Environment, Technology and Society

NEWSLETTER of the SECTION on ENVIRONMENT, TECHNOLOGY AND SOCIETY of the AMERICAN SOCIOLOGICAL ASSOCIATION SUMMER 2014

Section Website: http://www.envirosoc.org/

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A Typology to Consider in Teaching and Research: How Pollution Varies by State

© *Robert B. Smith*
Social Structural Research
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Because the states of the United States are diverse, teachers and policy researchers often find it useful to group the states according to meaningful categories. Several alternatives are available: Woodward's (2011) 11 regional cultures; the census bureau's four regions and nine divisions; the blue-purple-red (BPR) political classification of pundits; Gelman and colleagues' (2008) rich-state poor-state grouping; and the new typology of states, which this note explicates. This new typology has several advantages. It is more parsimonious than Woodward's; less geographically based than the census categories, more theoretical than BPR, and more multidimensional than Gelman's. It is validated (Smith 2014) and strongly predicts differences in pollution.

A Typology of States

A state's human development (HD) is a composite of its levels of health, education, and income. A cross classification of the states by their HD, dichotomized as lower (0) or higher (1), versus their income equality (gauged by their Gini coefficient), dichotomized as lower (0) or higher equality (1), forms a valid typology. Each category of states—the South (coded 0, 0), Heartland (0, 1), post-industrial (1, 0), and balanced-baseline (1, 1)—

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ETS Section Award Winners

by Richard York, ETS Chair
University of Oregon
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Allan Schnaiberg Outstanding Publication Award
Lisa Sun-Hee Park (University of Minnesota) and **David N. Pellow** (University of Minnesota).
The Slums of Aspen: Immigrants vs. the Environment in America's Eden. 2011. New York University Press.

Marvin E. Olsen Student Paper Award
Asad L. Asad (Harvard University).
"Contexts of Reception, Post-Disaster Migration, and Socioeconomic Mobility."

Environmental Sociology Teaching & Mentorship Award
Andrew Szasz (University of California-Santa Cruz)

Frederick Buttel Distinguished Contribution Award
Not Awarded This Year

Congratulations to all the award winners!

Newly Elected ETS Section Officers

by Richard York, ETS Chair
University of Oregon
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Chair-Elect:
Kenneth Gould (City University of New York-Brooklyn College/CUNY Graduate Center)

Treasurer:
Stephanie Malin (Colorado State University)

Council Member-at-Large:
Diane Sicotte (Drexel University)

Nominations Committee Chair:
Jill L. Harrison (University of Colorado-Boulder)

Policy and Research Committee Chair:
Rachel Shwom-Evelich (Rutgers University)

Publications Committee Chair:
Justin Farrell (Yale University)

Student Member:
Jennifer Reed (University of Nevada Las Vegas)

And the bylaws amendment passed.

Thanks you to all who ran and who voted.

Student News: Introducing Jennifer Reed, Our Section's New Student Rep

by Alissa Cordner
Whitman College, WA
cordneaa@whitman.edu

It has been a pleasure being the Student Member of the E&T Council for the past two years. The E&T Section was welcoming to me as a graduate student, and it has been wonderful to stay involved after transitioning into faculty life as an assistant professor at Whitman College. As I sign off as the student representative, I look forward to seeing many of you at ASA in August. Please feel free to contact me at cordneaa@whitman.edu.

Ahead of ASA, I am excited to welcome the newly elected Student Member of the E&T Council, Jennifer J. Reed. Jennifer is a Ph.D. candidate in sociology at the University of Nevada, Las Vegas, where she is currently a Graduate College Barrick Fellow. Her broad research interests include environment and technology, environmental and social justice, politics and public policy, sexuality and gender, health and medicine, social movements and social change, inequality and social stratification, and research methods. Jennifer's dissertation focuses on the ecosexual movement, a growing grassroots transnational social movement where environmental activism meets sexual and reproductive rights. Her innovative work proposes that this sort of intersectional activism represents the future of broad-based social movements in an era of significant change. In her personal life, she is a proud mom, grandma, and public sociologist for social and environmental justice.

You can reach Jennifer by email at reedj32@unlv.nevada.edu, follow her on Twitter @sociojen, and peruse her website at www.jenniferjreed.com.

ETS at ASA 2014: Mark your Calendars!

by Lori Peek, ETS Chair-Elect
Colorado State University
lori.peek@colostate.edu

We are looking forward to meeting with you at the American Sociological Association (ASA) Annual Meetings in San Francisco in August 2014. Please join us for the Environment, Technology and Society (ETS) Section day on Saturday, August 16. We are excited to have so many wonderful contributors to our 17 roundtables featuring well over 60 papers, two

paper sessions with five papers per session, and one co-sponsored session with the Section on Community and Urban Sociology (CUSS). In addition, we will also have our annual ETS business meeting promptly following the roundtable session and a reception on the evening of Saturday, August 16.

If you have not registered already, please make sure to do so soon. The program for the 2014 ASA follows, so please mark your calendars!

ETS at ASA 2014: Schedule at a Glance…

All ETS sessions and events will take place **Saturday, August 16**. Please check the final version of the ASA meeting program for locations

8:30-9:30 a.m.
ETS Roundtable Session (17 tables)
9:30-10:10 a.m.
ETS Business Meeting
10:30-12:10 p.m.
ETS Paper Session: Open Topic 1
2:30-4:10 p.m.
ETS Paper Session: Open Topic 2
4:30-6:10 p.m.
Paper Session: Urban Areas and Global Sustainability (co-sponsored with the Section on Community and Urban Sociology)
6:30-8:30 p.m.
ETS Reception

ETS at ASA 2014: Detailed Schedule…

Environment, Technology & Society Roundtables
8:30 a.m. - 9:30 a.m.

1. Environmental Movements
    a. Presider: Stacia Sydoriak, Colorado State University
2. Risk and Risk Perception
    a. Presider: Tracy Perkins, University of California-Santa Cruz
3. Environmental Justice
    a. Presider: Daina Cheyenne Harvey, College of the Holy Cross
4. Race, Class, Gender, and the Environment
    a. Presider: Apollonya Maria Porcelli, Brown University
5. Food, Agriculture, and Environment
    a. Presider: Damayanti Banerjee, University of Tennessee-Knoxville
6. Climate Change Mitigation and Adaptation
    a. Presider: Timothy James Haney, Mount Royal University
7. Environmental Policy and Governance
    a. Presider: Christina M. Leshko, Michigan State University
8. Water Use and Governance
    a. Presider: Raoul Salvador Lievanos, Washington State University
9. Hazards and Disasters
    a. Presider: Duane A. Gill
10. Sustainability and Development
    a. Presider: Stephen M. Zavestoski
11. Consumption, Consumer Behavior, and Access to Technology
    a. Presider: Karen Ehrhardt-Martinez, The Garrison Institute
12. Faith, Politics, and the Environment
    a. Presider: Bernard Daley Zaleha, University of California–Santa Cruz
13. Environmental Concern and Worldviews
    a. Presider: Allison Ford, University of Oregon
14. Energy Consumption and Carbon Markets
    a. Presider: Patricia Widener, Florida Atlantic University
15. Critical Perspectives
    a. Presider: Kerry Ard, Ohio State
16. Environment, Health, and Well-Being
    a. Presider: Jennifer Tobin-Gurley, Colorado State University
17. Environmental Degradation and Conservation
    a. Presider: Brian K. Obach, State University of New York–New Paltz

ETS Section Business Meeting
9:30 a.m. - 10:10 a.m.
All Are Welcome!

Environment, Technology & Society Paper Session: Open Topic #1
10:30 a.m. - 12:10 p.m.

Session Organizer: Lori Peek
Presider: Steven R. Brechin, Syracuse University

Individual Submissions:
1. Pathways to Environmental Activism Across Time and Place
    a. Sandra T. Marquat-Pyatt, Michigan State University
2. Understanding the Complexity of Detroit's Food Environment: Access, Justice, and Social Change
    a. Dorceta E. Taylor, University of Michigan
    b. Kerry Ard, Ohio State University

3. Comparing Climate Change Discourse Coalitions: Brazil, China and India in Comparative Context
    a. Jeffrey Broadbent, University of Minnesota
    b. Pradip Swarnakar, Indian Institute of Technology
    c. Jun Jin, University of Minnesota
4. From Boomerang Federalism to Hybrid Governance in Sustainable Cities
    a. Dana R. Fisher, University of Maryland
    b. Anya Mikael Galli, University of Maryland-College Park
5. Alternative Notions of Environmental Justice: Examining Sites of Acceptance to Industrial Uranium Production
    a. Stephanie Ann Malin, Colorado State

Environment, Technology & Society Paper
Session: Open Topic #2
2:30 p.m. - 4:10 p.m.

Session Organizer: Lori Peek
Presider: Riley E. Dunlap, Oklahoma State

Individual Submissions

6. Coal and the Environment: Confronting the Treadmill of Production in North Bohemia
    a. Thomas E. Shriver, North Carolina State
    b. Alison E. Adams, University of Florida
    c. Stefano B. Longo, North Carolina State
7. Corroding Communities: Social Comparisons, Competition, and Uncertainty Following the Deepwater Horizon Oil Spill
    d. Brian Mayer, University of Arizona
    e. Katrina Running, Idaho State University
    f. Kelly Bergstrand, University of Arizona
8. Latent Ecologies: The Connections Between Invasive Species, Habitat Destruction and Social Processes
    g. Jordan Fox Besek, University of Oregon
    h. Julius Alexander McGee, University of Oregon
9. Sex Stratification in Criminal Enterprise: Crimes against the Environment
    i. Jennifer Schwartz, Washington State
    j. Erik W. Johnson, Washington State
10. The World Bank, Armed Violence, and the Environment
    k. Liam Downey, University of Colorado-Boulder

Environment, Technology & Society Paper
Session: "Urban Areas and Global Sustainability"
Co-sponsored with the
Section on Community and Urban Sociology
4:30 p.m. - 6:10 p.m.

Session Organizer: William G. Holt, Birmingham-Southern College
Presider: William G. Holt, Birmingham-Southern College

Individual Submissions:

1. Cities, from Sustainability to Resilience: Why Locality Matters
    a. Lily M. Hoffman, City of University of New York-Graduate Center
2. Steel Cities in Europe. Local Development and Risk Governance: A Multiple Case Study
    a. Mara Maretti, University of Chieti-Pascara
    b. Alfredo Agustoni, University of Milan
    c. Adele Bianco, University of Chieti-Pescara
3. Globalization, Logistics Service Providers and Metropolitan Waste Management
    a. Albert S. Fu, Kutztown University
4. Why Don't Cities Adapt to Climate Change? An Analysis of Six Cities in the United States
    a. Sabrina McCormick, George Washington University

ETS Section Reception
6:30 p.m.- 8:30 p.m.

The Fudan Tyndall Centre Hosted the Second Biennial Conference of the Global Research Forum on Sustainable Production and Consumption this June

Shanghai, People's Republic of China – June 27, 2014 – The Fudan Tyndall Centre, a joint initiative of the UK's Tyndall Centre for Climate Change Research, and the Research Institute for Global Environmental Change at Fudan University in Shanghai hosted the Second Biennial Conference of the Global Research Forum on Sustainable Production and Consumption (GRF-SPaC) on June 8–11 under the theme "Global Transitions to Sustainable Production and Consumption Systems."

The conference brought together more than 100 scholars and practitioners, representing 23 countries and all five continents, to consider the latest research in the field and connect with Chinese colleagues who have become increasingly active in drawing attention to the risks inherent in current domestic consumption and production trends.

The event featured four keynote presentations, two panel discussions, more than thirty parallel sessions, and a world café reflection session. Following opening remarks by Fudan University Vice Presidents Lin Shang-li and Feng Xiao-yuan, Philip Vergragt, co-founder of the Global Research Forum on Sustainable Production and Consumption, and Trevor Davies, co-director of the Fudan Tyndall Centre, the first keynote address was delivered by John Ashton, former Special Representative for Climate Change for the UK Office of Foreign and Commonwealth Affairs. Ashton highlighted the domestic and global challenges associated with China's growing volume of material throughput and articulated his personal vision of a Chinese dream as a possible response.

Ashish Kothari, founder of the Indian environmental movement organization Kalpavriksh, discussed opportunities to advance sustainable consumption in ways consistent with radical notions of ecological democracy in his presentation.

William Rees, Professor Emeritus at the University of British Columbia, devoted his keynote address to exploring cultural propensity to deny the current conditions of global ecological overshoot and the social inequities of the dominant development pathway. He sought to derive inspiration from the Chinese concept of "ecological civilization" as a way to transcend current circumstances.

Finally, Dajian Zhu, Professor of Economics at Tongji University, outlined hopeful signs of a transition toward sustainable systems of production and consumption in China.

The focused parallel sessions covered both the width and depth of the conference theme, including presentations on the development of eco-cities in China and elsewhere, the creation of sustainable agro-food systems, the modeling of household energy use, the design of low-carbon innovations, and the facilitation of sustainable lifestyles. Other sessions considered business perspectives on sustainable consumption (and production), sustainable mobility, and carbon labeling. A particular emphasis on practitioner engagement was evident in presentations by leaders of sustainable consumption-related projects undertaken in China and Malaysia with financial support from the European Union-funded SWITCH Asia Network Facility. Another interesting series of sessions was devoted to food-waste recycling programs in large cities with special attention centered on community-based initiatives in Shanghai.

Co-chairs of the conference were Maurie Cohen (New Jersey Institute of Technology), Philip Vergragt (Tellus Institute and Clark University), Leonie Dendler (University of Manchester), Lin Shang-li (Fudan University), Trevor Davies (Fudan Tyndall Centre and University of East Anglia), Chen Shiyi (Fudan University), and Ren Yuan (Fudan University).

Conference sponsors included the SWITCH Asia Network Facility, Institute for Global Environmental Strategies (Japan), Tyndall Centre (UK), Tellus Institute (United States), New Jersey Institute of Technology (United States), ProQuest LLC (United States), OneEarth Initiative (Canada), World Resources Forum (Switzerland), and European Environment Agency.

For further information on the Global Research Forum on Sustainable Production and Consumption and its current and future activities, please visit http://grf-spc.weebly.com.

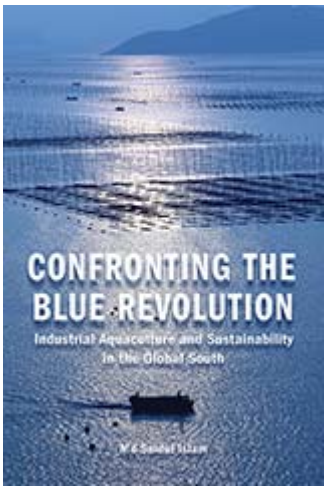
Individuals interested in accessing the papers or presentations from the conference should send an email message to conference co-chair Maurie Cohen at mcohen@njit.edu.

Publications

Books

Confronting the Blue Revolution: Industrial Aquaculture & Sustainability in the Global South
Md Saidul Islam
University of Toronto Press 2014
http://www.utppublishing.com/Confronting-the-Blue-Revolution-Industrial-Aquaculture-and-Sustainability-in-the-Global-South.html

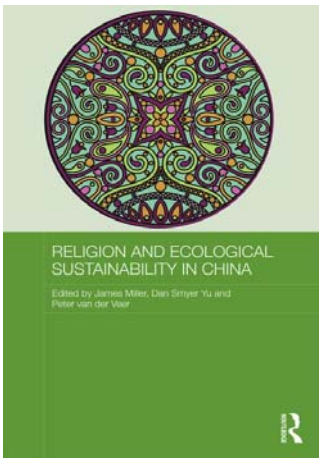
Like the Green Revolution of the 1960s, a "Blue Revolution" has taken place in global aqua-culture. Geared towards quenching the appetite of privileged consumers in the global North, it has come at a high price for the South: ecological devastation, displacement of rural subsistence farm-ers, and labor exploitation. The uncomfortable truth is that food security for affluent



consumers de-pends on a foundation of social and ecological devastation in the producing countries.

In Confronting the Blue Revolution, Md Saidul Islam uses the shrimp farming industry in Bangladesh and across the global South to show the social and environmental impact of industrialized aquaculture. The book pushes us to reconsider our attitudes to consumption patterns in the developed world, neoliberal environmental governance, and the question of sustainability.

Religion and Ecological Sustainability in China
James Miller, Dan Smyer Yu, Peter van der Veer (eds.)
New York: Routledge 2014
http://routledge-ny.com/books/details/9780415855150/



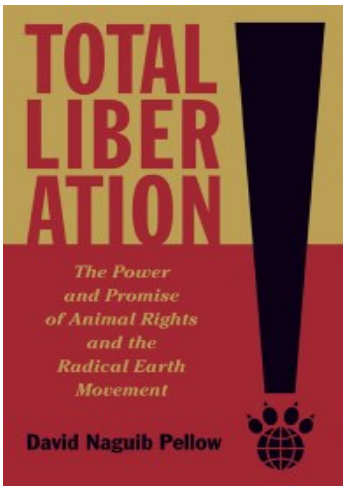
This book sheds light on the social imagination of nature and environment in contemporary China. It demonstrates how the urgent debate on how to create an ecologically sustainable future for the world's most populous country is shaped by its complex engagement with religious traditions, competing visions of modernity and globalization, and by engagement with minority nationalities who live in areas of outstanding natural beauty on China's physical and social margins. The book develops a comprehensive understanding of contemporary China that goes beyond the tradition/ modernity dichotomy, and illuminates the diversity of narratives and worldviews that inform contemporary Chinese understandings of and engagements with nature and environment.

Story about the birth of this volume: This multidisciplinary volume has a "Tucker and Grim character!" The story of it began with Chen Xia, a dear friend of Mary Evelyn and John, and a senior researcher at the Chinese Academy of Social Sciences. In 2009, when Chen Xia was teaching a course at a U.S. study abroad center in Beijing directed by Dan Smyer Yu, she introduced Dan the works of Mary Evelyn and John. Chen Xia connected Dan with Mary Evelyn and John. Dan soon began to seek funding for a religion and ecology conference in China. Finally in 2011 Dan successfully received funding from the School of Ethnology & Sociology at Minzu University of China and Max Planck Institute for the Study of Religious and Ethnic Diversity. Yang Shengmin, the former Dean of the ethnology school at Minzu and Peter van der Veer, Director of the Max Planck Institute, were instrumental in making this international collaborative project possible. Dan, as the principal organizer, sought advices from Mary Evelyn and John. Both generously shared their wisdoms and experiences, recommending James Miller of Queen's University as a co-editor of the volume. With their heart-felt advices, the conference organizers and volume editors decided to expand the study of religion and ecology further into other disciplines of social sciences and humanities, especially anthropology, ethnology and sociology. Such expansion is particularly needed in the context of China as environmental issues are mostly tackled among scholars of natural and social sciences with a clear applied orientation. The conference took place in Beijing in March 2012. The "Tucker and Grim character" are shown in these aspects of the volume: an urgent sense of ecological crisis worldwide; advocating critical understandings of progress and development; exploring diverse modes of environmental sustainability from different religious traditions including those from smaller scale, indigenous societies; the effort to recover the feelings of affection and bonding with the Planet Earth from "the feeling of alienation" resulting from our exploitative relationship with the natural environment; and advancing the study of religion and ecology as "an inter-religious project."

Total Liberation: The Power and Promise of Animal Rights and the Radical Earth Movement
David N. Pellow
University of Minnesota Press 2014
https://www.upress.umn.edu/book-division/books/total-liberation

"David Naguib Pellow is a first-rate scholar, and this rich, carefully-researched book demonstrates that fact. His refusal to march lock-step with any given theoretical perspective but, rather, to employ a variety of them to illuminate his data (data from diverse sources) makes this effort all the more impressive. In numerous places I found myself admiring his insights into a movement I have studied for decades." —Rik Scarce, Skidmore College

In Total Liberation, David Pellow makes sense of the often tense and violent relationships among humans, ecosystems, and nonhuman animal species, expanding our understanding of inequality and



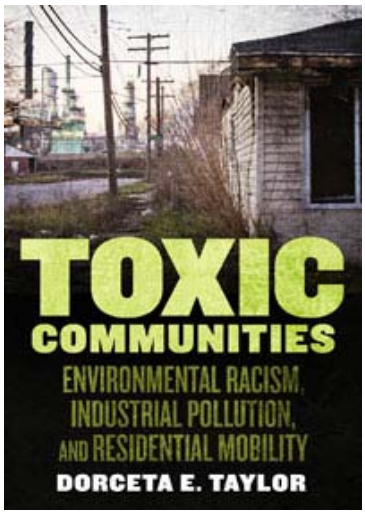
activists' uncompromising efforts to oppose it. Grounded in interviews with more than one hundred activists, fieldwork, and analyses of thousands of pages of documents, websites, journals, and zines, Total Liberation reveals the ways in which radical environmental and animal rights movements challenge multiple forms of inequality. The book offers a close-up, insider's view of one of the most important—and feared—social movements of our day. At the same time, it shows how and why the U.S. justice system plays to that fear, applying to these movements measures generally reserved for "jihadists"—with disturbing implications for civil liberties and constitutional freedom.

How do the adherents of "total liberation" fight oppression and seek justice for humans, nonhumans, and ecosystems alike? And how is this pursuit shaped by the politics of anarchism and anti-capitalism? In his answers, Pellow provides crucial in-depth insight into the origins and social significance of the earth and animal liberation movements, and their increasingly compelling critique of inequality as a threat to all life and the dream of a future characterized by social and ecological justice.

Toxic Communities: Environmental Racism, Industrial Pollution, and Residential Mobility
Dorceta Taylor
NYU Press
http://nyupress.org/books/book-details.aspx?bookId=12149#.U8BLO61OW01

From St. Louis to New Orleans, from Baltimore to Oklahoma City, there are poor and minority neighborhoods so beset by pollution that just living in them can be hazardous to your health. Due to entrenched segrega-tion, zoning ordinances that privilege wealthier communities, or because businesses have found the 'paths of least resistance,' there are many hazardous waste and toxic facilities in these communities, leading residents to experience health and wellness problems on top of the race and class discrimination most already experience. Taking stock of the recent environmental justice scholarship, Toxic Communities examines the connections among residential segregation, zoning, and exposure to environmental hazards. Renowned environmental sociologist Dorceta Taylor focuses on the locations of hazardous facilities in low-income and minority communities and shows how they have been dumped on, contaminated and exposed.

Drawing on an array of historical and contem-porary case studies from across the country, Taylor explores contro-versies over racially-motivated decisions in zoning laws, eminent domain, government reg-ulation (or lack thereof), and urban renewal. She provides a comprehen-sive overview of the debate over whether or not there is a link between environmental transgressions and discrimination, drawing a clear picture of the state of the environmental justice field today and where it is going. In doing so, she introduces new concepts and theories for understanding environmental racism that will be essential for environmental justice scholars. A fascinating landmark study, Toxic Communities greatly contributes to the study of race, the environment, and space in the contemporary United States.



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Member News

William G. Holt

William Holt, Urban Environmental Studies Program at Birmingham-Southern College was featured in an WBMA's report on Arbor Day where students, staff, faculty, and other volunteers planted fruit trees and bushes in the BSC Community Garden. Through the Southern Environmental Center, BSC manages 13 EcoScape urban gardens in Birmingham as well as co-manages the Turkey Creek Nature Preserve through a partnership with Alabama's Forever Wild Program and the Freshwater Land Trust.

A Typology to Consider in Teaching and Research: How Pollution Varies by State

(continued from page 1)

has some characteristics that suppress the capacities for HD of its residents.

The map of Fig. 1 (see page 10) portrays how this typology groups the 50 states and Washington D.C. The states classified as South are geographically southern. The Heartland comprises states in the Midwest and Great Plains. Post-industrial states are clustered in the coastal Northeast but also include Florida, Illinois, and California. The states balancing higher HD with higher equality are spread geographically providing a baseline for comparisons. These categories of states influence the BPR political color of a state. The mean "redness" scores for these categories (on a one-to-three scale) are respectively 2.96, 2.01, 1.31, and 1.28. The states are not completely homogeneous with respect to the typology's categories: different census tracts, cities, and areas within a state may deviate from the overall pattern.

These four categories of states are appropriately named. For example, indicators of post-industrial state economies include rates of internet access at home, per pupil funding, spending on research and development, accessibility to medical services, and superfund environmental cleanup sites. The post-industrial states are not "rust-belt" states, but their knowledge-based economies produce income inequality. This typology identifies many differences between the states on macrolevel indicators of social problems; the South is worse off than the Heartland and the Heartland is worse off than the post-industrial states. Because of their higher HD the post-industrial states and the baseline states have rather similar effects.

Environmental Pollution

The South (23) and the Heartland (25) have fewer superfund sites than the post-industrial (31) and baseline states (30). Since the latter two have higher HD it follows that increased HD may be associated with less pollution. Of the two categories of states with increased income equality—the Heartland and baseline—the former has higher environmental pollution. Post-industrial states focus on knowledge creation rather than heavy-duty manufacturing, power generation, and agriculture. Such states are cleaning up the residues of their earlier industrial past and now are less polluted than the other states.

Table 1 (see page 11) depicts the effects of the typology on the following five indicators of pollution (Burd-Sharps et al; 2008): CO2 emissions in metric tons per capita (2008 data); energy use in British Thermal Units (BTUs) per capita (2007); carcinogen releases in millions of pounds (2008); lead releases in millions of pounds; and mercury releases in pounds per 1,000 of population (2008). Overall, the levels of pollution in the baseline states are intermediate between the low emissions of the post-industrial states and the higher emissions of the states with lower HD. These rates are worsened by coal-fired power plants and concrete production.

The table's first panel examines pollution that characterizes the more rural South and Heartland. On all five indicators the states with higher HD tend to have lower pollution rates than the states with lower HD. As expected, the post-industrial states are least polluted. With the exception of lead releases, the South is more polluted than the baseline states. With the exception of energy use, on every other indicator the Heartland is more polluted than the other states.

The table's second panel examines pollution that primarily characterizes the Heartland. Pollutions due to carcinogen releases, lead releases, and mercury releases are uniformly lowest in the post-industrial states and generally higher in the Heartland. Regarding carcinogens, the states with lower HD have higher rates than the baseline and post-industrial states. Regarding lead releases, the pattern differs. The South has a significantly lower rate than the baseline; note the negative sign of the polarity difference. The insignificant average effect of lower HD, plus the significant average effect of income equality (+6.422, $p = 0.0005$), suggests that higher lead releases are associated with states with higher income equality; namely, the Heartland and baseline states. The difference between the more equal Heartland and less equal post-industrial states is large and significant; the other differences also favor the post-industrial states.

The Heartland's very high rate of mercury emissions coupled with the extremely low rate of the post-industrial states prevents the regression model from estimating the least-squares means appropriately. Consequently, the effects of the macroclassification are estimated without adjustments for the microlevel covariates. Even so, the South has a higher rate than the baseline: the polarization is positive but the interaction is negative. The difference between the Heartland's highest rate and the post-industrial states' lowest rate is very large. This negative interaction is primarily due to the very high pollution of the Heartland compared with the South, and not much due to the post-industrial and baseline difference.

Discussion

States with higher levels of HD are generally less polluted than those with higher income equality. Among the states with lower HD, the more equal Heartland has more pollution than the less equal South, but among the states with higher HD the less equal post-industrial states have less pollution than the more equal baseline states. Much of this pollution may be due to coal-fired power plants and the production of concrete. Putting aside the issues of global warming and climate change, because the different categories of states exhibit different kinds of pollution and their economies differ, the environmental issue has rather limited appeal, especially when concern for the environment is thought to be antithetical to the creation of jobs and economic growth. The more polluted states have the weaker economies and may be receptive to job creation at the expense of the environment.

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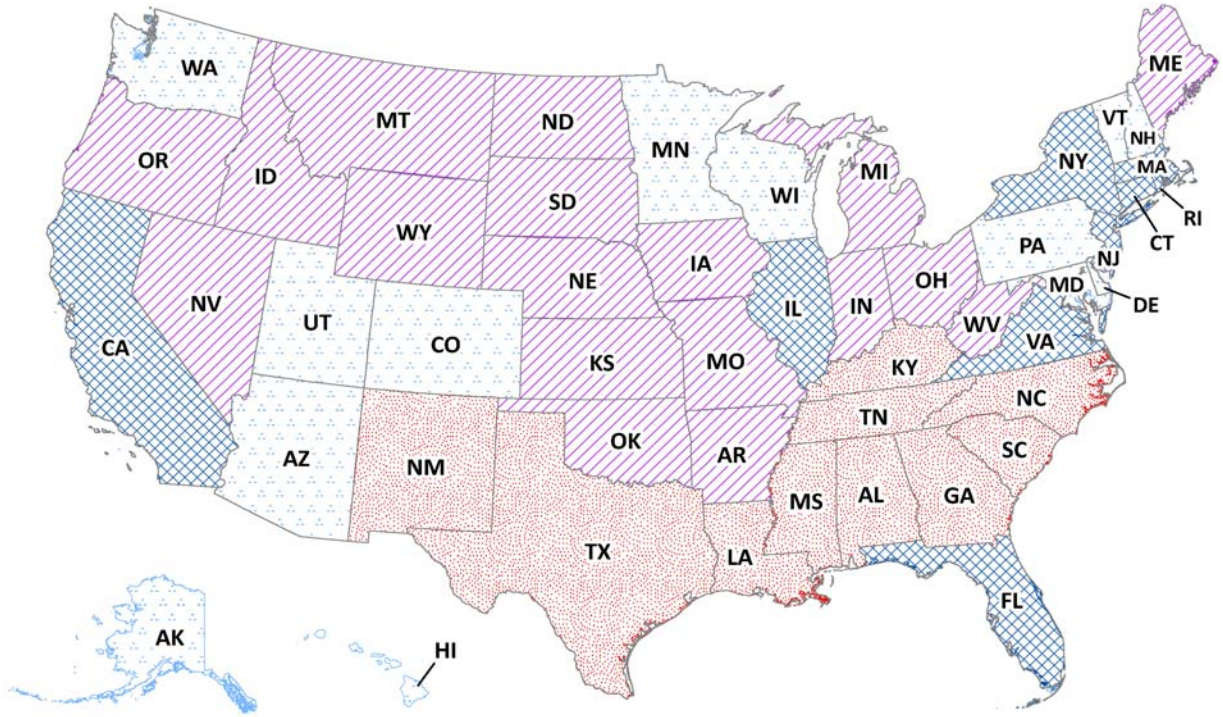

Fig. 1 Types of States

The author thanks Junhak Lee for preparing the map of the typology of states.

Table 1 The Typology of States Based on Human Development and Income Equality Influences Indicators of Environmental Pollution

Data Column	1	2	3	4	5	6
Objective State Characteristics	High HD (0) Equality (0) "South"	High HD (0) Equality (1) "Heartland"	High HD (1) Equality (0) "Post-Industrial"	High HD (1) Equality (1) "Balanced-Baseline"	Polarity $\delta_{00\text{-}11}$ = Columns 1 – 4; "South" vs. "Baseline"	Low HD × Inequality Interaction Effect
Environmental Pollution, higher in more Rural States (reliability α = 0.89; with Rural Population included α = 0.79):						
CO_2 Emissions	25.91	26.52	14.08	19.25	6.67	4.56
Effects and B *p*s	Inequality = - 2.88, $p = 0.0005$		Low HD = 9.55, $p = 0.0005$		$p = 0.0005$	$p = 0.0005$
$R^2 = 0.27$						
Energy Use (BTUs)	469,675	376,824	264,667	325,516	144,159	153,700
Effects and B *p*s	Inequality= 16,001, $p = 0.0054$		Low HD= 128,158, $p = 0.0005$		$p = 0.0005$	$p = 0.0005$
$R^2 = 0.42$						
Environmental Pollution, higher in Heartland and Great Plains States (reliability α = 0.90):						
Carcinogens × 10^6	15.54	18.02	5.45	12.18	3.36	4.24
Effects and B *p*s	Inequality= -4.61, $p = 0.0058$		Low HD= 7.96, $p = 0.0005$		$p = 0.1162$	$p = 0.1432$
$R^2 = 0.07$						
Lead Releases × 10^6	2.297	9.132	1.815	7.823	-5.526	-0.826
Effects and B *p*s	Inequality= -6.422, $p = 0.0005$		Low HD= 0.896, $p = 0.3327$		$p = 0.0005$	$p = 0.6215$
$R^2 = 0.05$						
Mercury Releases	7.90	80.19	0.52	+4.37	+3.53	-68.45
Effects and B *p*s	Inequality= -38.07, $p = 0.0150$		Low HD= 41.60, $p = 0.0158$		$p = 0.0152$	$p = 0.0287$
$R^2 = 0.03$						

Notes: All *p* values are Bonferroni-corrected B *p*s down the 5 rows composing each of the four columns of probabilities. For the polarization and other differences between the least-squares means, the raw *p*-values were previously Bonferroni-adjusted. Inequality is coded as equality = 0. Low Human Development is coded as High HD = 0. The interaction effects are added to the underdevelopment × inequality cells (0, 0). The American Human Development Project provided these data for 2007 or 2008. The units are CO_2 emissions in metric tons per capita; BTU per capita; carcinogen releases in millions of pounds; lead releases in millions of pounds; and mercury releases in pounds per 1,000 of population.