What Makes Democracies Credible?*

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Abstract

In this paper we analyze the effect of domestic institutions on the information asymmetries between countries and thus on the outcomes of international negotiations. We compare two extreme cases of organization, a "democracy" and a "dictatorship". Our main result is that democratic institutions promote credible information channels between countries and thus tend to relax information asymmetries. While credible information transmission may be beneficial in a negotiation we find that democratic regimes involve imperfect utilization of private information and are less efficient than dictatorships at exploiting information rents. This result endogenizes what has been termed in the literature as "audience costs" in democracies. Our results also support the "stylized facts" about democratic peace. We find that democracies in dispute, fight less often than dictatorships.

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1 Introduction

In this paper we analyze how domestic institutions affect outcomes of international conflicts and negotiations. More specifically, we will show that domestic institutions may affect the degree of informational asymmetries between countries. As explored by the bargaining literature, asymmetric information may be an obstacle to conflict resolution and thus may escalate crises.

We assume that domestic institutions differ in the degree of decentralization of decision making and then compare two extreme cases, a "democracy" and a "dictatorship". In a democracy, the decision making process is decentralized since the electorate is the ultimate decision maker. In a dictatorship, the decision making process is centralized and a dictator ultimately decides.[1]

The main premise of this paper is that the degree of decentralization determines the technology of information or opinion elicitation in a country. Consider citizens who are informed about the attractiveness of an agreement with a rival country. In a democracy, in order to influence the electorate's decision, they would have to transmit this information *publicly*. Otherwise, this information would not reach the masses. On the other hand, in dictatorial regimes, informed citizens can transmit information to the dictator secretly.

For any technology of communication between informed citizens and decision makers in a country, we investigate whether public messages (by informed citizens) can affect the degree of information asymmetries between countries, and hence the out-

[1]By a dictatorship or a democracy we do not necessarily mean a country that is known to be under such a regime, but a country which applies such procedures in the relevant conflict.

come of international conflicts. Our main result is that public messages sent in democracies gain credibility in the eyes of a rival country. This decreases the degree of asymmetric information. On the other hand, in dictatorships, public messages lack such credibility. The dictator may possess additional information that is not reflected in the public message, which he collected secretly. His public messages are perceived therefore as strategically biased and unreliable.

Put another way, under a democratic procedure, informed citizens play a cheap talk game with two distinct audiences, their own public and the rival country.[2] Although the transparency of messages by the rival country may induce informed citizens to misrepresent their information, the presence of their home audience, which is influenced by the messages, creates an endogenous cost for any such bluffing. This enhances the credibility of messages. Under a dictatorial procedure, messages are sent to one audience only, namely the rival country, since the public does not take part in the decision making process. This destroys the credibility of these messages.

We therefore endogenize what has been termed "audience costs" in the literature. For example, Fearon (1994) assumes that democratic leaders, due to reputational considerations, have higher costs of escalating a crisis and then backing down, than do dictators. However, he does not show why this should be so. We show that audience costs may be driven by informational considerations. A politician's statement in a democracy may be costly to the politician because it influences the decisions of the polity.

[2]See Farrell and Gibbons (1989) for general analysis of cheap talk with two audiences.

The ability of democracies to transmit information credibly to a rival side and facilitate gains from trade may be harmful in some cases. The transparency of public discussions by the rival side does not allow the public in a democracy to coordinate its actions behind closed doors. Thus, democracies involve imperfect utilization of private information and are less efficient at extracting rents from a rival country. The model identifies therefore a trade-off between credible revelation of information that facilitates efficient solutions on the one hand, and exploitation of informational rents on the other.

To illustrate this trade-off, consider the Israeli-Syrian conflict and in particular the debates on the Israeli side about its management. When a public discussion is held about the degree of concessions Israel would be willing to forgo in return for a peace agreement, a mega-debate immediately follows about whether it is appropriate to hold such discussions in public. Some claim that public statements about the willingness to withdraw from the Golan Heights signal good intentions to the Syrian side that would promote an agreement. Others claim that they weaken the Israeli bargaining position. We will return to this example in the course of the analysis.

The trade-off that we identify between democracies and dictatorships allows us to compare the performance of these regimes in various types of international conflicts. In intense conflicts, in which convincing the other party of your willingness to cooperate is the most important aspect of the strategic interaction, democracies perform better than dictatorships. In less intense conflicts, in which a country realizes an opportunity to exploit informational rents by misleading the other country, dictatorial regimes will perform better.

If democracies tend to relax informational asymmetries one would expect different outcomes to result when two democracies, or two dictatorships are in conflict. We find that democracies in conflict resolve disputes peacefully more often than dictatorships in conflict, but that this comes at the cost of their reaching mutually undesirable agreements in some cases. Dictatorships in conflict have a lesser chance of reaching mutual agreements but when they do, the agreement is always desirable for both sides.[3]

The literature on the effects of domestic institutions on international outcomes was pioneered by Putnam (1988). Iida (1993) formalized Putnam's ideas, by examining different bargaining outcomes that arise from different assumptions on the information held by the negotiator and by his congress. The emphasis in our model is different: we concentrate on the possibility of communication between informed and uninformed citizens and analyze its effect on the bargaining outcome. Schultz (1998) also shows that messages of leaders in democracies may be credible, due to the existence of informed opposition parties that can contradict the leader's messages. In our model we characterize what we view as the fundamental reason why democracies involve credible information transmission: the technology of information transmission between informed citizens and decision makers, which must involve public messages.

The paper proceeds as follows. In the next section we present the model that includes a one-sided incomplete information game of conflict. In section 3 we analyze

[3]The stylized fact that democratic countries tend to resolve conflicts more peacefully has been termed in the literature "the democratic peace".

the game under a dictatorial regime and in section 4 under a democratic regime. In section 5 we compare the performance of different regimes in different conflicts and in section 6 we extend the analysis to introduce two-sided incomplete information. This allows us to conclude that a conflict between two democracies is more likely to be resolved peacefully. In section 7 we explain how our analysis can be generalized to a variety of institutions.

2 The Model

Two countries are engaged in an international conflict that can be resolved by an agreement. The agreement may or may not hold the potential for mutual gains. The nature of the conflict is such that each country has possibly two actions; either to take costly measures that will enable an agreement between the two countries (such as withdrawing troops or offering a compromise by making concessions), which we term 'soft', or to take measures that will make an agreement impossible, at least in the short-run (such as a military attack on the other country), which we term 'tough'. When both countries play soft they reach an agreement whose benefits are uncertain. In any other configuration of actions, a peaceful agreement is not achieved: when both play tough they receive low payoffs, and when one country plays tough and the other soft, the tough country gains at the expense of the soft country. This situation can be described in the following normal form game which we denote by G (for strictly positive a, b, M):

[Figure 1 about here]

What are the characteristics of the strategic interaction in this game? If $s > 0$, then the game is a coordination game. It has two pure strategy equilibria, (T,T) and (S,S), and a mixed-strategy equilibrium. The equilibrium (S,S) Pareto dominates all other equilibria. On the other hand, if $s < 0$, country 1's dominant strategy is to play T. The game has therefore a unique equilibrium, which is (T,T).

The gains for country 2 when both countries play S are certain and are greater than the gains when country 2 plays T and the other plays S. Thus, if country 2 knows that country 1 will play S, it plays S for sure. However, country 1's gains from (S,S) are uncertain. This uncertainty is captured by assuming s to be a random variable, taking the value of either v or $-v$, each with probability one half . If $s = v$, country 1 prefers an agreement to exploiting the vulnerability of country 2 and when $s = -v$ the opposite is true. We consider cases in which $v > M$.[4]

In what follows (through section 5) we focus our analysis on one country (country 1) and therefore treat country 2 as a single player who is uninformed about the random variable s, i.e., about country 1's preferences regarding an agreement. In country 1 there are two players:

1) The public (P), who is uninformed about s.

2) Informed citizen (K), who receives a signal t in [0,1] that is correlated with s according to a function $f(t|s)$.

We assume that $f(t|s)$ is continuous in t and satisfies the Monotone Likelihood Ratio Property (MLRP) in s, which means that the higher is t the higher is the

[4]This assumption implies the existence of states of the world in which an agreement may be inferior to other outcomes.

probability that $s = v$. In particular, let $f(t|v) = 2t$ and $f(t|-v) = 2(1-t)$. Given this specific function and a signal t, player K can easily update his beliefs in a Bayesian manner, which yields $prob(s = v|t) = t$. Note that if $t = .5$, then $E(s|t) = 0$.

We analyze situations in which it is possible for the informed citizen to transmit messages prior to the play of the game. Specifically, player K, who has private information, can send a message m in [0,1] about his signal t. This message is received by both country 2 and P. After the message is sent, the two countries play the normal form game G described in figure 1.

We compare two alternative and extreme institutions that may prevail in country 1 and differ in the decentralization of decision making. We capture this feature in the model by changing the identity of the final decision maker, i.e., the one who plays in G against country 2. In a democracy, P plays the game against country 2. The public however, as a whole, is uninformed and any information that player K transmits to P must be made public, because it is technologically impossible to transmit such information privately to each citizen (or to a majority of citizens).

On the other hand, in a dictatorship, player K is the decision maker who faces the strategic interaction with country 2. Although information about the state of the world may be dispersed in the population, it is relatively easy for a centralized authority to secretly collect some of it. Thus we can model dictatorship as an institution in which an informed leader takes the final decision.

To recapitulate, the structure of the game is as follows:

Stage 1: K sends a message m, observed by country 2 and P.

Stage 2: If country 1 is a dictatorship, K and country 2 play the game G and if country 1 is a democracy, then P and country 2 play the game G.

Players utilities are the same within country and are specified in the normal form game G. We use the concept of a Bayesian Nash Equilibrium to characterize the outcome of the game.

3 Dictatorial Regime

What happens when the informed party is the one who takes the final decision? In particular, would he be able to send any informative signal to the opposing country? If the informed citizen believes that an agreement is beneficial ($s > 0$) he has an incentive to reveal the truth to country 2 so that both countries would cooperate and exploit the gains of a mutual agreement (playing (S,S)). However, when the informed citizen K, which we identify with the dictator in this case, believes that the agreement is not beneficial ($s < 0$), it is still in his best interest to convince the other country that he prefers an agreement (i.e., that $s > 0$) and that country 2 should take peace enhancing measures, in order to exploit the situation by attacking a now vulnerable opponent. This incentive to mislead the other country hampers the possibility of communication between the two countries.

The message that the dictator sends in the first stage of the game does not affect his utility and represents "cheap talk". Crawford and Sobel (1982) have shown that, in strategic interactions that entail a relatively high degree of conflict of in-

terest, cheap talk may not be credible and the messages that are sent are therefore meaningless. We find that there is no responsive equilibrium in the game, i.e., the actions in the second stage are not affected by any message sent in the first stage. We summarize this finding in the following proposition:

Proposition 1. *When Country 1 is a dictatorship, there are no informative messages sent by K in the first stage. Given any message m in the first stage: If* $b \leq a$*, then (T,T) is the unique equilibrium in the second stage. If* $b > a$*, then the equilibrium in the second stage takes one of the following forms: (i) (T,T). (ii) Country 2 plays S and K plays S for* $t > \frac{1}{2}$*. (iii) Country 2 mixes between playing T and S, and K plays S for* $t > \frac{b}{b+a}$*.*

Proof: We first characterize the possible equilibria in the second stage of the game when K knows t and country 2 knows that $t \in [t_1, t_2]$. In any equilibrium, country 2 can either play T, S, or T with some probability. Let us consider each of these possibilities and see which action can be sustained in equilibrium.

(i) If country 2 plays T, then K, understanding this in equilibrium, responds with T for any signal. (T,T) can be an equilibrium for any beliefs of country 2 about t.

(ii) If country 2 plays S, then K's best response is to play S if $t > .5$ and play T if $t \leq .5$. Anticipating this behavior, country 2 is willing to play S if its expected utility from playing S is higher than that from playing T, i.e., if:

$$prob(\text{K plays S})(M + b) + prob(\text{K plays T})(-a) >$$
$$prob(\text{K plays S})M + prob(\text{K plays T})0,$$

where $prob(\text{K plays S}) = prob(t > .5 | t \in [t_1, t_2])$. This condition reduces to:

$$\frac{b}{a} > \frac{prob(t \leq .5 | t \in [t_1, t_2])}{prob(t > .5 | t \in [t_1, t_2])} \tag{1}$$

If condition (1) is satisfied, then country 2 playing S and K playing S if $t > .5$ is an equilibrium. For example, if $t_1 = 0$ and $t_2 = 1$, such an equilibrium is sustained if $b > a$.

(iii) If country 2 mixes between playing S and T, then the best response of K is to play S for high enough t. Let country 2 play T with probability α. Then there is a type t' of player K that is indifferent between playing S and playing T. This type is defined by condition (2):

$$\alpha a = (1 - \alpha) E(s | t') \tag{2}$$

For country 2 to be willing to mix between S and T, condition (3) must be satisfied (we reach this condition by similar manipulations that lead to condition (1)):

$$\frac{b}{a} = \frac{prob(t \leq t' | t \in [t_1, t_2])}{prob(t > t' | t \in [t_1, t_2])} \tag{3}$$

If conditions (2) and (3) are satisfied for some $t' \in (0, 1)$ and $\alpha \in (0, 1)$, then there exists an equilibrium in which Country 2 mixes between playing S and T and K plays S if and only if $t > t'$. For example, if $t_1 = 0$ and $t_2 = 1$, such an equilibrium is sustained if $b > a$, $t' = \frac{b}{b+a}$ and country 2 plays T with probability $\frac{v(b-a)}{v(b-a)+a(a+b).}$

The utility levels that country 1 achieves in these equilibria can be ranked. For any t, the equilibrium described in part (i) yields the lowest utility and the one described in (ii) yields the highest utility, in fact the highest possible payoff in this game. The equilibrium described in (iii) yields an intermediate utility.

We can now analyze possible equilibria of the first stage of the game. The equilibrium strategy of K partitions the message space [0,1] to intervals, such that each message m indicates to country 2 that t belongs to some interval $[t_1, t_2]$. In a responsive equilibrium, there exist at least two meaningful messages, m_1 and m_2, each indicating that t belongs to some interval, and a type t^* that is indifferent between sending each of the two messages, as in Crawford and Sobel (1982). If there is no responsive equilibrium, then all messages indicate that $t \in [0, 1]$.

We are now ready to prove that there is no responsive equilibrium in the game. Assume to the contrary that there is a responsive equilibrium. Since the three possible equilibria are ranked in terms of utility for each t, no t^* can ever be indifferent between the two messages, m_1 and m_2, if each induces a different equilibrium as specified in parts (i), (ii), and (iii). Could it be that each message induces a different mixed-strategy equilibrium? If so, country 2 must believe, given m_1, that $t \in [t_1, t^*]$ for some t_1, and given m_2, that $t \in [t^*, t_2]$ for some t_2. If t^* sends a message m_1, country 2 plays T with probability α_1 and t^* plays S in equilibrium. The expected utility of t^* must be higher than $(1 - \alpha_1)M$, which is his expected utility if he plays T. If t^* sends m_2, country 2 plays T with probability α_2 and t^* must play T in this equilibrium. His expected utility in this case is $(1 - \alpha_2)M$. Using condition (2), we can see that $\alpha_1 < \alpha_2$. The expected utility of t^* from sending m_1 is therefore higher than from sending m_2. We conclude that no t^* can be indifferent between these two messages.

Since there is no responsive equilibrium, the equilibrium outcomes of the game are the equilibrium outcomes of the second stage when country 2 knows only that

$t \in [0,1]$, as described above.■

A dictator is unable to credibly transmit information to a rival country. This may prevent a mutual agreement from occurring even when such an agreement would be Pareto improving. However, in other cases it is to the dictator's advantage to keep his private information to himself and not share it with the other country. For example, when $b > a$, there is an equilibrium in which the dictator can extract information rents from country 2. In this equilibrium, it is in country 2's interest to make concessions to country 1 (by playing S) even though it knows that country 1 may sometimes exploit it. The dictator indeed makes strategic use of his information; When he believes that a mutual agreement is beneficial, he takes measures to facilitate it, but when he believes otherwise, he takes advantage of a weakened opponent. Sharing the information with country 2 would only harm the dictator.

In connection to the Israeli-Syrian conflict, the skeptical portion of the Israeli population often claims that after yielding the Golan heights to Syria, the Syrians will exploit the situation to launch an attack on Israel. This perception on the Israeli side renders President Assad's claims of peaceful intentions unreliable in the eyes of the Israeli public.

4 Democratic Regime

The second case that we analyze is that of a democratic regime. In this case, the informed citizen (player K) participates in the message stage, but the polity (player P), is the one who takes the final action. When the informed citizen transmits a message in the first stage, it is observed by two audiences, namely by his country-

men and by Country 2. The message can therefore affect not only the behavior of Country 2 but also the behavior of the polity. Therefore, his messages may evoke an endogenous cost, which in turn may render these messages credible in equilibrium.

In this case we can establish the existence of equilibria with informative messages.

Proposition 2. *When Country 1 is a democracy, there exist informative messages in equilibrium with at most two messages. In any such equilibrium, K sends m_1 when his signal t is lower than some threshold t^* and m_2 otherwise. If m_1 is sent, P and country 2 play T. When m_2 is sent, it is either the case that both P and country 2 play S or that both mix between S and T. In any such equilibrium, $t^*<.5$.*

Proof: Let us consider the equilibria of the second stage of the game, assuming some message m has been sent in the first stage. Then, the game G played by P and country 2 is perceived as:

[Figure 2 about here]

Both players update their beliefs in the same manner after observing the message m. For any m, (T,T) is an equilibrium in the second stage of the game. If $E(s|m) < 0$, then (T,T) is the unique equilibrium. When $E(s|m) > 0$, (S,S) is an equilibrium as well, which Pareto dominates (T,T). In this case there is also a mixed-strategy equilibrium that is ranked between (T,T) and (S,S) utility-wise. In this mixed-strategy equilibrium, P plays T with probability β and Country 2 plays T with probability α. For the mixed-strategy equilibrium to exist, equations (4) and (5) that determine the indifference conditions for P and country 2 respectively, must

hold:

$$\alpha a = (1-\alpha)E(s|m) \tag{4}$$

$$\beta a = (1-\beta)b \tag{5}$$

We can now analyze the equilibria of the first stage. Obviously, there is an equilibrium in which P and Country 2 disregard the messages of K and always plays T. However, there are also two types of responsive equilibria. We will first show that the equilibria described in the proposition exist and then show that these are the only responsive equilibria.

Assume that when m_1 is sent, P and country 2 play T, and that when m_2 is sent, both play S. To sustain this behavior in equilibrium, we must find a type t^* of K who is indifferent between sending m_1 and sending m_2. This type is defined by the following equation:

$$M + E(s|t^*) = 0 \tag{6}$$

If t^* satisfies equation (6), then he is indifferent between the outcomes (S,S) and (T,T). Similarly, for the equilibrium in which both P and country 2 mix when m_2 is sent, we have to find a type t^* that is indifferent between (T,T) and an equilibrium in which P plays T with probability β and country 2 plays T with probability α. This type is defined in equation (7):

$$\alpha(1-\beta)(-a) + (1-\alpha)M + (1-\beta)(1-\alpha)E(s|t^*) = 0 \tag{7}$$

where α and β satisfy equations (4) and (5).

Both equations (6) and (7) are satisfied in our model, for some $t^* < .5$.[5] Moreover, these two equations imply that all types with $t > t^*$ prefer to send m_2 and all types with $t \leq t^*$ prefer to send m_1. The beliefs of P and country 2 prove to be correct, so, responsive equilibria can exist.

To understand why there can be only two messages that elicit different behavior in equilibrium, note that each message m that indicates that $E(s|m) < 0$ induces a play of (T,T) in the second stage. Thus, if there are more than two meaningful messages in equilibrium, e.g., three messages m_1, m_2 and m_3, then m_2 and m_3 must indicate that $E(s|m_2) > 0$ and $E(s|m_3) > 0$. A type t' who is indifferent between each of these messages must have $E(s|t') > 0$. This type cannot be indifferent between sending each of these messages if one message induces the countries to play one type of equilibrium (pure or mixed) and the other message induces them to play another type of equilibrium, since the equilibria are ranked utility-wise for positive expectation about s. Moreover, t' cannot be indifferent if both m_2 and m_3 induce the countries to mix. In two different mixed equilibria, only α changes with response to a message, since β does not depend on expectations about s (see equation (5)). Any type with $E(s|t') > 0$ would prefer the mixed equilibrium in which Country 2 plays S with a higher probability and therefore no t' can be indifferent. Thus, a responsive equilibrium can contain only two messages.■

Democratic regimes are able to credibly transmit information to a rival country and thereby facilitate mutually beneficial coordination. The messages sent by the

[5]Each equation is satisfied for a different value of t^*. For the sake of brevity we use the same symbol in both cases.

informed citizen of country 1 are credible because they are costly; The messages affect the electorate's behavior which in turn affects the sender's utility. Our model endogenizes what has been termed "audience costs" in the literature. For example, Fearon (1994) assumes that democratic leaders, due to reputational considerations, have higher costs of escalating a crisis and then backing down, than do dictators. However, he does not show why this should be so. We show that audience costs may be driven by informational considerations. In our model, a politician's statement may be costly to him since it affects the public's decision which in turn affect his utility.

Credibility is achieved because the informed citizen and the electorate cannot coordinate their actions behind the scenes. This entails a cost for democracies. In the responsive equilibria described in Proposition 2, for all signals above some threshold, both countries may reach a mutual agreement. However, conditions (6) and (7) demand that this threshold be lower than one half. This means that for an interval of values of the signal, an agreement is reached although it is not beneficial for country 1; these signals have $E[s|t] < 0$. The electorate's best response given these values of t would be to exploit the soft stance of country 2. Nevertheless, informed citizens cannot convince their countrymen to play tough without country 2 observing the message and deviating as well. In the next section, we ask whether and when the benefits of credible information transmission are greater than its costs.

Remark: We have modeled societies as entities in which citizens have homogenous preferences. However, our results would be qualitatively the same even if we allowed

for heterogeneity in preferences. We could assume that the informed citizen and the player who takes decisions differ in their willingness to reach a mutual agreement, given any s; For example, let the informed citizen receive $A + s$ when the countries reach an agreement, where A is distributed uniformly on $[M - H, M + H]$ and let the decision maker receive $M + s$. Under both regimes, the results in this case are analogous to Propositions 1 and 2.

5 Comparative analysis of institutions

The analysis of sections 3 and 4 clarifies a possible trade-off between autonomy over decision making and the credibility of information transmission.

In this section, we compare the performance of country 1 under democracy and under dictatorship, and show that the advantage of each regime is indeed tied to the parameters of the conflict. Later on, we examine whether a direct democracy can be an optimal regime.

5.1 Comparing democracy and dictatorship

We compare performance by calculating the ex ante expected utility (i.e., over all t) and the interim utility (i.e., given any t) of each regime, in the equilibrium that it induces.[6] This exercise yields the next result.

[6] In cases of multiple equilibria we pick the ex ante Pareto superior equilibrium for both country 1 and country 2.

Proposition 3. *If $b \leq a$, the equilibrium under democracy yields strictly greater ex ante utility and a weakly greater interim utility, compared to the equilibrium under dictatorial regime. When $b > a$, the opposite is true, and a dictatorship is better than democracy.*

Proof: If $b \leq a$, when country 1 is a dictatorship there is a unique equilibrium in which both countries play T and achieve utility of 0. When country 1 is a democracy, the Pareto superior equilibrium (for both countries) yields country 1 a utility of 0 for some values of t and utility of $M + E(s|t) > 0$ for other values of t. Democracies achieve greater utility, since credible information transmission allows coordination between P and country 2.

If $b > a$, when country 1 is a dictatorship, in the Pareto superior equilibrium country 2 plays S and country 1 plays S or T according to its information. This results in country 1 achieving a payoff of M or $M+E(s|t)$ (for types with $E(s|t) > 0$). When country 1 is a democracy, a responsive equilibrium entails utility of 0 for some t, and utility of $M + E(s|t)$ for all other types, including types with $E(s|t) < 0$. Democracy achieves lower ex ante utility and weakly lower interim utility.■

Intuitively, democracies do better when the conflict is harsh because in this case, without credible information transmission, mutual gains from trade cannot be attained. Dictatorships do better when the conflict is less harsh because in this case, country 2 is willing to play soft even when it faces the prospect of country 1 playing tough, and thus public discussions can only do damage by sacrificing informational advantages.

Our analysis so far compared two extreme institutions, dictatorship and a direct

democracy. It is beyond the scope of this paper to provide a more particular analysis of institutions as our main aim is to characterize the crucial difference between the extreme regimes that we have suggested. However, we do provide an answer to a simpler question; we ask whether democratic societies would like to allow their leaders more autonomy when it is time to take the final decision.

5.2 Should democratic leaders have discretion?

How much influence does the public have on political decision making in 'real world' democratic institutions? In most democratic countries, it is not clear to what degree leaders are accountable and whether the public really has the final word in decision making. When decisions are taken using a referendum, or when elections are held often enough, it may be true that the public is the final decision maker. However, in most democracies, it seems that the parliament or the Prime Minister are able to make decisions away from the public eye.

Take for example the Israeli-Syrian conflict. From the Syrian perspective, it may seem that Israeli citizens do not have full influence on the decisions taken by their politicians. The Syrian President may believe that it is possible that hostile actions will be taken by the Israeli Prime Minister without any vote or immediate consideration of public opinion. Thus, President Assad may not be sure whether he faces a "democracy" as we have defined it here.

We modify the model to account for this situation in the following way:

Stage 1: Player K sends a message, observed by P and country 2

Stage 2: A lottery takes place. With probability ε, K plays the game G and with

probability $1-\varepsilon$, P plays the game G against country 2.

During the message stage, it is not known yet who will take the final decision. This would be revealed to both sides only after statements are released, and prior to the game G. For $\varepsilon > 0$, with some (small) probability, the informed citizen K would take the final decision.

We will ask whether the country would prefer the value of ε to be set at 0 or at $\varepsilon > 0$ for a small ε. To answer this question, we have to analyze the equilibria of the game when $\varepsilon > 0$. Analysis of the ex ante Pareto superior equilibrium (from the point of view of both countries) yields the following conclusions:[7]

Proposition 4. *When $\varepsilon > 0$, there exists an informative equilibrium as long as ε is small enough. In this equilibrium, K sends m_1 for $t<t^*(\varepsilon)$ and m_2 for $t>t^*(\varepsilon)$. If P has to play, P plays T if m_1 is sent and S if m_2 is sent. If K has to play, he plays T if $t<.5$. Country 2 matches P's action if P plays and plays S if K plays. The value of the threshold $t^*(\varepsilon)$ for $\varepsilon > 0$ is lower than $t^*(0)$, which is the threshold under a democracy.*

In the equilibrium characterized in Proposition 4, the messages that are sent in the first stage are credible since the informed citizen takes into consideration that his messages may, with probability $1-\varepsilon$, affect the public's behavior. Therefore, an informative equilibrium can exist only if ε is small enough. Once the probability that the game will be played under a dictatorial regime is too high, country 2 will not believe messages sent by country 1.

A comparison of the equilibrium under a positive ε with that corresponding to

[7] The proof is similar to that of proposition 2.

$\varepsilon = 0$, yields our next proposition.

Proposition 5. *The expected utility of country 1 is higher under $\varepsilon > 0$ than under $\varepsilon = 0$, for ε small enough.*

Proof: An infinitesimal increase in ε to a positive level changes the equilibrium in two ways. First, it lowers the threshold t^* to $t^*(\varepsilon)$. Second, with a small probability, K gains control over the decision. The utility that types $t < t^*(\varepsilon)$ and types $t > .5$ receive does not change in response to that. However, all types in the interval $[t^*, .5]$, which has a positive mass, receive higher utility when $\varepsilon > 0$. In this interval, when $\varepsilon = 0$, these types receive $M + E(s|t)$ for $E(s|t) < 0$. When ε is positive, with some small probability the dictator exploits his information advantage and they receive M. This utility gain is of first order. The utility of the types in the interval $[\, t^*(\varepsilon), t^*]$ decreases when ε is positive, since these types receive $M + E(s|t) < 0 = M + E(s|t^*)$, where under $\varepsilon = 0$ they receive 0. However, this interval is infinitesimal and the utility loss is of second order. Since the first order effect is positive and dominates the second order effect, we conclude that a democracy would rather provide its leaders with some probability of autonomy over decisions.■

In other words, countries may want to create the impression that the public controls decision making, but allocate some power to individuals. In section 7 we discuss mechanisms that are used by democracies in order to implement different allocation of discretion. But first we extend the model to allow for two-sided incomplete information.

6 Two-sided incomplete information

The analysis that we performed in this paper has been concerned with one-sided incomplete information. We have assumed that country 2 certainly would benefit from a mutual agreement, whereas country 1's interests are uncertain. However, in most conflicts, it seems that the information asymmetries are two-sided and both countries are involved in a dialogue before taking actions. Each tries to figure out what is the likelihood that the other would take measures to facilitate a mutual agreement. Analysis of the model under two-sided incomplete information can provide insights about which regimes are more likely to reach peaceful agreements and which are more likely to engage in conflict. This question is related to the literature on "democratic peace", which explores the stylized fact that democracies do not fight each other as often as dictatorships do.

Suppose now that when both countries play soft, the payoff to country 1 is $M + s_1$ and the payoff to country 2 is $M + s_2$, where $s_i \in \{1, 2\}$, which are independent from one another, can be v or $-v$ with equal probability. The informed citizen in each country, K_i, receives a signal t_i in the interval [0,1] about the random variable s_i, where $f(t_i|v) = 2t$ and $f(t_i|-v) = 2(1-t)$ for both i. Thus, each country possesses only information about its own preferences.

In the first stage of the game, K_1 and K_2 engage in a message game, each able to send a message m_i in [0,1]. The messages are sent simultaneously and are observed both by the home and foreign audiences. In the second stage, depending on the prevailing regime in each country, P_i or K_i plays on behalf of country i.

We analyze the game when both countries are democracies, when both are dictatorships, and when one is a dictatorship and the other is a democracy. In all configurations of regimes, there exists an equilibrium in which both sides play T and ignore any messages. We will therefore characterize equilibria in which some agreement occurs. The following proposition summarizes our findings.

Proposition 6. *(i) In conflicts where at least one side is a democracy, there are always equilibria in which the probability of an agreement (i.e., both sides play S) is higher than any equilibrium of the game between two dictatorships. (ii) When both sides are dictatorships, an agreement is reached only if it is mutually preferred to any other outcome. Moreover, there are situations in which an agreement is preferred to both sides but is not reached. When both sides are democracies, an agreement may be reached although both sides would have preferred not to.*

Proof: To show the first part, we will consider three cases. Case A analyses the model when the two countries are dictatorships. We identify the maximum probability with which an agreement can occur, denoted by ρ_A. Case B analyses the model when country 1 is a democracy and country 2 is a dictatorship (switching the countries' names yields the symmetric results) and in case C we analyze the model with two democracies. In cases B and C we find equilibria that produce probabilities of agreements ρ_B and ρ_C respectively, both greater than ρ_A.

Case A: Both sides are dictatorships.

In case A, there exists a unique equilibrium with agreement. First, by the same reasoning applied in the proof of Proposition 1, there are no informative messages in equilibrium. Second, to reach an agreement in equilibrium, each country has to

play S with a positive probability. A type t_2 of country 2 plays S if and only if

$$prob(1\ plays\ \text{S})E(s|t_2) > prob(1\ plays\ \text{T})a$$

This suggests that, in the eyes of country 1, country 2 plays T if t_2 is smaller than some threshold that satisfies the above condition with equality. Using symmetry the equilibrium is the solution to

$$(1 - t_A)E(s|t_A) = t_A a$$

which is satisfied for some $t_A > .5$. The probability that an agreement is reached is therefore $prob(t_1 > t_A \text{ and } t_2 > t_A) = (1 - t_A)^2 \equiv \rho_A$.

Case B: country 1 is a democracy and country 2 is a dictatorship.

In case B, there exists the following equilibrium with agreement. The informed citizen in the democracy sends a message m_1 for values of t below a cutoff point t_B and a message m_2 for $t's$ above t_B. When a message m_1 is observed both sides play T. When m_2 is observed, the public in the democracy plays S and the dictator plays S only if his type is above .5. The informed citizen in the democracy is indifferent at t_B if

$$M + E(s|t_B) = a$$

which defines t_B. Note that $E(s|t_B) = a - M < a\frac{t_A}{1-t_A} = E(s|t_A)$ for $t_A > .5$, and therefore $t_B < t_A$. The probability that an agreement is reached is therefore $prob(t_1 > t_B \text{ and } t_2 > .5) = .5(1 - t_B) \equiv \rho_B > \rho_A$.

Case C: Both sides are democracies.

In case C, there exists the following equilibrium with agreement. The informed citizen in both countries sends a message m_1 for $t's$ below a cutoff point t_C and

a message m_2 for $t's$ above t_C. When both send a message m_2, both sides play S. Otherwise, for all other configuration of messages, both sides play T. Therefore, the informed citizen is indifferent at t_C if

$$M + E(s|t_C) = 0$$

which defines $t_C < .5$. The probability that an agreement is reached is therefore $prob(t_1 > t_C \text{ and } t_2 > t_C) = (1 - t_C)^2 \equiv \rho_C > \rho_A$. Because $t_C < .5 < t_A$, the second part of the Proposition follows.■

Our results support the conventional wisdom on what has been termed "democratic peace". Other explanations of this stylized view fall into two categories, one that emphasizes democratic norms favoring peaceful conflict resolution, and one that focuses on the democratic institutions that promote accountability and competition. Schultz (1998) shows that political competition induces credible information transmission and argues that this increases the chance of peaceful resolutions. Our explanation is similar to Schultz's in the sense that we use credibility of information transmission as the explanation for the democratic peace. However, we do not assume any form of political competition, but instead deduce credible information transmission from the public nature of policy debates in democracies.

7 Discussion

In this paper, we have analyzed how decentralization of decision making affects international outcomes. Specifically, we compared a fully decentralized institution which we named 'democracy', to a fully centralized one, termed a 'dictatorship'.

Obviously real world institutions lie somewhere between these two extremes. Moreover, the constitutions of many countries apply different procedures, some more democratic and some more dictatorial, to different issues. Our results in section 5.1 suggest that democratic procedures will achieve greater utility in some kinds of conflicts and dictatorial procedures in others.

It is not clear how much influence the public really has on the policy decisions even when the process is presumed democratic. Indirect democracies give autonomy to their leaders on some issues, but it may be that demonstrations and opinion polls will force accountable leaders to follow the public will after all. Section 5.2 dealt with cases of uncertainty with respect to the identity of the decision maker. We showed that the extreme version of a democracy, a direct democracy, is not desirable for international policy.

It may also be the case that the leaders themselves try to influence the degree of decentralization or involvement of the public in decision making. There are strategic tools that allow for that. The French Government was not obliged to use a referendum to ratify the Maastricht agreement, but did so, perhaps to signal to Europe the commitment of the citizenry as well as the elite. The White House did not have to organize a town-meeting in Cleveland that showed Sadam Hussein that the American public did not favor military acts. Perhaps it should not have done so in retrospect. An interesting extension of our model would be to allow an informed leader to determine the level of decentralization strategically.

This paper may also lay the ground for more specific research on the role of different information channels during international conflicts and how their credibility

is affected by the particular institution of decision making. In our model, the informed citizen sends messages that were fully observed by the public and by country 2. Thus, we have only analyzed the credibility of the public information channel in a democracy and in a dictatorship. In general, there can be three information channels that the informed citizen may use to transmit information:

(i) The public channel, which is observed with probability 1 by the home and foreign countries' decision makers.

(ii) A direct channel to the foreign country, which is observed by the foreign decision makers with probability one and by the home decision makers only with some smaller probability. This probability could be related to the decentralization level of decision making in the foreign country.

(iii) A direct channel of communication with the home country, which is observed by the home decision makers with probability one and by the foreign decision makers with some smaller probability. This probability could be related to the decentralization level of decision making in the home country.

Our assumption, regarding the effect of the decentralization of decision making on the technology of transmitting messages is related to the third information channel. We assumed that when the home country's decision maker is the public, the foreign country's decision maker observes communication with probability one, and when it is a dictator, the foreign country observes it with zero probability.

An extension of our model would allow a more continuous set of institutions that differ in the degree of decentralization of their decision making processes. The more decentralized is the home (foreign) institution, the higher is the probability that

foreign (home) decision makers will get hold of information passed in the home (foreign) country's information channels. We could then investigate which information channels would be used in equilibrium by the informed citizen, given the institutions in both countries and what will be the credibility of each channel.

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Figure 1: The game G

		Country 2	
		T	S
Country 1	T	$0, 0$	$M, -a$
	S	$-a, M$	$M + s, M + b$

Figure 2: The game G when country 1 is a democracy and a message m was observed

		Country 2: T	Country 2: S
Country 1	T	$0, 0$	$M, -a$
	S	$-a, M$	$M + E(s\|m), M + b$