



Original research article

# Hybrid forums, knowledge deficits and the multiple uncertainties of resource extraction: Negotiating the local governance of shale gas in Poland

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## ABSTRACT

The paper examines shale gas development as a situation of resource exploration loaded with multiple uncertainties stemming not only from technology-generated unknowns but mainly from the unknowns about the volume of exploitable resource and about the ways in which shale gas industry will exist 'locally'. By examining first information meetings organized by NGOs, companies and local authorities in Poland: Przywidz, Mikołajki Pomorskie and Żurawłów, the paper shows that uncertainty is built around three dimensions that are to be shared by communities and companies if exploration takes place: knowledge, space and time. Discussions around these three issues reveal knowledge deficits on all sides, contributing to the emergence of new areas of uncertainty and making any agreement difficult. By referring to the concept of 'hybrid forums', the analysis also shows how a gathering that is initially framed by the organizers as an 'information meeting' transforms into a 'hybrid forum' where new facts, values and identities emerge due to the confrontation of perspectives represented by heterogeneous stakeholders.

## 1. Introduction

Despite the fact that shale gas exploration proved to be successful in the USA or Canada, it sparked fervent worldwide discussions about its environmental and social impacts, as well as local protests in some extraction sites. The main trigger for discussion and contestation is a relatively new technology that is essential to the process – hydraulic fracturing – popularly called 'fracking'. Public perceptions of fracking attracted attention of social scientists who applied various methods, such as discourse analysis [1–5]; public opinion surveys [6–8] and deliberative focus groups [9,10] in order to better understand how the debate on shale gas is framed in different countries and how opinions of elite groups or mainstream media differ from attitudes of general publics. Some survey work on shale gas perceptions and communication has included embedded intricate message testing experiments; other surveys have included a great deal of variables that allow researchers to control for situational, group membership, and demographic variation between respondents (see an extensive review of the U.S. research on public perceptions of shale gas in [11]). Additionally, some studies focused on the role of a documentary movie 'Gasland' in mobilizing an anti-fracking movement [12], others on mechanisms of stirring resistance in social media [13,14], helping to understand how anti-fracking attitudes gained a global outreach. These approaches

brought many valuable findings and provided nuanced and contextualized analysis of attitudes towards shale gas projects, interactions with industries and helped us understand the dynamics of shale gas development on the ground.

Still, most of the existing studies collect opinions expressed in situations created and controlled by researchers (focus groups, surveys and interviews) or mediated by media accounts (public discourse analysis). The issue is also addressed by a growing number of qualitative studies, relying on interviews with key informants [15,16] or ethnography [17]. However, probably due to difficulties with documenting 'in-vivo' meetings, gatherings and interactions, that take place in local communities without researchers' intervention, there has not been much material collected and analyzed from such occasions so far. Therefore, we argue that having had an opportunity to get access to recordings of local meetings in Poland, we can offer some new and interesting insights into how shale gas development plays out in such specific contexts. Another added value of our analysis is that while most of the recent contributions about actual interactions between industries and communities in specific sites rely on the data from the UK and the USA [18,11], we contribute with data from Poland which, among the European countries, has so far seen the highest number of shale gas exploration operations on the ground. Moreover, the focus on the USA, where industry has already gained a relatively good understanding of

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local geology, leads to the situation when current studies from the USA are not that much interested in investigating how uncertainty around *resource-to-be-extracted* (*resource-yet-to-be-found*) plays out locally and how it manifests itself and is constructed through knowledge deficits faced by different stakeholders gathered at a specific site. Therefore, our data from Poland, the case studies that we examine, allow us to make and illustrate an important point that shale gas exploration is as a situation that is loaded with many more uncertainties [19–21] than just those stemming from the use of a controversial technology – “fracking”.

Through this analysis, we aim to broaden the discussion on public perceptions of shale gas methodologically and conceptually. First, we study the actual, ‘in-vivo’ interactions between local communities, industries, state representatives, experts and activists in specific localities during local information meetings in Poland: Przywidz, Miłkołajki Pomorskie and Żurawłów. After Callon et al. [22]. We conceptualize these information meetings as ‘hybrid forums’: organized collectives of heterogeneous actors engaged in solving a socio-technical controversy that generate new facts, values and matters of concerns. Through the prism of this concept, we examine how the gatherings of stakeholders become sites for exploring uncertainties around shale gas projects and how they bringing into discussions new dimensions that have not been planned to be discussed in the first place, such as the validity and relevance of knowledge and well as temporal and spatial dimensions.

Second, we conceive of shale gas development as a situation of resource exploration loaded with multiple uncertainties stemming not only from technology-generated unknowns but mainly from the unknowns about the volume of the exploitable resource and about the ways in which the industry will exist locally. Our goal is to show how multiple uncertainties and knowledge deficits pose challenge to communication and negotiation of a common future between industries and local communities, and by doing it, redefine the meaning of ‘knowledge deficit’, usually attributed to lay public as opposed to the experts (cf. [23–25]).

The article is constructed as follows. In the next part, we present our theoretical framework which allows us to examine shale gas development as a situation saturated with multiple uncertainties and burdened with knowledge deficits on all side. We also show how we apply and contribute to the concept of hybrid forums. Then we lay out development of shale gas industry in Poland along with changes in state regulations which shaped relations between the state, citizens and the industry. Next, after presenting the research methodology, we proceed with the analyzes of how various uncertainties and knowledge deficits were revealed when negotiating legitimate knowledge on shale gas as well as temporal and spatial conditions of its local development during information meetings in the selected locations. The last part discusses the politics of creating a common future with shale gas industry locally, in Poland.

## 2. Hybrid forums, knowledge deficits and multiple uncertainties of resource extraction

The concept of ‘hybrid forums’ [22] has been used to analyse how controversies emerge and develop around complex technoscientific projects, such as nuclear waste disposals, new drugs research or food safety procedures. Technoscientific projects are known for being saturated with uncertainty about their outcomes [26,27,19], which means that the involved stakeholders often have to act in “a situation where not only the result of their action is uncertain, but it is also not possible to create the exhaustive list of conceivable scenarios” ([22] [22]: 26) of possible developments and risks [28]. Callon et al. claim that in situation of uncertainty, controversies – often wrongly perceived as a mere obstacle for an effective action and as a problem to be quickly solved – may actually offer cognitive and practical gains. When heterogeneous groups of actors engage in exploring a controversy, new issues, questions and perspectives can be generated and explored

“through the game of confrontations” ([22][22]: 26). As a result, a much better understanding of possible risks and of possible ways of handling a project may be achieved. Such a gathering may be seen as a hybrid forum: a participatory setting formed around a controversial issue, which provides space in which, through interactions in heterogeneous groups, new issues are revealed and explicated. Thus, a hybrid forum should not be understood as a new, distinct tool for public engagement, next to citizens’ panels, consensus conferences, informational meetings, or on-line communities (cf. [29,30]), but it should rather be understood as an analytical lens through which a researcher can discover new dimensions of a controversy as they emerge in interactions around a controversial issue.

Deficits of knowledge, new dimensions of a controversy and a plurality of perspectives revealed in a hybrid forum could easily be overlooked in a non-participatory, less interactive setting. Their emergence may ultimately lead to establishing new relations of power, new political agencies and new scales at which actions are possible. The result of interactions within a hybrid forum may provide actors with resources to cope with emerging uncertainties: both through a better understanding of the issues at stake and through a formation of new networks. Hybrid forums generate a political process of (re)composing the world that actors live in [31,22]. This process is essentially coupled with the emergence of new groups, values, identities, agencies and knowledge claims, and as such, it is highly political. Importantly, the (re)composition of a common world, which results from a controversy, may not necessarily bring about a coherent vision of a common future. The negotiation may end up with conflicts, struggles, mistrust or indifference.

Our contribution to the concept of hybrid forums is thus twofold. First, we apply it to a situation of resource exploration which we conceptualize as highly political and saturated with multiple uncertainties and deficits of knowledge shared by all sides. We show how uncertainties related to facts, space and time emerge through the confrontation of different stakeholders’ perspective, revealing the impossibility of drawing the single future scenario. Second, we point to the fact that hybrid forums are not only a practical contribution to the enrichments of the procedures of democracy, as Callon et al. [22] would like to see it. We want to draw more strongly on the observation that they are organized in specific political and economic contexts of state politics and global markets.

## 3. Polish state, citizens and the oil & gas industry

The first important source of uncertainty – which actually stands behind the very decision to start shale gas prospecting – is the lack of data about the quality, quantity and the location of the resource itself. This could be seen in expert discussions where different agencies were giving estimates of the recoverable shale gas resources in Poland that varied greatly. Assessments ranged between 5.3 billion cubic meters (EIA, 2011), through 346–768 million cubic meters [32,33], to 1–3 billion cubic; the last figures being published in the reports by Rynstad Energy, Wood MacKenzie and Advance Research Institute [34]. All these assessments were based on archival geological data. According to the Polish Supreme Audit Office report (NIK, 2013), in order to reliably assess shale gas resources in Poland more data from about 300 wells are needed. Even though many oil & gas companies started to drill in Poland as they wanted to know whether they should stay and invest more money in exploitation or whether to they should leave, by December 2016, only around 72 wells had been drilled and not even half of them fracked. This has not changed much ever since, and thus, the process of assessing shale gas resources in Poland has still not been completed. Licenses for shale gas exploration in Poland have been issued since 2007, reaching its peak in 2012 (over 100), to drop to only 27 in December 2016. According to the data provided on-line by the Ministry of Environment, the highest number of drills was performed in 2012 (24) but then it dropped to 4 in 2015. Later on, when the global

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