Q Method as Discourse Analysis: Three Cautionary Tales

Abstract

Human-environment research is increasingly applying Q method as a way of analyzing discourses. The most common model for doing so suggests that Q allows us to measure or read off the discourses that are at work in the environmental controversies being studied. This paper offers three cautionary tales for users of Q method. The first involves resistance to Q by activists who find the carefully crafted nature of their arguments disrupted by the unfamiliar format of Q. The second involves the contrast between what participants publicly agree to be true and the orientations they reveal through their Q sorts. The third questions whether the fact that a participant is able to complete a Q sort necessarily means that they hold a comparably well-developed discourse when away from the Q sorting table. These cautionary tales emphasize the importance of drawing on contextual and “para-sort” information when conducting and interpreting Q studies.

Keywords: Q method, discourse, discourse analysis

Introduction

Human-environment research has shown an increasing interest in recent decades with discourses – the shared narratives or conceptual frameworks through which people organize their thoughts and actions toward the natural environment. Conflicts over environmental and natural resource issues are now typically traced back to differences in the values and frameworks that make up the discourses espoused by different actors (Dryzek 1997).
The rise in interest in discourses corresponded with a rise in the use of Q method (Addams and Proops 2001). Q seems perfectly suited to analyze discourses about the environment. Unlike a traditional mail or phone survey, Q enables the participant to reveal depth and complexity to their overall viewpoint, and does not require the researcher to pre-select variables to operationalize but rather allows different perspectives to emerge from the research. And unlike traditional interview and focus group methods, Q offers a structured way to reduce the complexity of participants’ viewpoints to a few manageable themes. And unlike both of the aforementioned approaches, Q has appeal across the philosophical spectrum from committed positivists to strong social constructionists (Robbins and Krueger 2000).

In most work with Q in the human-environment field, it is implicitly assumed that the discourses revealed through the Q process correspond with what people “really think.” What a person “really thinks” is that discourse that guides their actions and speaking whenever they are not at the Q-sorting table. If the Q analysis reveals three factors, for example, that means that the participants have three basic outlooks, and the progress of the issue can be explained as a result of those outlooks.

The goal of this paper is to problematize this approach, showing that the relationship between the factors revealed in a Q sort and the operation of discourses outside of the research context is more complex than often assumed. This paper is emphatically not about discouraging the use of Q – it remains a powerful methodology suitable for a wide range of applications (Danielson, Webler, and Tuler 2010). Rather, it is about encouraging reflective use of Q and interpretation of its results. The paper proceeds through examining three cautionary tales arising from case studies carried out by the author, each of which put a twist in the ability to match up Q with people’s “real” beliefs.
About Q Method

Space prohibits a comprehensive explication of Q method, but luckily a variety of useful introductory works exist (Brown 1980, McKeown and Thomas 1988, Webler, Danielson, and Tuler 2007). In brief, Q method involves asking a set of participants – typically about 20-40 for studies of environmental controversies – to rank a set of statements about the issue at hand according to how well they match the participant’s thinking. Since this is usually done by printing them on cards and having the participant arrange them on a table in a quasi-normal distribution, this data-gathering stage is referred to as “Q sorting.” The Q sorts are then factor analyzed, but sideways from the usual factor analysis approach, such that the factors consist of groupings of similar people rather than groupings of similar statements. Each of these factors can be represented as an averaged-together idealized Q sort and then interpreted as a discourse that all of the people associated with the factor espouse.

There are several important points about the structure and philosophical approach of Q that are necessary to keep in mind when considering the link between Q results and people’s “real” thoughts. First, Q is an intensive methodology that aims to reveal the internal structure of a discourse, rather than an extensive methodology that measures the discourse’s prevalence in a population or correlation with other variables (though see Baker et al. 2010 and Danielson 2009 for techniques by which Q can be extended to answer such questions).

Second, Q sorting is itself a behavior (Stephenson 1953). The expression “operant subjectivity,” which was adopted as the title of the most notable journal devoted to Q, reflects the idea that participants’ subjectivity (their inner life) can be made operant – that is, brought out to be studied scientifically – through the procedure of completing a Q sort.
The Discourse Model

Q studies of environmental topics are generally organized around what I am calling the “discourse model.” In this model, a discourse is a shared way of thinking and speaking about an issue (Dryzek 1997). Discourses are made up of some combination of beliefs, values, attitudes, and narratives arranged in a way that is at least moderately coherent. Discourses are then taken to explain environmental outcomes. Conflicts over environmental activities are ascribed to clashing discourses, and agents are seen to act on the basis of their discourses while working to convince others of the correctness of their discourse. The discourse model further suggests that resolution of conflicts is the primary imperative of the practitioner or engaged researcher. (The discourse model thus owes more to the faith in good policy emerging from clear discussion found in Mill or Habermas than to the more cynical approach of Marx or Foucault, whose followers would approach discourses as things to be deconstructed for their hidden oppressions, especially if they are consensual.) From a pragmatic standpoint, knowing the nature and content of the discourses at issue is critical to resolving conflicts and improving outcomes (Danielson, Webler, and Tuler 2010).

When researching discourses, Q is treated as a way of revealing or measuring the discourses at work. Q is thus positioned as a sort of measuring device, much like a rain gage or a census form. For example, Vugteveen et al. (2010) write:

To elicit these value orientations, a Q-methodology study was performed in the Netherlands; this method provides an inductive yet systematic way of assessing the viewpoints and values of subgroups of people.
Similarly, Mattson et al. (2006) describe Q as “elucidating” perspectives and allowing “participants [to] ‘map’ their own views.” They go on to express optimism about the resolution of conflicts over large carnivore conservation because the discourses that emerged from the Q study contained significant amounts of overlap and common ground, indicating that there was much the various factions already agreed on.

The argument of this paper is that treating Q as just elucidating or eliciting the existing discourses, pulling them out of the mess of real life in a convenient form for analysis and presentation, is too simple a view of what Q does. The argument is emphatically not that Q is useless or produces false information. Rather, it is that we must carefully contextualize Q and ask how the behavior of the Q-sorter is related to the behavior of the actors we are interested in. Doing so will produce a more sophisticated understanding of how discourse operates in environmental controversies.

Cautionary tale #1: The skeptical activist

The first cautionary tale came from an application of Q in the case of a contaminated site cleanup in New Jersey. With two colleagues, I collected Q sorts from 19 people who had been involved in the cleanup, including representatives of the EPA, local government, the responsible company, and citizen activists. Following the analysis of our Q and other data, we met with a small group of key players to discuss our results and get their feedback.

Participants in the study were generally positive about the Q sorting experience and found the results of the analysis sensible, though they had some difficulty with the academic style of the final report. However, one citizen activist displayed notable resistance to expressing their views in the form of a Q sort. While this person did complete a Q sort that was analyzable,
they complained several times during the process that simply ranking statements did not adequately capture their thoughts on the site cleanup. At the feedback group meeting, this person stated serious reservations about the results of the Q method study. While they did not accuse us of malfeasance, they did insist that Q is not a trustworthy methodology because the analyst could, in principle, use the selection of statements and analysis of results to bias the outcome.

This “skeptical activist” was among the individuals we interviewed in the process of preparing for our study and collecting potential Q statements. At the interview, this person expressed a very strongly structured argument about the site, its history, and the conduct of various other stakeholders. It was clear that they had given much the same argument to other players before, and were practiced at telling the right stories in the right way to make their conclusions appear persuasive. This person’s problem with Q, therefore, appears to be a difficulty in translating a very carefully-constructed commentary into the relatively anemic format of statements of greater or lesser importance. And indeed, when we analyzed the Q data, the factor that this individual loaded on captured well their underlying attitudes and values, but lacked the specific argumentative structure that their interview had had.

The concerns raised by this person were reflected in those of another individual who I collected a Q sort from for a project on oil spill cleanups (working with the same colleagues). This second individual was a representative of a Native American tribe. They expressed some initial reluctance to participate in the Q sorting because they had a very carefully constructed argument and statement of their position that was centered on tribal treaty rights. Sorting a set of statements, this person seemed to fear, would enter through a side door and reveal – or attribute to them – a position that does not follow their specific logic. In this case, I was able to assure the skeptical Q sorter that, in the analysis process, their results would be interpreted in the light of
the centrality of the tribe’s treaty rights, and the remainder of the Q sort went smoothly.

Nevertheless, it was not unreasonable for this person to raise concerns that expressing their views by placing statements above or below each other would lose the distinctive argumentative structure of their rehearsed commentary, and that they would have to trust the researchers to bring it back in at the interpretation stage.

What is important to note about these two individuals is that both are coming from backgrounds of substantial conflict with other players (notably government representatives), and the development of a careful and difficult-to-translate argument appears to be a reflection of the demands of that social situation. The hesitance of these skeptical activists is not altogether unlike the hesitance of a defense lawyer to allow their client to speak to the media (or even to take the stand in court) for fear that departing from the carefully-crafted argument will undermine their position.

The case of the skeptical activist has two implications for the use of Q method. The first, and simplest, is that securing the participation of certain key players may be challenging. More important is the loss of the facts about the structure of argument when all discourse information is obtained through the filter of Q sorting. In each study, the skeptical activist was grouped in a factor with several other people who were more easygoing about using a Q sort to express their views. This means that the particularities of the situation that drive some participants to craft careful arguments, while others are more comfortable with “top of the head” self-expression, are lost as long as there are people in both groups with similar ultimate attitudes and values. Yet the fact that these skeptical activists needed to develop such careful arguments and that they continue to use them in practice are important components of how the environmental controversies will work out in practice.
Cautionary tale #2: The conflict uncovered

The second cautionary tale came from another part of the aforementioned contaminated site cleanup study, this time focused on a polluted harbor on the Great Lakes. We again collected Q sorts from a range of stakeholders (17 in this case), and met with a small group to discuss our results. At the time of our data collection, all parties had agreed on a cleanup plan and were moving forward. In preparatory interviews, interviewees (most of whom later completed Q sorts) were clearly coming from different backgrounds, but all were on board with the new plan. Had we left our research at the interview stage, we would have concluded that while various stakeholders had different interests in the project, the range of discourses about how the project should proceed would be limited.

However, the Q sorts produced three very distinct factors. Factor X emphasized redevelopment of the lakefront, Factor Y emphasized restoration of local ecosystems, and Factor Z was most concerned with building community and public amenities. While there was consensus on some issues, several important points – such as whether the harbor should remain accessible to deep-water ships – were subject to strong disagreement.

While we were preparing our analysis, the cleanup agreement at the site fell apart. One institutional stakeholder publicly, and in a surprise to all other participants, backed out and announced its intention to go it alone in order to get a cleanup that matched its desiderata. In presenting our results to stakeholders after this event, we were told that our Q study had, in effect, predicted the fault lines for the conflict over the collapse of the agreement.

It would be tempting to interpret this as a triumph for Q method. After all, it seems to have revealed the real feelings of the various players that a more conventional interview and
document based discourse analysis would have missed. But the consensus that held at the time of our research was a real discursive fact – one that would have been missed by the Q analysis on its own. Knowing only about Factors X, Y, and Z would not have enabled us to understand why the cleanup plan moved forward in the way that it did.

The lesson of the “conflict uncovered” is therefore that the practice of simply collecting one sort from each participant that prevails in environmental Q studies may leave out part of the picture. Perhaps without even knowing it, the subjectivity of stakeholders in this case was operant in different ways in different contexts. The isolation of a Q sorter from other stakeholders is a different context than a planning meeting in which discourses are articulated directly to other stakeholders. Nor is the isolated Q sort context necessarily more “neutral” or “unbiased” than any other. It simply reveals one part of the picture.

**Cautionary tale #3: Constructed discourses**

The third case study was actually a pair of case studies using the same Q statements and revealing the same point of interest for this paper. Working alone in this case, I had residents of the wildland-urban interface in the New Jersey Pine Barrens and the suburbs of Sydney, Australia (25 and 28 individuals, respectively) sort statements about wildfire management.

The study produced four factors in Sydney and five in New Jersey. Each factor appeared to represent a coherent and sensible discourse – for example, the Green Democrats (Factor I) in New South Wales put a high premium on ecological sustainability and public participation, while the Accountable Citizens (Factor D) in New Jersey put their focus on ensuring that homeowners took appropriate steps to reduce the risk of fires burning on their own property in order to protect human life.
However, further research employing a mail survey cast a different light on the results of the Q study. The mail survey in each location employed a different technique to distinguish which factor from the Q study each survey respondent adhered to (self-cite omitted for blind review). In both study locations, there was considerable overlap between the discourses. In New South Wales, only 41% of survey respondents clearly favored a single factor, with the remainder split between favoring multiple discourses or favoring none. In New Jersey (where the factors were presented more explicitly to respondents) only 25% clearly favored just one. Moreover, adherence to the factors rarely correlated with any of the other variables measured in the survey (risk perception, risk reduction behavior, general cultural outlook, etc.).

These results suggested that rather than being stable discourses, the factors revealed in the Q were – for at least some participants – simply constructed on the spot. The possibility of constructed preferences has been discussed extensively in the psychology literature (Lichtenstein and Slovic 2006), and is frequently raised as a caution with respect to surveys and polls (Bishop 2005). In Q, it takes on a particular form. The Q sorting situation practically demands that a person construct a full-fledged discourse. The participant is given time and encouragement to look through a wide set of prompts about the topic, and to consider each carefully. The participant need not have come to any stable conclusions about the topic beforehand, and need not remember and stick to their Q results afterward.

It is important not to simply dismiss discourses constructed on the spot as spurious or illusory. These discourses are genuinely operant and reflect real thinking and behavior by the respondent. They simply do not necessarily match the discourses that may be operant outside of the Q sorting situation.
Q contains no intrinsic mechanism for measuring the degree of constructedness of the factors it discovers, no coefficient of constructedness or telltale sign in the arrangement of cards to distinguish sorts based on well-settled viewpoints and those produced in the moment of sorting. Yet indications of the construction process can be obtained through careful observation of the sorting process and probing of the sorter’s choices. For example, I one participant in New South Wales was quite surprised to learn they would have to do a sort about wildfire management (I had specifically avoided mentioning wildfire when soliciting participants in order to avoid biasing my sample toward high-interest individuals). They clearly struggled with arranging the statements, and I nearly called the sort off. Nevertheless, they produced a completed sort. When factor analyzed, this sort was highly correlated with sorts by other participants who had expressed a great deal of confidence in their choices (including one volunteer member of the Rural Fire Service who had obviously spent a great deal of time developing their thoughts about fire). These facts add to our understanding of the discourse reflected by this factor, suggesting that it has some “obviousness” within the New South Wales cultural context and appeals easily to those who have not given a lot of thought to the issue. One might then go beyond Q to seek the sources of the “obviousness” in media representations, cultural dispositions, etc., as well as examining the consequences of the great appeal of this discourse for future policymaking and practice.

The simplest conclusion to draw from the tale of “constructed discourses” would be that there is a sort of cut-off for engagement with the issue being studied, and people who fall below that cut-off in terms of having thought things through before approaching the Q sort should be excluded from the study. But taking this simple route potentially removes from consideration substantial populations whose actions do in fact impinge on the environmental controversy of
interest. Instead, Q researchers must be careful to gather qualitative information about the process of Q sorting by each participant. How the Q sort is constructed can tell us as much as the construction that results about what is going on when participants are engaging with the issue in ways other than Q sorting.

Discussion and conclusions

A running theme in these three cautionary tales is that it is dangerous to assume that each stakeholder in an environmental controversy has a single discourse housed in their mind which can be elicited by the researcher. Rather, the articulation and deployment of discourses is a contextual accomplishment. A Q study will give a partial picture if done without due attention to the nature of the Q sorting context and how it relates to the other contexts in which the participants may engage in discourse.

Also notable in all three cautionary tales is the importance of information from beyond the Q sort itself, what we might call “para-sort” information. The majority of Q studies published on human-environment topics draw nearly all of their conclusions from the outputs of the Q factor analysis. This portion of the analysis is crucial and central to Q method. But the cautionary tales elaborated above indicate that “para-sort” information derived from talking to participants and observing their sorting behavior can be vital to properly making sense of the official Q results. Researchers would be well-served to go beyond the implicit assumption that the discourses that are operant in “real life” correspond precisely with the discourses that are operant at the Q sorting table and that emerge from the factor analysis.

Indeed, it is the very gaps between the “real” discourses and the Q factors that may be most revealing about the role that discourse plays in shaping the course of environmental
controversies. The reluctance of skeptical activists to translate their arguments into the form of a Q sort shows us the demands that divisive controversies place on the discursive forms used by stakeholders. The contrast between public consensus and divided Q sorts reveals how practical agreements are political accomplishments that need not indicate private agreement – but both the consensus and the discord are real discursive phenomena. And the constructed discourses made up on the spot by participants give us insight into how deeply stakeholders are thinking and how they cope with demands to elaborate their views.

Works Cited


\(^1\) (names omitted for blind review). (names omitted for blind review) were also involved in this project, but did not participate directly in the Q aspects.

\(^8\) I use the gender-neutral singular “they” in this case in order to preserve anonymity, as the group of individuals involved is very small.