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How geographic distance and political ideology interact to influence public perception of unconventional oil/natural gas development

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HIGHLIGHTS

- Conservatives support unconventional oil and gas development (UOGD) more than liberals.
- This divide widened as geographic distance from UOGD areas increased
- Construal Level Theory may help explain this finding
- We discuss implications for energy policy and risk communication

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ABSTRACT

A growing area of research has addressed public perception of unconventional oil and natural gas development via hydraulic fracturing ("fracking"). We extend this research by examining how geographic proximity to such extraction interacts with political ideology to influence issue support. Regression analysis of data from a fall 2013 national telephone survey of United States residents reveals that as respondents' geographic distance from areas experiencing significant development increases, political ideology becomes more strongly associated with issue support, with the liberal-partisan divide widening. Our findings support construal level theory's central premise: that people use more abstract considerations (like political ideology) the more geographically removed they are from an issue. We discuss implications for studying public opinion of energy development as well as for risk communication.

1. Introduction

In recent years, advances in horizontal drilling and hydraulic fracturing ("fracking") technology[1] have led to increased unconventional oil and natural gas development (UOGD)[2] in many countries. Various health, environmental, economic, and social impacts have garnered considerable controversy (Colborn et al., 2011; Jacquet, 2014; Jemielita et al., 2015; Kinnaman, 2011; Moore

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[1] Hydraulic fracturing involves pumping water, sand, and chemicals underground "to enhance subsurface fracture systems [and] allow oil or natural gas to move more freely from the rock pores to production wells that bring the oil or gas to the surface" (United States Environmental Protection Agency, 2012)

[2] *Conventional* oil and natural gas are "produced by a well drilled into a geologic formation in which the reservoir and fluid characteristics permit the oil and natural gas to readily flow to the wellbore" (USEIA, n.d.). *Unconventional* production focuses on oil and gas in sandstone, siltstones, and shale that do not flow freely through these rock types. USEIA notes that "what has qualified as 'unconventional' at any particular time is a complex interactive function of resource characteristics, the available exploration and production technologies, the current economic environment, and the scale, frequency, and duration of production from the resource" (p. 1). What is unconventional today may become conventional in the future.

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et al., 2014; Newell and Raimi, 2014; Souther et al., 2014; Vengosh et al., 2014), and some countries, U.S. states, and U.S. communities have enacted moratoria or bans in response to public opposition (Coin, 2015; New York State Department of Environmental Conservation, 2015). Scholars have therefore examined public opinion toward UOGD, including how issue support and attitudes potentially differ depending on psychological factors (i.e., political ideology) as well as geographic distance to areas of development (Boudet et al., 2014, 2016; Davis and Fisk, 2014; Jacquet, 2012). However, existing research on the relationship between geographic distance and support for energy development has yielded mixed results (Jacquet, 2012; Swofford and Slattery, 2010). While these studies suggest that this relationship depends on experiences with different impacts, the nature of local issue discourse, salient values, and other elements, they often treat distance as a distinct predictor rather than examining how it conditions the effect of these elements on issue support.

In this article, we propose that the ways in which people perceive distance – that is, the extent UOGD is seen as "near" or "far" away – determines the social-psychological factors that are brought to bear when forming issue judgments, with implications for patterns of acceptance or opposition at different geographic scales (Evensen and Stedman, 2016; Gravelle and Lachapelle, 2015; van der Horst, 2007). Specifically, we argue that geographic distance to areas of significant UOGD interacts with political ideology to influence support among a nationally representative sample of U.S. adults. We expect that the liberal-conservative divide in support (Boudet et al., 2014) will widen as distance from these areas increases. Our study extends similar research on other contentious issues by focusing not on distance to a particular entity like an oil pipeline (Gravelle and Lachapelle, 2015) or an international border (Branton et al., 2007) but instead to numerous energy extraction areas that vary in discourse surrounding potential impacts, regulation, and other characteristics. It also draws on a theoretical framework – construal level theory (Trope and Liberman, 2010) - to understand the dynamics of this interaction and its implications for public opinion research and risk communication.

2. Political Ideology and public perception of UOGD

Political ideology is "a set of beliefs about the role of government that shapes responses to a wide range of specific policy issues" (Abramowitz and Saunders, 2006, p. 177). Individuals for whom political ideology is salient are more likely to perceive issues and evaluate information in a manner that reflects and reinforces those dispositions (Hart et al., 2015a). Partisan differences in issue awareness, concern, and other dimensions can arise in such situations and have been observed for a number of contentious issues (McCright and Dunlap, 2011), although some scholars have questioned the magnitude of such polarization (Fiorina and Abrams, 2008).

Controversy surrounding UOGD reflects ideological disputes across a variety of issues, including property rights, economic development, environmental protection, and government regulation (Davis and Fisk, 2014). Therefore, there is a noticeable ideological and party gap in issue support in the U.S. (Boudet et al., 2014; Cama, 2015; Foran, 2014). Conservatives often support it because of the promise of jobs as well as belief in the merits of free enterprise and economic development predicated on cheap fossil fuel energy (McCright and Dunlap, 2011). Conversely, liberals often oppose it because of environmental risks such as landscape degradation and water contamination (see Souther et al., 2014; Vengosh et al., 2014) that they view as unacceptable. This polarization, moreover, can be amplified as people selectively attend to cues provided by political elites that resonate with their ideological values (Brulle et al., 2012). Zaller (1992, p. 6) defined elites as "persons who devote themselves…to some aspect of politics of public affairs [such as] politicians, higher-level government officials, journalists, [and] activists." Zaller argued that patterns of elite consensus or conflict on an issue can filter down to citizens for whom political ideology is salient and who pay attention to issue discourse, leading to greater partisan divisions when elite disagreement is high. Indeed, the Republican Party emphasizes the economic benefits of expanded domestic oil and natural gas production (Republican National Committee, n.d.) in contrast to the Democratic Party, which is more supportive of renewable energy (Democratic National Committee, n.d.).

Overall, given that UOGD touches on politically controversial issues along with the likelihood of elite disagreement when it comes to issue support, we expect that political ideology will be associated with support as follows:

- H1: Political conservatives will be more supportive of UOGD than political liberals.

3. Distance and perception of UOGD

Much of the research on geographic distance as it relates to public perception of energy development speaks to the NIMBY phenomenon (Not In My Backyard), which posits a consistently negative relationship between distance and public support because people are confronted with adverse impacts in their "backyard" (Krause et al., 2014). However, the association between distance and public perception is inconsistent across studies (Batel and Devine-Wright, 2015; Smith, 2002). In the case of UOGD in particular, some studies find no relationship (Jacquet, 2012), while others have found that closer distance is associated with more, not less, support (Boudet et al., 2016). The NIMBY designation in general has also been criticized for a number of reasons (Jacquet, 2012). Some scholars, moreover, have also argued that because distance is often a proxy for social-psychological factors and broader social and political characteristics of an issue (Gravelle and Lachapelle, 2015), its relationship with public opinion toward energy development is inherently variable depending on local experiences, local discourse, salient ideological values, and other considerations (Swofford and Slattery, 2010; van der Horst, 2007).

4. Distance, political ideology, and public perception of UOGD

In this article, we view distance not as an objective measure of location or a substitute for the aforementioned psychological factors in models of public opinion. Instead, we believe that it conditions the effect of these factors on issue support/opposition. The ways in which people perceive distance – that is, the extent UOGD is seen as "near" or "far" away – determines the social-psychological factors that are brought to bear when forming issue judgments, with implications for patterns of acceptance or opposition at different geographic scales (Evensen & Stedman, 2016; Gravelle and Lachapelle, 2015). In particular, we examine how geographic distance to areas of UOGD interacts with political ideology to influence support. We expect that the liberal-conservative divide in support (Boudet et al., 2014) will widen as distance from these areas increases. Indeed, recent research on other contentious issues supports this premise. Gravelle and Lachapelle (2015) found that the association between political ideology and support for the controversial Keystone XL oil pipeline strengthened as respondents' geographic distance to the proposed pipeline route increased. While conservatives supported the pipeline irrespective of distance, support among liberals declined as distance increased,