

Designing institutions for climate change:

Why rational design involves technology

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Outline

- Working assumptions
- The problem: Why rational actor behaviour doesn't lead to a global cap on emissions
- Back to basics: building blocks of a technology-oriented agreement
- Initial thoughts on a technology-oriented agreement

Working assumptions

1. Addressing climate change means that greenhouse gas emissions need to be reduced drastically
2. Industrialised countries have to undertake most and earliest action
3. It will be costly to reduce emissions to a level that sufficiently addresses climate change
4. Actors in the climate change negotiations act according to rational-choice theory.

Rational actors and climate change

Cost and benefits distribution of GHG emission reduction

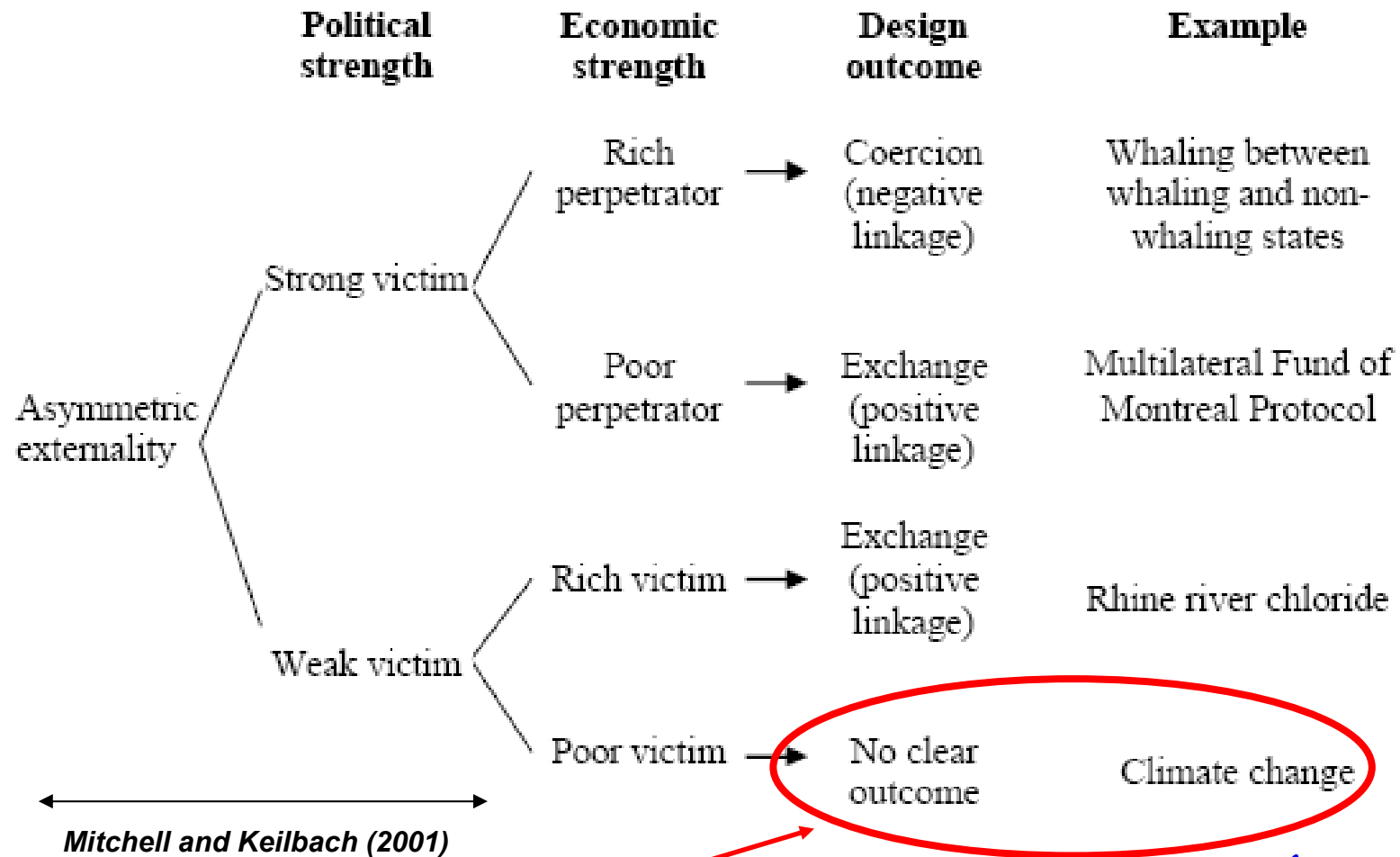
- Economic consequences of inaction (incl. food supply) most severe in developing world
- Economic consequences of action most severe in industrialised countries

Reciprocity, coercion, exchange

Political strength:	Strong victim	Weak victim	Examples
Symmetric externality	Issue-specific reciprocity		Whaling among whaling nations Ozone depletion among ozone depleting nations
Asymmetric externality	Coercion (negative linkage) OR Exchange (positive linkage)	Exchange (positive linkage)	Ozone depletion between industrialised (strong victims) and developing nations Whaling between whaling and non-whaling states (strong victims) Rhine river chloride between France/Germany/Switzerland and the Netherlands (weak victim)

Mitchell and Keilbach (2001)

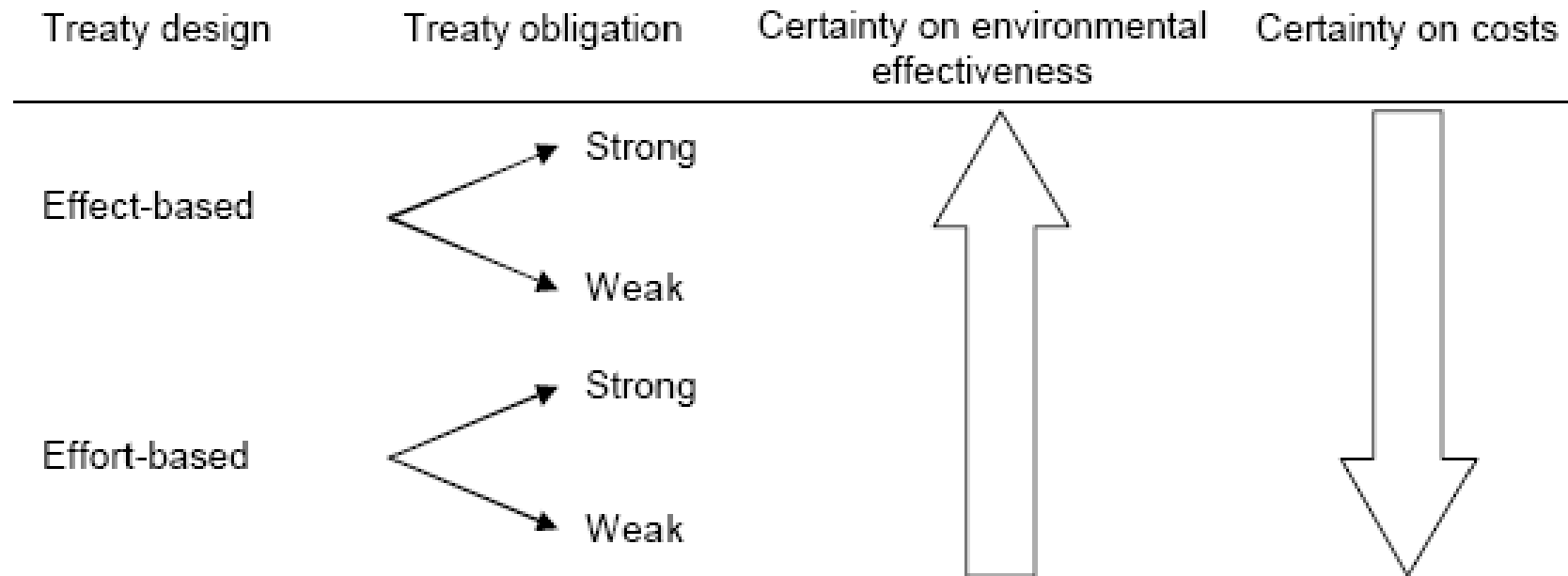
Reciprocity, coercion, exchange



Widening the scope of climate agreements

- Given the current state of climate change insights and rational-actor behaviour, it is unlikely that a global cap on emissions will be agreed
- Distribution, enforcement and number of actors-problems → increase scope of agreement
- Widening scope to where? (Energy security of supply? Air quality?)
- Technological innovation:
 - Not yet “claimed”
 - Interests of important actors

Back to basics: effort and effect

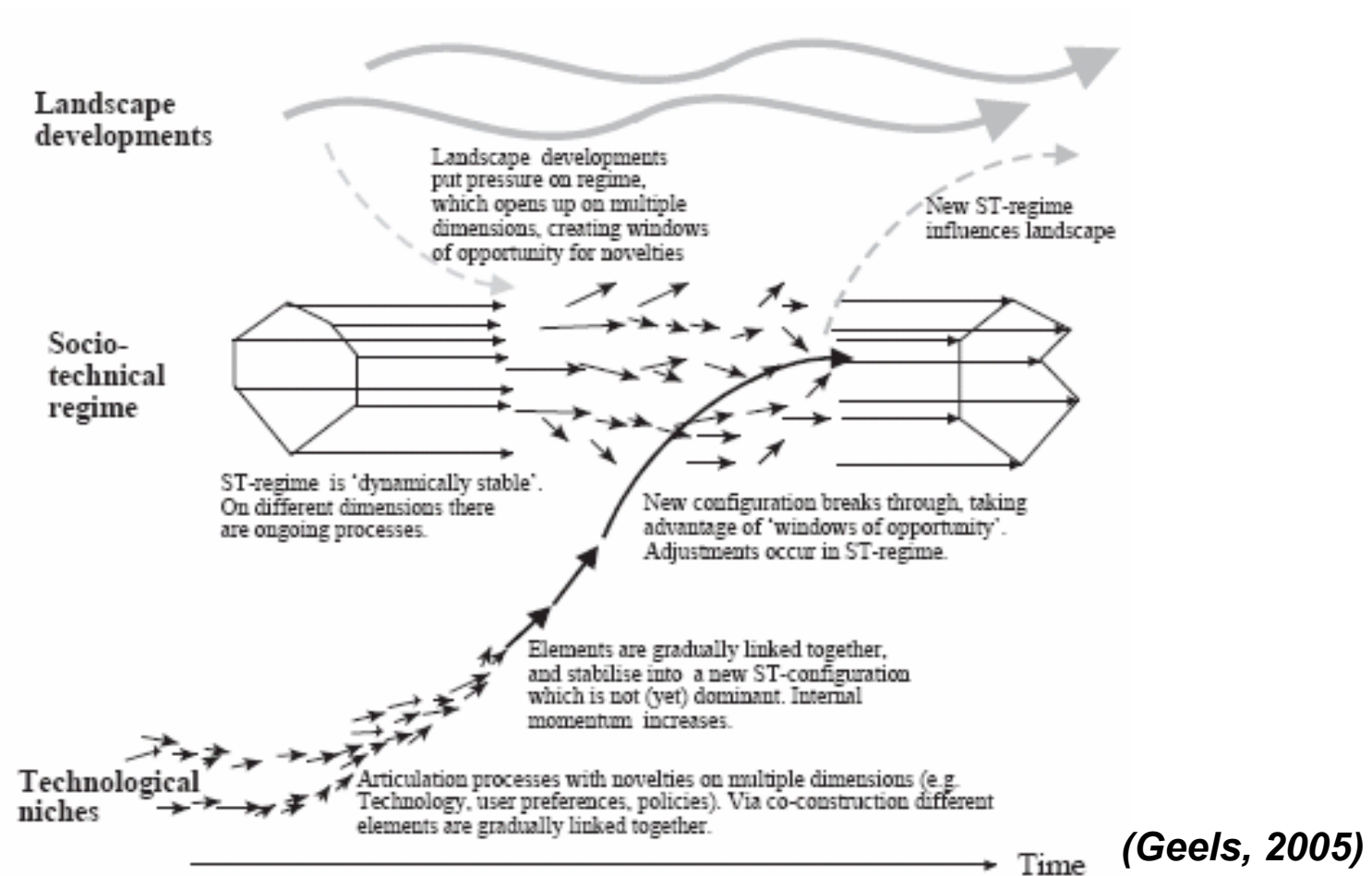


- Technology-oriented agreements can be effect-based

Back to basics: compliance

- Depth of cooperation versus compliance
 - Cooperation leads to compliance (Chayes & Chayes, 1993)
 - Compliance “fear” leads to shallow cooperation (Downs et al., 1996)
- Canada in the Kyoto Protocol
 - Lack of policy (federal vs. provinces)
 - Shifting interests (oil sands industry)
- Common interest in implementation and compliance
- In technology terms: consolidation of first-mover advantage

Back to basics: technology



Initial thoughts on climate-related technology-oriented agreements

- Align with vested interests
 - Make use of perceived first-mover advantages
- Align with technology specifics
 - Technological maturity
 - Socio-technical regime
- Focus on implementation (effect-based)
 - But don't forget RD&D
- Start with a small group of large emitters
 - But leave flexibility to expand with others

Conclusion

- Given the current state of climate change insights and rational-actor behaviour, it is unlikely that a global cap on emissions will be agreed
- Technology-oriented agreements can be effect-based and thus environmentally effective
- Technology-oriented agreements might offer advantages in fields of compliance and ease of implementation