Two-Player, One-Period Conflict Bargaining Games with Different Leadership Preferences

The baseline model is a simple, one-period bargaining game. Suppose two states bargain over territory and other, related policy outcomes. The total interests at stake are normalized to one. The status quo is written as \( \{SQ\} = (q, 1 - q) \), with \( 0 \leq q \leq 1 \) representing the share of Player 1. The bargaining starts with Player 1’s demand \((x, 1 - x)\), where \( x \in [0, 1] \). Player 1’s demand initiates a crisis, which has costs \( c_i > 0 \) for player \( i \). Upon receiving 1’s offer, Player 2 can either accept it or reject it. If the demand is accepted, the bargaining is over and \((x, 1 - x)\) becomes the new status quo. If the demand is rejected, the bargaining ends with conflict, denoted by \( \{C\} \). The outcome of conflict can be understood as a costly lottery with two possible outcomes: the victory of Player 1 (Player 1 wins all the benefits in dispute), occurring with probability \( p \) (\( 0 \leq p \leq 1 \)); and the victory of Player 2 with probability \( 1 - p \). In addition, conflict has costs \( k_i \) (\( 0 < c_i < k_i < 1 \)) for player \( i \). To sum up, once begun by the challenger, the bargaining game has two possible outcomes. It either ends in agreement \( x \equiv (x, 1 - x) \), or conflict \( \{C\} \). Finally, we assume this bargaining game is played with complete information, that is, all of the above parameters as well as the preferences of players (specified below) are public knowledge.
Ordinary nationalist preferences. An ordinary nationalist’s utility payoff to an agreement \((x, 1-x)\) is \(u^o_1(x) = x - c_1\), and \(u^o_2(x) = 1 - x - c_2\), where \(c_1\) and \(c_2\) are the bargaining costs relative to the value of the disputed collective goods. Note that the superscript marks the bargainer’s type—\(n\) refers to the ordinary nationalist type. The subscript distinguishes between the two players (1 or 2). Since the outcome of conflict \(\{C\}\) is defined as a costly lottery, the expected utility of conflict is \(p - k_1\) for the challenger, and \(1 - p - k_2\) for the defender. Therefore, the payoffs to conflict are \(u^o_1(\{C\}) = p - k_1 - c_1\) and \(u^o_2(\{C\}) = 1 - p - k_2 - c_2\). Proposition 1 describes when and how the status quo can be revised in a bargaining game involving two ordinary nationalist players.

**Proposition 1.** Under complete information the ordinary-ordinary nationalist bargaining scenario has a unique subgame perfect equilibrium (SPE) in which the status quo can be revised if and only if \(p + k_2 \geq q + c_1\). In particular, Player 1 proposes \((p + k_2, 1 - p - k_2)\), which is accepted by Player 2, and the status quo is revised from \((q, 1-q)\) to \((p + k_2, 1 - p - k_2)\).

**Proof of Proposition 1.** The proof has two parts. First we show that, if 1 is motivated to make an offer, this offer will be acceptable to 2. To see why, suppose there exists such an offer \(x\). Facing \(x\), Player 2 has to select between \(1 - x\) and \(1 - p - k_2\). Whenever \(1 - x \geq 1 - p - k_2\) or \(x \leq p + k_2\), 1 has every incentive to increase \(x\). However, any \(x > p + k_2\) will be rejected by 2 and lead to conflict. Therefore, the best agreement that 1 can expect is \((p + k_2, 1 - p - k_2)\). Note that 1 always prefers such an agreement over conflict because \(p + k_2 > p - k_1\).

Second, let us check whether 1 is motivated to make an offer \(x\). Since 1’s best payoff is \(p + k_2\), 1 is motivated to start the crisis whenever \(p + k_2 - c_1 \geq q \Rightarrow p + k_2 \geq q + c_1\).
**Extreme nationalist preferences.** A more extreme nationalist is defined as more highly valuing the upside risks of crisis-induced concessions and victory relative to the downside risk of defeat and the crisis and conflict costs. Thus, an extremist challenger’s utility function for agreement \((x, 1-x)\) is defined as \(u^*_i(x, 1-x) = Ex - c_1\), where \(E > 1\) is the extremist index for any agreement that improves upon the status quo. In the event of conflict \(\{C\}\), an extremist places high relative value on the prospect of victory. Therefore, Player 1’s expected utility of the costly lottery is \(pE^* - k_1\), where \(E^* > 1\) is the extremist index for conflict. Accordingly, 1’s utility function for bargaining that ends in conflict is \(u^*_i(\{C\}) = E^*p - k_1 - c_1\). For an extremist, we are interested in identifying threshold values of the extremist indices \((E\) and \(E^*)\) that suffice to forestall the outcomes other than conflict. In Proposition 2, we demonstrate that when an extremist evaluates the benefits and costs too disproportionately, there can be no agreement between an extreme nationalist and an ordinary nationalist.

**Proposition 2.** With complete information, the SPE of extremist-ordinary nationalist bargaining can be either agreement or conflict:

(a) when (1) \(E^* \leq \frac{1}{p}(p + k_2)E + \frac{k_1}{p}\) and (2) \(E \geq \frac{g + c_1 + k_1}{p}\), the status quo will be revised to \((p + k_2, 1 - p - k_2)\). In particular, Player 1 offers \(x = p + k_2\), which will be accepted immediately by Player 2;

(b) when (1) \(E^* > \frac{1}{p}(p + k_2)E + \frac{k_1}{p}\) and (2) \(E^* \geq \frac{g + c_1 + k_1}{p}\), the crisis will end in conflict. In particular, Player 1 would offer \(x > p + k_2\), which will be rejected by Player 2.

**Proof of Proposition 2.** For conflict to be the outcome, the following conditions have to be met. First, 1 prefers conflict to the best agreement she can get. From Proposition 1, we know that 1’s best offer acceptable to 2 is \(x^* = p + k_2\). Therefore the first condition requires \(U^*_1(p + k_2, 1 - p - k_2) < U^*_1(\{C\}) \Rightarrow Ex^* - c_1 < E^*p - k_1 - c_1 \Rightarrow E^* > \frac{1}{p}(p + k_2)E + \frac{k_1}{p}\).
Second, the motivation condition is $U^e_1([C]) \geq U^e_1([SQ]) \implies E^* p - k_1 - c_1 \geq q \implies E^* \geq \frac{q + k_1 + c_1}{p}$.

On the other hand, if $E^* < \frac{1}{p} (p + k_2) E + \frac{k_1}{p}$, then 1 prefers agreement over conflict. In this case, the motivation condition is $U^e_1 (x^*, 1 - x^*) \geq U^e_1 ([SQ]) \implies E p + k_2 - c_1 \geq q \implies E \geq \frac{q + c_1 - k_2}{p}$. □

We note that analogous results would follow from an otherwise identical analysis of moderate nationalist leadership preferences, for which the upside benefits of conflict are disproportionately undervalued relative to downside risks and crisis and conflict costs.

*Power-seeking preferences.* An ideal power-seeking (or diversionary) leader is exclusively concerned about the political consequences of crisis for staying in power. Let us define such a power-seeking Player 1’s payoff to the status quo as $\hat{q}$, to a bargaining agreement $x$ as $\hat{x}$. Furthermore, this power-seeker expects some political net benefit $\hat{b}$ from the process of crisis, where $\hat{b}$ may be either greater than or less than 0. Therefore, Player 1’s utility function for agreements $(x, 1 - x)$ is $u^d_1 (x, 1 - x) = \hat{x} + \hat{b}$. Note that $\hat{q}$ and $\hat{x}$ capture 1’s perception of political consequences of various redistributions of the collective goods. In a strict sense, if there exists a function between an agreement $x$ and its political consequences $\hat{x}$, or $\hat{x} = f(x)$, the only restriction of $f$ is that $f$ must be an increasing function. (The implication is that, other things equal, a power-seeker always gains more politically from a better deal, or $\hat{x} > \hat{y} \iff x > y$.) For the sake of clarity, we consider the simple form $f(x) = \beta x$ and $\beta > 1$. In the event of conflict $\{C\}$, a power-seeker can expect political benefits $\hat{w}$ from victory, political
costs from defeat \( \hat{l} \), and political costs/benefits from the conflict itself \( \hat{k} \) (\( \hat{k} \) may be either greater or less than 0). Her payoff to the lottery is written as \( \hat{\pi}_1^d = p\hat{w} + (1-p)\hat{L} + \hat{k} \). Accordingly, the power-seeker’s utility function is \( u_i^d(\{C\}) = \hat{\pi}_1^d + \hat{b} \). Proposition 3 sets out the possible outcomes of bargaining between a power-seeker and an ordinary nationalist.

Proposition 3. With complete information, the SPE of the power-seeker-ordinary nationalist bargaining can be either conflict or agreement:

(a) when \( \hat{\pi}_1^d \leq \beta(p + k_2) \) and \( \hat{\gamma} \leq \beta(p + k_1) + \hat{b} \), the status quo will be revised to \( (p + k_2, 1 - p - k_2) \). In particular, player 1 offers \( x = p + k_2 \), which will be accepted immediately by Player 2;

(b) when \( \hat{\pi}_1^d > \beta(p + k_2) \) and \( \hat{\gamma} \leq \hat{\pi}_1^d + \hat{b} \), the crisis will end in conflict. In particular, Player 1 would offer \( x > p + k_2 \), which will be rejected by Player 2.

Proof of Proposition 3. First, for an agreement \( (x, 1 - x) \) to be made, we need \( U_1^d(p + k_2, 1 - p - k_2) \geq U_1^d(\{C\}) \Rightarrow \hat{\pi}_1^d \leq \beta(p + k_2) \). Then the motivation condition requires \( U_1^d(p + k_2, 1 - p - k_2) \geq U_1^d(\{SQ\}) \Rightarrow \hat{\gamma} \leq \beta(p + k_2) + \hat{b} \).

Second, for conflict to be the outcome, we need \( U_1^d(p + k_2, 1 - p - k_2) < U_1^d(\{C\}) \Rightarrow \hat{\pi}_1^d > \beta(p + k_2) \). Then the motivation condition requires \( U_1^d(\{C\}) \geq U_1^d(\{SQ\}) \Rightarrow \hat{\gamma} \leq \hat{\pi}_1^d + \hat{b} \).
APPENDIX II

INTERNATIONAL TERRITORIAL CONFLICT: EXPERIMENTAL SCENARIOS

Note: The two factors varied in each of the two experimental manipulations are in italicized text. (In the scenarios presented to the subjects, no part of the scenarios is italicized.) The instructions and background information on the front end, and the choice instructions and ten-point scale on the back end, are constant across experimental scenarios.

Instructions (Identical Across Manipulations)

In this study, we are trying to learn about decision-making in international territorial disputes. Specifically, we are interested in your ability to comprehend decision making by government leaders. This comprehension will be shown by the quality of a decision you make in the context of a simulated crisis situation.

In the next pages, you’ll be confronted with a hypothetical international dispute scenario. The case will provide you with information from various sources. Read the information carefully, and then respond to the situation, assuming the role of an advisor to a government leadership. You will be presented with three factors to consider as you make your recommendation as advisor to the government leadership: (1) leadership objectives of the government; (2) initial conditions on the ground at the time of the dispute; and (3) the relative power between the two parties in the dispute.

Following the case is a response form on which you will record your recommendation on how to react to the situation. Please follow all instructions relating to your response.

Background Information (Identical Across Manipulations)

You are advising the leaders of Gorendy, who have a territorial dispute with the leaders of Winmont. The dispute concerns the province of Minal, which is currently under the control of Winmont. Minal is an oval-shaped region measuring about 80 kilometers by 240 kilometers, which lies along the southern border of Winmont and just across the northern border of Gorendy. Minal contains similar numbers of Gorendian and Winmontese people, and has been ruled by both Gorendy and Winmont during different periods in the past. Both Gorendy and Winmont continue to claim Minal as part of their sovereign territory.

Relations between Gorendy and Winmont have long been tense. This year, an economic and political crisis has made things worse. Unemployment is high across the region, and both the Gorendian and the Winmontese governments are struggling to improve their economies. In Minal, a number of Gorendian-Winmontese ethnic riots have occurred, killing civilians of both groups and destroying many homes and businesses.
Experimental Manipulation I: Variations in Leadership Objectives (Moderate vs. Extremist) and Relative Power (Equal vs. Unequal), with Initial Conditions Held Constant at an Intermediate Level

Leadership Objectives: You are an advisor appointed by leaders of the Gorendian People’s Party (GPP) government. The GPP seeks to nurture and protect the Gorendian people. In addition to building a higher standard of living at home, the GPP seeks to guard Gorendy’s external security and to restore Gorendy’s sovereignty over Minal. According to the GPP Charter, the GPP stands for improvement in all areas of Gorendian life, while seeking to avoid risks that threaten the future of Gorendy.¹

Initial Conditions: The Winmontese government seeks peaceful relations with Gorendy, claiming that coexistence benefits both countries more than hostilities. In Minal province, local Gorendian elites have some influence within government, and Gorendian students have access to literature and culture courses in their own language; Gorendians frequently do not receive equal treatment under the law, and have lower living standards than the local Winmontese. The Winmontese government insists on its sovereign territorial control over Minal, but on all other issues is open to negotiations and consultations with both the Gorendian state and the Gorendian population of Minal.

Relative Power: The rough estimate of military experts is that there is a 50% chance that Gorendy would defeat Winmont in a war for control over Minal. Gorendy has more people and a somewhat larger military than Winmont. So Gorendy has a decent chance of winning a conventional war in the short-run, or a guerrilla war in the long-run. If the war is won, Gorendy will rule over Minal. If the war is lost, a large part of Minal’s Gorendian population will flee to Gorendy, Winmont will rule Gorendians in Minal more repressively, and economic conditions in Gorendy and Minal will worsen. If the war is won quickly, military and civilian casualties and destruction of infrastructure and property in Gorendy and Minal are likely to be limited. But if the war is lost, thousands or tens of thousands of Gorendians will die, and widespread destruction in Gorendy and Minal is likely.²

The GPP leaders have not decided how to respond to the current situation. Several proposals exist. The possible courses of action begin with doing nothing, rise through an

¹ The manipulation for extreme leadership preferences reads as follows: You are an advisor appointed by leaders of the Gorendian People’s Party (GPP) government. The GPP insists that Minal will always be a part of the homeland of the Gorendian people. According to the GPP, restoring the territory of Minal to Gorendy is the only reliable way to protect the security of Gorendy and to guard the interests of the Gorendian community living in Minal. The GPP views the Gorendian people as steadfast, aware of their historical rights, and willing to endure sacrifice to uphold these rights.

² The manipulation for low relative power reads as follows: The rough estimate of military experts is that there is a 20% chance that Gorendy would defeat Winmont in a war for control over Minal. Winmont has more people and a larger military than Gorendy. But over time conventional and guerrilla warfare may be effective in gaining control over Minal province—either via military victory or because Winmont loses its will to continue fighting. If the war is won, Gorendy will rule over Minal. If the war is lost, a large part of Minal’s Gorendian population will flee to Gorendy, Winmont will rule Gorendians in Minal more repressively, and economic conditions in Gorendy and Minal will worsen. If the war is won quickly, military and civilian casualties and destruction of infrastructure and property in Gorendy and Minal are likely to be limited. But if the war is lost, thousands or tens of thousands of Gorendians will die, and widespread destruction in Gorendy and Minal is likely.
escalating series of non-violent forms of political pressure and increasingly intense uses of force, and end with an all-out war to seize control over Minal. At each step, new actions are added to the previous ones to put greater pressure on the Winmontese government.

More intense non-violent methods and uses of force involve greater risks—making both higher gains and higher losses more likely. On the one hand, more intense pressures or uses of force are more likely to produce an outright Gorenidian victory, or at least to lead the Winmontese enemy to make significant concessions in order to end the conflict. On the other hand, the enemy will respond to greater pressure or force with greater pressure or force of its own. This will increase the suffering of Gorenidians in both Minal and Gorenidy, and may leave the Gorenidians worse off than they were before the conflict.

At this point, you must make a recommendation to the Gorenidian People’s Party leaders. Based on the information at your disposal about leadership objectives, initial conditions, and relative power, choose a strategy on the scale presented below. Strategies are explained below the scale. To make your choice, please circle one and only one number on the 1-10 scale.

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1) Ordinary politics. No change from ordinary (peaceful) methods: Use regular diplomatic channels to negotiate with Winmont, and support similar efforts by the local Gorenidian population in Minal.
2) Extraordinary politics. Extraordinary, but still peaceful methods: Gorenidian leaders make stronger demands for change, supported by demonstrations, strikes against Winmontese businesses, and boycotts of Winmontese goods by Gorenidians in both Minal and Gorenidy.
3) Crisis politics. Strong methods that stop short of attacking people, but that damage property and disrupt ordinary life: Seek cooperation of international allies to put political and economic pressure on Winmont. In Minal, support local Gorenidian efforts to occupy schools and other government buildings; block streets and highways; break windows and graffiti walls of government buildings and businesses associated with the Winmontese government.
4) Shadow state. Refuse to recognize or work with the Winmontese government. In Minal, set up a parallel government controlled by local Gorenidians to provide public services and to mobilize local Gorenidian support for secession from Winmont.
5) Intermittent symbolic violence. Shelter Gorenidian guerrillas who conduct small numbers of attacks in Minal, targeting Winmontese soldiers, police, and high-ranking political leaders.
6) Regular symbolic violence. Shelter Gorenidian guerrillas who conduct significant numbers of assassinations and hit-and-run attacks on Winmontese security forces, political leaders, and symbolic sites, including attacks in other regions of Winmont.
7) Regular border attacks. Using both regular Gorenidian military forces and Gorenidian guerrillas, conduct regular attacks from border areas of Gorenidy into Minal province and other regions of Winmont, attacking Winmontese security forces and disrupting Winmontese control of Minal. Flee back across the border as necessary to minimize large-scale clashes with Winmontese forces.
8) **Forcible establishment of parallel control.** Seek to establish military presence and control within Minal alongside Winmontese police and security forces at places and times where the Winmontese state has a weak presence, for example in mountainous rural areas and city slums, especially at night. Avoid large-scale clashes with Winmontese forces.

9) **“Ink-spot” insurgency.** Seek to establish exclusive control in areas where the Winmontese state has the weakest presence, for example in mountainous rural areas and city slums. Expand these areas opportunistically as Winmontese forces weaken.

10) **All-out war.** Use all means available and effective to gain exclusive control over all of Minal province, including operations conducted beyond Minal in other regions of Winmont.

**Experimental Manipulation II: Variations in Leadership Objectives (Moderate vs. Extremist) and Initial Conditions (Better vs. Worse), with Relative Power Held Constant at an Intermediate Level**

**Leadership Objectives:** You are an advisor appointed by leaders of the Gorendian People’s Party (GPP) government. The GPP seeks to nurture and protect the Gorendian people. In addition to building a higher standard of living at home, the GPP seeks to guard Gorendy’s external security and to restore Gorendy’s sovereignty over Minal. According to the GPP Charter, the GPP stands for improvement in all areas of Gorendian life, while seeking to avoid risks that threaten the future of Gorendy.³

**Initial Conditions:** The Winmontese government seeks friendly relations with Gorendy, claiming that growing trade and investment and significant cultural ties and tourism benefit both countries. Within Minal province, regional political autonomy allows Gorendian communities to be ruled by their own local governments, and to have access to public education in their own language; Gorendians receive equal treatment under the law, and have living standards similar to the local Winmontese. The Winmontese government insists on its sovereign territorial control over Minal, but on all other issues is open to negotiations and consultations with both the Gorendian state and the Gorendian population of Minal.⁴

**Relative Power:** The rough estimate of military experts is that there is a 35% chance that Gorendy would defeat Winmont in a war for control over Minal. Winmont has more people and a somewhat larger military than Gorendy. But over time conventional and guerrilla warfare may be effective in gaining control over Minal province—either via military victory or because Winmont loses its will to continue fighting. If the war is won, Gorendy will rule over Minal. If

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³ The manipulation for extreme leadership preferences reads as follows: *You are an advisor appointed by leaders of the Gorendian People’s Party (GPP) government. The GPP insists that Minal will always be a part of the homeland of the Gorendian people. According to the GPP, restoring the territory of Minal to Gorendy is the only reliable way to protect the security of Gorendy and to guard the interests of the Gorendian community living in Minal. The GPP views the Gorendian people as steadfast, aware of their historical rights, and willing to endure sacrifice to uphold these rights.*

⁴ The manipulation for worse initial conditions reads as follows: *The Winmontese government is unfriendly and suspicious toward Gorendy, claiming that Gorendy has committed aggression against Winmont in the past and continues to be a threat at present. Within Minal province, centralized rule means that local government is controlled by Winmontese, and that Gorendians do not have access to public education in their own language; Gorendians are regularly mistreated by the local police and justice system, and have living standards much lower than the local Winmontese. The Winmontese government refuses to negotiate about any issues related to Minal, arguing that these issues are purely internal matters to be decided by Winmontese governments.*
the war is lost, a large part of Minal’s Gorenidian population will flee to Gorendy, Winmont will rule Gorenians in Minal more repressively, and economic conditions in both Gorendy and Minal will worsen. If the war is won quickly, military and civilian casualties and destruction of infrastructure and property in Gorendy and Minal are likely to be limited. But if the war is lost, thousands or tens of thousands of Gorenians will die, and widespread destruction in Gorendy and Minal is likely.

The GPP leaders have not decided how to respond to the current situation. Several proposals exist. The possible courses of action begin with doing nothing, rise through an escalating series of non-violent forms of political pressure and increasingly intense uses of force, and end with an all-out war to seize control over Minal. At each step, new actions are added to the previous ones to put greater pressure on the Winmontese government.

More intense non-violent methods and uses of force involve greater risks—making both higher gains and higher losses more likely. On the one hand, more intense pressures or uses of force are more likely to produce an outright Gorenian victory, or at least to lead the Winmontese enemy to make significant concessions in order to end the conflict. On the other hand, the enemy will respond to greater pressure or force with greater pressure or force of its own. This will increase the suffering of Gorenians in both Minal and Gorendy, and may leave the Gorenians worse off than they were before the conflict.

At this point, you must make a recommendation to the Gorenian People’s Party leaders. Based on the information at your disposal about leadership objectives, initial conditions, and relative power, choose a strategy on the scale presented below. Strategies are explained below the scale. To make your choice, please circle one and only one number on the 1-10 scale.

[The strategy choices and descriptions are the same as in Experimental Manipulation I.]
Manipulation Check Questions

1. Which objectives are most important to the leaders of the Gorendian People’s Party? (circle one, and only one, number that approximates your choice)
   - Avoiding Casualties 0 1 2 3 4 5 6 7 8 9 10
   - Gorendian Control over Minal
   - Threater the Future of the Gorendians

2. How likely is Gorendy to win a war against Winmont for control over Minal? (circle one, and only one, number that approximates your choice)
   - Victory 0 1 2 3 4 5 6 7 8 9 10
   - Victory Likely
   - Victory Unlikely

3. What is life like for Gorendians in Minal under the rule of the Winmontese state? (circle one, and only one, number that approximates your choice)
   - Worse 0 1 2 3 4 5 6 7 8 9 10
   - Equal Economic Conditions
   - Significant Political Influence
   - Equal Access to Education in Their Own Language
   - Cooperate Effectively with Winmontese State
   - No Access to Education in Their Own Language
   - Persecuted and Repressed by Winmontese State