

Assessing discourses of environmental justice in the university classroom

Stentor Danielson

Slippery Rock University

1 Morrow Way

Slippery Rock, PA 16057

724-738-2564

stentor.danielson@sru.edu

Abstract:

Teaching environmental justice in the university classroom requires an extensive focus on discourses about justice. Students must be familiarized with the various discourses that shape environmental justice conflicts, and given the tools to analyze these discourses to discern where justice lies. Effective teaching and learning can benefit from assessment of students' own preferred discourses about the topic. This paper reports on the results of using Q Method—an increasingly popular approach to discourse analysis that straddles the qualitative-quantitative divide - to examine student discourses about environmental justice in two Environmental Justice classes at a predominantly white, mid-size public university. I examine both the process of integrating formal discourse analysis into the classroom, as well as the benefits for teaching and learning that it provides.

Keywords: Environmental Justice, pedagogy, Q Method

Introduction

Environmental Justice (EJ) courses have become an important part of university curricula in geography, environmental studies, and related programs.¹ In such classes, students examine a variety of claims of unfair treatment with respect to the environment – from racial inequalities in hazardous waste siting, to displacement of indigenous people for development or conservation activities, to invocations of “nature” in debates over gender and sexuality.

There is no single, universally-accepted perspective on EJ issues. Researchers and activists aligned with the EJ movement disagree with each other, and contend with a variety of competing perspectives on EJ topics from industry, mainstream environmentalists, government, laypeople, and other sources. A student trying to make sense of EJ struggles must evaluate a variety of conflicting discourses – shared ways of thinking or speaking about an issue. It is thus important for EJ instructors to assess the way their students engage with these discourses.

This paper reports on the use of Q Method to examine changes in students' perspectives on EJ by assessing the discourses they express before and after completing a semester-long EJ course. In addition to revealing conclusions about the specific classes studied, it provides a model for other instructors.

Discourses and University Instruction

The focus of this paper is on broad-scale discourses about the topic of EJ held by students. What sorts of situations do they judge to be just or unjust, and what principles do they apply to resolve

¹ Joni Adamson, Mei Mei Evans, and Rachel Stein, eds., *The Environmental Justice Reader: Politics, Poetics, and Pedagogy* (Tucson: University of Arizona Press, 2002); Teena Gabrielson and Kaitlyn Watts, “A Sea of Riches: Teaching an Interdisciplinary Environmental Justice Course through Political Theory on-Campus and Online,” *PS: Political Science and Politics*, 2014, 509–12.

controversies?

I propose three hypotheses about how taking a course might affect students' discourses about a topic:

H-0: No change

It is possible that a semester of study might not change students' discourses in any appreciable way. Students' basic values and orientation toward the world may be relatively fixed by deep-rooted personality characteristics and life experiences, and thus not susceptible to change in a single course.

H-1: Shifted views

If students' views are changed by a semester of study, the most straightforward such shift would be in the direction of the instructor's discourse. The interpretation of such a shift depends in part on one's view of that discourse. The instructor may view this as a case of students simply learning, thereby discovering that other discourses are flawed. Others may view it as a case of "brainwashing" by the instructor.

H-2: Coherence

A third, and more complex, hypothesis is that dedicated study of a topic may create greater coherence of students' discourses without necessarily causing any large-scale shifts in the direction of their views. Prior to study, students' views about EJ issues may be poorly-thought-out, and different students bring very different context and assumptions to their interpretations of specific topics. Thus their views are idiosyncratic and internally inconsistent. A semester of dedicated study creates a set of common reference points, and pushes students to coalesce around a more clearly stated set of discourses. An outcome of this sort is documented by Niemeyer and Dryzek in a case of a public

participation exercise.² It is also suggested by research on polarization of viewpoints on culturally/politically charged issues in response to learning and debate.³ The end result would be a set of individual student perspectives that are more easily grouped into distinct discourses.

Q Method

This study assesses students' discourses about EJ through the use of Q Method. Q has been used to examine discourses about topics from predator conservation to wildfire management to climate change.⁴ Q identifies shared ways of thinking about a particular topic, and enables them to be systematically compared.

A variety of works now exist which give instruction in conducting a Q Method study.⁵ In brief, Q proceeds by assembling a “Q sample” consisting of statements covering the full breadth of things said about a topic. Individual participants are then asked to sort the statements by ranking them according to some instruction (such as “most like I think” to “least like I think”), producing a “Q sort.” The Q sorts are then factor-analyzed to discover commonalities between the sorts done by the participants. Each resulting factor represents a shared discourse about the topic, and can be presented as

² Simon Niemeyer and John S. Dryzek, “The Ends of Deliberation: Metaconsensus and Intersubjective Rationality as Ideal Outcomes,” *Swiss Political Science Review* 13, no. 4 (2007): 497–526.

³ Dan M. Kahan et al., “The Polarizing Impact of Science Literacy and Numeracy on Perceived Climate Change Risks,” *Nature Climate Change* 2, no. 10 (2012): 732–35.

⁴ Marleen Buizer and Tim Kurz, “Too Hot to Handle: Depoliticization and the Discourse of Ecological Modernisation in Fire Management Debates,” *Geoforum* 68 (2016): 48–56; Kersty Hobson and Simon Niemeyer, “Public Responses to Climate Change: The Role of Deliberation in Building Capacity for Adaptive Action,” *Global Environmental Change* 21 (2011): 957–71; Lily Ray, “Using Q-Methodology to Identify Local Perspectives on Wildfires in Two Koyukon Athabascan Communities in Rural Alaska,” *Sustainability: Science, Practice, and Policy* 7, no. 2 (2011): 18–29; Murray B. Rutherford et al., “Interdisciplinary Problem Solving Workshops for Grizzly Bear Conservation in Banff National Park, Canada,” *Policy Sciences* 42 (2009): 163–87; Debra J. Salazar and Donald K. Alper, “Justice and Environmentalisms in the British Columbia and U.S. Pacific Northwest Environmental Movements,” *Society and Natural Resources* 24, no. 8 (2011): 767–84.

⁵ Steven R. Brown, *Political Subjectivity: Applications of Q Methodology in Political Science* (New Haven: Yale University Press, 1980); Stentor Danielson, Thomas Webler, and Seth P. Tuler, “Using Q Method for the Formative Evaluation of a Public Participation Process,” *Society and Natural Resources* 23, no. 1 (2010): 92–96; B. McKeown and B. Thomas, *Q Methodology* (Beverly Hills, CA: Sage, 1988); W. Stephenson, *The Study of Behavior* (Chicago: University of Chicago Press, 1953); Paul N. Wright, “Is Q for You? Using Q Methodology within Geographical and Pedagogical Research,” *Journal of Geography in Higher Education* 37, no. 2 (2013): 152–63.

an average Q sort of the individuals associated with that factor.

This study was performed on two EJ classes taught by the author at a medium-sized public university in the northeastern USA. These classes, held in the Spring semesters of 2013 and 2015, used a substantially similar syllabus and teaching approach. The student body at the university, and the population in the course, is overwhelmingly white and from rural backgrounds, with the vast majority of the class being environmental studies majors. Data were obtained from 16 and 17 students, respectively.

The class first aims to familiarize students with common situations in which claims about environmental injustice arise. Second, the class aims to build students' skills at applying principles of justice to these cases. Class discussions and assignments push students to make clear justice-based arguments, and the instructor makes a point of reminding students that the goal of the class is for them to be able to articulate well-formed arguments so that they can participate in debates over EJ issues, rather than to teach them the correct conclusions about what things are unjust.

For this study, a set of Q statements (listed in Appendix A) was assembled based on the class texts as well as experience with class discussions in previous semesters. To ensure breadth and representativeness of the statements, I chose ten topics covered in the class (such as environmental racism, indigenous peoples' issues, and animal rights). For each topic, I chose a statement corresponding with each of the four worldviews in Mary Douglas's grid-group cultural theory,⁶ in order to cover a broad spectrum of possible takes on the issue.⁷ This gave a total of 40 statements.

Q sorts were conducted by having students arrange the statements in a quasi-normal distribution, ranging from +4 to -4. Each semester, students completed two Q sorts: one during the first week of classes (“Before”), and one during the final week (“After”). All students completed Q sorts as

⁶ Mary Douglas, *Risk and Blame: Essays in Cultural Theory* (London: Routledge, 1992); Michael Thompson, Richard Ellis, and Aaron Wildavsky, *Cultural Theory* (Boulder: Westview Press, 1990).

⁷ Note that this research does not attempt to test Douglas's theory, nor does it depend on the accuracy of the theory – the theory is simply a convenient framework for ensuring a variety of statements is included.

a class activity and received class credit for doing so, but students returned consent forms in sealed envelopes so that data from any student who did not wish to consent could be excluded from the published analysis.

The preliminary results of the analysis were presented to each class for discussion. In the course of the discussion, students endorsed the interpretations of the factors. The instructor also completed a Q sort, in order to make their results comparable to those of the students.

Results

The first two hypotheses can be evaluated by looking at the matrix of correlations between Q sorts, computed as the first step of the factor analysis. The average correlation between individual students' Before and After sorts was .599 in 2013 and .598 in 2015. This indicates a substantial stability of views, but contrary to hypothesis 0, there was meaningful change over the course of the semester.

Nearly all students' Q sorts were negatively correlated with the instructor's, both before and after the class. The highest correlation was merely .22, while the lowest was -.61. The average correlation with the instructor's Q sort shifted from -.21 to -.19 in 2013 and from -.24 to -.23 in 2015. The standard deviation of the student-professor correlations changed only a little, from .20 to .16 in 2013 and from .14 to .22 in 2015, indicating that the consistent averages were not the result of polarization in which some students came to agree with the professor while others more strongly rejected the professor's position. Whether one sees students coming to agree with their professor in a positive light or a negative one, in this case there was no meaningful convergence, and so hypothesis 2 can be rejected.

Each set of Q sorts was then factor analyzed separately. The analysis employed principal components analysis and varimax rotation.⁸ A three-factor solution proved most parsimonious in each

⁸ Results from alternate analysis procedures (such a centroid factor analysis and hand-rotation, which are favored by many

6

of the four analyses. Table 1 shows the correlations among the twelve factors. Each factor is labeled with a number indicating the year, and a letter – A, B, and C for the “before” factors, and X, Y, and Z for the “after” factors. Note that the letters are assigned based on the order in which the factors emerged in the analysis, and so (for example) factors 13-A and 15-A should not be presumed to have any similarity in content.

The 2013 before factors correlated with each other at .36, .47, and .33, indicating a modest degree of similarity to each other. The after factors for the same year show correlations of .18, .32, and .36, suggesting a greater separation between the discourses represented by each. Turning to 2015, we see the opposite phenomenon. The before discourses have correlations among themselves of .50, .17, and .10, while after they have correlations of .28, .45, and .54. So while the 2013 students came to disagree more over the course of the semester, the 2015 students gained more agreement.

Tables 2 and 3 show the number of students loading on each pair of before and after factors for each year, as well as the correlation between those factors (taken from Table 1) to show the similarity in content. Though the number of cases is small, there is a clear tendency for the largest number of students to have a before/after combination with a relatively high correlation between the factors.

The results of the initial analyses can be summarized by using them as inputs to a second-order factor analysis. The second-order factor analysis produced four factors, representing the four most general ways of thinking about environmental justice issues by students across the two classes. A fifth “factor” is described here which represents the view contained in the professor's sort. In the narratives below, numbers in parentheses refer to statement numbers, whose ranking illustrates the point being made. The full list of statements, and their ranking in each factor, can be found in Appendix A.

Factor I: Eco-spiritual Equality

This factor emphasizes two main themes: the protection of nature for its own sake, and equality

Q practitioners) produced substantially similar results.

(among both humans and non-humans). This factor holds that nature itself has rights (24, 20, 22, 30, 19) and is sacred (36, 35, 33). Equality among people is the most important social concern (32, 16, 12), with all people deserving equal access to nature, protection from environmental harms, and consideration of their views of the environment. This is coupled with a concern for the interconnectedness of people and the effects of one person's actions on another (2, 5, 1). Finally, this perspective has a positive view of creating cultural or political change (40, 38, 2). This perspective has some echoes of the classic “preservationist” approach to environmentalism associated with individuals like John Muir.

Factor II: Secular Pragmatism

This factor emphasizes responsible human use of the environment. There is a measure of pessimism or humility in this factor (10, 6), in contrast to Factor I's idealism, though without being defeatist (40, 38). This factor is concerned with generating the greatest benefits for all from our use of the environment (32, 23, 22). A good illustration of this factor's perspective comes from the equal weight it assigns to both protecting animals' rights (17) and acknowledging the necessity for human use of animals (18). Spirituality has little place in this perspective (33, 16, 35). If Factor I was preservationist, then Factor II bears some resemblance to Gifford Pinchot's conservationism.

Factor III: Scientific Environmentalism

This factor takes a sort of “hard-nosed” approach to the demands of environmental protection. It endorses action to protect the natural environment (40, 24, 22, 30, 38), and prefers science over a religious perspective (39, 33). This factor rejects animal rights (18, 19), market considerations (7, 37), special status for indigenous people (15, 13), and worries about social equality (4, 12). The overall picture is one that sees justice claims as soft or sentimental and thus not a high priority for

environmental policy

Factor IV: Anthropocentric Democracy

This factor is concerned with democracy and equality among people. It clearly places the interests of people ahead of non-human nature (23, 18). Among humans, there is concern for equal distribution of benefits and burdens (12, 3, 8, 32), as well as minimizing burdens and maximizing benefits (23, 3). A consultative approach to environmental decision-making is suggested rather than an individualistic or market-driven one (5, 11, 1, 9, 37, 2, 22). This factor echoes a number of concerns expressed in early writings on environmental justice, which critiqued the mainstream environmental movement's focus on nonhuman nature. It is thus curious that this factor was present in the “before” analysis in both years, but not the “after” in either year.

Factor V: The professor

The professor’s sort foregrounds concerns for environmental justice of the sort emphasized in the environmental justice literature. These include social equality (12, 13, 29, 6) and animal rights (17, 18), with a rejection of individualism (1, 2, 8, 31). In contrast to most student factors, the professor is not convinced by a preservationist or ecocentric approach to nature (21, 30, 36)

It is useful to look at which factors from the first-order analysis comprised each of the four second-order factors. This is shown in Table 4. In all but one case, each first-order factor loaded significantly on just one second-order factor. The exception is 15-X, which had nearly equal loadings on I and II, indicating that it shared some commonalities with both of them.

Factor I was clearly the most prevalent, appearing in all four first-order analyses. This is not terribly surprising, as it represents a common mainstream approach to environmentalism that is often

the motivation for students to choose a major in environmental studies. Moreover, all of the “after” factors in 2015 loaded on second-order factor I. This shows a consolidation of the class around this way of thinking, echoing the higher “after” correlations between the factors for that year. Factor II was present in the “after” group in 2013, and both before and after in 2015. Factor III was observed only in 2013, both before and after. And finally, factor IV was present in the before conditions in both years, but did not show up after.

Conclusions

Q method is a useful way of assessing the discourses that students bring to, and take away from, a course in Environmental Justice. In the courses studied here, students generally expressed views in line with mainstream environmentalist concerns. Over the course of a semester of study of EJ, students re-considered and modified their views to a noticeable extent, but rarely had dramatic ideological shifts. Students also did not converge with (or move away from) the views of the professor in any systematic way.

Because there is no universal curriculum or pedagogy for Environmental Justice, the results of this study cannot be generalized to all EJ courses. Nevertheless, it provides a model for how individual instructors can examine the effects of their own teaching. Moreover, by involving students in the analysis and interpretation of their own factors, a Q method exercise can promote self-reflection by students on their own approach to the topic and their learning process.

Author Disclosure Statement

The authors have no conflicts of interest or financial ties to disclose.

