Armament, Alignment and Alliance
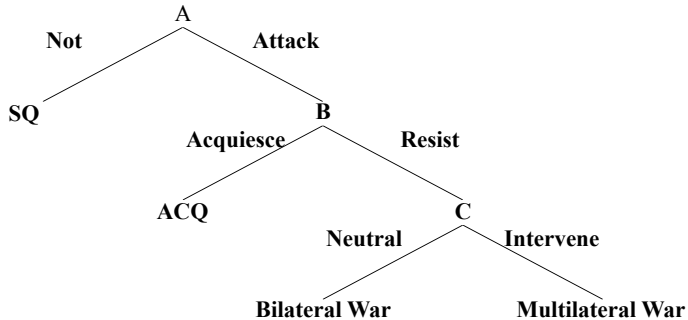
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- Gain Security in Extended Deterrence
  1. Arm
  2. Align
  3. Alliance
- Add domestic Politics

Figure : The Crisis Subgame

- Policy $z \in \{0, 1\}$
- Salience of Policy $\sigma_A < 0, \sigma_B > 0$ and $\sigma_C > 0$
- Strengths: a, b, c
- $Pr[\text{B wins alone}] = p = \frac{b}{a+b}$
- $Pr[\text{B wins with C}] = q = \frac{b+c}{a+b+c}$
- Cost of fighting: $\underbrace{k_i}_{\text{psychological}} + \underbrace{\frac{m_i}{W_i}}_{\text{financial}}$
- Selectorate Politics
  - R_i resources
  - W_i winning coalition

Nation C's Intervention

- $\frac{R_C - m_C}{W_C} + q\sigma_C - k_C$ vs $\frac{R_C}{W_C} + p\sigma_C$

C intervenes if and only if

- $k_C \leq k_C^0 = \sigma_C(q - p) - \frac{m_C}{W_C}$

Hence,

- $\gamma^0 = Pr(k_C \leq k_C^0) = F_C(\sigma_C(q - p) - \frac{m_C}{W_C})$.

Nation B's Resistance

- B resists Pr$=\beta$ if
  - $k_B \leq k_B^0 = \sigma_B \gamma^0 (q - p) + \sigma_B p - \frac{m_B}{W_B}$

Nation A's Attack

- A attacks Pr$= \alpha$ if

  - $-\frac{m_A}{W_A}\beta^0 - \sigma_A + \beta^0 \gamma^0 q \sigma_A + \beta^0 (1 - \gamma^0) p \sigma_A \geq \beta^0 k_A$

Proposition 1

$\gamma \uparrow \Rightarrow \beta \uparrow$ *and* $\alpha \downarrow$

- Deter aggression
- Empower target
- Ambiguous War Effect: $\alpha \downarrow \beta \uparrow$

γ^0 is increasing in W_C; β^0 is increasing in W_B; α^0 is increasing in W_A.

Preparing for Crisis

- Arm
  - B buy more weapons

- B Aligns with C
  - B shifts policy
  - incentivize C to intervene

- C offers alliance
  - C ties hands
  - deters A

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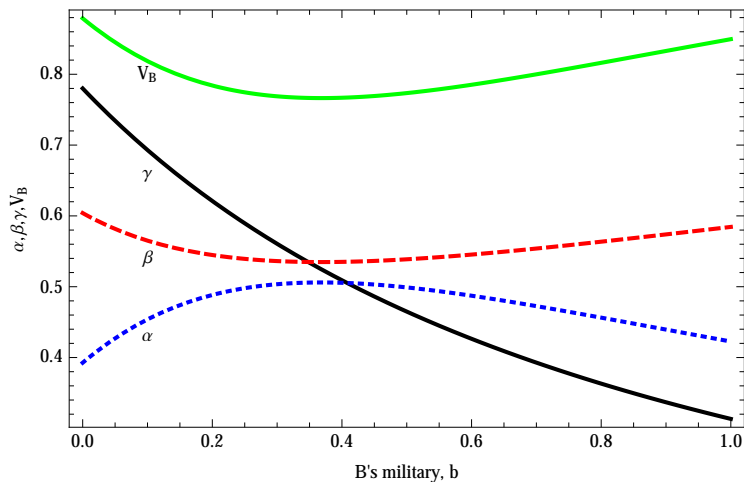 - C ties hands
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Power vs Domestic

ARMS

Proposition 3

C's military strength: γ^0 and β^0 are increasing in c and α^0 is decreasing in c.

B's military strength: γ^0 *is decreasing in b.* β^0 *is increasing and α^0 is decreasing in b if* $X = \frac{d\gamma^0}{db}(q - p) + \gamma^0 \frac{d(q-p)}{db} + \frac{dp}{db} > 0$.

A's military strength: *if $a < \sqrt{b(b+c)}$ then γ^0 is increasing in a; if $a > \sqrt{b(b+c)}$ then γ^0 is decreasing in a. If $\frac{d\gamma^0}{da}(q - p) + \gamma^0 \frac{d(q-p)}{da} + \frac{dp}{da}$ is positive then β^0 increases in a and α^0 decreases in a.*

Figure : B's Military and Outcomes in the Crisis Subgame

- Weak with friends $\Rightarrow$ Don't Arm
    - Underprovision of Arms (Olson&Zeckhauser)
- Large W_B Arm
    - Marginal cost: $\frac{\mu}{W_B}$

Alliance ties hands

Proposition 4

Defense Pact: $\gamma \uparrow \Rightarrow \beta \uparrow$ *and* $\alpha \downarrow$

Alliance ties hands

Proposition 4

Defense Pact: $\gamma \uparrow \Rightarrow \beta \uparrow$ *and* $\alpha \downarrow$

Result 1

Large W_C alliance attractive

Alignment

- B makes itself attractive to C
  - Policy Concession: $y \in \{0, 1\}$
  - Saliences: $\lambda_C > 0$ and $\lambda_B < 0$
- Align $\Rightarrow \gamma \uparrow$
  - $\gamma \uparrow$ beneficial if $|\lambda_B|$ small
  - deter A
- Alignment attractive for small W_B

Proposition 5

Alignment increases intervention, $\gamma^A \geq \gamma^0$. Alignment increases the probability of resistance if $(\gamma^A - \gamma^0)(q - p)\sigma_B \geq -\gamma^A \lambda_B q$. The probability of resistance is increasing in λ_C and λ_B:
$\frac{d\beta^A}{d\lambda_B} = f_B(\gamma^A q(\sigma_B + \lambda_B) + (1 - \gamma^A)p\sigma_B - \frac{m_B}{W_B})\gamma^A q \geq 0$ and
$\frac{d\beta^A}{d\lambda_c} = f_B\left(\gamma^A q(\sigma_B + \lambda_B) + (1 - \gamma^A)p\sigma_B - \frac{m_B}{W_B}\right)\frac{d\gamma^A}{d\lambda_c}((q - p)\sigma_B + q\lambda_B) \geq 0$. Alignment deters attacks if $\beta^A > \beta^0$.

Conclusions : Power and Institutions matter

- Power
  - strategic behavior modified by institutions: γ, β and α
- Arms
  - Weak targets with friends don't arm
    - W_B does not matter
  - Stronger targets: arms increase in W_B
- Align
  - Weak nations buy help
  - small W_B align
- Alliance
  - Large W_C offer alliance