



Analysis of IR

PS 1599 | Week 13: Coordination

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Administration

- Office hours, aklin@pitt.edu
- Exam
- Shorter class today

Brief reminder

- Research paper: who is supportive/unsupportive of clean energy (age, education, gender, etc.)
- Policy paper: suggest policies to deal with the problems identified in *Research Paper*
- Chuang's office hours: Fr 12-2:30pm
- Next two Mondays: drop-in session for your final projects
- Lots of material on course website!

What did we talk about
last time?

- Problem-solving addresses...
 - Natural problems
 - Individual problems
 - Social problems
- Social problems have many causes
 - So far: public goods/externalities
 - Next: coordination and commitment problems
 - Matters for policy

Coordination problems

Definition

- People benefit if they **coordinate** their behavior
 - I don't care strongly what we do as long as we adapt to each other
 - Canonical example: driving side
- When actors fail: coordination failure
- Differs from public goods
 - **no** incentive to free-ride
 - problem is to select an equilibrium

Coordination problems in markets

- a. **Format wars**: sectors often create industry-wide **formats**
 - Consumers don't care which format (smaller=better)
 - Important for firm planning
 - Eg: blu-ray vs HD DVD, QWERTY
- b. **Network effects**
 - = value to consumers goes up w/ more consumers
 - Eg: phones, vaccines, Playstation, Minidiscs
- Both relevant for sustainable technology

Case 1: network effects

- Consider electric vehicles (EV) and ignore externalities
- Still a challenge to switch from gas to EV
- Reason: both EV and gas require **infrastructures**
 - Infra is only provided if enough customers exist
 - If not: useless car

<i>Jane John</i>	Gasoline car	Electric car
Gasoline car	1, 1	0, 0
Electric	0, 0	1, 1

- Equilibria?

<i>Jane John</i>	Gasoline car	Electric car
Gasoline car	1, 1	0, 0
Electric	0, 0	2, 2

- Equilibria?

<i>Jane John</i>	Gasoline car	Electric car
Gasoline car	2, 2	0, 0
Electric	0, 0	1, 1

- Equilibria?

Assume you're working for the White House.
How would you ensure a transition to EV?

Policies

- Classic (same solutions as for public goods)
 - Pigouvian tax on cars
 - Subsidies for EV
- Coordination-specific solutions
 - Subsidy for infrastructure (charging stations)
 - R&D on flexible charging stations
 - Regulations on new apartment buildings

1. Law. Rule out one some options. Eg EU and gasoline cars
2. Services. Build charging stations.
3. Money. Subsidize EV
4. Taxes. Tax gasoline cars
5. Moral. ?

EU Lawmakers Vote to Ban Sale of New Gasoline-Powered Cars From 2035

Law requires new cars and vans to have significantly lower carbon emissions by 2030

Source: Wall Street Journal (Feb 14, 2023)

Tesla opens its EV charging network to the masses

By David Ferris | 02/15/2023 07:05 AM EST

Tesla Inc.'s deluxe electric vehicle charging network will start to serve other automakers' EVs, the Biden administration said Wednesday, in a move that could drastically expand Americans' options for plugging in.

'It's an instant closing of some gaps in the EV infrastructure market,' said Nick Nigro, the founder of Atlas Public Policy, which studies EV trends.

EE News, Feb 15, 2023

Case 2: format wars

- Electric vehicles must be charged
- Currently: <300 miles
- Problem: brands have competing charging standards
- Equivalent: having different plugs based on your electric supplier

J1772



CHAdeMO



CCS Type 1



CCS Type 2



Tesla



Source: <https://electrek.co>.

<i>Tesla BMW</i>	Tesla supercharger	CCS
Tesla supercharger	2, 1	0, 0
CCS	0, 0	1, 2

- Two equilibria
- But **distributional** impact

Assume you're working for the White House.
How would you pick a standard?

- Difficult choice: can the White House predict the future?
- One possibility: let the market decide (like blu-ray vs HD DVD)
- Problem: slows down the transition to EV
- Can use technical criteria. But same problem: no idea which format is superior in the long term
- Maybe best (?): force industry to pick

1. Law. Impose to all a standard that you think is superior
2. Services. Build charging stations.
3. Money. Compensate the loser
4. Taxes. Compensate the loser (lower taxes)
5. Moral. ?

- The Department of Transportation, in partnership with the Department of Energy, finalized new standards to make charging EVs convenient and reliable for all Americans, including when driving long distances. The new standards will ensure everyone can use the network – no matter what car you drive or which state you charge in. The standards also require strong workforce standards;

Source: White House, February 15, 2023

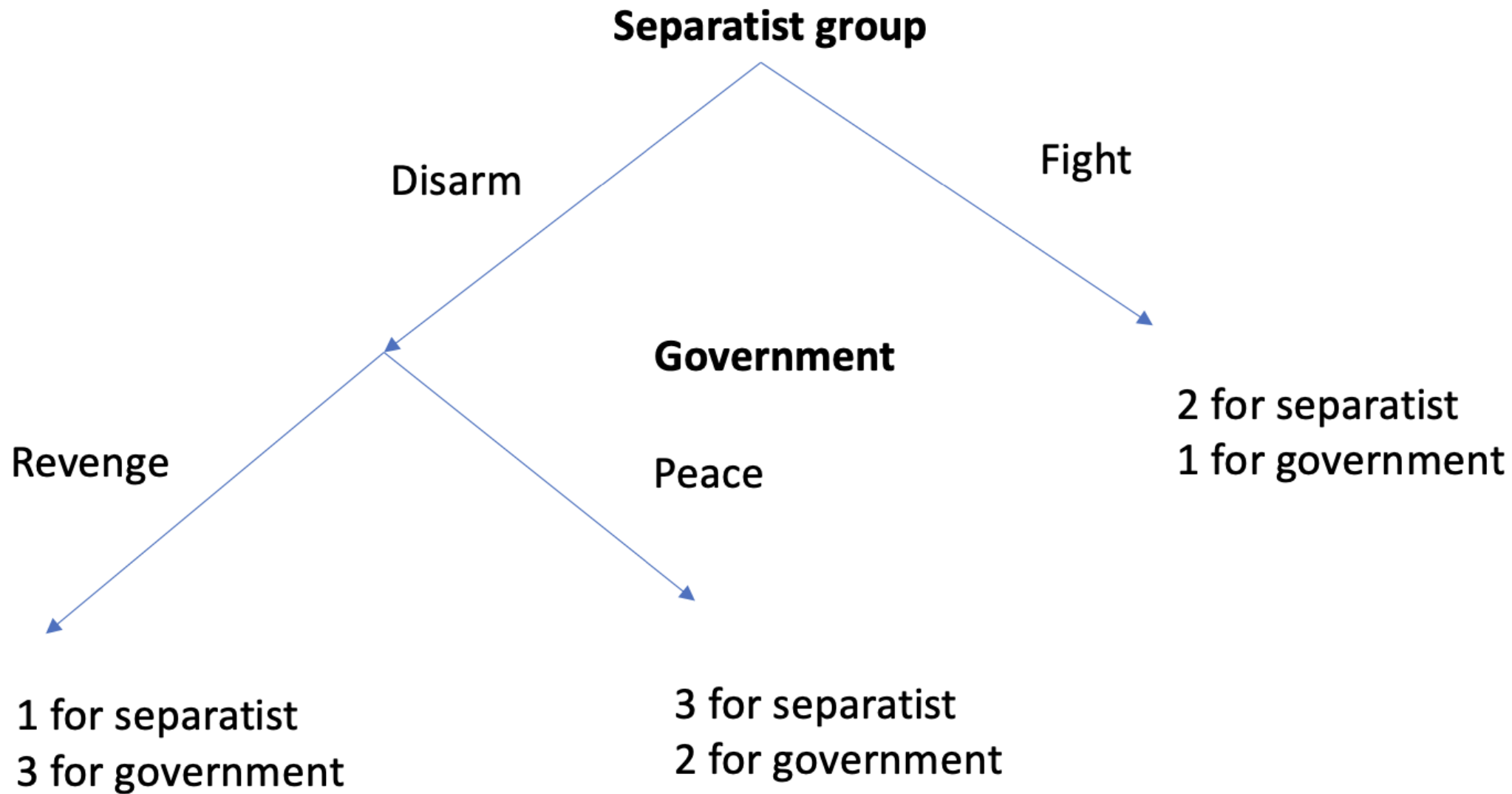
Conclusion

- Public goods are not the only social problems
- Coordination failures are also important
- Relevant for sustainable technology
 - Network effects
 - Format coordination
- Policies are different from those for public goods
- Implication for your projects

Commitment problems

Definition

- Actors sometimes make promise about the future
- These promises might not be **credible**
- Eg: teenage wanting to go out tonight and clean room tomorrow
- Problem: knowing this, actors will make worse decisions today
- Eg: peace treaty, long-term subsidies



Example: political risk

- Commitment problems are common in new industries
 - Need gov support to grow
 - But govs come and go
- Creates **political risks**
- Issue: who will invest in clean tech if govs might pull the plug later?

Industrial Policy: The IRA

- Three problems: public goods, coordination, commitment
- Can be addressed individually
- But that's sometimes insufficient
- Solution (?): industrial policy

History

Content

Solutions

- Public goods: public resources
- Coordination: creates entire markets
- Commitment: tries to create constituencies who will fight for it even if Republicans win

Questions?

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Source for title page painting: Alberto Rossi, *The Arab market in kalona*

References

- Busse, Matthias, and Carsten Hefeker. 2007. “Political Risk, Institutions and Foreign Direct Investment.” *European Journal of Political Economy* 23 (2): 397–415.
- Kelly, Bryan, Lubos Pastor, and Pietro Veronesi. 2014. “The Price of Political Uncertainty: Theory and Evidence from the Option Market.”

