



# Interim third-party selection in bargaining

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## ABSTRACT

Third-party intervention can reduce the risk of conflict in situations where the bargaining failure is due to asymmetric information. In this paper, I consider the selection of a third party in a two-person bargaining problem where each disputant has private information about its relative strength or weakness. For a class of problems, I find that the disputants choose the third party that is best for the strong type but worst for the weak type due to the incentive of each disputant to avoid seeming weak to their adversary. The selected third party's intervention entails a higher ex ante chance of conflict than intervention by any other alternative. This paper shows how the process of interim third-party selection can have important consequences for the outcome of a third-party intervention in bargaining.

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## 1. Introduction

In many bargaining situations, the failure to reach an agreement by mutual consent results in conflict. Some examples of such conflict are warfare in international relations, strikes in labor disputes, court trials after failed pretrial negotiations, and simply “no deal” in selling or hiring situations. When the source of these conflicts is asymmetric information, third-party intervention can be used to reduce information asymmetries and thus to minimize the risk of conflict. This paper addresses a novel issue: If the disputing parties can choose a third party among many potential third parties, will they actually choose the third party whose intervention in the dispute is effective in minimizing the probability of conflict? I posit that the problem of information leakage that arises during the selection process ineluctably influences the choice of a third party in a way such that the selected third party's intervention carries a higher risk of conflict than that of any other available third party.

A long tradition of research in both economics and political science has focused on understanding the sources of bargaining failure that might give rise to conflict.<sup>2</sup> Starting with the seminal work of Myerson and Satterthwaite (1983), a large amount of the literature studies the possibility of a bargaining failure due to asymmetric information. When asymmetric

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<sup>2</sup> See Fearon (1995), Jackson and Morelli (2011), and Powell (2006) for various sources of conflict (or war) in the context of international relations.

information is the predominate cause of conflict, the bargaining parties can achieve better outcomes by communicating with each other. For example, some possible communication systems (or conflict resolution institutions) are face-to-face dialogue, mediation, and arbitration. Thus many game theorists, and especially international relations scholars, analyze the effectiveness of these institutions in reducing the possibility of conflict (e.g., Bester and Wärneryd, 2006; Fey and Ramsay 2009, 2010; Hörner et al., 2015; Kydd, 2003; Meirowitz et al., 2016).<sup>3</sup>

Within the growing literature on applying mechanism design to the study of conflict resolution in international relations, one of the comprehensive applications is Hörner et al. (2015). Their goal is to compare the performance of different forms of institutions such as mediation, arbitration, and unmediated communication in terms of the ex ante chance of conflict. Their results show that the mediator whose objective is the minimization of the ex ante probability of conflict can strictly improve on unmediated communication, and more surprisingly, can be equally effective as the arbitrator with the same objective.

Of note is that, in most bargaining cases, the selection of a third party can be made by the disputing parties themselves. For example, the American Arbitration Association (AAA) offers third-party intervention to parties in various disputes and provides a list of outside mediators or arbitrators from which the disputants can choose.<sup>4</sup> In fact there are different kinds of third parties who might have different characteristics, and some third parties are capable of producing peaceful settlements more often than others.<sup>5</sup> My goal in this paper is to theoretically examine whether the disputing parties would actually choose the third party who is ex ante more likely to resolve the dispute peacefully when the selection process is endogenous and is at the interim stage.

Hörner et al.'s (2015) main focus is on the question of when (and how) mediator intervention helps in reducing the chance of conflict relative to arbitrator intervention, given the availability of a single, conflict-minimizing mediator or arbitrator. My analysis is complementary by further asking which third party would be chosen by the disputants to intervene and help in reducing the chance of conflict, given the availability of many potential third parties. This paper shows how the process of selecting a third party can have important effects on the outcome of a third-party intervention in interim bargaining situations.

To answer my question, I use the concept of *Bayesian bargaining problem* in the sense of Harsanyi (1967-8) for describing the bargaining situations with incomplete information. In my setting, two players can jointly opt for an *agreement outcome*, or else a *conflict outcome* occurs. The conflict outcome is inefficient in the sense that it leads to social welfare reduction. Each player has private information about its type, either strong or weak. This private information can be thought of as a player's preferences for outcomes. In particular, the strong type prefers agreement over conflict only with the same type opponent, whereas the weak type always prefers agreement regardless of the opponent's type.

In this strategic setting, the players can communicate through a third party to reduce information asymmetries, and they select the third party at the interim stage. But there are multiple third parties that are available to the players. These third parties are modeled as mechanical intermediaries each of whom recommends a bargaining outcome as a function of the players' independently and confidentially reported types according to a coordination mechanism. The third parties are assumed to have no private information and no independent budget for transfers or subsidies. Further, each third party is assumed to be fully committed to its mechanism. In particular, a third party recommends "conflict" if it is prescribed by the mechanism that he or she is committed to; in other words, the third party commits to quitting after failing to lead the players to an agreement and does not seek a new mechanism. Thus the third parties that are available to the players can be characterized by the corresponding mechanisms that have different probabilities of recommending conflict given type reports.

More importantly, each of these available third parties is feasible in the sense that the third party must guarantee that the players are willing to participate and to reveal their types honestly to the third party if chosen. In the underlying bargaining problem that I consider, the players are given the set of possible bargaining outcomes rather than a set of actions, and the players can unilaterally resort to conflict whenever it might be profitable. In such situations, the participation constraints essentially ensure that the third party's probabilities of recommendations induce posterior beliefs of the players so that the players are willing to participate in accepting the agreement outcome if recommended; and that, together with the informational incentive constraints, the players subsequently have no choice but to honestly report their types and to

<sup>3</sup> For example, Kydd (2003) argues that for mediation to be effective, the mediator must be biased and endowed with some independent knowledge on the private information of the disputants. Fey and Ramsay (2010) show that mediation cannot improve on unmediated communication if a mediator does not have access to exogenous sources of information beyond what the disputants relay to them in the case of private values. Applying mechanism design tools, Fey and Ramsay (2009) identify the conditions under which mechanisms with zero probability of war exist; Meirowitz et al. (2016) illustrate how mechanisms that minimize the chance of conflict can change incentives for militarization, in turn raising the chance of conflict.

<sup>4</sup> See <https://www.adr.org/aaa/> for the AAA's areas of expertise across a wide variety of disputes in various industries and fields. For example, commercial, labor, employment, and international disputes; conflicts in the construction, real estate, and environmental industries; disputes in the government and consumer sectors, etc.

<sup>5</sup> Some examples of characteristics are preferences (peace-loving; impartiality between parties), intelligence (knowledge about bargaining situations; information about the bargaining parties), degree of skills (communication skills; procedural skills), or even personal character (credibility; authority; patience; a sense of humor and timing) (See Bercovitch and Houston, 1996 and Savun, 2008). Information about some basic characteristics of third parties are disclosed to the disputing parties when they are provided with the list of third parties. Then each of these different third parties can be described by its rate of failing to make an agreement. Savun (2008) examines how certain characteristics affect the failure rate.

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