

Understanding the Social Construction of Environmental Concern

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Abstract

While it is uncertain whether the mass media promote environmental apathy or action, it is clear that the media play an important role in the social construction of environmental concern. To better understand public perceptions of environmental problems it is important to study how individual attitudes are structured and the negotiation of meaning of environmental messages in the media. This paper reviews the literature on the interpretation of environmental messages in the media and proposes a research method to unravel the social construction of environmental concern.

Public perceptions of environmental problems and environmental attitudes, values and beliefs are popular areas of research. Most of this research has been carried out using survey research methods. But while survey research is valuable, there are some questions that are difficult to answer with surveys. For example, how are attitudes about the environment socially constructed? What is the public's subjective assessment of environmental issues? And of particular concern, what influences public perceptions of environmental problems and participation in environmental advocacy? These questions require inductive methods that explore the nature of attitudes.

It has long been argued that public perceptions of environmental issues depend primarily on the mass media (Downs 1972), but the effect of the media on the popular consciousness depends on how the content is interpreted by the viewers. While some studies have documented that mass media coverage on the environment fosters public opinion, political action, and protest (Lowe and Morrison 1984; Molotch 1975), others argue that the media usually promotes apathy and cynicism rather than active citizenship (Gamson et al. 1992). However, there is no question that readers socially construct the meaning of media texts, and media imagery is a "many-voiced, open text" that can be read oppositionally and encourages competing constructions of reality (Gamson et al. 1992). The goals of this paper are to: (1) review the literature on analyzing environmental messages in the media, and (2) propose a research method that integrates quantitative and qualitative techniques to unravel the social construction of environmental concern. Specifically, I suggest linking a Q-method study of how individuals vary in attitude structure with a reader response study of how individuals interpret environmental issues in media texts.

Background

Most environment-media researchers have used traditional content analysis to assess the importance of environmental issues in the print media, such as counting articles, measuring columns, counting the frequency of specific issues or words, and measuring trends in coverage of environmental issues (Atwater, Salwen and Anderson 1985; Belak 1972; Blahna and Toch 1993; Bowman 1978; Burrus-Bammel, Bammel and Kopitsky 1988; Dangerfield, McCartney and Starcher 1975; Funkhouser 1973; Furlow 1994; Hoestrerey and Bowman 1976; McGeachy 1988/1989). While the existence of this large body of research documents the popularity of the environment as a topic for content analyses of the media, some scholars have abandoned prestructured coding categories and column counting for a more narrative approach to analyzing the content of environmental issues.

A qualitative, narrative approach to the analysis of media texts can uncover how particular issues are framed based on a researcher's reading. Some, for example, have analyzed the political messages embedded in educational films on specific environmental issues (Hepburn and Hepburn 1985). Others have studied the policy messages in press releases of the Chernobyl incident (Nohrstedt 1991) or exposed eco-journalism for reporting ecological crises by ignoring or mishandling the evidence of the crises (Chase 1973). And in a recent study of environmental reporting, Anderson (1991) used semi-structured open-ended interviews of professionals (journalists, broadcasters and representatives of environmental groups) to understand how environmental pressure groups influence the media's environmental agenda.

A 1987 study found that people use newspapers to learn about environmental issues and that there was a difference between print and electronic media use for environmental information—newspaper reading encouraged environmental attention, awareness, concern, and subsequent behaviors, but television viewing discouraged environmentally responsible behavior (Ostman and Parker 1986/1987). This research has also found that (1) the public has a negative perception of the quality of environmental content provided by journalists and newscasters (Ostman and Parker 1986/1987), (2) people who are heavy consumers of mass media (news, television, magazines, radio) have less personal commitment to environmental improvement than nonconsumers (Novic and Sandman 1974),

and (3) audiencerrankings of the importance of environmental problems correlates positively with perceived media agendas (Atwater, Salwen and Anderson 1985). One study that used an experimental design found that a televised environmental documentary from the Cousteau Society changed viewers' environmental attitudes (Fortner and Lyon 1985). Finally, Hine and Gifford (1991) reported that proenvironmental messages were effective in generating both verbal and financial support for antipollution groups among a sample of students. It is interesting to note that these researchers found that "individual difference variables" (gender, political orientation, political extremism, optimism, past activism, perceived threats to self and to the environment) did not predict behavioral measures of environmental concern—only political orientation was related to verbal commitment (Hine and Gifford 1991). Thus, they argue that media messages on environmental issues do not need to be targeted to specific subgroups of the population.

Recently, researchers have used text analysis to understand how environmental issues are presented in the media. This line of inquiry is based on the assumption that the analysis of meaning and ideology embedded in media texts is best undertaken from a semiological approach that focuses on text as a conversation (Woollacott 1982). For example, textual analyses of children's animated cartoons (King 1994) and adolescent magazines (Currie 1994) have found that environmental messages have conflicting political narratives (e.g., encouraging both conservation and consumption). But even these innovative studies do not reveal the complexity involved in how the readers negotiate and interpret environmental messages (Hansen 1991).

The reading of a text is an "interactional accomplishment" (Denzin 1992), and the social construction of environmental issues can only be understood within a dynamic, interpretive view of the interaction between reader and text. While it is acknowledged that the media play a strategic role in the social construction of environmental concern (Schoenfeld, Meier and Griffin 1979), only a few studies have explored how individuals negotiate and interpret environmental messages in the media.

Gamson (1992) showed respondents political cartoons that symbolized different sides of controversial issues, using the cartoons as triggers for group discussions. He found that people had "folk models" of nuclear power issues that were inconsistent with traditional liberal/conservative or pro-environmental/anti-environmental splits. Gamson and Modigliani (1989) linked media messages and public opinion using a constructionist framework. They found that media messages were critical in understanding the formation of public opinion on nuclear power. Changes in media texts on nuclear power were examined in four types of mass media (television news, news magazines, editorial cartoons and opinion columns). These changes were then used as a context for interpreting survey results on public opinion about nuclear power. They developed

the concept of media packages—a set of interpretive packages that readers use to give meaning to issues in the media. Each package has a core central organizing idea or frame for making sense of relevant events. A frame has a range of positions that allow for controversy within a common frame. A package has different symbols that suggest the core idea and positions in a symbolic or metaphoric shorthand. This research established that elite dichotomies (e.g., liberal/conservative, hawks/doves) cannot be imposed on a "mass" public. They suggest the development of methods to understand "which media packages are used in what ways and how people negotiate meaning on the issue" (Gamson and Modigliani 1989, 36). This study showed that inductive, or qualitative, methods can reveal diverse interpretive frames about the environment.

Another important study of reader interpretation of environmental issues was conducted by Burgess, Harrison and Maiteny (1991). They explored how different social groups actively created media text meanings within the context of their daily lives. Small group interviews were used to understand how people made sense of media coverage of environmental problems. This study found that the main issues raised by people who had little or no commitment to environmentalism were the dominant environmental news stories: pollution of beaches through sewage, the hole in the ozone layer, global warming, rainforest destruction, and threats to wild animals. But these issues were treated differently by the group. Global warming and the ozone hole were considered humorous and not of real concern, perhaps dreamed up by scientists. Polluted water and hurt or dying animals, however, generated anger and outrage (Burgess, Harrison and Maiteny 1991). A comparison group of committed environmentalists were outraged by the entire discussion, not just certain environmental issues, and media information was viewed as a resource for political action, such as mobilizing public opinion (Burgess, Harrison and Maiteny 1991). This study showed how different groups incorporated media messages into their particular understanding of environmental issues, and that the media messages on environmentalism are "still experienced by 'ordinary' people as a dominant form of distant-public discourse—the voice of a scientific and elite culture opposed to their concerns at the local-public level" (Burgess, Harrison and Maiteny 1991, 517)

Toward A Better Understanding of Environmental Concern

To explore the study of environmental concern, I propose a combination of two research methods. The first is the Q-method, which has been used in the social sciences for over 50 years and is explicitly designed to identify groups or clusters of individuals with a common attitude structure, thus making identification of differences in structure relatively straightforward. The second is a method I have developed to assess reader interpretations of popular culture images of femininity and masculinity (Kalof 1993). Both of these methods are more inductive and exploratory than those typically used in the envi-

ronmental social sciences, and both are directly applicable to understanding how the public interprets and structures environmental issues. But while they are closer to the interpretive or ethnographic tradition in the social sciences, they are also relatively systematic when compared to traditional qualitative methods such as in-depth interviews or participant observation.

Most environmental attitude research is grounded in social psychology or a search for the demographic correlates of environmental concern. Social psychology (particularly symbolic interactionism) also provides a framework for the study of media messages (or cultural texts) because of the interaction between reader and text (Denzin 1989). By using methods that can speak to these traditions, some of the contributions of symbolic interactionism in the study of cultural texts can be translated into a form useful to empirical work on public concern with the environment.

As noted previously, the work of Burgess et al. (1991), Gamson (1992) and Gamson and Modigliani (1989) illustrate the potential of diverse, contradictory readings of phenomena. These studies suggest that environmental attitudes, like attitudes toward other policy issues such as abortion or welfare, do not form a bipolar dimension that applies to the entire population. It seems an opportune time to use inductive methods that can readily detect differences in attitude structures within the general population, rather than continuing to assume homogeneity in attitude structure.

The Q-Method

The Q-method is literally the opposite of the traditional method for analyzing survey data (usually referred to as the R-method in reference to the standard symbol for the Pearson correlation coefficient). In the traditional R-method, covariances of variables across subjects are calculated then analyzed. Factor analysis and other scaling techniques are used to find groups of *variables* or survey items that “hang together,” or have a common underlying dimension, in the sense that the subjects gave similar responses to the survey questions. The result of the analysis might, for example, be three variables, each of which is composed of a set of different survey items: one variable measures self-interest, one variable measures concern for human life, and one variable measures concern for nonhuman life?

In Q analysis, covariances of subjects across variables are calculated, and the data matrix is transposed for analysis. Then factor analysis and clustering techniques are used to find groups of *respondents* that “hang together” in the sense that they have all given similar patterns of responses to the variables. While this approach may seem strange in the context of traditional survey analysis, it is actually a common approach when theory calls for the development of typologies or taxonomies (Bailey 1994, 3840). For example, many applications of cluster analysis use this approach.

A basic distinction between the Q and R methods lies in sampling strategy. Surveys obtain data from a probability sample of individuals so that statistical methods can be used to make inferences about the larger population. Survey items are carefully selected to be sure they adequately represent the issues being investigated, or the theory being tested. In Q-analysis, the researcher identifies the population of relevant attitude items, called a “concourse.” A concourse is therefore the set of all statements that might be used in any conversation that might take place on a particular topic. Ideally, Q-analysis should be based on a probability sample from such a population, but in practice there is no method for drawing such a sample. Instead, a large number of statements are accumulated from as diverse a set of sources as possible. The statements are sorted into logical categories and a sample drawn from within each category. The sampling of individual respondents is less systematic, and often Q-analysis uses a convenience sample. The logic of Q-analysis suggests that the ideal sample should contain a wide variety of individuals, to increase the chances of including participants who hold each attitude structure that might occur in the general population being studied. Thus a purposive sample that includes broad diversity is ideal. It is important to note that sampling all attitude structures in a population for a Q-sample would require knowing beforehand who holds such attitudes. But if such knowledge were available, it could also be used to identify subgroups for conventional R-analysis. The advantage of Q-analysis is that within the diversity of the sample used, it identifies differing attitude structures. Its weakness is that the full range of structures existing in the population may be missed if the sample of individuals is not sufficiently diverse. But even if some attitude structures are missed, the Q-method can provide valuable information on diversity that is hard to detect with R-methods. For example, in her argument that Q-method should be used in feminist inquiry, Kitzinger (1986) noted that the theoretical basis of Q methodology is that researchers should acknowledge and present the reality constructions of different individuals without imposing on them the researcher’s own construction of reality.

The Reader Response Method

The reader response method uses stimulus materials typical of those used in environmental disputes (e.g., editorial cartoons) to invoke an interpretation from reader respondents. For example, research by William Gamson and his colleagues (1989, 1992) has shown that editorial cartoons frame issues and are effective tools to elicit public views. The text of the respondents’ discussion of the meaning of the cartoon would provide a data base that can be analyzed using a method developed to examine responses to popular culture images (Kalof 1993). What follows is an illustration of the reader response approach to understanding the constitution of meaning. Respondents would be asked to read an environmental text from the popular culture, such as an editorial cartoon, and comment verbally on the meaning of the environmental message. Specifically, respondents would be asked, “what mes-

sage(s) about the environment do you see in the cartoon?” and “what specific words (for example, optimistic, angry) or phrases (for example, hostile to environmental groups) would you use to describe the message(s) as portrayed in the cartoon?” The responses would then be content analyzed (with respondent-identifying material removed) to establish coding categories, or the major environmental image categories as constructed by the respondents. Every effort should be made to preserve the viewers’ interpretation of meaning and to insure that the resulting categories provide a reasonably exhaustive list of images as read by the respondents. The major environmental image categories would then be used in a second pass through the transcriptions to code the number of times an image description falls into one or more of the major categories.

Research indicates that there are strong textual cues used by respondents in their descriptions that allow easy assignment of responses to categories, and the descriptors (words and phrases) would be used to operationalize specific categories (Kalof 1993). **An** image would be considered dominant if the respondent observes only one category or if one image is clearly primary and structures most of the response. In the case of multiple images that seem of equal weight to the respondent, other categories could be developed to reflect the multiple messages. Of course, each response should be coded independently by two coders as a check on reliability.

An Integration

Part of the reader response analysis involves simply establishing the sets of categories, or frames, respondents use to interpret the cartoons and then making qualitative comparisons of them. But once a set of image categories has been established, it is also possible to code responses to each cartoon into categories corresponding to the frames respondents used. One could then use standard contingency table analysis (or logit analysis) to examine the effect of both image type (e.g., high or low on environmental concern) and respondent type based on the groups defined by the Q-analysis on the interpretation of environmental messages. I anticipate important interactions between image type and respondent characteristics in studies that adopt this integrative method. For example, prior research has revealed some fascinating patterns in image interpretation based on certain respondent characteristics (Kalof 1993). Some were more obvious than others. For example, there were substantial gender differences in the reading of media images. But also since the readers make personal connections with the media text by drawing on lived experiences, the event was described by a seasoned researcher as demeaning to women, but was interpreted by young respondents in the sample as woman empowering. There is much potential for revealing similar insights into the reading of environmental messages. For example, one hypothesis might be that a Q-method could reveal a third dimension of gender, or a new category of environmentally concerned individuals as reflected in a clustering

of their responses on environmental attitudes. This newly revealed category of respondents could then have a unique interpretation of environmental messages in the media—an interpretation that has been constructed from their lived experiences and that might lead to environmental advocacy or activism.

Conclusion

For many years, researchers have used the theoretical frameworks and empirical conclusions from survey research on environmental values and attitudes to understand the structure and dynamics of public concern with the environment. Survey research usually presumes that all individuals have a common attitude structure but differ in the strength of the elements in that structure. Occasionally, surveys explore attitudes across predefined groups, such as gender, race or social class. But it is difficult to use a survey to explore differences in attitude structure across individuals. Recently, however, there has been a growing interest in research on how the media portrays environmental problems to understand how to motivate environmental concern among the public. I propose a method of inquiry into public perceptions of environmental concern that integrates Q-method with reader response methodology. The linking of these two tools of inquiry will allow researchers to gain better insight into the social construction of environmental concern and the structure of environmental attitudes.

I anticipate that the use of this method may help bridge the gap between quantitative and qualitative methods in the study of environmental attitudes and inform future work in both traditions. In addition, it could inform policymakers regarding the ways the public conceptualizes environmental issues and the ways advocacy messages are interpreted. Finally, improved research should help to design better communication with the public and reduce the misunderstanding that plagues public debate on environmental concern.

Endnotes

1. For simplicity, I will refer to this topic as “environmental attitudes” even though attitudes are only one of the psychological constructs that have been addressed in the literature. Also, I will use the term environmental concern with a literal meaning referring to attitudes of those who feel that environmental issues are serious, important and who feel action should be taken.
2. McKeown and Thomas (1988), Kitzinger (1986) and Stephen (1985) provide useful introductions to the Q-method. For an interesting application of Q-method, see Dryzek and Berekikian (1993).

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