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The Hidden Costs of Contingency:
Employers' Use of Contingent Workers and
Standard Employees' Outcomes

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Abstract

The U.S. labor market has changed dramatically over the past thirty years. Industrial shifts, declining unionization, and the rise of contingent labor arrangements have fundamentally altered employment relations in America. Existing sociological research has addressed in great depth the consequences for workers who have been directly impacted by these changing macroeconomic structures, such as contingent workers. However, less research has explored how these economic shifts affect nominally stable workers, such as standard, full-time, permanent employees. Using a national sample of matched individual- and establishment-level data from the 2002 General Social Survey and the 2002 National Organizations Survey, this article examines how employers' use of three forms of contingent labor – temporary workers, on-call workers, and independent contractors – is related to standard employees' perceived job security, subjective attachment to their workplaces, earnings, and relationships with managers and co-workers. Findings provide evidence that the use of contingent labor has consequences for standard employees' outcomes. The consequences, however, vary depending on the type of contingent labor that is used in the workplace. These results suggest that current research may be underestimating the consequences of the changing economic landscape for the outcomes of standard, permanent, full-time workers.

The Hidden Costs of Contingency: Employers' Use of Contingent Workers and Standard Employees' Outcomes

The labor market in the United States has changed dramatically over the past thirty years. Industrial shifts, declining unionization, and the rise of contingent labor arrangements have fundamentally altered employment relations, with important implications for patterns of stratification and mobility (Morris and Western 1999; Bernhardt et al. 2001). The resulting set of labor relations – what some have called the “new employment contract” (see Charness and Levine 2002) – is characterized by declining internal labor markets, decreasing attachment between employees and employers, and the increasing precariousness of the workforce (Cappelli 2001; DiTomaso 2001; Kalleberg 2009). Existing sociological research has addressed in great depth the consequences for workers who have been directly impacted by these changing macroeconomic structures (Clawson and Clawson 1999; Kalleberg, Reskin, and Hudson 2000; Bernhardt et al. 2001; Appelbaum, Bernhardt, and Murnane 2003; Wright and Dwyer 2003). Much less attention, however, has been directed at how these changes ripple outward to affect those workers who are in nominally stable jobs (for exceptions, see Western and Rosenfeld forthcoming; Davis-Blake, Broschak, and George 2003). Thus, extant research may be underestimating the aggregate consequences of economic restructuring for overall patterns of employment insecurity.

This article argues that the major economic changes since the 1970s have impacted even those workers thought to be relatively insulated from economic restructuring. To this end, the analysis presented below examines a specific case of

broader economic trends – the growth of contingent work – and its consequences for standard, permanent, full-time employees. Using a national sample of employer-employee matched data from the 2002 National Organizations Survey and the 2002 General Social Survey, this article explores the relationship between establishments' use of three types of contingent workers – temporary workers, on-call workers, and independent contractors – and the perceived job security, earnings, subjective workplace attachment, and relationships with managers and co-workers of the standard employees within those workplaces. This case is ideal for understanding the ripple effects of economic restructuring because contingent workers and standard employees often work alongside one another in the same organizations.

The empirical analysis presented below provides compelling evidence that employers' use of contingent labor has important consequences for standard employees. The strength and direction of this relationship, however, varies depending on the type of contingent labor that an establishment uses. While the use of temporary workers is generally negatively associated with standard employees' outcomes, the use of on-call workers and independent contractors does not appear to have this negative relationship. The results also indicate that standard employees' perceived job security serves as a central mechanism through which the use of contingent workers impacts standard employees. Organizations' decisions about the types of contingent employment relations they use, therefore, have real consequences for how standard employees experience the changing economic environment. These findings have important implications for

understanding the far-reaching consequences of economic restructuring on the outcomes of nominally stable and secure workers.

THE CASE OF CONTINGENT WORK

Contingent employment is distinguished from standard employment by two key characteristics. Contingent work implies that the employment relationship is conditional on some other factor, such as time, and it indicates a lack of attachment between the worker and the employer, such as the employee being paid by a separate agency than where he or she works (Polivka and Nardone 1989). The utilization of contingent workers in the U.S. labor market has skyrocketed since the 1970s (Belous 1989; Kalleberg 2000; Smith and Neuwirth 2008). In raw numbers, researchers estimate that there were approximately 0.4 million temporary workers in 1980 (Belous 1989), but by 2005 that number had increased to 1.2 million (Bureau of Labor Statistics 2005). Equally as striking is that the temporary help agency sector grew at an annual rate of over 11% between 1979 and the late 1990s, which was more than five times more rapid than the growth in nonfarm employment (Kalleberg 2000; Autor 2003). The increase in the use of contingent labor is due to multiple factors, including the increased numerical flexibility that contingent workers provide to firms (Kalleberg 2000; Houseman 2001), the changing preferences of workers for more flexible schedules (for a summary of the literature, see Ofstead 1999), marketing by the temporary help agency industry (Ofstead 1999; Smith and Neuwirth 2008), and changes in the legal environment (Gonos 1997; Autor 2003).

This article examines establishments' use of three specific types of contingent labor: temporary workers, on-call workers, and independent contractors.¹ There are two main types of temporary workers (or "temps"): direct-hire temps and help agency temps, which are combined in the current analysis.² Direct-hire temporary workers are those employees hired directly by the firm on short-term contracts. Temporary help agency workers are those workers who are on the payroll of another firm (the "temp agency"), but who work on a temporary basis at the firm of interest. Employers tend to use temporary workers to provide staffing for special projects, unexpected increases in demand, and seasonal variation in demand. Additionally, firms can "try out" temps before hiring them and, in the case of agency temps, the temporary worker has been pre-screened by a separate agency (Kalleberg 2000; Autor 2003).

In addition to temporary workers, firms also employ on-call workers and independent contractors as contingent labor. In this article, on-call workers are defined as those employees who are on an establishment's payroll, but who are only called in to work on an as-needed basis. Substitute teachers are a classic example of on-call workers (Coverdill and Oulevey 2007). Independent contractors are those who work at the firm on

¹ Some researchers define contingent work as any type of work that is not permanent, full-time employment. However, as Polivka and Nardone (1989) and others have argued, this definition often leads to the misclassification of certain workers – particularly part-time workers. Part-time workers may be permanent employees, which makes them different from temporary, contract, and on-call workers. In the empirical analysis in this paper, it would be ideal to distinguish between "secondary" part-time workers, who are generally part of the contingent labor market, and "retention" part-time workers, who are generally part of the permanent labor market (Tilly 1992). However, the data employed in this analysis do not allow for this differentiation to be made. Thus, employers' use of part-time workers is not explored in this analysis, but could be a fruitful avenue for future research.

² In the final analytic sample used for this analysis, 19.6% of establishments reported using temporary help agency workers, while 29.2% reported using direct-hire temps. We separately examined the bivariate associations between the two types of temporary workers and all of the dependent variables in the analysis. All of the associations had the same sign for both help agency temps and direct-hire temps.

a short-term basis, but generally possess a specialized set of skills (Osnowitz 2010). A key advantage of independent contractors is that they provide firms with highly specialized and skilled labor on an as-needed basis (Hipple and Stewart 1996).

The most recent national estimates on the prevalence of contingent workers, from 2005, indicate that just over 10% of workers were employed in contingent jobs. There were approximately 1.2 million temporary help agency workers (0.9% of total employment), 2.5 million on-call workers (1.8% of total employment), and 10.3 million independent contractors (7.4% of total employment) (Bureau of Labor Statistics 2005).³ While contingent workers may form a relatively small proportion of the workforce, the overall footprint of contingent work is much larger when one considers the percent of establishments that use contingent labor. In the sample of establishments in the 2002 National Organizations Survey, approximately 33% used temporary workers, 26% used on-call workers, and 26% used independent contractors. And, 58% of workplaces used at least one type of contingent labor (author's calculations).

The use of contingent work is not randomly distributed across workplaces. Empirical evidence suggests that larger firms, more hierarchical firms, firms with a higher percent of full-time female employees, and firms with high levels of employer-provided benefits are more likely to use contingent workers (Magnum, Mayall, and Nelson 1985; Kalleberg, Reynolds, and Marsden 2003; Chen and Brudney 2009).

Variation in an organization's employment needs is also positively associated with the

³ These estimates, however, only measure the number of contingent workers at a particular moment in time, which underestimates the total number of contingent workers by missing the flows of workers in and out of contingent employment. Some researchers estimate that approximately twice as many people work as temporary help agency workers throughout the course of a year than one would find in a cross-sectional estimate (see Finegold, Levenson, and Van Buren 2003).

use of temporary workers and independent contractors (Davis-Blake and Uzzi 1993). And, findings suggest that unionization within the firm is associated with the use of contingent labor, but the direction of that relationship has varied across studies (Kalleberg et al. 2003).

A key finding in this literature is that the use of contingent work is ubiquitous in the U.S. and does not break down clearly along lines of “good firms” and “bad firms.” Establishments that use contingent workers are not just fly-by-night organizations that do not provide any benefits – such as health insurance – for their standard employees. Nor are they only highly unionized, older organizations. Thus, there is no certain relationship between the types of establishments that use contingent workers and the outcomes one would expect for standard employees within those workplaces.

A second important finding from the literature on contingent work is that contingent workers tend to fare worse than standard employees. Kalleberg, Reskin, and Hudson (2000) find that both men and women, across nearly all types of contingent work, are more likely to receive low wages and are less likely to receive employer-provided health benefits or retirement benefits. Temporary work has also been found to be associated with lower accumulation of assets (Weins-Tuers 2004; McGrath and Keister 2008), increased lengths of unemployment (Houseman and Polivka 1999), stunted human capital development (Nollen 1996; Polivka 1996), and long-term wage penalties for men (Booth, Francesconi, and Frank 2002; Addison, Cotti, and Surfield 2009). It is also important to note, however, that independent contractors span a wide spectrum of

occupations and industries and there is significant variation in how their earnings and other outcomes compare with those of standard employees (Osnowitz 2010).

CONTINGENT WORKER USE AND STANDARD EMPLOYEES' OUTCOMES

Extant research provides important insights into the reasons firms use contingent labor and the consequences of contingent work for contingent workers themselves. However, much less research has explored how this form of employment relationship may impact standard employees who come into contact with contingent workers at the workplace (see Connelly and Gallagher 2004). This section reviews the relevant empirical literature and provides a theoretical framework for why and how the use of contingent workers may affect standard employees' perceived job security, subjective workplace attachment, earnings, and relationships with managers and co-workers.

Theoretical Considerations

Existing sociological theory offers two opposing frameworks for understanding how the use of contingent workers may impact standard employees. First, some organizational theorists posit that the differentiation between standard workers (the "core") and contingent workers (the "periphery") insulates standard employees from market fluctuations (Atkinson 1984; Magnum, Mayall, and Nelson 1985; Matusik and Hill 1998; Lepak and Snell 1999). Summarizing this perspective, Kalleberg (2003) writes:

“Segmenting the organization’s workforce into fixed and variable components is assumed to achieve cost effectiveness, as numerically

flexible, nonstandard, peripheral workers are used to buffer or protect the regular, core labor force from fluctuations in demand” (P. 157).

In this model, the use of contingent workers is beneficial for standard employees because it protects them from market volatility, thus increasing their economic security and, likely, their perceived job security, workplace attachment, and relationships with managers and co-workers.

Another line of theory, by contrast, argues that contingent workers represent a threat to standard employees’ security and well-being (Vough, Broschak, and Northcraft 2005; Kraimer, Wayne, Liden, and Sparrowe 2005). Vough et al. (2005) theorize that the presence of contingent workers threatens the commonly held perception of many standard employees that they will have continuing employment at their firm. Similarly, as Tilly and Tilly (1998) argue, the “substitutability” of a worker – how replaceable the worker is – plays an important role in shaping his or her compensation. Extending this line of argument beyond their focus on wages, we might also ask how perceived “substitutability” impacts a worker’s sense of his or her own job security, his or her sense of self within the organization, and his or her relationships with managers and co-workers. When contingent workers enter the workplace, standard employees may become intimately aware of how interchangeable they are, which could reduce their bargaining power with employers and, in turn, lead to decreased wages, lower job security, and poorer relations with managers and co-workers (Vough et al. 2005; Wacquant 2009). If contingent workers are perceived as a threat by standard employees, then their use in the workplace will likely be associated with negative outcomes for standard employees.

Figure 1, below, depicts a stylized theoretical model of how the use of contingent workers may affect the outcomes of standard employees.

[Figure 1 About Here]

The use of different types of contingent workers, however, will likely impact standard employees in different ways. Temporary workers and independent contractors do not have an on-going relationship with the firm where they work and are part of the external labor market. Both independent contractors and temporary workers may be used by employers to test out the possibility of outsourcing particular tasks in the organization and thus eliminating employment for an entire group of standard employees. In this regard, standard employees will likely see “temps” and independent contractors as a threat to their organization’s internal labor market and to their own job security (Cappelli 2001; Kraimer et al. 2005).

Moreover, temporary workers may pose a secondary threat beyond that posed by independent contractors. Some employers use temporary employment as a way of pre-screening workers before making the complicated legal commitments that come with permanent employment. For example, Autor (2003) finds that state legal changes making it more difficult to fire workers can account for up to 20% of the rise in the temporary help services industry between 1973 and 1995. Standard employees may therefore fear the possibility that temporary workers will displace them from the firm or perceive “temps” as a new source of competition within the workplace (Kraimer et al. 2005). A longitudinal analysis by Addison et al. (2009) indicates that 48% of workers who began the survey period in temporary positions were actually able to move into regular,

permanent employment at some firm. Thus, standard employees may fear that “temps” want to take their jobs. This second form of threat – replacement – likely pertains only to temporary workers, however, not to independent contractors. While the majority of temporary help agency workers, 56.2%, report a preference for leaving behind their non-standard employment arrangement, only 9.1% of independent contractors indicate that they would prefer a traditional employment arrangement (Bureau of Labor Statistics 2005; see also Krausz, Brandwein, and Fox 1995). Additionally, independent contractors may be less threatening to standard employees than “temps” because they are more likely to remain physically and administratively separate from a particular workplace (Davis-Blake and Uzzi 1993).

On-call workers, by contrast, are on the payroll of the establishment where they work and may have an on-going relationship to the employer, as is the case with substitute teachers. Thus, while certainly in the periphery of the organization, on-call workers differ from temps and independent contractors because they remain within the internal labor market structure of the organization (Magnum, Mayall, and Nelson 1985). Within the internal labor market framework, on-call workers can be seen as a form of “organizational slack” (Bourgeois 1981), where the environmental uncertainties of the workplace are absorbed or significantly reduced by building into the organization an on-going set of peripheral workers. For example, if demand increases or standard employees need to be absent from work due to illness or family matters, on-call workers can easily be brought in to perform the necessary tasks. Thus, standard employees may feel protected by, and even appreciate, their employers’ use of on-call workers. They may see

the use of on-call workers as a signal that their employer is trying to protect them, rather than displace them.

Empirical Background

While some existing empirical literature investigates the relationship between the use of contingent workers and standard employees' perceptions of their own job security, workplace attachment, material well-being, and relationships at work, this research is limited in important ways. Much of the research in this area is decades old and is primarily based on case studies of a small number of employers, qualitative investigations, or the examination of a single type of contingent worker. An important gap therefore remains in our knowledge about how establishments' use of different forms of contingent labor impacts the standard employees in those workplaces.

The research that does exist in this area, however, indicates that contingent work use, and especially the use of temporary workers, may be related to lower levels of standard employees' perceived job security (Geary 1992; Barley and Kunda 2004; De Cuyper et al. 2009). Previous research also suggests that contact with contingent workers may negatively impact standard employees' subjective attachment to their workplaces (Pearce 1993; Davis-Blake et al. 2003; George 2003; Chen and Brudney 2009). For example, a detailed case study conducted by Pearce (1993) found that standard employees' contact with contingent workers was negatively associated with standard employees' loyalty to the firm. Analyzing data from three firms, George (2003) found evidence that using contingent labor was related to standard employees' feelings that the

“psychological contract” had been violated. Drawing on data from a national survey of business establishments, Chen and Brudney (2009) found a relationship between employers’ use of nonstandard employment relations and employers’ perceptions of lower organizational trust among their employees.

The relationships between contingent worker use, earnings, and promotions have also been explored. Barnett and Miner (1992) found that temporary worker use was associated with slower promotion rates for lower-level staff and faster rates of promotion for higher-level staff within a Fortune 500 utility company. Additionally, drawing on survey data from a national sample of business establishments from the early 1990s, Tomaskovic-Devey et al. (2009) argue that workplaces’ use of temporary workers may be related to wage rewards for the top managers within the organization.

Some empirical literature also indicates that employers’ use of contingent labor can strain standard employees’ relationships with managers and co-workers (Smith 1997; Smith 2001; Lautsch 2002; Davis-Blake et al. 2003; Barley and Kunda 2004; Chen and Brudney 2009). Davis-Blake et al. (2003) analyze a multi-level data set from the early 1990s that matches individuals to their employers and find a negative relationship between firms’ use of temporary and contract workers and standard employees’ reports of their relationships with managers. Drawing on case study data from two firms, Chattopadhyay and George (2001) find that in work groups where temporary workers outnumber standard employees, the standard employees expressed less attraction to their co-workers, lower co-worker trust, as well as lower levels of altruism.

The empirical research presented above provides a useful framework for generating broader hypotheses about the relationship between contingent work use and standard employees' outcomes. However, the research in this area is generally qualitative in nature, focuses on a small number of firms, explores a single type of contingent labor, uses a small set of control variables, relies on employers' reports of employees' attitudes, or uses data that are, by now, decades old. These limitations make it difficult to draw conclusions that have significant external validity and are limited in their ability to test the differential consequences of varied forms of contingent labor. Additionally, extant empirical literature largely leaves open the mechanisms underlying the relationship between contingent work use and standard employees' outcomes (Davis-Blake and Broschak 2009). The following analysis addresses these important limitations in the existing literature.

Hypotheses

The theoretical framework and empirical evidence presented above enable us to generate a set of testable hypotheses about the relationship between establishments' use of contingent workers and standard employees' outcomes. In the case of organizations' use of temporary workers and independent contractors, the threat effects will outweigh the buffer effects. The result will be that the use of temporary workers and independent contractors will be associated with lower perceived job security, lower subjective attachment to the workplace, lower material well-being, and worse relationships with managers and co-workers for standard employees. The associations will be stronger for

temporary workers than independent contractors, however, because temporary workers are threatening on two fronts – replacement and outsourcing – whereas the threat from independent contractors is limited to potential outsourcing. On-call workers will be the least threatening to standard employees and may even be positively associated with standard employees’ outcomes because they do not pose a threat to the internal labor market of the organization.

The second primary hypothesis is that perceived job security plays a central role in mediating the relationship between an employer’s use of contingent labor and the outcomes of standard employees. A variable functions as a mediator to the extent that it accounts for the relationship between an independent and a dependent variable (Barron and Kenny 1986). As workers’ feel threatened, or buffered, by the use of contingent workers, their perceived job security is hypothesized to be impacted. For example, if workers feel threatened by contingent labor use, their perceived job security will be lower. And, if a worker is feeling unsettled about his or her job security, he or she is likely to feel less connected to the workplace and more likely to have negative interactions with managers and co-workers (see Ashford, Lee, and Bobko 1989; Probst 2000). Thus, the impact of the use of contingent workers on standard employees’ outcomes is hypothesized to run through workers’ perceptions of their own job security. To demonstrate the mediation effect in this paper, we will first need to demonstrate that the use of contingent workers is associated with perceived job security and that perceived job security is associated with standard employees’ earnings, subjective workplace attachment, relationships with managers, and relationships with co-workers. Finally, we

will need to demonstrate that there is a relationship between organizations' use of contingent workers and these outcomes for standard workers, but that this relationship is significantly reduced, or eliminated, once we account for workers' perceived job security. If this set of relationships hold, there will be strong evidence for the hypothesis that perceived job security mediates the impact of organizations' use of contingent labor on standard employees.

DATA AND METHODS

This analysis uses employer-employee matched data to examine the relationship between establishments' contingent work use and standard employees' perceived job security, subjective attachment to their workplaces, as well as their earnings and relationships with managers and co-workers. We have generated a multi-level dataset by matching individual-level data from the 2002 General Social Survey (GSS) with establishment-level data from the 2002 National Organizations Survey (NOS). The sample for the 2002 NOS, a national survey of establishments in the U.S., was drawn from respondents to the 2002 GSS, which allows for the two datasets to be merged. The unit of analysis for the NOS is the workplace itself, not the entire firm, which is ideal for researchers interested in the internal dynamics of the workplace. The NOS dataset contains information on 516 establishments, which was generated through surveys completed by the firms' human resources managers. After removing cases for which the GSS respondent was not a permanent standard employee, 407 cases remain. Finally, we only keep cases where the employer had more than one full-time employee because the

consequences of contingent labor in workplaces without at least two full-time employees would likely be quite different.⁴ The resulting data file contains 374 cases with matched information between individual respondents from the GSS – including demographic information and their attitudes about their current job – and their employer’s responses to the series of questions in the NOS. It is important to note that the merged dataset only includes information about one standard employee within each workplace. The NOS-GSS matched data provide a rare combination of a national sample of organizations, information on individual workers within those organizations, and a large set of variables at both levels.

Independent Variables

The primary independent variables for this analysis come from the NOS’s information on each employer’s use of temporary workers, on-call workers, and independent contractors. The NOS asks each employer about whether or not they utilize each type of contingent work. The analysis presented here is conducted using a binary variable for establishments’ use of each type of contingent work, which means that the contingent work categories are not mutually exclusive. The same employer can use multiple forms of contingent work. Workplaces are coded as utilizing temporary workers if they report using either temporary help agency workers or direct-hire temporaries and zero otherwise. Separate binary variables are also generated to indicate whether the

⁴ The results are not sensitive to the cut-off for the minimum number of full-time employees at the establishment. The main substantive results presented below hold when the analysis is limited to establishments with more than five and ten full-time employees.

establishment uses on-call workers or independent contractors. The means, standard deviations, and ranges for the primary independent and dependent variables are presented in Table 1, below.

[Table 1 About Here]

Dependent Variables

Workers' perceived job security and material outcomes are captured with single items from the GSS, whereas the other dependent variables are constructed from multiple GSS items. We operationalize standard workers' perceived job security using the GSS item that asks respondents to state whether "the [following] statement is very true, somewhat true, not too true, or not at all true with respect to the work you do: The job security is good." We next examine the earnings variable, which in the GSS is broken in to 23 categories. For the analysis, we mid-point coded the earnings variable and then top-coded it at \$110,000. The log of the re-coded earnings variable is used in the models.

The next dependent variable captures workers' subjective connection and attachment to their workplaces. To build a robust measure of workplace attachment, we employed principal components factor analysis to combine three separate items in the GSS.⁵ The first item captures a worker's pride in working for his or her employer. GSS respondents are asked to use a four-point scale, from "strongly agree" to "strongly disagree," in response to the statement: "I am proud to be working for my employer."

The second item is a question in the GSS that asks respondents whether the following

⁵ We conducted the principal components factor analysis to generate the subjective attachment variable using the polychoric sequence in STATA, which is designed to conduct factor analysis for ordinal variables. We used the same process to generate measures of relationships with managers and relationships with co-workers. When the models in this analysis are run using the individual GSS items as dependent variables, rather than the multi-item measures, we find similar empirical results.

statement is “very true,” “true,” “not too true,” or “not true at all” about their main job: “At the place where I work, I am treated with respect.” The final item used in the factor analysis asks GSS respondents to answer whether they “strongly agree, agree, disagree, or strongly disagree with [this statement]: I trust the management at the place where I work.” These three items load strongly on to one factor, with an eigenvalue of 2.40, which explains 80.2% of the variance.

We use four separate GSS items to build a single measure of workers’ relationships with management. First, we use a measure of standard employees’ general perception of how well the workplace is run. GSS respondents were asked to “strongly agree,” “agree,” “disagree,” or “strongly disagree” with the statement: “The place where I work is run in a smooth and effective manner.” We also examine a direct measure of employer-employee relations, which is derived from the GSS question: “In general, how would you describe relations in your work place between management and employees.” There are five response categories for this item, ranging from “very good” to “very bad.” Next, we use two items where respondents are asked to “strongly agree,” “agree,” “disagree,” or “strongly disagree” with the following statements: “My supervisor is concerned about the welfare of those under him or her,” and “My supervisor is helpful to me in getting the job done.” These four items load onto one factor, which we consider to capture employees’ relationships with management, with an eigenvalue of 2.78 and that explains 69.6% of the variance.

Finally, we generate a measure to examine horizontal relationships within the workplace – the respondent’s relationships with his or her co-workers. We combine two

separate GSS item to generate this measure. GSS respondents were asked, on a four-point scale, to indicate how true the following statements are with regard to their work. First, “The people I work with take a personal interest in me,” and, second, “The people I work with can be relied on when I need help.” Each of these GSS items provides a measure of the relationships between the respondent and his or her co-workers in the organization and combine to form a single item with an eigenvalue of 1.45, which explains 72.4% of the variance.⁶

Control Variables

There are important selection bias issues to deal with in this analysis. Workers sort themselves into different workplaces, and business establishments sort themselves into whether or not they use different forms of contingent labor. Thus, bivariate associations between a standard employee’s outcomes and the establishment’s use of contingent labor might be spurious. To deal with these concerns, the statistical models in this analysis include a large set of control variables that attempt to adjust for workers’ selection into their workplaces and establishments’ choice to use contingent labor.

At the organizational level, control variables are included for the size and age of the organization, whether there is a union present at the organization, whether more than two-thirds of the establishment’s full-time employees are women, and the sector in which

⁶ Here, we are combining only two items from the GSS, which means that the factor loadings for the two variables are the same. When the analysis is conducted by creating an additive scale for “relationships with co-workers,” rather than using factor analysis, the results presented below remain unchanged.

the organization is located.⁷ The models also attempt to control for the overall health of the establishment by including variables that capture the financial performance of the organization, whether the workplace has recently changed its number of full-time employees, and whether the organization offers health insurance to any of its employees.⁸

Another potential confounding variable is the orientation of management towards its employees. A purely instrumental or antagonistic managerial orientation to labor, what Hodson (2001) would refer to as a threat to workers' dignity, could increase both the likelihood of temporary worker use and workers' feelings of insecurity. While there is no way to fully capture this underlying orientation, we include a control variable that serves as a reasonable proxy for management's orientation toward labor. This binary NOS variable asks employers: "Has your organization made any explicit or implicit commitment to its employees to avoid layoffs, except in extreme circumstances?"

The models also include a set of occupational controls that situate the individual standard employee within the organizational context. It is likely that the seniority, prestige, and power of the standard employee would impact how an employer's use of contingent work is related to his or her well-being. Thus, we include control variables for job tenure, occupational classification, and occupational prestige.⁹ We also include binary

⁷ We measure organization size by the number of full-time employees. The log of organization size is used in the models. To control for the organization's sector, a series of binary variables is used for whether the organization produces a product, a service, both a product and a service, or neither a product nor a service.

⁸ The financial standing measure is self-reported by the employer and is in reference to other establishments that do the same kind of work as the employer. The variable is entered as a dichotomous variable equal to one for high financial performance and zero otherwise.

⁹ The job tenure variable is logged before being entered into the models. Five broad occupational categories are used as controls in the analysis.

variables for whether the respondent supervises other employees and whether he or she is supervised by someone else.

We also include a set of individual-level controls related to how workers sort into different establishments as well as how they may be affected by establishments' use of contingent labor. The individual-level controls include a series of binary variables for the employee's geographical region. We use a continuous measure of the number of years of education that the worker has completed. Log earnings is used as a control variable in all models except when it is used as a dependent variable. We also include a binary variable for whether or not the standard employee is married. Finally, a set of demographic variables for race, Hispanic ethnicity, sex, age, and age-squared are included in the models.

Analytic Strategy

The earnings, subjective attachment, relationships with management, and relationships with co-workers variables are all continuous in nature. Thus, linear regression is employed for these analyses. However, the perceived job security variable is ordinal, which makes a linear regression modeling approach inappropriate. Thus, we use ordered logistic regression to examine the relationship between employers' use of contingent workers and standard employees' perceived job security. For each model, we employed multiple imputation, using STATA's ICE package, to deal with missing data

and used five imputations for each model.¹⁰ The reported R-squared measures are the lowest values generated by one of the five imputed data sets.

Equation 1, a linear regression equation, is used to estimate the relationship between employers' use of contingent workers and the earnings, subjective workplace attachment, and workplace relationships of the standard employees in those workplaces.

$$y_i = \alpha + x_i\beta + w_i\theta + y_i\delta + z_i\lambda + \varepsilon_i \quad (1)$$

Equation 2, an ordered logit model, is used to estimate the relationship between employers' use of contingent workers and standard employees' perceived job security.

$$\text{logit}(g_{ij}) = \alpha_j + x_i\beta + w_i\theta + y_i\delta + z_i\lambda + \varepsilon_i \quad (2)$$

In Equation 2, α_j is the baseline odds of a response in category j or below when the covariates are all set to zero. The effect of the covariates (x , w , y , and z) raises or lowers the odds of a response in category j or below by a factor of $\exp(x_i\beta)$ (or $\exp(w_i\theta)$, $\exp(y_i\delta)$, or $\exp(z_i\lambda)$, respectively). In both Equation 1 and Equation 2, x_i is a vector of covariates for the use of contingent work at each workplace and consists of three binary variables: the employer uses temporary workers, on-call workers, or independent contractors. w_i is a vector of organizational-level control variables, y_i is a vector of occupational controls, and z_i is a vector of individual-level controls.

¹⁰ The results for the multivariate analyses presented below substantively hold when list wise deletion, rather than multiple imputation, is used to deal with missing data. However, significance levels are reduced in some instances, likely due to the loss of cases. Additionally, the factor analysis presented here was conducted after completing the imputation process. The main findings presented below were very similar when the factor analysis was carried out before the imputation process.

RESULTS

Contingent Worker Use and Standard Employees' Outcomes

The analysis begins by exploring the relationship between employers' use of contingent workers and standard employees' perceived job security. As Figure 2 demonstrates, standard employees in establishments that use temporary workers report relatively lower levels of perceived job security. While 49.66% of the standard employees in establishments that use temporary workers responded "very true" to the statement that their job security was good, 58.57% responded this way in workplaces that did not use any type of contingent labor. At the same time, standard employees in organizations that use on-call workers report higher levels of job security than standard employees in firms that do not use any form of contingent labor. These bivariate associations, however, could be confounded by a broad set of variables that are correlated with both the use of contingent workers and standard employees' perceived job security – such as the financial health of the establishment. The following multivariate analyses examine the relationship between employers' use of contingent workers and standard employees' outcomes, while controlling for possible confounding factors.

[Figure 2 About Here]

Table 2 presents findings on the relationship between employers' use of contingent workers and standard employees' perceived job security, earnings, subjective attachment to their workplaces, relationships with managers, and relationships with co-workers. Model 1 indicates that standard employees who work at establishments that use temporary workers have approximately 62% lower odds of reporting the highest level of

perceived job security, compared to workers at establishments that do not use temporary workers, controlling for a large set of potentially confounding factors. This finding is statistically significant at the 1% level and provides strong support for the hypothesis that the use of temporary workers is negatively associated with standard employees' perceived job security. While the relationship between on-call worker use and the perceived job security of standard employees is not statistically significant, the coefficient is positive, pointing in the opposite direction of the coefficient on the use of temporary workers. Additionally, the 95% confidence intervals for the coefficients for the use of temporary workers and on-call workers do not overlap, indicating that these coefficients differ from one another.

Model 2 explores the relationship between the use of contingent workers and standard employees' earnings. The results show a marginally significant and positive association between employers' use of independent contractors and standard employees' earnings. This finding runs counter the hypothesized relationship between the use of independent contractors and standard employees' earnings. The coefficients for establishments' use of temporary workers and on-call workers are not statistically significantly related to standard employees' earnings. However, the lack of statistically significant findings for the use of temporary workers and on-call workers is not conclusive evidence that a relationship does not exist. The earnings variable in the GSS is broken into large categories that were mid-point coded and top-coded at \$110,000 for this analysis, which may reduce the earnings detail necessary to detect the associations between use of "temps" or on-call workers and standard employees' earnings.

Model 3 examines the relationship between the use of contingent workers and the subjective attachment employees feel toward their workplaces. As Model 3 demonstrates, there is a statistically significant negative association between the use of temporary workers and the subjective attachment of standard employees. Standard employees who work at establishments that use temporary workers, on average, report a subjective attachment to their workplace that is just over one-quarter of a standard deviation lower than standard employees in organizations that do not employ temporary workers, after controlling for the other variables in the model. The findings also indicate that there is a positive, although not statistically significant, relationship between the use of on-call workers and the subjective attachment of standard employees. The use of independent contractors does not appear to be related to standard employees' subjective attachment. Model 3 provides strong support for the hypothesis that temporary worker use is negatively associated with standard employees' subjective workplace attachment.

[Table 2 About Here]

The results presented in Model 4 address the association between establishments' use of contingent labor and standard employees' reported relationships with management. Findings indicate that there is a strong, negative, and statistically significant relationship between the use of temporary workers and the employee-management relationships within the workplace. Standard employees who work at establishments that use temporary workers report relationships with management that are nearly one-third of a standard deviation worse than their counterparts who work at organizations that do not use temporary workers, after controlling for a large set of organizational, occupational,

and individual differences. While the coefficient for the use of on-call workers is not statistically significant, it once again points in the opposite direction from the coefficient for the use of temporary workers. The coefficient for the use of independent contractors is not statistically significant, but lies between the coefficients for the use of temporary and on-call workers.

Model 5 explores the association between the use of contingent workers and standard employees' reported relationships with their co-workers. The coefficient for the use of temporary workers is negative and statistically significant at the 5% level. The coefficient for the use of on-call workers is positive and is also significant at the 5% level. Standard employees who work at organizations that use on-call workers report relationships with co-workers that are 0.31 standard deviations better than their counterparts at organizations that do not use on-call workers. Thus, Model 5 provides strong support for the hypothesis that the use of temporary workers is negatively associated with the quality of the horizontal relationships in the workplace, while the use of on-call workers has a positive association with standard employees' reported relationships with their co-workers.

The Mediating Role of Perceived Job Security

The second hypothesis presented above posits that workers' perceived job security plays an important role in mediating the relationship between employers' use of contingent workers and standard employees' outcomes. If workers' perceptions of their own job security are threatened by the use of contingent labor, they will likely feel less

attached to their organization and additional strain may be placed on relationships with managers and co-workers. Since the use of temporary workers is the only type of contingent work use that is statistically significantly related to workers' perceived job security (see Model 1) and temporary worker use is also most consistently associated with workers' outcomes in the other analyses (see Models 2 through 5), we examine how workers' perceived job security mediates the relationship between temporary worker use and standard employees' subjective workplace attachment and relationships with managers and co-workers. Table 2 provides evidence for the first two relationships necessary to identify a mediation effect (Barron and Kenny 1986). Employers' use of temporary workers is negatively associated with perceived job security and employers' use of temporary workers is negatively associated with standard employees' subjective workplace attachment, relationships with managers, and relationship with co-workers.

Two additional components are necessary to provide evidence of a mediation effect (Barron and Kenny 1986). First, there needs to be a statistically significant and positive association between workers' perceived job security and their workplace attachment and relationships at work. To test for this relationship, the full models from above were used to predict subjective workplace attachment, relationships with managers, and relationships with co-workers, but we switched the primary explanatory variable from employers' use of temporary workers to workers' perceived job security. Post-estimation significance tests revealed a highly statistically significant relationship between perceived job security and workplace attachment, relationships with managers, and relationships with co-workers (results not shown here).

The final step in demonstrating the mediation effect is to show that the negative relationship between organizations' use of temporary workers and standard employees' outcomes is significantly reduced in size and significance once standard employees' perceived job security is taken into account. The results of this analysis are shown in Figure 3, below, which compares the coefficient for the use of temporary workers in models with the full set of controls used above, with and without including standard employees' perceived job security. In the case of each of the dependent variables presented in Figure 3 – subjective attachment to one's workplace, relationships with management, and relationships with co-workers – the inclusion of workers' perceived job security in the model reduces the size of the coefficient for temporary worker use by more than 50% and renders that coefficient no longer statistically significant. Thus, there is strong support for the hypothesis that workers' perceived job security mediates the negative relationship between employers' use of temporary workers and standard employees' outcomes.

[Figure 3 About Here]

ALTERNATIVE HYPOTHESES AND ROBUSTNESS CHECKS

An alternative hypothesis to explain the findings presented above is that the establishments that use temporary workers are different from those that do not and that these differences are driving the associations presented above. If it is “bad firms” that use temporary workers, then it is possible that there are aspects of establishments that drive both the use of temporary workers and worse outcomes for standard employees. The

organizational controls in the above models have attempted to address the differences between the establishments that do and do not use contingent workers. However, to further explore the differences between the types of establishments that use each type of contingent labor, Table 3 examines the organizational predictors of each type of contingent labor utilization.

[Table 3 About Here]

Model 6 in Table 3 demonstrates that, on most dimensions, establishments that use temporary workers are not statistically different from those workplaces that do not use temporary workers. The three significant differences are that unionized organizations and organizations with a high percentage of full-time female employees appear less likely to use temporary workers and larger organizations are more likely to use temporary workers. In terms of agreements to avoid layoffs, organizational age, financial productivity, organizational growth and decline, provision of health insurance, and sector of the economy, the establishments that use temporary workers do not appear to differ systematically from those that do not use temporary workers. The results in Table 3 provide support for the notion that it is not just “bad firms” that use temporary workers. Therefore, it is unlikely that some underlying establishment-level variable is driving the results presented above.

Another potential criticism of this analysis is that small changes in the sample of organizations under investigation could dramatically alter the results. To test for this possibility, we conducted the main analyses presented above on five draws of a random sample of 80% of the cases in the data set. The results remained substantively the same.

In a few instances, the level of statistical significance declined, as would be expected with the smaller sample size, but the approximate magnitude and, more importantly, the direction of the coefficients remained largely unchanged.

A key assumption of the argument presented in this article is that the standard employees within an establishment are aware that their employer is utilizing contingent workers. One would expect that this knowledge would be inversely related to the size of the workplace. Therefore, the strength of the relationship between contingent work use and standard employees' outcomes should be larger in magnitude and significance in smaller workplaces. To test for this relationship, we ran two full models predicting perceived job security, where we added an interaction term between working at an organization that uses temporary workers and has fewer than 1,000 and 500 full-time employees, respectively. The interaction term in both models was large, negative, and highly statistically significant (results not presented here). This finding indicates that the negative relationship between the use of temporary workers and perceived job security is stronger for standard employees who work at organizations with fewer full-time employees. This is what one would expect if the threat imposed by temporary workers is inversely related to size of the organization.

The results presented above indicate that a worker's perceived job security plays an important role in mediating the relationship between organizations' use of temporary workers and standard employees' outcomes. It could also be argued, however, that the mediating role of standard employees' perceived job security can be attributed mainly to the high correlation between job security and the other dependent variables. If this were

the case, one would expect that the other dependent variables – subjective attachment to one’s workplace, relationships with managers, and relationships with co-workers – would also play a role in mediating the relationship between employers’ use of temporary workers and standard employees’ perceived job security. Thus, adding the other dependent variables to the full model predicting perceived job security would result in a reduction of the magnitude and significance of the coefficient on establishments’ use of temporary workers. We conducted these analyses to test for this possible effect. Although the coefficient for temporary work was attenuated slightly in some models, it remained large, negative, and highly statistically significant. This sensitivity check provides additional support for the hypothesis that perceived job security acts as a mediator between employers’ use of temporary workers and standard employees’ outcomes.

The above empirical analysis differentiates subjective attachment to the workplace, relationships with management, and relationships with co-workers into three separate constructs. Factor analysis indicates, however, that the nine individual GSS items used to build these three separate factors can be loaded onto one factor, representing overall “worker well-being.” This single factor has an eigenvalue of 5.27 and explains 58.6% of the variation. Using the factor loadings from this analysis, we created a single “worker well-being” variable. When this variable is used as a dependent variable in the full models presented above, there is a strong, negative and statistically significant coefficient ($p\text{-value} < 0.01$) for the variable for temporary worker use (results not shown). The model also results in a positive and marginally significant coefficient ($p\text{-value} < 0.10$) for the variable for the use of on-call workers. The consistency of the

findings in this analysis across dependent variables, including an aggregated “worker well-being” construct, provides strong additional support for the negative relationship between organizations’ use of temporary workers and the outcomes of standard employees.

While some of the key alternative hypotheses have been addressed, there are still limitations of the analysis presented here, largely due to the nature of the data that are employed. First, as with virtually all observational, there is a potential problem of omitted variables bias. Although a large set of organizational-, occupational-, and individual-level controls are used in the analysis, it remains a possibility that some unobserved factor is driving workplaces’ utilization of temporary workers and standard employees’ negative subjective and relational outcomes. Additionally, the cross-sectional nature of the data does not allow us to examine the temporal ordering of the variables of interest, which is especially limiting for the mediation analysis. Second, there is the possibility of reverse causality in terms of employees’ relationships with management and with their co-workers. Organizations that are experiencing problems with their employees may begin utilizing contingent workers as a way of dealing with these labor problems. Thus, poor relations between employees and management may drive contingent work utilization rather than the other way around. To partially deal with this issue, we ran alternative specifications of the models that included a control variable for the employers’ perceptions of the labor relations in their workplace, which would likely be driving the use of contingent work. Inclusion of this variable did not have a substantive impact on the findings presented above.

While there remain limitations of the data used in this analysis, the results are robust to many different specifications. The consistency of findings across a variety of robustness checks provides compelling evidence of a strong negative link between employers' use of temporary workers and the outcomes of standard employees.

DISCUSSION AND CONCLUSION

Our analysis delineates some of the consequences of the changing economic landscape and the rise of the “new employment contract” for workers whose employment is often thought to be nominally stable – full-time, permanent, standard employees. The findings presented here provide compelling evidence that different types of contingent labor use are associated with varied outcomes for standard employees. There is strong evidence that employers' use of temporary workers is negatively associated with standard employees' perceived job security, subjective workplace attachment, and relationships with managers and co-workers. These negative relationships are found even after controlling for a large set of organizational, occupational, and individual variables. The analysis also demonstrates that standard employees' perceived job security plays an important role in mediating the relationship between an organization's use of temporary workers and negative outcomes for standard employees.

While only statistically significant in the model predicting relationships with co-workers, the association between the use of on-call workers and standard employees' outcomes is positive across nearly all outcomes. This may mean that on-call workers serve as an institutionalized buffer within workplaces, signaling to standard employees

that management is creating organizational slack to protect standard employees from market fluctuations. The relationship between employers' use of independent contractors and standard employees' outcomes is only significant in the model predicting earnings. This may be an indication that independent contractors provide firms with a level and type of numerical flexibility that enables them to buffer standard employees' wages from market fluctuations. The lack of significance of the use of independent contractors for the security, attachment, and relationship variables may stem from the fact that independent contractors often have limited contact with standard employees due to their specialized role and knowledge within the organizational context. While additional research is necessary to better establish the relationship between the use of on-call workers and independent contractors and standard employees' outcomes, these findings provide clear evidence that different forms of contingent worker use have different consequences for standard employees. Certain types of contingent labor utilization may even benefit standard employees.

While perceived job security, subjective workplace attachment, and relationships with managers and co-workers are important outcomes in their own right, they are also associated with workers' security and satisfaction more broadly. Employees' perceived job security is a good predictor of future job loss, is associated with organizational commitment and job satisfaction, and is related to self-reported health and depressive symptoms (Fullerton and Wallace 2007; Burgard, Brand, and House 2009). Research has also demonstrated that workers' attachment to their organizations is positively associated with satisfaction both inside and outside of the workplace and negatively related to self-

reported stress and work-family conflict (Romzek 1989; Meyer et al. 2002). Similarly, previous research indicates that good relationships with supervisors and co-workers are positively related to job satisfaction and negatively associated with stress, absenteeism, and turnover (Riordan and Griffeth 1995; Hodson 1997; Ducharme and Martin 2000; Maertz et al. 2007; Pazy and Ganzach 2008; Dur and Sol 2010). Thus, the associations demonstrated in this analysis between employers' use of temporary workers and standard employees' outcomes likely have broad implications for workers' lives.

The findings presented above also shed light on processes of stratification in the "new economy." For social scientists and employers interested in workplace dynamics, these results provide insight into the differential consequences of how organizations obtain numerical flexibility. The use of temporary workers, on-call workers, and independent contractors appear to impact standard employees quite differently. This article also extends the sociological literature on the consequences and contours of the changing employment contract in the United States, while urging labor market and social stratification researchers to take seriously the effect that contingent workers may have on the standard employees with whom they work. By paying limited attention to the impact of contingent workers on the perceived job security, subjective workplace attachment, and workplace relations of standard employees, sociologists may be missing an important determinant of labor market insecurity. As these results demonstrate, major economic changes – such as the increased use of contingent labor – have important consequences not only for the workers directly impacted – in this case, contingent workers – but also for workers thought to be nominally stable and secure.

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TABLES & FIGURES

Table 1: Descriptive Statistics for Primary Independent and Dependent Variables

	Coded	Minimum Value	Maximum Value	Mean	Standard Deviation
Independent Variables					
Temporary Work Use	Binary	0	1	0.3877	0.4874
On-Call Work Use	Binary	0	1	0.2989	0.4579
Independent Contractor Use	Binary	0	1	0.2717	0.4449
Dependent Variables					
Perceived Job Security	Ordinal	1	4	3.3957	0.8677
Log Earnings	Continuous	6.2146	12.4887	10.0478	0.9525
Subjective Attachment to Workplace	Continuous	1.1168	4.4674	3.5126	0.6895
Relationships with Managers	Continuous	1.1986	5.0908	4.0170	0.8286
Relationships with Co-Workers	Continuous	1.1750	4.7000	3.9602	0.7529

Notes: Data from the 2002 National Organizations Survey and the 2002 General Social Survey. Imputed data used to produce means, standard deviations, and ranges.

Table 2: Multivariate Analysis of Contingent Worker Use and Standard Employees' Outcomes

	Perceived Job Security (Ordered Logit)	Earnings	Subjective Workplace Attachment	Relationships with Management	Relationships with Co-Workers
	Model 1	Model 2	Model 3	Model 4	Model 5
Contingent Worker Use (Not Mutually Exclusive)					
Temporary Workers	-0.977** (0.283)	0.105 (0.101)	-0.180* (0.083)	-0.256* (0.101)	-0.198* (0.095)
On-Call Workers	0.357 (0.282)	-0.143 (0.101)	0.134 (0.088)	0.161 (0.106)	0.235* (0.097)
Independent Contractors	0.007 (0.266)	0.178+ (0.101)	-0.033 (0.085)	0.020 (0.105)	-0.022 (0.096)
R-Squared	0.0746	0.3978	0.1740	0.1604	0.1068
n	374	374	374	374	374

Organization-Level Controls: organization is unionized, organization age, agreement to avoid layoffs, high financial performance, recent increase in full-time employees, recent decrease in full-time employees, no recent change in number of full-time employees (omitted), organization offers health insurance, more than two-thirds of full-time employees are female, log number of full-time employees, firm produces product, firm provides service, firm provides neither product nor service, firm provides both product and service (omitted).

Occupational Controls: occupation, occupational prestige, log job tenure, whether supervises other employees, whether supervised by manager.

Individual-Level Controls: region, married, education level, race, ethnicity, sex, age, age-squared, log earnings.

Significance levels (two-tailed tests): +<.10; *<.05; **<.01; ***<.001

Notes: Log odds are presented in Model 1, which is an ordered logistic regression model. Multiple imputation is used to deal with missing data. Standard errors are in parentheses. Limited to establishments with more than one full-time employee. The lowest R-Squared generated by the individual imputed data sets is reported.

Table 3: Logistic Regression Models Predicting Establishments' Use of Temporary Workers, On-Call Workers, and Independent Contractors

	Uses Temporary Workers Model 6	Uses On-Call Workers Model 7	Uses Independent Contractors Model 8
Organization is Unionized	-0.761* (0.318)	0.673* (0.309)	0.478 (0.304)
Organization Age	0.004 (0.004)	0.001 (0.004)	-0.010* (0.004)
High Financial Productivity	-0.103 (0.277)	-0.369 (0.292)	-0.173 (0.267)
Recent Increase in FT Employees (Reference = No Change)	-0.123 (0.317)	0.525+ (0.306)	-0.112 (0.318)
Recent Decrease in FT Employees (Reference = No Change)	-0.197 (0.331)	-0.391 (0.372)	0.183 (0.339)
Employer Provides Health Insurance	-0.281 (0.478)	0.077 (0.493)	0.724 (0.583)
More than Two-Thirds Female Employees	-0.621* (0.282)	1.084*** (0.275)	0.216 (0.272)
Log Number of Full-Time Employees	0.535*** (0.078)	0.218** (0.073)	0.255*** (0.071)
Produces Service (Reference = Produces Service & Product)	0.278 (0.335)	0.762* (0.365)	0.488 (0.358)
Produces Product (Reference = Produces Service & Product)	0.290 (0.475)	-1.030 (0.699)	0.156 (0.513)
Produces Neither Service nor Product (Reference = Produces Service & Product)	-1.198 (1.257)	0.536 (1.089)	1.460 (1.141)
Employer Avoids Layoffs	-0.209 (0.268)	-0.015 (0.266)	0.712** (0.258)
Pseudo R-Squared	0.1753	0.1469	0.0938
n	374	374	374

Significance levels (two-tailed tests): +<.10; *<.05; **<.01; ***<.001

Notes: Log odds are presented. Multiple imputation is used to deal with missing data. Standard errors are in parentheses. Limited to establishments with more than one full-time employee. The lowest R-Squared generated by the individual imputed data sets is reported.

Figure 1: Theoretical Model of the Effects of Contingent Worker Use on Standard Employees' Outcomes

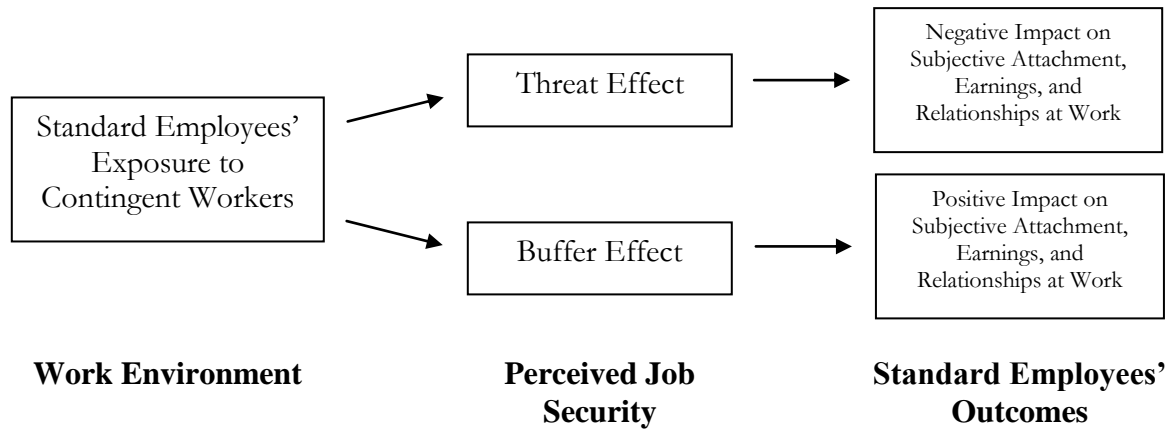
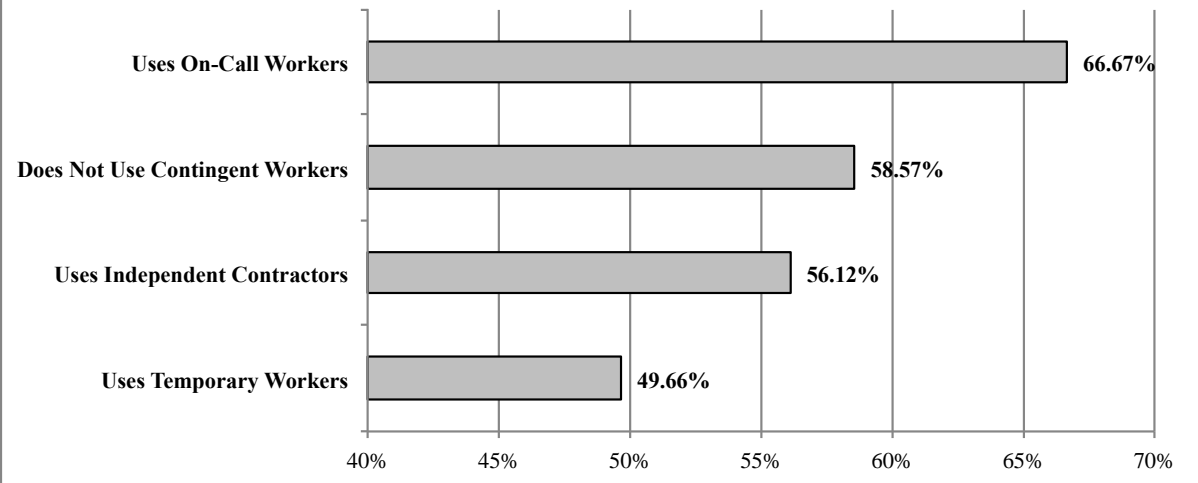
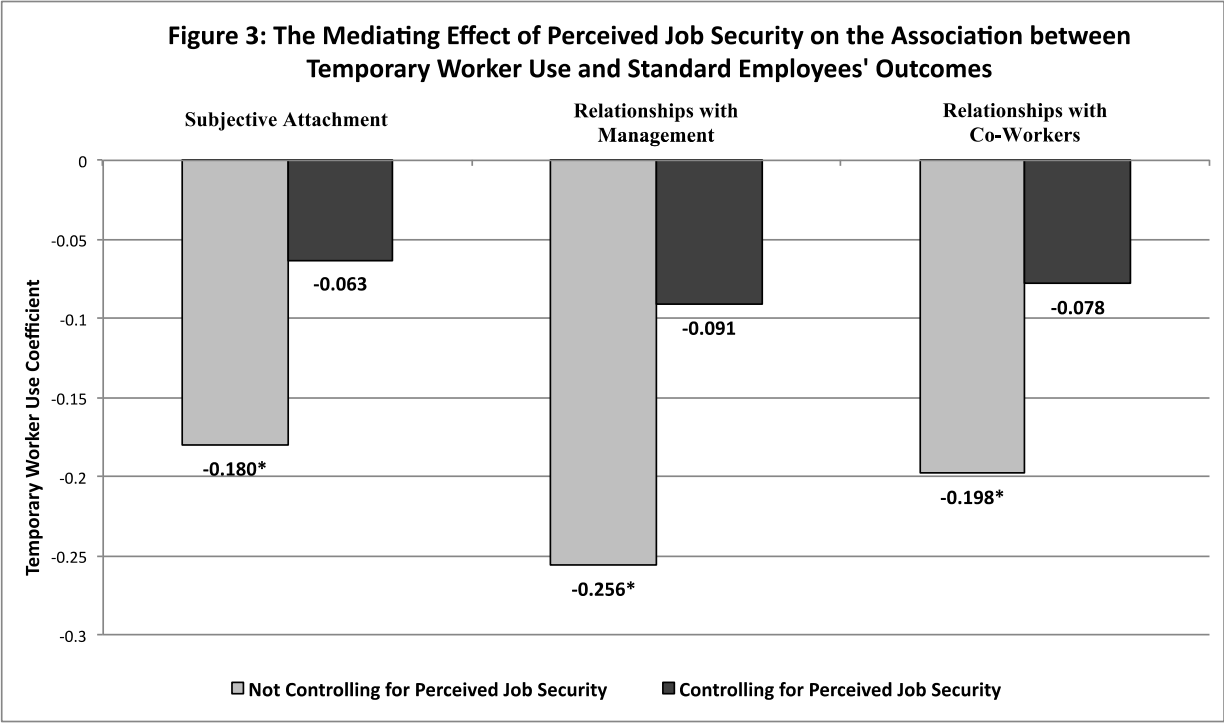


Figure 2: Percent of Standard Employees Reporting a High Level of Job Security, by Establishment Use of Contingent Workers



Notes: Data from the 2002 National Organizations Survey and the 2002 General Social Survey. The percentages reported here do not use imputed data and are based only on establishments with more than one full-time employee.



Notes: Data from the 2002 National Organizations Survey and the 2002 General Social Survey. The coefficients are unexponentiated ordered logit coefficients from the full models, as presented in Table 2. Significance levels (two-tailed tests): * <0.05 .