Why Are There Wars?

POSC 1020 – Introduction to International Relations

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Puzzle(s) for Today

War is a costly and ultimately inefficient means to address disputes. So why does it happen?

War is Fortunately Still a Rare Event

We care about war because of its costs, but most countries are at peace most of the time.

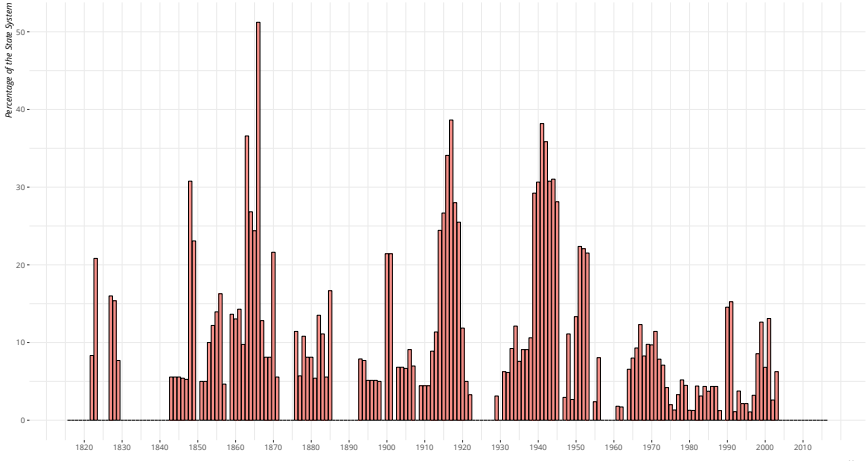
The American Case

Consider the case of the United States and American deaths from:

- 9/11: 2,996
- Terrorism: around a dozen per year (recent spikes in Orlando, San Bernardino)
- Iraq War: 4,493
- Murder, average year: 16,121
- Car accidents, average year: 33,804
- Accidental falls, average year: 30,208
- Diabetes as underlying condition, 2015: 79,535

The Percentage of States Involved in Interstate War by Year, 1816-2010

We treat interstate war as (fortunately) a rare event but the 1860s, 1910s, and 1940s stand out as particularly violent decades.



Data: GML MID data (v. 2.02) and Correlates of War State System Membership List.

Defining our Terms

Let's be clear with our terms:

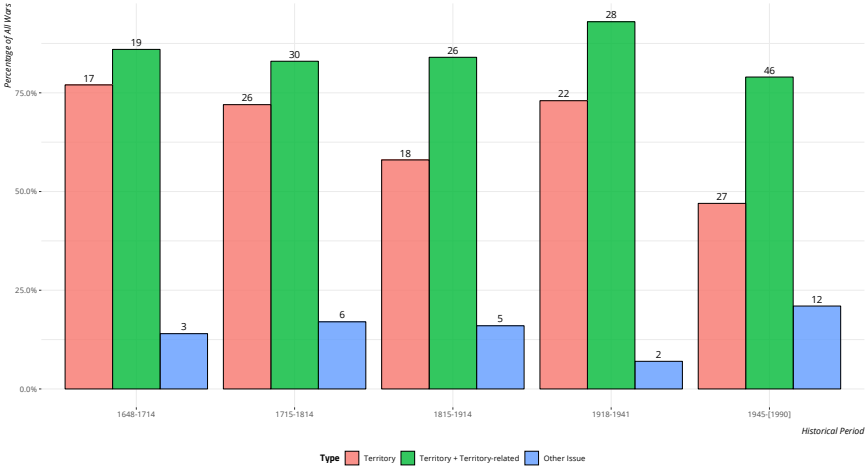
- *War*: Sustained combats between at least two participants that meets a miminum severity threshold.
  - Practically: 1,000 battle-related deaths per year (excluding civilian casualties).
- *Interstate*: a subset of war between at least two state system members.
- *State*: commonly a country, but with some caveats
  - e.g. recognition, population size

Kashmir: Breathtaking, but Strategically Not That Valuable

Territorial Claims in Kashmir

Percentage and Frequency of Wars By Issue Type, 1648-1990

Most wars over time have been fought over territory or territory-related issues than other issue types.



Data: Vasquez (1993) via Holsti (1991). Note: counts appear on top of the bars by issue-type.

Wars Over Other Issues

Other issues, by contrast, are not as war-prone but can still lead to war.

- Composition of another side's regime (Iraq War, Vietnam War)
- Trade (e.g. Anglo-Dutch War)
- Various other policy concerns
    - Treatment of co-ethnics has come up recently (hello, Russia...)

War as Failed Bargain

However, it's not as simple as saying "states fight wars over stuff." *Wars are failed bargains.*

- States have numerous issues among them they try to resolve.
- They may use threats of force to influence bargaining.
- If bargaining fails, states, per our conceptual thinking, resort to war.

A Simple Model of Crisis Bargaining

To that end, we devise a simple theoretical model of crisis bargaining.

- There are two players (A and B).
- A makes an offer ($0 < x < 1$) that B accepts or rejects.
  - If B accepts, A gets $1 - x$ and B gets x.
  - If B rejects, A and B fight a war.

A Simple Model of Crisis Bargaining

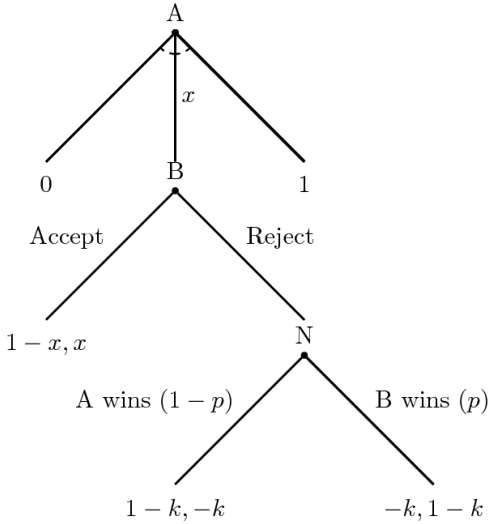
The war's outcome is determined by Nature (*N*)

- In game theory, Nature is a preference-less robotic actor that assigns outcomes based on probability.
- If (A or B) wins, (A or B) gets all the good in question minus the cost of fighting a war $(1 - k)$
  - Assume: $k > 0$
  - Costs could obviously be asymmetrical (e.g. k_A, k_B), but it won't change much about this illustration.
- The loser gets none of the good and eats the war cost too ($-k$).

We assume minimal offers that equal the utility of war induce a pre-war bargain.

A Simple Model of Crisis Bargaining

Here's a simple visual representation of what we're talking about.



Solving This Game

How do we solve this game? How do A and B avoid a war they do not want to fight?

- The way to solve extensive form (i.e. “tree”) games like this is **backwards induction**.
- Players play games ex ante (calculating payoffs from the beginning) rather than ex post (i.e. hindsight).
- They must anticipate what their choices to begin games might do as the game unfolds.

In short, we can solve a game by starting at the end and working back to the beginning.

Solving This Game

For our purpose, we need to get rid of Nature.

- Nature doesn't have preferences and doesn't "move." It just assigns outcomes.
- Here, it simulates what would happen if B rejected A's demand.

We can calculate what would happen if Nature moved by calculating the expected utility of war for A and B.

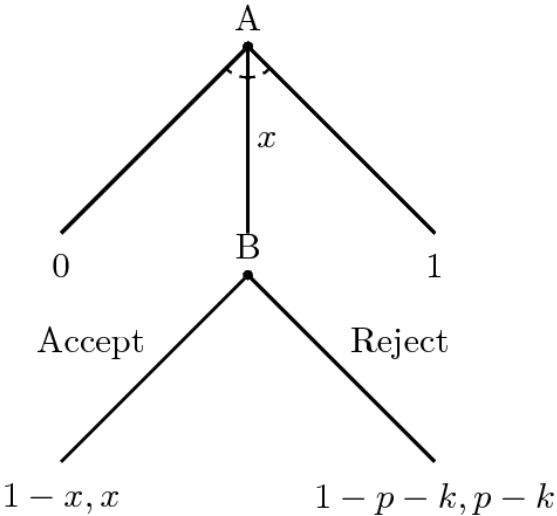
Expected Utility for A of the War

$$\begin{aligned} EU(\text{A}|\text{B Rejects Demand}) &= (1-p)(1-k) + p(-k) \\ &= 1 - k - p + pk - pk \\ &= 1 - p - k \end{aligned}$$

Expected Utility for B of the War

$$\begin{aligned} EU(\text{B}|\text{B Rejects Demand}) &= (1-p)(-k) + p(1-k) \\ &= -k + pk + p - pk \\ &= p - k \end{aligned}$$

The Game Tree, with Nature Removed



Solving This Game

Now, continuing the backward induction, we focus on B.

- B ends the game with the decision to accept or reject.
- B does not need to look ahead, per se. It's now evaluating whether it maximizes its utility by accepting or rejecting a deal.

Solving This Game

Formally, B rejects when $p - k > x$.

- It accepts when $x \geq p - k$.
- Notice A has a "first-mover advantage" in this game.
  - This allows it to offer the bare minimum to induce B to accept.
  - It would not offer anymore than necessary because that drives down A's utility.

We say A's offer of $x = p - k$ is a minimal one for B to accept.

Solving This Game

Would A actually offer that, though?

- In other words, are $x = p - k$ and $1 - x \geq 1 - p - k$ both true?

Recall: we just demonstrated $x = p + k$. From that, we can say $1 - x \geq 1 - p - k$ by definition.

- The costs of war (k) are positive values to subtract from the utility of fighting a war.

The Proof

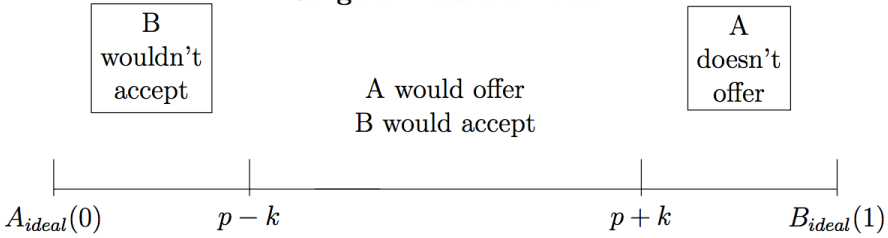
What A would get (1 - *x*) must at least equal 1 - *k* - *p*. Therefore:

$$\begin{aligned} 1 - x &\geq 1 - k - p \\ 1 - 1 + k + p &\geq x \\ p + k &\geq x \end{aligned}$$

Solving This Game

We have just identified an equilibrium where two states agree to a pre-war solution over a contentious issue.

- There exists a bargaining space where A and B resolve their differences and avoid war.


Range of Possible Deals
B wouldn't accept
A would offer
B would accept
A doesn't offer
$A_{ideal}(0)$
$p-k$
$p+k$
$B_{ideal}(1)$

War as an Ultimatum Game

If you know some game theory, this looks like an ultimatum game. It is.

War as an Ultimatum Game

Assume you and I cannot agree how to split $100.

- I want all of it. So do you.
- For $20, we can set up a fight for $100.
  - First one to say “matté” (i.e. tap out, a la *Bloodsport*) loses.
- Assume p = .5, our EU(fighting) = (100)(.5) + (0)(.5) - 20 = 30

Would You ‘Kumite’ for $100 in This Situation?

Yes, You Would...

By itself, this is a fantastic lottery.

- For $20, you win $30 on average.
- We would agree to fight if this accurately represented our payoffs.

War as an Ultimatum Game

Consider that I offer you a deal in light of this. I take $70; you take $30. Would you accept this? Assume:

- You are risk-averse and would take a deal that matches your expected utility for fighting.
- You are not permitted a counter-offer.

You might decry this as unequal. It is...

War as an Ultimatum Game

However, you would accept this if you were rational.

- My offer to you just matched your expected utility of fighting.
- You would accept this, per our assumptions.
- Any offer I give to you between $30 and $70 would induce you to accept.
  - I would not offer you $70, though, because that reduces my payout.

Conclusion

- War is the most destructive/costly thing we do.
  - Fortunately, it's a rare event.
- States mostly fight over the distribution of territory.
- Conceptually: war is bargaining failure.
  - We'll talk more next about why exactly bargaining fails.

Table of Contents