

PS12: FINAL REVIEW SHEET

The final exam is comprehensive. Refer to the Midterm Review Sheet for more information.

I. SUBSTANTIVE TOPICS

- **Deterrence** occurs when a defender tries to manipulate the expectations of a challenger causing it to refrain from action contrary to defender's interests.
- **Compellence** occurs when an actor manipulates the expectations of another actor such that the latter reverses its course of action that is detrimental to the former.
 - The challenger compares the status quo to expected utility from action in the deterrence game; improving the status quo can be just as effective as military options.
 - The challenger compares backing down to expected utility of continuing its actions in the compellence game; improving its payoff from backing down can be just as effective as military options.
 - Beliefs are critical; use commitment tactics (constraining choices, manipulating risk).
- A **crisis** is the last chance to avoid the transition from peace to war. It is a period of time where intense negotiations take place along with preparations for fighting.
- **Crisis stability** refers to the probability that a crisis will end in war. A crisis is stable if the likelihood of war is small, and is unstable if the likelihood is high.
- **Crisis bargaining** refers to the bargaining process through which opponents try to avoid war while securing their demands.
- The **Game of Chicken** is the simplest model of crisis bargaining and although its two pure strategy equilibria are not useful in analyzing strategic behavior, the mixed-strategy equilibrium yields important insights:
 - the mixed strategies are useful approximations of how rational players would behave in the presence of uncertainty;
 - the probability of war in such situations is strictly positive;
 - the expected utility from the crisis is less than the utility from the outcome where both sides back down but the latter outcome cannot occur because neither side can credibly commit not to exploit the other.
- One can use the familiar **constraining choice** and **risk** strategies to increase the credibility of one's commitments in a crisis. A **static** commitment device would remove the option of backing down or would make one unavailable to receive communication from the other. A **dynamic** commitment device would gradually increase the shared risk of disaster to persuade the opponent that one expects it to back down first. Both strategies can inadvertently result in a **lock-in** where players are unable to back down and war is inevitable.
- When there are advantages to striking first, the **reciprocal fear of surprise attack** may generate an additional risk of war quite apart from its other causes.
- **Two-level games** involve strategic interaction between leaders at the *international level*, where they engage in bargaining, and strategic interaction between each leader and his *domestic constituency*, whose support he needs to stay in office or ratify agreements.
- State leaders are **office-motivated**: they are interested in staying in power. The other actors (elite, general populace) are **policy-motivated**: they are interested in personal welfare.
- To stay in office, leaders must satisfy the members of the **winning coalition**, which is the group of people whose support is essential to his reelection. The winning coalition is a subset of the **selectorate**, which is the group of people who have a say in the political fate of the leader.
- Leaders pursue distributional policies to satisfy the demands of their constituency. They can provide either (a) **private goods** to the members of the

winning coalition only, or (b) **public goods** to the everyone, but they generally are constrained by the limited available resources, and cannot pursue both strategies.

- Leaders are the agents of the winning coalition, whose **median voter** is the principal. Leaders must satisfy the demands of the median voter from the winning coalition in order to stay in office.
- When leaders face low prospects of staying in power because they have failed to satisfy the median voter, they may engage in **gambling for resurrection** by participating in a foreign military crisis with another state.
- The principal-agent problem in two-level games suggests that democracies will not fight other democracies, although they will fight non-democracies regularly; democracies will also tend to win the wars they fight, and in doing so they will be quicker and suffer fewer casualties. These empirical regularities are well-established and are collectively known as the **democratic peace**.
- A *rationalist explanation of war* views war as a **bargaining failure**, requires an answer to the central puzzle: Since wars are **inefficient** once fought, why can't rational players negotiate an appropriate settlement without fighting?
- The **bargaining range** always exists as long as there is some underlying objective probability of one player winning the war, and as long as both suffer some costs. Each player's expected utility of war is his **reservation level**, which is the smallest deal he would accept.
- There are generally two strict such explanations:
 - **Private information with incentives to misrepresent**, which explains how rational players can form inconsistent optimistic expectations about the war because they hold privately known information, and how they may fail to communicate that information through diplomatic means (cheap talk) or through costly signals that generate risk of war.
 - **Dynamic commitment problems**, which explain why players may not be able to credibly promise to uphold the deal in the

future, and so are prevented from striking it today.

- **Alliances** are promises to perform (or not perform) certain military actions under specified contingencies.
- Alliances vary with the **degree of commitments**, from loose promises (*entente*), to more concrete promise not to attack the other (nonaggression pacts), to even more binding promise to remain neutral if the other is attacked (neutrality pact), to the most binding promise for mutual defense in case of attack (defense pact).
- There are two stages in each alliance model, the *commitment* (or defense) stage, where an ally has to honor its obligations when its protege is attacked; and the *signaling* stage, where a state may signal its intentions to defend the protege by forming an alliance.
- Alliances only have value if (a) they increase the probability that states would assist each other if challenged, and (b) they decrease the probability of a challenge through establishing a credible deterrent threat.
- Alliances are costly to maintain, but once they are formed, these are **sunk costs** and they no longer influence the decision to intervene.
- Alliances may create **audience costs**, either external or domestic, which can serve as a commitment device that increases the defender's credibility to honor its obligations. They also may generate the **risk of entrapment**, which provides another way to send a **costly signal** to the potential challenger.
- Challengers only attack alliances when they believe the threat to intervene is not credible, that is, they challenge weak alliances. This leads to a **selection effect** in the empirical record: We expect to observe that whenever challenged, most alliances would tend to fail.
- Spontaneous cooperation under anarchy is possible with **repeated interaction** because repetition allows **conditioning actions** on past behavior. This makes punishment of defection possible, and can deter it when actors care about the future.

- Cooperation crucially depends on (a) valuation of future interaction, (b) monitoring of activity and verification of compliance, (c) enforcement of punishment, and (d) selection of cooperative equilibrium; that is, on information and credible commitments.
- **Transaction costs** are the effort, time, and resources spent for negotiating, implementing, monitoring, and enforcing agreements. They make cooperation more difficult, and even may preclude actors from coordinating on a beneficial equilibrium.
- Rational actors respond to the presence of these costs by creating **institutions** that mitigate uncertainty by coordinating expectations. Institutions must be viewed as **equilibria of rational behavior**, which means that all enforcement of their rules must be **endogenous**.
- Institutions are **informal**, where communication is decentralized, and **formal**, where communication is centralized. The more actors involved, the costlier communication becomes, and so the harder it may be to sustain informal institution.
- **International organizations** are formal institutions with relatively centralized communication, where the organization provides information about the members, but actors carry out the punishment themselves when one is called for. If the organization does not implement **self-enforcing rules**, or fails to reflect the actors' bargaining power, it will not work.

II. GAME / SOCIAL CHOICE THEORY

- All members of a group have **rational individual preference orderings**. The group uses a **preference aggregation rule** to construct the **social preference ordering**.
- **Arrow's Impossibility Theorem** shows that if the social ordering satisfies Universal Domain, Pareto Optimality, and Independence of Irrelevant Alternatives, then there exists no non-dictatorial aggregation rule that can guarantee a rational social preference ordering.
- We can represent preferences with utility functions. An individual preference is **single-peaked** if there exists one point that yields

the highest utility, the individual's **ideal point**, and if utility uniformly diminishes the further the alternatives get from this point.

- **Black's Median Voter Theorem** shows that if individual preferences are single-peaked along one dimension, then the social preference ordering under majority rule is rational. The winning alternative is the ideal point of the **median voter**.
- **McKelvey's Chaos Theorem** shows that in multi-dimensional settings under majority rule social preference orderings will generally be intransitive, in which case any policy can be chosen by using the appropriate **agenda**.
- **The Principal-agent problem** arises in settings where the **informed agent** must take action on behalf of the **uninformed principal**, and where the agent's compliance may be unverifiable and unobservable.
- The principal can benefit from having multiple agents, especially when some of them are **biased** and their biases are known.

III. GENERAL CONCEPTS

- deterrence
- compellence
- nuclear deterrence
- crisis stability
- costly signaling
- surprise attack
- audience costs
- two-level games
- office/policy motivation
- selectorate/winning coalition
- public/private good
- preference aggregation
- median voter
- single-peaked preferences
- principal-agent problem
- gambling for resurrection
- bargaining failure
- sunk costs
- selection effect
- conditional strategy
- transaction costs
- endogenous enforcement
- informal/formal institution