

1. The Economist's Toolkit

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Your Resources

Module programme.

- Aims and outcomes.
- Teaching arrangements.
- Assessment.

Reading list at <https://warwick.ac.uk/ec224>.

Web-based resources at <https://moodle.warwick.ac.uk/course/view.php?id=21598>.

- FAQs: <https://moodle.warwick.ac.uk/mod/page/view.php?id=524898>.

Our Lecture Programme

Introduction (2 lectures):

- The economist's toolkit
- Wars and violence

World War I (5 lectures).

World War II (6 lectures).

The Cold War (4 lectures).

What Happens in Lectures?

“Lecturing is that mysterious process by means of which the contents of the note-book of the professor are transferred through the instrument of the fountain pen to the note-book of the student without passing through the mind of either” (Miller 1927: 120).

Or:



Why the Economist's Toolkit?

The economist has a toolkit: a set of ideas, theories, and models to use.

No model is useful for all purposes.

- In fact, all models are wrong, because they are only oversimplified representations of a complex reality that can never be fully captured.

“All models are wrong; the practical question is how wrong do they have to be to not be useful” (Box and Draper 1987: 74).

- All models are wrong, but some are useful, depending on the setting.
- Just as a hammer is useful if you have a nail, but not if you have a screw.

Which idea, theory, or model will help me solve the problem in front of me?

The skill of the economist is being able to tell wood from metal, and a screw from a nail.

What is in the Economist's Toolkit?

Many ideas, theories, and models!

Here are just a few.

- Rational self-interest.
- Self-interest versus public interest.
- Risk and uncertainty.
- Strategic interaction.
- Rational self-interest again.

See further Brauer and van Tuyl (2008), Bueno de Mesquita (2006), Rockoff (2012), Smith (2009), Harrison (2015).

Rational Self-Interest

War is **costly** in “blood and treasure.” Moralists often conclude that war is pointless or irrational.

- From a social-science standpoint war is more interesting than that.

When we see human agents doing something that is costly, the principle of rationality tells us that they must **expect some future benefit** that is equal or greater than the cost.

- “War is a mere continuation of policy by other means ... War is not merely a political act, but also a real political instrument, a continuation of political commerce, a carrying out of the same by other means” Clausewitz (1832/1982, p. 119).

In other words: war is a costly means to an end (or “expected benefit”).

- Not: “The end **justifies** the means” (as many people wrongly conclude).
- Rather: “What is the end that **explains** the choice of means?”

Here the axiom of rational decision making is **heuristic** (a device for discovery):

- Behind every decision is a purpose.
- To understand the decision, you need to discover the decision maker’s purpose.

Self-Interest and Public Interest

Costs of defence are private, but benefits are not: defence is a **public good**.

- **Non-rival** (my consumption does not lessen yours).
- **Non-excludable** (I cannot prevent you from sharing in the benefit).

Result: Any member of society may receive the benefit of others' defence efforts that they do not pay for, and this is a problem (Olson 1965):

- I will benefit from the good that you pay for and you cannot stop me.
- So, I have no incentive to pay my share of the cost (in money or fighting services).
- There will be a tendency to free-ride.
- Compulsion may be required to overcome it.
- Without compulsion, defence will be under-provided.

It's a **prisoner's dilemma**:

Self-Interest and Public Interest

		You	
		Share	Shirk
Me	Share	$B - C/2, B - C/2$	$B - C, B$
	Shirk	$B, B - C$	$0, 0$

The public benefit is B and the marginal cost of providing it is C .

- Unless $B > C$, it's a **prisoner's dilemma**.

Voluntary subscription will lead to the public good being **underprovided**.

- In this model, compulsory draft (conscription) and taxation are the solution.

Major implication:

- In the economy, going to war will be associated with free-riding and coercion.
- Or, every good war story is about us versus the enemy AND me versus society.

Risk and Uncertainty

Risk is a percentage.

- War involves probabilities of victory and defeat.
- We call this **risk**.
- *Sum of values of outcomes x probabilities = risk-adjusted value of option.*

Because of diminishing marginal utility, we generally value losses more highly than equivalent gains.

- This makes us **risk averse**.
- War is always a risky option.

Yet it doesn't follow that those that go to war are either risk lovers or irrational.

War has an option value; so does peace.

- When option value of war is low, choose war if risk-adjusted option value of peace is even lower.
- Berlin and Vienna, 1914.

Risk and Uncertainty

Uncertainty: Sometimes there are **multiple equilibria**.

	Good equilibrium	Bad equilibrium
Macroeconomics	Boom	Bust
Crime and policing	No one has guns	Everyone has guns
International relations	Peace	War

- Uncertainty over good versus bad outcomes is not a percentage, so uncertain outcomes cannot be valued.

For the economics of war, some uncertainties are particularly important.

- **Will there be a war?** How intensively should we prepare for (insure against) something that might not happen but will be very bad if it does?
- **When will war start?** How long do we have to prepare? Is there time to develop new weapons and build new factories or should we just recruit soldiers?
- **When will the war end?** How long do we have to build effort? Will we lose the war in the time it takes to develop new weapons and put up new factories?

Multiple equilibria are often a property of games involving **strategic interaction**.

Strategic Interaction

The word strategy (“generalship”) comes from Greek **strategos** (commander).

- A strategy is not just a set of targets, however important or long term they are.
- Even if such targets are often called “strategic” in business and politics.

In strategy, the commander must decide on a course of action, anticipating (but not knowing) the adversary’s counter-action.

- Your calculation (e.g. when, where, and how many forces to deploy) must internalize the expected outcome of my calculation.
- Knowing that I am simultaneously doing the same.
- Although uncertain about my move, you must still decide your own.

The key principle is **backward induction**:

- Consider all possible outcomes.
- I (the adversary) control some, you control the rest.
- You choose the best payoff available, subject to my doing the same.

In military science, strategy is often paired with tactics:

Tactics: how can I win the battle?

Strategy: which battles should I fight?

Strategic Interaction

Games can be positive-sum or negative-sum.

- Positive-sum game: **trade**.
- Negative-sum game: **war**.

Why would a ruler ever prefer a negative-sum game to one that yields a positive sum?

- Appropriable gains: the ruler might expect to be able to appropriate gains from war, not from trade.
- Transferable losses. the ruler might expect to be able to shift war losses onto the enemy, or onto his own subjects.

In more detail, what kinds of games are played in war?

- There is strategic interaction between adversaries (Bueno de Mesquita 2006) – us versus the enemy.
- And also among comrades and allies (Brennan and Tullock 1982) – me versus society.

(As in every great war novel or war movie.)

Strategic Interaction

Strategic interaction among adversaries: the game of Divide-the-dollar (Fearon 1995).

Examples: Sudetenland (1938), Poland (1939), Crimea (2014).

There is a dollar on the table: should you and I fight for it?

- There is certainty: fighting will cost us both.
- There is uncertainty: who can be expected to win?

We can both expect to be better off if we can agree to **divide the dollar** peacefully.

How then can wars happen?

- By mistake: if at least one side underestimates costs or overestimates probability of victory.

“Always remember, however sure you are that you can easily win, that there would not be a war if the other man did not think he also had a chance” (Churchill 1966: 232).

- Commitment failure: you do not trust me to stick to agreed division of the dollar.
- The dollar cannot be divided: it stands for national existence, so the outcome is all-or-nothing.
- Domestic private benefits from a state of war: political profit, commercial profit, criminal rents.

Rational Self-Interest Again

Problem: Economists think of self-interest as the motivation that drives the rational decision maker, but in waging war neither **self** nor **interest** is primitive (Greif 1994; Darden 2010; Rodrik 2014).

Self-**interest**:

- What is in our interest is primitive in some cases: Should I eat pizza tonight?
- Not in others: Should I vote for Brexit? For trade war with China? To send weapons to Ukraine?

Self (or identity): Who is the self that has this interest in the outcome of the given decision?

- A unique person or a representative member of an identity-based collective?
- What identity is primary: family, gender, social class, ethnic group, religious community, nationality, biological species?

Conclusion: behind choices over peace and war lie **beliefs** about both identity and causation:

- Identity: Who am I?
- Causation: How do international relations and the global economy really work, producing advantage for some and disadvantage for others?

Rational Self-Interest Again

As economists we should understand the importance of **beliefs**.

- We too have beliefs about how international relations and the global economy work.
- We call these beliefs “models.”

We have many **models**, often contradicting each other.

Not all are equally consistent with the evidence.

- “All models are wrong; the practical question is how wrong do they have to be to not be useful” (Box and Draper 1987: 74).
- There is enough uncertainty about how the world works that models that are wrong and not useful are not driven out (Darden 2010).

“Evidence-based policy”: To work out what policies we prefer, we first select models and supporting evidence.

- Non-economists do this too.
- And they have always done it that way.

To understand the rationality of choices over peace and war in history, first understand the actors’ beliefs:

- About self-interest: given how I see myself, what outcomes are in my interest?
- About the world: what outcomes are possible, and how do I get those that are in my interest?

What We Have Learned

The economist's toolkit contains many powerful tools for understanding war in history.

- Is every tool good for every problem? No.
- Is the economist's toolkit sufficient on its own? No.
- During the module we will also draw on ideas from history, psychology, political and strategic studies, and international relations.
- Most fundamentally, the national interest of a country in conflict with others is not an objective thing but a result of how the rulers **define** themselves and how they **model** the world.
- At the same time the economist's toolkit is versatile and can be applied to lots of problems that are not economic at first sight.

References

- Box, George E. P., and Draper, Norman R. 1987. *Empirical Model Building and Response Surfaces*. New York: Wiley.
- Brauer, Jurgen, and Hubert van Tuyll. 2008. *Castles, Battles, and Bombs: How Economics Explains Military History*. Chicago: University of Chicago Press.
- Bueno de Mesquita, Bruce. 2006. Game Theory, Political Economy, and the Evolving Study of War and Peace. *American Political Science Review* 100(4): 637-642.
- Churchill, Winston. 1966. *My Early Life: A Roving Commission*. New York: Touchstone.
- Clausewitz, Carl von. 1832/1982. *On War*. London: Penguin Books.
- Darden, Keith A. 2010. *Economic Liberalism and Its Rivals: The Formation of International Institutions Among the Post-Soviet States*. Cambridge: Cambridge University Press.
- Fearon, James D. 1995. Rationalist Explanations for War. *International Organization* 49(3): 379-414.
- Greif, Avner. 1994. Cultural Beliefs and the Organization of Society: A Historical and Theoretical Reflection on Collectivist and Individualist Societies. *Journal of Political Economy* 102(5): 912-950.
- Harrison, Mark. 2015. Introduction. In *The Economics of Coercion and Conflict*, pp. 1-36. Edited by Mark Harrison. London: World Scientific.
- Miller, Harry Lloyd. 1927. *Creative Learning and Teaching*. New York: Scribner.
- Olson, Mancur. 1965. *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, Mass.: Harvard University Press.

- Rockoff, Hugh. 2012. *America's Economic Way of War: War and the US Economy from the Spanish-American war to the Persian Gulf War*. Cambridge: Cambridge University Press.
- Rodrik, Dani. 2014. When Ideas Trump Interests: Preferences, Worldviews, and Policy Innovations. *Journal of Economic Perspectives*, 28(1): 189-208
- Smith, Ron P. 2009. *Military Economics: the Interaction of Power and Money*. Basingstoke: Palgrave Macmillan.