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ABSTRACT

This article opens up mediation to systematic economic analysis by considering mediators as analogous.to the Walrasian auctioneers of exchange theory. By altering trade-off rates among bargaining issues, mediators facilitate a process leading towards Pareto efficient voluntary settlements.

JEL codes: J52, D51

Key words: mediation, dispute resolution, exchange economy

MEDIATORS AS WALRASIAN AUCTIONEERS[1]

1. Introduction

Mediation is a form of alternative dispute resolution (ADR) that uses a neutral third-party to help resolve disputes, but mediators generally do not make binding decisions. As such, mediators are effective only in as much as they can facilitate a voluntary settlement among the disputants. This contrasts with arbitrators, for example, who dictate binding settlements. Mediation is utilized worldwide in a wide variety of settings that include labor-management negotiations, international relations, community disputes, school conflicts, and legal disputes, among others (see Wall et al., 2001, for a review). In the U.S., formal mediation plays a prominent role in labor contract disputes, court-mandated pre-trial mediation, and it is becoming increasingly used to resolve community disputes. The stakes of mediation range from relatively small (e.g., grievance mediation of employment disputes) to enormous (e.g., U.S. mediation efforts between Israel and Palestine).

Given the importance of mediation it is somewhat surprising that economic research has done little to analyze the process and outcomes of mediation. This is likely due to the prevailing notion that mediation is a form of "art" and, since successful mediators "orchestrate" settlements, the process is not well suited for systematic analysis. This article highlights how economic analysis can bring something to bear on our understanding of mediation by recognizing that a mediator is essentially the Walrasian auctioneer of exchange theory. Negotiators who bargain over the allocation of two or more issues are analogous to participants in an exchange economy, and mediators attempt to generate a Pareto efficient equilibrium. This is a simple yet powerful insight: the basic task of mediators is to vary the relative price of bargaining issues in order to induce voluntary agreement among netotiators.

[1]This paper has benefited from conversations with John Gilbert and Ronda Callister.

Though the skill required of a successful mediator is not to be ignored, I believe it is quite useful to draw attention to the core task at hand—"calling out" the correct relative price.[1] The implications of this approach to viewing dispute resolution may open the door to a more systematic way of analyzing mediation and other ADR procedures.

2. Negotiations and Dispute as an Exchange Economy

Assume bilateral negotiations between bargainers, *a* and *b*, over two issues, x_1 and x_2.[2] This is the simplest case that allows for "trade-offs" between issues, although the analysis extends easily to the *n*-issue case (as well as the *m*-bargainer case). Assume well-behaved preferences such that $U_j'(x_i)>0$ and $U_j''(x_i)<0$ for j=a,b, i=1,2. Now consider an Edgeworth "Bargaining" Box. Assume some initial endowment that may be the outcome of previous negotiations in repeated bargaining or long-term relationships. An example of two items in a typical labor-management dispute would be profits (or excess profits) and job security of employees. Management would then have preferences that are increasing in both the amount of its profits retained and in workforce flexibility (e.g., the opposite of job security to the workers). The dimensions of the Edgeworth Box may be determined by physical limitations (e.g., profits), legislated limitations (e.g., work hours limitations), or also by a previous stage of negotiations.

A common characteristic of negotiations is making trade-offs, which is reflected in the *relative price* (or trade-off rate) of negotiation issues. Figure 1 shows the case of dispute over bargaining issue #1 due to an incorrect relative price. The key point to be made is that *any* dispute can be viewed as a situation of *excess demand* for at least one bargaining issue. A bargaining dispute is thus a special case of general *disequilibrium* in an exchange economy.

[1] The ability to highlight the key item to successful mediation is also important as a growing number of community-based mediation programs utilize community volunteers who, though trained to some extent, may respond better to a simple description of how to accomplish their objectives.
[2] This section draws upon insights in Raiffa (1982).

At this point, simple general equilibrium theory introduces the mythical Walrasian auctioneer who calls out prices and adjusts them appropriately to generate general equilibrium. Note that this is precisely the role that the mediator plays in facilitating an agreement among negotiators. The mediator facilitates a process of "tâtonnement" (curiously but typically translated as "groping") described in the classic work of Walras (1926), whereby proposed trade-offs between negotiated items go back and forth until there is equilibrium in the system of equations of negotiated items. A mediator has no authority (generally) to impose a binding settlement, and so the key tool at his disposal is the ability to change the trade-off rate of x_1 for x_2.[3] Specifically, since Figure 1 shows a case of excess demand for issue #1 (e.g. profits, which would be evidenced by a firm's wage offer<union's wage demand), the mediator must "increase" the price of issue #1 relative to issue #2. By doing so to the correct extent the negotiators would *voluntarily* settle—that is, achieve general equilibrium in the bargaining economy. This clearly simplifies the job of a mediator, but the point is that the many tactics that mediators use have the basic objective of altering the negotiators' trade-off rate to achieve "agreement" equilibrium.[4]

Of course, difficulties in the task of the mediator should be highlighted. First, the larger the change needed in the relative price, the more difficult is the job of the mediator. One would hypothesize mediation's failure rate and/or the time required to mediate a dispute are increasing in the distance between positions on an issue (i.e., the extent of the excess demand), ceteris paribus. Wall et al. (2001) offers some evidence in support of this hypothesis in noting that higher settlement rates are found in mediations of elementary school student disputes versus difficult international disputes. This is consistent with the assumption that excess demand of key

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[3] Some mediators even avoid making explicit (nonbinding) suggestions for outcomes, though this is not always the case (Wall et al., 2001).

issues is greater in international disputes *or* that it is more difficult to alter the negotiators' trade-off rate between issues in international disputes. Secondly, negotiations might be over a multitude of issues. The existence of multiple options for swapping/trading issues, though apparently adding complexity, may ironically be advantageous to the skilled mediator who can affect trade-off rates by highlighting creative trades among multiple issues. Finally, dispute might also occur over what the initial endowment is. In this case, mediators must first align beliefs of what the starting point is before moving forward in mediation. For example, complex international negotiations often utilize a "single-negotiations text" (SNT)—an initial proposal by mediators—as a starting point for negotiations (see Raiffa, 1982).

There is evidence in support of the notion that mediators work towards changing the trade-off rate of issues on the bargaining table. In a recent survey of the literature on mediation Wall et al. (2001) notes a large variety of tactics that mediators might employ. Among those of interest here: information provision, pressure tactics, threats, and even monetary compensation. Some of these tactics are specific to the culture in which mediation occurs, but all may be used to alter trade-off rates of bargaining issues. In the U.S. mediation efforts of the Israeli-Palestinian conflict, the U.S. has contributed much of its own resources to "sweeten the deal" and attempt to alter the trade-offs of key bargaining issues (i.e., land and security). Greig (2001) also notes the importance of using outside resources for mediation success in international dispute resolution, and such explicit attempts to alter trade-off rates of bargaining issues are not uncommon.[5]

3. Implications

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[4] It is worth noting the difference between Pareto efficiency and dispute. Mediators seek to have bargainers exhaust all mutually beneficial gains from trade-offs in negotiations. At any given outcome, however, bargainers still prefer more to less and may still find reason to dispute the outcome in some sense.

[5] Raiffa (1982) gives the example of the Camp David negotiations between Israel and Egypt where a SNT was used along with U.S. mediation pressure and sweeteners for achieving agreements.

By analyzing negotiations as an exchange economy and mediators as Walrasian auctioneers, there are at least two implications worth noting.

IMPLICATION 1: Successful mediation leads negotiators to a Pareto efficient agreement.

This follows from our assumption that the mediator's basic task is to call out the correct relative price. This restatement of the first welfare theorem is quite a forceful endorsement of mediation. For a given initial allocation of issues (and well-behaved preferences, etc.), there is precisely one relative price that will generate general equilibrium, and this equilibrium will be on the contract curve of Pareto efficient outcomes. Note that this result does *not* depend on the mediator having complete information on the negotiators' preferences. Mediators must simply alter trade-off rates in response to revealed excess demand for bargaining items.

IMPLICATION 2: Mediators can guide negotiators towards desired outcomes when outside resources are utilized.

This second implication is quite interesting in that it suggests that mediators might exploit the fact that they may *prefer* some outcomes over others. Of course, this suggests a non-neutral mediator, but in certain mediation efforts the choice to involve an outsider with a stake in the outcomes is seen as necessary, especially in international mediation. Whether guided by self-interest, or by notions of distribute justice, fairness, etc., a mediator who can alter the dimensions of the bargaining box can exercise some discretion over negotiated outcomes. This follows from the fact that the contract curve moves with an increase in the amount of either bargaining issue (assuming that at least certain bargaining items are purchasable with mediator currency).[6] This may help explain behavior in international mediation where stakeholders mediate while often adding their own resources to help guide outcomes in a particular way.

Though the "correct" relative price will guarantee a Pareto efficient agreement, mediation might still be considered successful by other criteria. One might argue that any voluntary settlement indicates successful mediation because "voluntary" implies a Pareto improvement for both negotiators. However, a non Pareto efficient agreement does not realize all possible bargaining gains, and such agreements may plant seeds for future dispute. Some may even argue that if disputants are brought closer to agreement, then this implies a measure of success of the mediation process, though clearly less so than when a voluntary settlement is procured. At the very least, failed mediation maintains the status quo allocation, which is (weakly) part of the Pareto set. The apparent popularity of mediation is more easily understood when one considers that, by virtue of being a *nonbinding* procedure, negotiators will never be made worse off.

4. Conclusions

As with any theoretical analysis, simplifying assumptions must be made. This analysis of mediation assumes that negotiators do not gain any utility directly from mediation, but evidence suggests that negotiators may gain satisfaction from the process itself (Depner et al., 1994). Similarly, mediation might generate a positive externality. For example, Kitzmann and Emery (1994) argue that children are shielded from hostility in custody mediation, and gang mediation provides middle-school students with safer schools (Tabish and Orell, 1996). If positive externalities are generated then mediation will be relatively *under*utilized compared to what would be socially efficient. Relaxing some of these simplifying assumptions highlights areas that are ripe for further systematic analysis of mediation.

In this article I consider a simple negotiations case that may not seem to capture the flavor of real world negotiations and/or mediation. This criticism, however, would equally apply to general equilibrium theory as a whole. In the end, there is a powerful message to convey in

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[6] This point is made in a trade context with factor endowments by Rybczynski (1955).

noting that the complexities of mediation can be simplified to a basic task of altering relative prices to promote general equilibrium. This is the job of the Walrasian auctioneer as economists know it. Once mediation is cast in the light of an exchange economy, economic analysis can bring much more to bear on this widely-used, but under-analyzed, ADR procedure.

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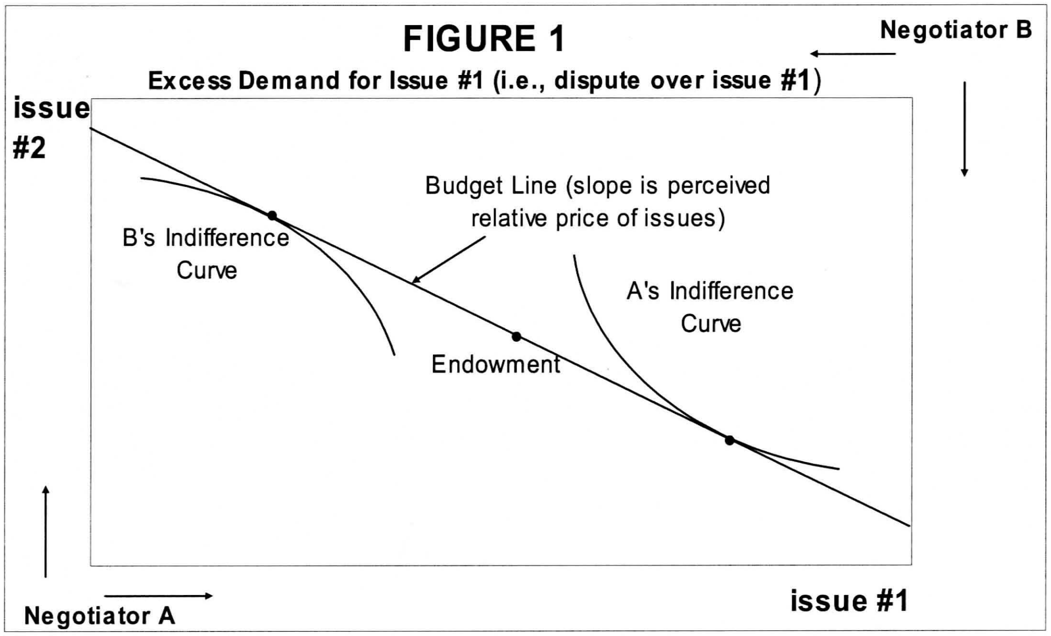

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