

Carbon lock-in and institutions: outlines of a political economic approach to emissions reduction inertia

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Outline

- Background
- Multi Level Perspective
- Combining Historical Institutionalism and the MLP
- Political Economy and wider institutional configuration

Background

- Despite relatively stringent climate legislation, states like the Republic of Ireland continue to see emissions growth.
- This occurs despite the existence of low carbon technologies.
- If this is essentially a story of market switching, why haven't we seen more progress?
- This leads us to the questions of transition: what factors aid or impede them?

Carbon lock-in defined

- The inertia from technologies, institutions and behaviours which, on their own and together, act to limit carbon emissions reductions (Seto et al. 2016).
- This is seen as a specific case of path dependency: history matters, and once you start upon a particular path, the probability of remaining on that path increases and the costs of switching rises (Lowndes & Roberts 2013; Pierson 2004).
- On the institutional side, which concerns us here:
 - Institutions are meant to lock-in outcomes.
 - Institutions are political.
 - Actors within political systems seek to maintain a status quo or shift to a new one which they find more favourable.

Multi-Level Perspective on transitions

- Part of wider *sociotechnical transitions* literature which try and explain the necessary social and technical facets of transitions.
- According to the MLP, transition involves change at three levels (Geels 2019):
 - Niche-innovations
 - Social technical system
 - Landscape (wider context)
- Transitions are non-linear and occur through an interplay between processes at these levels over four phases in the traditional account (Geels 2020).
 - Experimentation
 - Stabilisation
 - Diffusion & Disruption
 - Reconfiguration

Lock-in within social technical systems (Geels 2020)

- Techno-economic
 - Sunk investments
 - Material persistence of infrastructures
 - Costs/Performance
- Social and Cognitive
 - Routines
 - Lifestyles
- Institutional/political
 - Existing regulation/standards which favour current systems
 - Procedures which facilitate access for incumbents

Recent advances

- Geels and Turnheim (2022) point to several criticisms of standard MLP accounts:
 - Classic account sees singular niche innovation driving process of change.
 - Transition can occur from within existing socio-technical systems.
 - Low carbon systems involve multiple niche innovations
 - Multiple systems interact – within the electricity system for example, or between electricity and transport.
 - Change can be gradual, rather than occur according to a “punctuated equilibrium” model.
 - Existing socio-technical systems and incumbents aren’t monoliths – there are internal tensions which can drive changes within a system.
- In response, they add a framework for dynamics within existing systems:
 - Techno-economic reconfiguration
 - Reorientation of mainstream actors
 - Policy reconfiguration



Introducing historical institutionalism (HI)

- Distinct strand within institutional studies alongside (Lowndes and Roberts 2013):
 - Sociological
 - Rational choice
 - Discursive institutionalism
- Defines institutions as “Formal and informal procedures, routines, norms and conventions” (Lowndes and Roberts 2013 from Hall 1986)
- Lockwood et al. (2017) point to two broad (PE) concerns:
 - A theory concerned with agency within institutional constraints.
 - How institutions are formed, and how do they evolve ?

HI as a complement to the MLP

- HI can offer an entry point and fill in institutional dimensions of the system/regime and landscape levels of the MLP.
- The perspective offers insight into mechanisms of inertia.
- This can relate to specific institutions within sectors or broad configurations of institutions.
- HI focus on providing general explanation of patterns across cases using a comparative rather than case study approach (Lockwood, Kuzemko, Mitchell and Hoggett 2017) .
- Raises possibility of identifying institutional arrangements which may be more or less conducive to low carbon transitions.

HI insights

- Countries with PR are more likely to adopt environmental policy than first past the post systems.
- The presence or non-presence of veto players.
- The extent to which decision making is delegated, particularly on the regulatory side.
- Institutional variation results in variations in (Lockwood et al. 2017)
 - Incumbent power – tax revenue/employment, strategic role of energy within economy, centralisation/size
 - Incumbent interests – nature of relevant organisations, asset specificity
 - Ease of policy and regulatory capture – privatisation, “marketised” decision making (Kuzemko 2016).

HI perspectives on institutional inertia

- Positive feedback in politics (Pierson 2004):
 - The need for collective action imposes high entry costs.
 - Institutional set ups make reversals unattractive – investments made, identities formed.
 - Actors likely to use their power to change the rules such that their power is maintained/increased.
 - Difficulty assessing outcomes given the complexity of politics.
- Different types of institutional change (Mahoney and Thelen 2012):
 - Displacement – removal and replacement of old rules
 - Layering – introduction of new rules alongside old ones
 - Drift – impact of existing rules changes given shifts in the wider environment.
 - Conversion – formal rules are interpreted or enacted in new ways.

Insights from wider comparative PE

- Varieties of Capitalism framework:
 - Feldman (2014) argues that firm governance in CMEs favours environmental investment relative to LMEs – stakeholder vs shareholder value governance results in better alignment with longer term objectives.
 - Mikler and Harrison (2012) CME arrangements result in better coordination towards development of low carbon tech.
 - This may overstate coherence within an economy – some sectors may be more or less coordinated etc. (Kern et al. 2014)
- Other approaches:
 - Growth models – is the economy led by exports, consumption led growth? Sources of demand, dominant sectors, sensitivity to price, political foundations of these models in the form of blocs (Amable et al. 2019).
 - Regulationist approaches such as Cahen-Fourot (2020) which include social relation to environment as new grouping factor in clustering analysis.

Conclusion

- Lock-in and wider MLP framework can draw attention to integrated nature of systemic inertia across a number of domains.
- Historical institutionalism and wider PE can offer an entry point to examine the institutional elements of these processes, rather than technology as is often the case in MLP.
- Possible lessons:
 - Policy effectiveness may be context dependent.
 - If we know the environmental effects of certain institutional designs and/or wider configurations, we might better align ecological and social goals.

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