RISK AVERSION AND NEGOTIATOR BEHAVIOR IN PUBLIC SECTOR ARBITRATION

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ABSTRACT

In 1980, a relationship was proposed between risk and negotiator actions in the final offer arbitration process. This article examined such a hypothesis and also investigated the joint effects of risk and the form of arbitration procedures on final offers tendered in an arbitration situation. The effects of propensity toward risk and the form of arbitration procedure on final offers were examined in a public sector bargaining simulation. Results indicate strong support for the influence of risk on reasonableness of final offer positions. Significant differences were noted for risk avoiders and risk takers.

INTRODUCTION

Since the latter 1960s, the scope of public bargaining in the United States has increased markedly. Approximately three-fourths of the states currently have "enabling legislation" that allows some form of collective bargaining by at least one category of public employees. These legislative efforts were designed to structure conflict resolution procedures to meet the needs of the negotiation participants while simultaneously protecting public interests. The large increase in public sector unionization has resulted in attempts by agencies to introduce conflict resolution procedures that do not rely on the threat of strike as a means to promote settlement. As a result of such efforts, a variety of public interest arbitration procedures have been developed as substitutes for the strike to encourage settlement in public sector bargaining conflicts. One of the most commonly used forms of such public interest impasse procedures has been interest arbitration.

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Proponents of public sector interest arbitration procedures stress that interest arbitration allows each of the conflicting parties to gain some concessions or demands while avoiding the costs of protracted conflict or a strike to themselves and the public. Those critical of conventional arbitration as a public sector conflict resolution technique argue that it is simply a compromise decision rule and that unintended consequences of conventional arbitration actually cause increased difficulty in successfully negotiating present and future agreements [1, 2]. For example, Feuille argued that negotiators' expectations of arbitration and their perception that an arbitrator is likely to "split the difference" provides a stimulus for the parties to maintain extreme or exaggerated demands to minimize their losses [3]. This is often referred to as a "chilling effect" and has been noted in a number of laboratory and field settings [4-7]. Feuille argued that the chilling effect occurred because the parties perceived little or no uncertainty about the arbitrator's behavior and award [3]. Such an influence actually reduces the chance of a settlement being reached without the intervention of an arbitrator.

Another cited negative consequence of conventional arbitration is the "narcotics effect," which proposes that arbitration tends to move the parties away from a voluntary settlement [8]. The presence of a narcotics effect has been noted in field studies [4, 5]. In such situations, bargaining parties develop a history of reliance on arbitration as the "standard operating procedure" to resolve differences in contested issues. This results in overdependency on an arbitrator to solve current disputes between the parties.

Final offer arbitration (FOA) evolved from these concerns over the "splitting the difference" aspects of compulsory conventional arbitration where the arbitrator is free to make any awards s/he feels is appropriate. Advocates of FOA, an alternative to conventional arbitration, believe that FOA procedures serve to minimize these negative effects by reducing potential arbitrator compromise. This increases the stimulus for both sides to attempt to resolve their conflict without use of a negotiator/arbitrator [2, 3, 9-11]. In cases where a voluntary agreement is not reached, both parties stand to suffer substantial losses if the other party's position is awarded by the arbitrator. Stevens proposed that FOA was a viable alternative to conventional arbitration because FOA increased the parties' uncertainty about the arbitrator's decision [2]. This uncertainty introduced by FOA "is well calculated to compel the parties to seek security in agreement" [2, p. 40]. Reports on the effectiveness of FOA in practice generally have been favorable [3, 6, 12-15]. The use of FOA in public sector negotiations has increased dramatically in recent years. Forms of FOA have been used in the states of Iowa, Massachusetts, Michigan, New Jersey, Connecticut, Wisconsin, Oregon, Indiana, and Alaska.

Many variants of FOA have been employed. In one of the more frequent forms of FOA, "issue-by-issue," each party submits a final position on each unresolved issue of negotiation at the arbitration hearing. For each issue, the

arbitrator must then award one of these positions. No compormise is allowed between the offers on each selected issue.

Other forms of FOA have been used in many instances. These were discussed previously by Feuille [3], Anderson and Kochan [4], Klapper [16], and Ponak [17]. Probably the most widely used form after issue-by-issue is "total package." In this version, the arbitrator must select either the final offer of the management or the final offer of the union in the arbitration hearing. The arbitrator must accept in total one side's position on all issues of negotiation. No compromise is allowed between the final "package offers" or the individual issues within the package.

PREVIOUS RESEARCH

As the scope of public sector bargaining in the United States has increased, so has research interest in areas related to public bargaining. Most research in public sector collective bargaining negotiations has focused on differences in the specific conflict resolution *processes* that have been employed and the effects of these varying processes on likelihood of settlement, attitudes toward the decision and the other party, and costs of settlement. Examples of such studies include Notz and Starke [7], Subbarao [18], and Feuille [19, 20].

Previous research illustrates that proper selection of an arbitration procedure can influence the results of the settlement and the costs and benefits that accrue to all parties involved. However, almost all of the research conducted to date has failed to consider the roles and personal reactions of the negotiation participants on final outcomes. Bargaining agents generally have been treated as a given factor in analyzing arbitration process effects. It seems plausible that characteristics of negotiators, in conjunction with the form of arbitration used, could have a large influence on the outcomes of the settlement process. In an exception to the practice of considering only bargaining processes employed, Neale and Bazerman investigated the impact of "perspective taking ability" of the negotiators on the probability of successful negotiations in conventional arbitration and FOA [21]. Perspective taking ability (PTA) refers to the ability to correctly perceive the other party's perspective and view consequences to the other party from that viewpoint. Results of this study showed that PTA affected the number of issues resolved prior to arbitration, the movement in positions of the negotiators, and the dollar value of the contract obtained.

Another individual difference variable that may have a large potential in explaining psychological and behavioral outcomes in interest arbitration procedures is propensity toward risk (PTR) of the individual negotiators. Rubin and Brown reviewed research relating PTR to bargaining behavior and proposed that negotiators with high PTR (risk-takers) may prefer competitive bargaining strategies and make fewer concessions than those with low PTR (risk avoiders) [22]. Ashenfelter and Bloom also suggested that individual differences may be

expected to be a significant factor and called for research directed toward the role of risk in determination of the parties' final offers [23].

Recently, Farber developed a model of the final offer arbitration process in which he proposed that risk-averse parties will submit a more reasonable offer so that it has a higher probability of being chosen by the arbitrator [24]. Based on the assumption that each of the conflicting parties will maximize utility and that the utility of either party is a function of the joint offers, a Nash equilibrium pair of offers was presented. Farber stressed the role of costs imposed on the parties as the primary function of any form of conflict resolution strategy. These costs, which are borne in the event of disagreement and nonsettlement of the issues, provide incentives for the parties to reach a negotiated agreement. For example, a strike results in direct costs such as lost production and sales revenue to the organization and lost wages/salaries to the workers. Conventional arbitration results in direct costs such as preparation time, legal charges, and arbitrators' fees to both parties. FOA, Farber argued, also imposes additional indirect costs on both parties in the form of uncertainty. "It is the *uncertainty* (emphasis added) concerning the arbitrator's award combined with the risk aversion of the parties which is hypothesized to make FOA a costly alternative" [24, p. 684]. The introduction of this uncertainty would increase pressure on the parties to reach a settlement; therefore, FOA should be effective in resolving bargaining conflicts. A model was constructed to explain the validity of this uncertainty-risk aversion hypothesis. However, the external validity of the model was not empirically tested. No studies have been conducted to date examining the risk-taking propensity of the negotiator in conjunction with the form of impasse procedure used. Thus, the current study was undertaken in an attempt to directly test the predictions of Farber's model that low-PTR (risk-averse) individuals tend to offer more "reasonable" offers (indicating more concession to enhance selection of their position) than do high-PTR (non-risk-averse or risk-taking) individuals.

Methodological problems also arise in generalizing current research to the domain of negotiator behavior in FOA. In a review of arbitration research methods, Anderson called for more use of survey, field, laboratory studies, and quasi-experimental designs to provide tighter methodological controls that allow clearer interpretation of results [25]. Many previous investigations have been case studies, results of which raise questions of internal validity [26]. DeNisi and Dworkin [27] noted that laboratory experiments examining arbitration issues have typically employed undergraduate students as subjects [7, 18, 21, 28]. These "negotiators" are not familiar with arbitration procedures, and the effects noted on bargaining behaviors may not be indicative of those found in field settings with persons who are regularly involved in collective bargaining. The negotiation tasks in these studies are not highly representative of normal student work environments. Therefore, questions of external validity are applicable.

In summary, previous research generally has treated the type of bargaining procedure as the independent variable of interest while neglecting the role of the participants themselves on outcomes reached. Little attention has been paid to the role of differences in the negotiators as determinants of their final-offer behavior. Propensity toward risk (PTR) is an individual difference variable that may be expected to have a significant influence on final offers in arbitration settings. Thus, the purpose of this research was to investigate the joint effects of PTR and the form of arbitration on arbitration participants' final offers in a more socially rich setting employing actual negotiators bargaining over issues that are common in their work environment.

HYPOTHESES

The hypotheses of this investigation were designed as tests and extensions of Farber's mathematical model of the development and formation of final offers in final offer arbitration [24]. While such a model is elegant, the hypothesis that low-PTR parties will submit more reasonable final offer positions than high-PTR parties remains untested in a field study or simulation employing actual negotiators. In addition, the potential interactive nature of PTR and the form of arbitration used has not previously been considered. For example, it is not known whether the individual difference variable of PTR affects negotiator behavior more than the situational variable of form of arbitration. The effect of PTR on offers may also be influenced by the type of arbitration. These hypotheses were designed as a step toward examining such issues.

Hypothesis 1: Individuals with low propensity toward risk (PTR) will submit more reasonable final offers than will individuals with high propensity toward risk, controlling for type of arbitration.

This hypothesis is a direct test of Farber's proposition of the relationship between PTR and reasonableness of final offers.

Hypothesis 2: The form of arbitration will show a main effect on reasonableness of final offers submitted. Reasonableness of final offers will be highest in total package, followed by issue-by-issue, followed by conventional arbitration.

Stevens and Farber proposed that *uncertainty* was the factor that made FOA effective as a conflict-resolution strategy [2, 24]. In arbitration, this is reflected in the negotiating parties' uncertainty about the arbitrator's perception of a fair settlement and the resultant possibility of compromise in the arbitrator's final decision. Thus, different forms of arbitration could be viewed as having different levels of uncertainty.

Hypothesis 3: PTR will interact with the form of arbitration.

This hypothesis is designed to examine the potential interaction effects of the form of arbitration and PTR on a negotiator's final offer. The state of theory development in this area does not permit predictions about the relative efficacy of PTR and form of arbitration. The effect of PTR on negotiators' final offers

may differ as a function of the form of arbitration (and subsequent uncertainty) employed in the impasse process. Because of the multiple *a priori* possibilities of the nature of potential interactions, the exact form of the interactive effects was not specified but left for *post hoc* analysis.

METHOD

Subjects

Four hundred sixty-two supervisors of school districts in a midwestern state were sent a simulated bargaining situation. Two hundred forty-eight of these were completed and returned, a response rate of 53.7 percent. This survey was sent to superintendents of all school districts that contained a high school in the state. Typically, the teaching staff of smaller districts without a high school is not unionized. Therefore, superintendents of these districts were not included in the sample.

DeNisi and Dworkin noted that inconsistencies in results of previous studies examining the effectiveness of final-offer and conventional arbitration may be due to the inability of inexperienced bargainers (usually students) to understand the nature of final-offer procedures and the consequences associated with the various offers [27]. Their study confirmed that subjects must be aware of the process and the possible results of various arbitration procedures for the findings to be generalizable. To minimize such problems, subjects in this study were persons actually involved in negotiations as an element of their job.

While school boards and the school district superintendent typically employ an outside agent as their formal bargaining representative in these negotiations, the superintendent typically formulates, proposes, and approves the district's position in negotiations with the teachers' bargaining agents. Seventy-eight percent of the superintendents reported that they had been involved previously in contract negotiations with teachers' representatives. Thus, these school superintendents were chosen because they are representative of public sector bargaining agents and are responsible for a large number of public employees.

Task

Each subject was asked to assume the role of a district school superintendent responsible for negotiating next year's bargaining agreement with the teaching staff, a role consistent with the subjects' activities. Subjects were asked to determine final offers for employment issues in one of three randomly assigned forms of arbitration: conventional arbitration, issue-by-issue final offer arbitration, and total package final offer arbitration. Final-offer positions were determined for three issues: bachelor's degree base salary (BBASE), master's degree base salary (MBASE), and teacher preparation hours (PREP). These three issues were chosen because they represent the most frequent elements of

bargaining negotiations in this sector. Information was provided on the most recent offers proposed by both the superintendent and the teachers' bargaining representative as well as the relationship of these proposed offers relative to seven other districts in the same conference.

The school district represented by the subjects showed current "management" offers of $13,200, a rank of seventh of the eight districts for BBASE; $14,700, a rank of sixth for MBASE; and zero preparation hours above the state minimum of twenty minutes per day (sixty hours per year). The current "union" offers were $14,250 for BBASE, a rank of second; $16,000 for MBASE, a rank of fifth; and ninety preparation hours per year above the state minimum. These figures were chosen by sampling school districts in three midwestern states for a mean on each of the three issues. A constant was subtracted from the mean to represent "management's" offer, while the same amount was added to the mean to form the "union's" offer.

Subjects were sent a one-page cover letter; a three-page, six-item risk aversion measure; and a four-page simulation. The simulation explained the history of previous and current negotiations and the three specific issues to be resolved. In addition, the simulation explained the form of arbitration that was to be used to resolve the conflict. A one-page summary showing the current and next year's proposed BBASE, MBASE, and PREP positions for each of the eight schools in the district was also included. Within each experimental condition, one-half of the subjects completed the risk measure first, followed by the simulation. The other subjects completed the simulation and then the risk measure.

Measures

The purpose of this study was to investigate the joint effects of propensity toward risk and type of arbitration on arbitration participants' final offers. The following variables and operationalizations were used in the survey.[1]

Independent Variables

Propensity toward risk (PTR) – Wallach and Kogan developed the Choice Dilemmas Questionnaire (CDQ) to determine preferences toward courses of action in realistic situations [29]. This measure is a gauge of social risk preference. The subject assumes the role of an advisor to a third person in the scenario and is asked to check the minimum probability of success that would be considered acceptable to advise the person to pursue the course of action. The CDQ score summarizes the responses made to a set of twelve such choice dilemmas. Lower scores are associated with less conservatism in risk-taking situations, i.e., these people are considered risk takers. Kogan and Wallach reported reliabilities of .53 for men and .62 for women using odd-even coefficients

[1] All instruments used in this study are available from the author on request.

determined by the Spearman-Brown formula and considered this to be adequate [30]. Items from the CDQ have been used extensively in research of risk-taking propensity in organizational behavior. Results of these studies have shown acceptable realiability.

Due to the length of the bargaining simulation, six of the twelve items from the CDQ were used to measure propensity toward risk. Previous studies using the CDQ noted that two of the twelve items often result in different outcomes for the same subjects or groups (c.f. [29]). Therefore, these two questions were not used and six questions were randomly chosen from the ten. Internal consistency reliability for the six items was determined using Cronbach's coefficient alpha and measured .73.

Form of arbitration – Three types of bargaining were possible: conventional arbitration, issue-by-issue final-offer arbitration, and total-package final-offer arbitration. Each participant was randomly assigned to one of these three experimental conditions. An explanation of the mechanics of the form of arbitration to be used was provided.

Dependent Variables

Reasonableness of final offers – Subjects were asked to choose a final position on three issues to be resolved through the arbitration process: bachelor degree base salary (BBASE), master's degree base salary (MBASE), and teacher preparation hours (PREP). Subjects were told that their positions on all of these issues would then be presented to an arbitrator in one of the three arbitration conditions. The "reasonableness" of any subject's position on the two salary issues was measured as the dollar amount of the offers to be presented to the arbitrator. Similar to the current study, other researchers have employed terms such as "concessionary behavior" and "negotiator movement" as measures of reasonableness of negotiator behavior. Operationalization of these terms has been consistent and generally has been measured as magnitude of movement from the last position or movement toward the mean between the last set of outstanding offers. Since all participants in the current study began with the same pair of offers, the dollar amount of the final offer was employed as the dependent variable. "Reasonableness" of the preparation-time issue was measured as total preparation hours offered above the state-required minimum.

RESULTS

Initially, a test for homogeneity of variance was applied to the data to determine whether order effects existed due to the sequence of the risk measure and bargaining simulation within the survey. Results showed no significant order effects; therefore, all data were "pooled" for subsequent analyses. Possible effects due to the size of the local school districts were examined by considering

Table 1. Means and Standard Deviations of Variables

	Conventional Arbitration	N = 75	Issue-by-Issue FOA	N = 86	Total-Package FOA	N = 84	Total Sample N = 245	
BBASE	$13,548.11	(361.33)	$13,636.61	(304.91)	$14,662.80	(392.53)	$13,619.70	(355.99)
MBASE	$15,192.27	(539.35)	$15,284.34	(470.35)	$15,338.14	(559.68)	$15,276.76	(525.11)
PREP	34.33 Hrs.	(28.17)	30.76 Hrs.	(27.92)	37.41 Hrs.	(28.45)	34.15 Hrs.	(28.15)
PTR	20.17	(7.17)	19.62	(6.24)	19.88	(6.32)	19.84	(6.55)

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the student enrollment in each of the superintendents' school districts. No significant size effects were noted.

Means and standard deviations for the three dependent bargaining variables are presented in Table 1. Aggregate sample results are provided in addition to means and standard deviations categorized by the form of arbitration.

The primary analysis consisted of multivariate analysis of variance (MANOVA) to determine the effect of the predictor variables on the three dependent measures (bachelor degree base salary (BBASE), master's degree base salary (MBASE), teacher preparation hours (PREP)). The MANOVA analysis is a subset of the General Linear Models (GLM) procedure and is designed for situations incorporating continuous and discrete variables. The procedure uses the method of least-square regression to fit a linear model(s). The explanatory variables included propensity toward risk and form of arbitration. Interactions between PTR and form of arbitration were included and examined, given the *a priori* reasons for suspecting interactive effects. Because multiple dependent variables were present in the model, Wilks' lambda was examined to determine whether overall effects of each of the independent variables were present. Results of this analysis indicated highly significant overall effects for risk ($p < .0001$) and a moderately significant effect for form or arbitration ($p < .09$). The interaction between risk and form was not significant ($p < .64$).

Results of the MANOVA analysis are summarized in Table 2. A model incorporating propensity toward risk, form of arbitration, and the interaction between these two variables was developed and applied to the set of dependent variables (bachelor base salary (BBASE), master's base salary (MBASE), and preparation hours (PREP)). This model produced significant results ($p < .001$) explaining 44 percent of the variance in bachelor base salary offered, 42 percent of the variance in master's base salary offered, and 23 percent of the variance in number of preparation hours offered. Two analyses are presented in Table 2 to evaluate the effects of risk, form, and their interaction. The Type I analysis is order-dependent: each effect is adjusted only for the effects preceding it in the model. Because two main effect variables were present, two Type I analyses were obtained. Very few changes were noted between these two models; thus the Type I results in Table 2 are for a risk, form of arbitration, interaction order. The Type IV analysis is a test of the effect of each of the independent variables after effects of the other variables have been partialed. Thus, the Type IV results indicate the effect of each independent variable in the presence of all other independent variables.

For the dependent variable BBASE, risk was significant when examined as the only variable and also in the partial analysis ($p < .0001$). Form of arbitration was significant after extracting effects of risk ($p < .01$), but not in the presence of risk and the interaction term ($p < .76$). The risk-form interaction was not significant in either the Type I or Type IV analysis.

Similar results were noted for the dependent variable MBASE. Again, risk was significant in both analyses ($p < .0001$). Form of arbitration was significant

Table 2. MANOVA Analysis of BBASE, MBASE, and PREP

	DF	F		Pr > F		R^2
		a	b	a	b	
BBASE						
Model	5	36.45		.0001		.44
Risk	1	172.17	(168.07)	.0001	(.0001)	
Form	2	4.68	(.27)	.0102	(.7661)	
Risk-Form	2	.36	(.36)	.6968	(.6968)	
MBASE						
Model	5	33.54		.0001		.42
Risk	1	158.78	(155.56)	.0001	(.0001)	
Form	2	3.05	(1.64)	.0491	(.1965)	
Risk-Form	2	1.41	(1.41)	.2466	(.2466)	
PREP						
Model	5	13.79		.0001		.23
Risk	1	64.5	(65.17)	.0001	(.0001)	
Form	2	1.87	(.90)	.1565	(.4068)	
Risk-Form	2	.36	(.36)	.6984	(.6984)	

[a] The Type I analysis examines the effect on each variable after adjusting for previous factors in the model.

[b] The Type IV analysis examines the effect of each variable after adjusting for all other factors in the model. This analysis is enclosed in parentheses.

when examined as a factor after risk ($p < .05$) but·not after partialing effects of the risk and interaction variables ($p < .20$). The interaction was not significant in either analysis.

For the dependent variable PREP, risk was again significant in both analyses ($p < .0001$). Neither form of arbitration nor the interaction was significant in either analysis.

Due to the presence of main effects and the absence of interactive effects, subsequent follow-up analyses examined the direction of main effects of risk and form of arbitration using the procedure suggested by Myers [31]. First, the data were divided by form of arbitration and differences in MBASE, BBASE, and PREP were examined under each pairwise form of arbitration comparison, using the LSMEANS procedure. This technique calculates cell means and conducts pairwise tests for significant differences. These cell means are partialed for the effects of variables that are not in the effect being examined. Results are reported in Table 3. Significant form of arbitration effects were found in each of the three analyses. MBASE offers were significantly higher ($p < .01$) in total

Table 3. Analysis of MBASE, BBASE, and PREP by Form of Arbitration[a]

Form	MBASE	BBASE	PREP
Conventional	$15,207.65	$13,558.65 $p < .09$	34.88 Hours
Issue-by-Issue	$15,274.89 $p < .01$	$13,629.10 $p < .003$	30.67 Hours $p < .05$
Total-Package	$15,359.57	$13,684.83	38.11 Hours

[a] Comparisons not indicated in the table are not significant.

Table 4. Analysis of MBASE, BBASE, and PREP by High- and Low-PTR Negotiators

Negotiators	MBASE	BBASE	PREP
High-PTR (Risk-Taking)	$15,018.93 $p < .0001$	$13,425.65 $p < .0001$	22.50 Hours $p < .0001$
Low-PTR (Risk-Averse)	$15,529.86	$13,809.67	46.0 Hours

package arbitration ($15,359.57) than in conventional arbitration ($15,207.65). Neither of the other two MBASE comparisons was significantly different.

Similar results were noted for BBASE. Offers were significantly higher ($p < .01$) in total package ($13,684.83) versus conventional ($13,558.65) arbitration. In addition, issue-by-issue arbitration ($13,629.10) resulted in moderately higher offers ($p < .09$) than conventional arbitration ($13,558.65). The issue-by-issue versus total-package arbitration comparison was not significant.

Significantly greater ($p < .05$) PREP was offered in total package (38.11 hours) than in issue-by-issue (30.67 hours) arbitration. The remaining two comparisons were not significantly different.

Similarly, *post hoc* analyses of the direction of the risk effect were also conducted. Results are contained in Table 4. PTR scores ranged from 6 to 34. To assess potential differences in bargaining behaviors between high- and low-PTR negotiators, the sample was split according to the median PTR score of 19.84. Tests for significant differences between MBASE, BBASE, and PREP offers in these two groups were conducted using the procedures outlined above.

As expected, risk-taking negotiators submitted lower offers than their risk-averse counterparts for MBASE ($15,018.93 vs. $15,529.86, $p < .0001$), BBASE ($13,425.65 vs. $13,809.67, $p < .0001$), and PREP (22.5 hours vs. 46 hours, $p < .0001$). Since the risk-form of arbitration was not significant for any of the three offers, no interaction follow-up tests were conducted.

CONCLUSIONS AND DISCUSSION

Results of this study strongly supported hypothesis 1 that low-PTR, risk-avoiding negotiators submit more reasonable final offers. Conversely, high-PTR or risk-taking individuals were likely to submit a final offer much closer to their original position. Risk was a significant predictor ($p < .0001$) of final offers regarding the two salary decisions (BBASE and MBASE) and the preparation hours issue (PREP). For all three of the dependent variables, risk was the most powerful explanatory variable in both the Type I and Type IV analyses. Thus, Farber's propositions have been shown to occur in a field setting.

The prediction of hypothesis 2 that the form of arbitration would influence final offers was also supported for BBASE and MBASE but not PREP. The presence of these main effects is consistent with earlier works of Starke and Notz [28], Notz and Starke [7], Subbarao [18], and Neale and Bazerman [21] indicating differences in negotiator behavior and settlement outcomes between conventional and final-offer arbitration. Analyses dividing the data by form of arbitration indicated that BBASE and PREP offers were consistently higher as the form of arbitration changed from conventional to issue-by-issue FOA to total-package FOA, although these differences were not always statistically significant.

The third hypothesis, that the form of arbitration would interact with individual propensity toward risk, was not supported in the overall analysis.

High-PTR negotiators consistently submit less reasonable final offers in all forms of arbitration than their low-PTR counterparts. Thus, the effect of PTR on the final-offer issues did not vary as a function of the form of arbitration used.

The explanatory power of these models with respect to salary decisions compares very favorably with previous models of negotiator behavior in arbitration. The average r^2 for the three dependent variables is .36, suggesting that future research could be directed toward further examination of characteristics of the participants in conjunction with the nature and demands of the arbitration process. Substantially greater predictive power was found for the salary issues (BBASE and MBASE) than for PREP. Postsurvey interviews with selected respondents indicated that the two salary issues were viewed as the central and most crucial elements of the bargaining process. The superintendents indicated that these two issues generally received the greatest attention of the bargaining participants because they were highly visible to the respective constituencies. Preparation hours were viewed as a secondary issue that could be modified if necessary to enhance one's position on the salary issues.

Attention should be directed toward specific aspects of propensity toward risk that may affect negotiators' bargaining behavior. PTR was operationalized using Kogan and Wallach's Choice Dilemma Questionnaire, which has been widely used in many behavioral settings. In the six questions of the CDQ used in this study (as well as the full twelve questions in the expanded version of the CDQ) the respondent is asked to advise a central person in each scenario. Therefore, it may be that the CDQ measures propensity toward risk for *others'* outcomes, as opposed to *own* outcomes. Clearly, risk could be viewed as a multidimensional construct. Additional risk measures tapping dimensions such as the two above may be useful in measuring specific PTR effects on negotiator behaviors.

Additional research examining the construct of "reasonableness" of final offers appears to be warranted. To date, the reasonableness of a final offer has been defined as the magnitude of movement from the previous position or the amount of movement toward the mean between the last set of outstanding offers. Such approaches can be viewed as an "objective" measure of reasonableness. However, similar offers may not be viewed as equally reasonable by opposing parties. A measure of perceived reasonableness might be developed and considered as a covariate in future empirical studies to control for differing individual perceptions of reasonableness of the final offer. Bargaining models often include variables associated with the arbitrator's idea of a "reasonable" settlement point, about which the parties are thought to make perceptual assessments. These are translated into offers and evidentiary proof is presented in the arbitration hearing. More research providing further knowledge about the accuracy of such assessments and the manner in which the parties utilize them is appropriate. Future research should also investigate the parties' reaction to added "pressure points" in the impasse procedure in conjunction with risk-taking

propensities and whether the parties actually display behavior indicative of added urgency about the arbitration or experience a chilling effect instead.

Finally, results of this study suggest some public policy implications. On the one hand, policy makers struggling over the decision of which type of arbitration to include in their particular statute should note the effect of the form of arbitration on at least the more commonly encountered issues at impasse. On the other hand, if further research adds more support to the proposition that public sector employees are more risk-averse than private sector employees [31], policy makers should be aware of the strong effects of propensity toward risk on offers at arbitration and structure their impasse procedures accordingly.

ACKNOWLEDGMENTS

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