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Conditions for the deliberate destabilisation of established industries: Lessons from U.S. tobacco control policy and the closure of Dutch coal mines

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ABSTRACT

This paper contributes to recent developments in the literature concerning the need to destabilise existing industries. Challenging established industries through policy can be politically difficult. The purpose of the paper is to draw lessons from examples of the policy-driven destabilisation of established industries and from that, gain a better understanding of which conditions deliberate destabilisation might be possible under. The analytical framework draws together insights from the multilevel perspective and policy process theory. Two historical cases are analysed: the introduction of tobacco control policies in the United States and the decision to close down coal mines in the Netherlands. In its concluding sections, the paper discusses factors that lead to network change, particularly attending to how tensions within key organisations may lead to changes in alliances and thus provide opportunities for phase-out policies.

1. Introduction

How transitions can be accelerated has become an important topic in the sustainability transitions literature (Sovacool, 2016). An emerging direction in transition studies emphasises how an accelerated transition will require the destabilisation and, ultimately, the outmoding of existing systems (Köhler et al., 2017, p. 12). This direction is particularly evident within the context of energy system transformation, with several recent studies on how industries such as nuclear, oil, and coal can be weakened (Campbell and Coenen, 2017; Karltorp and Sandén, 2012; Rogge and Johnstone, 2017; Turnheim and Geels, 2013).

An important insight from studies of new energy technologies is that the development of such technologies relies on public policy intervention (Rogge et al., 2017). This is no less true for the destabilisation of established industries. Even though fossil fuel industries have come under increased pressure due to challenging market conditions, the destabilisation of these industries is unlikely to occur without some form of policy intervention (Johnstone and Newell, 2018; Kivimaa and Kern, 2016). This is partly due to mechanisms of path-dependency and technology lock-in and partly due to the political influence these industries exert, which help to maintain favourable market and institutional conditions (Meadowcroft, 2016). Because these industries enjoy privileged access to decision makers; subsidy programmes that are difficult to remove; and the infrastructure for transport, heating, and power adapted to centralised and fossil-based fuels, a 'level playing field' will, in practice, favour the established players in that field. Mazzucato and Perez (2015) have therefore argued that the state needs to 'tilt the playing field' in favour of new renewable energy technologies. Such tilting can, however, be politically difficult.

In this paper, I examine two examples of deliberate destabilisation and elicit lessons useful for researchers interested in the destabilisation of established industries as a research area and for policy makers and others who wish to contribute to accelerating

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energy transitions. Section 2 reviews the current literature on destabilisation and sustainability transitions. The importance of policy and politics is highlighted in this section. Section 3 presents the analytical framework that draws on the multilevel perspective and policy process approaches that are relevant for the destabilisation of established industries. Section 4 discusses the case selection, methods, and data. Sections 5 and 6 present the two cases of destabilisation, the U.S. tobacco industry and coal mining in the Netherlands. These cases have not been explored in detail in a sustainability transitions context and can therefore provide novel insights for the field. The cases are further discussed in section 7 before I present the main conclusions in section 8.

2. Sustainability transitions and destabilisation of established industries

In the multilevel perspective (MLP), transitions are understood to take place following dynamics at the 'regime' and 'niche' levels. The regime level consists of the dominant institutions, technologies, cultural and political values, and organisations, which collectively secure stability along a technological trajectory (Geels, 2004). The niche level is the locus of most of the new ideas, technologies, and organisations associated with a socio-technical system, such as the energy system. Regime change has been thought to occur through the combined pressure from exogenous developments, referred to in the MLP as the landscape level, and from successful niche empowerment, leading to different transition pathways (Geels and Schot, 2007). In recent years, studies of energy transitions have recognised that the promotion of new renewables is not sufficient for regime destabilisation (David, 2017; Geels, 2014; Kern and Rogge, 2016; Leipprand and Flachsland, 2018). Attention has therefore shifted towards the deliberate destabilisation of established industries.

One direction of research related to destabilisation has focused on industry response to pressure at the regime level (Berggren et al., 2015; Karltorp and Sandén, 2012; Mäkitie et al., 2018). Karltorp & Sanden, for instance, show how regime destabilisation can be initiated by actors in established industries that introduce new technologies that disrupt the regime. This research provides nuance to the understanding of regime-niche dynamics. However, the evidence so far suggests that regime destabilisation is unlikely to occur without deliberate policy intervention that aims to phase out (or at least weaken) established industries. A number of studies have therefore stressed how a transformation of the energy system requires a mix of policies that collectively aim to support new industries whilst at the same time destabilising fossil fuel industries (Kivimaa and Kern, 2016; Rogge and Johnstone, 2017).

While it is possible to introduce policies that stimulate growth in new industries, successfully introducing policies that significantly challenge the interests of established and powerful industries is considered more difficult (Bardach, 1976; Geels, 2014). Asymmetric distribution of power typically affords established industries better access to policy-makers (Pierson, 2000; Thelen and Mahoney, 2010). Moreover, a deliberate decision to phase out or weaken established industries will rely on governments and state institutions to exert authority through policies or market interventions. This can be problematic because the interests of state actors tend to be aligned with industries that are important to the national economy (Smith, 1993). Therefore, there is often a mutual dependence between the state and the fossil fuel industries. For example, Baker et al. (2014) show how state-industry relations and mutual interests in the industrial complex based on mineral and coal resources in South Africa have enabled stakeholders in these industries to resist destabilisation policies. From this, we might assume that destabilisation can be possible if there are changes in this mutual dependence between the state and established industries. Moreover, this finding opens up questions about how politicians and the political context fit into these state-industry relations.

A central question in this paper is *what are the different conditions that can make policy-driven destabilisation more likely to happen*? Research on destabilisation suggests that destabilisation policies can be easier to introduce following exogenous shocks or crises (Kungl and Geels, 2018). For example, the nuclear accidents in Pennsylvania (1979), Chernobyl (1986), and Fukushima (2011) provided an opportunity for the decision to be made to phase out nuclear power in Germany (Grossman, 2015). In the case of coal in the UK, sustained economic pressure opened up for the government to target the coal industry with destabilisation policies (Turnheim and Geels, 2012). However, crises do not necessarily lead to radical policy change. Rather, crises can open up windows for policy change.

Whether opportunities open up, and the extent to which they are exploited if they do, depends on the political-economic context *and* the development of solutions. One of the obstacles for phasing out fossil fuel industries is the dense relationships between public and private sectors that aim to preserve fossil fuel-based industry structures (Johnstone and Newell, 2018). Campbell and Coenen (2017) therefore argue that attempts to introduce phase-out policies depend on the political-economic context within which such initiatives are attempted. Johnstone and Stirling, in their comparison of responses in Germany and the UK to the Fukushima accident, refer to the ways in which the wider political environment affords *'access by the least powerful, to capacities for challenging power'* (Stirling 2014, cited in Johnstone and Stirling, 2015). Thus, Johnstone & Stirling highlight how certain institutional characteristics might open up for destabilisation policies.

Campbell and Coenen (2017) adopt a different approach and emphasise how studies of conditions for phase-out policies should focus on how coalitions of interest groups work together as well as how these alliances might shift. A phase-out requires coalition building with multiple actors (Heyen, 2017). Negotiations with affected actors can offer a chance for legitimacy and a successful phase-out decision (Bardach, 1976). This line of thinking has led some scholars to point to the importance of trade unions in destabilisation processes (Johnstone and Hielscher, 2017; Prinz and Pegels, 2018). The phasing out of established industries can meet resistance from labour organisations due to the potential job loss (David, 2017). The potential for job creation in a region, which can also be enhanced through policy, can therefore be an important condition for the deliberate phasing out of established industries (Campbell and Coenen, 2017; Kungl and Geels, 2018).

Finally, the political-economic context may refer to the preferences of politicians. If the preferences of politicians and policy-makers are important, then how those preferences are shaped is relevant. For instance, actors and groups can use discursive strategies

to influence policy preferences. In their study of the Energiewende, Leipprand and Flachsland (2018) show that the debate around coal phase-out in Germany has been one centred around arguments related to climate change versus arguments about the costs of a phase-out. To understand how these debates shape the conditions for destabilisation, studies of phase-out processes need to attend to which actors resist or promote phase-out, the strategies they adopt, and the extent to which actors change positions.

Opportunity windows created by exogenous shocks or changes in the political-economic context can be missed if well-developed solutions are absent (Bauer et al., 2012; Kern and Rogge, 2018). The successful development of alternatives can include the necessary maturation of certain technologies, the sufficient build-up of coalitions, or the creation of legitimacy. For instance, strengthening the legitimacy of destabilisation policies may be seen as part of the successful development of an alternative or a solution, which can be exploited when a window of opportunity opens up. The presence of viable alternatives can reinforce destabilisation pressures, whilst industry destabilisation can provide opportunities for alternatives. In this way, the relationship between new solutions and existing industries under pressure is bi-directional (Turnheim and Geels, 2012).

The discussion in this section suggests that destabilisation can occur through direct policy intervention and from changes in the economy or environment or in technology. Because rigid social structures are often blamed for the lack of sufficient responses to climate change (Geels, 2014), it is reasonable to study potential destabilisation as a result of structural change. However, an important difference between historical processes of industrial change and the current need to phase-out fossil fuel industries is that the latter will need to happen within only a few decades and will therefore need to be accelerated by political actors. As an example, Johnstone and Stirling (2015) argue that the German Energiewende is the clearest example of a politically deliberate shift whilst also emphasising how structural characteristics in Germany have made this shift possible. Thus, even though this paper aims to understand policy-driven destabilisation, it must inevitably address the structural and contextual conditions for change.

3. Analytical framework

For the analysis of the two cases of destabilisation, I draw on several strands of literature. First, the multilevel perspective provides guidance through attention to how windows of opportunity can open up through changes at the landscape level and how alternatives need to be sufficiently developed to exploit these opportunities (Geels and Schot, 2007).

3.1. Landscape

Landscape events are exogenous in the sense that they are beyond the influence of affected actors and industries and the particular policy processes related to those industries. Such events can include demographic changes, ideology changes, climate change, accidents, and economic crises (Geels, 2011; Geels et al., 2016). Changes in availability or resource prices can also shape the conditions for policy (Andrews-Speed, 2016). Examples from the energy sector show that variations in natural resource endowments provide different conditions for supporting certain technologies or industries (Ćetković et al., 2017; Hansen and Coenen, 2015). Some institutional characteristics can also be considered exogenous factors that provide conditions for certain policies. Established and powerful industries tend to have considerable political influence in centralised systems where the size of firms cannot be ignored by policy makers (Lockwood et al., 2016). Moreover, the nature of the legal system can also affect the policy discourse and policy process (Andrews-Speed, 2016).

3.2. Political context

The MLP emphasises that the transformation of established industries involves power struggles that occur at the regime level or through interaction between the niche and regime levels. As is evident from section 2, the political context shapes how these power struggles play out, whilst such struggles also, in turn, shape the political context. Even though the socio-technical regime includes policies and some political actors, it is, in my view, problematic to place the political context as a part of the regime. For instance, political ideologies and the political parties that are in power extend beyond the energy regime. However, the political context fits poorly as part of the socio-technical landscape, as it is more dynamic through, for instance, the formation of new coalitions and new ideas (Geels and Kemp, 2007). However, the political context seems important for destabilisation policies, and it is important to study the interplay between the landscape, political context and actors in the socio-technical system. Theories of the policy process can be helpful to better integrate the political context and its relation to exogenous factors (the landscape) and the development of solutions (niches) (Kern and Rogge, 2018).

Because close ties between state actors, political parties, and industry represent a barrier to destabilisation policy, I suggest that describing the structure of policy networks can be a useful way of including the political context in the analysis. Approaches that study policy networks (or coalitions) typically emphasise how policy is shaped through the mediation of different ideas and interests within networks of actors with mutual goals (Adam and Kriesi, 2007; Marsh and Smith, 2000; Sabatier and Weible, 2007). Policy networks tend to be particularly strong when state and government actors, as well as business interests, have a mutual stake in a particular policy issue. Policy network theory thus offers a useful inroad to studying the conditions necessary for destabilisation policies. Policy networks are often thought of as resistant to change (Richardson, 2004). However, changes in networks or coalitions can lead to a change in the balance of power and provide opportunities for policy change (Normann, 2017). As in the MLP, exogenous factors can lead to network change (Rhodes and Marsh, 1992; Rhodes, 2006; Sabatier and Weible, 2007). However, network change can also occur following changes in political leadership (Compston, 2009; Daugbjerg and Marsh, 1998); through alliance building, bargaining and compromises (Jordan, 1990, pp. 326-7); from conflicts; or if actors change their position on issues.

Following the above, I identify several components of the political context that might influence conditions necessary for deliberate destabilisation. First, the government structure and the political parties that are in power can influence the political feasibility of certain policies (Daugbjerg and Marsh, 1998; Kasa, 2000). Second, the structure of policy networks may provide certain actors with improved access to policy makers or shift the balance of power between groups (Compston, 2009). Finally, changes in policy networks or coalitions can be important for major policy change (Adam and Kriesi, 2007). The development of coalitions and negotiations with affected actors such as established industries, unions, and state actors therefore represent an important aspect of the political context.

I have argued above that destabilisation is likely to require significant policy change. Government therefore represents an important element of the political context. However, the discussion in this section shows that steering towards destabilisation is unlikely to occur without collaboration with non-government actors. For analytical purposes, the political context therefore extends beyond government and policy-makers. Rather, it reflects a broader governance understanding of policy-making where non-government actors such as markets and civil society interact with government and participate in policy-making (Ehnert et al., 2018; Hoffmann et al., 2017).

The multilevel perspective can provide a useful way to study network change in relation to destabilisation policies and potential system change. As with socio-technical regimes, policy networks can come under pressure from exogenous changes at the landscape level. However, networks might also change from the strategic behaviour of actors or groups, for instance, through efforts to shape the preferences of politicians, important decision-makers, or other key actors in networks. The determinants of politicians' preferences are therefore of interest.

Politicians' preferences to engage in policy processes that challenge established industries are influenced, but not determined, by situational factors, economic factors, and institutional constraints and opportunities (Bauer et al., 2012). Politicians will often want to stay in office (Bauer and Knill, 2012), and the potential for policy intervention (or lack thereof) to create or threaten jobs is essential (Kasa, 2000; Newell, 2015). The interpretation of a wide range of issues important to politicians will also be influenced by public opinion (Kingdon 1984/2011; Burstein and Linton, 2002; Giugni, 1998). Efforts to shape public opinion are therefore an important strategy for proponents and opponents of destabilisation policies (Giugni, 1998).

The development of solutions is a central mechanism in both the transitions literature (Geels and Schot, 2007) and in the multiple streams approach to agenda-setting (Kern and Rogge, 2018; Kingdon, 2011; Zahariadis, 2014). As I pointed out in Section 2, references to exogenous shocks or crises can explain major policy change. Similarly, the structure of policy networks can change as a result of exogenous events. However, the opportunities that are opened up from crises are only likely to be exploited if alternatives are sufficiently developed. Such alternatives are often thought to be developed in niches, and the emphasis is often on technological aspects. However, the niche literature has, for a long time, also emphasised how new ideas need to be matured and how policies need to gain legitimacy (Bergek et al., 2008; Rip and Kemp, 1998; Smith and Raven, 2012).

Structuring networks and institutions are the result of social decisions, and even though they often change slowly, they nonetheless do change (Baumgartner and Jones, 1993, p. 14). Structures can be changed through serendipity but also from actors' purposeful attempts to influence the structural conditions. It is therefore impossible to assess the importance of structures without an assessment of how actors attempt to negotiate those structures (Jessop, 2001).

Schmidt (2008) makes a distinction between ideas and discourses, pointing out that by attending to discourses, we can find answers to the question of how and when ideas are important. Issues will be framed differently depending on actors' perceptions and ideas and consequently attract preferences for different policies. How actors frame problems and alternatives shapes the way in which issues are accompanied by policy and whether policies are attached to articulated problems (Kern and Rogge, 2018). Struggles over policy outcomes are thus not only a result of material interests but also the outcome of contesting narratives or stories (Kern, 2012). Moreover, how certain issues are framed affects the type of problems they address and thus the viability of solutions to such problems as well. The framework therefore also attempts to capture how ideas concerning the focal policy issues have been articulated over time. Fig. 1 presents a simple, visual representation of the analytical framework.

4. Case selection, methods and data

A common feature of policy processes is that they are unique and context specific (Hill, 2013, p. 9). The study of policy processes is therefore often based on individual case studies. However, there are well-known limits to the lessons that can be drawn from a single case study. Including a second case can strengthen the analytical insights through the identification of commonalities (Yin, 2009, p. 61) without losing sight of the specifics of each case. At the same time, the cases can complement each other by highlighting different factors in different contexts (Robson, 2011, p. 140). Adding a second case can thus mitigate some, but by no means all, of the drawbacks of a single case study. The deliberate destabilisation of established industries through policy is rarely attempted. Finding cases suitable for a comparative analysis has therefore been difficult due to the unique nature of political processes in general and phase-out processes more specifically. I have therefore adopted a multiple case study of two different examples of the deliberate destabilisation of established industries: the U.S. tobacco industry and coal mining in the Netherlands.

In both cases, the destabilised industries have been important to political and state actors, which is why policy outcomes that could destabilise these industries are of interest. These are extreme cases where the purpose is to obtain a better understanding of the deeper causes behind a particular outcome (Flyvbjerg, 2001, p. 78).

Considering the swiftness of the Dutch transition from coal to gas, this case has received little attention from transition scholars when compared to the cases of coal mining in the UK and the nuclear phase-out in Germany. Some key points about the transition have been mentioned (Elzen et al., 2004; Geels et al., 2017; Sovacool, 2017), but these studies cover the Dutch mining case rather

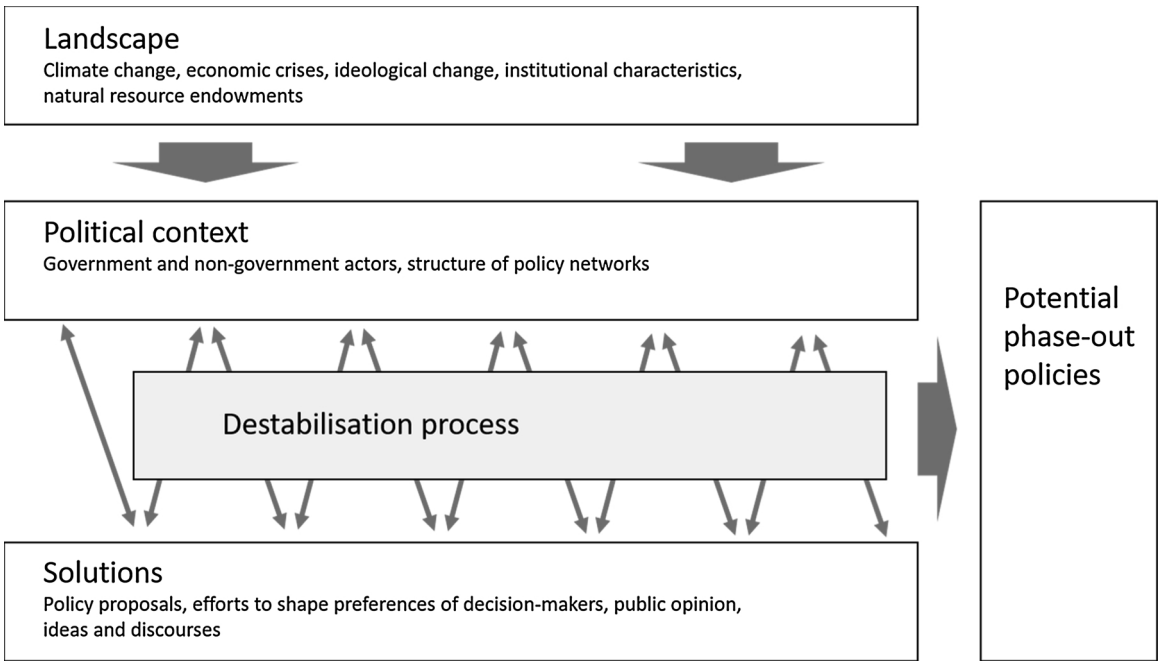

Fig. 1. The analytical framework shows how interaction between the landscape, political context, and solutions influence destabilisation processes.

superficially. I have therefore made use of other empirical investigations rooted in disciplines such as energy studies (e.g. Smil, 2010), economic history (e.g. Gales and Hölsgens, 2017; Hölsgens, 2016; Van Zanden, 1998), and policy studies (e.g. Moharir, 1979).

Tobacco control policies in the U.S. has been the subject of extensive research for several decades. A large part of this research is rooted in policy studies (e.g. Cairney et al., 2012; Givel, 2006; Worsham, 2006), but it has also been a major research topic in areas such health and medicine (e.g. Bayer and Colgrove, 2004; Saloojee and Dagli, 2000) and business studies (e.g. Derry and Waikar, 2007).

The results are presented as chronological narratives but are organised according to the different elements of the analytical framework.

There are some weaknesses with the research design that the reader should be aware of. First, with a study of two extreme cases, there are limited opportunities for comparative analysis. However, the cases bring forward different insights that, when discussed together in section 7, strengthen the overall lessons regarding contemporary destabilisation processes. Second, the case of tobacco deviates from current issues of destabilisation in the energy sector because there is no need to replace cigarettes with an alternative, as is the case for fossil energy. However, there are striking similarities between the tobacco and fossil fuel industries in terms of resistance to and the potential drivers of policy change (Simms, 2018). Valuable lessons about destabilisation can therefore be drawn from a case such as tobacco control (Simms and Newell, 2017). Third, the case analyses rely on secondary sources and are thus subject to the biases of other researchers (George and Bennett, 2005, p. 95). To address this weakness, I have attempted to use different historical explanations of the two cases, ensuring that different perspectives are represented whilst also allowing for the triangulation of data.

5. Tobacco control policies in the United States

In the U.S. in the early parts of the 20th century, tobacco was considered, like wheat and corn, an important crop that generated export earnings and supported millions of farmers, and whole communities, even some state economies, depended on the crop (Baumgartner and Jones, 1993, p. 91). Even though the value of tobacco for the economy has fallen, tobacco companies are still major taxpayers and lobbyists (Cairney et al., 2012). Policies that could destabilise the tobacco industry were seen to threaten state-level revenues and employment in the most tobacco dependent counties (Snell and Goetz, 1997). For this reason, attempts to introduce tobacco control policies have been met with resistance by a pro-tobacco network consisting of producers, growers, retailers, advertisers, and the hospitality industry (Cairney et al., 2012; Givel, 2006).

Despite the tobacco industry's significant influence over tobacco policy, different kinds of pressure and changing conditions opened up opportunities for destabilisation through various restrictions and taxes, perhaps most notably through the Master Settlement Agreement (MSA) in 1998 and the tobacco buyout in 2004. The MSA instructed the industry to provide financial compensation to U.S. states for the costs of healthcare for smokers. The settlement also put limitations on the industry's marketing and political activity. The tobacco buyout ended the federal price support programme for tobacco (Fallin and Glantz, 2015). The buyout required tobacco manufacturers to pay more than $3 billion to tobacco quota holders, which enabled smaller farmers to stop growing

tobacco (ibid). What, then, led to the pressure and subsequent changes in the U.S. tobacco control policy?

5.1. Power struggles and policy network change

Most studies of U.S. tobacco policy highlight how the tobacco discourse changed during the second half of the 20th century. Until the early 1950s, tobacco policy was treated as an economic issue. In the early 1950s, new medical evidence linked smoking to cancer (Saloojee and Dagli, 2000). Particularly after the publication of the Surgeon General's report on smoking and cancer in 1964, the tobacco industry came under stress (Studlar, 2002, pp. 35-6; Worsham, 2006). The 1960s and 1970s have been characterised as a tug-of-war (Derry and Waikar, 2007) in which health groups and the tobacco lobby employed various tactics to discredit the opposition. The tobacco industry's main strategy was to discredit health science (Derry and Waikar, 2007; Saloojee and Dagli, 2000), for instance, through the establishment of the Tobacco Industry Research Council. The Council's task was to reassure the public that the industry was taking smoking hazards seriously. Its true purpose, however, was to deliberately confuse the public about the risk of smoking through the funding of scientific publications that claimed smoking did not cause cancer (Saloojee and Dagli, 2000). A second strategy was to shift public attention towards tobacco's importance for jobs and tax revenue (Saloojee and Dagli, 2000). An important strategy for the anti-tobacco network was to promote distrust of the tobacco industry (Studlar, 2008), which gradually influenced consumers and regulators (Derry and Waikar, 2007).

Economic concerns, however, continued to trump public health until the early 1980s (Studlar, 2008), when economics became increasingly challenged by health concerns (Worsham, 2006). The major reasons for this shift included new scientific evidence on second-hand smoking (Bayer and Colgrove, 2004) and the move of tobacco policy into new venues in the Senate and House where non-economic arguments dominated (Worsham, 2006).

Even though the main conflict was between arguments about health and costs (Cairney et al., 2012; Worsham, 2006), focusing too much on how the anti-tobacco and pro-tobacco groups competed over the way tobacco was framed in public and in U.S. legislation overlooks the fact that both groups consisted of organisations and sub-groups. In addition to attending to changing discourses, we also need to recognise the potential impact of changing alliances (Derry and Waikar, 2007).

The pro-tobacco network's influence was substantial, in part because it included both producers and growers. These two groups had united behind a mutual goal of promoting the industry from the 1950s through to the 1970s and were thus collectively important for both employment and state revenues. The presence of large tobacco producers in the tobacco states restricted the introduction of tobacco control policies at the state level. Moreover, the tobacco states had considerable influence in Congress from the 1930s to the 1980s when the Democrats dominated Congress (Cairney et al., 2012).

Three noteworthy developments influenced the structure of the pro-tobacco policy network, which led to a shift in the balance of power between the pro-tobacco and anti-tobacco groups. First, the break-up of Democratic dominance in the 1980s and 1990s weakened the influence of the tobacco states through the Democratic Party in the South (Cairney et al., 2012, p. 134). Second, the relations between the tobacco producers and farmers became strained in the 1990s because the tobacco producers were increasingly using less expensive foreign tobacco whilst also circumventing price agreements with local farmers (Fallin and Glantz, 2015). This reduced the farmers' loyalty to the pro-tobacco network. Health advocacy groups and organisations leveraged the growing distance between tobacco manufacturers and farmers to create a new alliance between public health and farmers (Washington et al., 2011). Finally, the pro-tobacco network became fractured following a split between the cigarette companies and the hospitality organisations following evidence that found that smoke-free policies did not harm the restaurant business (Fallin and Glantz, 2015).

Attention to the political context and political networks suggests that the changing discourse around tobacco policy co-evolved with changing alliances. Until the 1950s, the dominant framing of the issue was that tobacco production and consumption benefitted large groups of society due to revenues and employment. Anti-tobacco advocates tried to reframe the issue by emphasising the economic costs of consumption in terms of public health costs (Bayer and Colgrove, 2004; Studlar, 2008). When the relationship between growers and producers fell apart, the argument about jobs in the tobacco industry lost legitimacy. This opened up room for the ideas concerning scientific evidence that linked smoking to ill health to become more accepted within the policy system (Cairney et al., 2012, p. 213).

5.2. Institutional characteristics

Attention to institutional characteristics reveals two additional factors that facilitated policy change. First, the U.S. political system is fragmented, with multiple venues for policy-making (Cairney et al., 2012). Marmor and Lieverman (2004) argue that federalism provides more opportunities for policy innovation. Stricter tobacco control could therefore be enacted within particular subnational units. For example, some states and local governments had greater opportunity to enact policies on taxes and smoke-free environments. Second, there is a strong judiciary in the U.S. Both of these characteristics were important for the implementation of the MSA in 1998. The policy initiative that eventually led to the MSA was first pursued at the national level but was defeated in Congress in 1998. A substitute legal arrangement was then enacted between 46 states and the industry with no permission from the central government. Since the process was a judicial process rather than an executive-legislative process, the group of tobacco-growing states could not veto the process (Cairney et al., 2012, p. 130).

6. Closing down Dutch coal mines

In the first half of the 20th century, coal was the dominant source of energy in the Netherlands. The Netherlands had vast coal

resources in the region of Limburg, close to the coal districts in Germany and Belgium. Coal mining was important for Dutch energy security and for the Limburg region, where it directly or indirectly represented 35 per cent of the active work force (Kasper, 2012). In 1965, the mining industry employed approximately 53 000 people, and an estimated 30 000 people were indirectly dependent on the coal industry (Kasper, 2012).

Towards the end of the 1950s, the coal industry came under pressure from the overcapacity of the European coal industry and competition from imported oil. After 1958, the Limburg mines were therefore considered unprofitable (Smil, 2010). In December 1965, the government announced that it would reduce coal output by closing several mines. The process of closing down the first mines went faster than had been projected, and in 1969, the government suggested that all remaining mines should be closed by 1975 (Moharir, 1979). In a country with a tradition of non-interventionist policies and preference for the free market, this decision to steer the phase-out of an industry can be considered a far-reaching public intervention (Van Zanden, 1999).

6.1. Exogenous events and the landscape

In contrast to the case of tobacco control policies, exogenous factors played an important role. In addition to the mentioned economic pressure, the discovery of the large Groningen gas field in 1959 put additional pressure on the coal industry. The gas deliveries from Groningen from 1963 and onwards provided an alternative source of energy in addition to promises of a new industry that could provide large state revenues (Hölsgens, 2016). However, despite the pressure on industry profitability and on state revenues, the decision to close down mines would put employment in Limburg at risk and threaten the position of several large firms. The government had to balance the interests of these different industries, the state, trade unions and the general public (Moharir, 1979). Gales and Hölsgens (2017) therefore argue that attending only to economic pressure and exogenous events is an oversimplification because the closure was a political decision, not a business decision.

In the following, I first describe how certain institutional characteristics provided favourable conditions for the phase-out policy. In the subsequent sections, I describe the actual process leading up to the policy decision to phase out coal mining.

6.2. Institutional characteristics

The problems in the coal industry in the early 1960s created a potential conflict between the interests of state finances, energy security and regional employment. However, in the Netherlands, these interests could be negotiated within the Ministry of Economic Affairs because the ministry was responsible for energy policy, industrialisation, and regional development. This helped in the coordination of the policy of closure and reindustrialisation (Moharir, 1979).

Furthermore, at that time, the Netherlands was a centralised state where national laws took precedence over regional decisions. Local municipalities also relied significantly on national state finances (Moharir, 1979). This strengthened the state's capacity to act upon broader state interests.

Finally, parliament had limited power, as policy was often shaped in networks where the interests of the government, employers and employees were represented (Moharir, 1979). This collaboration was institutionalised through the Mining Industry Council. Potential conflicts between employers and unions were often reconciled in this council, and a coordinated view developed on what had to be done with the coal industry (Moharir, 1979). As the subsequent sections will show, this was important because it enabled trade union support.

6.3. Power struggles and the political context

The Groningen gas field was discovered in 1959 by the Dutch Oil Company, which was a joint venture between Esso and Shell. After news about the discovery became public the following year, an intense political negotiation process started (Correlje et al., 2003; Kaijser, 1996). These negotiations involved the major oil and coal interests, unions, the government and broader state interests. Shell had a dominant position in Dutch economic and political life and, together with Esso, wanted to profit as much as possible from the Groningen gas. To avoid a severe distortion of their oil business, Shell and Esso pursued the goal of building up a system for gas that actively pushed coal out of the system (Elzen et al., 2004).

The interests pursued by the oil companies threatened to aggravate the coal crisis in the early 1960s, which made it important for Dutch State Mines (DSM) to not be left outside the decision-making process concerning the Groningen gas field (Kaijser, 1996). With 45 000 employees, DSM was by far the largest company in Limburg. The Minister of Economic Affairs, De Pous, had to balance these conflicting interests and find a plan to exploit the gas resources whilst minimising the negative impact on demand for coal. To avoid resistance, he gave responsibility for the future gas industry to the major coal and oil companies in the country (Kaijser, 1996).

To understand the phase-out decision, we also need to understand the changing position within DSM towards coal. In 1962, DSM reported losses in the coal sector, which were shouldered by the company's growing chemical division. Coal was the most important basis for the company's chemical division, but the company wanted to switch to cheaper oil and gas (Van Zanden, 1999). This led to a tug of war between the leaders of the chemical and coal divisions (Moharir, 1979). Until 1964, the coal side had leverage on the board, and DSM therefore lobbied for continued government subsidies of coal activity until the middle of 1964, when opinion shifted in favour of the early closure of mines. This shift was a result of increasing pressure from outside and within DSM. Between 1958 and 1964, the proceeds from coal remained stable, but the company was reporting overall losses on its coal business. Revenues from chemicals, however, increased in the same period from 213 million guilders to 381 (Moharir, 1979, p. 248). DSM's stake in the use of natural gas was another prompting factor for the early and rapid closure of the coal mines (Gales and Hölsgens, 2017; Moharir, 1979).

6.3.1. Government and the unions

The most important union in Limburg was the Catholic Mine Workers Trade Union, and the leader, Dohmen, was one of the most important people in the process. Based on his knowledge about international energy markets, Dohmen was convinced of a bleak future for coal. In 1962, he suggested to the Minister of Economic Affairs, De Pous, that the mines be closed and the money spent on subsidies be reallocated towards reindustrialisation. In 1964, Dohmen and DSM (following the new position of the DSM board on coal) repeated the proposal to De Pous's successor, Minister Andriessen of the Christian Democratic Party (Moharir, 1979). Andriessen's analysis of the problem, however, was that the situation for the Dutch coal industry was good, and he therefore supported continued subsidies. Even though pressure increased in 1964, to go back on the policy from a few months earlier was political suicide. Moreover, the costs of reindustrialisation policies[1] that the unions demanded came into conflict with other priorities, and consequently, Andriessen could not offer any compensation to Limburg (Moharir, 1979).

In 1965, a new cabinet was formed that included the Socialist Party for the first time since 1956. Limburg had been a stronghold of the Catholic People's Party due to the strong position of the Catholic Mine Workers Trade Unions. The Socialist Party had developed an interest in the reindustrialisation policies in Limburg that were influenced by general public opinion in the region (Moharir, 1979). Reindustrialisation could potentially alter the structure of trade unionism and thus voting behaviour. Following the elections in 1965, the Socialist Party had the opportunity to carry out those policies. The change in the position of the government, which now took on board the union's call for no closures without new employment, also helped align the Catholic Mine Workers Trade Union and the DSM board (Gales and Hölsgens 2017). The leader of the Socialist Party, Den Uyl, became minister of Economic Affairs, and only a few months after the election, he announced the first mine closure.

The government's promise to the unions was realised through policy countermeasures, including subsidies for new industries to set up activities in the region, financial incentives for retraining and employing ex-miners, the establishment of offices of public services in the region, and investments in infrastructure to attract business and stimulate tourism (Kasper, 2012; Moharir, 1979; Smil, 2010). These compensation policies were developed in close collaboration with the leadership of DSM (Moharir, 1979). Combined with the government decision to award DSM a share of the exploitation of the gas reserves, these countermeasures ensured that DSM and the unions remained supportive of the second phase of the closure. This is in stark contrast to the approach adopted in the UK, where the tensions between the Thatcher government and unions resulted in the Great Miners' Strike (1984–1985) and social unrest (Turnheim and Geels, 2012).

6.3.2. Changes in government and new ideas

The description above emphasises the importance of certain institutional characteristics, such as a consensus-based political system and centralised decision-making. Moreover, the description suggests that the eventual support from DSM and the trade unions for phasing out coal was pivotal for translating the economic pressure into policy action. However, the description also suggests that the change in government made a difference. One interpretation might be that by the time the Socialist Party entered government in 1965, the pressure on the government had become sufficiently strong so that the decision to close the mines was unavoidable. However, Gales and Hölsgens (2017) point to the significance of different economic paradigms. Minister Andriessen from the Catholic party had believed more in a laissez-faire approach with minimal government intervention. Den Uyl of the Social Democrats believed more in structural policies and a willingness to intervene in order to mediate the needs of industries. The change was therefore also due to a combination of personal convictions and beliefs and the capacity to act upon those beliefs that led him to go for this policy (Moharir, 1979). Thus, a change in government opened up space for new ideas to enter the policy-making process.

7. Discussion

This section is structured around the main elements of the analytical framework and discusses how the interplay between the landscape, political context, and development of solutions provided the favourable conditions for destabilisation policies.

7.1. Landscape factors

The case of mine closures in the Netherlands fits with previous studies of sustainability transitions and destabilisation (see section 2) in that exogenous events put pressure on the established mining industry. For instance, it is difficult to imagine the implementation of the closure policies without the economic pressure on the coal industry and the discovery of natural gas. The case of tobacco control policies is an example of destabilisation that, to a lesser extent, was driven by similar types of exogenous pressure. The increased scientific knowledge about health hazards from smoking slowly changed the context within which the destabilisation process evolved. However, publications such as the 1964 Surgeon General's report should be understood as part of a conscious effort to change the discourse around smoking rather than as a change at the landscape level.

In addition to the role of exogenous events, both cases show that particular institutional characteristics favoured destabilisation. In the case of Dutch coal mining, centralised decision-making and the structure of the Ministry of Economic Affairs, which united

[1] Between 1958 and 1963, the government spent around 9 million guilders per year in support of coal mining. In 1964, this increased to 35 million. In 1966, as a result of the First Memorandum, this spending increased to 107 million guilders plus an annual 50 million guilders each year on reindustrialisation. Altogether, more than 2000 million guilders was spent on mine closures and reindustrialisation policy between 1965 and 1975 (Moharir, 1979, p. 318)

competing goals concerning regional interests, energy security, and industrial policy, provided an opportunity for decision-makers to find solutions that were acceptable to the main stakeholders. The institutionalised collaboration between employers and unions further facilitated the negotiations around closure. In the case of tobacco control policies, multiple venues for policy-making and a strong judiciary provided opportunities for destabilisation policies. Thus, in addition to landscape events, stable characteristics of the landscape can also open up room for deliberate destabilisation. However, both cases illustrate that exogenous events and institutional characteristics are not sufficient to explain the nature and speed with which destabilisation may take place.

7.2. Policy networks and the political context

A particular feature of established and powerful industries is that they tend to be intertwined with different state actors and governments (Baker et al., 2014). The political context characterised by the structure of policy networks and political parties in power will typically represent what Avelino (2017) refers to as a collective exercise of reinforcive power. Destabilisation requires changes in these networks. The tobacco control case shows how a coalition of actors with different interests were organised around a mutual goal of maintaining government support for continued industry growth. The successful introduction of tobacco control policies was preceded by changes in these networks, which led to a redistribution of power. The coal mine closures involved negotiations and compromises between key actors in the policy network organising the energy and industry interests in the Netherlands. The influence of the trade unions in this network ensured that there was sufficient legitimacy behind the phase-out.

In both cases, major policy decisions were made after changes in the political leadership. The new Dutch cabinet in 1965, with Den Uyl as Minister of Economic Affairs, had a more forward-leaning approach to dealing with the pressures on the Dutch coal mining industry. In the case of tobacco control, changes in political leadership were important because the tobacco industry had particularly strong links to the Democratic Party in the South. Thus, changes in the government are not only important due to the differing ideologies or policy preferences, as evidenced in the coal mining case, but also due to certain industry-political relations of mutual dependence that, when broken up, created new opportunities. Furthermore, when the support from tobacco workers (farmers) vanished, the legitimacy of the tobacco industry in terms of regional importance diminished.

What both cases illustrate is that there can be conflicts of interest within a regime that can lead to network change and consequently reduce the political influence of incumbent actors. The way in which this change occurred in these two cases, however, is different. In the case of tobacco control, the most important change was the shift in power between two opposing groups due to changing discourses around tobacco control and shifting alliances. In the coal mining case, changes also occurred within one of the incumbent actors (DSM). This has relevance for sustainability transitions studies, which have been criticised for focusing too much on regime-niche dynamics, where the regime is sometimes considered one coherent force for stability (Berggren et al., 2015; Mäkitie et al., 2018).

7.3. Solutions

An important reason why it is difficult to introduce destabilisation policies is that such policies can cause political problems. Politicians have many incentives *not* to propose radical policies (Bardach, 1976): The moral burden on government to favour continuity over disruption (threatening people's livelihood) is pronounced, there is a reluctance to go back on previous policies (as Minister Andriessen's unwillingness to retract financial support to coal mines illustrates), and potential reformers are often reluctant to threaten industries if they lack confidence in the available alternatives.

Geels et al. (2017) argue that in the case of phase-out, solutions must include a variety of counter-measures. Policies that countered the negative impact of destabilising the established industries were, in both cases, important to gain support from affected groups. This helped shift the power balance in favour of destabilisation policies. In the example of tobacco control policies in the U.S., this included programmes to provide job opportunities to farmers and those working in the tobacco-growing part of the industry. Furthermore, the case of coal mining illustrates how the legitimacy of solutions can be improved when these are developed in collaboration with trade unions (Johnstone and Hielscher, 2017). This might suggest that a managed decline will be easier in countries where there is a tradition for consensus and collaboration between unions and employers.

The anti-tobacco network actively tried to change the discourse from one that was about the economic impact of regulation to one that was about health. Once more, we can see similarities between the discourse around tobacco control and fossil fuel phase-out (Leipprand and Flachsland, 2018), as groups promoted different narratives concerning the costs of phase-out and the hazards of climate change in an attempt to influence politicians and public opinion. After the publication of the 1964 General Surgeon's report, the narrative promoted by anti-tobacco groups changed several times. In the 1970s, the focus shifted from protecting smokers from harming themselves to protecting the general public from smokers damaging the environment. Arguably, this is also where much of the discourse around fossil fuel is today (Leipprand and Flachsland, 2018). A second change occurred in the 1980s when economic arguments about the cost of smoking to U.S. tax payers received more attention. This is similar to a more recent framing of climate change in which the costs of a managed decline of fossil fuels are argued to be lower than the costs of a delayed, forced decline (e.g. Partington, 2018; Stern, 2015).

Both cases provide examples of how the political context and changing alliances co-evolved with the development of viable solutions to political problems. However, this relationship between structure and agency is different in the two cases. In the tobacco policy case, structural change was a result of strategic behaviour by groups and organisations who succeeded in influencing public opinion and in shifting the balance of power between the pro- and anti-tobacco coalitions. The mine closures in the Netherlands are contrarily an example of how a certain political context provided opportunities for policy-driven destabilisation. However, certain

individuals, in this example, the leader of the trade unions and the Minister of Economic Affairs, exploited this window of opportunity.

8. Conclusions

The starting point for this paper has been that the deliberate destabilisation of established industries will be necessary for accelerating a transition of the energy system. Challenging these industries through policy is difficult and rarely attempted. This paper has sought to understand which conditions this might still be possible under.

I have used a framework that attends to the interplay between an exogenous landscape, the political context and the development of solutions. With this framework, I have explored two cases of policy-driven destabilisation: the U.S. tobacco control policy and the coal mine closures in the Netherlands. By studying the political context in these two cases, I have shown that under certain conditions, opportunities for destabilisation can open up. Studies using the multilevel perspective emphasise how windows of opportunity can open up from changes at the landscape level, often in concert with the development of niches. One challenge with this understanding is that without favourable conditions at the landscape level, it is not easy to see how opportunities may rise since the landscape is considered unmalleable. By focusing on how changes in the political context can also give rise to opportunities for destabilisation, we can say something about how windows of opportunity can be constructed through strategic action. In this final part, I highlight two ways in which this may be achieved.

8.1. Destabilisation requires changes in the mutual dependency between established industries and political and state actors

One reason that it is difficult to challenge the interests of established industries is that these interests tend to be organised in networks in which political parties, unions, business organisations and various state actors have great influence (Geels, 2014; Normann, 2017). Changes in the structure of such networks represent an important condition for destabilisation policies. By drawing on policy process theories such as those found in the literature on policy networks, we might be better equipped to study conflicts, negotiations and power struggles that transcend the regime-niche dichotomy. The political context can be understood as part of, or significantly influenced by, the regime whilst also having a semi-exogenous influence on both the regime and niche levels. It is therefore not obvious how the political context, and in particular, changes in policy networks, fits within the multilevel perspective. Insights from policy network analyses can be helpful in that regard. For instance, network approaches to understanding policy change point to several factors that can contribute to network change, some of which are evident in the cases analysed here. First, changes in government may lead to changes not only in positions on policy issues within the government but also in actors' access to decision makers. Second, within-regime conflicts due to changes in social or economic pressure or from deliberate efforts to change alliances can shift the balance of power between groups. This is well known from sustainability transition studies. However, these changes also occur within organisations such as trade unions, political parties, and large firms, which brings us to the second conclusion.

8.2. Policy networks can change if central actors change their policy preferences

Destabilisation may require altering the networks that entrench fossil fuel dependence. One way in which this can happen is if some actors in those networks change their roles (Kuhlmann and Rip, 2018, p. 451). Trade unions are an actor group that can have a great influence on transition processes. One way in which trade unions can change from a force for continuity to a force for change is through shifting alliances between unions and other stakeholders or through changes in the position of unions over time (Prinz and Pegels, 2018). The central role of unions, as observed in the case of the mine closures in the Netherlands, can be observed elsewhere. The chemicals part of the German Trade Union has been an important ally for the German chemicals industry in their efforts to resist regulations. However, the German Trade Union was divided on the regulation issue when the metalworkers' union (Germany's largest union) took a more positive stance towards regulations (Grant et al., 1988). Similar shifts have been observed within the Norwegian Confederation of Trade Unions on the issue of offshore petroleum exploration (Mortensen, 2017).

One question that arises from this research is how certain characteristics of the political context influence the potential for trade unions to represent a force for change. Possible characteristics include the structure of trade unions and the types of workers they represent (e.g. do different trade unions collaborate or compete?); the relationship between trade unions and political parties in government; the share of the workforce organised in unions, and thus, their likely political influence; and finally, the relationship between business organisations and trade unions. Comparative research on the role of trade unions and their potential participation in deliberate destabilisation in different countries would represent a valuable next step in the research on destabilisation.

There may also be tensions in established firms. If managed decline should be pursued, as it was in the case of Dutch coal, how can this be achieved in cases where industries are not under economic pressure? In answer to this question, Green and Denniss (2018) suggest that policy can be crafted to divide otherwise opposed fossil fuel companies and recruit some of them into the phase-out coalition. In this context, the example of Dutch State Mines suggests that we should look much closer at conflicts and negotiations that take place within large corporations vested in fossil fuels. Many of these firms, such as Equinor and Shell, are also investing in niche technologies, and there are competing visions within these companies concerning how much should be invested in fossil fuels versus renewable technologies. There is nothing deterministic about the outcome of such competing visions (Mazzucato, 2018, p. 280). How factions supporting phase-out within incumbents and in trade unions can be identified and supported should thus be a goal for researchers and policy makers.

8.3. Final reflections

There is no silver bullet for deliberate destabilisation. Pressure from landscape changes is important for opening up opportunities for destabilisation, but such changes can occur in different ways. Moreover, as the tobacco control policy case shows, destabilisation may even be possible without exogenous shocks to the system. It is also important to recognise that the cases analysed represent only two, admittedly very different, examples. However, together with examples such as coal in Canada (Rosenbloom, 2018), nuclear power in Germany (Johnstone and Stirling, 2015), coal in the UK (Turnheim and Geels, 2013), and other phase-out examples that need to be explored, we may start to build a collective understanding of when and how it is possible to deliberately destabilise established industries.

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