

# GREENING PATHS

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- Framing the puzzle
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# Framing the puzzle

# Coping with environmental challenges

- *The problem*
  - ▣ environment as a global common
- *The solution*
  - ▣ international regimes
- *The tenets*
  - ▣ policy change can be exogenous
  - ▣ bad performances as (deliberate?) non-compliance
- *The findings*
  - ▣ int'l regimes as an opportunity structure only
  - ▣ policy change is endogenous

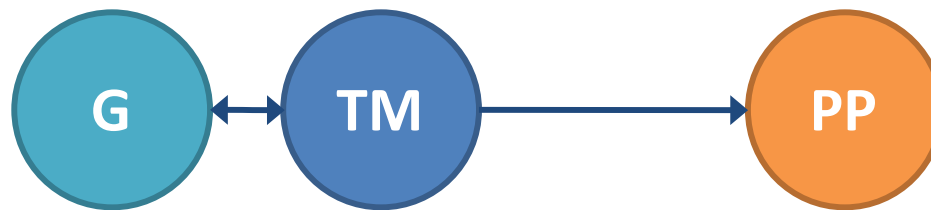
# Framework

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- *Theoretical references*
  - ▣ Paradigms: normative discourses (priorities) and policy tool-mixes (institutions)
- *Analytical approach*
  - ▣ Paradigms-in-use: the actual way international regimes and discourses are endogenized

# Framework

- *The driving question*
  - Which paradigm\* deliver
- *The general model*





# Paradigms, & operational consequences

# About the deep core

- Any environmental policy paradigm implies some position about economic growth
  - ▣ Priority
  - ▣ Kind of 'game'
- *The explanandum has to account for goal integration*
  - ▣ Decoupling as 'the breaking of the link between environmental bads and economic goods' (OECD)


$$1 - [(EP_{t+1} / DF_{t+1}) / (EP_t / DF_t)]$$



# how many paradigms?

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- Frontier Economics
  - no tool
    - no decoupling
  
- Environmental Protection
  - command and control regulation
  - end-of-the-pipe doctoring
    - some decoupling

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- Resource Management
    - Product/pollution targeted taxation
    - Market-compatible regulation
    - Incentives
      - Decoupling



- Eco-Development

- General environmental taxation
- Market-compatible regulation
- Incentives
  - Decoupling

- Deep Ecology

- Regulation for de-growth
- Local community planning for autarchy
  - Little or no decoupling

# Operationalizing the *explanantes*

- taxation:
  - ▣ Volume of environmental taxation as % GDP
  - ▣ Ratio of Pollution/Product taxation out of non-targeted environmental taxation
  
- regulation:
  - ▣ Use of command-and-control regulation (OECD)
  - ▣ Extension of protected areas (IUCN and UNEP-WCMC)

# Operationalizing the *explanantes*

- expenditures:
  - ▣ Total current environmental expenditure as % of GDP
  - ▣ End-of-the-pipe investment as % of GDP
  - ▣ Investment for prevention as % of GDP
- governance:
  - ▣ WBI index of regulatory quality
  - ▣ Environmental expenditure centralization
  - ▣ Index of Steering Quality (nr of sectoral reviews + expenditure linked to performance targets)

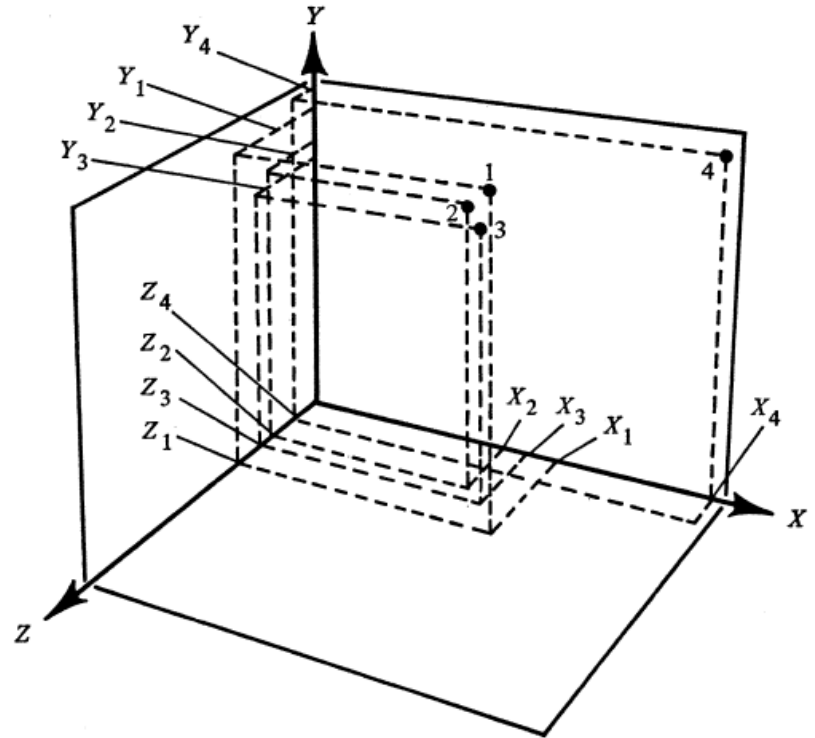


# The method



# The (fs)QCA: rationale

- Lazarsfeld's idea of property space
  - ▣ Types as configurations of conditions allowing expectations about the explanandum
  - ▣ Cases as configurations of conditions that make types true and provide evidences to test expectations



# The (fs)QCA: heuristic

## □ Meths families

- ▣ Case-oriented (few cases, many aspects, unraveling complexity)

- ▣ *Diversity-oriented*

- ▣ *Variable-oriented* (many cases, few concepts, aiming at

GOALS	Case-oriented	Diversity-oriented	Variable-oriented
Identifying general patterns	--	Secondary	Primary
Testing/refining theory	Secondary	Secondary	Primary
Making predictions	--	Secondary	Primary
Interpreting significance	Primary	Secondary	--
Exploring diversity	Secondary	Primary	Secondary
Giving voice	Primary	--	--
Advancing new theories	Primary	Primary	Secondary



# The (fs)QCA: explanations

- Necessity of a cause

- $X > Y$

	$\sim X$	$X$
$y$	empty	<b>cases</b>
$\sim y$	<i>irrelevant</i>	maybe

- Sufficiency of a cause

- $X < Y$

	$\sim X$	$X$
$y$	maybe	<b>cases</b>
$\sim y$	<i>irrelevant</i>	empty

- Necessity and sufficiency of a cause

- $X = Y$

	$\sim X$	$X$
$y$	empty	<b>cases</b>
$\sim y$	<i>irrelevant</i>	empty



# Findings



# Database

country	gg	_ptx	_ptr	_etx	_ccr	_par	_inc	_eop	_prv	_rqt	_ctr	_sqt
AUT	<b>0,62</b>	0,07	0,08	0,43	0,53	0,85	0,25	0,74	0,88	0,81	0,56	0,09
BEL	<b>0,92</b>	0,58	0,69	0,08	0,97	0,03	0,56	0,03	0,03	0,6	0,03	0,09
DEU	0,25	0,03	0,04	0,27	0,14	0,99	0,31	0,08	0,03	0,75	0,03	0,15
DNK	0,02	0,97	0,94	0,99	0,03	0,08	0,92	0,03	0,03	0,96	0,78	0,22
ESP	0,11	0,04	0,06	0,03	0,97	0,22	0,03	0,74	0,57	0,39	0,1	0,04
FIN	0,32	0,07	0,08	0,65	0,04	0,27	0,11	0,66	0,41	0,98	0,99	0,94
FRA	<b>0,56</b>	0,55	0,6	0,24	0,74	0,57	0,07	0,74	0,07	0,09	0,08	0,83
GBR	<b>0,77</b>	0,2	0,21	0,37	0,19	0,69	0,23	0,38	0,13	0,94	0,6	0,68
IRL	0,44	0,03	0,04	0,13	0,92	0,02	0,36	0,03	0,03	0,92	0,36	0,22
ITA	0,09	0,06	0,07	0,52	0,19	0,54	0,7	0,74	0,41	0,03	0,07	0,06
NLD	<b>0,97</b>	0,93	0,96	0,84	0,07	0,63	0,97	0,55	0,57	0,98	0,15	0,96
PRT	0,03	0,03	0,04	0,64	0,16	0,82	0,34	0,99	0,98	0,24	0,34	0,04
SWE	<b>0,65</b>	0,1	0,11	0,52	0,43	0,42	0,03	0,38	0,8	0,93	0,64	0,83

# Greening paths

1. *regulation*

**par\*(sqt + ccr\*ctr) → gg**

2. *taxation*

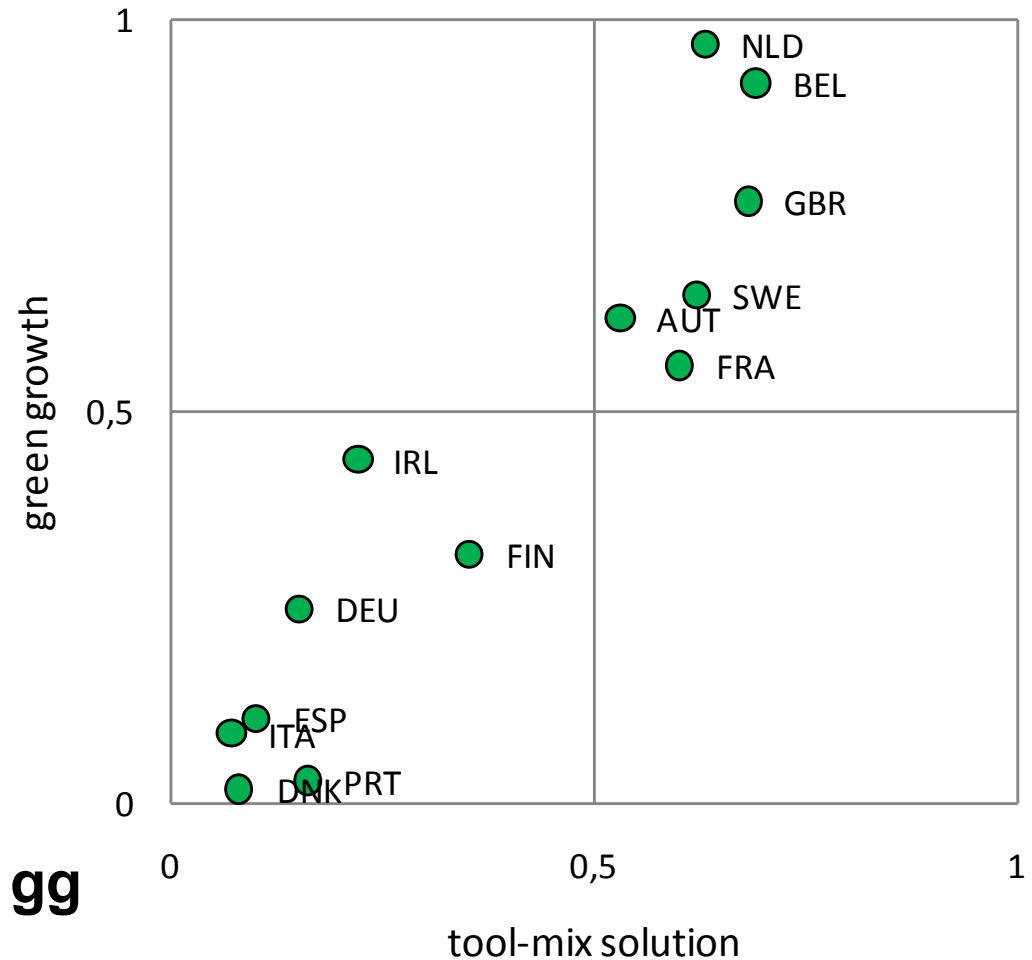
**~etx\*(ptr+ sqt\*ctr) → gg**

3. *expenditure*

**sqt\*(ctr\*~eop\*~inc +  
prv\*eop\*inc) → gg**

4. *general solution*

**g\_reg + g\_exp + g\_tax → gg**



# Dirty paths

## 1. regulation

$\sim \text{sqrt} * \sim \text{ccr} * (\text{ctr} * \sim \text{par} + \sim \text{ctr} * \text{par}) \rightarrow \sim \text{gg}$

## 2. taxation

$\sim \text{sqrt} * \text{etx} \rightarrow \sim \text{gg}$

## 3. expenditure

$\sim \text{sqrt} * \sim \text{ctr} * \text{eop} * (\sim \text{inc} + \sim \text{prv}) + \text{crt} * \sim \text{prv} * (\text{eop} * \sim \text{inc} + \sim \text{eop} * \text{inc} * \sim \text{sqrt}) \rightarrow \sim \text{gg}$

## 4. general solution

$\text{d\_reg} + \text{d\_exp} \rightarrow \sim \text{gg}$

