Uncertainty in Crisis Bargaining with Multiple Policy Options
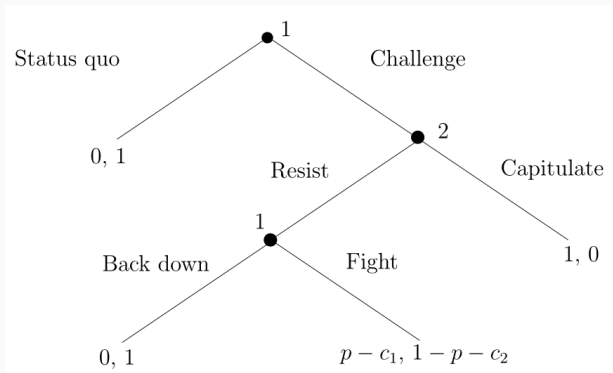
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Dichotomous outcome — total peace or total war.

Common explanation for war — incentive to misrepresent private information about willingness to fight.

Robust results on private information

Lots of ways to bargain.

- Ultimatum, alternating offers, random recognition, simultanous offers, any sequence of these
- Pre-play cheap talk, mid-game cheap talk, no cheap talk
- Take-backs, renegotiation, incremental concessions

Regardless of exactly how bargaining takes place,

1. Greater private war payoff $\Rightarrow$ **greater chance of war**
2. Greater private war payoff $\Rightarrow$ **better off in equilibrium**

(Banks 1990; Fey and Ramsay 2011)

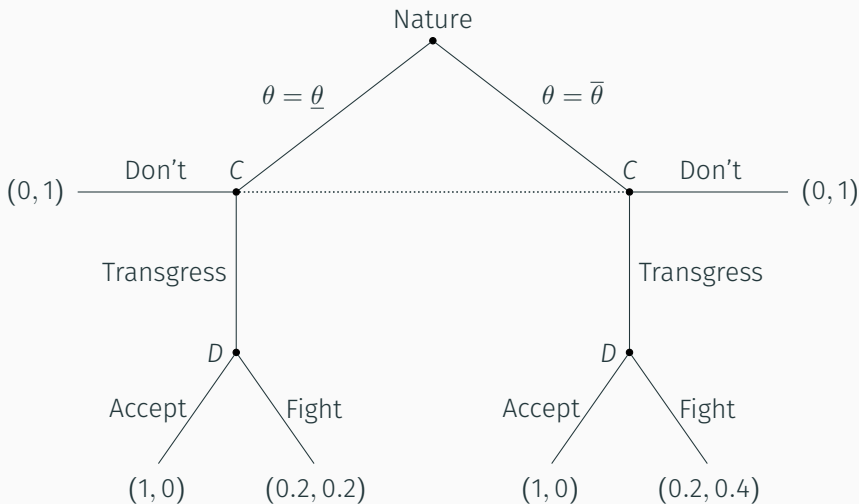## What ordinary crisis bargaining theories leave out

Not just total war or total peace in reality. Many policy options in between.

- Sanctions and tariffs (Coe 2014; McCormack and Pascoe 2017; Spaniel and Malone 2019)
- Third-party support to rebels (Schultz 2010)
- Gray zone conflict, hybrid conflict, hassling (Mazarr 2015; Lanoszka 2016; Gannon et al 2020; Schram 2021)
- Cyberwar (Gartzke and Lindsay 2015; Baliga et al 2020)
- Brinkmanship (Powell 1989, 2015)
- Arming, incl. nukes (Schultz 2010; Debs and Monteiro 2014; Gurantz and Hirsch 2017; Coe and Vaynman 2020)
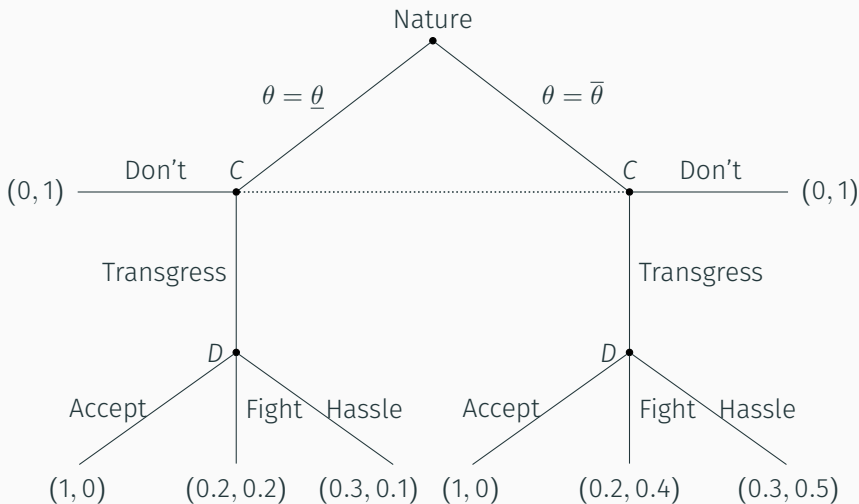
Our contributions

1. Characterize a general class of *flexible response crisis bargaining models*

2. Identify properties of *all* equilibria of *all* flexible response crisis bargaining games

3. Show that "robust" findings on crisis bargaining only hold under special circumstances
   - Greater private willingness to fight can lead to *lower* chance of war
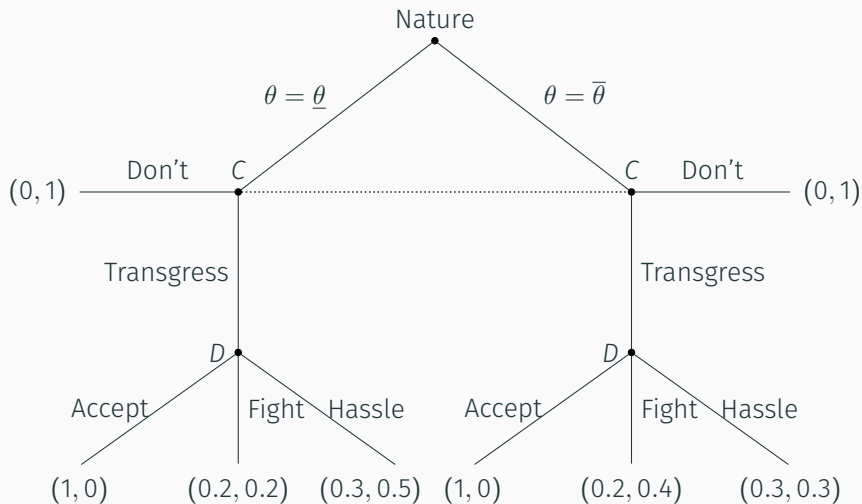   - Greater private willingness to fight can be associated with *worse* equilibrium payoffs

Example model — ordinary crisis bargaining

Example model — private type decreases chance of war

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Example model — private type decreases equilibrium payoff

General analysis

In a *flexible response crisis bargaining game*:

- Challenger chooses transgressions t, bargaining strategy b_C
    - Transgressions cost $K_C(t)$

- Defender chooses hassling h, bargaining strategy b_D
    - Has private information θ about war payoff
    - Hassling costs $K_D(h, \theta)$

- Bargaining strategies determine if war occurs
    - War $\Rightarrow$ C gets $W_C(\theta)$, D gets $W_D(\theta)$
    - Peace $\Rightarrow$ C gets $V_C(t, h, b_C, b_D) - K_C(t)$
      D gets $V_D(t, h, b_C, b_D) - K_D(h, \theta)$

Methodology

Following prior mechanism design analyses of crisis bargaining
(Banks 1990; Fey and Ramsay 2011):

1. For any strategy profile, a *direct mechanism*:
   - $\pi(\theta)$: does peace prevail when D is type θ?
   - $V_D(\theta)$: what does D get from bargaining when type θ?
   - $h(\theta)$: how much does D hassle when type θ?

2. Equilibrium must be *incentive compatible*
   - No incentive to mimic other type's bargaining + hassling
   - Can state in terms of direct mechanisms (Myerson 1979)

3. Also must have *voluntary agreements*
   - Won't accept a deal worse than fighting

θ represents D's privately known strength $\Rightarrow W_D(\theta)$ increasing.
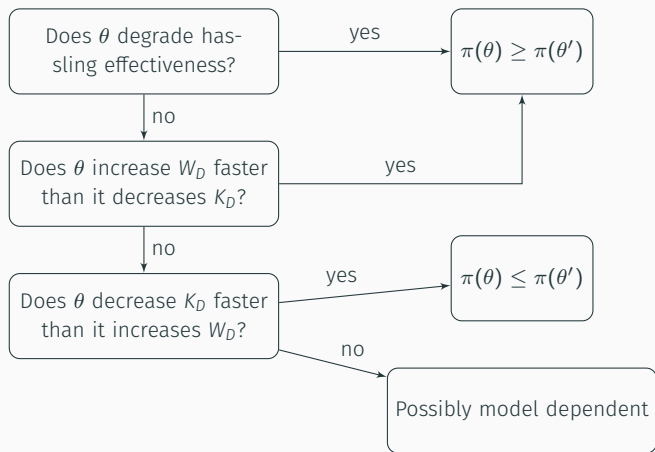
Possible relationships between private willingness to fight and hassling.

1. θ enhances hassling effectiveness $\Rightarrow$ hassling cost $K_D(h, \theta)$ decreases with θ.

2. θ degrades hassling effectiveness $\Rightarrow$ hassling cost $K_D(h, \theta)$ increases with θ.

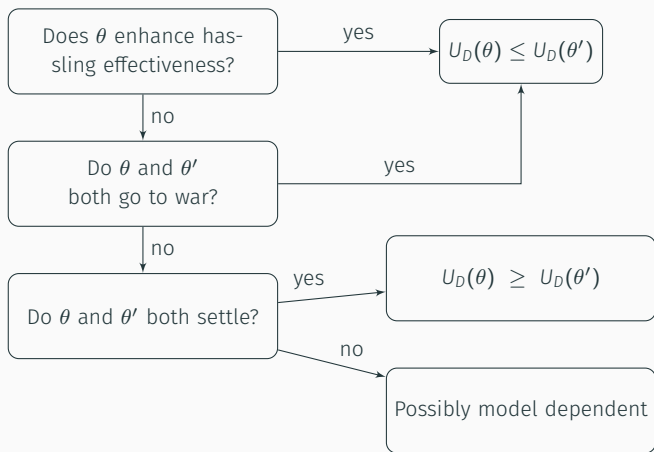For the pedantic: Yes, the cost could also be non-monotonic in θ, but we're going to ignore that.

Assume $\theta < \theta'$, compare each type's equilibrium probability of peace.

Assume $\theta < \theta'$, compare each type's equilibrium utility.

- Conditions for a totally peaceful (no hassling/transgression) equilibrium.

- Monotonicity of hassling level in private type

- Monotonicity of D's settlement payoff in private type

- Characterization of settlement payoffs given hassling levels

Conclusion

Effects of private information on crisis outcomes aren't as straightforward as previous literature implied.

Relationship between war and hassling technologies is critical.

- Dual versus specialized use

Game form matters more for outcomes of flexible response crisis bargaining.

Thank you!

Can we construct a game that has an equilibrium where:

- *C* chooses no trangressions
- All types of *D* choose no hassling
- The game ends peacefully regardless of *D*'s type

In baseline setting, if *D*'s type doesn't affect *C*'s war payoff — yes.

... but it's not so simple if transgressions and hassling can affect war payoffs.