# WHEN ARE LAYOFFS ACCEPTABLE? EVIDENCE FROM A QUASI-EXPERIMENT

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If, as has been widely suggested, internal labor markets are declining and a new employment contract with reduced employer-employee commitment is emerging, the criteria by which employees judge layoffs as fair or unfair may be changing. This paper presents findings relevant to that question, based on quasi-experimental surveys in Canada and the United States. Respondents rated layoffs stemming from reduced product demand as more fair than those resulting from employee suggestions. Behind this judgment, apparently, was the normative premise that companies should not punish employees for their efforts; rent-sharing norms appear to have played little or no role, as respondents deemed new technology an acceptable reason for layoffs. Consistent with theories of distributive and procedural equity, layoffs were perceived as more fair if the CEO voluntarily "shared the pain." Respondents in Silicon Valley were not more accepting of layoffs than were those in Canada, on average.

The implicit employment contract can powerfully affect important economic outcomes, including productivity, unemployment, and inequality. Since the mid-1980s, a number of business scholars, journalists, and labor economists have claimed there is a "new employment contract" with lower employee-employer commitment. To the extent that this new contract is generally accepted, it should influence citizens' view of whether and to what extent various actions taken by firms are fair or unfair.

Our study examines some of the determinants of perceived fairness in layoffs and other employment practices and also explores the question of whether the norms of the new employment contract are generally accepted. We build on Kahneman, Knetsch, and Thaler's (KKT's) 1986 study, which examined Canadian respondents' views on fairness in wage determination. We extend their study in several ways.

First, we examine the perceived fairness of layoffs. It is crucial to understand the

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quantity aspects of the employment contract as well as the price aspects; that is, resistance to layoffs as well as to wage cuts. Policy-makers and managers both have an interest in understanding citizens' perceptions of when layoffs are fair. Moreover, layoffs are far more common than the pay cuts KKT examined.

Second, we conducted the study in one site in the United States, Silicon Valley, as well as in the two Canadian cities KKT examined (Vancouver and Toronto). One of our goals is to see if these regions have different levels of acceptance of the market.[1] This element is important because it may be that Canadian results do not hold in the somewhat different cultural setting of the United States. Understanding differences (or lack thereof) between attitudes in the United States and Canada is crucial for understanding policies ranging from site location of factories to the future of NAFTA. Finally, our analysis sheds light on several theories of procedural and distributive justice.

## Employment Contracts, New and Old

According to numerous authors (for example, Hackett 1996), the old employment contract for core employees at large employers had the following provisions:

> We expect loyalty from our core mid-level employees, and we provide loyalty in return. If you work hard, and receive satisfactory performance ratings, your job is secure. (We might take exception if the financial health of the company is threatened.)

At a small number of large and visible employers (most notably IBM, but also AT&T, Hewlett-Packard, and a few dozen others; see Foulkes 1980), this contract had been in effect for generations. It was supplemented with provisions whereby managers and professionals agreed to move or be retrained as necessary.

Many authors have expressed the view that we are in the midst of a major shift away from internal labor markets and toward a new employment paradigm, characterized by greater employee mobility and diminished ties between employer and employee. For example, the Academy of Management *Executive* recently devoted a special issue to the new employment contract and its effect on careers (1996). The new contract is said to be particularly prevalent in professional and technical areas.

In contrast to the old contract, the new employment contract is said to have the following provisions:

> The work you do will be interesting, and you will learn new skills while you are here. Your employability will be high, although perhaps not at this employer. We work on great projects, but as each project ends, it is up to you to find a new place for yourself within the company—otherwise, you must find a new place for yourself outside the company.

So far, the evidence on whether there has been a large-scale shift from the old to the new employment contract is suggestive, but not conclusive. For example, there has been a decline in job stability for prime-age men (Rose 1995; Farber 1996), but average tenure in firms has not declined much (for example, Farber 1995; Neumark et al. 1997). Although employees, on average, report lower perceptions of job security and believe employers are less loyal than they used to be (Cappelli et al. 1997), Americans did not report lower trust in their employer in 1997 than in 1989 (Kruse and Blasi 1998:22–23). Several prominent large employers such as IBM and Kodak have weakened their commitment to long-term employment, and human resource executives at many large employers report a shift from the stereotypical old employment contract to the new (Hackett 1996)—but such commitments never covered more than a few percent of the work force, anyway.[2] There

[1] A companion paper (Charness and Levine 1998) examined changes over the last fifteen years in the pay-cutting scenarios studied by KKT. In general, respondents did not find pay cuts more fair in 1997–98 than KKT's respondents found in 1984–85.

[2] Interestingly, while many human resource executives report a shift away from the old high-loyalty contract (Hackett 1996), few of these executives work at employers that ever had reputations for implicitly promising job security (Foulkes 1980).

is some evidence of more use of bonuses and other flexible forms of pay (O'Shaughnessy, Levine, and Cappelli 1998), but at the same time, pay structures at large employers are not more flexible over time and space than they used to be (Belman and Levine 1998; Groshen and Levine 1998).

In a telephone survey, we asked U.S. and Canadian employees for their opinions about the fairness of various layoff scenarios. We are specifically interested in the compatibility, or lack thereof, between these respondents' attitudes and the terms of the new employment contract.

### Perceptions of Fairness of the Employment Contract

Sociologists who analyze workplaces have long claimed that employees' productivity depends on their perception of the underlying social contract with the employer, as well as on narrowly economic concerns (Barnard 1938; Blau 1964; Gouldner 1954). Recently, economists have also begun to focus on the implications of this view. Milgrom and Roberts (1992) pointed out that "the employment contract is typically quite imprecise"; Williamson (1975) spoke of "atmosphere"; Baker, Murphy, and Jensen (1988) stressed the role of trust and loyalty; and Simon (1991) noted that people in organizations do all sorts of things without receiving any specific reward.[3]

When the social contract, atmosphere, and loyalty matter, then perceptions of fairness can matter as well. A dissatisfied worker may deliberately restrict output or even resort to sabotage. "In simple English, if people do not get what they think they deserve, they get angry" (Akerlof and Yellen 1990:260–61). Conversely, an employee who feels he or she receives a fair deal is more likely to perform above minimum requirements.

Recent evidence supports the view that nonpecuniary considerations affect productivity. Levine (1993) showed that in simulations, compensation executives made decisions as if they believed fairness matters. For example, executives did not give lower relative or nominal wage increases when unemployment was high. Moreover, in interviews, the executives justified their decisions on fairness grounds. Rabin (1993) surveyed the literature more broadly and suggested that reciprocity is an important norm in determining fairness—people do not usually believe it is fair when one person responds to gentle actions with harsh actions. Experimental evidence also supports this reasoning. Fehr, Kirchsteiger, and Riedl (1993) and Fehr, Kirchler, Weichbold, and Gachter (1998) found that employees responded to higher (above-market) wages with higher effort, even in an environment where their reputation did not matter. Charness (1998) found that reciprocity was a significant factor in the level of costly effort an employee chose. Specifically, work effort was more responsive to high wages when an employer chose the wage than when the wage was chosen randomly or by an external entity.

While the experiments mentioned above related to observable work effort, it is likely that in the real world most employees have more opportunity to express themselves through extra-role behavior such as organizational citizenship behavior, or "OCB" (Organ 1988). OCB is behavior that is above and beyond the call of duty, discretionary, and not rewarded by an organization's formal reward structure. A number of studies have found that OCB is higher when employees perceive more fairness, especially when they perceive more procedural justice (for example, Farh, Podsakoff, and Organ 1990; Konovsky and Pugh 1994; Moorman 1991). Other studies provide fairly consistent evidence of an association between OCB and organizational performance (for example, MacKenzie, Podsakoff, and Fetter 1991; Podsakoff, Ahearne, and MacKenzie 1997).

[3]Akerlof (1982), Akerlof and Yellen (1990), and Levine (1992) presented models of work behavior incorporating social factors such as perception of fair treatment. Rousseau (1995) provided an overview of psychological approaches to the employment contract.

The implication is that organizations have an incentive to maintain what employees perceive to be a fair employment contract.

Given that perceptions of fairness may matter, what evidence exists concerning community standards of fairness in the employment relationship? In the mid-1980s, Kahneman, Knetsch, and Thaler conducted a series of quasi-experiments to investigate perceptions of fair treatment in Vancouver and Toronto. They found that reductions in current employees' wages due to slack labor markets were considered unfair much more frequently than were equally large reductions in wages for new employees.

The literature on procedural justice emphasizes that not just the level of pay, but also the causes and processes for changing it can affect employees' reactions (Lind and Tyler 1988; Leventhal 1976). Theories of procedural justice emphasize that most people consider procedures more fair if, among other things, the decision-maker accords respectful treatment to those affected by the decision, has no vested interest in a decision that is harmful to them, and has limited choice in making a decision.

The latter factor implies that changes in the economic context can affect the sense of entitlement. For example, Kahneman, Knetsch, and Thaler found that economic shocks reducing profits were seen as justifying reduced wages, but that increases in market power were not. While 77% of respondents considered it unfair for a company that has been making money to reduce wages by 5% (even if it could easily replace workers with others at the lower wage), 68% deemed this wage reduction acceptable if the company is losing money. More generally, Shore and Tetrick summed up the research on violations of perceived employment contracts by noting the importance of how employees assess responsibility for unmet obligations:

> If an organization appears to break the psychological contract voluntarily, judgments of injustice may be greater than when the organization is not held fully responsible. For example, a psychological contract representing organizational obligations of job security in exchange for employee obligations to be loyal, which is broken (for example when an employee is fired or part of a layoff) may be viewed as only a partially broken contract if an economic downturn caused the organization to be unable to fulfill the obligation. In addition, when the organization claims that they cannot completely fulfill a contract, but attempts to partially do so (for example early voluntary retirement rather than a layoff), this voluntary attempt may lessen perceptions of a violation. (1994:104)

Rousseau and her colleagues used quasi-experiments to examine the perceived fairness of layoffs (Rousseau and Anton 1988, 1991; Rousseau and Aquino 1993). Respondents felt that layoffs were less fair when employees had high seniority and when employers had made commitments to long-term employment.

We extend the research of Rousseau and her colleagues in several ways. First, whereas they surveyed part-time students (typically holding full-time jobs as mid-level managers) and full-time students at elite business schools, we examined a random cross-section of adults in several cities. Thus, their results largely reflect the opinions of those making (or soon to be making) downsizing decisions; our results are more representative of the opinions of those being downsized and their colleagues who survive the layoffs. Both sets of perceptions are important for understanding the economy.

Rousseau and her co-authors largely used a within-subjects design, comparing how respondents rated several dozen scenarios. This method is subject to the problem that respondents may see the contrast in treatment between two matched scenarios. In such a setting it sometimes happens that respondents, guessing that the experimenter expects certain treatments to matter, conform their responses to those perceived demands. We used a between-subject design, in which all of the contrasts are between scenarios given to different subjects, to reduce that "demand effect."

The study design employed by Rousseau and her co-authors led them to include some unrealistic features in their scenarios,

such as employers that frequently terminated competent employees but were formally committed to providing long-term employment (Rousseau and Anton 1988:279). Our design avoided that problem.

Finally, the scenarios used in our research add a number of conditions, such as changes in CEO pay due to the layoffs (as in Bies, Tripp, and Neale 1993), that have not been used in previous quasi-experiments, and omit some conditions that most previous quasi-experiments have used, such as changes in executive pay.

This study also builds on the surveys conducted by Brockner et al. (1994). They explored employee reactions to layoffs as a function of distributional elements of treatment (such as the respondents' cost of being laid off) and procedural elements (such as length of advance warning). Their study covered actual victims or survivors of layoffs, whereas this study covers a representative sample of the adult population; their surveys were purely correlational, whereas this study has the advantage of a quasi-experimental design; their study specifically examined the interaction of distributional and procedural elements of justice, whereas we examine more dimensions of the layoff and its environment. Thus, the studies are complementary.

## Methods

We selected our respondents by randomly drawing telephone numbers from each city's phone book. Interviewers were trained to follow a standard script, in which they asked each respondent two or three questions (included in Appendix 1) about standards of fairness in layoffs.[4]

We first carried out the study in Vancouver and Toronto between March and September 1997 with a total Canadian sample of 950 respondents. We then replicated the survey in Silicon Valley between October 1997 and March 1998, with a sample of 1,059.

We studied how changes in the sources of the shocks to the employer, the reactions of the employer, the skills and occupations of the employees affected, and other factors affected respondents' perceptions of fairness. The questions concerning layoffs examined variations of a model case:

> A company faced lower product demand due to shifts in the market; the viability of the employer is threatened. In response, the company laid off some high-technology engineers with an average of ten years of tenure at this employer. Before the layoff, the employer gave each employee four paid weeks to find another job elsewhere in the company. Those who could not find a new position received severance pay based on age and years of service. The company provided outplacement assistance including counseling and résumé-writing workshops. Employees knew layoffs were likely in this circumstance.

Respondents were then asked if the layoff was completely fair, somewhat fair, unfair, or very unfair.

We varied this model case along a number of dimensions. We examined how respondents changed their views about the fairness of the employer if the source of lower labor demand was higher productivity due to employees' suggestions or due to new technology, instead of product market shocks; if the layoffs came with less notice or the company avoided layoffs altogether, in contrast to the relatively gentle layoffs described above; and if the employees were production workers rather than engineers (and in the Silicon Valley surveys, we added the dimension of general versus firm-specific skills). Finally, we varied the CEO's role: in one scenario, CEO pay rose due to cost-cutting from layoffs, and in a second one, the CEO turned down his bonus to "share the pain."

Our scenarios covered two occupations with different gains or losses from the new employment contract. The first group of workers, high-technology engineers with

[4]Respondents also answered two questions concerning when pay cuts were fair. The questions were taken from Kahneman, Knetsch, and Thaler (1986), and results are reported in Charness and Levine (1999).

ten years of tenure at this employer, presumably would be able to find high-paying new employment relatively easily. The second group, production workers who have specialized in this company's unusual technology (also with an average of ten years' tenure), presumably would be more vulnerable.

Comparison questions (for example, questions matched on all aspects except the source of the shock) were asked of different respondents. This design minimizes respondents' inclination and ability to answer based on guesses about the researchers' hypotheses or expectations.

The tables present the means of each question, coding the responses from 3 = "completely fair" to 0 = "very unfair." Because the data were ordinal, the statistical tests use the nonparametric Wilcoxon-Mann-Whitney rank-sum test (Siegel and Castellan 1988). Unlike a parametric test such as a t-test, the rank-sum test makes no assumptions about the spacing of the intervals that make up the ordinal scale. The differences in means are easy-to-read summaries of the magnitudes of gaps, and we focus on them in the text; Appendix 2 contains the full tabulations.

We report all differences that were statistically significant at the 5% level with the rank-sum test. Most of the tests involved comparisons of two groups of 250 or so respondents. With these sample sizes, differences as small as 0.10 on a 4-point scale were usually statistically significant, although the economic effects of such changes may not be important. Moreover, differences in means of less than 0.18 were usually not statistically significant using the parametric t test.

## Hypotheses

Justice theories lead to a number of hypotheses concerning how the source of shocks, company responses, and the characteristics of employees should affect perceptions of fairness.

### What Shocks Justify Layoffs?

The scenarios examined four different shocks that reduce the employer's demand for labor:

*Product demand:* Lower product demand due to shifts in the market; the viability of the employer is threatened.

*Technology:* Higher productivity due to new technology.

*Suggestions:* Higher productivity due to employees' suggestions.

*Project:* The employee's current project has ended.[5]

In general, previous research suggests that people consider it fairer for an employer to react to an exogenous shock than to take the initiative and cause harm (see the citations in Rabin 1993). KKT found that circumstances threatening the existence of the firm led many people to consider pay cuts fair; similarly, Brockner (1992) noted that employees tend to accept layoffs that are necessary due to external circumstances. Thus, we assume that layoffs will be largely perceived as fair when the employer's health is threatened by declining product demand.

New technology is less exogenous to the employer than is lower product demand. Thus, respondents should rate layoffs in response to a product demand shock as fairer than those due to a technology shock. Moreover, new technology that raises productivity increases the employer's ability to pay. To the extent that perceptions of fairness involve the sharing of rents and

[5]Follow-up interviews led us to believe that respondents did not interpret this condition as we had intended. That is, the scenario we had in mind was of a company with employees who moved from project to project. Under the "old" employment contract, the employer found new positions for employees as each project ended (for example, a new version of a product shipped). Under the "new" contract, employees must seek new employment within the enterprise or outside it as each project ends. Apparently, some respondents had in mind a different scenario in which the employee was hired for a single project, the employer had no ongoing or starting-up projects, and then the single project ended. This ambiguity led us to drop a separate analysis of this condition, although we did retain these respondents for other conditions.

quasi-rents, layoffs due to the introduction of new technology should be perceived as less fair than layoffs due to lower product demand.

Like new technology, employees' suggestions increase employers' ability to pay. Layoffs due to employees' suggestions are apt to be perceived as unfair for another reason, as well: they violate the norm of reciprocity. The norm of reciprocity suggests that employers should respond to employee suggestions with bonuses, not with layoffs. For respondents who share this view, layoffs for this reason should be perceived as even less fair than those due to new technology.

These considerations lead to:

*Hypothesis 1:* Layoffs will be perceived as fair when they result from lower product demand, sometimes fair when they result from the introduction of new technology, and usually unfair when they result from employees' suggestions.

### When Are "Gentle" Layoffs Fair?

Our scenarios depicted three responses to a reduction in labor demand:

*Layoffs ("gentle"):* The company is laying off some employees. Before the layoff, the employer has given each employee four paid weeks to find another job elsewhere in the company. Those who cannot find a new position receive severance pay based on age and years of service. The company provided outplacement assistance including counseling and résumé-writing workshops. Employees knew layoffs were likely in this circumstance.

*Layoffs ("harsh"):* The company is laying off employees with two weeks' warning. These are the first layoffs of [occupation] in the company's history.

*Hoard labor:* The employer promises to avoid laying off employees, although many employees will need to be retrained in a new job, and employees may need to relocate to a different city.

The "gentle" layoffs scenario is substantially more generous than the harsh layoff scenario. Brockner, for example, noted that layoffs are perceived as more fair when the employer provides tangible care-taking services to help soften the blow (1992). Moreover, the gentle layoffs scenario includes advance notice, a token of respect toward employees that Brockner et al. argued will enhance their perceptions of procedural justice (1994). This reasoning leads to:

*Hypothesis 2a:* Gentle layoffs will be perceived as significantly more fair than harsh layoffs.

More interestingly, the literature on the new employment contract predicts that gentle layoffs will generally be perceived as fair. Unlike harsh layoffs, respondents will not consider these gentler layoffs as violating norms of reciprocity, even when employees have submitted productivity-enhancing ideas. For example, the severance pay may be interpreted as indicating that the employer is sharing some gains of higher productivity. This reasoning leads to a prediction that contrasts with Hypothesis (1):

*Hypothesis 2b:* The type of shock makes little difference in the fairness rating respondents give to gentle layoffs. That is, harsh layoffs will be considered very unfair when they occur after employee suggestions, but not too unfair when they occur after demand shocks; in contrast, gentle layoffs will be considered not too unfair in any case.

Hoarding labor is the strongest form of employment security an employer can provide. In this case, we assume hoarding labor may involve a need for retraining or relocation. These were the preconditions for employment security extended by some large Japanese and U.S. employers. (Recall the joke that "IBM" stood for "I've Been Moved.") If the old employment contract was fair, then we have

*Hypothesis 2c:* Hoarding labor, even if it means retraining and relocation, will be considered fair for every type of shock.

### The Role of CEO Bonuses

Theories of distributive justice often imply that lower-paid employees look to the fate of their higher-paid colleagues for fairness comparisons. In some cases, these comparisons rise to the highest ranks of the organization (Cowherd and Levine 1992).

CEO pay may be particularly salient during downsizing.

For example, one high-technology company announced its CEO's record compensation the same week it announced layoffs. The employees were outraged. E-mail on the company's internal computer network contained messages such as, "Morale is somewhat like it must have been just before the French Revolution; everyone wants to overthrow the royalty." (Bishop and Levine [1998] detail this case.)

Considerations of *procedural* justice sometimes modify how distributive concerns affect perceptions of fairness (Bies, Tripp, and Neale 1993). People are more likely to consider a decision fair, even if it harms them, if the decision-maker does not profit from it. Conversely, if a decision-maker profits from a decision that harms employees, the employees have reason to doubt the objective basis of the decision (Leventhal 1976).

In spite of these concerns, some analysts have emphasized the potential benefits to shareholders that can follow from rewarding CEOs for cutting costs (Dial and Murphy 1995). This result depends heavily on whether the remaining employees perceive the CEO pay as fair or not, and on employees' reaction to any perceived unfairness.

In fact, the reaction of layoff survivors appears to depend in part on the perceived fairness of the layoffs. Brockner (1992) claimed that employees perceive layoffs as more fair when cutbacks were shared at higher managerial levels. These considerations lead to:

*Hypothesis 3a:* Perceived fairness will increase when the CEO turns down his annual bonus because of the unexpected need for layoffs.

*Hypothesis 3b:* Perceived fairness will decrease when, in conjunction with layoffs, the CEO receives a record bonus for his success in introducing new technology or cutting costs.

## The Role of Skill Specificity and Occupation

All else equal, layoffs are costlier for workers with employer-specific skills than for those with more general, portable skills (Becker 1975). Hence, the former are apt to see layoffs as less fair.[6] In the more specific terms suggested by our scenarios,

*Hypothesis 4a:* Layoffs are perceived as more fair when the affected workers are engineers who specialize in widely used hardware, whose skills would be useful in another job, than when the affected workers are specialists trained in use of an unusual technology peculiar to the company.

Although recent data suggest that layoff rates of production employees and professional employees are converging, the former still are more likely to be laid off than the latter (Farber 1996). Substantial evidence indicates that many people come to view what is common as fair. Moreover, professionals typically have a higher-trust relationship with the employer than do production employees. In exchange for higher commitment from such employees—or so goes the reasoning of the traditional employment contract—the employer is supposed to provide them with stable employment. Based on both of these considerations, we predict the following:

*Hypothesis 4b:* Layoffs will be perceived as more fair when they affect production workers than when they affect engineers.

## Canada versus Silicon Valley

Compared to the United States, for most of this century Canada has been characterized by a stronger welfare state, a more active government, and lower acceptance of market forces (Lipset 1990; Card and Freeman 1993). Silicon Valley, in contrast, is an unusual region with a history of low unemployment and high mobility among skilled engineers. Moreover, the rhetoric of the new employment contract was enunciated early on by some Silicon Valley employers, such as Apple Computers (for example, Sculley 1987:92–99). This history leads to:

[6]Rousseau and Anton (1988, 1991) provide further theoretical justification for this hypothesis.

*Hypothesis 5a:* Layoffs will be perceived as more fair in Silicon Valley than in Canada (specifically, Vancouver and Toronto).

The historical and cultural differences between Silicon Valley and Canada may have been heightened, at the time of our surveys, by unusually large differences in unemployment rates. In November 1997, the unemployment rate in Silicon Valley (specifically, the San Jose metropolitan area) was only 2.6%, below the already-low U.S. average of 4.1% (U.S. BLS 1998). In Canada, in contrast, average unemployment rates were running about 8.9%. The rates in Vancouver and Toronto were slightly lower than the national rates (Statistics Canada 1999).

How the differing unemployment rates in Canada and the United States might affect views on fairness of layoffs is unclear. To the extent that people find layoffs less fair when the cost of job loss is high, the much-higher Canadian unemployment rates should predispose Canadian respondents to view layoffs as less fair than Silicon Valley respondents do. Alternatively, if being in a region with many layoffs increases the perceived fairness of layoffs (see the discussion of Hypothesis 4b, above), then the Canadian respondents may have become inured to layoffs, increasing the likelihood that they will view layoffs as fair.

We chose Silicon Valley with the expectation that respondents there are probably more accepting of the new employment contract than would be the typical U.S. respondent. Thus, the tests below provide a one-sided test for U.S.-Canada differences; should we find that respondents in Silicon Valley are more accepting of the new contract than are respondents in Vancouver and Toronto, it could still be that most people in the United States hold attitudes more similar to those of Canadians.

Conversely, francophone Quebec has a very different history and somewhat different culture from that of the rest of Canada. In many studies, Quebec respondents have been less accepting of the market, and have differed more sharply from U.S. respondents on other matters as well, than have anglophone Canadians (Lipset 1990). Thus, any findings of U.S.-Canadian similarity may not generalize to francophone Canada.

In Silicon Valley, layoffs of professionals such as engineers are relatively common events.[7] Moreover, for most of the last several decades, unemployment rates for engineers in the Valley have been quite low, often less than 1%. Based on the premise that a low cost of job loss makes layoffs seem more fair, then,

*Hypothesis 5b:* Compared to layoffs for production employees, layoffs of engineers will be perceived as more fair in Silicon Valley than in Canada.

## Results

### What Shocks Justify Layoffs?

The results shown in Table 1 provide mixed support for the hypothesis that reciprocity and ability to pay mattered in determining the perceived fairness of layoffs (Hypothesis 1).

As expected, layoffs were viewed as more fair when due to declining product demand (1.71 in Canada, 1.58 in the United States—again, with 3 = completely fair, 0 = very unfair) than when due to employees' suggestions (1.37 in Canada, 1.39 in the United States). This finding supports the

[7]To get a feel for the frequency of publicly visible announcements, we searched the Computer Database produced by Information Access Company for articles concerning layoffs at computer companies. In the relatively prosperous year between May 4, 1997 and May 4, 1998 (chosen to be the most recent at the time of the search), 46 articles appeared with the word "layoff" in the title. The list included former bastions of the "old" contract such as IBM and DEC, innovators in creating the new contract such as Apple, and new software companies that have always grown up with an atmosphere of exciting prospects coupled with low job security such as Netscape, Sybase, and Informix. The results of this quick search are merely suggestive. On the one hand, many of the layoffs were not specifically in Silicon Valley. On the other hand, many smaller employers that closed down or laid off employees would not have merited articles in this database.

*Table 1.* Effects of Source of Shock on the Perceived Fairness of Layoffs.
(Mean perceived fairness: 3 = completely fair, 0 = very unfair)

| *Description* | *Canada* | *Silicon Valley* | *S.V.–Canada* | *Scenarios* | *No. Obs. Canada/S.V.* |
|---|---|---|---|---|---|
| **Source of Shock** | | | | | |
| Declining Product Demand | 1.71 | 1.58 | –.13 | F, M | 270/253 |
| New Technology | 1.57 | 1.71 | .14 | D, E | 240/256 |
| Employees' Suggestion | 1.37 | 1.39 | .02 | L, I | 224/278 |
| Project Has Ended | 1.75 | 1.56 | –.18** | J, S | 216/272 |
| **Differences among Shocks** (and Differences by Region in Differences by Shock) | | | | | |
| Technology – Product Demand | –.14 | .13 | .27** | | |
| Product Demand – Suggestions | .34*** | .19 | –.15 | | |
| Technology – Suggestions | .20** | .32*** | .12 | | |
| Combined Other Shocks – Suggestions | .31*** | .22** | .09 | | |

Note: Appendix 1 contains the full text of the questions referenced in the "Scenarios" column.
**Statistically significant at the .05 level on a Wilcoxon-Mann-Whitney rank-sum test (two-tailed) for one-way comparisons, and on a two-tailed t-test for differences in differences; ***at the .01 level. Results may not sum due to rounding.

hypothesis that layoffs are not considered fair when the employers' ability to pay is high or when the layoffs violate norms of reciprocity.

More surprisingly, respondents rated layoffs due to technological change as at least as acceptable (1.57 in Canada, 1.71 in the United States) as layoffs due to a negative product demand shock; the difference in rating corresponding to these two sources of shocks was not statistically significant. Thus, it appears that the violation of a reciprocity norm (whereby employees who have given a gift of new ideas should not be punished), rather than rent sharing, is responsible for the lower perceived fairness of layoffs.

### When Are "Gentle" Layoffs Fair?

Hypothesis (2a) posited that the "gentle" layoffs scenario (with advance notice, attempts to find alternative placement, and so forth) would be perceived as more fair than harsh layoffs (those that are unexpected and for which only two weeks' warning is given). Consistent with this hypothesis, on average, gentle layoffs were rated midway between "completely fair" and "acceptable" in Canada (2.35), and in the United States they were rated as acceptable (2.03) (see Table 2). Harsh layoffs were consistently rated as unfair, with a score near 1 in both nations.

Importantly, the literature on the new employment contract suggests that layoffs, even following employees' suggestions, will be seen as more consonant with norms of reciprocity when employers try to cushion the blow. Thus, Hypothesis (2b) posited that the type of shock should make little difference in how respondents rate gentle layoffs. This leveling effect of gentleness in the administration of layoffs, we suggested, should be more noticeable in the case of layoffs created by employee suggestions (which would normally be perceived as unfair) than in the case of those motivated by downturns in demand (which would normally be perceived as fair, anyway).

For both Canada and Silicon Valley, the gap in perceived fairness between harsh and gentle layoffs is slightly smaller for layoffs following suggestions (1.36 and 0.86 points) than for layoffs following demand shifts (1.63 and 1.14 points). These results do not support the hypothesis that gentleness matters more when employee suggestions lead to layoffs.

*Table 2.* Effects of Employer Reactions on the Perceived Fairness of Layoffs. (Mean perceived fairness: 3 = completely fair, 0 = very unfair)

| *Description* | *Canada* | *Silicon Valley* | *S.V.–Canada* | *Scenarios* | *No. Obs. Canada/S.V.* |
|---|---|---|---|---|---|
| **Employer Reaction** | | | | | |
| (Focal scenario has demand shock, professionals, and special skills) | | | | | |
| Hoard Labor | 2.67 | 2.01 | –.66*** | P | 24/138 |
| "Gentle" Layoffs | 2.55 | 2.12 | –.43*** | E | 131/133 |
| "Harsh" Layoffs | .92 | .98 | .05 | M | 139/120 |
| **Differences in Reactions** | | | | | |
| Hoard – Gentle | .12 | –.11 | –.23** | | |
| Gentle – Harsh | 1.63*** | 1.15*** | –.48*** | | |
| (Pooling sources of shocks and characteristics of employees for matched scenarios) | | | | | |
| Gentle | 2.35 | 2.03 | –.31*** | E, I, J, M | 468/544 |
| Harsh | .88 | 1.05 | .17*** | D, F, L, S | 482/515 |
| **Differences in Reactions** | | | | | |
| Gentle – Harsh | 1.46*** | 1.00*** | –.48*** | | |

*Notes*: See notes to Table 1.

Hypothesis 2c posited that hoarding labor, even if it means retraining and relocation, would always be viewed as fair. In fact, hoarding was rated between acceptable and completely fair, not substantively different from the rating given to gentle layoffs.

## The Role of CEO Bonuses

Theories of upward equity comparisons and theories of procedural justice lead to the prediction that layoffs are perceived as more fair when the CEO shares in the pain of downsizing than when the CEO receives a bonus for successful downsizing (Hypotheses 3a and 3b).

Supporting Hypothesis (3a), respondents felt layoffs were substantially more fair when the CEO refused his bonus than when CEO pay was not mentioned (1.48 versus 1.00, $p < .01$; only asked in the United States). (See Table 3.) We also find some support for Hypothesis (3b): perceived fairness was lower when the CEO was said to have received a bonus than when no bonus was mentioned, although the difference in means was only 0.10 on the four-point scale (.90 vs. 1.0, $p < .05$).

## The Role of Skill Specificity and Occupation

As expected (Hypothesis 4a), layoffs of employees with generally useful skills were rated as slightly more fair than layoffs of employees who are specialists in the company's unusual technology (with employees in both cases having an average of ten years' tenure at the employer). A gap of 0.17 was found between ratings of fairness for these two scenarios given by Silicon Valley respondents ($p < .05$); the question was not asked in Canada. (See Table 4.)

The results for occupation (Hypothesis 4b) were mixed. Laying off production workers was perceived by Canadian respondents as slightly more fair than laying off professionals (.95 versus 1.12, $p < .05$), but in the United States the gap was smaller (1.11 vs. 1.18) and not statistically significant.

## Canada versus Silicon Valley

Averaging over all matched scenarios, fairness ratings for layoffs were about the same in Silicon Valley and Canada (a difference of 0.004 points). This provides no support for Hypothesis (5a), which pre-

*Table 3.* Effects of CEO Compensation on the Perceived Fairness of Layoffs.
(Mean perceived fairness: 3 = completely fair, 0 = very unfair)

| *Description* | *Canada* | *Silicon Valley* | *S.V.–Canada* | *Scenarios* | *No. Obs. Canada/S.V.* |
|---|---|---|---|---|---|
| CEO Bonus Record High | n/a | 0.90 | n/a | H, Q | 272 |
| CEO Bonus Not Mentioned | 0.92 | 1.00 | 0.08 | D, F | 238/262 |
| CEO Bonus Refused | n/a | 1.48 | n/a | C, N | 247 |
| **Differences** | | | | | |
| Bonus High—Not Mentioned | | −0.10** | | | |
| Bonus Refused—Not Mentioned | | 0.48*** | | | |

*Notes*: See notes to Table 1.
If only one sample size is given, the question was asked only in the United States.

dicted higher acceptance of layoffs among Silicon Valley respondents than among Canadians.

While the mean fairness rating did not differ across nations, the gap between the perceived fairness of harsh and gentle layoffs was substantially larger in Canada (1.63 points versus 1.15). Also, Silicon Valley respondents gave a fairness rating to labor hoarding and "gentle" layoffs that was about 1/2 point lower, on a 3-point scale, than that given by Canadian respondents ($p < .01$). Given the number of comparisons we tested, sampling variation suggests that not much should be made of these differences on specific questions. Overall, Canadians were a bit more likely to respond with the extreme answers "Completely Fair" or "Very Unfair" (43.2% to 39.6%; both the test of equality of proportions and the chi-square test give $p = .06$, two-tailed). Other differences between the two nations were small and not statistically significant.

Hypothesis (5b) posited an interaction whereby layoffs of professionals would be more acceptable in Silicon Valley than in Canada. The divergences are in the hypothesized direction, but they are small and not statistically significant.

A companion study analyzed responses to questions concerning the fairness of pay cuts in Canada versus Silicon Valley (Charness and Levine 1999). As with the questions reviewed here on layoffs, Canadians were not more accepting of pay cuts than were Silicon Valley respondents, on average. Also paralleling results here, the perceived fairness of pay cuts varied depending on the reason cited for the cuts. Nevertheless, the main result across the studies is the fundamental similarity between Canadian and Silicon Valley respondents in their views of what justifies layoffs and pay cuts.

## Discussion

As we expected, layoffs due to lower product demand were perceived as more fair than those due to employee suggestions. This result appears to stem from norms of reciprocity, according to which employees should not be punished for their efforts, rather than from rent-sharing norms. Specifically, to the extent that technological change is thought to raise the employer's ability to pay, layoffs after technical changes should, according to norms of rent sharing, be viewed as unfair, but the respondents in our study considered new technology a somewhat legitimate justification for layoffs.

One qualification to that conclusion is in order. Although we intended respondents to see technological change as a factor that would increase an employer's ability to pay, respondents may instead have seen it as being necessary for the employer simply to keep up. That is, on the assumption that the new technologies were available to the entire industry, respondents might reasonably have supposed that the company

*Table 4.* Effects of Employee Characteristics on the Perceived Fairness of Layoffs. (Mean perceived fairness: 3 = completely fair, 0 = very unfair)

| *Description* | *Canada* | *Silicon Valley* | *S.V.–Canada* | *Scenarios* | *No. Obs. Canada/S.V.* |
|---|---|---|---|---|---|
| **Type of Skills** | | | | | |
| Employer-Specific | n/a | 1.15 | n/a | F, G, K, S | 517 |
| Generally Useful | n/a | 1.33 | n/a | A, B, O, R | 540 |
| Specific – General Skills | | −0.18*** | | R | |
| **Type of Employee** | | | | | |
| Professional | 0.95 | 1.11 | 0.16 | F, S | 246/257 |
| Production | 1.12 | 1.18 | 0.06 | G, K | 228/260 |
| Professional – Production | −0.17* | −0.07 | 0.10 | | |

*Notes:* See notes to Table 3.

adopted them just to stay in business. In that case, the respondents may have viewed the technology shock as reducing employment demand without increasing ability to pay. In future studies, researchers may want to distinguish labor-saving technological shocks—those that give a company a competitive advantage and, thus, raise its ability to pay—from technological changes that do not increase ability to pay.

As expected, "gentle" layoffs with advance notice, job-hunting assistance, and severance pay were considered more fair than harsh layoffs with no notice. Unexpectedly, labor hoarding was not considered fairer than gentle layoffs. Evidently, a significant proportion of respondents felt that requiring employees to relocate was not completely fair.

As expected, layoffs were perceived as more fair if the CEO shared the pain. Unexpectedly, the reduction in perceived fairness if the CEO received a record bonus for success in cutting costs was much smaller. This result defies expectations based both on norms of distributive justice (good and bad times should be shared equally) and on norms of procedural justice (decision-makers should be impartial and not benefit from a decision that harms others).

One possible explanation for the relative indifference to CEO bonuses is the fact that CEOs have been receiving bonuses based on accounting measures of costs and profits for many years—and, as noted above, many studies find that people tend to perceive what is usual as reasonably fair. The "Accept what is normal" heuristic may, in other words, carry more weight with respondents than do procedural justice norms of impartiality, which are clearly violated when the CEO benefits from employee layoffs. Alternatively, people may feel that in general, rewarding the CEO for cost cutting is fair, and the question's wording may not have sufficiently underscored the fact that the reduction in costs was directly tied to downsizing.

Layoffs of production employees and of employees with general skills were perceived as slightly more fair than layoffs of professionals and employees with firm-specific skills. Consistent with the results found by Rousseau and her co-authors, none of these effects were large. Specifically, Rousseau and Aquino (1993) found that seniority had a small statistically significant effect on fairness, while Rousseau and Anton (1988) found that employability (ease of finding the next job) had no effect. Overall, people appear to give some weight to seniority and employees' cost of job loss, but not a lot.

Contrary to expectations, layoffs were not, on average, more accepted in Silicon Valley than in Canada. Canadian respondents were less accepting of harsh layoffs but more accepting of gentle layoffs than were respondents in Silicon Valley. Given that we selected Silicon Valley specifically with the intent of finding regional differ-

ences, these results suggest that the U.S.-Canada gap in attitudes toward the market are not large. Lipset (1990) surveyed the larger literature on U.S.-Canada gaps in attitudes; he found many cases of differences and many cases of similarity. As discussed above, our respondents were in anglophone Canada, and we are unable to say whether respondents in Quebec would differ more sharply from U.S. respondents.

### Implications

Discussions in the managerial and popular press often stress the "new employment contract." Briefly, the story is that the old employment contract had rigid wages and employment, whereas under the new contract employers pay market wages and freely lay off surplus employees.

For managers, the results in this paper suggest that traditional internal labor market policies such as minimizing layoffs may still be useful in promoting high levels of skill and effort. Moreover, when layoffs are necessary, it appears that providing a justification from an exogenous source, having top executives share the pain, and providing notice and assistance all can improve perceptions of fairness. These results echo prescriptions found elsewhere in the literature (for example, Brockner 1992).

Importantly, respondents did not feel that layoffs following higher productivity due to employees' suggestions were as fair as layoffs due to other causes. This result highlights the tension between efforts to reduce costs via employee involvement and via downsizing. Managers should be aware that reassuring employees that their suggestions will not lead to downsizing may increase employees' willingness to contribute ideas.

Canadians' reputation for norms that are less responsive to the market than those held by U.S. residents may have dissuaded some managers from choosing to site new workplaces in Canada. Our results, however, suggest that U.S. respondents in one of the most market-oriented regions of the nation had norms regarding layoffs similar to those of anglophone Canadians. Thus, these results suggest that concerns about a U.S.-Canada attitude gap may not be warranted.

For public policy–makers, these results suggest that labor market policies should not assume employees have given up hope for long-term stable jobs. Product market and organizational forces may keep the supply of such jobs below demand, but employees apparently have rather traditional ideas about what is fair treatment.

For scholars of psychological employment contracts and of fairness theories, our results pose at least two puzzles. First, no theory of justice predicted our finding that although "sharing of the pain" by a CEO can increase perceptions of fairness, a CEO's receipt of a bonus does not appreciably reduce perceived fairness. Second, why is the gap between the perceived fairness of gentle and harsh layoffs so much greater in Canada than in the United States? Is it possible that the implicit contract is clearer in Canada, so that responses tend to be more bipolar?

Our results bear on current models in which a person's happiness is affected by nonpecuniary considerations such as equity and reciprocity (for example, Rabin 1993; Bolton and Ockenfels 1997; Fehr and Shmidt 1997; Charness and Rabin 1999). One of the major debates in this area is whether the apparent concern for "fairness" observed in many experiments is driven more by a desire to equalize payoffs (sharing of rents) or by a desire to reciprocate kind or harsh actions. Our finding that layoffs associated with employee suggestions were judged much less fair than layoffs associated with new technology suggests that in these contexts, norms of reciprocity are more important than norms of rent-sharing.

### Limitations and Further Research

This study has a number of limitations, each of which suggests additional possible research.

Most important, people's responses to hypothetical surveys may differ from attitudes of employees in a real layoff situa-

tion. It is important to use alternative methods to check the validity of these findings. For example, researchers could survey victims or survivors of layoffs or measure behaviors of survivors in cases resembling these scenarios. Perhaps more practically, researchers could create scenarios that match somewhat similar pairs of real-life situations, and see whether survey results from people in the actual situations are similar to those from participants in a quasi-experiment.[8] Still, in this connection, the match between several of our results (when conditions overlapped) and those of Brockner and his co-authors (1994) is reassuring, as Brockner et al. surveyed actual layoff survivors and victims, while we surveyed a random sample.

Our finding of only modest differences between the U.S. and Canadian residents in their notions of fairness concerning layoffs leads to more questions. First, if we were to extend the range of cultures, would fairness perceptions diverge further? (We are currently engaged in replicating and extending these findings to additional continents.) Extensions over time are important as well, to see if increases in the unemployment rate decrease perceptions of the fairness of layoffs as the cost of job loss rises, increase the perception of fairness as people become accustomed to layoffs, or have little effect because perceptions are due to more persistent cultural values.

The scenarios we presented included multiple features, but still more scenarios might help determine which elements of the "gentler" layoffs make a difference: advance notice, severance pay, or only the combination? The sources of shocks could also be further broken down. For example, the technology shock condition could specify either a company-specific shock (implying an increase in the employer's ability to pay) or an industry-wide shock (implying that adoption is necessary for corporate survival). With more detailed scenarios one could examine Brockner et al.'s (1994) hypothesis that either low cost of job loss or high procedural justice is sufficient for respondents to feel a layoff is fair.

Finally, this survey did not collect demographic information on respondents. It is possible that the occupation mix of respondents in one region differed greatly from that of respondents in another region, and that regional gaps would emerge if the analysis controlled for occupational mix. More generally, it would be useful to see how answers differ according to respondent characteristics. For example, Gorman and Kehr (1988) found that top managers were much more likely than a random sample of citizens to view pay cuts as fair. In the realm of layoffs (which are much more common than pay cuts), we need to know how much managers and their subordinates share a common vision of what is fair. Again, the rationale for the differences is also important. It may be that managers perceive pay cuts as fair in large part because they feel pay cuts can avoid layoffs, while other respondents have lower confidence in such a link.

[8]We thank an anonymous referee for this suggestion.

## APPENDIX 1

## THE SURVEY QUESTIONS

This study analyzes responses to 19 questions about layoffs. All 19 questions were asked in Silicon Valley, and 11 of the 19 were also asked in Canada. Surveys were designed so that no respondent was asked closely comparable questions; 3 or 4 questions were asked in each phone interview.

All questions involved scenarios in which, due to some "shock," an employer was laying off workers. The employees could be either high-technology engineers or production workers. The layoff could be gentle, harsh, or labor-hoarding. Workers developed either employer-specific or generally useful skills. In Silicon Valley, some questions included mention of a CEO either receiving a record bonus or refusing a bonus.

The first sentence in every survey question describes why the layoff is occurring:

a1) "A company faced lower product demand due to shifts in the market; the viability of the employer was threatened."

a2) "A company has higher productivity due to the introduction of some new technology."

a3) "A company has higher productivity due to the employees' suggestions."

a4) "The current project for a group of high-technology engineers [a4': production workers] has ended. The company has decided to lay them off."

The second sentence (except in the case of a4 or a4' above) describes the type of worker being laid off:

b1: "Thus, the company is laying off some high-technology engineers."

b2: "Thus, the company is laying off some production workers."

The next sentence mentions the type of skills developed by the affected workers:

c1) "These workers are specialists in this company's unusual technology, with an average of ten years' tenure at this employer."

c2) "The affected engineers [production workers] have an average of ten years' tenure at this employer and specialize in widely used hardware, so that their skills would be useful in another job."

The next sentence states the employer's response to the shock:

d1: "The company is laying off the employees with two weeks' warning. These are the first layoffs in the company's history."

d2: "Before the layoff, the employer gave each employee four paid weeks to find another job elsewhere in the company. Those who could not find a new position received severance pay based on age and years of service. The company provided out-placement service including counseling and resume-writing workshops. Employees knew layoffs were likely in this circumstance."

d3: "Although the company has a surplus of workers, it has decided to keep a set of high-technology engineers [production workers] on the payroll until work can be found for them. The company may shift the workers to a new line of work, and may require them to relocate."

Finally, a CEO bonus might be mentioned:

e1) No mention.

e2) "The CEO received a record bonus for his success in cutting costs [introducing the new technology]."

e3) "The CEO turned down his bonus this year because of the unexpected need for layoffs."

The 19 questions consist of concatenations of these sentences, in the following combinations:

| | |
|---|---|
| A. | a1, b1, c2, d1, e1 |
| B. | a4, c2, d1, e1 |
| C. | a1, b1, c1, d1, e3 |
| D. | a2, b1, c1, d1, e1 |
| E. | a2, b1, c1, d2, e1 |
| F. | a1, b1, c1, d1, e1 |
| G. | a4, c1, d1, e1 |
| H | a1, b1, c1, d1, e2 |
| I. | a3, b1, c1, d2, e1 |
| J. | a4, c1, d2, e1 |
| K. | a1, b2, c1, d1, e1 |
| L. | a3, b1, c1, d1, e1 |
| M. | a1, b1, c1, d2, e1 |
| N. | a2, b1, c1, d1, e3 |
| O. | a4, c2, d1, e1 |
| P. | a1, b1, c1, d3, e1 |
| Q. | a2, b1, c1, d1, e2 |
| R. | a1, b2, c2, d1, e1 |
| S. | a4, c1, d1, e1 |

For example, question I is:

"A company has higher productivity due to the employees' suggestions. Thus, the company is laying off some high-technology engineers. These workers are specialists in this company's unusual technology, with an average of ten years' tenure at this employer. Before the layoff, the employer gave each employee four paid weeks to find another job elsewhere in the company. Those who could not find a new position received severance pay based on age and years of service. The company provided out-placement service including counseling and resume-writing workshops. Employees knew layoffs were likely in this circumstance."

Questions A, B, C, H, N, O, Q, and R were asked only in Silicon Valley.

**APPENDIX 2**

**COMPLETE SURVEY RESULTS**[a]

| | *Canada* | | | | | *Silicon Valley* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *Scenario* | *C* | *A* | *U* | *V* | *Mean* | *C* | *A* | *U* | *V* | *Mean* |
| A. Demand Shock, Harsh Layoffs, Professionals, General Skills | | | | | | 8 | 34 | 64 | 31 | 1.14 |
| B. Project End, Harsh Layoffs, Production, General Skills | | | | | | 15 | 49 | 50 | 19 | 1.45 |
| C. Demand Shock, Harsh Layoffs, Professionals, Special Skills, CEO Refused Bonus | | | | | | 11 | 49 | 40 | 21 | 1.41 |
| D. New Technology, Harsh Layoffs, Professionals, Special Skills | 2 | 26 | 56 | 39 | 0.93 | 8 | 21 | 55 | 34 | 1.03 |
| E. New Technology, Gentle Layoffs, Professionals, Special Skills | 50 | 49 | 15 | 3 | 2.25 | 67 | 53 | 10 | 8 | 2.30 |
| F. Demand Shock, Harsh Layoffs, Professionals, Special Skills | 5 | 27 | 59 | 48 | 0.92 | 5 | 22 | 58 | 35 | 0.98 |
| G. Project End, Harsh Layoffs, Production, Special Skills | 8 | 32 | 42 | 27 | 1.19 | 9 | 33 | 55 | 26 | 1.20 |
| H. Demand Shock, Harsh Layoffs, Professionals, Special Skills, CEO Record Bonus | | | | | | 9 | 25 | 43 | 57 | 0.90 |
| I. Employees' Suggestions, Gentle Layoffs, Professionals, Special Skills | 45 | 35 | 23 | 8 | 2.05 | 32 | 69 | 17 | 20 | 1.82 |
| J. Project End, Gentle Layoffs, Professionals, Special Skills | 61 | 44 | 3 | 1 | 2.51 | 36 | 64 | 19 | 16 | 1.89 |
| K. Demand Shock, Harsh Layoffs, Production, Special Skills | 4 | 30 | 55 | 30 | 1.07 | 7 | 32 | 73 | 25 | 1.15 |
| L. Employees' Suggestions, Harsh Layoffs, Professionals, Special Skills | 1 | 11 | 53 | 48 | 0.69 | 14 | 20 | 53 | 53 | 0.96 |
| M. Demand Shock, Gentle Layoffs, Professionals, Special Skills | 77 | 50 | 3 | 1 | 2.55 | 62 | 40 | 16 | 15 | 2.12 |
| N. New Technology, Harsh Layoffs, Professionals, Special Skills, CEO refused bonus | | | | | | 25 | 34 | 51 | 16 | 1.54 |
| O. Project End, Harsh Layoffs, Professionals, General Skills | | | | | | 17 | 60 | 39 | 19 | 1.56 |

*Continued*

**APPENDIX 2**

**Continued**

| Scenario | Canada C | Canada A | Canada U | Canada V | Canada Mean | Silicon Valley C | Silicon Valley A | Silicon Valley U | Silicon Valley V | Silicon Valley Mean |
|---|---|---|---|---|---|---|---|---|---|---|
| P. Demand Shock, Hoard labor, Professionals, Special Skills | 16 | 8 | 0 | 0 | 2.67 | 40 | 65 | 27 | 6 | 2.01 |
| Q. New Technology, Harsh Layoffs, Professionals, Special Skills, CEO Record Bonus | | | | | | 19 | 19 | 31 | 69 | 0.91 |
| R. Demand Shock, Harsh Layoffs, Production, General Skills | | | | | | 22 | 30 | 33 | 50 | 1.18 |
| S. Project End, Harsh Layoffs, Professionals, Special Skills | 6 | 25 | 37 | 39 | 0.98 | 21 | 29 | 49 | 38 | 1.24 |

[a]Number of respondents who gave each response for perceived fairness of the scenario, with C = completely fair (3 in calculations presented in the text); A = acceptable (2); U = slightly unfair (1); and V = very unfair (0).

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