

Energy Impacts Research Coordination Network >>> www.energyimpacts.org



Synergies and Innovations in Coordinating Energy Impacts Research: The Case of Shale Development Impacts
November 10, 2016, 1:30 – 2:30 p.m. CST

Synergies and Innovations in Coordinating Energy Impacts Research: The Case of Renewables
December 15, 2016, 1:30 – 2:30 p.m. CST

New Voices in Energy Impacts Research: Graduate Research Highlights
February 16, 2017, 1:30 – 2:30 p.m. CST

Coordinating Research on Energy Law and Policy
April 13, 2017, 1:30 – 2:30 p.m. CST

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The first annual Energy Impacts Symposium will be held July 26-27, 2017 at the Nationwide & Ohio Farm Bureau 4-H Conference Center in Columbus, Ohio



Roadmap

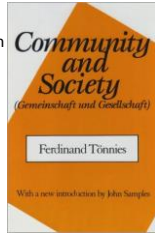
- Sociological approaches, Jeffrey Jacquet
- Economic perspectives, Jeremy Weber
- Geography & local impacts, Julia Haggerty
- Integration
- Q&A, discussion



Sociological Approaches to Energy

A discipline obsessed with Modernization and Urbanization
The study of the "impact" of modernization on rural communities

- Transformation of
 - Rural Communities To Urban Cities
 - Homogeneous populations to heterogeneous populations
 - Isolated communities to Integrated industries and economies
 - Agricultural to Blue/White Collar Jobs
 - Religious cultural norms to educated secular society, etc.



Sociological Approaches to Energy

A few Key Variables

- Effects on Housing, Employment, Govt. Services, Quality of life
- Changes to social interaction, long standing social structures
- Impacts to social stratification, who bears costs vs benefits?
- Political control, access to decision-making, trust, participation

- Resiliency of Communities to weather these changes, long term effects to community well being

Sociological Approaches to Energy

Less focused upon, but important...

- Gendered effects of development
- Linkages from local-level to macro-level scales (local to global)
- Critical (Of-Maxist) Sociological approaches
- Analyses of the workforces, industries, commodity chains,

Sociological Approaches to Energy

An intense focus on measuring "Attitudes"
(Surveys, Interviews, Focus Groups, etc.)

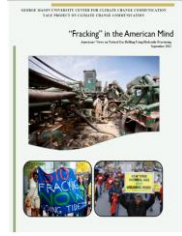
Multiple Rationale:

- "Perception is reality" for many people
- Attitudes easier to measure in real time
- Conducive to experimental design
- Government statistics difficult to obtain

Too much of a focus on Resident Attitudes?

Too focused on pre-existing population?

Need for diverse methodologies



Sociological Approaches to Energy



Article

Socioeconomic System of the Oil Boom and Rural Community Development in Western North Dakota

Felix N. Fernandez, Dennis R. Cooley

First published: 12 May 2016 Full publication history

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Sociological Approaches to Energy

Socioeconomic System of the Oil Boom and Rural Community Development in Western North Dakota



Rural Sociology
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<http://onlinelibrary.wiley.com/doi/10.1111/ruso.12100/ful#wos12100-fig-0005>

Sociological Approaches to Energy

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



Christopher E. Clarke^{a,*}, Dylan Bugden^b, P. Sol Hart^c, Richard C. Stedman^d, Jeffrey B. Jacquet^e, Darrick T.N. Evensen^f, Hilary S. Boudet^g

Sociological Approaches to Energy

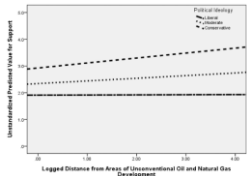


Fig. 2. The relationship between logged geographic distance from a major shale oil/gas play and model-predicted net support among liberals, moderates, and conservatives. (N = 254).

Community Impacts from Energy Development: Perspectives from Economics

Jeremy G. Weber

University of Pittsburgh,
Graduate School of Public and International Affairs
Department of Economics
Shale Gas Governance Center

Key Areas

- Labor Markets
- Social Costs/Externalities
- Public Finances
- Resource Ownership

Labor Markets

- Increased extraction leads to greater labor demand
 - Increases local employment, population, and earnings
 - Likely increases wages
 - Wage increases can cause non-booming sectors to become less competitive
 - Higher wages for low-skilled work can discourage schooling
 - Wage gains may be felt unequally, increasing or decreasing inequality/poverty
- Marchand, J. and J. Weber, "Local Labor Markets and Natural Resources: A Synthesis of the Literature," http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2829368

Social Costs/Externalities

- The industry may not pay all of the costs that it generates
 - Environmental or health risks (e.g. water contamination and housing values)
 - Crime, prostitution
 - Traffic congestion and incidents
 - Disproportionate use of public goods (e.g. roadways)
- Muehlenbachs, Lucija, Elisheba Spiller, and Christopher Timmins. "The housing market impacts of shale gas development." *The American Economic Review* 105.12 (2015): 3633-3659.

Public Finance


- Booms and busts in extraction can affect revenues and expenditures of local public institutions (schools, municipalities, counties)
 - Tax base, tax rates, total revenues
 - Transfer revenues from the state
 - School finances (spending per student)
 - Non-school public expenditures (roads, police)
- Newell, Richard G., and Daniel Raimi. *Shale public finance: Local government revenues and costs associated with oil and gas development*. No. w21542. National Bureau of Economic Research, 2015.

Resource Ownership

- The terms of extraction and the receipt of revenues from it depend on resource ownership
 - Patterns in resource ownership
 - Nature of lease contracts, leasing markets
 - Effects on land and housing values, wealth
 - Effects of resource windfalls on recipients
- Brown, J., Fitzgerald, T., and J. Weber, 2016, "Capturing rents from natural resource abundance: Private royalties from U.S. onshore oil and gas production," *Resource and Energy Economics*, 46: 23-38.

Geography
& Local Impacts of Shale Development

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Not all geographers celebrate community-focused research. Many wish to

escape the local trap & connect the 'holes' to the big picture

Huber (2015), quoting Bridge (2010) and Castree (2008)

Examples:
Critical Resource Geography
Geopolitical Analysis
Policy studies
Lifecycle & commodity chain research

Some questions geographers ask about energy & community:

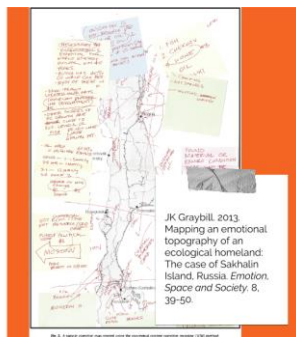
Who cares about this place and why?
How is development changing this place?

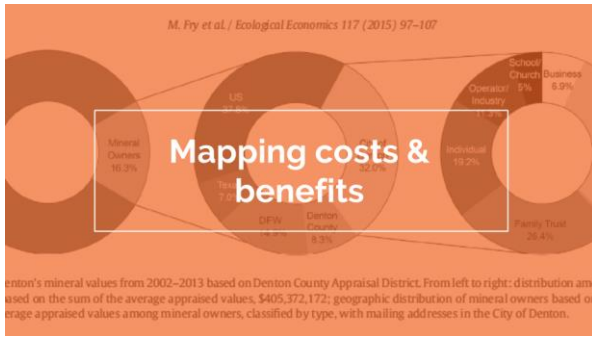
Who are winners and losers in energy development and where are they?

Who says that development *needs*?
Who/what resists & how?

How did [they] get here and what governs where [they] are going?

Mapping patterns of PLACE & PLACE ATTACHMENT





J. Roberts, K. Moran / Journal of Macroeconomics 41 (2019) 230–247

BLM → The United States Bureau of Land Management (BLM), a federal land management agency.

PAPA, *Prostate Anticancer Project Area* → a federally defined area of oil and gas well permitting that was in section 315.

PAPA/EIS, *PAPA Environmental Impact Statement*, 2005, established the PAPA/EIS as an adaptive management approach to mineral oil and gas well development in the Powderly Anticline.

SEIS, *The Socioeconomic Task Group* established in the PAPA/EIS based on community concerns, and was one of the original chapters. It was a volunteer group with professional assistance. For local and neighboring businesses, impacts and economic value, programming for PAPA/EIS was an ongoing 2002 to 2007 and continued to function with SEIS.

SCP, *Subsidiary Community Partnership* was set up from 2002 to 2008 and replaced SEIS as the vehicle for socio-economic monitoring and mitigation. It was funded by the county and state and had local government and industry representatives only with professional assistance.

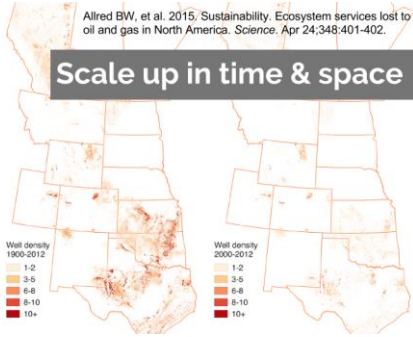
MAPPING PROCESS

Absent planning or impact assessment mandates in the US, how do host communities measure, assess and mitigate impacts? At what cost?

Fig. 5. Organizational context.

The material, cultural and political intersect to reinforce the **LOCAL NATURE OF IMPACTS** from shale development.





Can we turn impacts inside out to broaden the net?

Energy makes **place** & **mobility** possible.

Integration

Scalar-Integration
Synthesize & aggregate community information

Data accuracy
Need for accurate, current, detailed data; battle against data privacy challenges

Map & model benefits
Mapping and modeling are opportunities to aggregate and analyze across datasets

Toward a clear policy statement
Plenty of research to make a stronger, clearer set of recommendations to 'upgrade' policies that affect communities

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