Part 2: Structures in Transition

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The Challenges of Changing the Paradigms, Regimes and Structures of Low Carbon Mobility

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Introduction

Transitions are broadly defined as processes in which society changes fundamentally within comparatively short periods of time, usually of the order of just over a generation or 25 years (Rotmans *et al*., 2001). Transitions refer to the change in dynamic equilibrium from one state of equilibrium to another. They are also referred to as regime change (Smith *et al*., 2005), and are often seen as equivalent to, or occurring in concert with, paradigm change (Vanloqueren & Baret, 2009). Geels and Kemp (2007) distinguish between a 'transformation', referring to a change in the direction of trajectories, related to an alteration in the rules that guide innovation, and 'transition', referring to a discontinuous shift to a new trajectory and system. However, the terms are often used interchangeably. The topic of sustainable or low carbon mobility transitions has attracted reasonable levels of academic interest (Nykvist & Whitmarsh, 2008; Köhler *et al*., 2009; Cohen, 2010; Farla *et al*., 2010; Geerlings *et al*., 2012; Upham *et al*., 2015), with concerns over sustainable or low carbon mobility also often embedded in or overlapping with other policy fields, such as urban design and planning (Mäkinen *et al*., 2015; Strandell & Hall, 2015), or tourism (Hall, 2009; Gössling *et al*., 2012).

This chapter aims to provide a brief introduction to some of the issues associated with enabling low carbon mobility transitions. It first discusses issues of regime change and transition and highlights the desire for specific types of transition. However, the nature of desired regime change appears to inherently require the involvement of the state and therefore this also raises significant issues of policy change and learning. The chapter then goes on to discuss the complexity of multiscale transitions and the extent to which this raises issues of agency and structure, with emphasis on the capability to enable transition and positive change itself being related to different framing of policy interventions and learning. The chapter then concludes by noting the limitations of capacities to enable low carbon mobility transitions without there being third degree policy learning and major paradigm change.

Regime change and transition

Regimes can be understood as the rules, institutions and structures, which are recursively reproduced, used and changed by policy actors (Giddens, 1984). Policy in this sense needs to be understood not just as what is written but more so what is done and not-done with respect to decision-making and the flows and trajectories of decisions and their implementation over time. Such decisions and flows are also dominated by particular policy paradigms. For Hall (1993: 279) a 'policy paradigm' is the '*framework of ideas and standards that specifies not only the goals of policy and the kind of instruments used to attain them, but also the very nature of the problems they are meant to be addressing*'. Although concerns have been expressed about the capacity for paradigm change (Weaver, 2009) and policy learning with respect to sustainable tourism and mobility (Hall, 2011), this '*agency-structure dynamic, which is also crucial in [transition pathways], leaves space for different kinds of action*' (Geels & Schot, 2007: 415).

Regime change, which has been incorporated into multi-level perspectives on technological transitions (Geels, 2011), is primarily a function of two partially coupled processes: (1) shifting selection pressures on the regime, and (2) the co-ordination of resources (capabilities, factor endowments, knowledge) available inside and outside the regime to adapt to these pressures. Selection pressures include not only economic pressures operating at the level of the firm and the region (such as pricing, competition, contracts, taxes and charges, regulations, standards, liability, profitability, skills and knowledge), but also broad political, social and economic pressures emanating from institutional structures and conventions (e.g. demographic shifts, consumer culture, societal environmental attitudes, urbanisation, neoliberal model of globalisation), as well as pressures that 'bubble up from below, from innovative niches that are not yet so established as to constitute a regime' (Smith *et al.*, 2005: 1495). An example of the latter would be the demands that arise in some jurisdictions from the pressures of the so-called 'piecemeal' or 'sharing economy' (Hall & Veer, 2016).

Table 6.1 illustrates some of the different types of changes in the regime environments. Importantly the types of change may shift over time. For example, coral bleaching appears to be shifting from being an occasional specific shock to a situation of hyper-turbulence over time as a result of increased frequency of bleaching events in response to the growing intensity of climate change (Slezak, 2016). The activity of interests with respect to regime change is significant because such debates affect the manner in which policy learning occurs and therefore consequently frames the function reproduction and potential for change of policy paradigms (Hall, 2011) and socio-technical regimes (Smith *et al.*, 2005). Indeed, without at least some form of internal or external pressure '*it is unlikely that substantive change to the developmental trajectory of the regime will result*' (Smith *et al.*, 2005: 1495).

In utilising the two dimensions of regime change and assuming that different selection pressures are always present it is possible to present a typology of four transitions (Figure 6.1) (Berkhout *et al.*, 2004; Smith *et al.*, 2005; Gössling *et al.*, 2012). The reorientation of trajectories and emergent transformations are evolutionary transitions in which the outcome is not planned in a significant way, endogenous renewal and purposive transition are goal-oriented (teleological) transitions in which a diffuse goal or vision of the end state is guiding policy-makers and orienting their strategic decisions (Kemp & Rotmans, 2004: 138). This latter type of regime transformation or regime shift is also referred to as transition management.
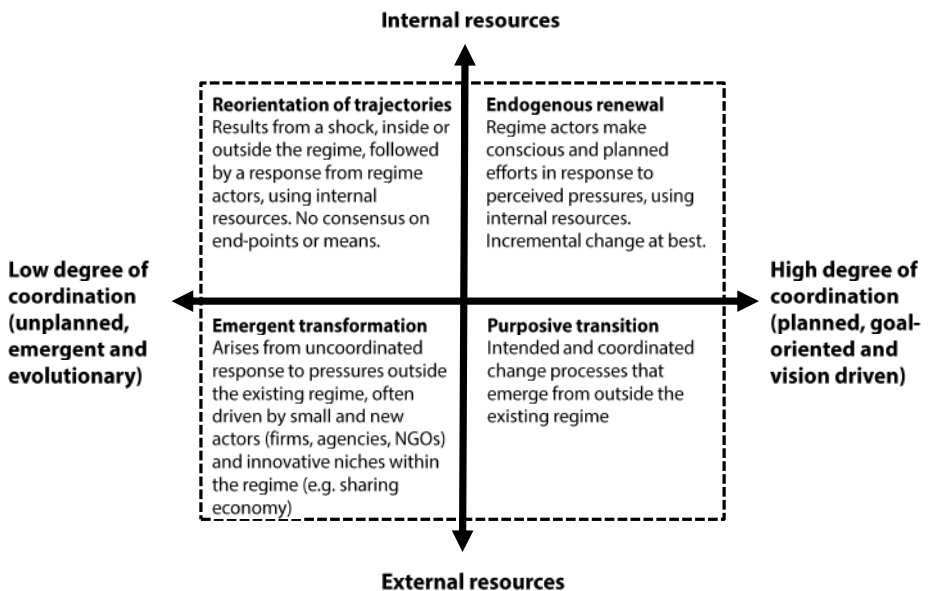

Figure 6.1: A typology of transitions. Source: After Berkhout *et al.* (2004); Kemp & Rotman (2004); Smith *et al.* (2005); Gössling *et al.* (2012).

Transition management is usually regarded as requiring integrative and multi-level governance to encourage and shape development processes, and choice of policy instruments and actions by individuals and private and public organisations,