

Anti-fracking campaigns in the United Kingdom: the influence of local opportunity structures on protest

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Abstract: Hydraulic fracturing ('fracking') was a controversial issue in the United Kingdom which sparked national and community-led groups to organise protest mobilisations. However, to date, the social science literature has largely focused upon general anti-fracking discourse rather than on the physical, community-led mobilisations that emerged from the frustrations of people directly affected at a local level by threats to their community. The paper develops and applies a novel conceptualisation of political opportunity structures at the nexus of the national and local levels to more fully explore the usually overlooked role of local-level structures in interaction with the national level in shaping protest. It uses protest event analysis with data derived from two key activist-specific sources. The analysis draws on data from over 1,400 protests occurring across sixty-nine counties from 2011-2019. In so doing, this paper observes and accounts for variance in the form and frequency of community-led anti-fracking protest events within and between different areas of England across the life course of the protest episodes. The paper finds that trends in protest frequency and form over time correlate to shifts in opportunity structures, particularly regarding local and national level interaction, and that this can be usefully conceptualised through a local-national-state-nexus.

Keywords: fracking; protest; opportunity structures; local-national-state-nexus; protest event analysis; United Kingdom

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Introduction

Associated with water contamination, air pollution, seismic activity, negative health impacts, and fugitive methane emissions contributing to climate change (Green et al., 2012, Gullion, 2015; Vengosh et al., 2014; Willow et al., 2014), hydraulic fracturing ('fracking') has been subject to moratoria in many European states (Krause and Bucy, 2018). The use of fracking for fossil fuel extraction involves the high-pressure injection of water mixed with sand and chemicals into the ground to break up oil or gas-bearing rock formations (RS and RAEng, 2012; Stephenson, 2015), and was explored in the United Kingdom, albeit with limited success. The UK government's support for

fracking was related to ideas around the industry's potentials for national energy security and self-sufficiency, while reducing consumer costs. It was also advocated as facilitating a shift from coal to renewables with any produced shale gas serving as a transition fuel on account of its relative cleanness compared to more CO₂-intensive fossil fuels (Bomberg, 2015; Cotton et al., 2014).

Given concerns, anti-fracking campaigns and protest emerged across the UK and grew in prominence and radicality over numerous years until the UK government halted the push for fracking in November 2019 before any extensive development was realised (Ambrose, 2019). This decision thereby followed those already taken by devolved authorities in Wales, Scotland and Northern Ireland. The campaigns that occurred in England, however, received relatively little attention from social movement scholars.

This paper addresses the gap on England-based anti-fracking protests, offering an account of community-led responses to the industry. Accordingly, we address two questions: to what extent did community-led anti-fracking protest form and frequency vary over time and place?; and, how can a combined local-national political opportunity structure model help explain such variance? This model attempts to understand the interactions between national opportunity structures and the influence of local authorities plus associated planning processes on the shape, form and frequency of anti-fracking protest. It brings to the fore the notion of the 'local-national-state-nexus' (LNSN), which conceptualises the potentially difficult yet overlooked interactions between local and national government in relation to anti-fracking campaigns.

Following Doherty et al. (2007), we employ a protest event analysis approach drawing on activist-specific sources and focus on three case areas, namely Lancashire, North Yorkshire and South Yorkshire. Note that we adopt the terms 'protector' and

‘protection’ because these were frequently used self-referentially by campaigners, avoiding the negative connotations of more commonly used terms like ‘protestor’ (Steger and Drehoibl, 2018). More specifically, we use the term ‘protector’ to refer directly to local residents who became engaged in community-oriented mobilisations against fracking. The three case areas were chosen because they shared a high degree of protest and similar place characteristics, but had different experiences with fracking developments, including through the planning process where national and local authorities sometimes reached opposing decisions.

Through this, we show that the form and frequency of community-led anti-fracking protest varied notably across place and in response to the changing national and local political contexts within which they were situated. We further suggest that an opportunity structure focus can account for the shifts in protest witnessed, while contributing positively to our understanding of anti-fracking campaigns. This is argued to be especially the case when looking at local level structures in conjunction with the national through the LNSN; an aspect under-theorised within existing social movement literature. To this end, a model emphasising the LNSN role is developed.

The paper proceeds as follows. First, the UK fracking context is presented alongside a review of literature concerned with the anti-fracking campaigns witnessed in the country. Second, the theoretical approach will be discussed and the LNSN model introduced. Methodological considerations follow and precede the presentation of the data for the case areas, plus the main analysis. Conclusions are drawn in the final section.

UK fracking context

From the Coalition (2010-15) and continuing under the Conservative governments of Cameron and May, the UK government originally promoted fracking on economic, security and energy transition-related grounds (BEIS, 2019; Rudd, 2015). Interestingly, however, devolved authorities in Scotland, Wales and Northern Ireland passed moratoria on fracking as early as 2015, with the Scottish government instigating what it referred to as an ‘effective ban’ in October 2017 (Scottish Government, 2017). As such, England, and particularly the north, became the main focus for fracking with exploration licences granted in multiple counties from 2015. Planning permission was also granted from this point, including for a notable development site in Lancashire, which belonged to the prominent UK-based oil company, Cuadrilla, with local authorities being the primary determinants of applications within their area under the English planning system.

Let us first elaborate on the intersection of local and national decision-making with regard to fracking approval. Although local government approves or rejects applications for the physical undertaking of a development following open consultations through the planning process, the Oil and Gas Authority (OGA) must have first awarded licences to firms. These licences provide firms with permission to conduct environmental and other surveys to assess the land, development potentials and risks. The OGA is also involved in the regulation and monitoring of developments, similarly to the Health and Safety Executive which observes risk-mitigation efforts across a development’s life. Meanwhile, the Environment Agency must also assess environmental and health impacts before development, supplying permits allowing work where deemed appropriate. These licences, permits and any land survey results provided by the development company open the path into the planning process, and

feed into local government's subsequent decision-making although, as demonstrated later, their decisions may still be overridden by national authorities.

Relating to this context, the current anti-fracking literature has three main foci: exploring public perceptions; discussing the motivations of anti-fracking mobilisation participants; plus, policing and distrust. Despite the fact that these branches of literature overlook the nature of protest cycles in community-led protection, they do provide an understanding of dominant discourses within the anti-fracking debate. In studies of UK fracking discourse, for instance, Bomberg (2015) and Cotton et al. (2014) (similarly, Neil et al., 2016; Williams et al., 2017; also Howell, 2018; O'Hara et al., 2013) identify both industry proponent and opponent viewpoints. Analysing news media to observe government, NGO and industry perspectives, they find that risk forms a key area of contention with the UK government arguing that fracking is safe and well-regulated. Others, meanwhile, emphasised links to various associated threats; themes commonly found in the wider literature (Willow et al., 2014).

However, concerns were not just about the environmental impacts of fracking, but also surrounded the social and political landscape. Bomberg (2015) thus discussed a 'bad governance' frame within anti-fracking discourse based on a broad analysis of newspaper, industry, government, NGO and community group statements. Here, debate shifted to incorporate governmental decision-making procedures. Consequently, a perceived lack of accountability and transparency from authorities over fracking and towards affected communities was raised, with an absence of a social licence observed for Cuadrilla's activities in Lancashire (Bradshaw and Waite, 2017).

Similarly, through planning process involvement in Lancashire where the county council rejected applications for two fracking sites in 2015, only for one of these

decisions to be overturned on appeal by the UK government,¹ residents' discourse frequently conveyed feelings of powerlessness as their concerns were seemingly dismissed by ministers (Short and Szolucha, 2017; Szolucha, 2016). The bad governance frame was, therefore, introduced into local discourse with one group issuing a statement provocatively entitled 'local democracy is dead' in response to the UK government's decision (PNRAG, 2016). This arguably ran counter, then, to the government's concurrent 'localism' agenda emphasising decentralisation and greater community participation in decision-making, including in planning (Cotton et al., 2021; Hawkins, 2020).

Moreover, when locals have subsequently participated in protest, like in Lancashire, they have reported police actions to be excessive, intimidating and, for female protectors, sexualised (Szolucha, 2016). Similar findings were presented by Gilmore et al.'s (2017) study of police tactics around a protection camp at Barton Moss, Greater Manchester, in 2014. The authors argue that newer rights-sensitive dialogue approaches to policing protest through establishing communication with protectors was used to legitimise older, more coercive policing methods. These took the form of mass and pre-emptively targeted arrests with bail conditions including exclusion zones around the camp and development site; the latter intended for exploratory drilling to evaluate resource presence without fracking.²

These studies demonstrate that, alongside industry-associated risks, the presence and policing of fracking in England created an 'atmosphere of conflict, distrust and intimidation' (Szolucha, 2016, p. 76). These observations regarding community distrust and injustice are reemphasised by recent work from Short and colleagues (2020). They further noted how this relates to local democracy, defined as community voice and knowledge representation in governance, with mention of tensions between local and

national levels, including from the UK government's contradictory pro-fracking and pro-localism stances.

However, while these insights contribute to a contextual understanding of anti-fracking protest, questions remain about how we can specifically understand the campaigns and their variation across place. This is underlined by Short et al. (2020, p. 2) who maintain that literature concerning physical anti-fracking protest mobilisations 'remains under-developed'; they themselves only re-stating the limited findings made by others. With this in mind, a theoretical framework suggested to be complementary for movement studies will now be detailed.

Opportunity structures and the local state

While social movement theory represents a vast literature, we are interested in perspectives offered by political opportunity scholars. Under this approach, attention turns to the political environment within which movement groups emerge and operate, emphasising a state's degree of centralisation, separation of powers, and the presence of elite allies or divisions (Tarrow, 1998; Tilly, 2006). Scholars such as Kriesi et al. (1992; Van der Heijden, 1999) have consequently discussed the 'open' and 'closed' structures influencing movement activity. The latter suggests that movements adopt confrontational protest forms like direct action given an unresponsive and potentially repressive government. Whereas movements may pursue more integrative strategies to raise grievances (i.e., petitions) in open structures characterised by receptive governments and (in)formal channels of access to decision-makers.

A similar conceptualisation from Kitschelt (1986) further distinguishes 'input' and 'output' structures, where the former concerns the extent to which movement actors are incorporated into policy-making and the latter the ability of government to

implement decisions. In short, POS literature holds that the nature of a polity and its degree of receptiveness to campaign demands influences the form protest events may take.

POS has been criticised for numerous reasons, however, including conceptual stretching in which myriad factors become subsumed under the language of ‘political opportunities’ and ‘structure’. Structure, for instance, has somewhat confusingly included both stable and frequently changing aspects such as electoral systems vis-à-vis elite alignments and the government of the day’s policies (Saunders, 2013; Tarrow, 1998). Moreover, through exhibiting structural bias, critiques also highlight limited considerations of movement actors’ agency and emotion, which could also influence activism (Goodwin and Jasper, 1999). Importantly, for this paper, POS approaches have often neglected local contexts and the roles these could play in relation to national-level structures and protest mobilisation, too. Nevertheless, with clear conceptual definition POS can facilitate understandings of institutional event or actor roles in relation to protest.

While many POS studies focus upon national structures, we are particularly interested in examining the ‘local’, too; defined through the notion of the local state. This concept, elaborated upon by Magnusson (1985), focuses on government bodies that are both situated within and directly concerned with a local area. Additionally, the local state highlights the relationship between local and national levels, forming one area of possible conflict over where respective jurisdictional boundaries lie. Varying across place, the local state contributes to a LNSN notion which elaborates upon how local and national government structures interact and the consequences this may hold for protest.

Previous UK-based movement research has also indicated the significance of local authorities as key actors, including in the planning process through their powers to determine applications. For instance, in studying the 1990s anti-roads movement, North (1998) discusses how, following years of public consultation, it was only after the planning process closed and democratic channels deemed exhausted that local campaign groups adopted direct action. Similarly, Saunders (2007) found that greater collaboration between residents' and radical groups began once the local opportunity structures around the construction of a cinema multiplex in London were perceived to have closed, developing more visible protest strategies as a result.

Note here our study's emphasis on *community protectors*. Our work makes a novel contribution to the literature because these are very different actors from the stalwart activists usually written about in relation to direct action protest. Stalwart activists adopt a taste for direct action protest due to disillusionment with conventional repertoires, or as part of an anarchistic or anti-capitalist stance. Community protectors, in contrast, are interested to protect their local communities.

Appearing as significant, the local level forms a central aspect of this paper's LNSN conceptualisation, with anti-fracking campaigns providing a useful focus through which to demonstrate its importance. The main theoretical expectation is that in addition to national-level opportunities and constraints, the local state and, specifically, changes in the planning process as a key local-level input and output structure will influence the form and frequency of protest.

Within this, there are four hypothesised situations which reflect POS on national and local levels simultaneously. First, when the local is open but national closed, the adoption of more integrative strategies to influence local authorities is expected. Despite

national closure, local authorities remain the primary determinants of planning applications and their openness to movement engagement provides campaigns with an opportunity to prevent developments like fracking when planning processes are ongoing. However, where national authorities use their powers to override local decision-making, there is the possibility of a second situation occurring in which national and local POS are both closed, with this closure extending also to planning processes. This thereby creates the potential for the uptake of a greater number of confrontational actions as integrative pathways decline.

The third situation includes contexts with local closure and national openness. Here, integrative campaign actions focused on national-level representatives (such as MPs) or bodies would be expected, with these aiming to secure national authority pressure upon local governments to change course. The final context sees openness on both levels. Campaigns may thus reasonably expect to be heard and so feel able to persuade through argument and conversation rather than confrontational actions.

These situations also demonstrate the LNSN concept in which national-local tensions and conflict could be observed. For instance, closure on both levels might represent decision-makers' common platform, as could relate to shared political party memberships, and so indicates a lack of conflict between national and local structures. Local openness and national closure, by contrast, may indicate a context in which competing political interests or affiliations are at play between the two levels. This creates a point of tension between them, which could lead to a closure of local POS following national-level intervention, with implications for protest campaign strategies. These configurations thereby highlight how national and local POS can interact under the LNSN, and how this could subsequently influence movement activities.

By way of formally conceptualising these interactions, Figure 1 presents a model which gives greater attention to LNSN. Reformulated from Kriesi et al. (1995), national-level POS components interact and influence authority responses to movements. Institutional structures refer to input and output structures, plus whether a state is weak or strong. Political conflicts, or ‘cleavage structures’ in Kriesi’s language, relate to socio-cultural divisions such as over religion or labour which can influence the space available for environmental and similar ‘new’ movements to emerge. Prevailing approaches concerns authorities’ strategies when dealing with movements, which can be integrative and facilitative or exclusive and repressive, while elite divisions and allies represent a more changeable aspect as shifts in political alignments or participatory processes open new possibilities for movements in the short-term. The interaction of these components informs the range of opportunities and constraints presented by the national level.

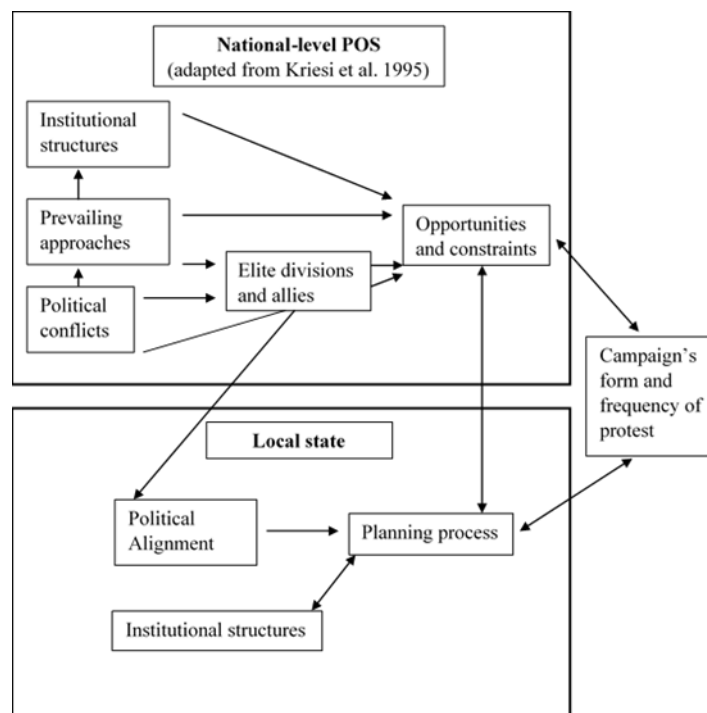
As proposed, key to the LNSN is the planning process which is informed by national-level frameworks and considered here to represent an important input and output (‘institutional’) structure for local authorities dealing with development. As suggested by the data below, the planning process and its outcomes can influence the form and frequency of protest, but may result in further involvement from national authorities where decisions run counter to government policy, hence the link back to the national level.

Political conflicts, elite allies, divisions, and prevailing approaches here included as ‘political alignment’ exist in the local state, and party politics can play a role. This could be perceived when North Yorkshire’s Conservative-led council followed the Conservative UK government’s policy on approving fracking, while Labour’s

Lancashire and South Yorkshire councils rejected fracking proposals; decisions overturned by the national level.

Finally, campaigns are influenced by both national and local structures; their activities further feeding back into the planning process and local state when open to participation, or contesting outcomes when closed. It also links back to national authority reception with, for example, increased non-conventional actions in Lancashire being met by greater and, for some, excessive policing (Szolucha, 2016). Similarly to Kriesi et al.'s (1995) model, while ours may not be appropriate in every context, it still indicates in a formal manner how the LNSN can be important for movement studies whilst providing a point from which further theoretical development around the local state's role in protest could – and arguably should – depart. Before model usefulness is explored, data collection and methodology will be discussed.

Figure 1. Model demonstrating the LNSN in relation to protest.



Methods

To test expectations around the role of the LNSN, a protest event analysis (PEA) was adopted to understand differences in UK-based anti-fracking actions. PEA is a content analysis method which helps identify variations in protest over time and across spatial scales according to event frequency and form (Olzak, 1989), and has been employed in POS studies to gain insights into protest. Rootes (2003), for instance, traced instances of UK environmental protest from 1988 to 1997, relating changes in action to shifting opportunities throughout Thatcher's premiership. This included the legitimacy she gave environmental issues and subsequent failures to meet expectations, accompanied by a perceived unresponsiveness toward movements. Further, Kriesi et al. (1995) used PEA to inform a detailed conceptualisation of POS regarding various western European movements' mobilisations, which were shown to differ according to national opportunity structures and movement types.

While these studies help us understand why differences in protest form and frequency have occurred through their distinctive focus upon national-level structures, they also hold little or no consideration of local contexts. It is building from this, and on Kriesi et al.'s (1995) national level conceptualisation, that this paper's model was developed.

Here, data was drawn from event calendars advertising campaign activities by month as provided by Frack Off (2015), a nationwide network facilitating anti-fracking mobilisations which listed over 200 affiliated local groups, and Drill or Drop (2019), an independent online news website focused on UK fracking protests.

It is common to find PEA studies using mainstream media instead (Earl et al., 2003; Fillieule and Jiménez, 2003; Kriesi et al., 1995). Consequently, efforts have been

made to identify different types of bias present within these sources and how they may affect data. As a result, two main types are discussed: description bias, affecting the way events are reported, including through the omission of facts like protest size; and selection bias, influencing event coverage with a greater likelihood that larger, more violent or novel protests are reported over smaller actions (Fillieule and Jiménez, 2003; Koopmans and Rucht, 2002).

Alternative data sources like activist materials can be used, however, as Doherty et al. (2007) showed regarding UK-based environmental direct action. Noting that these sources also retain bias, they argued that they still formed the most comprehensive account of direct action across their cases. This reasoning is followed here as the sources are not a complete account of protest, yet are directly concerned with fracking activism. They should, therefore, provide greater and more varied insights when compared to mainstream media.

Issues found with the event calendars included the underreporting of direct action and protection camps; the same being true of planning objections. For the former, underreporting may relate to direct action's spontaneous, possibly illegal nature. However, campaign websites and local online newspapers provided supplementary reports of direct action and camps which are complementarily considered alongside the formal PEA data. Again, while they did not capture every protest event, the calendars represented the most informative source available for understanding anti-fracking activities.

With interest in a wider range of protests beyond large-scale demonstrations or direct action, we define 'protest events' as activities involving one or more people and claim-making against some aspect of fracking. Based on the sources' event recording,

the same protest occurring on successive days was counted as one instance of protest. To capture variation between places and develop ideas around the local, events which were part of nationwide actions were counted as separately for each unique county similarly to Fillieule and Jiménez (2003) and Kriesi et al. (1995), but differing from Doherty et al. (2007) who coded these as one event on networking-related grounds.

Five event categories were subsequently defined, namely: (1) procedural (litigation, petitions and planning objections); (2) awareness raising (public information events, film screenings); (3) demonstrations (marches and rallies); (4) direct action; and, (5) protection camps.³ To aid comparison, categories were further understood as representing conventional (procedural and awareness raising activities) or non-conventional actions (demonstrations, direct action and camps). This language was adopted from relevant PEA literature and based on our interest in analysing LNSN's influence on the adoption of integrative (conventional) or confrontational (non-conventional) protest repertoires (Koopmans and Rucht, 2002).

The time period examined extended from October 2011, both the earliest available date and the year the first UK test fracks for shale gas occurred in Lancashire,⁴ to 6 March 2019, the last date available from the calendars. Here, the Frack Off calendar became redundant after May 2017, while Drill or Drop remained consistently informative up until 2019, when updates to this site's calendar also ceased. This period nevertheless covers initial attempts to introduce the industry with numerous planning applications and increased awareness of fracking nationally, the subsequent campaign peaks, and the decline in activism following industry delays and withdrawals.

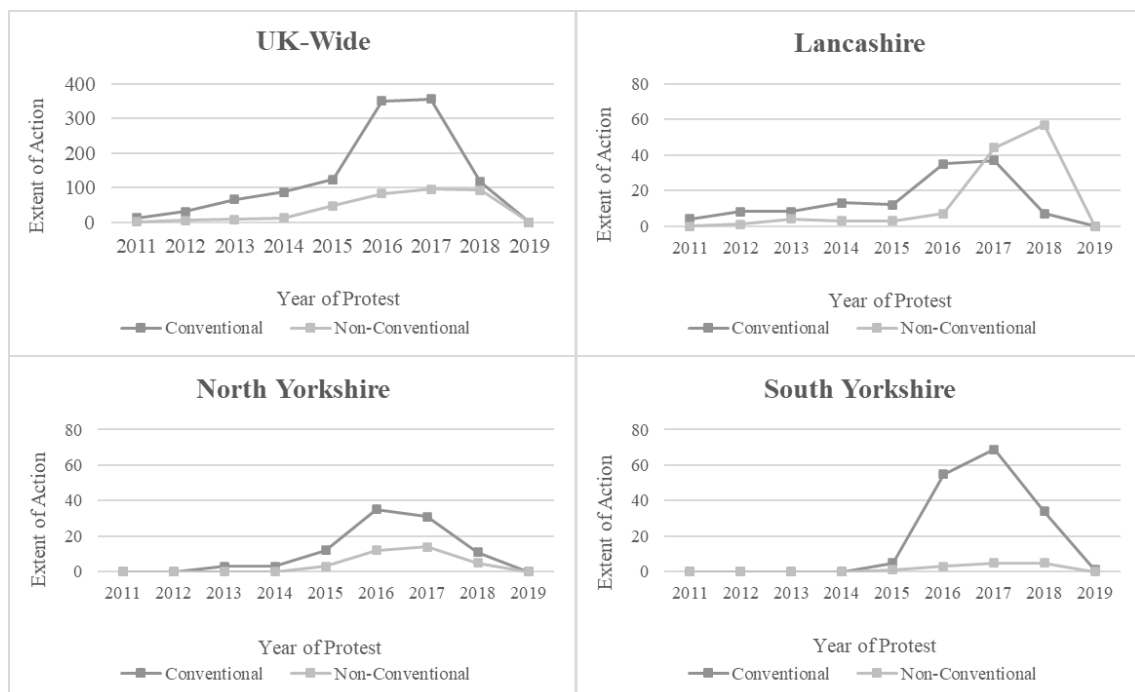
From this, 1,472 protest events from sixty-nine counties across the UK were counted, seventy-six percent (n=1,123) being conventional and the remaining twenty-

four percent (n=349) being non-conventional. Thirty-two additional events were found from unspecified locations, four being non-conventional. As it remains unclear where these additional events were organised, they were omitted from the data. We now present our protest event analysis in the form of trend lines with a commentary about their relationship to observable shifts in the LNSN.

Presentation of data

The trends from three specific case counties, namely Lancashire, North Yorkshire and South Yorkshire, will consequently be considered (Figure 2).

Figure 2. Forms and frequencies of anti-fracking protest by year across (*left to right*): the UK (n=1,472); Lancashire (n=243); North Yorkshire (n=129); South Yorkshire (n=178).



A notable feature presented by the data is that of a peak in conventional and non-conventional action in 2016-17; a trend also reflected by the aggregated UK-wide data. This, we suggest, reflects an increased awareness of fracking following the 14th Onshore Licensing Round which saw licences for oil and gas exploration awarded across the UK in December 2015 (OGA, 2017). Once the OGA granted licences, companies could apply for required permits and planning permission in order to start developing the licence area. As a result, fracking-related planning applications were possible for companies and were consequently submitted to some local authorities in 2016.

To illustrate and understand this data, we turn attention to three case counties which shared a high level of protest and similar place characteristics. They also exhibited key differences in protector experiences of the local state through the planning processes. Again, these are Lancashire, North Yorkshire and South Yorkshire. Together, they account for thirty-seven percent (n=550) of recorded protest events, a breakdown of which is provided in Table 1. They are each considered in turn.

Table 1. Event type and count by case.

Action Type	Lancashire	North Yorkshire	South Yorkshire
Conventional			
Procedural	9	3	0
Awareness raising	115	92	164
	(n=124)	(n=95)	(n=164)
Non-Conventional			
Demonstrations	116	33	14
Direct action	2	0	0
Protection camps	1	1	0
	(n=119)	(n=34)	(n=14)
Total	243	129	178

Lancashire

Lancashire, in northwest England, is a largely rural county with this general characteristic shared by the Fylde Borough, the centre for fracking developments. The industry was particularly active here, with fracking tests occurring in 2011 and two sites proposed a few years later. With UK government permission in late 2016, Cuadrilla's Preston New Road (PNR) site, intended to comprise four wells and use fracking to assess the commercial viability of shale gas, underwent construction from January 2017 with the drill rig arriving in July. Fracking commenced at the site in October 2018 – the only occurring in the UK – but underwent a temporary pause following a number of associated tremors, in line with regulation (Vaughan, 2018b). The other proposed development, similar to PNR and in nearby Roseacre Wood, was rejected by local and UK governments although the latter initially indicated support should traffic management concerns be sufficiently allayed. Corresponding with this history, Lancashire witnessed anti-fracking protests from 2011 with increased frequency through subsequent years.

Regarding protest form, the PEA demonstrates a mixed campaign where once predominating conventional activities were coupled with non-conventional actions, which increased notably in 2017-18. Among these events were two judicial review cases concerning PNR's planning approval. These were taken to the High Court by local anti-fracking groups, with Friends of the Earth (FoE) also represented, and argued against fracking on emission, climate and localism grounds. In 2017, the court ruled in favour of the UK government's approval decision. Indeed, judicial review has been discussed as offering only a limited pathway to challenge fracking decisions that are largely expert-led and beyond the court's remit to question in the absence of clear procedural wrongdoing (Hawkins, 2020).

Beyond litigation and planning process engagement, numerous demonstrations occurred, some boasting attendance in the hundreds. While local campaigns were predominantly active in these, and notably the Frack Free Lancashire coalition of residents' groups which further partook in actions beyond Lancashire, national groups including FoE, Greenpeace and the Green Party, alongside radical direct action groups like Reclaim the Power, were present. Focusing upon the county council during its original decision-making on fracking, campaign activities shifted focus onto PNR, Cuadrilla and the UK government once planning permission was granted.

One instance of direct action from Table 1, Reclaim the Power's 'Break the Chain' fortnight of action from 27 March 2017, involved an intense protest period with activities counted as one event according to their reporting in the consulted sources. Aiming to disrupt supplies to PNR, unrecorded individual actions spilled over county borders, seeing the entrance to a Manchester-based contractor depot blocked by protectors using arm tubes for seven hours, with similar occurring at another depot in Derbyshire and an industry-linked PR firm in London. Within Lancashire, protectors

from another direct action group, Bristol Rising Tide, obstructed a quarry's entrances by hanging from the height restriction bars for eleven hours. After targeting contractors, some firms reportedly terminated contracts with Cuadrilla, indicating success for campaigners (Hayhurst, 2017).

While underreported in the PEA, many reports of direct action were still discovered through supplementary materials. For example, lorry surfing occurred in which protectors climbed onto vehicles delivering supplies to PNR, including an 80-hour action in July 2017. Additionally, the site entrance had been blockaded by protectors through lock-ons, where participants attach themselves to fences or equipment using bike chains or similar, including by Greenpeace members in May 2017 and four individuals two months later who locked-on to cars parked across PNR's gates. Cuadrilla's previous sites were also targeted, including by Bristol Rising Tide and Frack Off members in separate actions in December 2011, with small groups accessing the site and attaching themselves to equipment.

For protection camps, which were also underreported, two short-lasting camps were established in late 2014, respectively by residents and Reclaim the Power. In response to construction beginning at PNR, two further camps were created in early 2017, providing a base from which protectors maintained their presence at the site.

As a case, Lancashire witnessed the greatest industry development met with significant protest dating from 2011. While groups including FoE and Reclaim the Power were involved in protest, a key feature was the local campaign groups, which took active and leading roles within and outside the county through a mixture of action forms. What was also particularly interesting about the Lancashire context were

planning-related experiences with the county council's rejection of planning permission overturned by the national level, despite the latter's concurrent promotion of localism.

North Yorkshire

Similar in its rurality to Lancashire but in the northeast, North Yorkshire boasts a heritage coast, multiple national parks and Areas of Outstanding Natural Beauty, some of which were close to Third Energy's former site – KM8 – near the village of Kirby Misperton. KM8 intended to use fracking to test the commercial viability of local shale gas through one vertical well, with planning permission granted by North Yorkshire County Council in May 2016 (Third Energy, 2015). However, given administrative delays, the company halted KM8 operations in February 2018 and moved equipment off-site before the moratorium in England (Third Energy, 2018).

In response, the nearby protection camp established a year before (yet unreported through the PEA) was dismantled. This camp was associated with other events, including multiple demonstrations at the site gates with a Green Party co-leader involved on one occasion, alongside direct action in which three individuals climbed the on-site drill rig and remained overnight in October 2017. Mass arrests were reported in response to some of these actions around KM8 (Short et al., 2020). Other protests occurred outside the local MP's constituency surgery and a venue where another firm, INEOS, were giving a presentation to local councillors. One demonstration was also held outside the district council offices during a planning committee meeting.

Regarding conventional actions, a prominent local campaign group in conjunction with FoE appealed for a judicial review of North Yorkshire County Council's planning approval on grounds largely reflecting those in Lancashire. Heard in the High Court in 2016, the original approval decision was again upheld.

North Yorkshire, therefore, witnessed similar industry and, to an extent, protest activity to Lancashire with sites in each area intending to assess shale gas potential through fracking. However, substantial differences were found in local decision-making with the Conservative-led county council in North Yorkshire granting planning permission unlike their Labour-run counterparts in Lancashire, hence why they are interesting cases for comparison.

South Yorkshire

Finally, and also in northern England, South Yorkshire shares some of the rurality demonstrated by the other cases coupled with larger urban centres such as Sheffield and Rotherham. Here, anti-fracking campaigns appeared to have started early with a notable increase in protest events, rising sharply from six in 2015 to fifty-eight the following year. While the 2016-17 peak is a common feature, planning applications were not immediately forthcoming in the county, although they were expected. INEOS submitted its first application to Rotherham Metropolitan Borough Council on 30 May 2017 for exploratory drilling to assess shale gas potential around the village of Harthill (INEOS, 2017a). They further expressed interest in undertaking similar activities near Woodsetts, another village just east of Harthill and south of Rotherham (INEOS, 2017b).

It was clear that local campaign groups emphasised conventional actions, with these being the most frequent alongside a small number of demonstrations. Here, it is interesting that awareness raising events were predominately information presentations targeting town and parish councillors. This suggests that local protectors were actively engaging not only with other residents, but also with the various levels of local government which play a role within the planning process. This could, therefore, account for the lower number of non-conventional actions when compared to other counties.

Moreover, Rotherham council rejected the Harthill and Woodsetts' planning applications in early 2018, allaying the need for non-conventional protest since the local state's openness in planning concluded favourably for protectors. The council, to note, was Labour-led, and so again links to national-local tensions and interactions which inform the opportunities for different protest forms. However, shortly afterwards the UK government's planning inspectorate granted permission for Harthill. Challenged unsuccessfully by residents in the courts, the site was nonetheless delayed again in 2019 as Rotherham council was required to determine traffic management plans with public consultation before site construction, thus retaining local state openness despite national intervention. Furthermore, unlike the two prior cases, there was little involvement of external campaign groups within the county and vice versa, resulting in a very localised community-centred campaign.

To summarise, despite a comparatively late prospect of fracking, there were still a significant number of protest events held in South Yorkshire. Here, conventional actions numbered higher than in Lancashire where the industry and campaign were more prominent for a longer time. South Yorkshire thus forms a third useful and illustrative example. A more formal case comparison will now be provided, including the application of the LNSN conceptualisation.

Discussion

Looking at Figure 2, 2016-17 presented itself as a peak for protest events in the case counties and the UK as a whole. Lancashire, notably, also saw non-conventional actions peak in 2018. This was influenced largely by the reporting of re-occurring demonstrations planned on a roughly weekly basis at PNR. Nevertheless, figures for North and South Yorkshire, plus the UK, demonstrate declining actions from 2018. Despite source materials ending by early 2019, this trend did seem likely to continue,

including for Lancashire's non-conventional actions which became progressively absent from the source material. This indicates a general anti-fracking campaign slowdown in England.

Overall, therefore, three core phases can be identified. The first, pre-2015, was where awareness and protest was limited; but Lancashire slightly differing because of its longer fracking history. However, the fracking debate ignited across contexts from 2015 and coincided with a licensing round for fossil fuel exploration; when some licences were acquired by firms with fracking interests.

This marks the second phase's start when nationwide protests increased significantly; peaking in 2016-17. These years witnessed significant, intensive and ultimately successful community-dominant campaigning in Lancashire against PNR. Around this time, site developments and/or proposals also came to the fore in other English counties like North and South Yorkshire.

The third phase appears to follow industrial slowdown and withdrawal from sites like KM8 in 2018, alleviating the urgency and perceived fracking threat previously experienced within case counties. Correspondingly, a general decline in anti-fracking protest frequency, conventional and non-conventional, was witnessed as campaigns began to slow in light of industry delays and a UK government shift of emphasis away from fracking, culminating in the 2019 moratorium. This was underscored by the end of the data sources which were consistently updated until, in Drill or Drop's case, March 2019.

It is possible to see these three phases in the life of the predominantly England-oriented anti-fracking movement as corresponding to national-level POS. Here, raised awareness and place-specific 'threats' followed the UK government's known intention

to facilitate the industry domestically. Without a devolved executive, which could decide not to share this policy programme, England became the core development and protest focus. The ensuing years witnessed peak campaigning activities until developments were successfully delayed, with firms halting operations at sites like KM8. After this, campaign frequency reduced.

Regarding POS in general, it appears that the UK government reflected what Kriesi et al. (1992) conceptualised as ‘full exclusion’. That is, the government remained closed to anti-fracking campaigns and their concerns, actively promoting and supporting fracking including by overturning local authority decisions counter to their localism agenda.

While this ability to implement policy or, to adopt POS language (Kitschelt, 1986), the government’s output structure could be understood as strong, it simultaneously appeared relatively weak. To elaborate, while they possessed abilities to overturn local government decisions running counter to national policy, before the 2019 moratorium there was no successful nor continuous fracking in the UK, whether at exploratory or production stages, despite UK government promotion since 2011.

This policy shift could directly relate to anti-fracking movement intensity within (and beyond) affected communities which prevented the realisation of UK government and industry plans for onshore fracking. This indicated that movement activities were not only influenced by national-level POS, but fed back into policy-makers’ decisions; a dynamic captured within Figure 1.

Seeing the UK context in this way helps account for the limited conventional engagement that campaigns in England sought with national authorities and MPs, as indicated by the PEA. Instead, non-conventional actions appeared predominant when targeting the industry and the UK government’s position. Lancashire prominently

exemplified this since the campaign was active in planning processes and attempted to engage with local councillors largely through conventional means. However, while ongoing public consultations represented an open opportunity structure, when the UK government followed its pro-fracking stance and overruled Lancashire County Council's PNR planning rejection, these structures closed to protectors. This marked a point where the county council lost voice in the fracking debate, reducing the efficacy of conventional actions and contributing to increased non-conventional protest around PNR.

A national-level POS explanation of the protest phases therefore remains insufficient to capture the differences between the case counties' campaign forms and frequencies. Shifting attention to the LNSN is consequently valuable. We argue that the local state's explanatory value facilitates our understandings of the anti-fracking movement's life course in England. Specifically, by drawing explicit attention to local *and* national structures, as well as the relationship between them, planning processes can be conceptualised as one area where conflict can emerge between these two levels concerning their respective agendas, interests and decisions. This was witnessed in Lancashire, and the two-way links between national structures, planning processes and political alignments in Figure 1 represents this. Lancashire's experiences regarding the local state and its position against the national level would seem also to speak to ideas captured by Bomberg's (2015) bad governance frame, exemplified through statements that 'local democracy is dead'.

Resultantly, it further appeared as though the interaction of these opportunity structures influenced the forms protest events took, with observable shifts from conventional actions during consultation stages to more non-conventional methods when formal grievance-raising channels closed. In other words, a change of movement

strategy followed the changing POS configurations due to local state conflict, with Lancashire initially presenting an open local, yet closed national situation, with this replaced by a closed local and national context following the intervention of the latter. This finding thereby echoes those of North (1998; similarly Saunders, 2007) where anti-roads campaigns adopted confrontational strategies once planning processes concluded in favour of development, and additionally supports some assertions of POS scholars.

The idea that protectors perceive local authorities as more open and receptive to campaigns is supported by the South Yorkshire case. Here, conventional actions dominated with little outward protest, with information events and meetings with local councillors being notable among the 164 awareness-raising activities recorded through the PEA. Among the examined counties, it is South Yorkshire where no fracking site was constructed despite an overturned application rejection. Indeed, planning processes remained open since important aspects to site construction still required approval from local government. These concerned traffic management plans and, as before, a period of public consultation was required. This county therefore represents an open local but closed national POS configuration following the theoretical conceptualisations offered earlier, with these expected to encourage predominantly conventional protest like that seen in South Yorkshire.

While local authorities' decision-making against fracking was overturned on the national level in Lancashire and South Yorkshire, but site construction still pending local decisions in the latter, North Yorkshire represents a third distinct context where the county council granted permission for fracking. This signalled a closed local and national context, related here to political alignments, in which confrontational strategies were expected under the LNSN notion developed within this paper. Regarding protest, and alongside targeting the site, a number of demonstrations targeted the county council

after its planning consent, one of which boasting a reported attendance of around 2,000 individuals.

Based on the PEA, it therefore appears that while sharing similar protest forms with Lancashire, in a context where the main local authority responsible for planning granted permission and local POS shifted to a closed system, an uptake of more non-conventional methods subsequently occurred with the council among the targets.

The three cases' differing planning decisions could be captured by introducing political alignment into the local state framework, through which local political parties follow national branch policy preferences. This opens a possibly tense and conflict-associated linkage with the political dimension of national-level POS concerning divisions and allies (Kriesi et al., 1995). Again, North Yorkshire council possessed a Conservative majority, thus reflecting the nationally-governing and pro-fracking party. Lancashire and South Yorkshire were held by the opposition Labour party which called for a national-level moratorium a few months after PNR's 2015 planning rejection. This opposition was re-stated within Labour's 2017 election manifesto; a position then shared by the Liberal Democrats. The Conservative party, meanwhile, still remained pro-fracking under May despite the anti-fracking campaign peak of 2016-17 (Williams et al., 2020).

In sum, county-specific campaigns revealed a clear favouring of conventional actions in South Yorkshire which attempted to engage with councillors and planning processes when fracking applications were forthcoming or under continued deliberation. In Lancashire, we observed how emphasis was placed on non-conventional targeting of PNR following the UK government's overturning of local authority decisions, with local campaigns proactively involved in planning processes beforehand. Finally, once

the planning process had closed and Third Energy granted approval from North Yorkshire County Council, campaigns similarly adopted more non-conventional actions targeting the industry, UK government and Conservative local authority alike.

We therefore suggest that opportunity structures, and particularly the LNSN, seem to have played an important role in protest form adoption and its timing, corresponding broadly with planning processes. We further argue that the local state concept is of particular interest, enabling us to consider POS simultaneously on national and local levels, providing opportunities to examine the relationships between the two on controversial issues like fracking where respective concerns and interests may not be compatible. Understanding that this relationship can include conflict over authority boundaries, we finally propose that planning processes can and have represented a key area of local state conflict and provides a good indicator of which protest forms were adopted by anti-fracking campaigns in England.

Certainly, the case counties reflected two of the expected situations presented through the LNSN concept regarding the influence of openness and/or closure on national and local levels. While the remaining two situations concerning open structures on both levels, or closure on the local against national openness were not encountered, these provide interesting theoretical circumstances which future studies may wish to test.

Moreover, in relation to the four theoretical expectations presented by this paper, it is interesting to highlight how campaigns remained community-led while local structures were open, with national group involvement notably commencing after local-level closure. With their involvement missing in South Yorkshire, groups such as FoE, Greenpeace, the Green Party and Reclaim the Power were witnessed partaking in

conventional actions against pro-development planning decisions (like FoE), and non-conventional protest at PNR and KM8 in a context of full national *and* local closure. This consequently underscores again the influence that the LNSN can hold for movement strategies.

Conclusions

To conclude, fracking was a recent and controversial issue in the UK, resulting in widespread protest over numerous years, especially within England. Through a PEA approach drawing on fracking-specific sources and supplementary materials, we demonstrated the forms and extent of these activities in Lancashire, North Yorkshire and South Yorkshire. Notable variation around protest events was found between different counties at different times, and this arguably relates to the changing opportunity structures experienced in each case.

The findings seem to support long-standing assertions that open structures influence the adoption of conventional actions, while closure at national levels invites more non-conventional repertoires. However, we propose that adopting an approach considering variations in these structures simultaneously on a local level through the LNSN concept provides an interesting and relevant means to examine protest. As such, and reflecting case experiences, an indicative model which formally conceptualises and situates the local state within a POS framework has been developed and could provide a meaningful, nuanced basis for further studies of local structures in relation to protest and the national level.

Presenting a window into the UK fracking debate, the data also highlighted the gaps which continue to exist in our knowledge of community-led anti-fracking campaigns which were prominent. Therefore, studies continuing to expand this focus on

community responses to the industry, and to understanding who protectors were and how they participated, would represent a valuable contribution to the UK's emergent anti-fracking protest literature. Knowing the degree to which campaigns continue to be active following the 2019 moratorium, and the underlying reasons why, would also be a fascinating avenue to pursue. Finally, comparative studies contrasting UK experiences with those in Europe or elsewhere should be encouraged, including examinations into the role of the local state within protest. The latter may thus make use of the LNSN conceptualisation which we have proposed through charting the movement's life course across three important English counties.

Notes

1. Permitted under Section 79 and Schedule 6 (paragraph 3) in the Town and Country Planning Act (1990), for instance, where development holds national-level significance. The UK government expressed interest in classifying fracking as 'nationally significant infrastructure', which requires planning consent solely from the national level (Vaughan, 2018a).
2. Anti-fracking protests also occurred in Balcombe, Sussex, in 2013 (Bomberg, 2015), although fracking was not intended at Cuadrilla's site (O'Hara et al., 2013). Similar occurred at UKOG's Surrey-based Horse Hill site, and Rathlin's West Newton sites, East Yorkshire.
3. Two categories, 'training events' in direct action and 'other', including fundraisers, were excluded for not fitting the protest event definition.
4. At Cuadrilla's Preese Hall site where tests resulted in tremors and a fracking pause in England (Green et al., 2012).

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