

Class three and four

WWI, bargaining failure, strategic bombing

May 17, 2018

What this course about: WWI as poster child

- Brief history
 - A world of colonial powers: France, Russia, UK, emergent Germany, Italy to some extent
 - World of alliances: Germany and AH empire vs France, UK, Russia.
 - Arms races, especially UK vs Germany in navies
 - Franco-Prussian war: short, swift, the loser paid
 - Economically integrated (Norman Angell, "The Great Illusion.")
 - Eve of war: both sides anticipated a short war with reparations, both sides expected to win. If it did not end quickly, cooler heads would prevail and end it.
- What had happened to military technology as illustrated by Civil War?
 - Breech-loading, rifled barrel weapons
 - Improved artillery
 - machine guns perfected
 - Early civil war: a war of movement; later civil war, butchery as defense gained upper hand
 - Upshot: pendulum swung to defence.

- "Make the right wing strong" (Schlieffen's dying utterance)
 - Opportunity cost.
 - PA problem: where's the glory in defence? (what are incentives of left-wing generals? Civil War generals "leaked info to newspapers that enhanced their careers); March on Paris? (Von Kluck exposes his flank).
 - Belgian neutrality: misperceptions ("they won't ... fight," Britain will not enter war). Historians say: Germans "had" the information, i.e., objective observer would have predicted this, but didn't see it this way. (behavioral economics: why do economists, Dr.'s, disagree?)
 - Behavioral: see what you want to see (Romeo and Juliet).
- Militarism: misaligned incentives again, PA problem ("bloody wars and dread diseases")
- France: quick strike through Ardennes, no need to be defensive, belief the Germans wouldn't invade neutral Belgium.
- Offense-defence misperceptions

WWI: the cost

Country	KIA	% Pop.	Wounded	Casual. as % force.
UK	900,000	2	2,000,000	36%
France	1,700,000	4.25	4,266,000	73%
Italy	589,000	3	1,000,000	39%
Russia	2,300,000	1.75	5,000,000	76%
US	117,000	.13	204,000	7.1%
AH	2,000,000	3.75		
Germany	2,000,000	3.75	4,000,000	64.9%

WWI cost: back of env. calc.

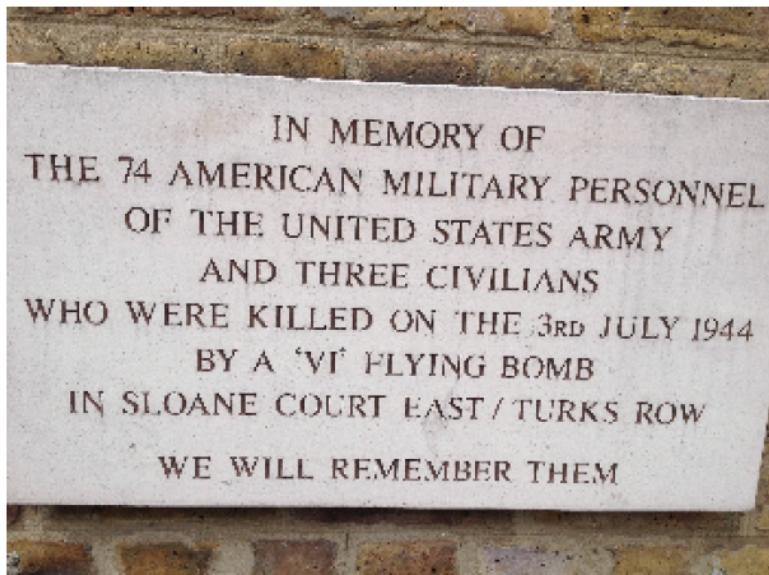
- British population: 45,000,000
- Pop. of people who are "age of service:" 15,000,000
- Men of age of service: 7,500,000
- About every eighth such man died, every fourth wounded
- Probably disproportionately high outside of metropolises
- For France, about doubled: one of every fourth such man died

WWI costs: comparisons

Country	Military deaths	Pop.	%
France	200,000	41,000,000	.04%
Germany	5,000,000	70,000,000	7%
UK	383,000	48,000,000	.07%
US	416,000	131,000,000	.03%

- Viet Nam: 47,000 battle deaths, 153,303 WIA, about 25 million eligible men.
- Population? maybe 200,000,000

Why are we here?



Why are we here?

V1 Bombs

"The weapon was a flying torpedo, twenty-five feet long with stubby wings, a crude jet engine, and a one-ton warhead. It could cross the English coast twenty minutes after launch; when the fuel ran dry, the engine quit and the bomb fell. Hitler called them "cherry stones." "

Atkinson, Rick (2013-05-14). *The Guns at Last Light: The War in Western Europe, 1944-1945 (The Liberation Trilogy)* (p. 107). Henry Holt and Co.. Kindle Edition.

Why are we here?

V1 Bombs

"But subsequent volleys showed greater promise. By noon on June 16, of 244 launches, 73 cherry stones had reached "Target 42," also known as London. This very morning the nameless weapon had been anointed the Vergeltungswaffe— reprisal weapon— or V-1. "Terror is broken by terror," the Führer liked to say. "Everything else is nonsense.

Rundstedt suggested that the V-1 be used against those half million enemy soldiers now massed in the beachhead. Rommel agreed. Hitler summoned a military expert who explained that the flying bomb's inaccuracy made any target smaller than London difficult to hit: the V-1s were aimed at Tower Bridge on the Thames, but the margin of error might be fifteen kilometers or more. Relentless pummeling of Target 42, Hitler told the field marshals, would "make it easier for peace." Panic would paralyze Britain, with psychological and political chaos."

Atkinson, Rick (2013-05-14). *The Guns at Last Light: The War in Western Europe, 1944-1945 (The Liberation Trilogy)* (p. 107). Henry Holt and Co.. Kindle Edition.

Bargaining Failure

Formal Model (FYI, not on test)

- Secure resources:

$$\bar{R}_A, \bar{R}_B; \text{ e.g.,}$$
$$R_A = 100, R_B = 100.$$

- PPF: (draw)

$$FNR_A = \bar{R}_A - M_A$$

- Disputed divisible resource:

$$\tilde{R}; \text{ e.g., } \tilde{R} = 200.$$

- Disputed divisible resource lost in fighting:

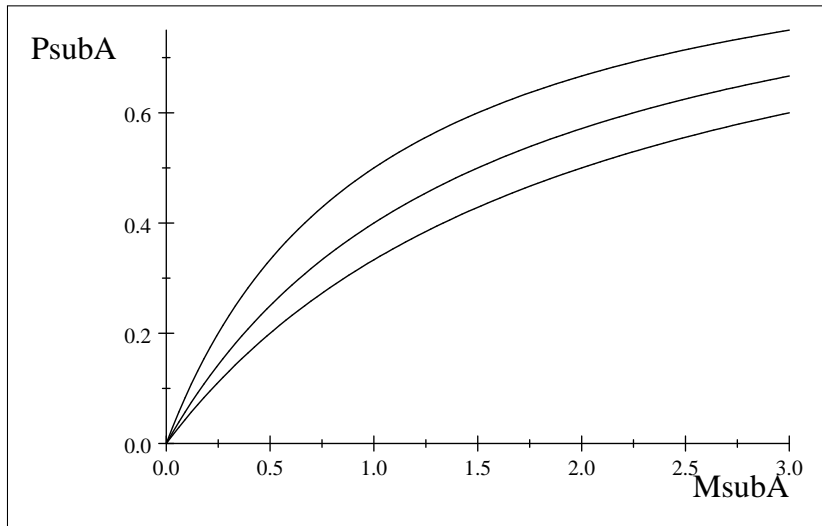
$$\delta\tilde{R}; \text{ e.g., } \delta = .2.$$

- Success functions:

$$p_A = \frac{(M_A)^\gamma}{(M_A)^\gamma + (ZM_B)^\gamma}; p_B = \frac{(ZM_B)^\gamma}{(M_A)^\gamma + (ZM_B)^\gamma}; \text{ e.g., } Z = 1, \gamma = 1.$$

Bargaining Failure

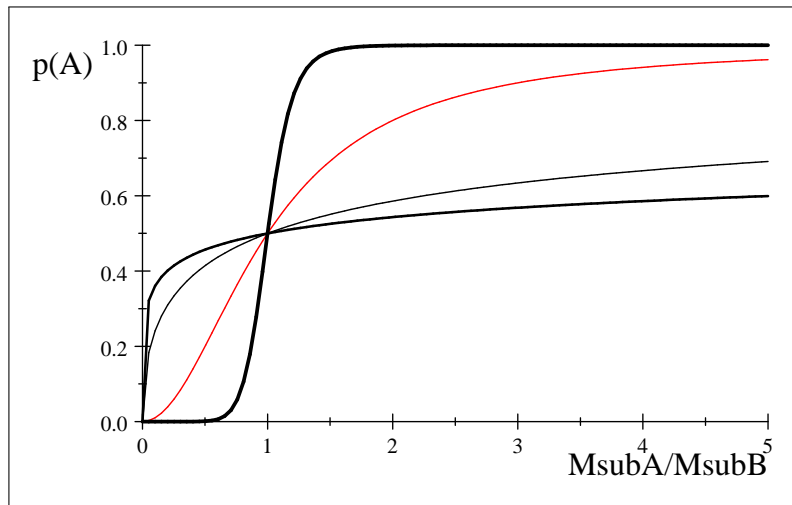
Formal Model: CSF



$M_B = 1, 1.5, 2; \gamma = 1$

Bargaining Failure

Formal Model: CSF's



$M_B = 1; \gamma = .5(b); \gamma = 2(r); \gamma = .25, 10$

Bargaining Failure

Formal Model

- Expected resources (income) after fighting

$$FNR_A = R_A - M_A + (1 - \delta)p_A \tilde{R} = f_A(M_A; M_B);$$

$$FNR_B = R_B - M_B + (1 - \delta)p_B \tilde{R} = f_B(M_B; M_A).$$

- Maximize FNR (set $\frac{dFNR_i}{dM_i} = 0$ to get reaction functions):

$$\frac{dFNR_A}{dM_A} = -1 + (1 - \delta)\tilde{R} \left(\frac{M_A + ZM_B - M_A}{(M_A + ZM_B)^2} \right) = 0$$

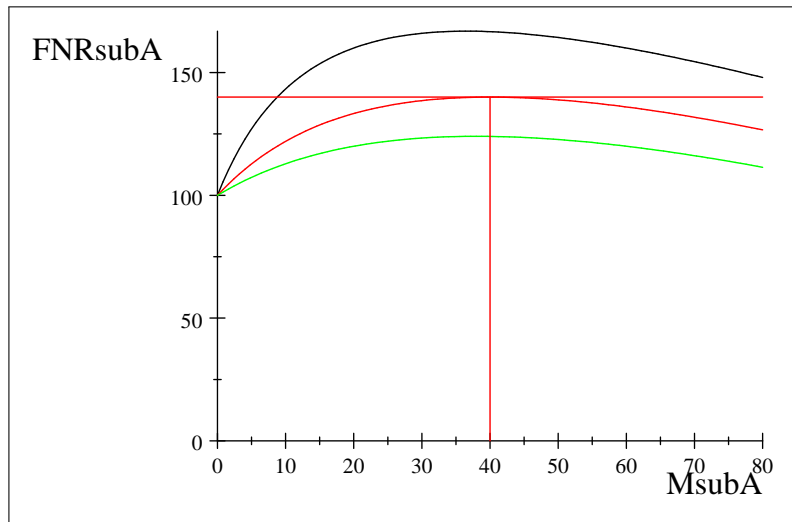
$$= -1 + (1 - \delta)\tilde{R} \left(\frac{ZM_B}{(M_A + ZM_B)^2} \right) = 0;$$

$$\frac{dFNR_B}{dM_B} = -1 + (1 - \delta)\tilde{R} \left(\frac{Z(M_A + ZM_B) - Z^2 M_B}{(M_A + ZM_B)^2} \right) = 0$$

$$= -1 + (1 - \delta)\tilde{R} \left(\frac{ZM_A}{(M_A + ZM_B)^2} \right) = 0;$$

Bargaining Failure

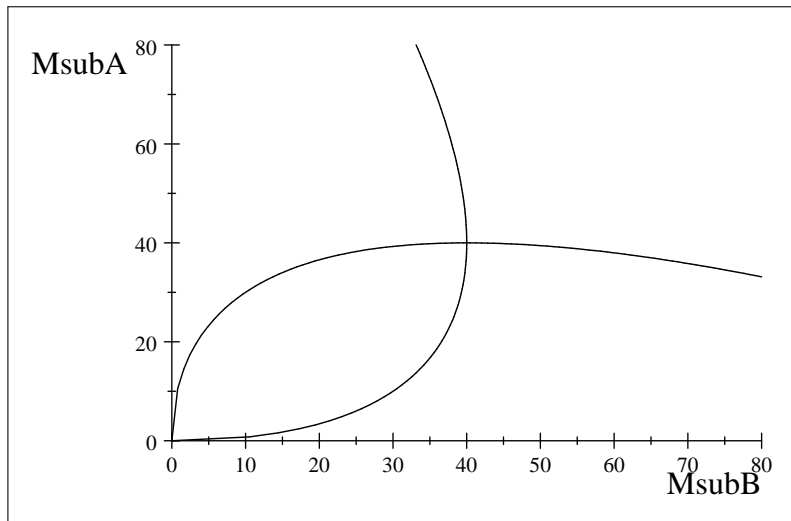
Formal Model



$M_B = 20, 40, 60$

Bargaining Failure

Formal Model: RC's



Bargaining Failure

Formal Model: RC equations

Set slopes of $\frac{dFNR_i}{dM_i}$ equal to zero and solve for $M_A(M_B)$ and vice versa

$$(M_A + ZM_B)^2 = (1 - \delta)\tilde{R}ZM_B;$$

$$M_A + ZM_B = \sqrt{(1 - \delta)\tilde{R}ZM_B};$$

$$M_A = \sqrt{(1 - \delta)\tilde{R}ZM_B} - ZM_B;$$

$$(M_A + ZM_B)^2 = (1 - \delta)\tilde{R}ZM_A;$$

$$M_B = \frac{1}{Z}\sqrt{(1 - \delta)\tilde{R}ZM_A} - M_A.$$

Bargaining model

Solving the model

- Note from $\frac{dFNR_A}{dM_A} = 0$ equation:

$$(M_A + ZM_B)^2 = (1 - \delta)\tilde{R}ZM_B$$

- From $\frac{dFNR_B}{dM_B} = 0$ equation:

$$(M_A + ZM_B)^2 = (1 - \delta)\tilde{R}ZM_A.$$

- Hence,

$$(1 - \delta)\tilde{R}ZM_B = (1 - \delta)\tilde{R}ZM_A;$$

$$M_B = M_A.$$

- This is not obvious: Z might not be equal to one. Now can solve

$$(M_A(1 + Z))^2 = (1 - \delta)\tilde{R}ZM_A;$$

$$(M_A)^2(1 + Z)^2 = (1 - \delta)\tilde{R}ZM_A.$$

Bargaining Failure

Formal Model; solution

$$M_A^* = M_B^* = \frac{(1 - \delta)\tilde{R}}{(1 + Z)^2};$$

$$FNR_A^* = R_A + \frac{(1 - \delta)\tilde{R}}{(1 + Z)^2};$$

$$FNR_B^* = R_B + \frac{Z^2(1 - \delta)\tilde{R}}{(1 + Z)^2}.$$

Bargaining Failure

Formal Model

Under settlement: each side gets fraction θ of resources saved by not fighting and p_A , p_B of remaining disputed resource:

$$SNR_A = R_A - M_A + p_A(1 - \delta)\tilde{R} + \theta\delta\tilde{R};$$

$$SNR_B = R_B - M_B + p_B(1 - \delta)\tilde{R} + (1 - \theta)\delta\tilde{R}.$$

Same reaction functions. Equilibrium:

$$SNR_A^* = R_A + \frac{(1 - \delta)\tilde{R}}{(1 + Z)^2} + \theta\delta\tilde{R};$$

$$SNR_B^* = R_B + \frac{Z^2(1 - \delta)\tilde{R}}{(1 + Z)^2} + (1 - \theta)\delta\tilde{R}.$$

Bargaining Failure

Formal Model: numbers

$$M_A^* = M_B^* = \frac{(1 - \delta)\tilde{R}}{(1 + Z)^2} = \frac{160}{2} = 80;$$

$$FNR_A^* = R_A + \frac{(1 - \delta)\tilde{R}}{(1 + Z)^2} = 100 + 80 = 180;$$

$$SNR_A^* = FNR_A^* + \overbrace{\theta \delta \tilde{R}}^{\theta} = 180 + \left(\frac{1}{2}\right) (.2) (200) = 200$$

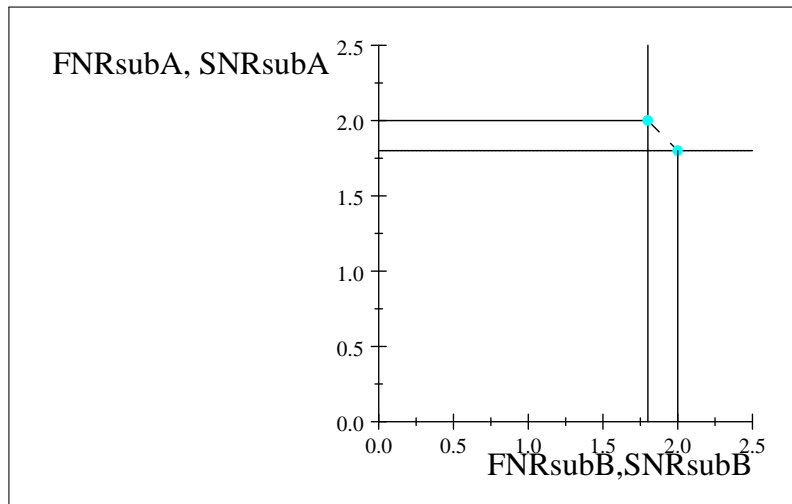
$$FNR_B^* = R_B + \frac{Z^2(1 - \delta)\tilde{R}}{(1 + Z)^2} = 180.$$

$$SNR_B^* = 200.$$

Why Fight?

Bargaining Failure

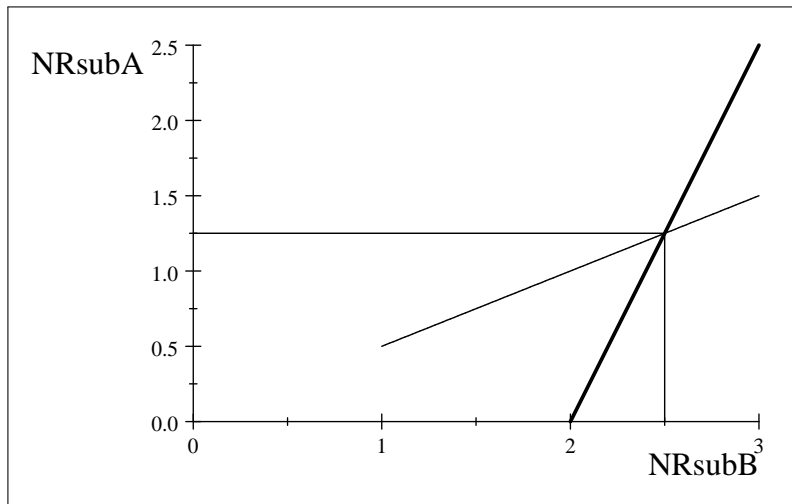
Why fight?



Peace dividend = $\theta \delta \tilde{R}$

Bargaining Failure

Formal Model: malevolent preferences (FYI, Not on Test)



Malevolent preferences

Bargaining Failure

Rationalist perspective

- Rational war: "When we refer to a rational action by an agent we require that action to maximize the expected payoff to that agent out of the available actions and relative to the agent's beliefs about the potential consequences of the actions. This does not necessarily require that the beliefs be accurate, nor that the payoffs of the individual agent correspond to what is best for the state or country that he or she might represent."
- Non-rational: Religion, revenge, ethnic cleansing. But ...

Bargaining Failure

Failures: JM on Crusades, Treaty of Westphalia

- "The important aspect of this from our perspective is that the crusades took place at least partly due to a lack of ability to credibly commit to abide by agreements, to the multiplicity of factions involved on multiple fronts, and due to situations with great frictions in communication and in gaining information (e.g., see Runciman (1951-4)). Thus, the crusades can be partly understood from rationalist perspective ... below."
- "Thus, although the 30-year war involved religious motivations, the various factions were also motivated by territory, peace, and autonomy, and were eventually able to find a rather complicated agreement that was self-sustaining."
- Munich: "part of the understanding of the Second World War involves seeing why conflict was not avoided through concessions, and there rationalist explanations can help. As ..., for example, the failure of the Munich Agreement was due to credible commitment problems, and would have failed even if ethnicity and insanity were not in the

Bargaining Failure

Reasons for failure: Jackson-Morelli, POCE lists

- 1 Asymmetric information about the potential costs and benefits of war. POCE: inconsistent expectations
- 2 A lack of ability to enforce a bargaining agreement and/or a lack of the ability to credibly commit to abide by an agreement.
- 3 Indivisibilities of resources that might change hands in a war, so that not all potentially mutually beneficial bargaining agreements are feasible.(POCE makes this a sub-component of Commitment).
- 4 Agency problems, where the incentives of leaders differ from those of the populations that they represent. (Wag the Dog)
- 5 Multilateral interactions where every potential agreement is blocked by some coalition of states or constituencies who can derail it.

- Reflections on IWM:
 - Medals: VC,GC; US: MofH, DSC,SS,BS (V), ArCom (V), PH, CIB
 - Organizational Politics? Read account in "They Marched into Sunlight (David Marannis); "Thin Red Line."
 - Tanks: substitution principle (lots of less-perfect tanks vs Tigers); M16 vs AK47?
- Holocaust: How does Germany deal with it? Why not a British exhibit about colonial atrocities?

Bargaining Failure

Failures from AI

- Inability to distinguish strong from weak
- But, an incentive for strong to clarify it is strong. But problematic: "If it is really impossible to fully and credibly reveal information and such information is critical to predicting the outcome of a potential war, it can be that bargaining will fail and war must be expected with at least some probability."
- Sometimes, bluffs have to be called: SDP; (Brito-Intriligator 1985)

Bargaining Failure

Failures from AI: inconsistent beliefs

- "Psychologists recognize that a nation's leaders tend to develop theories of warfare whereby the nation's success relies heavily on the factors perceived to be the ones in which it holds the greatest advantage over its opponent. As Blainey (1973, 40) explains:

Bargaining Failure

Failures from AI: inconsistent beliefs

- "In England the prediction that the war of 1914 would be short was based heavily on the economic arguments. England was the leading financial power: accordingly, if economic collapse was to come early in the war, it would hit England's enemies first and so lead to their surrender. In contrast, German leaders predicted that the war would be short because of the decisiveness of modern military technology: in that field, Germany was the recognized master and so could expect victory. Expectations of the outcome of the war had a strong, subjective, inarticulate streak."

Bargaining Failure

Failures from AI: inconsistent beliefs

- Such explanations encompass the common phenomenon that the vast majority of people regard themselves as good drivers. Although initially it appears impossible that most are better than average, when the speedy equate good driving with speed, the cautious regard good driving as careful driving, and the skillful liken keen handling to good driving, then it is easy to see that, via the use of differing perceived appropriate standards, each plausibly regards themselves as “above average.”

Bargaining Failure

Failures from AI: inconsistent beliefs

- Bureaucratic politics can create similar biases (Allison 1999). Because the agencies reporting on military preparedness have their own agendas, their reporting tends to be biased in a manner designed to support their goals. For instance, before and during the initial phases of the FirstWorldWar, the French military adopted an offensive military doctrine grounded in élan, or an aggressive martial spirit (Snyder 1984). Such a doctrine provided the military with great freedom to structure the military to suit its goals. Although these goals presumably included national defense, the military might have other objectives, commonly including increasing its share of the budgetary pie (Allison 1999; Kier 1997; Posen 1984). Thus, even without any misperception on the part of the military, it may present biased information to civilian policy makers.
- Strategic bombing

Bargaining Failure

Failures from AI: inconsistent beliefs

Before the Seven Weeks War, both Austria and Prussia (among others) observed the devastating effect of firepower during the American Civil War. Although both sides saw the same evidence, they drew different conclusions (Luvaas 1959). The Prussians observed the devastating power of massed fire. So did the Austrians. Where they differed was in how they thought the development of the needle gun affected their relative strength. All of the European observers fit the information they gleaned from the American Civil War into their preexisting models of warfare.

Bargaining Failure

Failures from AI: inconsistent beliefs

- Given the lessons of the American Civil War, the Prussians felt emboldened by their widespread deployment of the needle gun. Although the Austrians also saw the power of concentrated fire, they felt that it flowed from highly disciplined and cohesive units, rather than the technological innovations of the needle gun. They believed that although the needle gun gave the individual soldier greater firepower, it undermined unit cohesion because soldiers would rapidly discharge all their ammunition and then retire to the rear (Wawro 1997). Although both arguments have intrinsic logic, the evidence of the SevenWeeksWar suggests that the improvement in firepower overwhelmed any loss in unit cohesion.
- Mickey Kantor: "people see what they want to see."

Bargaining Failure

Failures from AI: You crazy!

The idea common to these works is that even a small probability of being faced by an armed irrational foe can lead a rational country to arm to some level. In turn, this now means that either a foe who is irrational, or a foe who thinks that I might be irrational will be arming, and this then leads me to arm even more, and this feedback continues to build. Depending on the specifics of the payoffs to arming and potential conflict, it can be that the rational countries each arm to very high levels and are ready to attack first because of the fear that the other side may attack first.

"Though this be madness, yet there is method in't." (Polonius).

Schelling

Bargaining Failure

Failures: commitment problems

- Shelby Moats channels Hobbes: "I could just go and rob someone here in London-they don't have guns."
- Effectively there is nothing stopping someone from grabbing resources except fear of retaliation. Hobbes goes on to suggest that reasonable people can come to realize the inherent difficulties with anarchy and cede their rights to a Leviathan in order to live in peace. However, such social contracts do not generally appear in the international arena, and hence for an agreement to endure it has to be balanced in such a way as to be self-enforcing.
- Treaty of Westphalia (1648?): redrawn lines of sovereignty, and respect for such. Foundation of modern state system.

Bargaining Failure

Failures: commitment problems

- Commitment not to attack: "A notable example of such a failure of appeasement due to a lack of commitment is the Munich Agreement of 1938, after which Hitler invaded Czechoslovakia despite the agreement."
- First-strike advantages: "A significant offensive advantage to war can lead war to be inevitable. As a simple illustration, imagine two evenly matched countries with an even split of resources and a cost to war. If war leads to an evenly matched outcome regardless of who attacks first or under what circumstances, then peace is self-enforcing. In contrast, if a country that strikes first gains a large advantage by doing so, and expects to gain resources with a high enough probability, then peace is destabilized. Each country would like to strike before the other, and also understands that the other also has an incentive to attack first, and so must react by expecting a war, and so war becomes inevitable."
- Offense vs defense

Bargaining Failure

Failures: commitment problems

- one country has a current arms advantage and worries that the other will catch up in the future and that the future situation will be unstable (possibly due to first-strike advantages, or some other considerations), and so wishes to attack while the balance is in their favor.
- Examples: US vs USSR in Truman, Ike
- "In summary, the pervasiveness of commitment problems comes from the lack of any external enforcement device in an international setting, and so any agreement is really only lasting if it is in the interest of all parties to continue to abide by it."

Bargaining Failure

Physical impediments to bargaining

Crusades, MBS's ,Coase

Bargaining Failure

Agency problems

- Wag the Dog, Falklands, Uve Von Reinhardt and "moral hazard"
- "The leader of a country might not face the same risks as the country's citizens, or it might be that the leader expects greater gains or glory from a war than the citizens."
- Hess and Orphanides

Bargaining Failure

Multilateral

Two gang up on the other; Parliament as BOP

Bargaining Failure

Application: Triangulating Peace Model

- "The idea that incentives of aristocrats to go to war differ from that of democratic leaders is not new, and is well articulated by Kant (1795)."
- It is worth noting that the interactions between an executive's behavior and election prospects can be quite complicated. For example, going counter to the incentives to avoid conflict when facing reelection, there are also "wag the dog" sorts of situations, such as that described by Hess and Orphanides (1995, 2001),"
- What makes a democracy?

Bombing

Classification

The theory of strategic bombing— in either mode, precision or area— had been straightforward and attractive. In the memorable, quaint language of the United States Strategic Bombing Survey (USSBS), “strategic bombing bears the same relationship to tactical bombing as does the cow to the pail of milk. To deny immediate aid and comfort to the enemy, tactical considerations dictate upsetting the bucket. To ensure eventual starvation, the strategic move is to kill the cow.”

Brauer, Jurgen; van Tuyl, Hubert. Castles, Battles, and Bombs: How Economics Explains Military History (Kindle Locations 4371-4383). University of Chicago Press. Kindle Edition.

USSBS: after the fact; set up rationale for separate air force; politicized because of careerism?

Bombing

Classification

"Strategic bombing . . . is aimed at the systematic destruction of those resources which will most weaken the enemy by denying him the materials or weapons he needs to prosecute the war."

"Strategic bombing is best defined as the use of air power to strike at the very foundation of an enemy's war effort— **the production of war material, the economy as a whole, or the morale of the civilian population**— rather than as a direct attack on the enemy's army or navy. . . . While **tactical air power** uses aircraft to aid the advance of forces on the ground or on the surface of the ocean, usually in cooperation with those forces, **strategic air power** usually works in relative independence of armies and navies."

Brauer, Jurgen; van Tuyll, Hubert. Castles, Battles, and Bombs: How Economics Explains Military History (Kindle Locations 4371-4383). University of Chicago Press. Kindle Edition.

Bombing

Aims and motivation

- " ...three operational targets: (a) the opponent's actual arms production; (b) the enemy's economy as a whole that forms the supply chain to and from arms industry facilities; and (c) the morale of the adversary's civilian population."
- "strategic bombing is to achieve certain war outcomes by itself, especially to avert the need for a land-based invasion of the opponent's territory, the capture of its capital, and the deposing of its leaders."
- Note the influence of WWI:
 - "By remarking on "the morons volunteering to get hung up in the wire and shot in the stomach in the mud of Flanders," Air Chief Marshal Sir Arthur (" Bomber") Harris aptly captured the incomprehensible gore of trench warfare in World War I— the war to end all wars— and thereby commented on his infinite preference, in World War II, for aerial over ground combat."
 - AWPD-1: " "If the air offensive is successful, a land offensive may not be necessary."

Bombing

Aims and motivation: rewrite

"Consequently, one finds a good many historical narratives that essentially take the following position: yes, high hopes had been invested in strategic bombing; yes, strategic bombing did run into certain practical difficulties; but if nothing else, strategic bombing forced Nazi Germany into expending vast resources on air defenses that otherwise could have been poured into its front-line efforts; therefore, strategic bombing made a valuable, indeed indispensable contribution to winning the European war."

Brauer, Jurgen; van Tuyl, Hubert. Castles, Battles, and Bombs: How Economics Explains Military History (Kindle Locations 4400-4403). University of Chicago Press. Kindle Edition.

- Industrial web
 - Choke points, critical resources
 - Leontieff production function assumption
- Evidence?
 - WWI sub campaign
 - Molybdenum, iron, oil; the list is endless.
 - But one exception?: pilots and airplanes

Strategic Bombing

Theory summary

- Basics: destroy "vital elements" of enemy's war-making capabilities, this would then destroy morale, (or destroyed morale would destroy war-making capabilities?)
 - Hence, need for civilian industrialists, economists, to determine how to destroy capabilities
 - Problem: how to determine effectiveness in real time? Even if you know physical damage, how does it affect the system? (Olson pt)
- PA problem: evaluation of WWII strat. bombing could shape an independent airforce
- Precision vs area bombing: information problem
- Cost Effectiveness? Early theory: bomb cities, destroy war-,making capabilities, morale, much cheaper than ground and naval operations

Brits vs US

Day versus night

"The principal architects of America's air war plan calculated that by destroying "50 electric power plants, 15 marshalling yards, 15 bridges, 17 inland waterway facilities, and 27 petroleum and synthetic oil plants," that is, 124 electric, transportation, and oil targets in all, the German economy could be wrecked enough to make the Nazis sue for peace. ... All told, AWPD-1 called for 6,860 bombers, in ten groups, for the German war theater alone. Adding in replacements for anticipated losses as well as escort fighters and support aircraft, let alone requirements for the other theaters of war, the sum total came to 63,467 aircraft and nearly 2.2 million men."

Brits vs US

Day versus night

"It is improbable that any terrorization of the civil population which could be achieved by air attack could compel the Government of a great nation to surrender. . . . In our case we have seen the combative spirit of the people aroused, and not quelled, by the German raids. Nothing we have learned of the capacity of the German population to endure suffering justifies us in assuming that they could be cowed into submission by such methods, or, indeed, that they would not be rendered more desperately resolved by them." So wrote Winston Churchill on 21 October 1917.

Evidence

Remembering history

"For Britain, the phony war had ended, and in May 1940 it threw its first serious load of bombs on German cities. In July, Bomber Command for the first time employed delayed-action bombs, and on the night of 12 August the first-time use of incendiary bombs followed, dropped on the cities of Bielefeld, Dessau, Frankfurt am Main, Halle, Hamburg, Kassel, Koblenz, Köln (Cologne), Münster, Neustadt an der Weser, Osnabrück, and Weimar. Up until this time, the Nazis had focused on bombing British shipping. Now, the Luftwaffe responded by attacking the British Isles, indeed British cities. The "Battle of Britain" had begun, and so had "morale" bombing."

Brauer, Jurgen; van Tuyl, Hubert. Castles, Battles, and Bombs: How Economics Explains Military History (Kindle Locations 4775-4776). University of Chicago Press. Kindle Edition.

British philosophy

Information problems: what was the damage?

"As for the British, even "Bomber" Harris was not primarily interested in morale bombing. His particular peeve was that precision bombing manifestly did not work so that the only alternative that remained was indiscriminate area bombing."

Brauer, Jurgen; van Tuyll, Hubert. Castles, Battles, and Bombs: How Economics Explains Military History (Kindle Locations 4797-4799). University of Chicago Press. Kindle Edition.

More principles

Moral hazard

"But moral hazard exists in that the men ordering battle are not the men to die. Those who give orders must be subject to a set of incentives (the possibility of being relieved from duty, reassigned, court-martialed, etc.) that induces them to deploy resources under their command to best effect. The fighting men depend on it with their lives. Moral hazard is an aspect of information asymmetry: only the officer knows whether his men really need to be sent into this or that particular battle. As with King David, who covets Bathsheba and sends her husband Uriah, a general, to die in battle, what are a commander's real intentions when he gives orders? What benevolent or malevolent purposes are hidden beneath the veneer of his uniform, the impressive status his rank conveys to the underlings? To overcome this incentive alignment problem, hierarchies must provide for oversight and recourse. These may include appeal to higher authorities up the rank, but more effective is the simple requirement that commanding officers fight with their men. If the officer is to face death, he will think twice about being heedless; if he is truly mad, a mutiny may well be

End for 2017

More to think about-but not enough time now

- United States Strategic Bombing Survey (USSBS)
 - "a problematic document which epitomizes the problematic nature of strategic bombing as a concept. Thus, determining strategic bombing's true efficacy is inherently difficult if not impossible" (Review by Mike Hankin of *How Effective Is Strategic Bombing?: Lessons Learned from World War II to Kosovo*, By Gian P. Gentile).
 - "the Survey reports have taken on the aura of a document that contains the truth about strategic bombing in World War II. In fact, the Survey is a secondary source that interprets the past." The Survey is merely the analysis of the men who authored it. It is not in itself an objective source of facts and data, although many facts and data points are contained within the reports. Gentile argues that too often, this distinction is forgotten or ignored, yet remembering this is key to correctly understanding the Survey." (BR)
- "desire of senior AAF officers to use the Survey's results as a tool for creating a postwar independent air force"

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