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Working Paper # 430

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INTRODUCTION

The use of strike replacement workers is one of the most controversial issues facing the actors in the industrial relations system, as evident in the attention the issue attracts during debates on industrial relations law and/or when replacement workers are used by employers. Labour and labour rights advocates argue that laws prohibiting the use of replacement workers are fundamental in our system of industrial democracy and leads to, among other outcomes, less strike activity. Employers and “free market” advocates, on the other hand, contend that banning the use of replacement workers leads to increased bargaining power for unions and increased strike activity. However, there is a relative paucity of empirical research on the effects of employers actually *using* strike replacements on such outcomes as strike duration (notable exceptions include Gramm, 1991; Gramm and Schnell, 1994; Olson, 1990).

Canada, with its division of labour law administration by provincial and federal jurisdictions, may be viewed as fertile grounds for “natural experiments.” That is, as a result of varying labour law regimes, the experience of jurisdictions that have experimented with relevant strike laws can be analyzed, comparing the results against time and with other provinces that lack these provisions, keeping other factors constant (see for example, Budd, 1996; Gunderson, Kervin and Reid, 1989; Gunderson and Melino, 1990). Further, such variations in law allow for a richer analysis of the effects of actually using strike replacements on strike activity. That is, this issue can be studied within the context of the legal and economic environment present at the time of the strike. Yet, to the best knowledge of the authors, there is no empirical study on this latter issue; that is, *the effects of the use of replacement workers on strike duration in Canada*.

Further, as Kaufman (1992) notes, behavioural-based strike related research diminished

considerably in the 1980s. An analysis of the literature suggests that the situation has not improved in the 1990s. In fact, apart from the labour law-oriented studies, all the contemporary studies on the strike replacement issue utilize theoretical and methodological frameworks drawn largely from economics. In cognizance of the fact that two of the earliest studies on strike replacements successfully investigated sociological and psychological dimensions on the antecedents and consequences of using replacement workers using largely qualitative case study approaches, it may be worthwhile to complement quantitative methodologies with this line of research. A synthesis of disciplinary orientations to research should provide for a richer analysis and, in all likelihood, better explanations of reality. Thus, the major objective of this study is to analyze the effects of the use of replacement workers on strike duration in Canada, using both quantitative and qualitative approaches.

II. A REVIEW OF THE RHETORIC, THEORY AND EMPIRICAL EVIDENCE

The debate on the effects of the use of replacement workers on industrial relations outcomes (such as strike activity and wages) is marked by considerable passion and controversy, with organized labour and its supporters generally arguing a case for a ban on the use of replacement workers (both permanent and temporary), and employers and “free market” advocates generally opposing such bans (for detailed reviews of these arguments, see Singh and Jain, 1997; Gramm, 1991; Budd, 1996; Weiler, 1980). In general, proponents for a ban contend that the use of strike replacements allows for increased strike activity (strike incidence and duration), increased union decertifications and a more precarious job security situation for workers, and increased picket line violence. Opponents of a ban, on the other hand, contend that

denying employers the freedom to hire replacements increases union bargaining power which leads to high and inefficient wage structures which, in turn, leads to a negative impact on employment, production and the economy as a whole. With specific reference to the effects of the use of replacements on strike duration, organized labour and friends usually contend that this practice leads to longer strikes since the employer's ability to continue its business operations is not seriously affected and its ability to withstand the strike becomes stronger than the union's; that is, the employer's ability to bear the costs of a strike is stronger than the union's. In light of these conflicting arguments, it is imperative that the theory and empirical research be discussed.

There are no theories that specifically address the strike replacement issue; however, standard models of strikes may be used to explain relevant aspects. The *joint-cost model*, one such standard model, suggests that the greater the joint costs of a strike to unions and employers, the less the chances of costly strikes (Kennan, 1986; Reder and Neumann, 1980). That is, both sides rationally calculate their respective costs of a strike versus other alternatives. The less costly a strike is to a party the more likely that party will be willing to bear the consequences of a confrontation. In terms of strike duration, the model suggests an inverse relationship with strike costs. That is, it can be deducted that the use of replacement workers may reduce the costs to employers (since production may not be significantly affected), thus increasing their ability and willingness to withstand a longer than usual strikes.

There is a sparse body of empirical research on the effects of strike replacements on various industrial relations outcomes. As Kaufman (1992), in a strike review article notes, despite the fact that the strike replacement issue was one of the most important issues in the 1980s, "... this subject is almost entirely missing from the industrial relations literature"

(p.119). While considerable strides have been made in such research in the 1990s, the literature is still embryonic in many aspects. Two distinct streams of the extant research can be identified: one that examines the *probable effects of strike replacement laws* on outcomes such as strike activity and changes in bargaining power and wages; and, another stream that focuses on the *actual use of replacement workers* on these outcomes.

Results in the first category are mixed (please see Table 1). Gunderson and colleagues (Gunderson, Kervin and Reid, 1989; Gunderson and Melino, 1990), using data on relatively large samples of Canadian strikes, found that statutes prohibiting the use of replacement workers resulted in increased strike probabilities and longer strikes. However, as Gunderson and Melino (1990, p.308) noted, “. . . the effect of the antiscab legislation is identified only through its existence in Quebec since 1977. It may be picking up the effects of other changes in that province, which are not controlled for in our analysis.” Budd (1996), on the other hand, also using a relatively large sample of Canadian strikes, found no evidence that the presence of legislation affecting the use of strike replacements significantly affects strike duration.

The results of studies that analyze the effects of the actual use of strike replacements is unambiguous: this practice leads to increased strike activity, including longer strikes (see Table 1). Two early studies used a broadly case-study approach in analyzing the employer’s ability to continue operations with the use of strike replacements. In an in-depth study, using archival data and interviews, Hutchinson (1962) reported that some of the main determinants of an employer’s decision to continue operations included the “right by employers to operate without union labour,” the associated costs, and behavioural factors such as the personality and attitudes of the actors. Perry, Kramer and Schneider (1982), also using interviews and archival data to study

strikes involving replacement workers, found that while employers were able to continue their operations to meet market needs, there was a high turnover among permanent replacements, “emotional encounters” and picket line violence, and an increase in the bargaining power of employers as indicated through concessionary wage settlements by unions.

In more recent studies, Gramm (1991), using mainly descriptive statistics, examined the differences across strikes in which permanent replacements (n=10), versus temporary replacements (n=4), were used by struck firms. Using survey data on 53 strikes in the United States, she found that, among other results, strikes were longer when permanent replacements were used. In a related study, Schnell and Gramm (1994) investigated the effects of an employer announcing an intent to use permanent strike replacements and the actual use of such replacements on strike duration. Using hazard estimates on a stratified sample of 271 strikes in 1985 and 1989 in the United States, they found that both actions by employers were associated with longer strikes. Further, Olson (1990), using duration analysis in a study on the use of replacement workers in a relatively large sample of strikes in the United States, found that the use of replacement workers led to longer strikes. Card and Olson (1992), using archival strike data for the 1880s, reported similar results. A study by the United States General Accounting Office, using descriptive statistics, also found that the practice hiring permanent replacements was associated with longer strikes (US GAO, 1991).

As the above review of the empirical and case studies suggests, while there are a few studies in the United States that have analyzed the effects of the actual use of replacement workers, there are no similar studies, to the best knowledge of the authors, outside of the United States. Canada offers a unique advantage in the study of the effects and reform of labour law: the

experience of jurisdictions with relevant laws can be viewed as “dry runs” for others contemplating similar changes. Further, a careful analysis of the literature reveals that most studies have used samples comprising mainly of large bargaining units (notable exceptions are Schnell and Gramm, 1994; Olson, 1990), thus prompting a need for samples with more variations in the size of bargaining units. Thus, with the addition of new data and methodological perspectives, this study may be viewed as an extension of work initiated in the United States on the effects of the use of replacement workers on strike duration.

III. METHODOLOGY

Two distinct approaches are used in this study. First, a quantitative analysis of the strike data is performed; no model is developed and tested, but rather the empirical relationships between the use of strike replacements and duration are analyzed. Using a case study approach, this is then complemented by in-depth qualitative research on two of these strikes, one in which strike replacements were used and another in which they were not. This should serve to enrich the quantitative analyses².

Quantitative Analyses

Data: Strike data were acquired from Human Resources Development Canada for work stoppages in the federal jurisdiction. The Canadian federal jurisdiction covers approximately 10 percent of the workforce and include industries/organizations that cut across more than one

²In this paper, we use qualitative research to supplement the quantitative study; however, this does not imply that this should always be the case. There may be instances where quantitative work can be used to supplement qualitative research or both approaches can be integrated into a single framework.

provinces (such as railroads, banks, ports, etc.). During the period covered in this study (1991-1997), the federal jurisdiction did not have a ban on permanent replacement workers and the statutes were silent on the use of temporary replacement workers³. However, in Canada, the hiring of permanent replacements has been effectively cut from an employer's strategies through case law and custom and practice⁴. As a recent report on comparative labour laws across North America, by the body overseeing NAFTA's Labour Side Accord, concluded:

“[p]ermanent replacements are completely prohibited in Canada through law, jurisprudence or practice. In Canada, the striker replacement debate turns on the use of temporary replacements - the use of managers or other non-striking employees of the employer, or the hiring of temporary replacement workers. A consensus prevails that views permanent striker replacements as fundamentally violative of workers' freedom of association and right to strike” (NAALC, 1996, p.28)⁵.

The random sample consisted of approximately 80 per cent all strikes in the federal jurisdiction for the period January, 1991- December, 1997. The original sample comprised 100 strikes. However, seven cases were excluded: four because they were not independent (though involving different bargaining units, the strikes occurred in the same organization, involved the same union, and lasted the same time/duration) and three because the bargaining units involved

³Note, however, that as a result of recent changes in the Canada Labour Code (s.94(2)(1)), both temporary and permanent replacements are now prohibited in the federal jurisdiction, if it can be proven that replacements are being used to undermine the union's “representative capacity.”

⁴There are, of course, some exceptions, including the 1994 strike at the Irving company in New Brunswick in which several strikers were not rehired after the union “lost” the strike.

⁵In the United States, as a result of the *Mackay* case, employers are allowed to permanently replace striking workers during economic strikes (for a review of these laws/cases see Spector, 1992; Singh and Jain, 1997; Weiler, 1980). In Canada, there are considerable variations in the statutes (see Table 2).

were large enough to have a disproportionate impact on the effects of this variable. Of the 93 strikes in the final sample, replacement workers were used in 17 cases (approx. 18%). Basic descriptive statistics of these sub-samples and full sample are shown in Table 3 below.

INSERT TABLE 3 ABOUT HERE

Measures: The dependent variable, *strike duration*, as in previous research (Gunderson, et al, 1989; Budd, 1996) was measured as days lost as a result of the strike (a log transformation was necessary for linear regression analysis). The end date was recorded as when the strikers returned to their jobs. The overall mean strike duration was 90 days, with the shortest being one day and the longest 816 days; the mean length of a strike when replacement workers were used was 280 days, compared to 48 days when replacements were not used.

The main traditional independent and control variables, viz., size of bargaining unit, industry and time/year were derived from the literature; that is, these variables have been consistently examined, and sometimes found significant, in previous research (Gunderson, et al, 1989; Gunderson and Melino, 1990; Schnell and Gramm, 1994; Budd, 1996). Sector was included to test the argument that industrial relations in the public and private sectors are substantially different (Troy, 1992).

The *use of replacement workers* was coded using an indicator variable (1 = replacements used; 0 = no replacements used); *size of the bargaining unit* was measured as the number of workers within a bargaining unit (this variable also had to be log transformed); *sector* was divided into private and public and coded using an indicator variable (1 = public; 0 = private). A

proxy was created to represent the nature of the *legal environment with respect to strike replacements*. Since permanent replacements are not generally used in Canada, two basic categories exist: provinces with an outright prohibition (both temporary and permanent replacements) and those with a partial prohibition (only temporary replacements allowed). Thus there were two categories (binary coded), viz., outright prohibition and a lack of an outright prohibition; obviously, the year of the strike was also considered (1 = strikes that occurred in provinces with outright prohibitions at the time of the strike; 0 = otherwise). See Table 2 for a summary of strike replacement statutes in Canada. An outright ban existed in Quebec from 1977 - present; Ontario from January 1993 - November 1995; and in British Columbia from January 1993 - present (see Budd, 1996, and Singh and Jain, 1997, for accounts on the existence of various strike replacement laws in Canada, including the provinces). *Controls* were established for industry and time/year of strikes. There were two main industries: transportation and communications; firms in other industries were placed in a third category. Year of strike was recorded as the year in which the strike began. Both industry and year of strike were dummy coded.

Analyses: Since all the strikes were completed, OLS regression analyses were used to evaluate the effects of the use of replacement workers, plus the other independent and control variables, on strike duration. Four models were necessary: one without controlling for industry and time, one each controlling for industry and time, and another controlling for both.

Qualitative Analyses

Information on two strikes, one involving *Air Ontario* and the *Canadian Union of Public Employees (CUPE)* and the other involving *Air Ontario* and the *Canadian Airlines Pilot*

Association (CALPA), were obtained through archival data (newspapers, press releases, company and union documents, etc.), as well as interviews conducted with senior representatives from union and management. Replacement workers were used in the CUPE strike but not the CALPA dispute. While the quantitative analysis revealed no significant differences across the two strike situations (use of replacements versus non-use) in terms of bargaining unit size, sector, year, industry, nor region (province), for ease of comparability purposes, these two broadly similar strikes were selected (in terms of the independent and control variables in the quantitative analyses), with the main difference being the actual use of replacement workers. That is, both strikes occurred in the same province, about the same time, in the same industry, and involved bargaining units of similar sizes.

IV. RESULTS AND DISCUSSION

Quantitative Study

As Table 4 shows, there is a significant relationship between the use of replacement workers and strike duration; that is, the use of strike replacements is associated with longer strikes, at a statistically significant level. The only the significant relationship in the correlations suggests that strikes are shorter in larger bargaining units. The inter-correlations among the independent variables are low and not significant, thus decreasing the potential for multicollinearity problems in the OLS regressions.

INSERT TABLES 4 AND 5 ABOUT HERE

As Table 5 shows, of the variables measured, the use of replacement workers is the only significant variable that affects strike duration. Of importance, the presence of legal prohibitions is not statistically significant. The size of the bargaining unit, sector and industry of the struck organization, and the year of the strike are also not statistically significant. None of the assumptions necessary for linear regression analyses are violated.

The results of this study support the contention by trade unionists and others that the use of replacement workers leads to longer strikes. These results are also largely consistent with previous research on this issue (Gramm, 1991; Schnell and Gramm, 1994; Olson, 1990). It does appear that the use of strike replacements decreases the costs of the strike to be borne by employers, thus decreasing their willingness to compromise in settling the dispute in a short time. The use of replacements may also lead to a deterioration of union-management relations and a hardening of positions; this may result in bitter and longer strikes.

Further, the results do not support the contention that the legal environment with respect to general prohibition of strike replacements has a significant effect on strike duration. Previous studies examined the effects of the presence of laws prohibiting the use of strike replacements, a focus quite different from that of this study, and the findings were equivocal. Whilst Budd (1996) reported no significant effects, Gunderson, Kervin and Reid (1989) and Gunderson and Melino (1990) found that the presence of a general prohibition on strike replacements in Quebec is associated with longer strikes.

In our study, only data from the federal jurisdiction were analyzed. Nevertheless, the strikes occurred across Canada and in jurisdictions with different strike replacement legislation. Since federal law permitted the use of temporary strike replacements during the period of this

study, the decision on whether or not to use such workers was left up to management, presumably taking into consideration their provincial legal and economic environments. Thus, the bottom line is that having a ban, *per se*, does not significantly affect strike duration. Rather, it is the employer's strategy of using strike replacements that is associated with longer strikes. This implies that a ban on replacement workers may lead to shorter strikes.

However, as a result of a few limitations, these findings must be interpreted with some caution. First, the sample is relatively small and in the interest of parsimony, only a few independent variables were analyzed. It would be ideal if future research can utilize larger samples. Secondly, a simple OLS one-stage regression analysis, as performed in this study, does not take into consideration a number of factors. For instance, the use of replacement workers could be endogenized and the two-way relationship with strike duration tested using more advanced statistical techniques. That is, it could be that longer strikes lead to the use of replacement workers. Future research should address this shortcoming.

These results also have implications for policy making, taking into consideration the above limitations and cautionary advice. As noted earlier in the literature review, policy makers are usually confronted with arguments for and against banning strike replacements. In the United States, the use of permanent replacements is permitted by law, via the *Mackay* doctrine. It does appear from these preliminary results that the fears of negative consequences of legal strike replacement prohibitions on strike duration, and consequently on employment and the economy, may be precariously grounded. In fact, the results suggest that the use of replacement workers, allowed by legislation, leads to longer, and by logical extension, more costly strikes.

In an effort to better understand some of the underlying dimensions evident in the use of

replacement workers, it is useful to conduct in-depth case studies on strikes where such workers are used versus strikes where they are not.

Case Studies

Background: The Actors

Air Ontario, the employer in both disputes (involving CUPE and CALPA, as mentioned earlier) is a member of Air Canada's regional airlines that operates mainly in the Ontario market. The other regional affiliates are Air BC, Air Nova, and Air Alliance; these airlines service other regional markets in Canada. Air Ontario, serving over one million passengers a year, is the most prosperous of these affiliates, and has routes throughout Ontario, as well as east to Montreal, west to Winnipeg, and to several U.S. destinations. Though entirely owned by Air Canada, it is a separate corporate entity and the aircraft it operates are, in general, smaller and "less prestigious" for pilots. The four regional airlines account for about 10 percent of Air Canada's revenue which was about \$5 billion in 1996 (Fitzpatrick, 1997).

In 1994, CALPA, then representing all pilots at Air Canada and the regional airlines, treating Air Canada and the regional airlines as a single employer, proposed a merged seniority system for all pilots in the airlines owned by Air Canada to management. The intent was to offer pilots at the regional airlines an opportunity to bid on the more lucrative and prestigious jobs at Air Canada since, under conditions present at that time, these pilots could have worked only at the regional airlines. The Air Canada pilots did not agree to the concept of a merged seniority list and the case went to an arbitrator who issued an award in favour of a "dovetailed seniority" for the regional pilots (at the lower end of Air Canada's seniority list). Following this award, the Air Canada pilots broke from CALPA in 1995 to form the Air Canada Pilots Association

(ACPA).

At the time of the strike in 1997, CALPA represented approximately 900 regional pilots in Air Canada's four regional airlines, with the Ontario division having about 225 members. The regional airlines and Air Canada have separate collective agreements with the respective "Master Executive Councils" of CALPA and with ACPA.

The Canadian Union of Public Employees is Canada's largest trade union and represents workers in a diverse range of organizations across the country, including the service sector. At the time of the strike, 146 flight attendants were represented by the Airline Division of CUPE in Ontario.

The federal government has jurisdiction of the airline industry and has a large stake in the outcomes of the union-management relationship since work stoppages in this industry can have a serious impact on the government and the public. While the federal government insists on using conciliation and arbitration to solve problems in its jurisdiction, it has resorted to back-to-work legislation on several occasions.

Negotiations and Strikes: A Discussion of the Conversion Processes and Outcomes

On January 5, 1997, after five months of negotiations with Air Ontario, CUPE called out its Ontario flight attendant's membership on a legal strike; these attendants were without a contract since August 31, 1996. The union's main demands were wage parity with their counterparts at Air Canada and other regional airlines, job security, and improvements in working conditions. Nevertheless, the use of replacement workers was a major "area of aggravation" even before the strike was called and continued to be a source of conflict throughout the strike.

Air Ontario, in anticipation of a strike, began training replacement workers almost three months before the actual strike. As Steve Smith, the airline's president remarked, "training is a long, drawn-out process so we had no choice but to start (early)" (Canadian Press Newswire, Jan. 5, 1997). Eighty-five replacement workers were hired and trained. However, this move appeared to have set the stage for a longer than usual strike. As Lisa Hutchinson, the local union president noted, the strike started even earlier than scheduled because the company began using replacement workers on some flights (Canadian Press Newswire, Jan. 5, 1997).

Even before the strike began, CUPE indicated that the use of strike replacements may sour collective bargaining. In a direct appeal to the replacement workers at the time of hiring, CUPE stated that:

"...we welcome your interest in the aviation industry and your desire to become a flight attendant. These are interests we share with you. We love our jobs. It is for this reason that we want you to know the real reason Air Ontario is hiring "temporary flight attendants" . . . the 146 flight attendants at Air Ontario have been bargaining since July for a new collective agreement with decent pay, improved working conditions and job security . . . but Air Ontario has jumped the gun. They reacted by holding this hiring meeting for "replacement workers" to intimidate us . . . you will be expected to work during a strike or lockout and cross our legal picket lines . . . most importantly we are guaranteed our jobs . . . once this dispute is over. You will be terminated at that time . . ." (CUPE Statement, Nov. 6, 1996).

The airline continued its operations during the strike with the use of the 85 replacement workers, even though many services were cut and passengers had to be re-routed via alternative methods, including the use of other airlines, buses, and trains. The strike replacements also faced "hostile" airline pilots, many of whom were not comfortable flying with attendants with "limited" training. In fact, many replacement attendants failed to answer pilots' questions on general procedures and thus could not be used (Daw, 1997); further, a number of flights were delayed or canceled when pilots initially refused to fly with replacement flight attendants

(London Free Press, Jan. 7, 1997).

Four days into the CUPE/Air Ontario strike, the pilots themselves went on strike, as CALPA called out its members in Ontario (and other regional airlines) on a legal strike on January 9, 1997. Like the flight attendants, the pilots were without a contract for about 5 months. The main demands by CALPA related to job security and wages, both tied to the seniority list (Bertin, 1996). The strike issues were made more complex because one of the demands by CALPA for a merged seniority list with Air Canada pilots was opposed by the Air Canada Pilots Association.

Air Ontario reacted to the strike by using some of its parent's company planes, as well as some chartered airlines. However, its services were severely hampered, with operations often grinding to a halt. Nevertheless, the company did not use replacement workers to fly the airline's planes. In fact, unlike the CUPE situation, the airline's spokesperson emphatically stated at the beginning of the conflict that they had no intention of using replacement pilots (Globe and Mail, Jan. 10, 1997).

Both strikes dragged on for over two months, with the CALPA strike ending 21 days before CUPE's. The strikes by CUPE and CALPA against Air Ontario lasted 80 and 59 days, respectively. Thus, the pilots had to cross the picket lines of their colleagues in prior picketing. In both settlements, the unions won wage increases and improved job security clauses (Collective Bargaining Agreements, 1997).

The strikes by CUPE and CALPA against Air Ontario offer a few perspectives on the dynamics involved in the use of replacement workers and probable reasons why strikes may be longer when such workers are used. First, it is evident that the use of replacement workers

introduces an additional stress factor to an already tense strike situation. Strike action by workers is usually a last resort and implies considerable sacrifice. Replacement workers pose a threat to such actions and the situation becomes charged with emotions. In Canada, the use of replacement workers is also seen by unions as a strategy by management to break the will of strikers and contempt for their legal right to strike. This leads to a loss in trust in management and a deterioration in the relationship between the two actors, which ultimately leads to more pronounced bitterness and longer strikes. The leader of Ontario's New Democratic Party, in reference to the strike by flight attendants at Air Ontario, remarked that, "...the Conservative labour legislation to allow replacement workers during strikes is a bid to pit worker against worker and bid down the price of jobs" (Bender and Rumleski, 1997). Pradeep Kumar (Professor at Queen's University) was also reported as saying that the conservative government's repeal of laws that prohibit the use of replacement workers during a strike made it more difficult for unions and management to settle disputes, including the one at Air Ontario (Canadian Press Newswire, November 11, 1996).

Second, as evident in the two strike situations, the replaceability of the strikers is an important factor. While the flight attendants may have been replaceable by a group of quickly trained workers, the pilots could not have been replaced with such a management strategy because of the skills needed for this job. In the pilots' strike, management used chartered airlines but with limited success. The bottom line was that management could have maintained its operations at an acceptable level without the striking flight attendants but not without the pilots. Thus, there is support for the *joint-cost* model in these cases. That is, the cost of the strike was less for management in the CUPE dispute and this may have led to it being longer than the

pilots' strike. It is important to note that the replacement workers were paid less than the strikers.

A third and related issue is the nature of the occupation and industry in question. It seems logical to rationalize that there would be a greater propensity to use replacement workers, *ceteris paribus*, when the job is not human capital intensive. That is, when the job does not require considerable education and training to acquire the knowledge and skills necessary for satisfactory performance. Another related factor may be the size of the bargaining unit. Whilst this was not a major variable in the two cases, it is logical to assume that it would be more difficult to replace strikers in larger units.

Finally, the attitude of management toward unions, collective bargaining and strikes seem to be a factor that affects the use of replacement workers, and consequently the duration of strikes. Whilst we cannot conclusively state that the personalities of the actors may have played a role in prolonging the CUPE strike, anecdotal evidence suggests that this may have been the case. One union representative stated that leading members of both union and management have been advised by conciliators and the Canadian Labour Relations Board to undertake "sensitivity training," since future relations between the two parties may be jeopardized by personalities involved in the strike, and by the use of replacement workers.

It is evident that there were other significant attitudinal and behavioural factors influencing the use and effects of replacement workers in the CUPE strike. As a senior union official remarked, "it takes a certain type of management to use replacement workers...one that does not value collective bargaining and a good union-management relationship."

Behavioural factors were also evident in the CALPA strike. In general, pilots are seen as

a pampered elite by management and industry experts. In fact, Harry Steele, the chairman of Canadian Airlines and former head of Eastern Provincial Airways once described pilots as “overpaid, oversexed bus drivers” (Bertin, 1997). This attitude seems to be common in management at Air Ontario and Air Canada. However, management did not resort to the use of replacement workers in the CALPA strike, arguably as a result of the factors discussed above, especially the fact that pilots were not easily replaceable.

V. CONCLUSIONS

This study set out to investigate the effects of the use of replacement workers on strike duration, using both quantitative and qualitative methodological approaches. The empirical results suggest that employers’ use of replacement workers is associated with significantly longer strikes in Canada. The case studies suggest that some of the antecedents of the use of strike replacements include the replaceability of strikers, the nature of the job and industry, the attitudes and personality of the actors, and, of course, whether or not the law allows the use of such workers; among the consequences are more antagonistic union-management relationships and longer strikes.

This research is a tentative initial step in combining methodologies in the two paradigms. There is a need for more data and more rigid analyses in both instances. Nevertheless, as the results suggest, such an approach may cast fresh dimensions on organizational realities.

REFERENCES

- Bender, E., and Rumleski, K. 1997. Hampton walks the line. *London Free Press*.
- Bertin, O. 1997. Pilots cast off prima-donna image. *Globe and Mail*, Jan. 10.
- Budd, J. 1996. Canadian strike replacement legislation and collective bargaining: Lessons for the United States. *Industrial Relations*, 35(2), 245-260.
- Canadian Press Newswire. 1997, Jan., 5. Air Ontario Flight attendants begin strike.
- Canadian Press Newswire. 1997, Nov. 11. Labour strife worsening after long stretch of labour peace.
- Card, D., and Olson, C. 1992. Bargaining Power, Strike Duration, and Wage Outcomes: An Analysis of Strikes in the 1880s. *Journal of Labor Economics*, 13(1), 32-61.
- Collective Agreements, *CUPE and Air Ontario* and *CALPA and Air Ontario*, 1995 and 1997.
- CUPE Statement. 1997. Why is Air Ontario Hiring "Temporary Flight Attendants" today. CUPE Airline Division.
- Fitzpatrick, P. 1997. Regional Airlines returns to the skies. *Financial Post Daily*, 10(21), March 11, 1.
- Globe and Mail (Metro Edition). 1997, Jan. 10. Airlines vow to keep flying as 900 pilots go on strike.
- Gramm, Cynthia. 1991. "Empirical evidence on Political Arguments relating to Replacement Worker legislation." *Labor Law Journal*, (August).
- Gramm, C., and Schnell, J. 1994. Effects of Using permanent Striker Replacements. *Contemporary Economic Policy*, July, 122-133.
- Gunderson, M., Kervin, J., and Reid, F. 1989. The Effects of Labour Relations Legislation on Strike Incidence. *Canadian Journal of Economics*, 12, 779-794.
- Gunderson, M., and Melino, A. 1990. The effects of public policy on strike duration. *Journal of Labor Economics*, 8, 295-316.
- Hutchinson, J.G. 1962. *Management Under Strike Conditions*. New York: Holt, Rinehart and Winston, Inc.

- Kaufman, Bruce. 1992. Research on Strike models and Outcomes in the 1980s: Accomplishments and Shortcomings. In David Lewin, Olivia Mitchell and Peter Sherer (Eds.) *Research Frontiers in Industrial Relations and Human Resources*. Madison: Industrial Relations Research Association.
- Kennan, J. 1986. The Economics of Strikes. In O. Ashenfelter and R. Layard, (Eds.), *Handbook of Labor Economics*, v.2. New York: North-Holland.
- London Free Press. 1997, Jan. 7. Air Ontario flight attendants strike.
- NAALC. 1996. *Comparative Labor Law Report*. Dallas, TX: Secretariat, North American Agreement on Labor Cooperation.
- Olson, C. 1990. The use of strike replacements in major U.S. strikes, 1985-88. Unpublished manuscript, University of Wisconsin-Madison.
- Perry, M., Kramer, A., and Schneider, T. 1982. *Operating During Strikes*. Penn.: IR Unit, University of Pennsylvania.
- Reder, M., and Neumann, G. 1980. Conflict and Contract: The Case of Strikes. *Journal of Political Economy*, 88, 867-886.
- Schnell, J., and Gramm, C. 1994. The empirical relations between employers' strike replacement strategies and strike duration. *Industrial and Labor Relations Review*, 47(2), 189-206.
- Singh, Parbudyal, and Jain, Harish, C. 1997. Strike Replacement Laws in Canada, Mexico and the United States: Policies and Issues. *Canadian Labour and Employment Law Journal*, 5, 285-320.
- Spector, J. 1992. Replacement and Reinstatement of Strikers in the United States, Great Britain and Canada. *Comparative Labor Law Journal*, 13, 184-232.
- Troy, L. 1992. Convergence in International Unionism, etc.: The case of Canada and the USA. *British Journal of Industrial Relations*, 30(1), 1- 43.
- US GAO. 1991. Labor-Management Relations: Strikes and the Use of Permanent Strike Replacements in the 1970s and 1980s. GAO/HRD-91-1.
- Weiler, P. 1980. *Reconcilable Differences: New Directions in Canadian Labour Law*. Toronto: Carswell.

Table 1: Summary of Major Empirical Research

Study	Sample	Dependent Variable(s)	Independent Variables and Controls	Analysis	Results
Gunderson Kervin and Reid (1989)	3347 coll. ag. , mostly >500 ee's; 531 strikes	strike incidence	eight policy variables, plus controls for industry, region/province, size of unit, etc	logit analysis	statistically significant increase in strikes
Gunderson and Melino (1990)	7546 strikes in private sector: 1967-85; mostly >500 ee's	strike duration	same as above	hazard-function estimates	strikes longer when a general prohibition on replacement workers exists
Gramm (1991)	53 strikes; permanent replacements in 10, 4 temporary	union decertification; strike duration; employer's ability to continue operations	not applicable	descriptive statistics	when permanent replacements use: unions more likely to be decertified; strikes longer; limited impact on employers ability to continue operations
Martinello and Meng (1992)	Cross section of 3853 full-time ee's in 1986	union coverage	ban on permanent and temporary replacements and strike breakers plus other policy variables	probit regressions	no significant impact on wages and union coverage
Schnell and Gramm (1994)	271 strikes in 1985 and 989; corrected n=1211	strike duration	employers' announcing use of striker replacements; actual use of replacements, plus controls for size of unit, region, etc.	hazard function estimates	no significant effects on proportion of full capacity operations; significant decrease in the re-hiring of strikers; firms using replacement workers obtain less favourable contracts than those that do not

Study	Sample	Dependent Variable(s)	Independent Variables and Controls	Analysis	Results
Gramm and Schnell (1994)	53 strikes in U.S.	Employers ability to continue operation; strikers' job security; bargaining outcomes.	Hiring permanent replacements; plus controls for size of unit, etc.	logistic regressions	general prohibition and ban on professional strikebreakers associated with increased likelihood of strikes; reinstatement rights clauses associated with lower strike probabilities.
Cuthers-Gershenfeld, McHugh and Power (1996)	481 coll. bar. negotiations, 24 involving strikes - 11 using repl. workers: 1987-91	time to settle after contract expiration	use of replacement workers plus industry strike incidence	OLS regression	no significant effect on time to settle
Budd (1996)	2042 c.b. agreements; 22.5% involved a strike; 13.8% in Quebec	strike incidence, strike duration, wage determination	bans on permanent, temporary and professional strike breakers plus controls for year/time etc.	logit analysis; hazard estimates; OLS regressions	general prohibition and ban on professional strike breakers associated with increased likelihood of strikes; reinstatement rights clauses associated with lower strike probabilities

Table 2: Strike Replacement Legislation in Canada

	Total Ban on All Replacements	Reinstatement Rights Provisions	Professional Strikebreakers Banned	Provisions Protecting those who refuse to do struck work
Federal	s. (1998 - present)			
Alberta		s.88 (1988-present)	s.152(1)(1988-present)	s.147(f)(1988-present)
British Columbia	s.68 (1993-present)		s.3(3) (1975-present)	s.68(3) (1993-present)
Manitoba		ss.11,12,13 (1976-present)	ss.14 (1) (1973-present)	ss.15,16 (1973-present)
New Brunswick				
Newfoundland				
Nova Scotia		s.53(3)(a)(1989-present)		s.53(3)(c)
Ontario	s.73 (1993-95)	s.80 (1995-present) s.75(1) (1970-1993)	s.78 (1986-present) s.73(1) (1993-1995)	
P.E.I.		s.9(1987-present)		
Quebec	s.109.1 (1977-present)	s.98(a) (1977-present)		
Saskatchewan		s.46 (1994-present)		

Source: Survey of Ministries of Labour/Labour Departments/Labour Boards.

Table 3: Descriptive Statistics of Main Variables

Variables	Total Sample		Strikes without Replacements		Strike with Replacements		F-Ratio
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Strike duration	90.30	143.09	47.86	67.60	280.00	222.53	60.02***
Log Strike duration	3.43	1.60	3.02	1.42	5.28	.97	38.96***
Bargaining Unit Size	375.61	1066.62	433.76	1172.34	115.65	106.90	1.24
Log Bargaining Unit Size	4.60	1.56	4.67	1.64	4.26	1.10	.98
Legal Ban	.45	.50	.45	.50	.47	.51	.03
Sector	.25	.43	.28	.45	.12	.33	1.88

N = 93; one-way ANOVA used to test significance of differences across the sub-samples

*** p < .01

Table 4: Zero-Order Correlations for Main Variables (two-tailed)

	Log Duration	Replace	Log BUSize	Ban	Sector
Log Duration	1.00				
Replace	.55***	1.00			
Log BUSize	-.19*	-.10	1.00		
Ban	.06	.02	-.09	1.00	
Sector	-.08	-.14	-.05	-.07	1.00

Notes:

Log Duration: Duration of Strike (log transformed)

Replace: Use of Replacement Workers

Log BUSize: Size of Bargaining Unit (log transformed)

Ban: Presence of Laws Banning Replacement Workers

Sector: Sector in which Strike Occurred

*** p < .01; ** p < .05; * p < .10; N= 93

Table 5: Regression Results: Dependent Variable - Strike Duration (log)

Variables	Model 1	Model 2	Model 3	Model 4
<i>Independent</i>				
Replace	.53*** (.36)	.53*** (.37)	.52*** (.38)	.51*** (.37)
Log BUSize	-.13 (.09)	-.11 (.09)	-.14 (.09)	-.11 (.09)
Sector	-.00 (.33)	.02 (.33)	.02 (.36)	.06 (.36)
Legal Ban	.04 (.28)	.04 (.29)	.07 (.34)	.08 (.34)
<i>Controls</i>				
Year	No	No	Yes	Yes
Industry	No	Yes	No	Yes
<i>Model Summary</i>				
R ²	.32***	.34***	.35***	.38***
Adj. R ²	.29***	.29***	.28***	.29***

N = 93; *** = p < .01

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