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Free Market Ideology and Deregulation in Colorado's Oilfields: Evidence for triple movement activism?

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Abstract

Unconventional oil and gas extraction (UOGE) has spurred an unprecedented boom in on-shore production in the U.S. Despite a surge in related research, a void exists regarding inquiries into policy outcomes and perceptions. To address this, support for federal regulatory exemptions for UOGE is examined using survey data collected in 2015 from two northern Colorado communities. Current regulatory exemptions for UOGE can be understood as components of broader societal processes of neoliberalization. Free market ideology increases public support for federal regulatory exemptions for UOGE. Perceived negative impacts do not necessarily drive people to support increased federal regulation. Utilizing neo-Polanyian theory, interaction between free market ideology and perceived negative impacts is explored. Free market ideology appears to moderate people's views of regulation: *increasing* the effect of perceived negative impacts while simultaneously increasing support for *deregulation*. To conclude, the ways in which free market ideology might normalize the impacts of UOGE activity are discussed.

Keywords

Hydraulic fracturing; unconventional oil and gas production; fracking; free markets; neoliberalism; Polanyi; double movement

INTRODUCTION

Unconventional oil and gas extraction (UOGE)—executed via a combination of vertical drilling, directional drilling, and hydraulic fracturing (or fracking)—has spurred an unprecedented boom in United States (U.S.) domestic oil and gas production. Proponents claim that UOGE creates jobs and energy independence while reducing greenhouse gas emissions (Driessen 2013; Energy from Shale 2015). However, economic growth related to UOGE is relatively modest (Kinnaman 2011), and most direct jobs go to people from outside host communities (Wrenn *et al.* 2015). Emerging evidence suggests that UOGE can strain local infrastructure (Graham *et al.* 2015), have negative environmental impacts (Holzman 2011; Ferrar *et al.* 2013; Paulik *et al.* 2015), and damage public health (Colborn *et al.* 2011; Perry 2012; McKenzie *et al.* 2014; Rabinowitz *et al.* 2015). Social scientists have responded to the boom by conducting a number of studies examining general cost-benefit perceptions of UOGE activity (Jacquet 2012; Schafft *et al.* 2013; Boudet *et al.* 2014; Crowe *et al.* 2015) and quality of life related to UOGE activity (Willow 2015).

Nevertheless, a void exists in our knowledge of UOGE's policy-related aspects, even as deregulation requires states and cities to formulate policy responses (Boudet *et al.* 2016). This is especially important to examine, since the boom in UOGE in the U.S. can be attributed in part to the industry's exemptions from comprehensive federal environmental regulations (Kraft *et al.* 2011; Nolon and Gavin 2013; Warner and Shapiro 2013). Yet, we still know little about how people living amid the UOGE boom perceive industry exemptions from federal environmental regulations. We also know little about how this relates to people's overarching political and economic ideologies, particularly to views on free markets.

As a long-standing top energy producer in the U.S. (EIA 2016), Colorado offers a vital laboratory for studying socio-environmental consequences of drilling amid U.S. population centers. Colorado's Front Range, emanating about 100 miles north and south from Denver along the Rocky Mountains, has record population growth and one of the most competitive housing markets in the nation. It also hosts substantial UOGE activity, with oil extraction quadrupling and natural gas extraction up 51% since 2010 (EIA 2016). Importantly, our study site of Weld County ranks eleventh among U.S. counties in its daily oil production and has one of the highest well-to-people density ratios in the country (FracTracker Alliance 2015). Politically, Colorado leaders assert the state sets the bar for UOGE regulations, even as Colorado townships wrangle with the state over the appropriate scale of governance and enforcement mechanisms. Thus, while states such as Texas and Kansas have more drilling, with 292,000 and 252,000 active wells respectively (FracTracker Alliance 2015), Colorado's high production rates and political context make it an illustrative study site.

Here, we examine support for federal regulatory exemptions for UOGE activity. We utilize survey data we collected from two communities in northern Colorado as part of a National Institutes of Health study on UOGE impacts. To the best of our knowledge, no study has examined what drives public support of regulatory exemptions for UOGE. Further, our focus on northern Colorado extends the literature, which has an abundance of data drawn primarily from Texas and the natural gas-producing Marcellus Shale in the eastern U.S.

We assert that current regulatory exemptions for UOGE can be understood as components of broader societal processes of neoliberalization, thereby moving the industry away from traditional state-based regulation and towards market-based re-regulation. We expand neo-Polanyian theory (Block and Somers 2014; Malin 2015) by relating northern Colorado outcomes to these broader processes of neoliberalization. We use our survey data to test for relationships between Coloradoans' free market ideologies and their support for federal regulatory exemptions. Public support for the neoliberalization of UOGE policy may hinge upon free market ideology, but this has not been tested.

Below, we describe the current literature on public perceptions related to hydraulic fracturing and other aspects of UOGE, offer a primer on Polanyian theory and neoliberalism, and present relevant findings from our survey, conducted simultaneously in two communities — one with active extraction and the other with a moratorium on drilling within city limits.

EMPIRICAL AND THEORETICAL BACKGROUND

Regulatory and Attitudinal Contexts Surrounding UOGE Activity

Historically, regulatory oversight of the U.S. oil and gas industry concentrated at the federal level, particularly as production ramped up in the early 20th century (Anderson 2012). More recently, federal environmental and health regulations for the oil and gas (O&G) industry have been *deregulated* and *devolved* to state enforcement through a series of clauses, exemptions, and amendments to federal regulations. These include: the 1976 Resource Conservation and Recovery Act, which now makes special exceptions for waste storage and disposal related to O&G production; the 1980 Comprehensive Environmental Response, Compensation, and Liability Act (Nolon and Gavin 2013), which excludes many petroleum and O&G products from definitions of hazardous waste; and exclusion from the Toxic Release Inventory Reporting requirements in that portion of the Emergency Planning and Community Right-to-Know Act (Kraft *et al.* 2011).

Perhaps the most notorious exemption is the so-called “Halliburton Loophole” embedded in the 2005 Energy Policy Act that exempted the O&G industry from various reporting requirements of the Safe Drinking Water Act, the Clean Water Act, and a suite of other U.S. federal environmental regulations (Warner and Shapiro 2013). Despite recent attempts to enact federal regulations for UOGE occurring on federal (public) lands governed by the Bureau of Land Management (BLM), several states and industry interests have taken this issue to court, saying that federal regulations unnecessarily replicate state laws. Thus, oversight has largely been devolved to the states, which have struggled to develop adequate regulatory responses to UOGE. The current regulatory environment is inherently fragmentary (Davis 2012; Rabe 2014; Ziogiannis *et al.* 2016; Neville and Weinthal 2016).

Populations familiar with UOGE hold an array of complex views about its threats and opportunities. Most related research has focused on other U.S. regions. Rural Pennsylvanians perceive benefits like job growth, economic development and increased tax revenue, yet also express concern about water pollution, public health, and nuisances like noise and dust (Brasier *et al.* 2011; Jacquet 2012; Jacquet and Stedman 2013;). Residents of

Louisiana (Ladd 2013, 2014), Texas (Anderson and Theodori 2009; Theodori 2009), and Ohio (Willow 2015) hold similarly conflicting views about risks and benefits.

Thus, UOGE activity spreads rapidly across in the U.S., and most intensively in top drilling locations such as Colorado, leaving the people living in oil and gas patches scrambling to respond. If democratic decision-making and procedural justice are to shape UOGE regulations in heavily-drilled areas, then we must rapidly commence with systematic data collection related to people's perceptions of said regulations in those regions, especially Colorado. Here we address that need.

Polanyian Economic Theory and Neoliberal Capitalism

Karl Polanyi's work (1944, 2001) has become increasingly relevant for contemporary social scientists analyzing effects of neoliberal capitalism (Dale 2010, 2016; Block and Somers 2014). For Polanyi, markets are 'always embedded' in social ties and cultural systems; that is, markets emerge from complex, long-term socio-cultural and institutional arrangements and reciprocal systems of social exchange. Markets are not autonomous entities; rather, they are constructed over time within social norms, relationships, and institutions. Economic relations are so embedded in social life that when free market policies attempt to dis-embed markets from social protections, people experience social dislocation as their daily lives become less predictable, increasingly unstable, and less guarded by regulatory systems. Dis-embedded and/ or de-regulated markets that encourage corporate 'self-regulation' exacerbate people's social dislocation because these markets depend on rapid exchanges of fictitious commodities—like land, labor, and money—which are inherently unstable when traded as commodities in market-based systems (Polanyi 1944; Block 2008).

As self-regulating, dis-embedded markets cause deep social dislocations, people experience elevated risks and insecurity related to unsafe workplaces, environmental contamination, or abuses of labor amid de- and re-regulation. These experiences of dislocation result in the double movement—whereby people mobilize to fight destabilizing impacts of free market capitalism. The double movement mobilizes through “the varying support of those most immediately affected by the deleterious action of the market,” and outcomes involve collectively “using protective legislation, restrictive associations, and other instruments of intervention” (Polanyi 1944:138–139). Double movement activists typically target the state for social protections, as with U.S. movements for federal environmental protection and child labor laws (Dale 2010).

Yet, current systems of neoliberal capitalism have unique socio-cultural discourses and impacts, helping shape what Block and Somers (2014) call 'social naturalism' – people's increasingly common ideological belief in free 'market fundamentalism.' Social naturalism holds that “the laws of the market are no different from the biological self-regulatory organisms of nature” (Block and Somers 2014: 6) and suggests that markets produce socially, economically, and environmentally optimal outcomes that are the 'natural' workings of the free market. Dis-embedded markets become normalized. Because this system maps closely on to American values of individualism and private property, neoliberal discourses have become hegemonic in the U.S. (Harvey 2005). But how is the double movement changed or re-constituted in neoliberalized spaces like the U.S.?

Here, neoliberalism refers to policies enacted since the late 1970s in the U.S. and U.K. and subsequently adopted globally – policies characterized by widespread subordination of productive sectors to financial ones (Castree 2008). Neoliberalism typically involves massive reductions in the federal state's role in governance, including privatization of state-owned natural resources, state-run directives, and devolution of governance to states, municipalities, or to civil society in the interest of 'slimming down' the federal state (Harvey 2007).

Neoliberalism treats market systems as regulators of states and has transformed the ethos of governance from bureaucracy to business. Neoliberalism manifests primarily as a moral project that normalizes logics of individualism and entrepreneurialism; it equates freedom with consumption and self-interest, redefining citizens as consumers (Mudge 2008).

Yet, neoliberalism is qualitatively different from both liberalism and so-called "American" values that parallel it. First, neoliberalism envisions a more limited state role than even the most conservative programs pre-1970s. Second, geographical implications of neoliberalism differ from liberalism or American individualism, as it is promoted and accepted among global elites (Harvey 2007). Additionally, freedom is conceptualized as capacity for self-realization and freedom from bureaucracy—rather than freedom from want—and human behavior is therefore understood from individualized, economized perspectives (Leitner, Peck, and Sheppard 2007). Neoliberalism is therefore as much a social and ideological project as an economic one, a "hegemonic restructuring ethos" (Peck et al. 2010:104) of society.

Environmental activism deserves specific attention. Polanyi identified environmental degradation as a central problem of free market systems. However, neo-Polanyians do not adequately analyze environmental activism as part of the double movement (Randles 2007; Dale 2010; Polanyi-Levitt 2013). For example, sociologists have shown how natural resource markets are embedded in a complex array of social relations, policies, and institutional arrangements (Kaup 2015), which help mobilize divergent responses to regulation and social impacts certain of those markets (Malin 2015). Still, while social movement scholarship has highlighted resistance to toxic industries or environmental harms (e.g. Devine-Wright and Howes 2010; McAdam and Boudet 2012; Bogdan, *et al.* 2015), such activism has not been regarded as part of the double movement.

A few studies attempt to connect environmental activism and Polanyian theory, particularly where activists diverge from predicted models. Malin (2015) utilizes fieldwork in uranium communities to characterize 'sites of acceptance,' where people mobilize to support socially or environmentally risky industries. Finewood and Stroup (2012) argue that market-based logics have attenuated the regulatory response to UOGE in Pennsylvania. In a study of Pennsylvania farmers with natural gas leases, Malin (2014a) found that farm operators displayed economic rationality akin to Block and Somers' market fundamentalism through a neoliberalized discursive framing that normalized the rapid expansion of local drilling. More broadly, controversies around potentially risky industrial or extractive facilities are often tempered by strong free market ideologies, which use economic outcomes like jobs and economic growth as carrots incentivizing growth (Shriver and Kennedy 2005; Messer, Adams and Shriver 2012; Ladd 2014). Thus, orthodox Polanyian theory ignores the power

and durability of neoliberalized market fundamentalism (Block and Somers 2014), particularly in environmental contexts.

Malin (2015) calls this the triple movement.¹ The triple movement is a neoliberalized arm of Polanyi's double movement. It represents the normalization of neoliberal ideologies and policies at the grassroots level, where people characterize free markets as the best, most efficient arbiters of social life. In stark contrast to double movement activism, triple movement actors mobilize 'sites of acceptance' for corporate self-regulation, marketization, and privatization of natural resources within potentially risky industrialized systems. Triple movement actors support commodification of fictitious commodities, like markets in land and mineral wealth, and even defend those markets as part of their community's social fabric. Triple movement actions are not astro-turf organizations; instead, they are grassroots, even community-based - *but are actively pro-market and privilege self-regulating markets*. Triple movement actors trust corporate self-regulation, since corporations are increasingly seen as providers of social protections and safety nets as the state retreats (Malin 2015).

Here, we empirically test the assertion that these neoliberalized public responses to social dislocation privilege dis-embedded, self-regulating markets. Free market ideology emerges as an important predictor of a range of environmental attitudes in other settings. Across different contexts, researchers have shown that free market ideology is associated with disbelief in climate change (Heath and Gifford 2006; Lewandowsky and Oberauer 2013; Cook and Jacobs 2014) and low general environmental concern (Jackson *et al.* 2013). Similarly, Longo and Baker (2014) show that people who support deregulation have less environmental concern. Taken together, these studies indicate that free market ideology reduces concern for environmental well-being and support for environment regulation. The theoretical and sociological significance of this in the UOGE context is systematically addressed here.

Other predictors of environmental policy support

In this section, we discuss other possible predictors of regulatory views. As we describe in the methods section, we control for these possible influences to avoid omitted variable bias.

Trust in regulatory authorities has been found to increase support for progressive environmental regulations (Konisky, Milyo and Richardson 2008; Harring 2013, 2014; Zannakis *et al.* 2015). Trust in regulators is especially important in Colorado, where the main regulatory agency, the Colorado Oil and Gas Conservation Commission (COGCC), simultaneously enforces regulations and advocates for increased development to support economic growth. In this dual role, the COGCC appears to favor industry (Cook 2014, 2015; Opsal and Shelley 2014).

Proximity to UOGE activities might also relate to regulatory views in several complex ways. For instance, familiarity with a technology or industry generally lessens perceptions of risk related to that technology or industry (Fishchoff *et al.* 1978; Slovic *et al.* 1980). Media and

¹Though this term is the same as Nancy Fraser's characterization of emancipatory markets, the concepts are quite distinct and were coincidentally created around the same time.

community leaders also impact framing and public perceptions (Kasperson *et al.* 1988; Zavestoski *et al.* 2004; Auyero and Swinstun 2008). Hence, respondents who live near harmful facilities may normalize risk and /or might not necessarily be more likely to endorse regulation.

Political ideology or affiliation can also profoundly influence people's support for environmental policies, their environmental behavior, and general environmental attitudes (Mohai and Bryant 1998; Hamilton 2008; McCright 2011; McCright and Dunlap 2011). In the case of fracking, political conservatives are generally more supportive of expanding drilling (Boudet *et al.* 2014; Clarke *et al.* 2015; Crowe *et al.* 2015).

Finally, public attitudes towards environmental and technological issues vary by socio-demographic variables like age, race, socio-economic status and gender (Flynn, Slovic and Mertz 1994; Finucane *et al.* 2000; Shelley, Chiricos and Gertz 2011). For that reason, we have controlled for these in the models presented below.

Hypotheses

The theoretical framework sketched above indicates that free market ideology may be a key overlooked variable in the case of public perceptions of UOGE activity. Specifically, qualitative research indicates that UOGE is framed in terms of its economic benefits and some believe that the expansion of UOGE is a market-driven, inevitable process (Malin 2014b). Further, a 'triple movement' dynamic may exist in that extractive community members support deregulation. Following this framework, we test the following hypothesis:

Hypothesis 1: Free market ideology will increase support for exemptions from federal regulations for UOGE activity.

As noted above, people living near hydraulic fracturing and other phases of UOGE activity report an array of positive and negative impacts (e.g. Braiser *et al.* 2011; Jacquet 2012; Jacquet and Stedman 2013). It is likely that people who associate hydraulic fracturing with negative impacts will favor comprehensive regulations. While this has not yet been tested in the literature on hydraulic fracturing, studies have shown that perceived risk in other areas, such as climate change, does predict policy support (O'Connor *et al.* 1999; Leiserowitz 2006). Thus, we additionally expect that:

Hypothesis 2: Perceived negative impacts from UOGE activity will increase support for federal regulation of the industry.

The 'social naturalism' concept described above suggests that free market ideology helps normalize environmental risks from industrial development, enhancing public support for expanding potentially risky industries. This suggests that, among people who report holding free market ideologies, these views may temper public perceptions of risks related to hydraulic fracturing. In other words, we suggest that while individuals possessing free market ideologies may very well perceive a number of risks from UOGE activity or even witness personal or community harm, normalization of these risks means they do not mobilize the sorts of double movement activism that Polanyi suggested. Rather, as Malin's triple movement framework (2015) suggests, free market ideology *moderates* the effect of perceived negative impacts. Thus, we test the following hypothesis:

Hypothesis 3: Free market ideology will ‘normalize’ the impacts of UOGE activity. The effect of perceived negative impacts upon support for federal exemptions will be moderated by free market ideology.

Methods, Measures, and Data

Data Collection Methods

The National Institute of Environmental Health Sciences, one of the research centers comprising the National Institutes of Health, funded this two-year study. Our research team utilized a unique comparative design. Data was collected from two communities in northern Colorado in Spring 2015; these communities were selected due to their varying levels of oil and gas activity.

The first community, Fort Collins, Colorado, is a relatively affluent city of about 156,000 whose economy centers on a large, research-intensive land grant university, hospitals, and various tech firms (ACS 2015a). At the time of survey data collection, there was very little oil and gas drilling within the city limits, and several miles separated our respondents’ homes from the nearest wells. In 2013, city residents voted for a moratorium on UOGE, though this is currently under appeal in state court.

The study’s second community is Greeley, Colorado. Greeley has about 99,000 residents and its economy centers on industrialized agriculture, oil and gas extraction, and a medium-sized university. (Chamber of Commerce 2016). At the time of data collection, roughly 21,000 oil and gas wells were actively being drilled in Greeley’s home county (COGCC 2015), with dozens of wells in close proximity to our respondents.

Our sampling frame for Greeley was a census tract near a well pad with three active wells and seven additional pending permits for new wells. The study site was chosen by first identifying permitted wells within city limits, then narrowing our search to well pads with additional permits pending. Site visits were then conducted to identify the most appropriate site with close proximity to residential areas. Once this well pad location was selected, we identified the most proximate census tract from which to sample. In Fort Collins, we selected a comparable census tract, with socio-demographic similarities to the Greeley site, except that the Fort Collins location was relatively insulated from UOGE activity. From these tracts, we drew a random sample of 1400 households, 700 per community, to participate in the study.

We collected data using a mixed-mode, modified tailored design approach (Dillman *et al.* 2014). Two waves of mail surveys were distributed, with reminder postcards mailed between the two survey mailings. The third round utilized drop-off/pick-up methods (Steele *et al.* 2001) in which households were contacted up to six times, in an attempt to retrieve a completed survey instrument from every location. The ‘nearest birthday’ method was used to screen respondents within households. A total of 458 surveys were collected, for a response rate of 32%. 164 people from Greeley and 294 people from Fort Collins participated.²

As mentioned above, Colorado's current boom perpetuates the state's long history of oil and gas production, which makes the industry familiar to long-time residents. Colorado's first successfully drilled well was completed in 1860 outside Colorado Springs. The first refinery was built in 1885. Production in Colorado exploded at the turn of the century, particularly on the Western Slope and Denver-Julesburg Basin, increasing from 200 barrels per day in 1885 to over 2 billion barrels per day by the late 1920s (Colorado Energy Office 2013). Additional booms have occurred in the 1970s, in the 1990s, and again from about 2009–2015, as UOGE activity and booming oil prices created the most recent surge.

Measures

Dependent Variable—Our dependent variable assessed respondents' support for federal deregulation, such as the "Halliburton Loophole," utilizing the following statement:

"The oil and gas industry should be **exempt** from federal environmental regulations."

Respondents could answer on a Likert scale, from "Strongly Agree" to "Strongly Disagree". (We recoded this variable so that 3=Strongly Agree and Agree, 2= Neither Agree or Disagree, 1= Disagree or Strongly Disagree for ease of interpretation.) As shown in Figure 1, after recoding only 11% of respondents agreed with the statement, while nearly 80% reported disagreement.

Focal Independent Variables—We assess free market ideology through questions adapted from both Heath and Gifford (2006) and Life and Transition II study (ECB 2015). These items were combined into a scale with Cronbach's Alpha = 0.75 and with a mean of 2.6, with higher values corresponding to greater free market ideology.

We measure perceived negative impacts from UOGE development by asking respondents to assess the following quality of life impacts of UOGE activity in their community: increased traffic on main roads, increased traffic on secondary/ rural roads, noise around oil and gas facilities, light around oil and gas facilities, diminished water quality at home, diminished water quality in the environment, diminished access to water, and reduced control over land. We combine responses to these questions into an additive scale with Cronbach's Alpha = 0.93 and mean=1.95. Appendix 1 provides question wordings for these items.

Control Variables—We assess trust in state regulators via four survey questions in which respondents gauged the COGCC's capacity and ability to adequately enforce regulations and the Colorado Department of Public Health and Environment's ability to protect human and environmental health. We combine these into an additive scale with alpha = 0.90, a mean of 3.05 and a standard deviation of 1.06 (higher values correspond to more trust in state regulators).

²There are several reasons why Fort Collins residents were more apt to respond than Greeley residents. For example, the largest employer in Fort Collins is a university and the town has a high number of people with advanced degrees; we speculate that these individuals have a higher propensity to respond.

We control for political affiliation (0= not Republican, 1= Republican), proximity to UOGE (0= Fort Collins, 1= Greeley), race/ethnicity (0=non-white, 1=white), household income (0= less than \$24,000, 1=\$35,000-\$50,000, 2=\$50,000 to \$80,000, 3=\$80,000 or more), education (0= less than HS, 1= high school graduate, 2= associates or some college, 3= college graduate, 4= graduate degree or more), age in years, and sex (0=male, 1=female). Greeley residents have somewhat lower incomes and perceive more oil and gas impacts than Fort Collins residents. (See Table 1 for means and standard deviations for all predictors, organized by community.)

Statistical Models—We employ ordinal logistic regression to accommodate the ordinal nature of our outcome variable. Model 1 includes our control variables for socio-demographics, trust and location. In Model 2, we add the impact variables and the free market ideology scale. In Model 3, we test for whether free market ideology moderates perceived oil and gas impacts by adding an interaction between these variables. To assess model fit, we report two pseudo R^2 statistics—the first was developed by McKelvey and Zavoina (1975) and the second is described in Lacy (2006)—and Akaike Information Criteria (AIC) and Bayesian Information Criteria (BIC) statistics. We examined multicollinearity diagnostics and no variance inflation factor exceeded 1.5, indicating that multicollinearity is not a problem in our models.

Results

As shown in Table 2, *Model 1* includes only socio-demographic controls and, for the most part, these variables have relatively little influence – though more educated individuals are slightly less supportive of federal exemptions. In this model, trust in state regulators reduces support for federal exemptions ($b = 0.320$, $p < .05$). Income, age, political affiliation, location, and race/ethnicity appear to have relatively little impact.

Model 2 introduces the free market ideology and perceived impact scales to test Hypotheses 1 and 2. Consistent with Hypothesis 1, we find that individuals who advocate free market ideologies are more likely to endorse exempting the oil and gas industry from federal regulations ($b = 0.841$, $p < .05$). Support for exemptions *increases* as negative perceptions of UOGE activity's impacts rise. This surprising finding runs counter to Hypothesis 2, as we expected perceived impacts to *reduce* support for exemptions. The introduction of free market ideology and impacts has attenuated the effect of trust and, as in the prior model, the socio-demographic controls and location appear to be relatively unimportant.

Model 3 tests Hypothesis 3 by including an interaction between free market ideology and perceived impacts. Here, the main effect of perceived impacts (i.e. the effect of perceived impacts when free market ideology is equal to zero) is statistically significant, as is the main effect of free market ideology ($b = 1.244$ when impacts are set to zero). The interaction term, while not statistically significant, suggests that as free market ideology increases, the effect of perceived impacts on people's views of (de)regulation wanes (and vice versa). In other words, free market ideology moderates the effect of perceived impacts from the UOGE industry on people's support for federal regulatory exemptions by intensifying the effect of perceived impacts on *support* for deregulation. However, the inclusion of the interaction

terms has not improved model fit—the pseudo R^2 statistics have barely improved and both the AIC and BIC suggest *worse* model fit than the prior model. These findings provide qualified support for Hypothesis 3.

To further understand the modeling results, we calculated average marginal effects (AMEs) for impacts across different levels of free market ideology using the coefficients from Model 3; these average marginal effects are plotted in Figure 2. The AMEs largely corroborate the results reported in Table 2. As free market ideology increases, the AME of impacts grows in tandem — thus, individuals who adhere to strong free market ideology while also perceiving strong negative quality of life impacts are most likely to support federal exemptions. Still, in practical terms the degree of moderation is small.

Discussion & Conclusions

We find unambiguous support for *Hypothesis 1*. Across all model specifications, we find that free market ideology increases public support for federal regulatory exemptions for the oil and gas industry (in other words, support for deregulation). This effect survives the inclusion of an array of control variables, suggesting that free market ideology is an important and too often overlooked predictor of the public's policy preferences. The presence of free market ideology may indeed indicate the hegemonic power of neoliberal ideology in societies like the U.S. (Harvey 2007; Block and Somers 2014). These results are consistent with research documenting the impact of free market ideology on people's belief in climate change (Health and Gifford 2006; Lewandowsky et. al. 2013). Indeed, because free market ideology appears to impact a diverse array of variables ranging from UOGE regulations to climate change attitudes, it warrants further attention in future research.

We do not find support for *Hypothesis 2* in this analysis. Perceived negative impacts do not drive people to support federal regulation. Counter to our hypothesis, we find that people who perceive more negative impacts from UOGE are *less* supportive of federal regulation or, alternatively, more likely to endorse federal deregulation.

However, the moderation model estimated to test *Hypothesis 3* (Model 3) provides more nuanced interpretation of the effect of perceived negative impacts. Due to social naturalism, we suspected that free market ideology would blunt the effect of perceived negative impacts. While we do find evidence that the effect of perceived negative impacts on regulatory support is to some degree conditioned by free market ideology, conditioning is not in the expected direction. Free market ideology appears to moderate perceptions of negative impacts, but, surprisingly, it *increases* the effect perceived negative impacts have on people's expressed support for *deregulation*—though in practical terms the degree of moderation is small.

This unexpected finding warrants further discussion. In our data, perceiving that UOGE activity creates negative impacts appears to *increase* support for federal *deregulation*. This is surprising, especially when we consider that research related to climate change has shown that heightened perceived impacts *increase* policy *support* (e.g. Leiserowitz 2006), or support for strengthened state regulations.

Perhaps findings related to climate change cannot be generalized to the case of policy related to UOGE activity in Colorado. Unlike climate change, which is often perceived as a distant problem for future generations, residents of the Colorado communities under study have familiarity and, often, daily experiences with UOGE activity. Well pads, pipeline routes, and industry infrastructure are in close proximity to homes, businesses, schools and public spaces, especially in Greeley. Many people are employed, directly or indirectly, by the industry. It is likely that, in addition to UOGE's visual presence in the community, some respondents will have personal connections to the industry as it becomes part of community social fabrics. In this context, people willingly tolerate impacts on quality of life or environment because of the perceived economic benefits of UOGE activity or personal ties to industry employees, making individuals' responses to UOGE activity quite different from their responses to climate change.

We assert, however, that these outcomes highlight the hegemonic power of neoliberal capitalism in political economies such as the U.S., supporting the notion of the triple movement. Here, it becomes normal to privilege deregulated economic development above socio-environmental or quality of life considerations. The seemingly surprising relationships discussed above, then, seem to highlight and support our overarching theoretical proposition that a triple movement now co-exists with a double movement in neoliberal political economies like the U.S.

It seems that rather than trusting the federal government to address negative outcomes from UOGE operations, people may instead prefer state-level UOGE regulations or industry self-regulation. This outcome may relate to respondents' general distrust in the federal government, which is a common and well-evidenced public sentiment in the American West (e.g., Limerick 1987; Reisner 1993; Krannich and Smith 1998). Even if people perceived the oil and gas industry as increasing risk or negatively impacting their communities or daily lives, they may blame these outcomes on the *federal* government, rather than on the self-regulating corporations or on the state-level institutions actually enforcing regulations.

However, we contend this is not unique to Colorado but is instead symptomatic of a growing triple movement in neoliberalized contexts like the U.S. In unreported models, we constructed an index measuring people's trust in federal and state capacities to regulate, and when we controlled for these factors, we saw no change in the relationship between perceived negative impacts and support for federal deregulation. Thus, it seems that some people may simply trust industry to regulate its own performance, trusting markets and private corporations more than the state. People's free market ideologies only enhance this trust as private or public-private approaches to regulation become increasingly privileged and preferred by people.³ Understanding the nuanced relationships between these different

³One alternative explanation is that some individuals might prefer that regulatory power concentrate at the local level and hence support federal exemptions. To investigate this possibility, we correlated our DV with two other variables: first, asking if localities should have the right to pass stricter regulation on UOGE activity and, second, asking if localities should be able to relax existing UOGE regulations. Using polychoric correlations, we observed that support for local regulation of UOGE has a positive correlation with support for federal exemptions ($\rho=.35$) while those who support increased local regulation are not supportive of federal exemptions ($\rho=-.29$). Hence, it appears that support for federal exemptions is not likely a function of preference for local regulation.

aspects of trust, and how they relate to people's overarching views on economic structures and regulatory responsibilities, is an important task for future research.⁴

Despite the drastic differences in the level of UOGE activity, when comparing Greeley and Fort Collins we find that Fort Collins residents are only slightly less supportive of federal regulatory exemptions, and this effect does not approach statistical significance in any model specifications. This highlights important intersections between the normalization of extractive industries in Colorado and normalization of neoliberal capitalism in the U.S., as embodied by the triple movement. On the one hand, Weld County has a long history of extractive activity and perhaps drilling has become normalized. That is, our Greeley sample may be desensitized to large-scale UOGE activity because it is seen as a part of their daily lives and collective history. This interpretation is in line with other research into the community response to environmental hazards (e.g. Kasperson et. al. 1988; Auyero and Swinstun 2007; 2008; 2009), which suggests that the mere presence of socially or ecologically harmful activity is unlikely to generate a public response. For our Fort Collins sample, an influx of new residents who may be unaware of the extensive drilling activity in Weld County may contribute to the surprisingly similar perceptions across communities. Our Fort Collins sample also includes individuals who work in managerial and engineering sectors of the oil and gas industry, such as engineering and oil field services, which may engender similar levels of support. Yet, Fort Collins residents voted for a moratorium on UOGE activity in 2013, which suggests that support for the industry is not widespread and something else must be at work to moderate residents' perceptions of UOGE *regulations*.

Thus, we suggest our findings highlight the presence of triple movement mobilization and the power that free market ideology can have on individuals' perceptions of environmental risks and appropriate regulations. In particular, neoliberalism's main ideological tenets — free trade and unencumbered markets, de- and re-regulation to promote free trade, shrinking social safety nets, weakening state capacities for governance, and the individualization of daily life (Harvey 2007)—have become increasingly hegemonic in U.S. policy and, in turn, U.S. cultural systems, since the early 1980s era of 'Reaganomics'. We now have a generation of adults that were raised in a neoliberalized U.S., where privileging self-regulating markets has been the accepted norm. In the realm of political discourse, this perspective has become so normative and hegemonic that to question the logic of free markets is to be anti-American or anti-freedom. Indeed, Block and Somers (2014) maintain and display that the core assumptions of neoliberalism are rarely challenged.

Our results show that these new ideological norms may help displace support for the double movement Polanyi observed and help create space for a divergent triple movement — fundamentally different from the double movement in its support for self-regulating (disembedded) market systems. While the double movement still thrives, a triple movement now exists alongside it, as the public may generally trust corporations to self-regulate, privilege market-based economics, and distrust state regulators. Hence, some members of

⁴This paper is one of the few to examine a specific UOGE policy. Other research has assessed general support using national samples (Boudet et al. 2014; Clarke et. al. 2015) and surveyed community leaders in areas with little active drilling (Crowe et al. 2015).

the public support deregulation, even in the face of negative impacts, while others may organize for more protection from rapid oil and gas development.

The robust predictive power of free market ideology in the face of several control variables suggests that future research should more closely attend to how this ideology impacts public demand for environmental protection and the type and level of environmental protection preferred by various segments of the population. We see this as a crucial area of study, specifically teasing apart the extent to which energy policy regimes are increasingly informed by neoliberal ideas. Coupled with the ongoing lobby for market fundamentalism and liberalism waged by business and industry, we may witness a steady march toward a weakened environmental state and normalization of de-/regulation favoring industry.

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Appendix 1. Question Wordings for Scale Variables

Trust

How much do you trust the Colorado Oil and Gas Conservation Commission (COGCC) to adequately regulate the oil and gas industry in Colorado?

How much do you trust in the capacity of the Colorado Oil and Gas Conservation Commission (COGCC) to adequately enforce state oil and gas regulations?

How much do you trust the Colorado Department of Public Health and Environment (CDPHE) to adequately protect human health from potential risks of oil and gas production?

How much do you trust The Colorado Department of Public Health and Environment (CDPHE) to adequately protect the environment from potential risks of oil and gas production?

Impact

Increased traffic on main roads

Increased traffic on secondary/rural roads

Noise around wellpads or other facilities

Light around wellpads or other facilities

Diminished water quality in my home

Diminished water quality in environment

Diminished access to water

Diminished control over land / home

Decreased property values

Free Market

An economic system based on free markets unrestrained by government interference automatically works best to meet human needs.

A free market economy is preferable to any other form of economic system.

The preservation of the free-market system is more important than localized environmental concerns

Fig. 1.

The oil and gas industry should be exempt from federal environmental regulations

Fig. 2.
Average Marginal Effects of Impacts by Free Market Ideology

Table 1

Means and Standard Deviations for Predictor Variables

	Full Sample		Greeley		Fort Collins	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Trust	3.06	1.06	3.08	1.11	3.05	1.03
Free Market	2.67	0.92	2.76	0.86	2.62	0.94
Impact	1.95	0.88	2.15	0.96	1.79	0.87
Income	1.02	1.08	0.66	0.84	1.21	1.14
Education	2.3	1.05	1.77	1.09	2.59	0.91
White	0.86	0.35	0.74	0.44	0.92	0.28
Age	45.63	18.8	50.71	17.26	42.89	19.05
Republican	0.26	0.44	0.26	0.44	0.26	0.44

Table 2

Ordinal Logistic Regression Model for Federal Exemptions

	Model 1 b(se)	Model 2 b(se)	Model 3 b(se)
Trust	0.320 * (0.132)	0.298 (0.154)	0.311 * (0.155)
Education (ref. less than HS)			
High School Graduate	−0.693 (0.568)	−0.796 (0.591)	−0.813 (0.591)
Associates or some college	−1.080 (0.562)	−1.050 (0.586)	−1.075 (0.585)
College Graduate	−1.180 * (0.583)	−1.060 (0.609)	−1.104 (0.609)
Graduate Degree or more	−2.208 * (0.758)	−1.839 * (0.792)	−1.903 * (0.797)
Income (ref. less than \$24,000)			
\$35,000–\$50,000	0.003 (0.298)	0.079 (0.316)	0.075 (0.315)
\$50,000 to \$80,000	−0.512 (0.544)	−0.476 (0.567)	−0.492 (0.570)
\$80,000 or more	0.408 (0.379)	0.331 (0.394)	0.255 (0.401)
Age	0.005 (0.007)	0.004 (0.008)	0.004 (0.008)
Republican	−0.067 (0.290)	−0.295 (0.304)	−0.298 (0.305)
White	−0.449 (0.357)	−0.274 (0.379)	−0.280 (0.377)
Location-Fort Collins	−0.417 (0.287)	−0.354 (0.309)	−0.348 (0.309)
Free Market Ideology		0.841 * (0.182)	1.244 * (0.371)
Oil and Gas Impacts		0.393 * (0.169)	1.010 * (0.508)
X Free Market Ideology			−0.215 (0.168)
<i>N</i>	385	365	365
<i>AIC</i>	533.28	487.43	487.86
<i>BIC</i>	588.62	549.83	554.17
<i>Mckelvey and Zavoina Pseudo R²</i>	0.14	0.27	0.30
<i>Lacy Pseudo R²</i>	0.07	0.14	0.15

*
=p<.05