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Complementarities in Organizational Dispute Resolution Systems: How System Characteristics Affect Individuals' Conflict Experiences

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Abstract

In 1999-2000, a Canadian national government agency pilot-tested different employment dispute resolution systems (DRSs). The author analyzes how DRS characteristics in this natural quasi-experiment affected employees' approaches to conflict management, their attitudes toward conflict at work, and their rate of success in resolving conflict. A system that added negotiation training to a rights-based grievance procedure, she finds, was actually associated with worse conflict-related problems than a system consisting solely of a rights-based grievance procedure. In contrast, the joint use of a rights-based grievance procedure, negotiation training, and an interest-based neutral generated greatly improved outcomes. The author attributes the superior performance of a three-component DRS to complementarities among the components.

KEYWORDS: dispute resolution systems

COMPLEMENTARITIES IN ORGANIZATIONAL DISPUTE RESOLUTION SYSTEMS: HOW SYSTEM CHARACTERISTICS AFFECT INDIVIDUALS' CONFLICT EXPERIENCES

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In 1999–2000, a Canadian national government agency pilot-tested different employment dispute resolution systems (DRSs). The author analyzes how DRS characteristics in this natural quasi-experiment affected employees' approaches to conflict management, their attitudes toward conflict at work, and their rate of success in resolving conflict. A system that added negotiation training to a rights-based grievance procedure, she finds, was actually associated with worse conflict-related problems than a system consisting solely of a rights-based grievance procedure. In contrast, the joint use of a rights-based grievance procedure, negotiation training, and an interest-based neutral generated greatly improved outcomes. The author attributes the superior performance of a three-component DRS to complementarities among the components.

In response to pressures from changing work force demographics, new work structures, and growing individual employment rights litigation, many organizations have tried to change managers' and employees' behaviors in workplace conflicts. These efforts include reducing their reliance on ad hoc, informal manager interventions, increasing the array of conflict management options that are available to employees, and increasing the scope of conflicts that can be considered by formal dispute resolution procedures. Three types of dispute resolution components are most commonly introduced or expanded when organizational leaders

decide to formalize their conflict management practices: rights-based processes, interest-based neutrals, and negotiation or conflict management training. Rights-based processes, such as arbitration, formal investigation, and peer-review, involve third parties determining the outcome of disputes based on laws, contracts, or standards of behavior. Interest-based neutrals, including mediators, coaches, and ombudsmen, facilitate the dispute resolution process directly or indirectly, but leave decision-making authority to the parties themselves. Negotiation or conflict management training increases the ability of individual disputants to resolve conflicts themselves, without any third-party intervention. Anecdotal evidence suggests that dispute resolution systems (DRSs) that combine all three types of dispute resolution components more effectively improve organizational members' attitudes toward conflict and behavioral responses to it than do any of the individual components or pairs of components. However, no rigorous empirical research has been conducted to validate that observation or to explain why systems of all

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three types of dispute resolution components might be more effective than individual components or pairs of components. Thus, this paper contributes to the DRS literature by systematically analyzing and investigating these relationships.

I test the proposition that the beneficial effects of a three-component DRS on individuals' conflict attitudes and behaviors throughout an organization result from complementarities among the types of dispute resolution components. Several activities are complementary if doing more of any one activity increases (or at least does not decrease) the marginal effectiveness of each other activity in the set (Milgrom and Roberts 1992:108). Complementarities in a DRS imply that each type of component may function more effectively when it is reinforced by the other types than it can independently. In other words, each type of component potentially exerts an independent main effect on these outcomes, but component types may also have a synergistic effect when they interact with each other. For instance, due to complementarities, negotiation training might more effectively generate negotiation behaviors when it is offered in conjunction with interest-based neutrals and rights-based processes than when it is by itself or paired with either of the other components.

This research extends the literature on alternative dispute resolution (ADR) in several ways. First, most ADR research has examined the effects of adding components to a formal process for addressing particular kinds of disputes, such as disagreements over a collectively bargained contract or equal employment opportunity regulations. Although adding components to formal complaint processes appears to improve the management of the kinds of disputes they are designed to address, such disputes represent only a small fraction of the conflicts that arise in organizations. This study, in contrast, examines how DRSs implemented at the organizational level affect individuals' management of day-to-day workplace conflicts to see if DRSs' benefits extend beyond the narrow scope of disputes that are typically considered by formal complaint processes. Second, instead of considering how dispute

resolution components affect participation rates, participants' satisfaction, and dispute resolution outcomes, this study explores the impact of a DRS on people's attitudes and behaviors *throughout* an organization. In other words, unlike most ADR research that considers the dispute resolution procedure as its level of analysis, I use a cross-level design to see whether or not DRSs affect organizational members' conflict behavior beyond the experiences of the minority of people who file formal complaints.

Complementarities Model of DRS Effectiveness

Components of a DRS may be complementary because the multi-faceted nature of many workplace conflicts limits the independent effectiveness of different types of components. When offered in combination, however, the components may be more effective. Rights-based processes are limited because they are generally designed to address only certain kinds of disputes, leaving those with non-covered issues feeling disenfranchised and excluded. For example, a rights-based process that only covers equal employment opportunity-based disputes would not be available for conflicts that do not involve claims of discrimination. Furthermore, some employees simply dislike or are uncomfortable with rights-based procedures in any circumstances, and if an organization relies exclusively on them, at least a few employees with legitimate workplace conflicts may be left without any conflict management support. Interest-based neutrals' effectiveness is limited by the requirements of neutrality and confidentiality. For instance, when conflicts involve policy implications beyond the resolution of an individual dispute—as may be the case with systematic discrimination—a practitioner may be faced with taking on an advocacy role in the broader organizational interest or for disputants who cannot advocate for themselves. The practitioner might then violate his or her neutrality and damage his or her credibility in future cases. Finally, individual negotiations are not effective in all workplace conflicts either. Negotiated processes provide no security against negative

repercussions, such as retaliation or damaged personal relationships, and no recourse if the other party disregards one's interests or refuses to negotiate. Individuals who lack confidence in their negotiation skills or who face a conflict with a much more powerful individual may, therefore, be unwilling to seek a negotiated resolution. Implementing all the components together may be the most effective way to compensate for the limitations of each.

Furthermore, many conflicts are multifaceted and may benefit from being addressed by multiple types of components simultaneously. For example, a grievance over a supervisor's staffing decision might be the result of cross-cultural miscommunication or a bad interpersonal relationship. The grievance procedure alone would uphold or overturn the supervisor's decision, but would not address the underlying causes of the conflict. In a complementary system, the supervisor's decision might be considered by the grievance procedure while the interpersonal and communication issues are dealt with using a mediator. The decision made in the grievance process might be more acceptable to the parties because the mediator has addressed the underlying causes of the conflict. Furthermore, the foundation is laid for future conflicts between the same individuals to be handled by negotiations, perhaps with the mediator's assistance. Through the use of multiple dispute resolution components in a complementary DRS, therefore, conflicts may be resolved more satisfactorily and the parties may be more committed to implementing their agreements than would be possible if the disputants only utilized a single component (Bendersky 2003:647).

The basic premise of the complementarities model is that when the types of dispute resolution components interact in a DRS—so that any conflict may be addressed by any type of component or even by multiple components at once—each component functions more effectively than it can independently (Bendersky 2003). In the previous example, then, the DRS is effective not simply because its multiple components render more aspects of the dispute addressable, but also because the decision reached in the rights-based

process is more acceptable and the agreement reached with the interest-based neutral more satisfactory than they would be if all three dispute resolution components were not present.

A DRS is complementary only if the interplay among the components enables each type of component to influence individuals' conflict attitudes and behaviors more appreciably than it could without reinforcement from the others. Implementing multiple dispute resolution components that do not interact, whether because they are poorly integrated or because the organization restricts the types of conflicts that can use each type of component, may not generate complementarities. In other words, the complementary interaction among the types of components amplifies the effects of each type of component, generating positive synergies in addition to direct effects. It is not the number of components that matters, *per se*, but the fact that rights-based processes, interest-based neutrals, and conflict management training, when combined, are mutually reinforcing in such a way that the whole of the system is, quite literally, greater than the sum of its parts. This is the fundamental reason to expect three-component DRSs to generate more positive conflict outcomes than the use of only one or two types of components.

Although complementarities theory has not been tested empirically with respect to DRSs, research on multi-component interventions has been conducted in other organizational arenas, such as knowledge development and transfer (Argyris and Schön 1996), organizational diversity (Gilbert and Ivancevich 2000), and particularly human resources management (HRM) and business performance (for example, Batt 1999; MacDuffie 1995). For instance, Ichniowski, Shaw, and Prenzushi (1997) found that bundles of "high-performance" HRM practices—including incentive pay, extensive screening of new workers, off-line training, employee teams, rotating job duties, high levels of information sharing with management, and implicit employment security—positively affected both productivity and quality in steel mills, whereas changes in individual work practices had little or no effect. They attrib-

uted this finding to complementarities among the practices, because “HRM system variables are shown to raise productivity substantially, and the effects of the system variables exceed the effects of the full set of individual practices” (p. 311). Thus, they found that the effect of the system was non-linearly greater than the sum of the independent marginal effects of the individual components.

Another research stream that substantiates the complementarities model of DRS effectiveness examines the use of multiple conflict management strategies or styles by individuals (for example, Brett, Shapiro, and Lytle 1998). These studies suggest that when people address a conflict, they typically use patterns or conglomerations of multiple conflict styles, not single approaches. Individuals who use multiple methods are more effective at achieving high joint and individual outcomes, breaking negative spirals of reciprocal behaviors, and motivating the parties to commit themselves to change. Furthermore, some research suggests that the best substantive and relational outcomes occur when parties use a combination of competitive and collaborative tactics during negotiations, rather than either one alone (Van de Vliert et al. 1999). Although these studies differ from the present one in level of analysis, they suggest that if an organization makes multiple dispute resolution components available to its employees, the employees will be better able to address workplace conflicts than they would be through a single channel.

Proposition: Because of complementarities among types of dispute resolution components, the use of three types of components will be more marginally effective than the use of one or two types of components.

DRS Effectiveness

Measuring usage rates of formal procedures, speed and cost of resolving conflicts, or the quality of outcomes does not provide a complete picture of the impact of the system as a whole on organizational members. People may avoid using formal processes for various reasons, and those metrics exclude the effects of access to dispute resolution components on people’s informal conflict

management actions. Furthermore, several research studies indicate that employees’ most common conflict management actions are informal, including negotiating between the parties, asking supervisors to intervene, and going to third parties for coaching (see, for example, Volkema, Bergmann, and Farquhar 1997). Measuring the full impact of a DRS, therefore, requires studying the informal behaviors of individual organizational members as well as their use of formal procedures.

Before changing behaviors, dispute resolution interventions should effect more positive attitudes toward conflict. Individuals may understand what they *should* do differently in a conflict before they actually change what they do when they are confronted with such a situation (Fishbein and Ajzen 1975). Access to dispute resolution components may increase individuals’ feelings of efficacy and self-esteem. They may be more confident of their conflict management abilities and—because proactive conflict management is viewed as a legitimate workplace activity—less fearful that their efforts will have negative repercussions. Thus, exposure to dispute resolution components should affect individuals’ overall attitudes, defined as (i) confidence in ability to resolve conflicts, (ii) self-efficacy, and (iii) perceptions of procedural and distributive justice.

One measure of DRS effectiveness in changing conflict behaviors is whether individuals take a proactive approach to conflict management. The exact expression of this activity may vary from negotiation to getting advice to mediation to filing grievances. Regardless of what participants do, a baseline indication of a dispute resolution intervention’s effectiveness is whether it prevents conflict avoidance. I define conflict avoidance as acknowledgement that a conflict exists, but with no direct actions taken to resolve it. Thus, conflict avoidance, in this sense, is undesirable because it is the failure to address existing conflicts rather than the successful avoidance of the emergence of conflict.

The counterpoint to reducing avoidance is increasing individuals’ conflict resolution efforts. Although a DRS provides individuals

with access to multiple types of dispute resolution options, this does not mean people actually use them. Even if the system is designed to be complementary, if people do not use the components to take advantage of their interactions, the synergistic benefits may not be realized. Thus, perhaps the strongest test of DRS effectiveness is whether members use the resources that are available, as indicated by their pursuit of multiple conflict resolution avenues in their efforts to address a given conflict.

Proactive conflict management efforts should increase the likelihood that conflicts will be resolved. Solutions to problems are more likely to be found when parties employ dispute resolution components than when they resort to coercion, avoidance, sabotage, or exit. Each type of dispute resolution component creates opportunities to explore integrative outcomes, or those that “expand the pie” to create joint value for negotiators. Thus, dispute resolution components may enable parties to find integrative solutions to problems, thereby resolving conflicts more often.

In sum, I examine if the marginal effect of three types of dispute resolution components on improving individuals’ attitudes toward conflict, reducing their conflict avoidance behavior, increasing their use of multiple conflict management activities, and increasing the likelihood that conflicts are resolved is greater than the marginal effect of two types of dispute resolution components.¹

Research Site and Design

The research was conducted in a field-based natural quasi-experiment with pairs of matched treatment and comparison offices. A Canadian national government agency that was introducing new DRSs selected some offices in which to pilot-test different models in 1999–2000 before implementing the changes agency-wide. I collected survey data from employees at four offices, two of which were part of the dispute resolution pilot program

and two of which were not, one year after the implementation of the pilot program and before the national roll-out. Each of the sites that were part of the pilot program (called “treatment sites”) was carefully matched to a non-treatment site based on the specific tasks that were conducted in the office, the region in which the offices were located, the age of the offices, and the union representing the workers. Although the sites within each pair were closely matched, the two pairs of matched sites were not comparable to each other on these dimensions. As a result, the baseline of each pair is potentially different. Therefore, this is a differences-in-differences design, in which I examine the treatment effect within each pair and compare the magnitude of the effect size across pairs.

All sites were unionized and had a rights-based grievance procedure in place. Thus, both of the comparison sites (called “Comparison One” and “Comparison Two”) had a single rights-based grievance procedure. One of the treatment sites, the Two Component Treatment site, also administered a three-day interest-based negotiation training workshop to all its employees, and an additional three days of training to supervisors, managers, and union representatives. The second treatment site, the Three Component Treatment site, offered the same negotiation training plus an interest-based neutral, who coached disputants, helped navigate the different dispute resolution options, and performed ongoing dispute resolution education. One of her key roles was to integrate the components of the system by helping disputants decide how best to try to resolve the conflict given the resources provided by the different components. Although some of her activities were similar to those that are typically conducted by an organizational ombudsman, she did not directly intervene in any disputes and should not be mistaken for a mediator or ombudsman.

The fact that the interest-based neutral who was adopted in the Three Component Treatment site did not directly intervene in conflicts makes this a fairly conservative, but also a very appropriate test of the complementarities model. It is conservative by comparison with a test in which a more

¹Due to limitations of my research site, described below, I am unable to test the marginal effects of a single dispute resolution component.

involved interest-based neutral, like a mediator, participates in the three-component intervention. It is an appropriate test of the complementarities model, however, because it enables me to estimate the synergistic impact of each component on the effects of the system. Since it seems unlikely that the direct effects of a neutral like the one in the Three Component Treatment site would be greater than those of three days of negotiation training, evidence supporting the complementarities proposition (that the marginal effect of a three-component system will be greater than the marginal effect of a two-component system) is more easily attributable to the synergies generated by this neutral's integrating function than to an alternative explanation that conflicts are managed better simply because more types of components are available.

The interest-based negotiation training workshops were identical in the two treatment sites. They took place on site, and were administered by the same Agency internal training staff. Topics, which included interests versus positions, active listening, and joint problem-solving, were communicated through a combination of readings, lectures, discussions, and role-playing. Although the managers and union representatives at all four sites had been exposed to interest-based negotiation concepts prior to the intervention, they had not received formal training. This was the first time the general population had learned about interest-based negotiation and was encouraged to apply the techniques in their daily work conflicts.

The formal grievance procedure was available both for issues related to the collective agreement and for issues not related to it, such as staffing or promotion decisions. When the grievance was related to the collective agreement, the union represented the grievance, and processed it through four levels of internal Agency review, from the local manager to the Assistant Commissioner for the division of the Agency. If the issue could not be settled at the fourth internal review stage, it was filed for adjudication at an external public sector staffing review board, which made a final, binding ruling. For non-collective agreement issues, the employee owned the

grievance, and could choose whether or not to be accompanied by a union representative. These grievances progressed through the same four internal steps as did the others, but did not have the final external review board recourse option. Thus, unlike what is often the case in the United States, there were no jurisdictional conflicts between the grievance procedure and the other types of dispute resolution components that were introduced. There was no formal negotiated settlement stage of the grievance process, but many issues were resolved informally before they got filed for formal review. In fact, grievances were rarely filed in any of the offices in my sample, and therefore were not a useful metric for evaluating the impact of the dispute resolution pilot program. Local union representatives actively participated in the local design and implementation of the dispute resolution programs in both of the treatment sites. These DRSs were potentially complementary, therefore, in that there were no restrictions on the types of conflicts that could be addressed through any of the types of components.

By comparing the attitudes, avoidance behavior, multiple activities, and resolution behavior of employees in the Two Component Treatment site to those of employees in the Comparison One site, I measured the impact of two components, a rights-based grievance procedure and an interest-based negotiation training intervention, on conflict behaviors relative to a single rights-based component. The Three Component Treatment site/Comparison Two site analysis examines how the impact on conflict behaviors of three components in combination—a rights-based process, an interest-based negotiation intervention, and an interest-based neutral—compares to the impact of a rights-based process alone. Estimation of the magnitude of the effects of the two different types of dispute resolution treatments in each pair (see Figure 1) then permits me to determine how the marginal effect of a three-component system compares to that of a two-component system. It is important to note that this is a cross-level design, in which I am measuring the effects of organization-level interventions on individual-level outcomes.

Figure 1. Research Design.

	<i>Pair One</i>	<i>Pair Two</i>
<i>Treatment</i>	Rights-Based + Negotiation ("Two-Component site")	Rights-Based + Negotiation + Neutral ("Three-Component site")
<i>Baseline Comparison</i>	Rights-Based Only ("Comparison One")	Rights-Based Only ("Comparison Two")

Unfortunately, I did not have a research site that included the rights-based process plus an interest-based neutral without interest-based negotiation training that would be necessary to conclusively reject an alternative hypothesis that the effects observed in the Three Component Treatment site were driven just by the direct effect of the neutral. I therefore conducted additional analyses to examine if the results I observed in the Three Component Treatment site could plausibly be attributed solely to the neutral's interventions.

Methods

I collected data on dependent variables—attitudes toward conflict at work, avoidance, multiple activities, and conflict resolution behavior—from survey reports of individual employees' and managers' conflict incidents roughly one year after the implementation of the pilot program in the treatment sites. I also conducted 100 interviews, each ranging from 20 to 60 minutes, with members of each site and the Agency's central design committee to understand the design and use of the process and to gather observers' general impressions of the interventions.

Interview Questions

During interviews, I asked members of

each site to tell me about a specific conflict incident they had experienced since the treatment began. I probed for information about the steps they used to deal with it, and for their impressions of the process, outcomes, and ramifications. Where appropriate, I asked if they had applied any of the skills from the negotiation training or used the interest-based neutral's services. Interviews confirmed that similar types of conflicts were experienced by members of all four sites. Most respondents described conflicts they had at work with coworkers and supervisors over task and interpersonal issues. There also were many conflicts over staffing and promotional decisions, as well as frustration with changes at the Agency that was not directed at specific individuals.

Survey Instrument

One year after the introduction of the pilot program, I administered a survey instrument to all on-site employees in the Three Component Treatment site and the Comparison Two site and to day-time employees (roughly 75% of the total population in each site) in the Two Component Treatment site and the Comparison One site. The instrument was designed to elicit detailed information

about a specific conflict experienced in the past few months, and general information about team dynamics, communication, and attitudes toward conflict. I asked detailed questions about a specific conflict incident rather than more general questions about conflict behaviors in order to elicit reports of what respondents actually did in a conflict rather than normative views of what ought to be done in such situations. Indications from the interview data that similar types of conflicts were experienced at all four sites allayed the concern that certain kinds of conflicts would tend to be reported only in some sites. Furthermore, since my research question focuses on the impact of dispute resolution interventions on general workplace conflict attitudes and behaviors, I defined conflict as generally as possible for survey respondents: "any grievance, disagreement, misunderstanding, argument, difference of opinion, views or interests over tasks or interpersonal relationships."

Coding. This survey instrument generated data for both dependent and independent variables. In order to minimize response-response bias, questions used to form key dependent variables were asked in both open-ended and closed-ended forms. The information from the open-ended questions was extracted from the surveys, and coded by four blind raters who achieved a .931 Chronbach's alpha measure of inter-rater reliability. The raters, who had received special training, then rated each of the open-ended responses for the prevalence of relevant characteristics on 1 to 5 Likert-type scales. The coded open-ended responses were all statistically significantly correlated with respondents' own closed-ended responses to the same questions ($r = .35-.72$, all $p < .01$), demonstrating high convergent validity of the constructs (Schwab 1999:41-43).

Variables. Independent variables were dummy variables representing whether an observation was a treatment site, which matched pair it was in, and the interaction between treatment site and matched pair. Dependent variables were constructed based

on the theoretical association and reliability of different measures. Exact items and scales are reported in the Appendix. The attitude variable was a ten-item standardized scale (Chronbach's alpha = .89) comprised of closed-ended questions about confidence in being able to resolve the conflict (for example, "I felt confident that I would be able to resolve this conflict"), legitimacy of the conflict resolution process (for example, "I felt that it was acceptable for me to use this conflict resolution process"), and perceptions of the procedural and distributive fairness of the conflict resolution efforts (for example, "Overall, this was the fairest way to address a conflict like this"; "Overall, this was the fairest outcome"). Despite the high convergent validity between the coded open-ended ratings and closed-ended reports, when those two measures were indexed together the Chronbach's alpha of the conflict avoidance scale was below the .70 cut-off point (Black 1999). I used the coded open-ended question alone because of the high inter-rater reliability that was achieved when determining it. The multiple conflict activity variable is a nine-item standardized scale (Chronbach's alpha = .84) comprised of coded ratings of responses to open-ended questions and self-report items indicating use of negotiation, informal and formal interest-based interventions, and rights-based processes (for example, "I talked directly to the person"; "I sought informal help from someone not directly involved"; "I filed a formal complaint"). The resolution dependent variable is a single, dichotomous item based on responses to the question, "Was this conflict resolved permanently?"

Consistent with other research on human resources in organizations, I included control variables for respondents' managerial status and age based on single closed-ended items. Additionally, I controlled for the type of conflict that was reported, since previous literature suggests that people experience conflicts over tasks differently from conflicts over interpersonal relationships (Jehn 1995). Both relationship and task conflict control variables were analyzed based on scales combining the coded open-ended and Likert-scale responses to questions modified

from Jehn (1995) (Chronbach's $\alpha = .70$ and $.79$, respectively).

Additional Analyses

To examine the plausibility of the alternative explanation that the effects in the Three Component site were due to the direct effect of the interest-based neutral alone instead of complementarities among all the components, I re-calculated the empirical analyses excluding the respondents who reported using the interest-based neutral's services to see if the basic pattern of results changed, and also explored the neutral's role qualitatively using data from pre-survey interviews that were specifically aimed at determining the validity of that interpretation.

Results

***A Priori* Similarity of Matched Sites and Differences between the Pairs**

This design requires the two sites in each matched pair to be identical prior to their differential treatment (Lieberson 1992), and the differences-in-differences analyses are predicated on the two pairs having different baselines. I will start with the similarities of the sites within each pair.

Similarity within pairs. The Two Component Treatment site and Comparison One site were two divisions of the same facility, and were located on separate floors of the same building. Employees in the Two Component Treatment site and Comparison One site conducted similar tasks, although they dealt with different parts of the Agency's legislative responsibility. They had no direct public contact. In addition, these two sites were nearly the same size (144 and 125 employees, respectively), had the same distribution of occupational groups (70% clerks and 30% program administrators), and had about the same proportion of seasonal workers (who represented roughly half of the work force). The average age of employees was 32 years in the Two Component Treatment site and 35 years in the Comparison One site, both sites were 72% female, and the average tenure was roughly 5 years in both. All employees

in both sites were represented by the same union. While their geographic co-location may have led to some contamination effects because members of the Comparison One site knew about the pilot program in the Two Component Treatment site, the site director clearly communicated to members of both groups that the pilot was the first phase in a broader dispute resolution effort, and that both sites would ultimately get negotiation training. Thus respondents did not think that the Two Component Treatment site was getting "treated" because its members had more conflicts or worse conflict management behaviors than did those in the Comparison One site.

Although employees of the Three Component Treatment and Comparison Two sites served two different parts of the same regional population, they performed identical tasks. Their tasks differed completely, however, from those of employees in the Two Component Treatment and Comparison One sites. The Three Component Treatment and Comparison Two site employees directly served the public by helping citizens file and process forms and pay fines. Both sites maintained a staff of 106 employees. The distribution of occupational groups was similar, with 75% program administrators, 13% clerks, and 12% professionals in the Three Component Treatment site, and 60% program administrators, 20% clerks, and 20% professionals in the Comparison Two site. Both sites used few seasonal employees. The average employee age was 42 in the Three Component Treatment site and 43 in the Comparison Two site, both sites were roughly 50% female, and average tenure was 10 years in both sites. In all four sites, roughly 10% of employees in each occupational group were front-line managers who were covered by the collective bargaining contract. The majority of employees in the Three Component Treatment and Comparison Two sites were represented by the same union, but it was a different union from the one representing employees of the Two Component Treatment and Comparison One sites.

More relevant than the demographic data were data collected by the Agency prior to the pilot project's implementation that I

used as a proxy-pre-test (Cook and Campbell 1979) to establish an objective measure of the Three Component Treatment site and Comparison Two site's *a priori* similarity. I was unable to separate the survey responses of the Two Component Treatment site and the Comparison One site, however, because results were aggregated at the facility level. I examined responses to eight of the Agency's conflict-related survey questions, regarding participation in decision-making (two questions), initiative-taking, disagreeing with supervisors, respect from other employees, sharing information, and team orientation (two questions). F-tests comparing responses from employees in the Three Component Treatment site and the Comparison Two site indicate no statistically significant differences on any of the eight questions (all F-values ≤ 2.08 , n.s.). Thus, this proxy pre-test suggests the Three Component Treatment site and the Comparison Two site were not statistically significantly different on these conflict-related dimensions prior to the treatment.

Differences between pairs. Although the sites were closely matched within each pair, there are several reasons why one might expect the baseline within each pair to be different. First is that the tasks performed by employees in the offices in each pair were very different. The Three Component Treatment site and Comparison Two site had all of the customer contact and the Two Component Treatment site and Comparison One site processed all the materials collected by the other pair of sites. These functional differences could generate different kinds of task-based conflicts. Second is the different demographic composition of the two pairs of sites. The Two Component Treatment and Comparison One sites were comprised of younger, better-educated, and more sexually homogeneous employees than were the Three Component Treatment and Comparison Two sites. In addition, the population of the Two Component Treatment and Comparison One sites fluctuated seasonally, whereas the population of the Three Component Treatment and Comparison Two sites was quite stable. These differences could plausibly generate different types of relationship-based conflicts

in the two pairs. Finally, employees in the two pairs of sites were represented by different unions with very different styles. The union representing most of the employees in the Three Component Treatment and Comparison Two sites historically had a relatively antagonistic relationship with the management of the sites, whereas the union representing employees in the Two Component Treatment and Comparison One sites took a more cooperative, partnership-oriented approach to the management of those sites. These differences could foster very different atmospheres and collective bargaining conflicts in the two pairs of sites. For these reasons, it is necessary to examine the effects of the treatments by comparing the magnitude of the changes within each pair separately.

Response Rates and Non-Response Bias

The 73 interviews I conducted in the four sites represent between 12% and 20% of the population in each site.² 322 of 409 surveys were returned, for a 78% response rate. Of these, 38% were missing data from a section of the survey that asked people to describe in detail one conflict they had at work in the past few months, most because the respondent claimed there were no conflicts to report. Subsequent quantitative analyses use the smaller sample of 199 fully completed surveys (Two Component Treatment site $n = 60$, Comparison One site $n = 75$, Three Component Treatment site $n = 37$, Comparison Two site $n = 29$), for an effective 62% response rate. The small sample size in each cell makes the statistical hypothesis tests I conducted fairly conservative.

I conducted logit analyses to test for differences between those who filled out the survey instrument in full and those who did not with respect to managerial status, tenure, age, and sex. I conducted these analyses for the total sample, for pairs of sites, and for each site alone (see Table 1). I found

²The other 27 interviews I conducted were with members of the Agency's central design committee and staff who administered the negotiation training sessions.

Table 1. Logit Analyses of Non-Response Bias.

Independent Variable	Total	Two Component	Comparison One	Pair One	Three Component	Comparison Two	Pair Two
Constant	1.669*** (2.85)	1.365 (1.10)	2.680** (2.24)	.277 (.33)	1.312 (.73)	-.392 (-.21)	1.894*** (3.71)
MANAGER	1.02*** (3.07)	1.773 (1.61)	N/A ^a (1.86)	.636 (1.28)	.973 (.25)	.314 (5.61)	1.810***
TENURE	.033** (2.58)	.093 (.91)	.095 (1.00)	.040*** (4.57)	.046 (1.02)	.027 (.45)	.046*** (19.90)
SEX	-.129 (-.57)	.162 (.32)	-.67 (-1.33)	-.095 (-.41)	-.261 (-.51)	.305 (.43)	-.101 (-.25)
AGE	-.037*** (-3.70)	-.047 (-1.56)	-.050 (-1.58)	-.009 (-.33)	-.040 (-.86)	.015 (.30)	-.042*** (-34.03)
N	322	106	101	207	70	45	115

Note: This table gives unstandardized parameter estimates with two-tailed significance tests. T-statistics are reported in parentheses.

^aMANAGER perfectly predicts the outcome in this site, so the variable was dropped from this analysis.

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.

that managers tended to fill out the survey more often than did non-managers, younger employees tended to fill out the survey more frequently than older employees, and longer-tenured employees filled it out more often than more recently hired employees. Therefore, I included managerial status, age, and tenure as control variables in subsequent regression analyses.

Manipulation Check

To verify that individuals in the treatment sites recognized that they had been exposed to the dispute resolution interventions, I asked them how much negotiation training they had received from the Agency. A t-test comparing the amount of training between respondents in the treatment and comparison sites indicated statistically significant differences ($t = 14.35$, $p < .01$). Similarly, within each matched pair of treatment and comparison sites, the amount of negotiation training was much greater in the treatment sites (Two Component Treatment site and Comparison One site: $t = 10.86$, $p < .01$; Three Component Treatment site and Comparison Two site: $t = 10.75$, $p < .01$).

I also asked whether or not an interest-based neutral was involved in the reported conflict. This question serves as a manipu-

lation check, since only those employees in the Three Component Treatment site should have responded affirmatively to it. Only one person from a site other than the Three Component Treatment site reported speaking to an interest-based neutral, and this observation was dropped from the analysis. Thus, respondents from the treatment sites had more negotiation training than did those in the comparison sites, and only respondents from the Three Component Treatment site used an interest-based neutral's services.

Analyses

I performed ordinary least squares regression (OLS) and logit analyses according to the continuous or dichotomous nature of the dependent variable. In all models, I used robust standard errors that corrected for biases generated by the clustering of observations in groups (Moulton 1990). The equation I estimated was

$$(1) \quad Y = \beta_0 + \beta_1(\text{TREATMENT}) + \beta_2(\text{PAIR}) + \beta_3(\text{TREATMENT*PAIR}) + \beta_4(\text{MANAGER}) + \beta_5(\text{AGE}) + \beta_6(\text{RELATIONSHIP CONFLICT}) + \beta_7(\text{TASK CONFLICT}) + \beta_8(\text{TENURE}) + \epsilon.$$

TREATMENT is a dummy variable that equals one for observations from the treatment

Table 2. Variable Means, Standard Deviations, and Correlation Coefficients.

	ATTITUDE	AVOIDANCE	MULTIPLE ACTIVITIES	RESOLUTION	AGE	MANAGER	RELATIONSHIP CONFLICT	TASK CONFLICT	TENURE CONFLICT
ATTITUDE	1.00								
AVOIDANCE	-.33***	1.00							
MULTIPLE ACTIVITIES	.35***	-.55***	1.00						
RESOLUTION	.43***	-.31***	.32***	1.00					
AGE	.00	.07	-.03	.02	1.00				
MANAGER	.23***	-.14**	.14**	.09*	.10*	1.00			
RELATIONSHIP	.27***	.09	.55	.14**	-.03	.02	1.00		
TASK	.28***	-.05	.62***	.27***	-.05	.06	.40	1.00	
TENURE	.02	-.02	.09	.07	.37***	.25***	.06	.07	1.00
Mean	3.18	2.65	-.03	83 ^a	37.51	29 ^a	2.38	3.40	6.26
S.D.	1.02	1.83	.67		7.53		1.40	1.46	4.83

^aThe frequency of dichotomous variables is reported affirmatively.

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.

sites and zero for observations from the comparison sites. PAIR is a dummy variable indicating which matched pair of treatment and comparison sites the observation is in, thus allowing a determination of whether the baseline condition differs across pairs. TREATMENT*PAIR is an interaction term that indicates whether or not there is a statistically significant difference between the treatment effect in the Three Component/Comparison Two pair and the treatment effect in the Two Component/Comparison One pair.

The specific effect of the Two Component Treatment site versus the Comparison One site is simply the TREATMENT coefficient. The effect of the Three Component Treatment site relative to the Comparison Two site is derived by adding the coefficients from TREATMENT and TREATMENT*PAIR and conducting a post-estimation test of the null hypothesis $TREATMENT + TREATMENT*PAIR = 0$ (reported in the last row of Table 3). The coefficient of the TREATMENT*PAIR interaction term indicates if the magnitude of the Three Component treatment effect relative to Comparison Two exceeds the magnitude of the Two Component treatment effect relative to Comparison One. For ease of exposition, I refer to this as a comparison between the Three Component and Two Component treatments. MANAGER, AGE, RELATIONSHIP CONFLICT, TASK CONFLICT, and TENURE are included as control variables in all analyses. Descriptive statistics and correlations

among the variables are presented in Table 2 and regression results in Table 3.

OLS and Logit Results

In all four analyses, not only did results from the Three Component treatment indicate statistically significantly more positive effects than the Two Component treatment, but also the Two Component treatment results indicate statistically significant *detrimental* effects of that intervention (see row 2, Table 3). Respondents from the Two Component Treatment site had statistically significantly worse attitudes than respondents from the Comparison One site ($\beta = -.134^{**}$, $t = -4.37$), engaged in conflict avoidance more ($\beta = .203^{**}$, $t = 3.11$), pursued multiple activities less ($\beta = -.051^{*}$, $t = -2.44$), and were less likely to resolve conflicts ($\beta = -.365^{***}$, $t = -4.17$).

In all of these analyses, the effect of the Three Component treatment was statistically significant and in the anticipated direction relative to Comparison Two (see row 11 in Table 3), and the treatment effect was statistically significantly greater than was the effect of the Two Component treatment (see row 4 in Table 3). Respondents from the Three Component Treatment site had more positive attitudes toward conflict than did those from Comparison Two ($\beta = .241^{***}$, $F = 58.72$), and the effect was bigger than the Two Component treatment effect ($\beta = .375^{***}$, $t = 40.84$).

Table 3. OLS and Logit Regressions on Attitudes, Avoidance, Multiple Activities, and Resolution.

Independent Variables	Attitudes	Avoidance	Multiple Activities	Resolution (Logit)
1. Constant	-.145 (-.84)	1.735 (1.64)	-.140 (-.67)	-.260 (-.33)
2. TREATMENT (Two Component vs. Comp. One)	-.134** (-4.37)	.203** (3.11)	-.051* (-2.44)	-.365*** (-4.17)
3. PAIR	-.272*** (-11.86)	.594** (5.22)	-.064** (-5.86)	-1.584*** (-24.16)
4. TREATMENT*PAIR	.375*** (40.84)	-1.506*** (-29.46)	.290*** (36.12)	1.752*** (23.36)
5. AGE	.002 (.51)	.022 (.73)	.001 (.19)	.005 (.37)
6. MANAGER	.476** (3.77)	-.615 (-1.69)	.080 (1.06)	.268 (.67)
7. RELATIONSHIP CONFLICT	.062 (1.70)	.119** (3.51)	.062** (3.96)	-.175*** (-2.70)
8. TASK CONFLICT	.033 (1.18)	-.020 (-.24)	.074*** (6.26)	.005 (.06)
9. TENURE	.001 (.38)	-.005 (-.27)	.002 (.41)	.065*** (3.44)
10. R ² /log-likelihood	.10	.08	.12	-.126.99
11. Three Component vs. Comp. Two ^a	.241*** (58.72)	-1.302*** (401.46)	.238*** (148.06)	1.387*** (218.24)

Notes: The table gives unstandardized parameter estimates with two-tailed significance tests. T-statistics (z-statistics for the logit analysis) are reported in parentheses. N = 198.

^aThis coefficient was calculated by summing the TREATMENT and the TREATMENT*PAIR estimates, and the p-value was determined by a post-estimation F and chi² tests. F-statistics (chi² value for the logit analysis) are reported in parentheses.

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.

They engaged in avoidance behavior less than did the respondents from Comparison Two ($\beta = -1.302^{***}$, $F = 401.46$), and the treatment effect was bigger than the Two Component treatment effect ($\beta = -1.505^{***}$, $t = -29.46$). Three Component Treatment site respondents also pursued multiple avenues more frequently ($\beta_{\text{vs. Comparison Two}} = .238^{***}$, $F = 148.06$; $\beta_{\text{vs. Two Component treatment}} = .289^{***}$, $t = 36.12$), and were more likely to resolve conflicts ($\beta_{\text{vs. Comparison Two}} = 1.387^{***}$, $\text{chi}^2 = 218.24$; $\beta_{\text{vs. Two Component treatment}} = 1.752^{***}$, $z = 23.36$).³

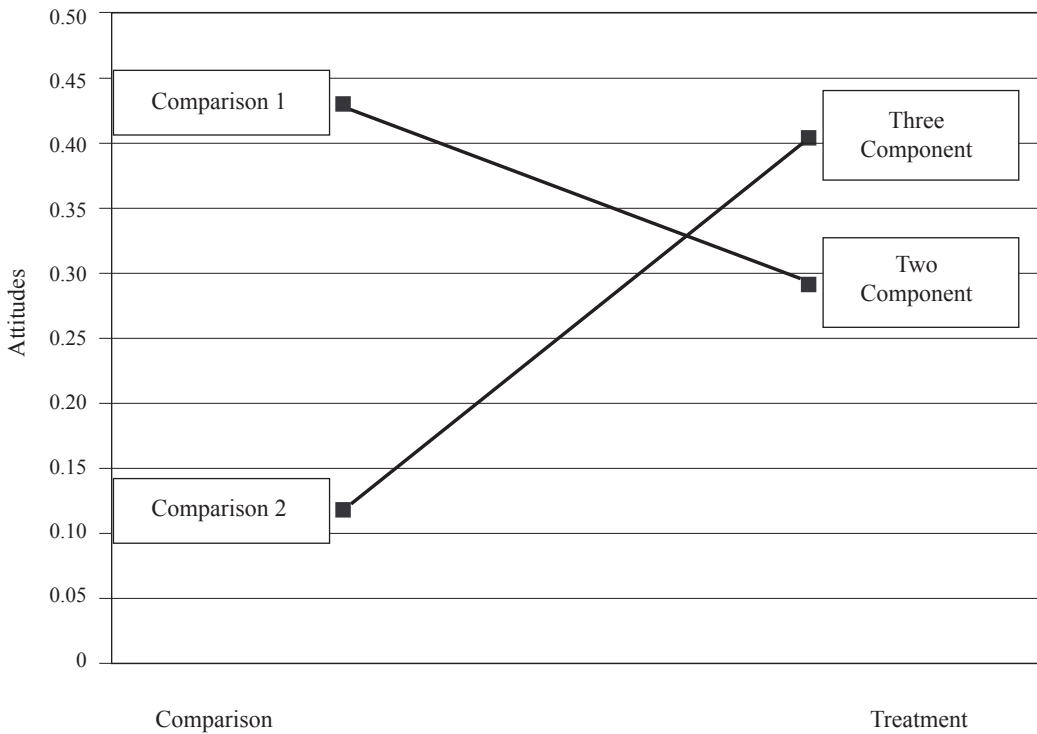
³I also conducted the analyses using a single negotiation behavior open-ended item that was coded , since this should be common in both treatment sites. Results indicate more negotiation behavior in both treatment sites than in the corresponding comparison sites, but a significantly bigger effect in the Three Component site

As can be seen in Figures 2–5, not only is the direction of the effect in the Three Component vs. Comparison Two pair opposite to the effect in the Two Component vs. Comparison One pair, but also the magnitude of the effect is bigger in the former than in the latter pair in all of the analyses. It should also be noted that the baseline, indicated by the comparison case in each pair, is different across the two pairs in most of the analyses, validating the differences-in-differences analytical approach.

These analyses are all consistent with the complementarities model, and strikingly strong. Not only was the marginal effect of the Three Component treatment statisti-

than in the Two Component site. Although this pattern differs from that in the other four analyses, it is still consistent with the complementarities model.

Figure 2. Attitudes.



cally significantly bigger than the marginal effect of the Two Component treatment as predicted, but also the effect of the Two Component treatment was deleterious. This suggests the components are highly complementary, such that the exclusion of one of the components undermined the beneficial effects of the intervention altogether.

Alternative Explanation

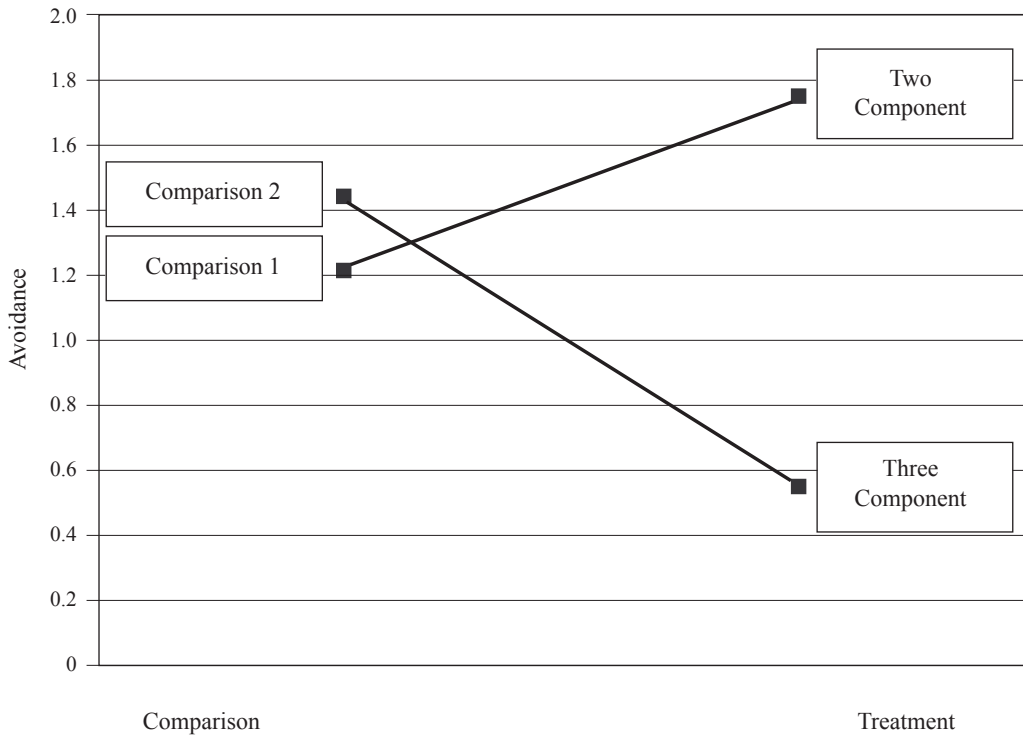
Because there was no treatment site in which a grievance procedure and interest-based neutral were present but interest-based negotiation training was absent, I cannot reject an alternative explanation that the greater beneficial effects of the Three Component intervention than of the Two Component intervention were due to the direct effect of the neutral rather than to complementarities among the components as I have posited. To explore this alternative

explanation, I will present (a) qualitative data on specifically what the neutral did in the Three Component Treatment site and (b) quantitative analyses excluding individuals who reported using the interest-based neutral's services in the Three Component Treatment site.

Qualitatively, the interest-based neutral in the Three Component Treatment site acted primarily as a coach and champion of the DRS. She did not directly mediate or otherwise intervene in disputes. Her main impact was reinforcing the negotiation training by helping people when they wanted to experiment with their new skills. As the neutral explained,

The [neutral] is the person who is the first contact most employees would have.... A fair number of people come to me to say "here's what I'm going to do, is this the way the process works?" Sometimes it's literally coaching, sometimes setting up

Figure 3. Avoidance.



meetings, sometimes they are just talking about the process.

She was both practically and symbolically important because her presence not only constantly reminded workers to use the new skills, but also provided security for them to try. Because her services were confidential, she provided a forum in which individuals with conflicts could get support without fear that their supervisors would find out and disapprove. As a clerk in the Three Component Treatment site said,

It helps to go to [the neutral] if there are particular problems. That way my supervisor can evaluate my performance without these other things affecting her interpretation.

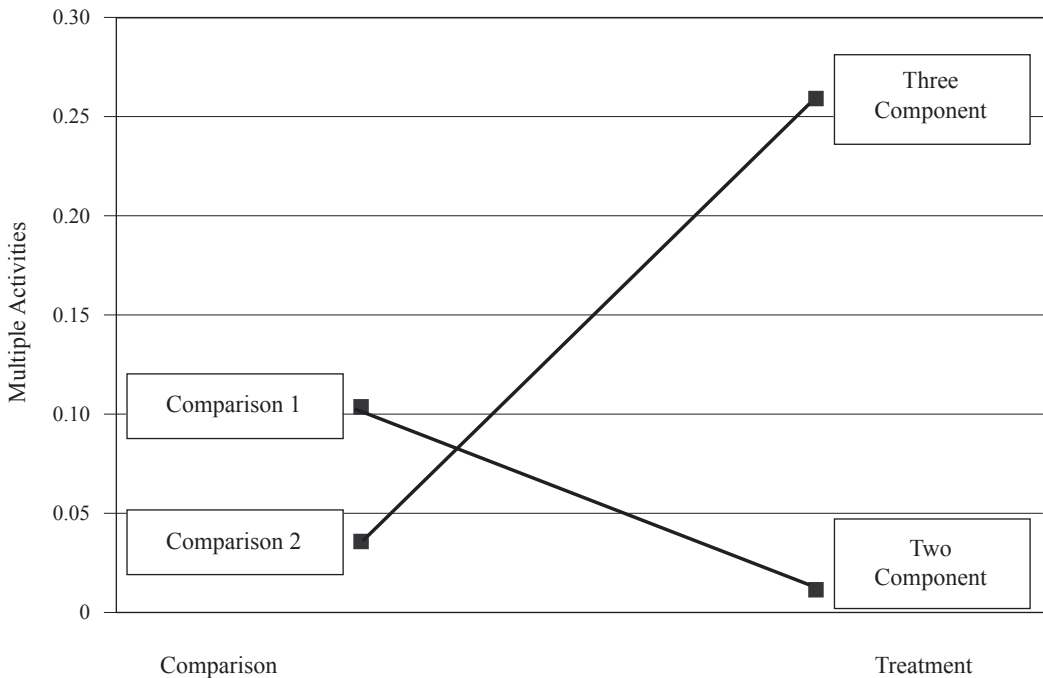
Thus, the interest-based neutral played an important role in the Three Component Treatment site by reinforcing the negotiation training and providing security against potential retribution or other negative

consequences for implementing the new interest-based communication skills, even though she did not directly intervene to resolve conflicts. In other words, she was an important integrator of the components, and thereby surfaced the potential synergies in the system.

In contrast, there was no such symbolic conflict resource in the Two Component Treatment site. No post-training support was available to encourage people to try out their new skills and get coaching on how to apply them to real situations. A supervisor in the Two Component Treatment site explained, A big thing that is missing from the implementation is some kind of dispute resolution facilitator. There's no on-going presence.... There's not enough support for staff out there who are saying, "Gee, I'd like to use these conflict management techniques, but how do I go about it?"

Thus, employees in the Two Component Treatment site found it difficult to implement

Figure 4. Multiple Activities.



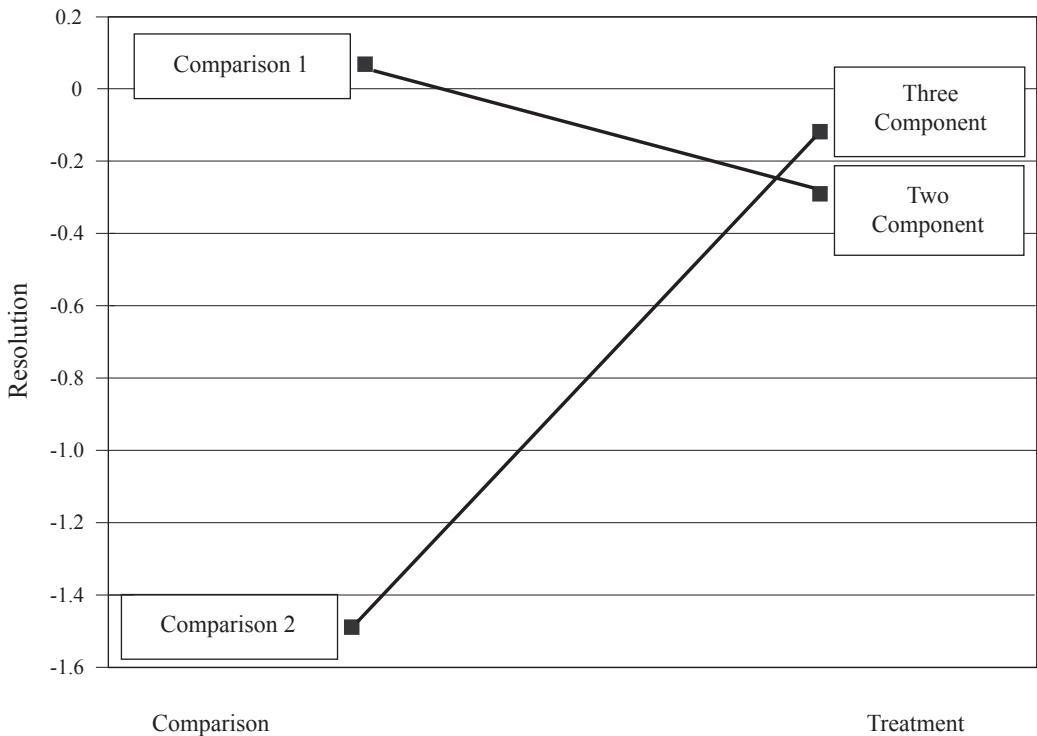
the new skills to which they were exposed in the training, and the behaviors were not reinforced.

As an example of an interest-based neutral component, the neutral in the Three Component Treatment site was fairly weak, making this a conservative test of the complementarities model in some ways. This particular interest-based neutral's effects were all indirect; she functioned as a complement to the negotiation training and rights-based process more than as a direct conflict intervener. Indeed, if one conducts a thought experiment on what her impact would have been in the absence of the negotiation training, it is hard to imagine her having a very strong independent effect on the outcomes I measured. It is, therefore, improbable that the markedly stronger effects observed in the Three Component Treatment site than in the Two Component Treatment site could be attributed to her direct intervention alone. Thus, the strongly positive effects of the Three Component

compared to the Two Component treatment are quite striking, and the qualitative description of the neutral's actions indicates that these effects are more likely attributable to complementarities among the neutral, the training, and the rights-based process than to direct effects of the neutral.

Furthermore, although the neutral reported that 27 people—about a quarter of the population at the site—had spoken to her about specific conflicts since the initiation of the pilot program, only 8 of the 37 survey respondents from the Three Component Treatment site reported talking to the interest-based neutral in the conflict they described. This amplifies the point that the powerfully positive effect of the Three Component Treatment site compared to the Comparison Two site is not attributable solely to the interest-based neutral's interventions with these 8 people. Removing them from the sample reduces the magnitude and significance level of the effects, but does not change the pattern of

Figure 5. Resolution.



regression results.⁴ These results suggest that while the interest-based neutral's actions may have exerted a direct impact on the few people who reported using her services, at least as important was the indirect, complementary impact of her presence on the effectiveness of the system as a whole, even for people who did not use her services. In other words, the results indicate that just knowing such a resource was available affected the conflict attitudes and behaviors of people throughout the organization, even if they did not use her services themselves.

Discussion

This is the first empirical study to link dispute resolution system (DRS) character-

istics to individuals' conflict attitudes and behaviors at work in general. Consistent with the complementarities model, I found that the presence of an interest-based neutral in addition to a rights-based procedure and interest-based negotiation training strongly improved employees' attitudes toward conflict, increased their pursuit of multiple conflict management activities, reduced their conflict avoidance behavior, and increased the likelihood that conflicts were resolved relative to both the single rights-based process that was available in Comparison Two and the Two Component intervention without the interest-based neutral. In contrast, adding interest-based negotiation training to a rights-based grievance procedure had a considerable *deleterious* impact on individuals' conflict attitudes and behaviors. Thus, as predicted, the marginal beneficial effect of the three-

⁴Results available upon request to the author.

component system substantially exceeded that of the two-component system.

The results from this study are particularly strong evidence of the complementarities effect. Not only was the effect of the second type of component smaller than that of the third, but also it was in the wrong direction, indicating a detrimental impact of implementing a subset of the components. Moreover, the research sites made for a fairly conservative test of the effects for several reasons. First, because all four sites were unionized, organizational members had considerable experience with the rights-based grievance process prior to the intervention. One might, therefore, anticipate that adding a few days of negotiation training or an interest-based neutral who did not even directly intervene in conflicts would not have a strong effect on conflict attitudes and behaviors. Yet this expectation is clearly not borne out by the data. Second, as discussed at length already, the interest-based neutral did not directly intervene in disputes and had only an indirect effect on the system. Nonetheless, the impact of the Three Component treatment relative to Comparison Two was very strong, and substantially greater than the effect of the Two Component treatment relative to Comparison One in all four analyses conducted, as well as in the supplemental analysis of negotiation behavior reported in footnote 3. It seems likely that a replication of this research in a setting with a stronger type of interest-based neutral component or without unionization (or both) would generate results even more strongly corroborating the value of a three-component DRS.

The finding of a deleterious effect of the Two Component treatment is somewhat surprising because it appears to contradict the results of some other research on dispute resolution systems, particularly the apparent benefits of adding interest-based mediation to rights-based processes such as union grievance procedures or equal employment opportunity commission reviews (see, for example, Bingham 1997). The results of this study are not as inconsistent with past research as they may first appear, however. Many formal complaint-handling procedures include a negotiations stage, either formal or informal,

prior to the adjudication or arbitration stage. That means that introducing a mediation component into the system is really introducing a third, complementary component, not a second, which could account for the benefits that are documented most famously in Ury, Brett, and Goldberg's (1988) *Getting Disputes Resolved*. Furthermore, research evaluating the effect of adding mediation to a rights-based process generally examines the impact of the additional type of component on the process and outcome experiences of those who filed formal complaints. It is possible that while opportunities to mediate a formal claim improve the participants' experience, reduce cost, and save time, they have little effect on the general attitudes and behaviors of the majority of people in an organization who have conflicts but do not attempt to resolve them by using the formal rights-based procedure.

In addition, these results are consistent with empirical evidence from other contexts suggesting that the limited effect of a subset of complementary components is not atypical. For example, in their comparison of Japanese and U.S. human resource management systems in steel mills, Ichniowski and Shaw (1999) found that when U.S. lines adopted a subset of innovative work practices that are used in Japan and by the most innovative U.S. lines, "productivity levels [were] only slightly higher than the productivity of U.S. lines with the traditional U.S. system [of no innovative work practices]" (pp. 714–15). Although not all complementary systems exhibit this characteristic, these results indicate that the beneficial synergies that arise when all three types of components interact may be lost when only a subset of components is introduced. Indeed, the qualitative evidence suggests that the Two Component Treatment failed as an organizational intervention because it was not reinforced by the interest-based neutral the way it was in the Three Component Treatment site. Thus, employees may have become frustrated and more disillusioned than they would have if they had never received the training in the first place.

This design was not optimal for a few reasons, however. First, the sites self-selected into the different "conditions," and the deci-

sions to be part of the pilot project and to implement three versus two components cannot be separated from the historical, leadership, and labor dynamics leading to those decisions. Second, the Two Component Treatment site and Comparison One site were physically located in the same building, and I cannot rule out the possibility of some contamination through informal discussions across the two sites that might have reduced the differences between them. Hearing about negotiation training is very different from experiencing a multi-day training session, however, and is unlikely to have generated substantially more positive behaviors than did the training. The potential contamination effect would be more troubling if, instead of the statistically **significant negative impact** that actually emerged, no differences between the sites had been found. Third, due to my fairly small sample size in the Three Component Treatment and Comparison Two sites, I cannot rule out the possibility that the effects are due to statistical artifacts and would not be found in a different setting. I would be more concerned about this alternative explanation, however, if the pattern of results were inconsistent across the multiple dependent variables I considered. It is also possible that the effects I observed

were peculiar to the time frame in which I measured the effects, about one year following the intervention. It is conceivable that the effects would fade over time such that they would not have been observable had I sampled at a different moment in time. Finally, as acknowledged above, I did not have all the different conditions that would be necessary to fully rule out an alternative explanation that the effects were driven by the presence of an interest-based neutral rather than complementarities among all three types of components or to compare the scale of the effects to the introduction of a single component.

These are all types of challenges with experimental control that are endemic to field research. Nonetheless, I believe the natural quasi-experimental field design offers substantial benefits over previous anecdotal case studies and laboratory experiments, because it is both comparatively rigorous and realistic. Simulating dispute resolution intervention features in a laboratory is extremely difficult, so this natural quasi-experiment is an important step in determining the effects of organizational-level design features on individual-level outcomes. The limitations of the design will, I hope, inspire future research to refine and expand on the findings from this study.

Appendix Survey Items

Independent Variables

Treatment: Dummy variable = 1 if a treatment site, 0 if a comparison site.

Matched pairs: Dummy variable = 1 if in Comparison Two/Three Component Treatment pair, 0 if in Two Component/Comparison One pair.

Interaction: interaction between pilot and pair.

Dependent Variables

Closed-ended items were measured by 5-point Likert-type scales, where 1 = strongly disagree and 5 = strongly agree. Open-ended conflict narratives were coded for conflict attributes on 5-point scales, where 1 = not at all present and 5 = strongly present.

Attitude about conflict: 10-item scale, $\alpha = .89$

Overall this was the fairest way to address a conflict like this.

I felt that it was acceptable for me to use this conflict resolution process.

I felt satisfied by this process.

I felt confident that I would be able to resolve this conflict.

Overall this was the fairest outcome.

I felt satisfied by this outcome.

It is acceptable to try to resolve conflicts in my workplace.

I feel confident that I can resolve conflicts then they arise.

Conflict management efforts are legitimate in my workplace.

Conflicts are a natural part of work life.

Avoidance: Single item, coded open-ended

Multiple Activities: Nine-item scale, $\alpha = .84$

Open-ended coded for: Direct negotiation.^a

Open-ended coded for: Arguing.

Open-ended coded for: Coaching.

Open-ended coded for: Escalating (defined as asking a superior to resolve the conflict).

Open-ended coded for: Interest-based intervention.

Open-ended coded for: Rights-based intervention.

I talked directly to the person.

I sought informal help from someone not directly involved.

I filed a formal complaint.

Resolution: Single item: Was this conflict resolved permanently?

Control Variables

Relationship conflict: 2-item scale, $\alpha = .70$

This conflict was about our relationship.

Coded open-ended.

Task conflict: 2-item scale, $\alpha = .79$

This conflict was about the task we were doing.

Coded open-ended.

Managerial status: Single item: Do you manage other employees?

Age: Single item: What is your age?

^aThis is the single item that was used for the alternative analyses of negotiation behavior reported in footnote 3.

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