in the household	.095** (.033)	.098** (.033)	.104** (.033)

(continued)

Table 2. (continued)

	Model 1	Model 2	Model 3
Age	-.015*** (.004)	-.011** (.004)	-.012** (.004)
<i>Race/ethnicity</i>			
White ^c	.041 (.108)	.103 (.106)	.099 (.106)
Other ^c	-.549** (.207)	-.458* (.201)	-.466* (.201)
Personal income	.000 (.000)	.000 (.000)	.000 (.000)
<i>Education</i>			
Less than high school ^d	.585* (.237)	.609** (.234)	.619** (.234)
Associate's degree/some college ^d	-.113 (.118)	-.208 (.117)	-.201 (.117)
College degree ^d	-.365* (.103)	-.443*** (.110)	-.431*** (.110)
Graduate degree ^d	-.136 (.122)	-.255 (.139)	-.244 (.139)
Wave 2 ^e	-.302*** (.047)	-.295*** (.047)	-.296*** (.047)
Constant	3.504	2.730	2.732
-2 Residual log likelihood	2,948.29	2,940.74	2,932.53

^aCompared to low chance of job loss.

^bCompared to professional.

^cCompared to black.

^dCompared to high school.

^eCompared to Wave 1.

* $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed test).

the chance of Type I errors. Fixed-effects models are useful in this regard since they correct for the problem of statistical dependence in panel data (Allison 2009). An additional strength that fixed-effects models offer is the ability to control for all stable, unmeasured characteristics of individuals, which allows us to rule out the possibility of a spurious association in our focal relationship that might be caused by some unobserved individual factor. However, while this approach adjusts for all measured and unmeasured time-invariant characteristics of individuals, it does not actually allow the effects of either to be estimated (e.g., gender, education, etc.). To address this issue, we therefore use Allison's (2005) "hybrid"

technique that combines fixed-effects and random-effects models to examine both *within-person change* and *between-individual change*. This technique is essentially a random-effects model that also contains individual means on time-varying characteristics (e.g., perceived control, job insecurity, job pressures, work hours) as independent predictors (Johnson, Sage, and Mortimer 2012). This allows for the estimation of within-person coefficients for these time-varying predictors (as produced in fixed-effects models) while also allowing us to estimate time-invariant predictors (as produced in random-effects models). Individual "mean" coefficients are not included in the tables because they do not have

a meaningful interpretation (but these are available upon request).

Our analyses are based on 1,720 person-years (i.e., 860 participants \times 2 interview years) in the WSH study and 4,722 person-years in the CANWSH study. Using Allison's (2005) hybrid approach, Tables 2 and 3 present a series of fixed-effects models for WSH and CANWSH participants, respectively. In Model 1, we include perceived control as a time-variant predictor of distress, adjusting for baseline sociodemographic statuses. In Model 2 we enter a set of time-variant job predictors (job insecurity, pressures, autonomy, and work hours) that might realistically change across Waves 1 and 2 and also adjust for basic job conditions (occupation, public sector, job change) and sociodemographic statuses. In Model 3 we test interactions between perceived control and job insecurity to examine if the latter moderates the association between perceived control and distress

RESULTS

Are There Diminishing Health Returns from Increasing Perceived Control?

Table 1 presents descriptive statistics for all variables in the WSH and CANWSH studies. In our multivariate analyses, we first examine the relationship between perceived control and distress in the WSH and CANWSH samples (Tables 2 and 3, respectively). Model 1 reports this association, adjusting for baseline demographics. Contrary to the predictions of the instrumental realism model, we find no evidence of either a linear or curvilinear association between perceived control and distress in the WSH sample; that is, WSH participants with higher levels of perceived control do not report reduced distress. This is in contrast to analyses of the CANWSH sample (Table 3, Model 1), where we find evidence of a statistically significant curvilinear association

between perceived control and distress: higher levels of control are associated with lower distress—but this decrease occurs at a diminishing rate. Put another way, at high levels of control, subsequent increases are associated with smaller mental health benefits; yet the strength of this diminishing pattern is weak, and there is never a point at which extremely strong control beliefs are detrimental for mental health. Among the control variables in the WSH sample, the following report higher distress: women, younger individuals, blacks, those with children in the household, and those with less than a high school degree. Married individuals and college-degree holders report lower levels of distress. The following report elevated distress in the CANWSH sample: women, younger workers, and those with more than a high school degree.

In Model 2 of Tables 2 and 3, we examine the association between job conditions and mental health. In the WSH sample, we find no association between job insecurity and distress: those reporting a moderate or high chance of losing their job do not report more distress than those reporting a low chance of job loss. In the CANWSH sample, however, we find that those perceiving a high chance of losing their job report greater distress compared to secure workers. By contrast, the coefficient for those reporting a moderate chance of job loss is nonsignificant. To probe the absence of a significant association between job insecurity and distress in the WSH sample, in additional analyses (not shown) we found that persistent experiences with job insecurity were associated with increased distress; we do not present this pattern here, however, since time-invariant measures of job insecurity are incompatible with our fixed-effects specification strategy that models insecurity as a time-variant predictor (i.e., modeling insecurity experiences that change

Table 3. Fixed Effects Regressions Predicting Distress in the Canadian Work, Stress, and Health (CANWSH) Study (N = 4,722)

	Model 1	Model 2	Model 3
Perceived control	-.898*** (.148)	-.874*** (.147)	-.801*** (.163)
Perceived control squared	.094*** (.025)	.094*** (.025)	.083** (.027)
<i>Perceived job insecurity</i>			
Moderate chance of job loss ^a	—	.025 (.028)	-.433 (.493)
High chance of job loss ^a	—	.130*** (.039)	1.499* (.593)
<i>Interactions</i>			
Perceived control × moderate chance of job loss ^a	—	—	.335 (.348)
Perceived control ² × moderate chance of job loss ^a	—	—	-.058 (.060)
Perceived control × high chance of job loss ^a	—	—	-.920* (.421)
Perceived control ² × high chance of job loss ^a	—	—	.158* (.073)
<i>Work conditions</i>			
Job pressures	—	.081*** (.011)	.080*** (.011)
Job autonomy	—	-.058*** (.015)	-.057*** (.015)
Work hours (weekly)	—	-.001 (.001)	-.001 (.001)
Employed in public sector	—	.036 (.021)	.035 (.021)
<i>Occupation</i>			
Administrative ^b	—	.027 (.035)	.024 (.035)
Service ^b	—	.002 (.034)	.002 (.034)
Production ^b	—	-.012 (.036)	-.008 (.036)
Sales ^b	—	.003 (.043)	.003 (.043)
Technical ^b	—	-.007 (.028)	-.006 (.028)
Executive ^b	—	.076* (.034)	.079* (.034)
Changed jobs between interviews	—	.004 (.026)	.002 (.026)
<i>Demographics</i>			
Female	.153*** (.020)	.102*** (.021)	.102*** (.021)
Married	-.037 (.020)	-.044* (.020)	-.041* (.020)

(continued)

Table 3. (continued)

	Model 1	Model 2	Model 3
Children in the household	.007 (.021)	.005 (.020)	.005 (.020)
Age	-.005*** (.001)	-.005*** (.001)	-.005*** (.001)
<i>Race/ethnicity</i>			
White ^c	.010 (.033)	.015 (.032)	.017 (.032)
Other ^c	.004 (.075)	.018 (.069)	.016 (.068)
Personal income	.000 (.000)	.000 (.000)	.000 (.000)
<i>Education</i>			
Less than high school ^d	.097 (.053)	.100 (.051)	.098 (.052)
Associate's degree/some college ^d	.078* (.030)	.052 (.030)	.052 (.030)
College degree ^d	.096*** (.028)	.031 (.029)	.034 (.029)
Graduate degree ^d	.107*** (.035)	.030 (.035)	.036 (.037)
Wave 2 ^e	-.009 (.011)	-.012 (.011)	-.011 (.011)
Constant	5.826	5.099	4.889
-2 residual log likelihood	3677.52	3470.62	3474.73

^aCompared to low chance of job loss.
^bCompared to professional.
^cCompared to black.
^dCompared to high school.
^eCompared to wave 1.
 * $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed test).

over time). Among the other work conditions, WSH respondents who changed jobs between the two waves report more distress, but job pressures, autonomy, and work hours are unrelated to distress. In the CANWSH sample, job pressures and job autonomy are associated with higher and lower levels of distress, respectively, while executives report greater distress compared to professionals.

In summary, the results presented in Model 1 of Tables 2 and 3 demonstrate limited support for the instrumental realism model; only in the CANWSH sample is perceived control associated with

reduced distress, and the extent that this association diminishes in strength at higher levels of perceived control is small.

Job Insecurity Contingencies in the Control-Distress Association

In Model 3 of Tables 2 and 3, we explore whether job insecurity moderates the association between perceived control and distress; that is, does the association between perceived control and distress vary across different levels of job insecurity? In the WSH sample, we observe statistically significant interaction effects

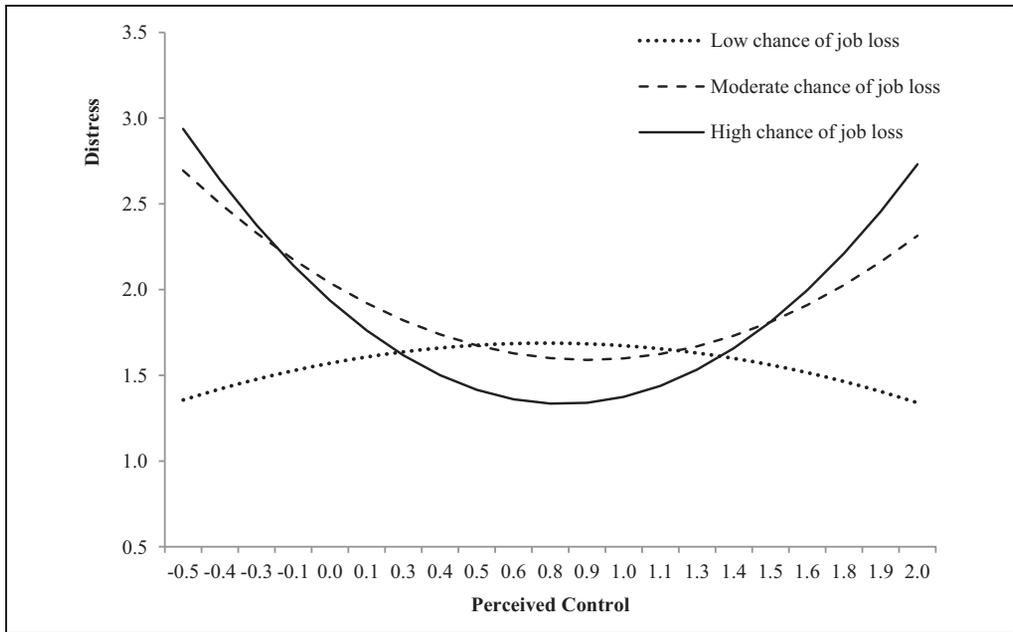


Figure 2. Job Insecurity Contingencies in the Association Between Perceived Control and Distress (Work, Stress and Health Study Sample)

Note: Predicted values are derived from Model 3 of Table 2. All control variables are held constant at their respective means. For categorical/contrast codes, we solved the equation using the modal response.

between perceived control and a moderate and high perceived chance of job loss. For both instances, the association between perceived control and distress is curvilinear. Additional analyses revealed that the difference in the slopes for these two groups was not statistically significant ($\chi^2 = .36; p > .05$). Figure 2 illustrates these patterns. In contrast to the nonassociation between perceived control and distress among secure workers, increasing levels of control are associated with a decrease in distress for those reporting a moderate or high chance of job loss—but this decrease occurs at a diminishing rate. At approximately the mean level of perceived control for the overall sample, progressively higher levels of control are associated with *increases* in levels of distress among individuals who report job insecurity.

As we observed in the WSH analyses, Model 3 of Table 3 shows that the

association between perceived control and distress in the CANWSH sample is also contingent upon level of job insecurity. The interaction between perceived control and a high perceived chance of job loss indicates that the relationship between control and distress differs for this group in comparison to workers who report no job insecurity. By contrast, the interaction between control and reporting a moderate chance of job loss is not significant; additional analyses show that the difference in the slopes for those reporting a high and moderate chance of job loss is statistically significant ($\chi^2 = 5.26; p < .05$). Figure 3 illustrates these patterns. Among those reporting a high chance of job loss, increases in perceived control are initially associated with greater decreases in distress compared to secure workers and somewhat insecure workers—this suggests that increases in levels

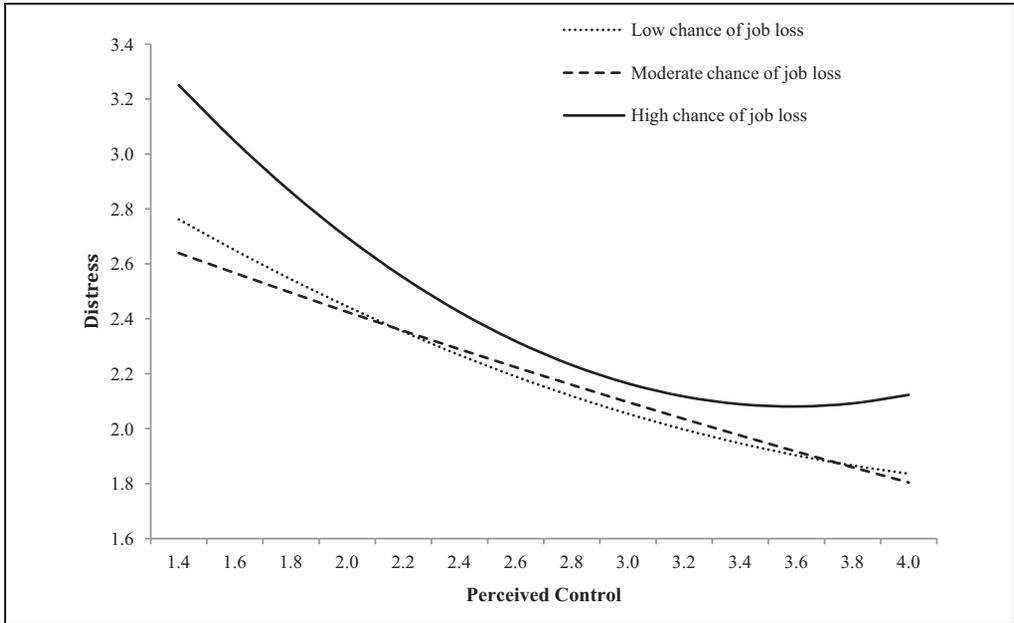


Figure 3. Job Insecurity Contingencies in the Association Between Perceived Control and Distress (Canadian Work, Stress and Health Study Sample)

Note: Predicted values are derived from Model 3 of Table 3. All control variables are held constant at their respective means. For categorical/contrast codes, we solved the equation using the modal response.

of perceived control initially buffer against the stress associated with high job insecurity. However, the disproportionate benefits of increasing perceived control among highly insecure workers disappear near the mean level of control (of the full sample). These benefits continue to diminish until subsequent increases in control are no longer associated with decreases in distress. At the highest levels of perceived control, we observe a small increase in distress among highly insecure workers.

In summary, the results in Model 3 of Tables 2 and 3 are consistent with a key prediction of the instrumental realism model: there are limits to the extent that perceived control is associated with better mental health among those with socioeconomic status constraints. In accordance with the model, we find evidence of an optimal level of control for insecure WSH and CANWSH

participants; after this point is reached, higher levels of control are associated with increased distress.

DISCUSSION

In this article, we have sought to advance knowledge about the limits of perceived control as a personal resource by examining its association with mental health in a threatening and uncertain role context. While we find that beliefs about personal control are associated with better mental health for workers with stable employment, our results suggest that when these beliefs are challenged by the threat of job loss—a stressor that is often resistant to coping strategies—distress may result. This is tied to the level of perceived control—with high levels of control being particularly problematic. Our results therefore echo the findings of previous research that has demonstrated the

disadvantages of unrealistic levels of perceived control (Wheaton 1985) and more recently, the costs of high control beliefs in the wake of job loss and in contexts of threat and economic hardship (Bierman and Kelty 2014; Heidemeier and Göritz 2013; Schooler et al. 2010).

A key contribution of our analyses is the examination of panel data, which enhances the case for possible causal links between perceived control, job insecurity, and distress. Most prior research on perceived control is limited to cross-sectional samples that require assumptions about temporal order—that is, beliefs about personal control are subsequently challenged and contradicted by constrained opportunity or role stress. Access to two waves of observations allows us to explicitly test this assumption and also rule out the effects of some potential unobserved factors that may lead to a spurious association among our focal variables. To our knowledge, we know of no other studies on perceived control and job insecurity that have utilized these methods.

Our investigation of the efficacy of control beliefs in contexts of uncertainty and threat was guided by Mirowsky and Ross's (1990) instrumental realism model, which suggests there should be diminishing health returns from increasing levels of perceived control that are not predicted by socioeconomic status. While several studies have found support for a curvilinear control-distress association, our results only show clear evidence of this pattern among insecure workers. We observe a very weak negative curvilinear association between perceived control and distress in the broader CANWSH sample; yet it is only for those reporting a high chance of job loss that we find clear evidence that the mental health advantages of perceived control diminish at higher levels of control. Among WSH participants, we find no indication of a main

association between perceived control and distress; however, consistent with the CANWSH sample, we observe a negative curvilinear association between control and distress for those reporting a moderate or high chance of job loss. We interpret these findings as providing conditional support for the instrumental realism model. That is, while our results reveal no substantive evidence of diminishing health returns from increasing perceived control within the broader WSH and CANWSH samples, there are diminishing benefits to higher control observed for those in role contexts (i.e., job insecurity) that entail substantial constraints to individual action—a pattern that is entirely consistent with the predictions of the instrumental realism model.

With regard to the absence of a main association between perceived control and distress in the WSH study, we suspect this might be due to the smaller sample and somewhat shorter time period between the two interviews (approximately 18 months). Since fixed-effects analyses model change within individuals, it is desirable to have greater duration between observations or alternatively more frequent observations in order to maximize observable person-specific variation; the reduced person-level variation in the WSH panel data may therefore be responsible for the non-significant association between perceived control and distress. To investigate this possibility, we examined whether there was a curvilinear association between control and distress in cross-sectional analyses of the WSH baseline data. These analyses, which are designed to examine between-person rather than within-person variation, did indeed reveal a curvilinear U-shaped association between perceived control and distress; that is, the negative association between control and distress diminishes at progressively

higher levels of control (analyses available on request).

Overall, our results speak to a central tenet of the instrumental realism model: for individuals to reap the psychological benefits of optimistic control beliefs, these beliefs must be grounded within an appropriate level of realism. In the context of job insecurity, we expected that individuals with high levels of perceived control would experience *greater* distress because of the unrealistic nature of these beliefs; however, it is revealing that in the American sample this occurs at even moderately high levels of perceived control. Thus, while it is clear that feelings of powerlessness are often detrimental for well-being, our findings underscore the conditions under which perceived control operates not as a resource for well-being but as a demand.

There are conceptual and theoretical reasons for our particular articulation of the link between perceived control and distress across levels of job insecurity—but it is also possible to flip these ideas around to interrogate the limitations of perceived control as a resource that moderates the relationship between job insecurity and distress. In both samples, increases in perceived control initially buffer the negative consequences of job insecurity among insecure workers. This is consistent with an established finding that personal agency acts as a coping resource. However, higher perceived control is ineffectual for reducing the stress of insecure work experiences. This may be because beliefs about control are most useful when one is actually able to achieve desired outcomes. Resolving the threat of a layoff is an outcome that is often beyond the control of most individuals—particularly during economic downturns like the recent American Great Recession. Coping strategies may be especially ineffectual in labor market contexts that offer scarce

employment alternatives—neutralizing perceived control or even rendering it distressing. As macrolevel changes in the economy unfold, future research should examine how this shapes the ways that perceived control operates as a personal resource.

A few limitations of our study deserve brief mention. While this study goes further than most prior research on perceived control, with only two waves of data it provides an incomplete portrait of the experience of job insecurity. We are unable to adequately map out the origins of long-term job insecurity and model its influence on, and interaction with, perceived control. It would be instructive to examine job transitions as a predictor of job insecurity or a strategy for dealing with the threat of job loss. A history of frequent job transitions might be indicative of an insecure career or represent a proactive way of avoiding job loss and the stress of uncertainty. Multiple waves of observations would more effectively identify the timing and nature of these processes and the ways in which perceived control is linked to job transitions. We are currently in the process of collecting five waves of data among the Canadian sample, along with qualitative interviews about the meaning and impact of job insecurity—especially for dynamics that might undermine the sense of personal control.

An additional issue that is common to most panel studies is attrition between interviews. Our analyses of attrition, however, do not suggest the presence of meaningful patterns relating to participant omission from the second interview in either study, with the majority of attrition random (analyses available on request). Furthermore, the response rates (71 percent to 74 percent) for the second interview are relatively high for research designs of this nature, and an examination of the Wave 1 and panel samples for each study does not reveal substantial

differences (see Table 1). A final attrition-related issue concerns the removal of those who were not in the labor force at the time of the second interview from the analytical sample; we do this in order to examine within-person change as part of the two-wave panel design. Since the CANWSH study reinterviewed all participants from the original interview, we also examined whether our focal measures of interest predicted the employment status of Canadian workers at the second interview; these analyses did not reveal any evidence that perceived control, job insecurity, or distress were associated with being absent from the labor force at the second wave.

CONCLUSION

The results presented in this article support an extensive body of research that has documented the mental health benefits associated with the sense of personal control. Our analyses of the CANWSH study reveal that for the majority of workers there are no drawbacks or diminishing health returns from holding strong beliefs about high personal control. Rather, it is among those with role experiences of uncertainty and threat that we find clear limitations to perceived control as a personal resource for mental health. Our choice to focus on job insecurity was due to the undesirable and uncontrollable nature of the experience; yet future research should seek to examine whether the findings of this article apply to a broader range of situations and individuals beyond insecure work contexts. Here, it is possible that there are similar problems associated with high control beliefs when individuals can do little to change their situation, such as intractable hardships like bankruptcy or a terminal illness, or the perceived threat of a broader, uncontrollable macrolevel

event, such as an economic recession or ecological disaster. Investigating the nature of the perceived control–mental health relationship across these different contexts would improve understanding of the nuanced ways in which beliefs about personal agency represent a resource versus a demand within the stress process.

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