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Article

Risk Society and Anti-Politics in the Fracking Debate

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Abstract:

Fracking in the UK has yet to reach full industrial development but it is still subject to significant opposition. This study uses Beck's Risk Society theory and anti-politics to examine the views voiced by opponents to fracking in Yorkshire, England. A qualitative approach was used; local newspaper reports were evaluated alongside semi-structured interviews with protesters to provide a thematic analysis. Although there are signs of post-materialist concerns with the environment these issues did not dominate the discussion. Scientists were not held responsible for the risks involved in fracking. Instead economic greediness of politicians and austerity measures were perceived as putting the environment and people's health at risk. Interviewees thought fossil fuel energy production was economically advantaged over more sustainable energy and jobs in the low carbon economy. Protesters' trust in politicians had been eroded but faith in democracy remained. It is suggested a citizen-led deliberative approach to all the concerns raised, not simply those relating to scientific risk, might achieve some level of resolution over fracking in the UK.

Keywords: fracking; Risk Society; anti-politics**;** climate change

1. Introduction

Fracking is controversial economically, environmentally and socially (Ochieng et al. 2015). Within the UK it has been subject to strong opposition despite limited industry development. Governments seek to make technological and scientific disputes like fracking apolitical. This allows policy decisions to be taken on apparently objective 'scientific evidence' (Mohr et al. 2013) and side-lines other influences on the debate, such as economics and politics (Williams et al. 2015). A popular theory for examining the environmental debate in the literature is Beck's Risk Society (Beck 1992). This allows for an examination of the scientific and technical evidence considering counter claims from concerned citizens. This approach emphasises the impacts of fracking (Evensen and Stedman 2017). Politics often takes a back seat in such studies (Brown 2015) other than for a call for more participatory democracy to take account of the views of citizens (Laurian 2004).

This article examines attitudes amongst residents opposing fracking in Yorkshire, England. It considers why opponents are deeply distrustful of government. The study argues that although there are signs consistent with a Risk Society developing (Beck 1992), concerns extend beyond environmental issues and include materialistic values. The interviewees' distrust of politicians is rooted in concerns over financial impropriety. This could be better explained by the growth of anti-politics that has occurred in the UK and the accompanying de-politicisation. Given this lack of trust, the discussion considers how the debate might move beyond its current impasse by looking at participatory and deliberative forms of democracy (Davidson and Elstub 2014).

2.Literature Review

2.1 Background to Fracking

Howell (2018) provides a full discussion of the advantages and disadvantages of fracking so only an overview will be given here. Proponents argue that the US experience shows fracking benefits the economy, society and the environment. Fracking has enabled an economic revival in the US by decreasing reliance on imported oil and gas (EIA 2016a, b), creating greater tax revenues, lowering household expenditure on heating and increasing jobs for highly qualified staff (Medlock and Hartley 2015). The greater use of fracked gas for power generation in the US has lowered carbon dioxide emissions. Thus, supporters argue that fracking is a bridge to a low carbon economy (Medlock and Hartley 2015). Against this, however, are many environmental concerns that have led to widespread opposition to fracking. These include seismic activity (Keranen et al. 2014), climate change (MacKay and Stone 2013), air quality (Moore et al. 2014) water scarcity and poor water quality (Rahm and Riha 2014), ecosystem destruction (Buchanan et al. 2017) and human health (Jacquet and Stedman 2014). Climate change is particularly contentious as although fracked gas is a relatively clean fossil fuel compared to coal and oil it also releases methane; a potent greenhouse gas (GHG) (Howarth et al. 2011). Opponents also argue that fracking will lead to carbon lock-in and subsidies being diverted away from renewable energy technologies (Howarth et al. 2011). Fracked products are still fossil fuels, which contribute to climate change. The UK's climate change act requires the government to meet strict GHG emission targets, unlike the USA. Any fracked gas recovered in the UK would need to replace coal use, to reduce emissions and meet the UK's carbon targets (CCC 2016). Given the length of time it takes to put in place energy generating infrastructure creates further doubts as to whether long-term carbon emission targets could be met.

The government claimed that fracking would boost the UK economy and create 60,000 jobs (Lord Bourne cited in Howard and Hellier 2015 see also Hansard. 2015). Knowledge deficit about the amount of recoverable fuel, however, creates uncertainty about the future revenues (Lis and Stasik 2017, Vidal 2014). There are doubts as to whether in the long-term, fracking is profitable (Sovacool 2014) or if it will reduce UK gas prices as predicted by the UK government (Carrington, 2013 cited in Howell 2018). The jobs created by the fracking industry are usually highly specialized. So the industry is unlikely to stop rural population loss in fracking areas as young qualified workers go elsewhere to work (Mayer et al. 2018). There can be temporary in-migration of predominantly male workers. However, this can cause strains in the local community as it changes the relationships between people and place (Measham et al. 2016). In addition, there are aesthetic (visual, auditory, and olfactory) concerns which also reduce well-being (Wynveen 2011).

Unwanted developments, especially in rural areas, can challenge residents' sense of place by industrialising the landscape (Per and Henrik 1998, Upreti and van der Horst 2004). This can lead to the formation of local protest movements to protect the "rural idyll", which are then dismissed as Not In My Backyard (NIMBY) resistance rather than rational opposition (Mannarini et al. 2015). Residents are seen as being concerned with these local environmental issues (Kurtz 2003) whereas activists appeal to global frames of reference such as climate change in the case of fracking (Hilson 2015). This suggests that residents are NIMBY in their outlook. Wider reviews, however, suggest that a person's attitude towards fracking will be influenced by the views they hold on climate change and their political affiliation (Cotton 2015, Jaspal and Nerlich 2014, Whitmarsh et al. 2015). Those with strong pro-environmental attitudes are unlikely to see the benefits of shale gas (Whitmarsh et al. 2015). Similar to attitude, trust in the political system and institutions that control the fracking, such as the industry and environmental agencies also affect people's view of the process (Opsal and O'Connor Shelley 2014, Robinson et al. 2017). Citizens who trust the fracking industry identify more benefits and have fewer concerns than those who don't (Mayer 2016, Whitmarsh et al. 2015).

2.2 Risk Society, De-Politicisation, and Anti-Politics

Ulrich Beck, amongst others, argues that there is a growing inability of governments to keep their citizens safe from global environmental harm caused by modern industrial society (Beck 1992, Giddens 1998). In the modern industrial society economic redistribution was paramount. It was assumed that the benefits created by science and technology would offset any 'bads,' such as job losses and environmental degradation. In the current political and physical climate, this supposition is being examined (National Academies of Sciences 2017, Sarewitz 2016). Governments can no longer protect its citizens from the harm caused by science and technology (Beck 1992, Giddens 1998). However, they continue to try to do so and remain locked into a concern with wealth distribution (Mythen 2004). The government creates the 'safety state' trying to keep individuals safe with rules and guidelines, from hazards over which it no longer has control over (Goldblatt 1996). This results in 'organised irresponsibility' in which environmental degradation increases despite of more laws to control it and accountability is unclear (Beck 1998, Goldblatt 1996). Safety failures have reduced public trust in science and technology (Espig and de Rijke 2016, Mayer et al. 2017). Paradoxically only science and technology can reveal the risks and provide solutions (Beck 1992, Brown 2016, Zilliox and Smith 2017). In Risk Society, science and technology become reflexive (Beck 1998). The lines between the political and non-political realms become blurred (Beck 1999). Risk and responsibility becomes individualised (Benn et al. 2009). The Risk Society allows individuals, task forces and groups to challenge the state and corporations. There is a growth of 'sub-politics,' for example, the use of the media and judiciary by the public to contest knowledge claims about environmental harms. Thus, Beck foresaw conflicts about the distribution of 'environmental bads', rather than capital (Benn et al. 2009).

In Beck's Risk Society the rationality of science and technology is used to depoliticise policy judgments made about novel technological practices. Hay (2007) provides details of the depoliticisation process, which moves policies from the governmental sphere (1) to the public sphere (2) and finally to the private sphere (3). This third sphere is the 'non-political' realm of necessity where issues are rarely discussed (Hay 2007). They become accepted as a problem with no alternative solution or TINA – there is no alternative. The process can be resisted, however, and repoliticisation can happen. Risk society provides a way of looking at how the depoliticisation of a technological process, like fracking, can be contested. Fracking, however also has an economic element that is equally questioned. Purely focussing on the technology and science might not be able to provide a complete picture of opponents' distrust of fracking or how to address their concerns. Since the 1990s and the rise of neo-liberalism, market efficiency has also been used as a rationality by politicians to depoliticise policy decisions. By depoliticising an issue, a government making economic policy choices can persuade the electorate to carry additional social and economic costs, without bearing the brunt of any blame (Rogers 2009). In the depoliticisation process political parties have converged on similar polices leading to disenchantment and contempt among the electorate (Brandenburg 2011).

Depoliticisation is said to contribute to anti-politics (Wood 2016). Although there has probably never been a 'golden age' of democratic engagement it seems clear that anti-political sentiment is on the rise in Britain (Clarke et al. 2016). In England there is a growing political divide between cosmopolitan areas of economic growth and backwaters of decline but what unites them is a dislike of politicians (Jennings and Stoker 2016). In the UK, several crises have helped to erode public trust in government, including the Iraq War, the MPs expenses scandal and recent austerity measures (Koch 2016, Whiteley et al. 2015). The alienation from politics or anti-politics is often classified as either a demand side or a supply side problem. Either citizens are asking government to solve complex problems too quickly or government has lost touch with what its citizen's want (Marsh 2018).

2.3 Improving Trust

The recent work of Marsh (2018) and Stoker (2017) would suggest that both elected and electorate need to reflect upon their decisions and take more time for evidence based policy making, if the current rise in anti-politics is to be reversed. It is generally agreed that one way to increase trust in government would be for greater participatory democracy (Brantley et al. 2018, Laurian 2004, Fung 2015). Greater participation could allow a small but supported representative sample of citizens to deliberate the merits of a key issue (Davidson and Elstub 2014). They make recommendations to government, enhancing the legitimacy of the policy-making process. By including more disparate views, social justice can also be served. Deliberative democracy is not without problems, which have led to scepticism about the benefits of participatory democracy amongst politicians and citizens (García-Espín and Ganuza 2017). The process can be co-opted by elites rather than being 'citizen-led' (Davidson and Elstub 2014). Political and economic elites can use their influence to suggest that a problem is a local issue, and thus amenable to a local solution thereby disempowering and negating some discourses (Benn et al. 2009, Brand and Gaffikin 2007, Murray 2009). In so doing, local protest groups who lack power can be overwhelmed and ignored as NIMBYs (Benn et al. 2009, Mannarini et al. 2015, Steelman and Carmin 1998). Governments can use this as a reason to exclude local participation in decision making (Murray 2009). The power of economic and political elites is often unchallenged (Benn et al. 2009, Murray 2009). Softer forms of participation allow elite decision makers to give the appearance of consultation when in fact the public have little impact on the policy process and their recommendations ignored (Few et al. 2007, Fung 2015). There are difficulties surrounding who should have a voice and how to include the marginalised (Fung 2015). There is no guarantee that increased democratic input leads to greater sustainability (Hajer and Kesselring 1999). Furthermore, reconciling competing interests may need some form of parliamentary process (Giddens 1998).

Those arguing for deliberative democracy claim there is a rational choice that transcends individual preferences and voting (Perote-Peña and Piggins 2015). They say a moral democracy will lead to consensus decision making and strengthen the democratic process (Habermas 1989, Rawls 1987). For others the democratic process is inherently an oppositional practice (Mouffe, 2000 cited in Peterson et al. 2005) and should aim towards an 'agnostic pluralism' (Mouffe 1991). Enemies become adversaries who acknowledge each other's right to disagree (Jones 2014). Given the complexity of many environmental problems and issues such as fracking, which cover not simply technological but also societal and economic challenges, the likelihood of finding a consensus solution seems small.

3. Methods and study approach

The aim of the study is to formulate a deeper understanding of the motivations of residents living near fracking sites, who oppose their development. A key objective was to obtain the opinions of people in local protest groups, in their own words. This necessitated a qualitative and purposeful sampling approach. The limitation of this study is that only a small number of active campaigners could be interviewed. There is no attempt to understand every point of view.

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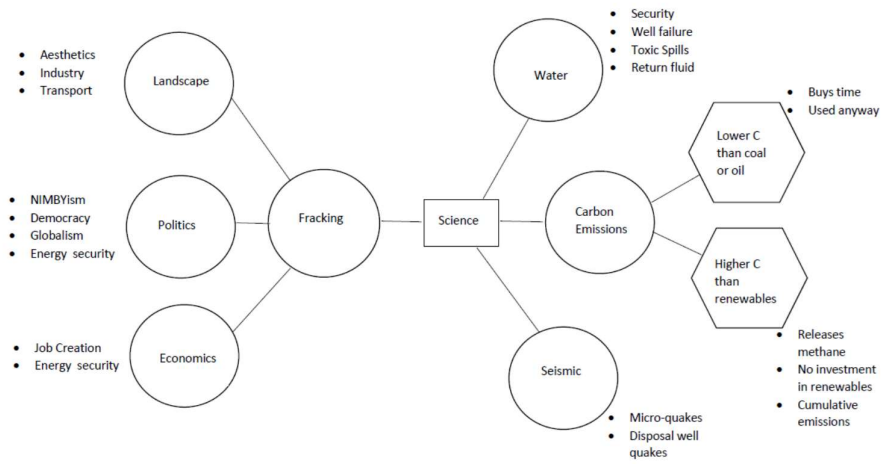

Figure 1 Mind map of potential advantages and disadvantages of fracking as drawn from the literature

Protest themes were derived from the literature in the form of a mind map (Figure 1). Local protest groups and their websites were then identified using the website *Frack Off - extreme energy action network* (http://frack-off.org.uk/fracking-hell/). This website provides an umbrella organisation for groups organising action against fracking in their area. Following the approach of Bomberg (2015), a critical discourse analysis of the content of the front page of protest websites with open access was undertaken. This was to ascertain what the websites presented as 'known' about fracking (Rein and Schon 1993). From this analysis, the themes were further refined to design a semi-structured interview. Using the *Frack-Off* website, protest groups in Yorkshire were identified and approached by email, to request face to face interviews with members of the group. Leaflets were also distributed at rallies and meetings to gather more interviewees. Fourteen face to face interviews were completed; ten interviews before the May 2015 general election and four after (Table 1). All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of University of Leeds (LTGEOG-015). The interviewees mostly had a relationship with the three potential fracking sites in Yorkshire; Crawberry Hill, West Newton and Kirkby Misperton (Ryedale). All the interviews were conducted before fracking was given planning permission in the last location. The interviews typically lasted for an hour and were audio-taped and professionally transcribed verbatim. Local newspaper stories covering the protest (Hull Daily Mail and Yorkshire Post from 2011 until June 2016) were downloaded from online sources. The transcribed interviews and local newspaper articles were analysed using NVivo (2012) thematic analysis software. The interviews were coded according to themes derived from Figure 1; additional themes were added as coding progressed. By focussing on a small number of interviewees, detailed insights were gained into the reasons for people's actions, in their own words (Matthews and Ross 2010). In addition, planning applications were downloaded for the sites of interest. YouTube accounts of the protests at the three study sites were watched to gather further information on the campaigns.

Table 1 Interviewees' abode and greatest concern about fracking

Interviewee	*Area*	*Affiliation to Area*	*Greatest Concern*
1	Ryedale	Moved to area < 3yrs	Industrialisation of the countryside
2	Ryedale	Retired to area <3yrs	Climate change

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3	Ryedale	Moved to area <3yrs	Industrialisation of the countryside
4	York (Active in Crawberry Hill & West Newton)	Lived and worked in area > 20yrs	Pollution of air and water
5	York	Lived and worked in area > 20yrs	Climate Change
6	York & Ryedale (Active in Crawberry Hill & West Newton)	Born and brought up in area Retired	Pollution of water (with fracking fluids)
7	Harrogate	Retired to area 5yrs	Water pollution (return waste fluids)
8	Leeds (Active in Barton Moss, Manchester)	Lived and worked in area for 33 years. Now retired	Pollution of water (with fracking fluids)
9	East Riding (Active in Crawberry Hill & West Newton)	Born and grew up in area. Returned for job later in life. Now retired	Climate change
10	East Riding (Active in Crawberry Hill & West Newton)	Worked in area and then retired 5 years	Climate change
11	Ryedale	Worked in area for >10yrs	Climate Change
12	Ryedale & Preese Hall, Blackpool	Works in Yorkshire & Lancashire	Pollution of air and water
13	Ryedale	Worked in Yorks and then retired	Pollution of air and water
14	Sheffield	Student	Climate Change

4. Analysis

4.1 Government and economic redistribution

From a Risk Society viewpoint, the UK government framed fracking as a classical example of redistribution of economic benefits. In response to public and local government resistance to fracking, central government announced a serious of financial packages. These included a Shale Wealth Fund to redistribute 10% of the shale taxes back to affected communities, over 25 years (DBEIS 2017). There is evidence that direct financial compensation can sway local opposition (Boudet et al. 2016, Dokshin 2016). Non-governmental organisations (NGOs) such as Greenpeace and Friends of the Earth denounced this move as bribery to accept 'dirty' fossil fuels (BBC 2016).

There is a sense of Beck's organised irresponsibility with fracking, where institutions acknowledge catastrophe whilst at the same time denying it (p18, Beck, 1998). The UK government has tried to reassure the UK public about the scientific advantages and safety of fracking. Unconventional gas derived from fracking, if used in placed of coal, would lower carbon emissions, as they have done in the USA. Thus, it can be claimed that fracking could help the UK meet its Greenhouse Gas reduction targets (MacKay and Stone 2013 cited in DBEIS, 2017). The government points to reports that say that risks to public health and the environment are low, with proper regulation and oversight (Royal Society 2012 & Kibble et al. 2014 cited in DBEIS, 2017). Much has been made of the difference between the light regulatory touch in the USA and tougher standards in the UK (Hansard. 2014).

It is unclear who would be economically responsible for a major fracking disaster. North and East Yorkshire has suffered extensive flooding. Interviewees brought up the issue of responsibility if contaminated flood water inundated their land (Interviewees 11 & 13). Media reports suggest that insurance companies are less willing to cover domestic houses near fracking sites (Rowell 2016). Interviewees were concerned about those who owned the land on which the fracking was taking place (Interviewees 2, 3, 4, 6, 10, 11, & 12). Interviewees felt that farmers had been 'duped' into having fracking sites on their land.

"I think that Rathlin energy have done very good PR job in East Yorkshire. And the farmers don't realise exactly what the intention is. I think they think, okay, so I'll get twenty-thirty grand, I can lease this field for two years and that will be the end of it… but that's not how fracking works." (Interviewee 4)

Given the potential for wells to fail many years in the future, when the drill companies may no longer exist, interviewees queried who would be responsible for any damage. Would the landowner be left with the responsibility?

"So, we have looked into it and all these fracking companies, they might be owned by Barclays or whoever, but they set them up as limited companies and limit the liability. And then what happens if there's lake pollution because we know well integrity gets worse over time and then they are on farmers' land who have no insurance, no cover […] where does it leave us longer term?" (Interviewee 2)

The government, by arguing that fracking technology is established and the risks are low, can continue to exclude the public from the debate and control the planning process. The interviewees contested both the safety and the established nature of fracking.

"I found out, what was really stunningly clear to me, was that the experts didn't actually agree about a lot of the contentious issues involved in fracking." (Interviewee 1)

"And conventional gas extraction is something completely different when you look at hydraulic fracturing. The risks are completely different." (Interviewee 12)

Only one interviewee made direct reference to the precautionary principle, Interviewee 2). Half of the interviewees referred to the risks of fracking (Interviewees 2, 3, 5, 9, 10, 12 & 13). There was emphasis on the need to minimise risk by doing research before the deployment stage of the technology. Notably, however, the onus was put on politicians not scientists.

"So, it's a risk and what your job is, as a Minister or politician, is to mitigate risk." (Interviewee 12)

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4.2 Local opposition – science, risk and trust

Addressing the key concerns of opponents to fracking is difficult because they cover a range of spatial scales from local to global issues. Beck's Risk Society thesis was primarily directed at global risks that could end with self-annihilation (e.g. climate change), rather than local risks (Goldblatt 1996). There was evidence to support the idea that residents prefer local environmental frames (Kurtz 2003)

"I don't want to go out and look at flares all round my horizon... We bought the house because of the views. …I don't want that to be taken away" (Interviewee 13)

This appears characteristic of a 'rural idyll' discourse, where residents do not have a productive working relationship with the landscape. Instead, they consume the landscape, as a retreat from the urban, and seek to protect it from change (Woods 2003). The residents may be accused of NIMBYism. As in previous studies, there was not a straightforward relationship between location and attitudes to fracking (Whitmarsh et al. 2015). Landed estate holders in the area seemed most concerned with the aesthetic impact (Storey et al. 2015). In contrast, most interviewees did not mention direct impacts unless encouraged by the interviewer. In response to prompts, opponents broached issues such as the number of heavy lorries on country roads (Interviewees 1, 4, 5 &10).

Table 1 shows that concerns about fracking are more to do with climate change and water pollution than the building of unsightly rigs. This suggests that residents opposing fracking are concerned more about the distribution of environmental 'bads' than aesthetic issues. Protesters also worried about water pollution, which has effects beyond the local community (cf. Hilson 2015).

"I've applied my research skills to the 2006 British Geological Survey on the Yorkshire aquifer, which is the main source document, which says that something like 55% of water used in the East Riding and Hull comes from that aquifer, which has got a borehole right through it. Not clever." (Interviewee 10)

"The water pollution, between you and me, it's out of this world, and the amount of stuff that they pump into it. They haven't got a clue. Cameron [the British Prime Minister] and company don't give a monkeys." (Interviewee 4)

The global frame of climate change used by environmental activists to oppose fracking is said not to appeal to residents, as it is ephemeral (Hilson 2015). However, climate change was important to many interviewees (Table 1). This seemed to stem from their affiliations to green political parties or non-governmental organisations even before fracking had become an issue in their local area (Interviewees 5, 7, 8, 9, 10, 11 and 14).

Several interviewees noted that the semi-professional activists (or *protectors* as they were called) were concerned about water pollution and were very assertive about this (Dubs 2014; Interviewees 6 and 10).

"And the younger people would be very concerned about water, …,in fact this is about part of a conspiracy to control populations by controlling resources, and that if you wanted to poison the water supply, you couldn't think of a better way of doing it in fracking." (Interviewee 10)

There was some evidence that the protectors' focus on water pollution was permeating the debate, swaying one interviewee to change their primary concern from climate change (Interviewee 7). The focus on water pollution did not seem to be due to a lack of faith in the scientific evidence surrounding climate change

"We're talking about it at a time when climate change is happening. 97% of the world's top scientists say it's happening and it's manmade, you know, we can't afford to take more fossil fuels out of the earth." (Interviewee 9)

Protesters were concerned that water was the greater priority

"…you can't do anything about it [water], … and water because of climate change is becoming a much more scarce resource so the idea of gaily pumping poison into the ground with actually no idea what it's going to do to the water table strikes me as particularly irresponsible" (Interviewee 8)

The argument put forward by government, that fracking in the UK will be safe because it will be more closely regulated than in other countries, was met with derision by most interviewees. This did not emerge from a conversation of zero risk but one of low trust in the regulatory regime and the ability of the Environmental Agency (EA) to police the fracking industry. Frequent references were made to the self-regulating nature of the fracking industry (Interviewees 1, 2, 5, 6, 7, 8, 9, 10 & 13). This was not interpreted as a failure of the EA. Instead it was linked to austerity measures by central government.

"I think that is the biggest thing that has affected me is just how important a job they [EA] do and how badly funded they seem to be. They don't seem to have enough people and processes..., Everything is self-regulated, all the information is provided by the person who wants to do the thing and someone just checks it over and either says well I'm not happy with it or rubber stamps it." (Interviewee 1)

"I mean we feel in Ryedale really under the cosh, the road maintenance, everything has been run down to such an extent. … We have no say in the agencies, the Environment Agency, everything is pared down." (Interviewee 10)

4.3 Anti-politics and trust

Interviewees' trust in the fracking industry was unsurprisingly low. The promise of financial incentives to allow fracking in the local area merely exacerbated the situation, as interviewees feared it could fracture community cohesiveness. Lack of trust stemmed not just from international and national media but also from local examples of claimed undisclosed pollution events and incidents while protesting.

"Barton Moss used to tip their effluent into the Manchester Ship Canal, very environmentally sound I thought, yes well regulated. Now the government couldn't give a hoot." (Interviewee 8).

At the time of writing, the fracking industry is committed to give £100K to each community at the exploration stage, then 1% of revenues at development (DBEIS 2017). In a letter to the local press, one resident called for protesters in Ryedale to stop and accept the inevitable

"…and concentrate efforts on getting the best possible mitigations and financial compensation for the affected communities, and be looking for ways to maximise the business and job opportunities for local people" (Morgan 2016)

Opponents argued that the industry would 'buy' support from residents by providing new community centres or school extensions (Interviewee 7). The interviewees thought that the fracking

industry was likely to target poorer areas which were deprived of facilities and needed money. This might persuade only parts of the community to accept drill sites, and divide the residents.

For many of the interviewees, the claim that fracking would bring economic benefits to the locale were widely dismissed as disingenuous propaganda. Some residents argued that the area was not in need of jobs in industry and that fracking would destroy existing rural activities, such as agriculture and tourism. At district level, Ryedale is ranked 239 out of 326 for employment, where one is the most deprived LA in the country (Data North Yorkshire 2015) Any jobs created would draw in temporary residents with the appropriate skills who would leave once fracking was finished, possibly disrupting community life (Interviewee 11).

"Ryedale is not a poor area in the strict sense the word, yes you know there are low-income agricultural jobs and things, but if you look at Ryedale it's not a particularly deprived area there are more people employed here in things like tourism and retail" (Interviewee 3)

"They [Jobs] won't be for the local people; their skills are in farming. You need specialists, and you know, it'll be highly skilled engineers and chemists and god knows what." (Interviewee 6)

The interviewees challenged the idea of a new fossil fuel based industry. Campaigners argued for a low carbon economy that would bring jobs with a long-term future (Interviewee 4, 9, 10, 12 and 13). The interviewees believed that the government was supporting a dirty source of energy through legislation and subsidies.

"You know the subsidies they are giving to the fossil fuel industries… If that money was for sustainable jobs - to have a clean secure future… but they [the government] are just not doing it" (Interviewee 2)

Opponents felt that government backing for the fracking industry was not just about supporting a fledgling business. Interviewees argued that it was a means of bolstering tax revenues and providing income streams for associates.

"I don't know what the politicians are playing at; apart from I know some of them are hoping to make a lot of money out of this." (Interviewee 4)

"So, there's a lot of connections between politicians of all the grey colours. The three leading parties and big business and fracking business." (Interviewee 5)

This led to significant distrust of traditional political and social institutions, including academics. The media were accused of trying to paint opponents of fracking as '*tree huggers*' (Interviewee 1) rather than acknowledging that this is '*Middle England*' (Interviewee 2) rising up. Two of the interviewees were arrested (charges were subsequently dropped) and another took court action against the police (Interviewees 9, 10 & 8). Amongst local campaigners, distrust grew throughout the protest, particularly of the police (personal communication). Some residents refused to talk to the author for fear of the information leaking to the government.

"I think people who are involved [in opposing fracking] are on Police lists and it's like the Miners' strike, the Poll Tax. Tories like this kind of thing." (Interviewee 11)

Most of those interviewed belonged to the political left, and included some members of the Green Party, although not exclusively. From the interviews, it appears the movement crossed class

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divisions, although most of those interviewed were retired middle class. The interviewees did not see their opposition as a political struggle.

"I don't see this as being a party-political issue, it's simply protecting the environment, and we should all be concerned about that, whether we're conservative, blue, purple, green, yellow, red or whatever colour your political spectrum" (Interviewee 4)

Given that they did not see it as a political issue, most protesters seemed unclear about how they would achieve a policy change from government.

4.4 How to move forward?

For several protesters, the key for moving forward was for government to listen to local demands and for greater democracy in local decision making. References were made to other countries which had banned fracking. Germany was held up as a model of community involvement.

"I looked at what the Government had done with the Royal Society report and then I looked at what the Germans had done, I was ashamed because what the German's had done was a model of a democratic approach." (Interviewee 7)

"There's also the agenda of democracy. I'm a very firm believer in democracy, and have come at democracy from an anarchist background. And decided that anarchism was not necessarily the best way to change society and improve things." (Interviewee 5)

Therefore, the protesters were arguing for a more participatory democracy. They wanted the local council to be able to take account of their views, as central government has allowed with wind farms (Smith 2016). There is a caveat, however. Interviewees thought that their fellow residents would only mobilise when fracking became a greater threat. The word 'apathetic' was mentioned several times. This suggests community ambivalence to participatory democracy. Most of those interviewed were also sceptical that their views represented many of their fellow residents. There was recognition that the local area was conservative, both in nature and by politics. The local MP was a conservative who had gone on a fracking fact-finding mission to USA. Although admitting he wouldn't want a drill rig next to his house, he still supported fracking in Ryedale on economic grounds. It is notable that he was returned to represent the constituency in both the 2015 and 2017 general elections, in the latter with an increased majority. The interviewees also recognised that their support for current party politics was not favoured by all opponents to fracking. Younger activists were reported as favouring more radical change.

"Then you saw the sort of future of politics, the way things are going, because it was the people's assembly, […] they would emphasise the need for community based action or individual action, and more anarchists with a small 'a', possibly." (Interviewee 10)

5. Discussion

The Risk Society framework can make sense of many aspects of the fracking debate. The UK government want to treat fracking as an economic redistribution in a modern industrial society. It argues for the economic benefits, nationally and in the locale affected by drilling. The government has also sought to minimise concerns about environmental impacts. In so doing, they have shown aspects of 'organised irresponsibility' (Goldblatt 1996). They have had to acknowledge the potential for environmental catastrophe and yet deny it. The government claims that regulation in the UK will be stricter than in the US and will prevent environmental breeches happening here (Hansard. 2014). The interviewees talked about 'environmental bads' as predicted by Beck (1992), but their exploration of these issues was not confined to competing scientific knowledge claims. Fracking opponents also

questioned its economic viability. Amongst protesters there was a focus on employment opportunities, not just through traditional employment, but also through new 'greener' technologies such as wind and solar power. The interviewees argued that these would provide long-term sustainable jobs and a low carbon society, but fracking would not.

The government has attempted to depoliticise the debate by drawing on scientific and technical rationalities appealing to the Royal Society Report and other scientific evidence. Opponents to fracking did not reject science, similar to previous critiques of Risk Society (Goldblatt 1996), but instead drew on them to support their claims to abandon fracking. They are attempting to repoliticise the debate. The willingness of many interviewees to place climate change as their number one concern about fracking would suggest trust in scientific consensus. The prominence given to water quality suggests that health concerns are also significant. The health implications of poisoning water courses has echoes of previous debates on mad cow disease, genetically modified food and mobile phones (Drake 2006, Patterson and Gray 2012). Many of the claims made with regard to water pollution were based on examples drawn from the USA or Australia. In contrast, however, there were few claims of scientific uncertainty of fracking but more about technical failures.

The protesters were not reassured by government or industry that sufficient regulation or care would be taken to avoid a catastrophe. Interviewees felt that the EA could not control fracking. In part this was due to a lack of understanding of the relationship between industry and regulatory authorities in UK. In the UK, there is usually a negotiated settlement between regulators and the regulated (Faure and Svatikova 2012, Ogus and Abbot 2002). The UK has not operated like the German Safety State described by Beck (Goldblatt 1996). Another reason that interviewees were unhappy with the EA's ability to oversee fracking was the austerity cuts imposed upon the organisation by government. They felt the government had made it impossible for the EA to carry out its role correctly. Whether this created, or merely confirmed, interviewees mistrust in government assertions that fracking would be properly supervised is difficult to ascertain.

Finance is also being used by the government to depoliticise the debate. The decision of government and industry to give locals money from fracking represents an attempt to redistribute wealth to offset local environmental degradation. It also scales the issue of fracking at the local level, so opponents can be dismissed as NIMBY, thus ignoring the larger issues of climate change. There was a great deal of financial distrust in politicians. This was the one area that united all the interviewees and would seem to reflect the growth in anti-politics. There was continual reference to ministers or their associates making money from fracking. Grievances were as much about the close alliance between capital and politics, as the environmental issues. It was argued that an elite closed section of society was making money at the expense of those they should be representing. The protesters felt that they were not being treated fairly. The UK government's determination for fracking to take place was interpreted by those interviewed as self-serving greediness. The push for fracking was seen as a corrupt activity. The distribution of profits and taxes from fracking to the local area exacerbated this view rather than reduced it.

Despite this most of those interviewed believed firmly in the democratic process. The protesters agreed that the protest should not be based on party political lines. The protest crossed class divisions and generational lines. Opponents include those from the landed gentry to students, from the Lancashire Nanas; a group of campaigning grandparents to environmental *protectors* (Nanashire 2016). The interviewees believed the media and the judiciary had been used against them. This calls into question whether the sub-politics envisioned by Beck is strong enough to challenge the traditional elites (Benn et al. 2009, Murray 2009). When it comes to resolving the issue, the interviewees acknowledged that they needed more local participation to ensure all views are represented (Goldblatt 1996). The sitting Conservative MP was returned to parliament after fracking had been given planning permission

in his constituency. Thus, opposition to fracking did not appear to be sufficiently strong to affect the outcome of an election.

Fracking may not trump the economic concerns of voters when it comes to the ballot box, but national surveys show that citizens do not want fracking (DBEIS 2016). Aesthetic landscape issues dominate these surveys, rather than national scale issues of climate change, energy security, economic growth or health. Therefore, participation needs to be at the national scale and citizens need to be enabled to deliberate these wider 'goods' and 'bads.' To achieve this, new ways to foster citizen engagement maybe required, perhaps using the internet as suggested by (Moss and Coleman 2014). It may be difficult to obtain a rational consensus given the different viewpoints involved. The agonistic pluralism approach might be another option: One which recognises it has reached the best decision given current knowledge and that alternative future paths have been, for now, excluded (Brand and Gaffikin 2007). If fracking is vigorously pursued, then the restrictions this may put on alternative energy sources needs to be acknowledged, rather than seen as a rational choice.

6. Conclusion

Risk Society theory shows that there is a focus on 'environmental bads' from fracking protesters. This is not primarily rooted in a lack of faith in science or technology. Interviewees expressed anger at what they saw as political manipulation of the debate, motivated by capital gains for the powerful. This can be interpreted through the growth in anti-politics that has occurred in Britain in recent decades. Although protesters saw their movement as apolitical, they considered the governing Conservatives as the party of fracking. Interviewees talked about capital, in the forms of subsidies for the fossil fuel industry and monetary gains being made by politicians and corporations. In summary:

1. scientific risk did not dominate the discussion,
2. interviewees were concerned with the capital implications of fracking
3. trust in politicians is further eroded. In using Risk Society Theory to examine fracking, care must be taken not to ignore capital and trust.

Those interviewed supported democratic institutions and democracy but the erosion of trust had led to a contempt of politics as suggested by Brandenburg (2011). New participatory forms of democracy could be a solution, but a national deliberative debate is needed, where a variety of views and subject matters related to fracking could be interrogated by a representative panel of citizens. This would provide a forum for debate and give greater legitimacy to policy decisions. The current UK government is reluctant to open a debate that might reduce its institutional power (Moss and Coleman 2014). The parochialism that accompanies local battles (Bomberg 2015, Hilson 2015) provides the government with a welcome distraction, allowing the wider issues of climate change and long-term energy security to go unchallenged. These concerns together with the costs and benefits of alternative renewable and fossil fuel energy need to be examined if any resolution to the current debate is to be found.

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