

Contesting Technologies in the Networked Society: A Case Study of Hydraulic Fracturing and Shale Development

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High-volume hydraulic fracturing, a drilling simulation technique commonly referred to as “fracking,” is a contested technology. This is to say that it sits at the juncture of democratic decision-making over the application of science and technology in society, with far reaching implications for global energy policy and environmental governance. While the economies of extraction and pressing environmental concerns such as climate change are global, drilling projects have the potential for significant environmental, health and social impacts on local communities. The use of hydraulic fracturing is increasingly widespread in the oil and gas industry. Given that global shale gas resources are “vast” according to the U.S. Energy Information Administration, hydraulic fracturing is experiencing an international expansion, making it a key point at which to study the cross-national reception of the technology.

In this dissertation, I study a transnational movement against hydraulic fracturing and shale development. The core question, which drives this inquiry, is: *In what ways are environmental activists using new media technologies to challenge socio-political power structures?*

In chapter two, I examine the structure of a social movement against fracking and shale development, the Global Frackdown, through analysis of hyperlinking patterns and qualitative analysis of the content of the ties of one European strand of the movement. I apply a relational perspective to the study of role of digital technologies in transnational political organizing. Qualitative methods of in-depth interviews are combined with social network analysis of hyper-linkages between the websites of organizations supporting a day of action calling for a ban on hydraulic fracturing, called Global Frackdown. Analysis shows that activism against unconventional fossil fuels brings together very localized concerns about environmental risks associated with extractive industries with more abstract global concerns. I identify three actor types: coordinator, broker, and hyper-local. As I show, while international organizations play a coordinating role, local groups with a global worldview can connect transnational movements to the hyper-local scale by networking with groups that are too small to appear in a transnational network.

In chapter three, I examine the content of the movement’s messaging on the social media platform Twitter. Findings show that Global Frackdown tweeters engage in framing practices of: movement convergence and solidarity, declarative and targeted engagement, prefabricated messaging and multilingual tweeting. As I show, Global Frackdown tweeters integrate personal action frames with collective action frames, as well as engage in hybrid framing practices, that I describe as *transnational frame jumping*. The episodic, loosely-coordinated and often personalized, transnational framing practices of Global Frackdown tweeters support core organizers’ goal of promoting the globalness of activism to ban fracking. Global Frackdown activists use Twitter as a tool to advance the movement and to bolster the moral authority of the movement, as well as to forge linkages between localized groups on a transnational scale.

In chapter four, in order to contextualize the anti-hydraulic fracturing social movement within the wider mediated discourse about the shale industry, I study the relative prominence of negative messaging about shale development in relation to pro-shale messaging on Twitter across five hashtags (#fracking, #globalfrackdown, #natgas, #shale, and #shalegas). In addition, I analyze the top accounts tweeting using the #fracking hashtag and receiving @mentions with the hashtag. Results show statistically significant differences in the sentiment about hydraulic fracturing and shale development across the five hashtags. In addition, results show that the discourse on the main contested hashtag #fracking is dominated by activists, both individual activists and organizations. The highest proportion of tweeters, those posting messages using the hashtag #fracking were individual activists, while the highest proportion of @mention references went to activist organizations.