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Power in Transition

An Interdisciplinary Framework to Study Power in Relation to Structural Change

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Abstract

This article conceptualizes power in the context of long-term process of structural change. First, it discusses the field of transition studies, which deals with processes of structural change in societal systems on the basis of certain presumptions about power relations, but still lacks an explicit conceptualization of power. Then the article discusses some prevailing points of contestation in debates on power. It is argued that for the context of transition studies, it is necessary to develop an interdisciplinary framework in which power is explicitly conceptualized in relation to change. Subsequently, such a framework is presented, with reference to existing literature on power. Starting with a philosophical and operational definition of power, a typology is developed of the different ways in which power can be exercised, explicitly including innovative power and transformative power. Finally, the presented power framework is applied to transition studies, redefining pivotal transition concepts in terms of power and formulating hypotheses on the role of power in transitions. By doing so, the article not only offers an interdisciplinary framework to study power in the context of transition studies, but also contributes to power debates more generally by including innovation and transformation as acts of power, and thereby proposes a re-conceptualization of the relation between power and structural change.

Key words

■ innovative power ■ interdisciplinarity ■ power ■ structural change ■ transformative power ■ transitions

Understanding structural change is one of the great challenges in social science. In order to face this challenge a field of studies has recently been formed that focuses solely on ‘transitions’: non-linear processes of social change in which a societal system is structurally transformed. This field of transition studies applies theories and methods from various disciplines to study the history, dynamics and governance of socio-technical transitions and ‘system innovations’ (Rotmans et al., 2001; Kemp and Loorbach, 2006; Geels, 2005; Grin, 2005; Loorbach,

2007). The ongoing development of 'transition theory' predominantly draws upon three strands of science: complex system theory, social studies of technology and governance literature. In order to couple the formalized, deductive abstractions of complexity theory with the inductive, often empirically developed management concepts of governance, concepts are applied from social theory on the interaction between structures, actors and practices (Rotmans, 2005). So far, a conceptualization of power has been lacking, as the current literature on transitions does not explicitly define or mention power. The literature does, however, offer insights on how processes of structural change are influenced at different levels of society, and these are based on *implicit* presumptions about power.

This article aims to incorporate an explicit conceptualization of power into transition studies. Definitions of power are manifold and highly diverse, ranging from power as actor-specific resources used in the pursuit of self-interests (Weber, cited in Fuchs, 2005) to power as 'the capacity of a social system to mobilize resources to realize collective goals' (Parsons, 1967: 193). According to Haugaard (2002), power is a 'family resemblance concept'; rather than trying to capture the essence of power in one all-encompassing theory that applies to each context, the challenge is to find a conceptualization of power that is suitable to describe phenomena in a specific context. The challenge of this article is to develop a conceptual power framework that can be used in the context of transition research.

Transition Studies and Power

By 'transition studies' we refer to a specific research field that looks at societal systems as complex adaptive systems and studies these in terms of non-linear and long-term processes of change from an interdisciplinary and integrative perspective.¹ The primary object concerns societal systems at the level of sectors or regions. This systemic perspective requires a certain holistic view that acknowledges the interaction between human and non-human aspects. Influence on society is not only social, cultural, institutional or political, but also economic, ecological and technological. Social actors are reflexive and as such shape and influence the dynamics of the system they inhabit. But as societal systems are complex (e.g. interactions at the micro-level may have unintended effects at the macro-level and they adapt to the systems' surroundings), they have a functional dynamic of their own which no actor or group of actors can control. A transition occurs when a societal system moves from one dynamic state of equilibrium to another through a sequence of alternating phases of relatively fast and slow dynamics, which form a non-linear pattern. This manifestation of alternating phases can be visualized through the so-called S-curve. In order to describe these processes of transformative change, different levels in time and (functional) aggregation are distinguished, resulting in the 'multi-phase', 'multi-level' and 'multi-pattern' frameworks that are applied in transition analysis (Rotmans, 2005). The complexity of societal systems prescribes that the way in which actors influence interaction processes, and differs for every level of aggregation, for every phase in time and for every pattern that manifests itself.

The most 'power-laden' conceptualization in transition studies concerns the 'multi-level' interaction between so-called *regimes*, *niches* and *landscapes*.² The *landscape* refers to the surroundings of a particular societal system under study, where one sees trends with a relatively slow progress and/or developments with a high autonomous character. The *regime* is defined as the most 'dominant' configuration of actors, structures and practices; it dominates the functioning of the societal system and defends the status quo. *Niches*, on the other hand, are defined as configurations in which non-conformism and innovation can develop. Niches are also part of the societal system, but able to deviate from the dominant structures, practices and actors within that system. As the regime dominates the societal system, a necessary condition for a transition to occur is that this regime is either transformed or replaced by a new regime. A transition process is described in terms of particular interactions through time between landscape, regime and niches.

During the so-called *pre-development phase* of a transition, changes occur in the 'background' at landscape and niche level, which are resisted by the regime. In the *take-off phase* structural change picks up momentum, in the sense that these changes pressure the regime in such a way that it starts breaking down. During the *acceleration phase* structural changes become visible as old regime structures are being replaced by new structures. In the *stabilization phase* a new dynamic state of equilibrium is achieved; a new regime has been formed that has replaced the old regime (Rotmans et al., 2001). In the interaction between landscape, regime and niches, multiple patterns are distinguished (de Haan, 2007). A dominant pattern is that niches cluster outside of the regime and form a so-called *niche-regime*. While this niche-regime becomes more powerful, the incumbent regime is weakening. Finally, this niche-regime 'attacks' and 'takes over' the incumbent regime.

A transition is thus associated with a transformation of the regime and a particular power struggle between the current regime, upcoming niches and landscape pressures. Whereas implicit references to power are obvious, an explicit integration of power concepts is lacking and confronts transition studies with a conceptual weakness. Defining a regime as a 'dominant' constellation is conceptually equal to defining it as the constellation with 'most power'. It logically follows that any question about regimes involves a question on power. The appeal of the regime concept has partly been its ability to synthesize structure and agency and to disrupt ongoing debates between 'pluralists' and 'elitists' (Mossberger and Stoker, 2001). The disadvantage, however, is that the regime concept can lead to escapism in terms of avoiding fundamental questions on the origins of regime change. Answering these questions requires a higher level of abstraction, which can be found in the concept of power. If we regard a regime as a distinct type of power constellation, we can use the concept of power to understand both the internal dynamics of the 'regime', as well as how this 'regime' interacts with other forms of power that exist within society. Niche-regimes are often described as niches 'turning into' regimes or 'emerging' regimes. The conceptual weakness of 'emerging regimes' is its tendency towards 'degreeism'; overuse of continua to explain variance between different empirical cases as quantitative rather than

qualitative (Sartori, 1991, cited in Mossberger & Stoker, 2001). In order to define the interaction between landscape, regimes, niches and niche-regimes qualitatively we need to incorporate a consistent conceptualization of power.

This need for a conceptualization of power is especially relevant considering the transition management model that is based on transition studies. Transition management is a new governance model that attempts to resolve persistent problems in societal systems. The underlying assumption is that full control and management of these problems are not possible, but that we can 'manage' problems in terms of adjusting, adapting and influencing the societal system by organizing a joint searching and learning process, focused on long-term sustainable solutions (Rotmans, 2005; Loorbach, 2007). Transition management is based on certain presumptions about power relations and possibilities for empowerment and leadership. As these presumptions are not made explicit, transition management has been criticized for ignoring the aspect of power (Shove and Walker, 2007, 2008). Various other authors have pointed out the need to pay more attention to power issues within ongoing research on transitions (Hendriks & Grin, 2007; Duineveld et al., 2007; Voss et al., 2007). This article takes up the challenge of incorporating a conceptualization of power into transition studies. In the next section we start with a discussion of the most characteristic debates on what power consist of.

Debates on Power

A general distinction in the debates on power can be drawn between instrumental, structuralist and discursive interpretations. Instrumental perspectives view power as actor-specific resources used in the pursuit of self-interests, referring to Weber's definition: 'by power is meant that opportunity existing within a social [relationship] which permits one to carry out one's own will even against resistance and regardless of the basis of which this opportunity rests'.³ In contrast, structuralist perspectives on power stress that material structures and institutional processes *predetermine* the behavioural options of decision-makers. In addition, discursive perspectives on power emphasize the dominance of ideas, frames, norms, discourses, perspectives, beliefs, and so on. Within 'discursive' interpretations there are those that emphasize the *structural* nature of discourse (such as Foucault) and those that emphasize the *agent-based* nature of discourse (such as Habermas).

In some debates 'power and structural constraint are theorized as *opposite ends* of a continuous spectrum', in which power is directly related to agency (Haugaard, 2002: 38, emphasis added). In contrast, Foucault has analyzed power as an inherently *non-subjective* phenomenon that it is exercised *by* structures and *through* actors, contending that individuals are not the subjects, but rather the *vehicles* of power (Foucault, 1980: 101). Interpreting what Foucault meant by power is a separate debate in itself. Authors from various social disciplines debate it, frequently accusing each other of either misunderstanding or neglecting parts of

Foucault's work (Aladjam, 1995; Garcia, 2001; Heiskala, 2001; Infinitio, 2003; Thompson, 2003; Borch, 2005).⁴ Although Foucault is often criticized for his 'death of the subject', Haugaard claims that this is contestable (2002: 209). Giddens is one of the authors who criticizes Foucault for not relating power 'to a satisfactory agency and knowledgeability as involved in the "making of history"' ([1984] 2002: 160). Giddens' own theory of structuration aims to overcome the duality between structure and agency, by theorizing how structures are both enabling and constraining, and how agents make use of these structures in their daily practices, power being the capacity of agents to draw on these structures to achieve outcomes. Clegg goes one step further with his 'three circuits' of power, multi-levelled model to theorize power as a complex interplay between agency (either human or non-human), rules of the game at the organizational level, and structures of domination at the societal system level (Clegg [1989] (2002), 2002).

A classical debate on power is the one between 'pluralists' and 'elitists'. One side emphasizes that elites possess power over society while the other side stresses that political power concerns a struggle between plural interest groups. While Dahl (1958) criticizes the 'ruling elite model' by pointing out that political power comes from broad decision-making processes, Bachrach and Baratz (1962) refer to the 'second face of power' to emphasize how elites are capable of determining agenda-setting before and outside the open process of decision-making, for instance, by keeping certain issues *off* the agenda (also referred to as 'non-decision-making'). In addition, Lukes (1974) introduced a 'third face of power' referring to processes of preference-shaping. Therein certain groups shape the interests and preferences of other groups, as such not even having to keep issues 'off the agenda' as these issues are prevented from emerging in people's minds in the first place.⁵ This relates to Mann's distinction between authoritative power and diffused power. While authoritative power 'comprises definite commands and conscious obedience', diffused power 'spreads in more, spontaneous, unconscious, decentred ways throughout a population, resulting in similar social practices that embody power relations but are not explicitly commanded' (Mann, cited in Stewart, 2001: 25). An essential trait of diffused power is normalization, i.e. the belief that certain practices are 'moral' or in the 'common interest'.

As pointed out by Haugaard (2002), debates on power often revolve around the question whether power is consensual or conflictual. This directly relates to the question whether power is distributive or collective. In the distributive model, power is 'zero-sum', i.e. gained by one actor *at the cost of* another actor. In the collective model, actors can enhance their joint power, as is the case in Parsons' definition of power as the capacity of a societal system to achieve collective goals (1967: 93), or in Arendt's interpretation of power as 'the human ability not just to act but to act in concert' (1958: 200, cited in Gordon, 2002). These models are particularly 'consensual' because both Parsons and Arendt position consensus as a necessary condition of power.⁶ According to Arendt, violence can destroy power but is 'utterly incapable of creating it'; 'power and violence are *opposites*, where the one rules absolutely, the other is absent' ([1969], 2002: 143, emphasis added). This starkly contradicts with Mann's characterization of violence as 'the

most concentrated, if bluntest, instrument of human power' ([1986], 2002: 177). Distinguishing violence from power does not necessarily take away the conflictual, physical or oppressive dimensions of power. Quite the contrary, the ability of oppressing and dominating *without* blunt violence is regarded by some as the essential characteristic of power. As Foucault puts it:

Subjection is not only obtained by the instruments of violence or ideology; it can also be direct, physical, pitting force against force, bearing on material elements, and yet without involving violence; it may be calculated, organized, technically thought out; it may be subtle, make use neither of weapons nor of terror and yet remain a physical order. (1975: 192)

According to Foucault, 'power is a form of pacification which works by codifying and taming war through the imposition of particular knowledge as truth' (Haugaard, 2002: 185). This resonates with Luke's preference-shaping, which challenges the Weberian premise of power as influence *in spite* of resistance. The ability to make resistance dissolve, and to prevent conflict from emerging in the first place, is understood by some as a decisive moment in the exercise of power.

So far, points of contestation within previous and ongoing power debates have been discussed. Rather than 'choosing sides' within these debates, the challenge of this article is to develop a conceptual framework that can be used to conceptualize and study power in transitions, remaining sensitive to various dimensions of power as discussed in the literature. The main reason why it is necessary to develop this framework for the context of transition studies is that the majority of power interpretations as found in the literature seem to privilege stability over change. For even the more agent-based theories of power are unsatisfactory in terms of conceptualizing change (Stewart, 2001: 16). Giddens, for example, characterized power as being 'generated in and through the reproduction of structures of domination' ([1984] 2002: 160). Even though Giddens has often been either applauded or criticized for privileging *agency*, the author's interpretation of *power* remains in fact narrowly defined in terms of dependency on and domination of structures. As Stewart puts it:

In spite of Giddens' formal commitment to possibilities of 'making a difference', it effectively makes power a function of the distribution of resources, subject only to actors' capabilities to draw upon such resources effectively. . . . [Giddens' specification of power] makes socially transformative capacity substantially dependent upon 'existing' structures of domination. (Stewart, 2001: 16, emphasis added)

Another reason why a new power framework is believed to be necessary for transition studies is that much of the existing literature on power is problematic in the context of an interdisciplinary research field like transition studies. Literature on power tends to reach particularly high levels of abstraction and terminological subtleties. This is, of course, not a problem in itself, and may even be a welcome challenge for social scientists who focus their analyses on the issue of power, or dedicate their academic career to the creation of theoretical power models couched in a sophisticated social theory. However, in interdisciplinary research fields (such

as transition studies) that deal with many other issues besides politics, in which power is just *one* of many dimensions, these theoretical challenges cause power to remain under-conceptualized or ignored. This is further aggravated by the fact that many theories on power tend to privilege social construction over material realities. As pointed out by Inglis and Bone (2006), social scientists have tended to conceptualize matters ‘in rather “traditional” and “orthodox” ways, whereby the human-symbolic-cultural-phenomenal dimension is asserted at the expense of the natural-organic-noumenal properties of things’. According to these authors, social scientists ‘too often have engaged in forms of “disciplinary imperialism” (Strong, 1979) so that domains traditionally ceded to natural scientists have been interpreted solely in the accustomed social scientific terms of the socio-cultural construction of things’ (Inglis and Bone, 2006: 284).

It is (also) the task of social scientists to translate central issues in social theory, such as power, into a language that others can understand. Even if the epistemological choices in empirical analysis are based on a constructivist paradigm, the conceptual language used to communicate the consequent results and insights, need not be filled with constructivists terminology. As formulated by Clegg ([1989], 2002: 263):

Irrespective of mode of analysis, an adequate framework of power should enable us to sketch a plausible narrative, where plausibility is not brought into question by recourse to devices such as analytical prime movers, or hidden in an inexplicable mechanisms of thought control.

Developing a Conceptual Power Framework

Our aim is not to present a new theory, nor to ‘synthesize’ different theories. Rather, we want to postulate what we mean exactly when we apply the concept of power (in the context of transition studies) by distinguishing and defining different aspects of power and consistently linking these aspects to one another. In this conceptual framework, we distinguish seven aspects of power, and we discuss each aspect in a separate subsection:

- meaning and definition of power
- (re)sources of power
- exercise of power
- dynamics of power
- conditions of power in relation to empowerment and leadership
- relations of power
- knowledge and power

Meaning and Definition of Power

For a philosophical meaning of power, we follow Luhmann’s interpretation of power as a *social medium*. With ‘philosophical meaning’ we refer to an existential

question: why does such a thing as 'power' seem to exist in society, what is the purpose of this phenomenon? In Luhmann's theory of society (1984), power is conceptualized as an evolutionary product within an evolutionary framework. Society is complex to such an extent that it cannot rely on spontaneous congruence of interests to deal with contingencies. Therefore, the medium of power is necessary to deal with contingencies and 'an unavoidable priority for further evolution' (Luhmann, cited in Borch, 2005). In this evolutionary context, power is observed as a symbolically generalized medium of communication, just like 'truth', 'love', 'money', 'beauty', and so on. We chose Luhmann's interpretation for a philosophical meaning of power, mainly because it serves to emphasize that the only thing that the existence of power 'dictates' is that the medium of power is always available in society; *it does not predetermine how or by whom the medium is exercised*. Power is a social force just as gravity is a physical force. In the same way that gravity enables us to be physically attached to earth, power enables us to be embedded in society. Power is, as such, an inherent part of society and the 'human condition'.

Moving on to a less abstract formulation, we define power as the ability of actors to mobilize resources to achieve a certain goal, thus following Parson's definition (1967: 93), but only *partly*. We remove the idea that resources are mobilized *by* the system: we conceptualized power as an ability *of actors*. We also remove Parson's condition that the goal should be 'collective' or 'for the survival of the societal system'. The mobilization of resources may also be used to realize 'self-interest'. The distinction between 'common interest' and 'self-interest' depends on the level of analysis, or even on political belief, and should not be inherent to any general definition of power.⁷ The definition of power as the ability to mobilize resources is consistent with its underlying philosophical meaning: the idea of power as a social medium and evolutionary product is *embodied* in the ability of actors to mobilize resources.

We follow Morriss's statements that power is derived from the Latin word *potere* ('to be able'), that it always refers 'to an ability, capacity or dispositional property' ([1987], 2002: 283) and that 'everything that needs to be said about power can be said by using the idea of the capacity to effect outcomes' ([1987], 2002: 299). Our definition includes both the 'possessive' and 'exercising' aspects of power. The capacity to mobilize resources is 'owned' in the sense that one can 'have' this capacity and 'own' resources *and* it is exercised in terms of actually mobilizing resources. The same counts for the distinction between power 'over' (control) and power 'to' (act). The 'ability to mobilize resources' contains an *act* (mobilizing resources) that inherently includes a certain level of *control over* these resources (which may include other actors). Whichever aspect should be focused is mostly an empirical question.

A Typology of Resources

What distinguishes this definition from the classical, instrumentalist interpretations of power, is the way in which 'resource' is defined. The 'instrumentalism'

of classical definitions lies not so much in the central role of resources, but rather in the narrow interpretation of 'resource'. In many debates 'the ability to mobilize resources' is associated with the 'rational' and instrumental application of material capital, and contrasted with 'structural' or 'discursive' interpretations of power. We define resources more broadly as persons, assets, materials or capital, including human, mental, monetary, artefactual and natural resources. Human resources refer to 'manpower' or human leverage,⁸ i.e. personnel, members, voters, clients, supporters, fans, etc. Mental resources include information, concepts, ideas and beliefs. Monetary resources are funds, cash and financial stock. Artefactual resources comprise apparatuses, products, construction and infrastructure, but artefactual resources can also include a song, a dance, a painting, a photography or a movie.⁹ Natural resources refer to raw materials, physical space, land and organic life. We propose this categorization to make a distinction that is as generic as possible, deliberately avoiding notions such as 'economic', 'social', 'technological', 'ecological', 'political', 'organizational' or 'cultural', in order to prevent theory-laden discussions on the exact distinctions between them and in order to remove (mono-)disciplinary biases.

There is no *inherent* hierarchy of relevance between the different resources. Each type of resource can be the object of power to more or less extent. All resources are interrelated and in order to mobilize one type, one may need to make use of other types. Which resources are 'more influential' in a particular context is an empirical question. Our categorization of resources can be used to analyze such empirical observations. This can be related to other typologies, such as Mann's distinction between ideological, economic, military and political sources of power ([1986] 2002). Ideological power, for instance, can be operationalized as the ability to mobilize mental resources (thereby indirectly mobilizing human resources), and military power as the mobilization of a specific combination of artefacts and manpower (e.g. army and intelligence). Economic power refers to the mobilization of monetary resources (thereby gaining access to all the other resources), whereas geo-political power predominantly refers to the ability to control natural resources (in order to mobilize monetary and human resources). Such analysis can be combined with Mills's concept of 'power elites' (1956), in which the 'most powerful' actors operate at the intersection between economic, military and political circles, thereby mobilizing a wide variety of resources.

The common factor in the resources listed above is that they can be 'owned' in one way or another, which distinguishes the term 'resources' from institutional phenomena such as 'rules', 'laws', 'culture' or 'traditions'; these cannot be 'owned'. Not including these phenomena in the typology of resources does *not* mean that the role of these phenomena in power is ignored. Quite the contrary. The existence of these institutions in itself requires the exercise of power. It thus becomes circular to argue that the exercise of power requires institutions. Even though this circular relation between power and institutions exists, it is unsatisfactory to explain the *primary* sources of power. The conceptualization of resources as presented here serves to capture the *atomic objects* of power exercise, which is

crucial to an understanding of the possibilities for change. These resources are in themselves 'power neutral'; they only become power-laden when they are mobilized by actors to reach a certain goal. Phenomena such as 'rules', 'laws', 'culture', 'institutions' or 'traditions' start playing a role in the act of mobilization, i.e. the way in which power is exercised (as discussed in the next subsection).

A Typology of Power Exercise

Moving beyond a resource-based discussion of power; instead of asking what is mobilized, we now focus on how things are mobilized. Power being defined as the ability to mobilize resources, a typology of power exercise can be deduced by distinguishing the different ways in which one can mobilize resources, and the different levels at which one can do so. On that basis, five different types of power can be distinguished: innovative, destructive, constitutive, transformative and systemic.

Innovative power is the capacity of actors to create or discover new resources. This specific capacity of actors seems to receive little to no attention in the literature. Debates on power – even the ones addressing possibilities for change – focus on the extent to which actors can or cannot gain access to *existing* resources, and ignore the ability to create or discover *new* ones. While our definition of innovative power is not taken from the literature, it has been inspired by Arendt's notion of *natality*¹⁰ and Arendt's definition of power as 'the human ability not just to act but to act in concert' in which *visibility* and *plurality* are necessary conditions of power (1958: 200, cited in Gordon, 2002). Visibility is what distinguishes innovative power from notions such as 'originality', 'newness', 'creativity' or 'innovativeness'. A new idea or tool is powerless if it is not visible. Visibility's condition is 'plurality', i.e. at least two individuals must be involved. The ingredients of innovative power are thus natality, visibility and plurality (with regard to the new resource).

Destructive power is the ability to destroy or annihilate existing resources. Typical examples are militant or industrial actions that destroy or exhaust infrastructure or natural resources, or the killing of people and animals. Destructive power is also exercised when an old building is blown up, trees are cut down, an organization is abolished, or when a political or religious ideology is successfully eradicated. As such, destructive power may, but does not necessarily, involve violence or physical force. Two ingredients of innovative power – visibility and plurality – also apply to destructive power; for destruction to be an act of power, it must be visible to others. While one could theorize that destroying a resource is 'easier' than constructing a new one, this is not necessarily the case. For example, destroying mental resources (e.g. an idea or a belief) may be harder than inventing new ones.

Moving on from the level of resources to the *distribution* of resources, *constitutive power* is the ability to constitute a distribution of resources. To 'constitute' something means to establish, institute or enact it. Institutions and structures are the means to establish a distribution of resources, making it 'structural' and 'stable', thereby enabling social order. Institutions are broadly defined as social

rules and agreements (e.g. laws, norms or traditions), while structures include organizational and physical infrastructures. Institutions and structures have also been 'established'; as such, institutions are both an *outcome* of as well as a *condition* for constitutive power. This definition of power is linked to the so-called 'structural' interpretations of power as found in the literature discussed previously. The reason we choose to call it *constitutive* rather than 'structural' or 'institutional' is to remain consistent with our initial definition and emphasize that power is exercised *by actors* and *not* by structures or by institutions. This does not mean that we wish to ignore decades of agent–structure debates. Quite the contrary, the point being made here is that the agent–structure debate goes *beyond* a definition of power, and should therefore not be contained in it.¹¹

We define *transformative power* as the ability to transform the distribution of resources, either by redistributing resources and/or by replacing old resources with new resources. This involves the development of new structures and new institutions. Changing a certain distribution of resources is an inherently different act than establishing this new distribution. Equally creating new institutions and structures is an inherently different act than establishing them at a societal level, even though one typically desires one to be followed by the other. Much of the literature conceptualizes power as something that must inherently have a 'long-lasting' effect, and thus focuses on the 'structural' aspects of power. Theoretically speaking, however, an actor that succeeds in changing the distribution of resources only today *is exercising power today*, regardless of whether or not this change remains tomorrow. An actor that succeeds in creating a new institution or structure in a small local context *is exercising power in that context*, whether or not that institution or structure is broadly implemented at a societal level. This transformative exercise of power may not be 'enough' to transform the 'entire' society 'for good'; for that, one needs constitutive power to establish the transformation. Transformative exercises of power need to be distinguished from constitutive exercises of power in order to study the relation between one and the other, which is impossible if one precludes structural aspects as an inherent necessary condition of power.¹²

Finally, we define *systemic power* as the 'combined' capacity of actors to mobilize resources for the survival of a societal system, i.e. a particular continent, region, nation, sector, industry or business (depending on the chosen level of analysis). The extent to which actors are able to mobilize resources for the survival of a system defines the level of 'systemic power' exercised by those actors within that system. Systemic power refers to 'collective' interpretations of power (as discussed in the previous section), and resonates with Luhmann's and Parsons' original definitions of power. However, in our definition, power is not exercised *by* a system, nor is it necessarily exercised with the intention of 'realizing collective goals'. Rather, systemic power is the extent to which the collective mobilization of resources by actors within a societal system amounts to the surviving functioning of that societal system, regardless of whether or not these actors deliberately 'intend' to reach 'collective goals'. As such, systemic power is not necessarily consensual.

Our distinction between types of power is based on two dimensions: (1) the nature of mobilization: *constructive* versus *deconstructive*; and (2) the level of mobilization: *resources* versus the *distribution* of resources. Within these dimensions, four ideal types of power are defined. At the level of resources, we find *innovative* power (constructive) versus *destructive* power (deconstructive), and at the level of resource distribution, we find *constitutive* power (constructive) versus *transformative* power (deconstructive). All these exercises of power are embedded in systemic power, i.e. the collective exercise of power in a societal system. This typology of power exercise is presented in Table 1.

Table 1 Typology of the exercise of power

	Level of mobilization	
	<i>Resources</i>	<i>Distribution of resources</i>
<i>Systemic power</i>		
Nature of mobilization		
<i>Constructive</i>	Innovative power	Constitutive power
<i>Deconstructive</i>	Destructive power	Transformative power

Dynamics of Power

Gordon uses Arendt's notion of power to complement Foucault's weakness to deal with freedom and agency, stating that 'Arendt's power is the potential that enables humans to break away, or more precisely, to disrupt the hold of Foucauldian power' (2002: 134). In our typology, any type of power can be used to 'disrupt' or 'break' the hold of any other type of power. At the same time, different types of power could also be used to 'strengthen' and 'enable' each other's grip. All forms of power can *both* enable and restrict one another from being exercised. When one type of power resists or prevents another, we call this an antagonistic power dynamic. When different types of power exercise mutually enforce and enable each other, we call this a synergetic power dynamic. Both sides of any power struggle may be 'dominant'. Which side is 'resisting' or 'dominant', 'enabling' or 'constraining' depends on the chosen perspective in an empirical case, and on the starting point of analysis.

For instance, actors can resist transformative power by exercising constitutive power, and vice versa. If actors successfully resist the attempt by other actors to change the distribution of resources, they are: (1) resisting transformative power; and (2) further establishing the current distribution of resources, as such being dominant in their exercise of constitutive power. The opposite also applies: actors can resist the exercises of constitutive power by being dominant in their exercise of transformative power. As pointed out by Clegg: 'resistance to power may consolidate itself as a new power and thus constitute a new fixity in the representation of power' ([1989], 2002: 258).

There is also the opposite of resistance: different forms of power may *enable* and *enforce* each other. By creating a new resource (innovative power) an actor can

enable the replacement of old resources by new resources (transformative power). Even constitutive power can enforce transformative power: by establishing a new distribution of resources (constitutive power) one is enforcing a transformation in this distribution (transformative power). Constitutive power is always needed to constitute a new distribution of resources. By using destructive power, one can destroy a resource but one cannot prevent this particular resource from being recreated and re-established. Through innovative power, one can develop a new resource but one cannot establish the long-term and widespread application of that resource. The latter requires: (1) transformative power through which actors distribute this new resource by replacing old resources; and (2) constitutive power through which this new distribution is established within the system.

This conceptualization of power dynamics, in which all types of power exercise can either enforce and enable or resist and prevent one another, can help to systematically describe different actor strategies in terms of power. For instance, the introduction of a new automobile technology can enable the further establishment of the current automobile industry and thereby prevent a replacement of the automobile system by public transportation alternatives. This would be an example of innovative power that 'enables' and 'enforces' constitutive power, thereby preventing transformative power. This example demonstrates that the relationship between different forms of power exercise is not inherent. Actor strategies include various combinations of power exercise.

There are different possible configurations of power exercise in a societal context at a certain point in time. We define a *power plenum* (literally 'filled by power') as a situation in which all types of power are exercised; constitutive, innovative, destructive and transformative power are exercised in such a way that they fully enable *systemic power* (i.e. actors collectively enable the mobilization of the necessary resources for the survival of a societal system). A *power vacuum* (literally 'devoid of power') refers to a situation in which a contingency impedes the exercise of systemic power; the environment confronts actors with a new situation while they are not able to mobilize the necessary resources to deal with it. Such 'power vacuums' spring up all the time: whether it is a building that collapses, a cabinet that falls, a wall that is removed (e.g. 1989), a war that breaks out, a financial crisis that emerges, a company that goes bankrupt or a natural resource that runs out. This concept of power vacuums does not contradict Foucault's statement that power is 'ubiquitous'. The social *medium* of power is 'ubiquitous' in the sense that it is everywhere and always *available* to anyone, but power is not necessarily being exercised always, everywhere and by everyone. Power vacuums are temporal disruptions in the exercise of power.

Relations of Power

As, according to our definition, resources may include humans (e.g. human leverage, supporters, members, voters, etc.), power may consist of the ability to mobilize *people*, thereby exercising power 'over' them. This can be called a 'relation of power'. There is, however, also another relation of power: person A can have

'more' power than person B, in the sense that A has more ability to mobilize resources than B does, or in the sense that A can mobilize more resources than B can. Furthermore, there is a third relationship of power, which relates to the *type* of power: person A can mobilize different resources, or mobilize resources in a different way, than B does. For example, A can exercise constitutive power, whereas B can exercise innovative power, or A exercises economic power, while B exercises geo-political power, etc. As pointed out by Dahl: 'individuals or groups who are relatively powerful with respect to one kind of activity may be relatively weak with respect to other activities. Power need not be general; it may be specialised' ([1968], 2002: 12). As such, we make a distinction between three sorts of power relations: (1) A exercises power 'over' B,¹³ or (2) A has or exercises 'more' power in comparison to B; or (3) A exercises a 'different' power than B. These three different relations of power may coincide but one does not necessarily follow from the other. If A has 'more' power in comparison to B, it does not necessarily mean that A has power or control 'over' B. And vice versa: if A has power 'over' B, it does not automatically follow that A has 'more' power than B in absolute terms.

Moreover, each of these power relationships can have various levels of 'balance' or 'imbalance'. A power relationship in which A exercises power 'over' B has to do with the dependency of B on a resource that (only) A can mobilize. Even if B controls almost *all* resources, while A only mobilizes *one* resource, A can still have power 'over' B to the extent that B is dependent on that one resource that only A can mobilize. If this dependency is mutual (i.e. A is also dependent on B), then there is a certain balance in the relationship. If dependency is one-sided, there is an imbalance. Equally, whether a relationship in which A exercises 'more' power than B results in 'conflict' or 'competition' depends on the extent to which the goals of power exercise are mutually exclusive. If A and B mobilize resources for a collective goal, or for goals that are independent of each other, then their relationship becomes one of cooperation or co-existence, rather than competition. The same counts for the exercise of different types of power: if A exercises power in such a way that it enables and enforces the power exercised by B, there is synergy, whereas one can speak of antagonism when A exercises power in such a way that it disrupts or prevents power exercised by B (Table 2).

Conditions for the Exercise of Power, Empowerment and Leadership

Having defined power as the ability to mobilize resources, we can deduce four conditions for the *exercise* of power: (1) *access* to resources; (2) *strategies* to mobilize them; (3) *skills* to apply those methods; and (4) the *willingness* to do so. *Access* to resources refers to the awareness that those resources (can) exist, information on where they can be found/how they can be created, and by whom they are/will be owned. *Strategies* refer to methods that are applied in order to mobilize resources (e.g. formalization, physical force, propaganda, lobbying, networking, protesting, experimenting, ceremonial activities, voting, prohibition, subsidies, contests,

Table 2 Typology of power relations

<i>Type of power relation</i>	<i>Balance</i>	<i>Imbalance</i>
Having power 'over'	A depends on B but B also depends on A, so A and B have power over each other = mutual dependency	A depends on B but B does not depend on A, so B has power over A = one-sided dependency
Having 'more' or 'less' power	A mobilizes more resources than B, but A and B have goals that are collective or co-exist = co-existence/cooperation	A mobilizes more resources than B, while A and B have mutually exclusive goals = competition
Having a 'different' power	A exercise power in such a way that it enables and enforces the power exercised by B = synergy	A exercises power in such a way that it disrupts or prevents power exercised by B = antagonism

management models, and so on). These strategies also include the ways in which actors combine different types of power exercise in reaction to the (combined) power exercise of others, i.e. how they play into a synergetic or antagonistic power dynamics, and how they play into existing power relations. *Skills* refer to human competencies that are necessary to apply strategies (e.g. disciplinary training such as legal or financial education, language and computer skills, public speaking, writing, rhetoric, argumentation, rationalization, improvisation, creativity, acting, informal conversation, and so on). *Willingness* refers to the will of an actor to mobilize resources, which includes the will to gain resources, to develop strategies and to acquire skills. These conditions of power exercise can both *replace* as well as *complement* one another. For instance, if one has *access* to great amounts of money, one may not need to have the *skill* of legal training (and visa versa), yet one may be necessary to gain the other. Positioning strategies and skills as conditions of power relates to those interpretations that emphasize the 'strategic face of power, which relies on skilled analysis, deployment, and coordination to out-manoeuvre dominant actors with superior resources' (Levy & Scully, 2007: 986, referring to Gramsci and Machiavelli, 1532). Clegg stresses that power is 'a tenuously produced and reproduced effect which is contingent upon the strategic competencies and skills of actors who would be powerful' (Clegg, 1989: 32, cited in Levy & Scully, 2007).

The conditions of power can be used to deduce definitions for other power-related concepts, such as empowerment and leadership. *Empowerment* can be defined as the attainment of resources, strategies, skills and willingness. The 'empowerment of an actor' means that this actor attains the necessary resources, strategies, skills and willingness to exercise power. This attainment can occur passively or actively (i.e. an actor can attain resources by himself, or an actor can transmit resources to another actor). An actor can also be disempowered by

losing resources, strategies, skills or willingness. *Leadership* can be defined as the capacity to influence and convince other actors in terms of determining the goal for which power is exercised, by increasing (or decreasing) the willingness of other actors to exercise power for that specific goal. Leadership differs from empowerment in that it can take place when all the actors involved already 'have' power. A leader is simply influencing the willingness of others to use that power for a specific goal that the leader has in mind. In turn, leadership is not a necessary condition for empowerment. Empowerment can take place, regardless of whether or not one can influence the willingness of actors to exercise power to reach a specific goal.

Knowledge and Power

The relation between power and knowledge is one of the most contested relations in social theory (Garcia, 2001). In our definition, a narrow interpretation of knowledge refers to the mobilization of mental resources (information, concepts, ideas and beliefs) to reach a specific goal, which is (by definition) an exercise of power. However, as pointed out by Barnes ([1988], 2002: 123), knowledge not only has a 'cognitive but also a performative significance'. As pointed out by Bourdieu,

The categories of perception, the schemata of classification, that is, essentially, the words, the names which construct social reality as much as they express it, are the stake par excellence of political struggle, which is a struggle to impose the legitimate principle of vision and division. ([1989], 2002: 239)

This means that by constructing and communicating knowledge, one is exercising power, not only in terms of 'mobilizing mental resources', but also in terms of influencing how other actors mobilize all the other type of resources (human, artefactual, natural and monetary). In order to know which resources to mobilize to reach a specific goal, and in order to know how to mobilize these resources, it is necessary to have knowledge about these resources.¹⁴

Knowledge relates directly to the conditions of power: *access* to resources, *strategies* to mobilize them, *skills* to apply these methods and the *willingness* to do so in the pursuit of a specific goal. All four conditions depend to a large extent on having or gathering knowledge, which makes knowledge (on how to exercise power) a 'meta-condition' for the exercise of power. Conceptualizing knowledge as a (meta-)condition of power (i.e. as something prior to power) may seem in contrast to Foucauldian or postmodern interpretations, in which power is often seen as prior to truth. This, however, is not necessarily the case. All that is being postulated here is that: (1) knowledge is a meta-condition to meet the four conditions of power (access, strategies, skills and willingness); and (2) that creating or communicating knowledge is also a form of power exercise in itself, as visualized in Figure 1.

All that is necessary to make this model 'work' within a Foucauldian or post-modern paradigm, is to *add* that knowledge is in itself produced, shaped and constituted by the exercise of power (Figure 2).

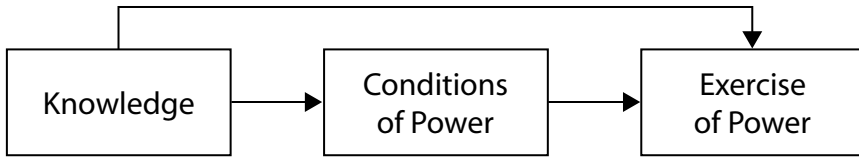


Figure 1 Relations between power and knowledge

The point is that within an *interdisciplinary* and *interparadigm* dialogue between constructivists and positivists, it is still possible to communicate about Figure 1 (and to cooperate in the gathering of knowledge), without having to agree about Figure 2 (i.e. whether the long arrow underneath should be there or not). The ‘postmodern arrow’ can be regarded as an additional insight, a deeper layer, that does not necessarily dismiss or invalidate the other arrows (although it may regard them as superficial and incomplete).

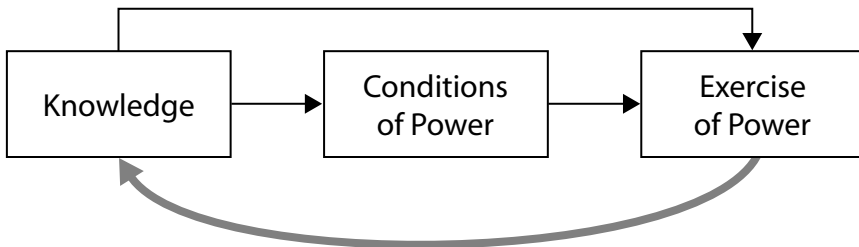


Figure 2 Foucauldian/postmodern relations between power and knowledge

By placing power within an evolutionary, systemic framework, by acknowledging the whole range of resources through which it is exercised, by conceptualizing power vacuums and the possibility of empowerment and empowerment, and by distinguishing between constructive and deconstructive forms of power exercise, power becomes an inherently *dynamic* concept. In the next section we postulate hypotheses on how different forms of power are exercised in the context of a long-term process of structural change, by translating basic assumptions in transition studies in terms of the power concepts presented so far.

Redefining Transition Concepts in Terms of Power

The most important ‘power presumption’ underlying transition theory concerns the relation between ‘regimes’ and ‘niches’. When the system is in a state of dynamic equilibrium, the regime has more power than niches, in the sense that the regime mobilizes more resources than niches do. However, regimes do *not* necessarily have power *over* niches, for several reasons. The first is that all types of resources – mental, human, artefactual, natural and monetary – play a role in a transition process. As it is impossible for regimes to mobilize *all* possible

resources, niches can mobilize certain resources that regimes cannot. Second, not only can niches have access to other resources, they also have the capacity to mobilize resources in a different way. While the regime is inherently constructed in such a way that it invests most of its energy in the 'status quo', niches have the willingness and the capacity to invest in those resources, strategies and skills that are necessary to create new things. Because niches and regimes can exercise power in different ways, they can co-exist, each in their own 'territory', with their own strengths and weaknesses.

Regimes can be redefined as the (network of) actors that exercise constitutive power; regime-actors constitute the current distribution of resources. Niches can be redefined as (networks of) actors exercising innovative power and/or destructive power. Niche-actors create and discover new resources, and/or destroy old, existing resources. Niche-regimes have so far been described as niches 'growing stronger' or 'turning into regimes', as such, dependent on a quantitative definition of 'degree'. We propose to redefine niche-regimes qualitatively as (a network of) actors that exercise transformative power; niche-regimes have the capacity to replace old resources by new resources and to transform the current distribution of resources. Finally, the landscape is the system's surrounding in which systemic power is exercised, i.e. actors mobilize resources in order for the system to 'survive' within this particular surrounding. Which resources need to be mobilized is thus not determined by those mobilizing most resources (the regime), but also by autonomous developments surrounding the system.

Even if regimes can mobilize more resources than niches do during a state of dynamic equilibrium, this relation of power changes during phases of instability. Such instability can be caused by great changes at the landscape level. Niches may be better able to respond to these changes than regimes do, by mobilizing new resources that the regime may have no access to. During a phase of instability, the societal system is 'losing systemic power' because actors fail to apply the appropriate mix of power to mobilize the necessary resources for the survival of a system. The starting point of a transition can be redefined as the anticipation of a power vacuum, meaning that the system is losing systemic power, or at least actors fear that this is the case. When the need for new resources is high, while the availability is low, space is offered to more 'radical' forms of innovative and transformative power. The pre-development of a transition can be described as the phase in which niche-actors first develop innovative power by creating or discovering new resources that offer solutions for how an (anticipated) power vacuum could be avoided or dealt with. Then, niche-actors strengthen themselves by cooperating and forming networks, thereby actually exercising innovative power (i.e. not only the condition of natality but also the conditions of visibility and plurality are met). Regime-actors react by trying to 'absorb' these niches so that these new resources do not challenge but rather enforce the current distribution of resources. Or in other words, the regime is looking for a 'synergetic' relationship with niches, in which their innovative power enforces the regime's constitutive power. If the regime 'succeeds' in absorbing niches, a so-called 'lock-in' occurs. A lock-in is a 'reverse transition path' (Rotmans, 2005). When innovative power is

used to enforce constitutive power, the exercise of transformative power is resisted, thereby hampering the continuation of a transition. If, however, niches are able to resist such absorption by the regime, they become a 'threat' to the current distribution of resources. Such antagonistic niche-regime relations at the end of the pre-development stage are a necessary condition for a transition to continue.

The take-off is the stage in which a power vacuum occurs; a contingency takes place which the regime cannot deal with, which may result in institutions collapsing or severely weakening. Different 'transition patterns' (de Haan, 2007) can be redefined in terms of power vacuums. A 'top-down' power vacuum is caused by landscape changes (e.g. an international crisis, a terrorist attack, a natural disaster or the emergence of a new foreign market). An 'internal' power vacuum is caused by a clash between regime-actors (e.g. a cabinet crisis, an election period or a competitive battle between established companies). A 'bottom-up' power vacuum is caused by niches challenging the regime (e.g. a technological innovation destroying the market for existing technology, or environmental activists publicly denouncing a certain company or industrial sector on moral grounds). The take-off stage is one of imbalanced power relations and struggle; the regime tries to survive by increasing the dependency of others on the regime, there is an internal competition over resources among regime-actors, and/or there is a highly antagonistic dynamics between niches and regimes, in which innovative and destructive power are exercised to disrupt constitutive power and vice versa. If, during this power struggle, the regime succeeds in reclaiming its initial dominant position and controlling the contingency, a so-called 'backlash' occurs; the second 'reverse transition path' (Rotmans, 2005). If, however, the regime fails in reclaiming its initial dominant position, the next phase of the transition can be entered.

The *acceleration phase* is characterized by transformative power; resources are redistributed among actors, and old resources are replaced by new ones. As the regime's grip has been disrupted in the take-off stage and its resistance to niches has weakened, niche-networks now have enough 'space' to exercise transformative power, thereby forming so-called 'niche-regimes'. While in the pre-development niches had created new resources, which the regime attempted to either suppress or absorb, now niche-regimes are able to replace old resources by these new resources. There is a synergetic power dynamics between niches and niche-regimes; innovative and destructive power is exercised to enable and enforce transformative power (and vice versa). In the *stabilization phase*, these niche-regime-actors exercise constitutive power to establish a new distribution of resources, thereby forming a new regime. As such, there is a synergetic power dynamics between constitutive and transformative exercises of power as they both enable the establishment of a new distribution of resources. A phase of reconfiguration takes place between these new regime-actors and old regime-actors that 'survived'. At the end of the reconfiguration process, these actors together have formed a new regime. This new regime exercises constitutive power to further establish itself. At the end of the transition, the power vacuum is filled and there is now a situation of a 'power plenum'. In systemic language; 'a new dynamic equilibrium is reached', until the day that another great disturbance comes along.

Combining these descriptions, we redefine a transition as a long-term and non-linear process in which deconstructive and constructive forms of power are exercised in such a way that old resources are replaced with new resources and a new distribution of resources is established at a societal level. This means that all forms of power are exercised during a transition. Moreover, we propose to redefine *transition management* in terms of empowerment and leadership. As a transition process depends on the exercise of power, and the purpose of transition management is to influence the direction and speed of a transition process, transition management inherently includes the 'adjustment' and 'adaptation' of power relations. We can redefine transition management as a governance model that aims to enable the attainment of resources, strategies, skills and willingness (empowerment) *and* to influence the willingness of actors to exercise power for a specific goal (leadership), this goal being 'a more sustainable societal system'. The transition management model provides operational tools to lead and manage human interaction processes in terms of what type of resources, strategies and skills actors need at strategic, tactical and operational levels during different stages of a transition process (Rotmans, 2005; Loorbach, 2007). Transition management especially focuses on the *empowerment of niche-actors*: (1) creating 'space' for innovative thinkers and entrepreneurs by enabling them to attain the necessary resources, strategies, skills and willingness to exercise *innovative* power; and (2) linking niche-actors to each other so that they can form a broader and stronger network, a 'niche-regime' that can exercise *transformative* power. In addition, niche-actors are linked to regime-actors that can exercise *constitutive* power to establish a new distribution of resources at a structural level. Even though the literature on transition management offers tools and strategies to do all this, these insights have so far not been explicitly described in terms of power, empowerment and leadership. Doing so would increase the theoretical strength and empirical possibilities of transition management as a governance theory.

Conclusion

This article has set out to conceptualize power in relation to structural change, and to develop a power framework that can be used in the context of transition studies. We presented an interdisciplinary language of power as an inherently dynamic concept, explicitly linking it to processes of innovation and transformation. In doing so, the article has not only aimed to offer a conceptual framework to study power in transition studies, but also proposed three contributions to the understanding of power more generally:

First, the criticized 'instrumentalism' of classical interpretations of power as the human capacity to mobilize resources to reach a certain goal, lies not so much in the 'central role' of resources, but rather in a narrow interpretation of what 'resources' constitute. Resources can be defined more broadly as persons, assets, materials or capital, including mental, human, artefactual, natural and monetary resources. This conceptualization serves to go beyond disciplinary

jargon ('economic', 'social', 'political', 'ecological'), and to capture the most neutral, atomic objects of power, which is crucial to conceptualize change. Power being defined as the ability to mobilize resources, the *conditions* for power exercise can be deduced as (1) access to resources; (2) strategies to mobilize them; (3) skills to apply these strategies; and (4) the willingness to do so. These conditions in turn can be used to deduce a conceptualization of empowerment (as the attainment by actors of all these conditions), and of leadership (as the capacity to increase or decrease the willingness of other actors to exercise power for a *specific goal*). This way power, empowerment and leadership can be consistently conceptualized in relation to each other and in relation to change.

Second, the conceptual framework presented in this article moves beyond resource-based typologies of power towards a dynamic typology of power exercise. Instead of merely addressing 'what' is mobilized, the framework turns its focus to 'how' actors mobilize, explicitly acknowledging the concept of 'innovative power'. The creation or discovery of a *new* resource is a mobilizing act, and as such can be considered as an exercise of power in and of itself. The role of *new* resources is widely ignored in the literature on power, which seems to solely focus on (the distribution of) *existing* resources. The dynamics of power (antagonistic versus synergetic) and the level of systemic power depend on how the different types of power exercise (innovative, constitutive, destructive or transformative) enable or disrupt each other.

Third, while much of the power debates focus on the distinction between power 'over' (as a social relation) versus power 'to' (as an act), the framework in this article differentiates between three power relations: (1) A exercises power 'over' B; (2) A exercises 'more' power than B; and (3) A exercises a 'different' type of power than B. Although these forms of power relations can coincide, they often do not, and one power relation does not necessarily lead to another. Moreover, each of these power relations can have balanced or unbalanced manifestations. Distinguishing different types of power relations helps to acknowledge and indicate the possibilities for change, and to deconstruct discourses that assume power by the 'vested interests' and the 'status quo' *a priori* obstructs power exercised for upcoming interests or alternative practices.

Using these conceptualizations, this article incorporated various aspects of power into the field of transition studies by presenting a 'power-laden transition storyline'. Because our conceptualization of power is fundamentally based on the 'elementary particles' of 'actors mobilizing resources', the power-laden assumptions in transition studies can now be translated into operationalizable hypotheses. By incorporating power in transition studies in such a way we hope to facilitate empirical research on the ways in which power is exercised during long-term processes of structural change, thereby increasing the descriptive and explanatory potential of transition theory. Moreover, we also hope that our typology of power exercise combined with the insights from transition studies may contribute to broader debates on power and change. The presented framework allows researchers with different disciplinary backgrounds, and dissimilar epistemological beliefs, to engage in a dialogue on power and to cooperate in gathering empirical data.

The most important conceptualization in this regard is the typology of resources, which explicitly aims to remove 'mono-disciplinary' biases. Instead of confining economic perspectives to the mobilization of 'money', an economist is given space to analyze how *all* resources (mental, human, artefactual, natural and monetary) are produced, transacted and traded. Instead of limiting discursive perspectives to the mere mobilization of 'ideas', a social constructivist is allowed to study how *all* resources are socially 'constructed', contested and reproduced. Having a common conceptual framework, the economist and the social constructivist can subsequently compare their different research findings and discuss them with one another, thereby contributing to an interdisciplinary understanding of power relations and how they transform through time.

Power relates to one of the most fundamental debates in social science, between those that 'describe' and 'explain' and those that 'prescribe' and 'predict', between those that call for an understanding of how things 'are' and those that emphasize the understanding of how things 'ought to be'. Critical social theory has predominantly occupied itself with the latter, openly defining its purpose as social research for social improvement. In the past decade various social scientists have challenged that Enlightenment paradigm as inspired by authors such as Kant and Habermas and called for a re-appreciation of the insights offered by Machiavelli, Nietzsche and Foucault. Brocklesby and Cummings (1996) have explicitly proposed a shift from Habermas to Foucault as 'an alternative underpinning of critical social theory', emphasizing the advantage of understanding how things 'are' instead of focusing on how they 'should be'. The study of power is often associated with the way things 'are', whereas 'empowerment' and 'leadership' are often discussed in terms of how things 'should be'. Transition studies aims to go beyond this dichotomy between 'is' and 'ought'. It is not about knowing with absolute certainty how power relations are exactly at a specific point in time, nor about deciding who should gain or loose power. Rather, it is about figuring out how relations of power *can be* . . . by understanding how, why and when they change.

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Notes

- 1 The focus in transition studies is on *interactions* between technology, ecology, economy, politics and society, which distinguishes it from demographic transition theories, as well as democratic transition theories or other forms of transition research found in political science that focus on processes of change in and around governments and

- nation-states (e.g. power transition theory as found in international relations, Lemke & Kugler, 1996).
- 2 The multi-level framework is based on Rip and Kemp (1998), Geels and Kemp (2000). This multi-level concept of niche, regime and landscape differs from the centre-periphery model as found in geography and political economy. The main difference is that niche, regime and landscape are distinguished as levels of (functional) aggregation in a complex system, rather than as dualistic entities opposing each other. The multi-level concept is explicitly functional, while the centre-periphery model provides an inherently spatial metaphor.
 - 3 In the tradition of political sciences and international relations, these actors are mostly nation-states and interest groups such as political parties.
 - 4 First, there seems to be quite some difference and sometimes even contradiction between the 'early Foucault' and the 'later Foucault', and second, at least one of the 'Foucaults' has explicitly emphasized that he does not aim to present a theory nor a model, but rather a 'toolbox' for studying power. According to Foucault, power is an empirical question that requires historical and ethnographic research methods such as genealogy.
 - 5 Including Luke's preference – shaping in the equation challenges the Weberian premise of power as influence *in spite* of resistance. The ability to make resistance dissolve is understood as a form of power in itself. The problem with the concept of preference-shaping is mostly an epistemological one, as it is hardly possible to operationalize.
 - 6 Parsons compared power to money, claiming that its meaning can only survive as long as society supports it, and that power diminishes when it is used illegitimately (similar to processes of inflation).
 - 7 For example, liberal and socialist worldviews differ in terms of the distinction and relation between 'common interest' and 'self-interest'. As pointed out by Giddens: 'In associating power with so-called "collective goals", Parsons sacrifices part of the insight that the concept of power has no intrinsic relation to that of interests' (1984: 160).
 - 8 Leverage refers to the concept of 'human support' in terms of the total number of people in a firm, department, office, party, or other organizational unit divided by the number of partners.
 - 9 Mann has emphasized that aesthetic/ritual practices are an important source of ideological power (1986, cited in Haugaard, 2002: 174), including things like a song or a piece of art.
 - 10 With the concept of 'natality', Arendt emphasizes the inherent human capacity to create something new; the 'birth of individual men re-affirms the original character of man in such a way that origin can never become entirely a thing of the past' (1994: 321, cited in Gordon, 2002).
 - 11 The agent–structure debate concerns the complex linkages between institutional conditions and human action *in general*, including temporal differentiations between one and the other (i.e. institutions and infrastructures outlive human individuals). Questions on how actors mobilize resources – i.e. exercise power – through time is only one part of this agent-structure relation, rather than the other way around. In order to answer those questions on power we should define and discuss the mobilization of resources *before* defining the relation to structures. Especially because different types of power exercise each carry a *different* relation to structures. For example, the exercise of constitutive power relates *differently* to existing structures than innovative power does

- 12 The distinction between transformative power from constitutive power is comparable to the distinction between 'inertia' and 'change'. Change can only be proven by means of inertia and vice versa; the object of change has to be consolidated in a new state of stability before one can state that the change 'has taken place', while inertia is only fully 'proven' when change has been attempted without success. In order to observe this relation between change and inertia, we need to distinguish the two as distinct concepts.
- 13 In terms of the ethics of power, we can refer to Kant's ethics and include the idea that in moral behaviour, one should *always* treat individuals as ends in themselves, and never *only* as means. In terms of our definition of power this means that when A exercises power 'over' B to the extent that B becomes a resource and ceases to be an actor, this would qualify as an unethical exercise of power (committed by A). When A can mobilize B as a 'pawn' to reach a specific goal that A has decided without B's consent or knowledge thereof, B has become merely a means to an end. When A mobilizes B as a resource without taking into account B's goals, A is not treating B as an end in itself.
- 14 As formulated by Haugaard: 'physical power is derived from a knowledge and manipulation of physical objects, while social power is based upon knowledge and membership of social systems' (2002: 113, in reference to Barnes, 1988) and: 'what enables actors to reproduce structure is their knowledge of social life' (2002: 148, in reference to Giddens, 1984).

References

- Aladjam, T.K. (1995) 'Of Truth and Disagreement: Habermas, Foucault and Democratic Discourse', *History of European Ideas* 20: 909–14.
- Arendt, H. ([1969] 2002) 'On Violence', in M. Haugaard ed. *Power: A Reader*, pp. 137–45. Manchester: Manchester University Press.
- Bachrach, P. and Baratz, M. (1962) 'The Two Faces of Power', *American Political Science Review* 53: 947–52.
- Barnes, B. ([1988] 2002) 'The Nature of Power', in M. Haugaard ed. *Power: A Reader*, pp. 116–31. Manchester: Manchester University Press.
- Borch, C. (2005) 'Systemic Power; Luhmann, Foucault and Analytics of Power', *Acta Sociologica* 48: 155–67.
- Bourdieu, P. ([1989] 2002) 'Social Space and Social Power', in M. Haugaard ed. *Power: A Reader*, pp. 229–44. Manchester: Manchester University Press.
- Brocklesby, J. and Cummings, S. (1996) 'Foucault Plays Habermas: An Alternative Philosophical Underpinning for Critical Systems Thinking', *Journal of the Operational Research Society* 47: 741–54.
- Clegg, S.R. ([1989] 2002) 'Frameworks of Power', in M. Haugaard ed. *Power: A Reader*, pp. 249–73. Manchester: Manchester University Press.
- Dahl, R.A. (1958) 'A Critique of the Ruling Elite Model', *American Political Science Review* 56: 463–9.
- Dahl, R.A. ([1968] 2002) 'Power', in M. Haugaard ed. *Power: A Reader*, Manchester: Manchester University Press.
- Duineveld, M., Beunen, R., Ark, R.G.H. van; Assche, K.A.M. van and During, R. (2007) 'The Difference Between Knowing the Path and Walking the Path: Een Essay over het Terugkerend Maakbaarheidsdenken in Beleidsonderzoek', Wageningen: Wageningen

- Universiteit, Leerstoelgroep Sociaal-ruimtelijke Analyse <http://lx1.library.wur.nl/way/bestanden/clc/1861989.pdf>.
- Foucault, M. ([1977] 2002) 'Discipline and Punish', in M. Haugaard ed. *Power: A Reader*, pp. 181–204. Manchester: Manchester University Press.
- (1980) *Power and Knowledge*. Brighton: Harvester Press.
- (1982) 'The Subject and Power', in H. Dreyfus and R. Rabinow (eds) *Michel Foucault: Beyond Structuralism and Hermeneutics*. Brighton: Harvester Press.
- Fuchs, D. (2005) 'Commanding Heights? The Strength and Fragility of Business Power in Global Politics', *Millennium* 33(3): 771–803.
- Garcia, R.M.R. (2001) 'Scientia Potestas Est – Knowledge is Power: Francis Bacon to Michel Foucault', *Neohelicon*, 28(1): 109–22.
- Geels, F. W. (2005) *Technological Transitions and System Innovations: A Co-Evolutionary and Socio-Technical Analysis*. Cheltenham: Edward Elgar.
- Geels, F. and Kemp, R. (2000) 'Transities vanuit sociotechnisch perspectief'. *Report for the Dutch Ministry of Environment*, The Hague.
- Giddens, A. ([1984] 2002) *The Constitution of Society: Outline of the Theory of Structuration*, in M. Haugaard ed. *Power a Reader*, Manchester: Manchester University Press.
- Gordon, N. (2002) 'On Visibility and Power: An Arendtian Corrective of Foucault', *Human Studies* 25: 125–45.
- Grin, J. (2005) 'Reflexive Modernization as a Governance Issue – Or: Designing and Shaping Re-Structuration', in J-P. Voß, D. Bauknecht and R. Kemp (eds) *Reflexive Governance for Sustainable Development*. Cheltenham: Edward Elgar.
- Haan, J. de (2007) 'Pillars of Change: A Theoretical Framework for Transition Models', paper presented at the EESE 2007 Conference Integrating Natural and Social Sciences for Sustainability.
- Haugaard, M., ed., (2002) *Power: A Reader*. Manchester: Manchester University Press.
- Heiskala, R. (2001) 'Theorizing Power: Weber, Parsons, Foucault and Neostructuralism', *Social Science Information* 40(2): 241–64.
- Hendriks, C.M. and Grin, J. (2007) 'Contextualizing Reflexive Governance: The Politics of Dutch Transitions to Sustainability', *Journal of Environmental Policy & Planning*, 9(3–4): 333–50.
- Infinito, J. (2003) 'Ethical Self-formation: A Look at the Later Foucault', *Educational Theory* 53(2):155–71.
- Inglis, D. and Bone, J. (2006) 'Boundary Maintenance, Border Crossing and the Nature/Culture Divide', *European Journal of Social Theory* 9(2): 272–87.
- Kemp, R. and Loorbach, D. (2006) 'Transition management: A Reflexive Governance Approach', in J-P. Voss, D. Bauknecht and R. Kemp (eds) *Reflexive Governance for Sustainable Development*. Cheltenham, UK: Edward Elgar.
- Lemke, D. and Kugler, J. (1996) 'The Evolution of the Power Transition Perspective', in J. Kugler and D. Lemke (eds) *Parity and War: Evaluations and Extensions of the War Ledger*. Ann Arbor: University of Michigan Press.
- Levy, D. and Scully, M. (2007) 'The Institutional Entrepreneur as Modern Prince: The Strategic Face of Power in Contested Fields', *Organization Studies* 28(07): 971–91.
- Loorbach, D. (2007) 'Transition Management: New Mode of Governance for Sustainable Development', PhD thesis, Erasmus University Rotterdam, Utrecht: International Books.
- Loorbach, D. and Rotmans, J. (2005) 'Managing Transitions for Sustainable Development', in A.J. Wiczorak and X. Olshoorn (eds) *Industrial Transformation: Disciplinary Approaches towards Transformation Research*. Dordrecht: Kluwer Academic Publishers.

- Luhmann, N. (1984) *Social Systems*. Stanford, CA: Stanford University Press.
- Lukes, S. (1974) *Power: A Radical View*. London: Macmillan.
- Machiavelli, N. (1532) *The Prince*. London: Everyman.
- Mann, M. ([1986] 2002) 'The Sources of Social Power', Vol.1, in M. Haugaard ed. *Power: A Reader*. Manchester: Manchester University Press.
- Mills, C.W. (1956) *The Power Elites*. New York: Oxford University Press.
- (2003) 'Contesting the Political: Butler and Foucault on Power and Resistance', *The Journal of Political Philosophy* 11(3): 253–72.
- Morriss, P. ([1987] 2002) 'Power: A Philosophical Analysis', in M. Haugaard ed. *Power: A Reader*, pp. 278–303. Manchester: Manchester University Press.
- Mossberger, K. and Stoker, G. (2001) 'The Evolution of Urban Regime Theory; The Challenge of Conceptualisation', *Urban Affairs Review* 36(6): 810–35.
- Parsons, T. (1967) *On the Concept of Political Power: Sociological Theory and Modern Society*. London: Free Press.
- Rip, A. and Kemp, R. (1998) 'Technological Change', in S. Rayner and E. Malone (eds) *Human Choice and Climate Change*, Vol. 2, pp. 327–99. Columbus, OH: Battelle Press.
- Rotmans, J., Kemp, R. and Asselt, M. (2001) 'More Evolution than Revolution: Transition Management in Public Policy', *The Journal of Futures Studies, Strategic Thinking and Policy*, 3(1): 15–32.
- Rotmans, J. (2005) 'Societal Innovation: Between Dream and Reality Lies Complexity', inaugural speech. Rotterdam: Erasmus Research Institute of Management.
- Shove, E. and Walker, G. (2007) 'CAUTION! Transitions Ahead: Politics, Practice, and Sustainable Transition Management', *Environment and Planning A* 39: 763–70.
- (2008) 'Transition Management and the Politics of Shape Shifting', *Environment and Planning A*, 40: 1012–14
- Stewart, A. (2001) *Theories of Power and Domination: The Politics of Empowerment in Late Modernity*. London: Sage Publications.
- Thompson, K. (2003) 'Forms of Resistance: Foucault on Tactical Reversal and Self-formation', *Continental Philosophy Review* 36: 113–38.
- Voss, J.P., Newig, J., Kastens, B., Monstadt, J. and Nolting, B. (2007) 'Steering for Sustainable Development: A Typology of Problems and Strategies with Respect to Ambivalence, Uncertainty and Distributed Power', *Journal of Environmental Policy & Planning*, 9 (3–4): 193–212.

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