UNDERSTANDING CITIZENS' REASONING
ABOUT GOOSE MANAGEMENT CONFLICTS:
IMPLICATIONS FOR PUBLIC POLICY EDUCATION

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EXECUTIVE SUMMARY:

Citizen participation has become an accepted part of natural resource decision making. Through it, citizens can have considerable influence over natural resource decisions. Consequently, the quality of citizens’ reasoning about natural resource issues is important for sound policy decisions. We described and evaluated the quality of citizens’ reasoning about a controversy over goose management in Rockland County, New York.

In the design of our research, we relied on theory about how adults reason about ill-structured problems. Ill-structured problems are open-ended problems about which substantial uncertainty and disagreement exist, even among experts. Kuhn (1991) developed an interview instrument for evaluating the quality of reasoning about "intellectual problems," or questions about what the world is like (e.g. what caused the large population of geese in Rockland County?). In addition to involving many intellectual questions, however, natural resource decisions also involves addressing "normative problems" (e.g. what should be done about the large goose population in Rockland County?). Although Kuhn’s interview methods were not designed for exploring normative reasoning, her methods may be adapted for this purpose.

Kuhn provided an effective vehicle for describing reasoning about ill-structured problems. Mezirow (1991) provided an effective vehicle for evaluating such reasoning. Mezirow argued that in order for people to make sense of their experience of the world, they must interpret their experience using frameworks of beliefs or assumptions, which are primarily acquired during childhood. Mezirow described a variety of ways in which these beliefs or assumptions could be "distorted" or faulty. We applied the work of Kuhn and Mezirow to examine intellectual and normative reasoning and distortions in the reasoning process.

We interviewed 14 citizens who had been involved in the public policy debate over goose management in Rockland County in order to describe and evaluate their reasoning about the goose management issue. All 14 citizens were interviewed in the spring of 1996 to explore their reasoning about: (1) what caused the large number of goose-related complaints in Rockland County (an intellectual question), and (2) what should be done about the complaints (a normative question). Our interview guide was modeled after Kuhn’s (1991). Interview transcripts were analyzed to identify (1) the different types of intellectual and normative reasons citizens used to support their arguments; and (2) the distortions reflected in their reasoning. The products of these analyses were used to design an educational brochure intended to encourage citizens to reflect upon their own distorted assumptions about the issue. After being sent a copy of the brochure, 10 citizens were reinterviewed in the spring of 1997. These interviews were analyzed to categorize the distortions that were evident in citizens’ reasoning after they had reviewed the educational brochure.

We found that citizens had a wide variety of theories about what had caused the high incidence of goose related complaints and a wide variety of proposals about what should be done to address these complaints. Most interviewees could offer some type of reasons to support their theories and proposals, but not all of these reasons were convincing. The majority of intellectual arguments offered to support causal theories could be classified in one of five categories:
natural resource policy issues and how that reasoning could be inadequate. Educators were asked to design educational strategies for addressing distorted reasoning.

Our research provided a tool for describing and evaluating citizens’ reasoning about complex natural resource policy issues. We believe it is important to develop and evaluate educational strategies for influencing this type of reasoning. We suggest future research should focus on comparing various types of educational strategies (e.g., brochures, public meetings, advisory committees) regarding their ability to enable citizens to reevaluate different types of distorted assumptions related to natural resource policy issues; and (2) test whether educational strategies designed to address particular normative reasoning have a differential influence on citizens who hold these types of reasons.

We identified 15 types of distortions in citizens' reasoning, which we grouped into three categories that Mezirow (1991) had identified:

- **Reasoning Distortions** — distortions related to acceptable rules of logical argument.
- **Epistemic Premise Distortions** — distorted assumptions about the nature and use of knowledge.
- **Sociolinguistic Premise Distortions** — distortions related to how society and language arbitrarily shape and limit our understanding.

Sociolinguistic premise distortions were the most common in the data. The types of these distortions that we encountered included: (1) using language selectively in ways that constrained understanding of the goose management problem; (2) defining the goose management problem in ways that constrained thinking about how to address it; and (3) distorted views of others involved in the policy conflict. Several interviewees showed indications that they had recognized some of their own assumptions about the goose management issue following their review of the brochure.

We designed a workshop for Cooperative Extension educators following our research. The workshop was designed to acquaint educators with the ways in which citizens reasoned about...
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BACKGROUND:

Introduction

Natural resource management professionals and extension educators are frequently faced with the task of assessing public input about controversial resource management issues and considering or helping to facilitate the use of that input in decisions. Indeed, citizens often expect to have their opinions considered in natural resource management decisions, and these expectations can be particularly high with regard to controversial issues. A good example of such an issue is the problem of how to manage nuisance geese in Rockland County, New York. As in many other parts of the northeastern United States, the population of Canada geese in Rockland County has increased dramatically in recent years. The goose population is now at a level at which geese have become a serious nuisance for local property owners. The debate over how the geese should be managed has become intense, and numerous citizens with strong and diverse interests have participated in this debate.

Widely accepted management decisions are exceedingly difficult to make in such cases because of the strength and diversity of public opinion. A number of attempts have been made to resolve the goose overpopulation issue in Rockland County in the past. In each of the last two years, the Town of Clarkstown has received permits to kill adult geese in the town and distribute the goose meat to those needing food. These efforts, however, remain highly controversial, and many citizens continue to participate in the ongoing decision-making process related to this issue.

Resource issues are complex, however, with both scientific and social components. Meaningful participation of citizens in natural resource management decisions, therefore, often demands: (1) at least a rudimentary understanding of the complexities of natural systems; and (2) an appreciation of the diversity of values and perspectives humans hold with regard to those systems. Often, it is hoped that the process of becoming involved in management decision-making will educate citizens about the relevant aspects of natural resource issues, and, thus, that the opinions expressed by citizens will be informed ones. If the education that occurs while citizens are involved in the decision-making process is inadequate, however, and the quality of citizen reasoning about resource issues is poor, management decisions may suffer.

Because of the influence that citizen opinions can have on natural resource policy, it is important to: (1) assess how citizens who participate in management decision-making reason and make decisions about resource management issues; (2) identify the shortcomings or inadequacies in their reasoning; and (3) determine how education may influence their reasoning. Understanding these components is necessary for educating citizens to be more effective in decision-making processes and for developing training materials for those who will facilitate or coordinate citizen involvement in decision-making processes. We investigated these issues in a study of the Rockland County goose control controversy and disseminated the results of our research by developing and implementing a workshop for Cornell Cooperative Extension educators.

Theoretical Background

Making a natural resource management decision is an "ill-structured problem" (Kuhn 1992, King and Kirshner 1994); it is an open-ended process that involves substantial uncertainty and disagreement, even among experts. In order to evaluate how citizens reason about ill-structured problems, we had to adopt a set of guidelines as to what constitutes good reasoning about such problems. A number of theorists have proposed such guidelines.

Kuhn (1992, 1993) advocated "thinking as argument" as a way to approach ill-structured problems. In an argument, one asserts something. For example, one might assert that it is necessary to destroy goose eggs to control the growth of a large goose population. For such an assertion to be well-reasoned, Kuhn argued that a person should: (1) be aware that alternative assertions exist; (2) recognize evidence relevant to the various assertions; and (3) weigh the evidence before choosing the favored assertion. Kuhn's model of thinking as argument seems to be reasonably appropriate for natural resource management decisions.

Kuhn (1991) has conducted research on how people reason about ill-structured problems. She presented numerous adults with various causal problems (e.g., What causes prisoners to return to crime after they're released?) and interviewed them to better understand how they reason about such problems. Her interview methods were based on her model of good reasoning. She asked people to generate theories, offer evidence in support of those theories, offer counterarguments against those theories, and offer rebuttals of those counterarguments. Her findings demonstrated that, although most adults are able to generate theories about the causes of complex phenomena, remarkably few can: (1) produce evidence to support their theories; (2) recognize alternative theories that could also explain the causes of a phenomenon; (3) generate possible counterarguments against their theories; and (4) produce rebuttals against these counterarguments.

As part of her work, Kuhn developed a category system to classify: (1) the types of reasons that people offer in support of their theories; (2) the types of counterarguments they generate against these theories; and (3) the types of rebuttals they offer against these counterarguments. For example, Kuhn found that the types of genuine evidence adults offered in support of causal theories could be classified into one of three categories:

- **Covariation arguments** note the coincidence of the presumed cause and effect. For example, one might argue that destroying goose eggs had decreased the goose population because fewer geese were present in those parks where this action had been taken.
- **Evidence external to the causal sequence** consists of observations of phenomena or relationships outside the presumed causal link that, nevertheless, make the causal theory more plausible, if true. For example, in order to support the theory that destroying goose eggs had decreased the goose population in a park, a person might note a decrease in the number of goose nests in the park.
- **Indirect evidence** bears no direct relationship to the presumed causal link. For example, one might reason by analogy that destroying goose eggs would reduce the
goose population because destroying seagull nests had been found to be an effective way to reduce seagull populations.

Kuhn's category system is a useful one for classifying certain types of arguments related to policy debates. In particular, it is useful for classifying arguments related to "intellectual problems," or questions about what the world is like. Examples of such problems include assessing the causes of unemployment, the safety of flood additives, and the effects of egg destruction on the size of a goose population. Intellectual problems are a part of all natural resource management questions.

The overriding questions in management disputes, however, are always normative ones, or questions about what we should do. Should we increase unemployment benefits? Should food additives be further restricted? Should goose eggs be destroyed? The reasons citizens have for arguing that certain actions should be carried out are unlikely to be limited to the kind of cause and effect arguments that Kuhn outlined. Therefore, Kuhn's system for categorizing reasoning about intellectual problems is not appropriate for categorizing normative reasoning. Nevertheless, Kuhn's methods for identifying the types of arguments adults use are sound and can easily be extended to studying normative reasoning. In other words, a citizen could be asked to: (1) suggest a policy action that he or she believes should be carried out; (2) offer reasons in support of that policy action; (3) speculate about possible counterarguments against the policy action; and (4) offer rebuttals of those counterarguments. Such an interview format could be used to produce a detailed description of how citizens reason about particular policy questions, and a classification of normative arguments (differing from Kuhn's classification of intellectual arguments) could be produced through an analysis of these interviews.

Categorizing intellectual and normative arguments is useful for understanding how citizens reason about natural resource issues. However, it is important to move beyond mere description and evaluate the quality of these arguments. Evaluating arguments about ill-structured problems is difficult because these problems, by their very nature, involve substantial uncertainty. Consequently, arguments often can not be classified simply as right or wrong.

Mezirow (1991) developed a useful way to conceptualize the quality of reasoning and arguments about ill-structured problems, and used this conceptualization to inform a theory of learning. One of the critical concepts utilized by Mezirow (following Habermas) is a distinction between instrumental and communicative learning. Instrumental learning is learning to control and manipulate the environment. Communicative learning is learning to understand others. Mezirow described most significant adult learning as falling in the communicative domain. In his words, "it involves understanding, describing, and explaining intentions; values; ideals; moral issues; social, political, philosophical, psychological, or educational concepts; feelings and reasons" (Mezirow 1991, p. 75). This domain is central to natural resource issues in which citizens formulate opinions about what should or should not be done through their interactions with others.

Although the manners in which we learn in the instrumental and communicative domains are distinct, they share some commonalities. In particular, Mezirow argued that we all possess systems of beliefs that influence how we interpret our experience. We have developed beliefs that influence whether we interpret a new object as a table or as a chair, as a new creature as a dog or a cat; a new experience as an issue of fairness or an issue of efficiency.

Among these systems of beliefs, Mezirow drew a distinction between what he calls "meaning schemes" and what he calls "meaning perspectives." Meaning schemes are specific knowledge, beliefs, value judgments, or feelings involved in making an interpretation. Meaning perspectives are broader rule systems that govern the activities of perceiving, comprehending, and remembering.

Mezirow explained that we learn through negation. We revise meaning schemes and perspectives when we find they are no longer adequate for interpreting our experience. This can happen on a variety of levels, both conscious and subconscious. A young child whose family has a dog might think of all four-legged animals as dogs until he gets close enough to a sheep to see how it differs. When a person learns carpentry, she continually adjusts the way that she uses tools until she is able to get the effects that she wants. A person interested in a controversy over geese might think of the issue as a problem of protecting private and public property. But when this person is exposed to people who complain about the presence of geese in a public park, no matter how few, he might also begin to think of the issue as a problem of increasing tolerance for wildlife.

Many meaning schemes and perspectives are assimilated unreflectively and may even be transformed unreflectively. However, Mezirow noted that the ability to reflect on and consciously transform meaning schemes and perspectives is a uniquely adult capability. Encouraging this reflection and transformation is, to Mezirow, the most important goal of adult education.

Although we can never argue that a particular meaning scheme or perspective is the single correct one, Mezirow proposed certain standards for judging the quality of meaning schemes and perspectives. He noted those that are less adequate are those that arbitrarily limit what is included, impede differentiation, lack permeability or openness to other ways of seeing, or do not facilitate an integration of experience (Mezirow 1991, p. 118). He called these meaning schemes and perspectives "distorted."

Mezirow (1991) provided a loose categorization of the ways in which assumptions (unreflectively held meaning schemes and perspectives) can be distorted. These include four broad groupings:

- **Reasoning distortions** are logical and methodological in nature and are particularly relevant to the domain of instrumental learning. For example, after experiencing several unusually cold winters in upstate New York, a person might conclude that global warming could not be occurring. This reasoning is distorted because experience in a limited geographic area over just a few years is used inappropriately to generalize about a global phenomenon taking place over decades and centuries.

- **Epistemic premise distortions** are "distorted assumptions about the nature and use of knowledge" (Mezirow 1991, p. 123). For example, people in their early teens often view
knowledge as clear and unambiguous. They believe that they directly see and experience reality and, thus, inappropriately fail to recognize the role that interpretation plays in our experience of reality.

- **Sociolinguistic premise distortions** are "all the mechanisms by which society and language arbitrarily shape and limit our perception and understanding" — including implicit ideologies; cultural codes; social norms, roles, and practices; and underdeveloped levels of consciousness (Mezirow 1991, pp. 130-131). Stereotypes of racial or ethnic groups are examples of sociolinguistic premise distortions.

- **Psychological premise distortions** "produce ways of feeling and acting that cause us pain because they are inconsistent" with our "sense of how we want to be as adults" (Mezirow 1991, p. 138). These distortions are artifacts of earlier experience that have become dysfunctional in adulthood. They are exhibited as fears of taking action for various reasons leading to an inability to act in a constructive way. For example, a person who was punished for challenging an authority figure as a child might inappropriately fear the consequences of challenging authority figures as an adult.

Mezirow provided numerous examples of types of distortions under each of these groupings, but does not provide a well-developed category system. Nevertheless, the types of distortions that he described can be used as a starting point for identifying reasoning that is inadequate.

Categorizing distortions in adult reasoning can be used in the development of educational strategies. Mezirow argued that encouraging the transformation of meaning schemes and perspectives is the most important purpose of adult education. It may be possible to design strategies that would encourage citizens to reflect on and possibly revise distorted assumptions that they make. Therefore, we set the following objectives for this project:

1. Determine how citizens involved in decision making about the Rockland County goose management issue reason about the issue. Subobjectives include:
   a. Categorize the reasons citizens use to support their stances on intellectual problems (i.e., questions about what the world is like, such as what will happen to the goose population if a certain action is taken).
   b. Categorize the reasons citizens use to support their stances on normative problems (i.e., questions about what we should do, such as what should we do to address complaints about geese).

2. Identify the distorted assumptions evident in citizens' reasoning.

3. Distribute an educational brochure to citizens and determine whether it encourages them to reevaluate their distorted assumptions.

4. Distribute insights generated from this research through the development of Cornell Cooperative Extension training materials.

**METHODS:**

**Data Collection and Analysis**

The primary data-gathering method was interviewing citizens who had been involved in the decision-making process about this issue to assess their reasoning strategies. Fourteen citizens who were involved in this decision-making process were selected. These individuals had either: (1) served on a past task force to recommend goose management strategies in Rockland County; or (2) contacted the Town of Clarkstown (one of the towns in Rockland County) to express an opinion about the issue. Interviewees were selected to be as diverse as possible with respect to type of interests in the issue, gender, and age.

During the first phase of the project, all 14 citizens were interviewed in the spring of 1996. We designed a semi-structured, open-ended interview format (Patton 1990) with questions about: (1) how citizens reason about intellectual problems involved in the policy debate (what had caused the increased incidence of goose-related complaints in Rockland County?) and (2) how citizens reason about normative problems involved in the policy debate (what should be done about the high incidence of goose-related complaints in Rockland County?). In addition to allowing us to identify the types of reasons citizens used to support their arguments, these interviews also allowed us to identify the types of distortions evident in citizens' reasoning. The interview guide was based on a guide used by Kuhn (1991, pp. 299-300) and is included in Appendix A.

All interviews were taped (except for one during which the tape recorder malfunctioned) and transcribed. Each interview was separated into two sections: one dealing with reasoning in support of intellectual claims and the second with reasoning in support of normative claims. Each section of the transcripts for each respondent was analyzed separately to help ensure that the analysts were not influenced by one section when analyzing another.

Responses to the questions about citizens' intellectual reasoning were analyzed using Kuhn's (1991) category system for classifying such arguments. One half of the interview transcripts were coded by two researchers independently in order to help ensure the quality and consistency of the coding. Disagreements about how particular excerpts should be coded were resolved in meetings between the two researchers. In some cases, certain categories were revised Kuhn's system slightly to fit the data better. After the first half of the interview transcripts were analyzed, the remainder of the transcripts were analyzed by one researcher.

The normative reasoning questions were analyzed in a similar fashion. For these questions, however, we did not have a pre-existing category system that we could apply to the data. Consequently, this category system was developed during the analysis. The two researchers, working independently, developed categories to describe the type of normative reasons offered by interview respondents. A final category system was agreed upon by the two researchers. This category system was then used to analyze the data by the same procedures as those used in the analysis of intellectual reasoning.
RESULTS AND DISCUSSION:

Categorizing Intellectual Reasoning

In our exploration of intellectual reasoning, we found that theories offered about the causes of the high incidence of goose-related complaints fell into 11 basic patterns (Figure 1). Many citizens offered more than one theory, believing that multiple factors had contributed to the high incidence of goose-related problems. Some theories were more complete than others. For example, one citizen simply argued that an increase in the number of geese had caused the large number of goose-related problems without offering an explanation for why geese had increased.

Most citizens who offered theories were able to offer relevant reasons why they believed the theory to be true, although not all of these reasons were necessarily convincing. The vast majority of these reasons offered fell into one of five categories: (1) explanation; (2) expert opinion; (3) correspondence; (4) covariation; or (5) correlated change. All of these categories except "expert opinion" were modeled after categories developed by Kuhn (1991).

1. Explanation: The respondent offers a description of how the presumed cause could lead to the effect (increase in geese or goose-related complaints) but does not suggest observations he or she would expect if the cause had led to the effect. This category was called "pseudoevidence" by Kuhn (1991) who distinguished it from genuine evidence because this type of reason was simply an elaboration of one's theory rather than distinct evidence for it. In the following example, the respondent has been arguing that warmer winters led to an increase in the goose population. In this excerpt, he explains how warmer winters could lead to an increase in geese but offers no observations suggesting that they actually have done so: "The lakes and the rivers don't seem to freeze like they used to. So the geese have more availability to open water. It's not frozen solid like it was when I was a kid. . . . The winter isn't as harsh, the old geese haven't got to fly."

2. Expert Opinion: The respondent appeals to direct or indirect testimony of "experts" (people who should know) as to what has caused goose-related problems. In this excerpt, the respondent cites the newspaper as an expert source that has indicated that an increase in grassy areas has led to a larger goose population: "Just from what I've heard, from what other people have told me, reading articles in the newspaper."

3. Correspondence: The respondent notes that the effect is associated in space or time with the presumed cause. In this example, the presumed cause of the large goose population is the increase in lands with mowed grass: "And part of the deal is that, where do you see the geese? You see them in clear areas. You see them on golf courses and you see them on the playing fields, both public and private golf courses, the school lots where the kids play and are mowed and kept neat."

1 For Kuhn to accept a statement as genuine evidence, it had to: (1) be distinguishable from the theory the statement was intended to support; and (2) have some bearing on the correctness of the theory. Because this type of evidence was simply an elaboration of a person's theory, it did not satisfy Kuhn's first criterion.
animals. . . . And I can't help that. . . . So any of this stuff drives me nuts. Any of these killing ideas. . . . It's not a solution for me. Why would I kill a Canada goose?"

5. Consequences: In the consequences stage of the policy cycle, the expected outcomes of alternative actions are discussed. The consequences of policy actions (effectiveness in reducing goose-related problems, cost, safety, etc.) are of concern to many citizens. We labeled arguments based on the consequences of actions as "outcome" arguments. In this excerpt, one respondent expresses his concerns about the cost of solutions to the goose problem: "The other thing that seems to be coming up is in Rockland County, people are just tired of taxes - higher and higher taxes. . . . I have one daughter who's down at Walter Reed Hospital with the Army. . . . After her stint with the Army is over, I don't know that she can come back and live in Rockland County. It's just too expensive. So how much money are people going to be willing to pay either on a one-time outlay for a border collie or the application of grape flavored extract. All this costs money, and it may seem like just pennies, and yet in the public's eye - here's another expense and why should I, the beleaguered taxpayer, have to pick up any of this? So I think cost conscious approaches need to be given the spotlight."

6. Choice: During this stage, final deliberation is completed and the choice of a particular action is made. Some normative arguments are based in the procedures used to make a choice. We called such arguments "procedural" arguments. This respondent argues for actions that have been produced by "scientists" during their deliberations: "I'm a believer that if the scientist type says we have x amount of birds and we can safely reduce it by a number y, maybe taking the eggs and not allowing them to hatch, and not endanger the species, that scientific kind of thing. I'm in favor of that."

7. Implementation: In the implementation stage of the policy cycle, a policy action is carried out. Citizens may argue that certain actions are either practical or impractical to implement. We called such arguments "feasibility" arguments. In this excerpt, the respondent argues against transporting geese out of Rockland County because of the logistical difficulties involved: "Like moving the things out of the country hasn't been tried for awhile. It's incredibly complicated. You not only got to get the town's permission, you got to get the state DEC, and then you got to get the federal people involved. The last time it was tried they had to get the permission from the state where they were going to - and again the federal people approved it. It had to be done in one day. So you're not going to be able to move them all that far. If you really hustled, you can get them down to South Carolina."

8. Evaluation: Results of policy actions are assessed during the evaluation stage of the policy cycle. Some citizens supported or opposed actions because of the ways in which these actions would be evaluated. These actions were categorized as "evaluation" arguments. This respondent criticized lethal goose control proposals because no adequate standards had been established to evaluate the results of these actions: "In fact, that's one of the criticisms that people throw around here. Everybody's talking about . . . the DEC. 'We're managing our waterfowl. [The town supervisor] is managing that.' Well . . . there's a plan that doesn't actually have any real goals associated with it. Well, how many geese are acceptable in any given park, or in the region?"

Identifying Distortions

The distortions we identified were classified using a category system based on Mezirow's (1991) work. Although Mezirow did not provide a well-developed category system to describe different types of distortions, he does identify four broad groupings (which we adopted) and lists numerous examples of distortions that fall under each of these groupings. We used some of Mezirow's examples as the basis for categories of distortions but also added categories of our own when none of Mezirow's examples seemed appropriate to describe the types of distortions we encountered.

I. Reasoning Distortions

These are distortions that are related to acceptable rules of logical argument.

Material Fallacies. Material fallacies have to do with the facts or content of an argument. They include cases in which an argument does not provide the necessary support for its conclusion and cases in which an argument's statements are irrelevant to its conclusion.

This type of distortion was fairly common. It was often encountered in reasoning about what had caused the high incidence of goose-related problems or what types of actions would be effective at reducing these problems. For example, in order to support her argument that the goose-related problems were caused by a particular waterfowl management plan being implemented by the federal government, one respondent said:

"Well, you can go back into newspapers and get quotes from people that have been written up as having complained where they will say: 'This is crazy it never used to be like this.' OK? Public testimony. They are now complaining where ten years ago they didn't have to complain. So, couple that with the North American Water Fowl Plan [which was initiated about ten years ago]. Yeah. Public testimony. Written word. Yes, that's good."

This excerpt certainly provides evidence for her contention, but it is far from compelling, particularly since the management plan in question was not targeted towards Rockland County geese, but rather toward North American waterfowl generally.

Linguistic Fallacies. This type of distortion includes arguments which involve ambiguous use of language — shifts in meaning, vagueness, or incorrect use of words. This type of distortion was encountered infrequently. In one case, a respondent was distinguishing geese which migrate from those that do not. He identified non-migratory geese as those which were present in Rockland County during the winter. This use of the term "migratory" was incorrect. Geese are often present in the U.S. during the winter, but the migratory geese move north to breed during the summer. Therefore, non-migratory geese would be those that were present in Rockland County during the summer.
And again I keep harping back to the same thing; if they’re there, they’re not migrating. We shouldn’t have twelve thousand goose or even two thousand goose in the middle of the winter. In this area.

Strategic Fallacies. This type of distortion includes arguments presented so that they appeal to biases, fears, or guilt. It was only rarely encountered. One respondent defended her claim that a particular waterfowl management plan had caused an increase in the goose population by claiming that the management agency would benefit financially if the plan was successful.

And you do know that there is a direct revenue benefit as a consequence. So we’re not saying this is an altruistic function.

This claim seemed to be intended to cast doubt on the motives of the agency, although it did not speak to the issue of whether the management plan had indeed caused an increase in the local goose population.

Unsupported Contentions. Many respondents made claims with the implication that the truth of the claim was obvious but without offering any support. Some of these claims were questionable because they were oversimplified (e.g. focusing on only one cause of a phenomenon), overgeneralized (basing a general truth on a single observation), or based on data which was vivid but not relevant.

For example, one respondent simply made the claim that the goose population would increase if there was food available:

Nature responds to its food source. It’s just the way it is.

Although the availability of food is certainly an important influence on goose, it is really only one factor of many that affects population changes.

II. Epistemic Premise Distortions
This category includes distorted assumptions about the nature and use of knowledge.

Fallibility Distortions. This label was applied to reasoning in which respondents demonstrated an inability to recognize the possibility that their factual or normative judgments could be wrong or called into question. For example, one respondent, when asked how sure she was about what had caused the increase in the local goose population responded:

How sure am I of what has caused the increase to the goose population? I’m 100% confident.

Verification Distortions. The comments of some respondents suggested that they assumed propositions were meaningful only if they could be verified empirically. This type of distortion typically occurred when a respondent claimed that a particular strategy for reducing goose-related problems could not be judged to be ineffective unless it was tried:

They could very well say that they don’t think it would work. They can say that, but unless we try it how can they say that?

Reduction Distortions. This type of distortion occurs when a respondent seems to assume that a phenomenon or conceptualization produced by human interaction is beyond human control. For example, one respondent viewed the question of whether the goose population in Rockland County was too large or not as something that could be ascertained objectively rather than a collective social judgment:

There’s no scientific data that really says that this population is large compared to what our habitat is as a whole.

Prescription Distortions. This type of distortion is evident when a respondent uses descriptive concepts as prescriptive. The respondent seems to consider a description of the results of a particular action sufficient to justify that course of action. For example, one respondent justified her preferred goose management technique by arguing:

Because it’s something that’s not harmful to the animals, but might work.

This excerpt, like most others in this category, reflects the standards the respondent is using to evaluate the suitability of management actions. The standards themselves, however, remain unjustified. A description of them is considered sufficient to justify the actions.

III. Socio-linguistic Premise Distortions
These distortions include all the mechanisms by which society and language arbitrarily shape and limit our perception and understanding. They were the most common type of distortion encountered in the interview data.

A. Language-Based Distortions
These distortions are those that allow language to limit our perceptions of experience or the actions we are willing to consider.

Distorted Problem Definition. This distortion occurs when a respondent defines a social problem in a way that constrains our thinking about how to address that problem.

This category included many fundamental assumptions that are quite important to how people think about the goose management issue. For example, some people seemed to assume that what we should be doing is allowing room for nature to exist without human interference:

But I think they should just let nature take care of itself and that it will eventually take care of itself.

While others saw the problem quite differently as one of how to serve as good stewards of the earth (in which case human interference is desirable):
I feel very strongly about our obligation to be stewards. We are the intelligent beings here, the stewards of the earth and its possessions.

**Distorted Word Choice.** This type of distortion occurs when a respondent allows the choice of words to arbitrarily limit the ways in which an experience is perceived. Effectively, this is reification by applying a name to something. For example, one respondent described proposals to kill adult geese in Rockland County as:

_the culling of the herd_

suggesting that the action involved removing excess animals. Another described the same proposal as:

_wiping out hundreds of Canada geese under unnatural circumstances, like slaughterhouses._

The use of language in each case shapes the way the proposal is perceived. Neither description, however, can be argued to be the single correct one.

**Distorted Metaphors.** The respondent uses metaphors or analogies that limit our understanding of a phenomenon or actions that may be taken to address that phenomenon. For example, one respondent criticized the justification for killing geese as a way to reduce a potential health threat:

_"You had people being executed in World War II on that same premise. Potential threat! Mother of God! Is this what we're reducing ourselves to?"

Comparing proposals to kill geese with the Holocaust is very objectionable to many people. Not all metaphors used are as extreme, but they all can influence the way we think about a problem.

**B. Distortion through Selective Perception**

These distortions include those which arbitrarily limit the ways in which people are perceived.

**Stereotyping.** This type of distortion is one in which a respondent engages in simplistic characterizations of other people with whom he or she does not agree. For example, one respondent described the people who attended a rally for those opposed to killing geese (which Alec Baldwin, the actor, also attended):

_Well, it was held at the Helen Hayes Theater down in Nyack and I would say that the theater . . . must have held close to 250 to 300 people . . . . I was seated fourth row up from the stage up with my co-worker. I looked around and I said to Liz: "you know I'm the only male in this entire section." I suspect as I looked around that a number of people were there to hear and see Alec Baldwin, and they were younger females who were swooned by his presence. He is, I guess, a draw, and I don't know how many people in the audience were there for the goose issue or for the Baldwin presence._

This description reflects an unflattering view of those opposing lethal goose control methods.

**Dismissing of Alternative Perspectives.** The respondent dismisses or blocks out meaning perspectives or viewpoints as aberrations that do not fit comfortably with his or her own. People, experiences, or viewpoints that are inconsistent with a respondents' perspectives are not recognized. For example, citizens on all sides of the issue tended to dismiss the view of those they disagreed with, often suggesting those views were based in "emotion." One individual responded to arguments he had heard against plans to feed local geese to the poor. Some citizens had claimed goose meat is not healthy to eat and criticized government officials for being willing to feed "contaminated goose flesh" to the poor.

_And the emotion over using terms like "contaminated goose flesh" and "homeless" — I think that just clouds the issue. If something could be done to prevent the extreme from garnering most of the airwaves and most of the print, the public would be better off looking for that balance. And that's what most people want. They don't want to get wrapped up in extremes. But middle-of-the-roaders aren't the people that normally make headlines. We kind of just plod along and do our thing._

Another respondent on the opposite side of the issue criticized the perspective of citizens who wanted geese to be killed:

_"I'm furious about geese," for example. Here's one perspective. "I'm fed up with geese. I'm close to going out with a shovel and killing geese with a shovel." . . . . The emotional point that I would get at that point. They're not really interested in what other people are thinking. . . . I hate to say it but people are not really open-minded to other views. Generally, they become emotionally involved in an issue._

In both cases, the terms "emotion" and "emotional" are intended to denigrate other perspectives.

**Fundamental Attribution Error.** Mazrour used this term to describe distortions in which a respondent interprets the behavior of others as caused primarily by their character rather than by the characteristics of the situations to which they respond. The reverse often holds true when an individual interprets his or her own behavior. For example, some respondents viewed the high incidence of goose-related complaints in Rockland County as reflecting a flaw in the citizens who complained about geese rather than being based in the effects geese were having on Rockland County. One respondent claimed that the complaints were coming from:

_a new population of people living in the suburbs, maybe from the city or from near the city, that . . . . don't have any relationship, they have no standard by which to understand the natural world and, therefore, conflicts are going to . . . . occur more readily._
The Impacts of an Educational Brochure

The educational brochure we developed (Appendix F) was intended to encourage citizens to question some of the distorted assumptions that we encountered frequently in the data. Our approach was to pose different questions about the controversy over geese and describe alternative viewpoints about each question. In particular, we targeted three types of assumptions that all were related to "Distorted Problem Definitions" (p. 19):

- We described alternative views about the nature of the problem. Rockland County was facing. We presented the views that the problem was: (1) one of too many geese, (2) one of geese congregating in inconvenient places, and (3) one of human intolerance for geese.
- We described alternative conceptualizations for how to deal with the problem. We presented the beliefs that: (1) geese could be effectively discouraged from congregating in inconvenient places; (2) citizens needed to be educated about how to avoid problems with geese and how to become more tolerant of geese; and (3) the population of geese needed to be reduced.
- We contrasted two basic world views underlying the debate over goose management. One maintained that geese were a part of the natural world, and nature needed to be protected from human interference. The other maintained that geese had unnaturally grown cut of balance with their environment, and human action was needed to restore that balance.

Reactions to the brochure varied considerably among interview respondents. Several respondents thought the brochure was an excellent portrayal of the controversy, and that the brochure could have real value if it was distributed within the community. Many respondents stressed that it portrayed different viewpoints well.

Other respondents believed that the brochure did an adequate job of describing different citizens' views, but did not think it would be of much use if distributed. People argued that: (1) community residents already knew all of the information presented in the brochure; (2) understanding other citizens' perspectives is of no use in resolving the conflict; and (3) opinions within the community were already formed and would not change.

Two interview respondents believed that the brochure could cause harm if distributed. In particular, they argued that the brochure could help to legitimize viewpoints that should not be legitimized. They distinguished views (which could be wrong) from facts (which could not) and contended that the brochure should present facts:

You have contrasting viewpoints on everything. But you're dealing with a very definite issue here, and if you want to be of service, you need to give the facts and at least a good solution. Then you're being a public service. This is just a . . . "let's irritate both sides" (laugh). OK. That's all that's going to do. I got irriated reading it. Because I said to myself, we're dealing with a very serious issue here. And it's something that's not being appropriately addressed.

This perspective suggests a distortion which was apparently not influenced by the brochure. This respondent views the issue as well-defined and unambiguous and is apparently unable to perceive that the definition of a social problem is something which is created through social interaction.

We encountered some other examples of distortions in citizens' comments about the brochure. For example, one respondent thought that people might not understand the magnitude of the problem caused by geese after reading the brochure. Again, this comment suggests a particular viewpoint about how the problem should be defined, and a viewpoint with which not all would agree.

Several respondents argued that the brochure could be improved by presenting solutions to the controversy. These comments also reflected distorted assumptions, although in a more subtle way. A solution to the problem is not a concrete quantity that can be defined by an outside expert. Rather, it is a product of social interaction which depends on how a community has defined the problem it faces. Consequently, the belief that solutions could be identified in the brochure reflects a belief that the problem is well-defined.

We also found evidence that the brochure did encourage a few citizens to reevaluate the assumptions they were making about the issue. One citizen stated that the brochure allowed him to get a clearer perspective on other citizens' views about the issue:

I had a chance to read the other people's point of view who are quite opposite from me without emotions coming in to play. I didn't have to listen to them chant and yell and hold a sign. I could read what their point of view was without getting emotional myself. And I thought that was effective.

Given that some of the more common distortions we encountered during interviews were distorted views about what other people were like, it is encouraging that this respondent believed that the brochure helped to gain a clearer perspective on the views of others.

Another respondent questioned the standards she had been using to think about solutions to the controversy. She was a supporter of controlling the goose population, but, after reading the brochure, thought that some of the concerns others had about humans interfering with nature might be legitimate:

But I think that you bring out good points for people who [favor goose control]. Look at history, when man has messed with nature, how we messed nature up. And I think that that comes across.

Two citizens indicated that they thought that the section of the brochure titled "Why is this issue so controversial?" was particularly effective. This section described the differing world views that were linked with some disagreements about the goose controversy. One respondent
clearly stated that this section had opened her eyes to the different types of thinking that underlie contrasting viewpoints:

Well, I thought the one thing that . . . was very nice was this one (the section titled "Why is this issue so controversial?"). I hadn't thought about that. And, of course, I always like to find things to analyze anyway. So, I thought that was good. . . . Cause you can see yourself in one part or the other. And you realize that it's not just about geese. It's not geese. It's more of a philosophy or whatever.

Thus, as expected, the brochure did not have a dramatic effect on how citizens thought about the issue. We did find evidence, however, that the brochure encouraged some people to reflect on, and to some degree to reevaluate, the assumptions they held in relation to the goose management controversy.

**Workshop Evaluation**

The workshop was designed to encourage extension agents to make sense of citizens' reasoning about the goose management controversy for themselves. Most of the workshop focused on group activities and discussion. Early in the workshop, participants engaged in a role play exercise in which they took on the perspectives of members of a task force convened to address the goose controversy. This exercise was designed to familiarize them with the issue and the reasons why citizens took various stands on the issue. Participants then worked with excerpts from the interviews we had conducted in an effort to identify and label some of the distorted assumptions that citizens made in their reasoning. This exercise was used to inform a discussion of appropriate educational objectives and strategies for the goose issue. The workshop concluded with a discussion of the appropriate role of extension educators in public education about natural resource controversies.

Workshop participants engaged in a group oral evaluation at the end of the workshop and also completed short evaluation forms. Participants were quite positive about their experience in the workshop. They particularly liked:

- the size of the group;
- the overall design of the workshop;
- the focus on one case study, along with the opportunity to share insights from related experiences;
- the opportunity to learn from others with experience in the field;
- the depth of discussion throughout the workshop;
- the discussion of the appropriate role for extension educators; and
- the opportunity for interaction between extension educators and Cornell-based staff.

Improvements they suggested included:

- providing a stronger link between the discussion of distorted assumptions and a discussion of specific educational objectives and strategies (the discussion of educational methods tended to be vague), and
- allowing more time for sharing of the personal experiences of participants.

**Suggested follow-up activities included:**

- a workshop encouraging participants to reflect on their own assumptions about the issues on which they work;
- a workshop focusing on strategies which have not worked in other areas;
- a workshop directed at higher-level administrators in Cooperative Extension and natural resource management agencies; and
- a workshop aimed at teams of personnel addressing different aspects of the same issue (extension educators, DEC staff, local government representatives, etc.).

**CONCLUSIONS:**

Several useful findings came out of this project. The classification of normative arguments using Hahn's (1990) model of the policy cycle proved to be an effective way for describing a diversity of arguments using a familiar model. Classifying these arguments has practical value because it can serve as a guide for communication efforts. This classification represents the types of concerns that are important to citizens as they establish and defend their positions on policy issues. Therefore, citizens thinking about these issues may be influenced by communication about: (1) the reasons why a particular problem arose, (2) the necessity of addressing that problem, (3) the types of people who are interested in the issue and the reasons they have for their positions, (4) alternative ways of defining a problem, (5) alternative strategies for addressing the problem, (6) the consequences of each of these alternative strategies, (7) the procedures used to choose a particular policy, (8) the feasibility of implementing different strategies, and (9) the standards which will be used to evaluate a policy.

The classification of distortions was also very useful from an educational standpoint. Although Mezirow's work on distortions and education has been published for some time, we know of no other attempts to systematically identify the distortions evident in citizens' reasoning about a public policy issue. Being aware of distortions which exist can be used to guide the design of educational strategies encouraging citizens to reflect on their own assumptions. Mezirow (1990) compiled a number of examples of such strategies. We developed an educational brochure as a strategy for encouraging the reevaluation of distorted assumptions, and this approach did encourage some citizens to reflect on their own perspectives. Such an approach could be evaluated when used with different types of audiences (e.g. citizens who had been less actively involved in an issue than those targeted in this project).

We also believe it would be useful to evaluate and compare the effectiveness of other types of educational strategies (e.g. public meetings, focus groups, citizens' advisory committees, etc.) for encouraging citizens to reevaluate different types of distorted assumptions related to natural resource policy issues (e.g. constrained definitions of social problems that are being
addressed, stereotyped views of others, etc.). The conflict resolution literature may be extremely helpful in this regard. Conflict resolution activities are typically designed to encourage people to reevaluate assumptions they make about: the nature of the problems they are facing; what they need in order to be satisfied; the characteristics of other people involved in conflicts, and their own capacities to effect change (e.g. Fisher and Ury 1981, Bush and Folger 1994). These types of assumptions include some of the more important types of distorted assumptions we identified in our research. Therefore, conflict resolution strategies may be very appropriate for encouraging transformative learning. We believe it would be worth exploring how well conflict resolution strategies encourage people to reflect on their distorted assumptions about natural resource policy conflicts.

Studying reasoning about ill-structured problems, such as natural resource policy disputes, is problematic because these disputes are filled with issues of uncertainty. Consequently, it is not always straightforward to distinguish good quality reasoning from bad. We believe that our approach to this problem is worth further development. In particular, we believe it would be useful to: (1) test whether communication based on the model of types of normative reasons that we developed influences citizens who hold these types of reasons; and (2) work to develop educational strategies which are effective for addressing particular distorted assumptions.

This continued work will be of value to extension educators. Extension educators are often in the position of working with citizens to increase their capacity to understand and influence policy processes. Additional workshops focused on enabling extension educators to consider and evaluate alternative approaches to working with citizens on public policy topics may be a useful mechanism for extending the application of research findings and for supporting extension educators in their work.

LITERATURE CITED:


Table 1: List of citizens’ proposals about what should be done about the high incidence of goose-related complaints in Rockland County.

- Cull goose eggs
- Use chemical or noise-based repellents
- Alter landscaping practices to make area less attractive to geese
- Discourage humans from feeding geese
- Kill geese
- Use trained dogs to deter geese
- Educate citizens on how to avoid goose-related conflicts
- Conduct additional research on and discussion about problems
- Trap geese and transfer them to another location
- Set aside land for the use of geese
- Use birth control methods to inhibit goose reproduction

Table 2: Stages of the policy cycle (according to Hahn, 1990).

<table>
<thead>
<tr>
<th>Concern:</th>
<th>People with concern seek additional support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involvement:</td>
<td>Issue is defined</td>
</tr>
<tr>
<td>Issue:</td>
<td>Different actions proposed</td>
</tr>
<tr>
<td>Alternatives:</td>
<td>Consequences of alternatives discussed</td>
</tr>
<tr>
<td>Consequences:</td>
<td>Decision is made</td>
</tr>
<tr>
<td>Choice:</td>
<td>Decision is implemented</td>
</tr>
<tr>
<td>Implementation:</td>
<td>Results are evaluated</td>
</tr>
<tr>
<td>Evaluation:</td>
<td></td>
</tr>
</tbody>
</table>
Figure 1: Citizens’ primary theories about the causes of the high incidence of goose-related complaints in Rockland County. Theory components in parentheses were included in some versions of the theory, but not others.

Human changes to environment → Good goose habitat → Population increase → Complaints
Feeding of geese → (Geese don’t migrate) → Population increase → Complaints
Mild winters → (Geese don’t migrate) → Population increase → Complaints
Human development of areas with geese → Increase in goose-human contact → Complaints
Lack of understanding/tolerance of nature → Complaints
Lack of hunting/goose protection → (Geese don’t migrate) → Population increase → Complaints
Lack of predators → (Geese don’t migrate) → Population increase → Complaints
Government encouraging goose population increase → Population increase → Complaints
Geese transported in → Prevented from migrating → Population increase → Complaints
Good weather → People outdoors → Interaction with geese → Complaints
Population increase → Complaints

Figure 2: Alternative theories offered by citizens regarding the causes of the high incidence of goose-related complaints in Rockland County. Theory components in parentheses were included in some versions of the theory, but not others.

Human changes to environment → Good goose habitat → Population increase → Complaints
Feeding of geese → (Geese don’t migrate) → Population increase → Complaints
Mild winters → (Geese don’t migrate) → Population increase → Complaints
Human development of areas with geese → Increase in goose-human contact → Complaints
Lack of understanding/tolerance of nature → Complaints
Lack of predators → (Geese don’t migrate) → Population increase → Complaints
Government encouraging goose population increase → Population increase → Complaints
Geese multiplying too fast → Population increase → Complaints
Figure 3: Types of normative arguments used to support normative theories, linked to phases of Hahn’s (1990) policy cycle.
7b. (If yes) Can you remember what it was that led you to believe that this is the cause?

Contradictory Positions

1. Suppose now that someone disagreed with your view that this is the cause. What might they say to show that you were wrong?

2. What evidence might this person give to try to show that you were wrong?

2a. (Probe, if necessary) Just to be sure I understand, can you explain exactly how this would show that you were wrong?

3. (If not already indicated) Is there any fact or evidence which, if it were true, would show your view to be wrong?

4. Could someone prove that you were wrong?

5. (Omit if alternative theory already generated) A person like we've been talking about whose view is very different from yours -- what might they say is the major cause?

6. ([Include if no alternative theory generated] Suppose that someone disagreed with you and said that (a lack of goose hunting/a lack of natural predators/changes in land use/human development on goose habitat) was the cause.) What could you say to show that this other person was wrong?

6a. (Probe, if necessary) Just to be sure I understand, can you explain exactly how this would show the person was wrong?

7. Would you be able to prove this person was wrong?

8. (If not already indicated) What could you say to show that your own view is the correct one?

Epistemological Reasoning

1. How sure are you about what has caused the large number of goose-related complaints?

2. Do experts know for sure what has caused the large number of goose-related complaints?

3. (If no) Would it be possible for experts to find out for sure if they studied this problem long and carefully enough?

4. How sure are you of your own view, compared to an expert?

5. Is more than one point of view possible regarding the question of what has caused the large number of goose-related complaints?

6. (If yes) Could more than one point of view be right?

7. How much would you say you know about this topic, compared to the average person?

8. How important is this topic to society as a whole?

9. How important is this topic to you personally?

Normative Questions:

Theory and Justification

1. What should be done to reduce the number of goose-related complaints in Rockland County?

1a. (Probe, when subject completes initial response) Anything else?

2. (If multiple actions mentioned) Which of these actions to reduce the number of goose-related complaints is most important?

3. What reasons do you have for thinking that this action should be taken to reduce goose-related complaints?

3a. (Probe, if necessary) Just to be sure I understand, can you explain exactly how this shows that this action should be taken to reduce goose-related complaints?

4. If you were trying to convince someone else that your view is right, what evidence would you give to try to show this?

4a. (Probe, if necessary) Can you be very specific, and tell me some particular things you could mention to try to convince the person?

5. Is there anything further you could say to help show that what you've said is the best action to take?

6. Is there anything someone could say or do to prove [verbal emphasis] that this action should be taken to reduce the number of goose-related complaints?

7. Can you remember when you began to hold this view?

7a. (If no) Have you believed it for as long as you can remember?

7b. (If yes) Can you remember what it was that led you to believe that this action should be taken to reduce goose-related complaints?
**Conradictory Positions**

1. Suppose now that someone disagreed with your view that this action should be taken to reduce goose-related complaints. What might they say to show that your view was not right?

2. What evidence might this person give to try to show that your view was not right?

2a. (Probe, if necessary) Just to be sure I understand, can you explain exactly how this would show that your view was not right?

3. (If not already indicated) Is there any evidence which, if it were true, would show your view was not right?

4. Could someone prove that your view was not right?

5. (Omit if alternative theory already generated) A person like we’ve been talking about whose view is very different from yours -- what might they say should be done to reduce the number of goose-related complaints?

6. [(Include if no alternative theory generated) Suppose that someone disagreed with you and said that _____ was the action that should be taken to reduce the number of goose-related problems.] What could you say to show that this other person’s view was not right?

6a. (Probe, if necessary) Just to be sure I understand, can you explain exactly how this would show the person’s view was not right?

7. Would you be able to prove this person’s view was not right?

8. (If not already indicated) What could you say to show that your own view was right?

**Epistemological Reasoning**

1. How sure are you about what actions should be taken to reduce the number of goose-related problems?

2. Do experts know for sure what should be done to reduce the number of goose-related problems?

3. (If no) Would it be possible for experts to find out for sure if they studied this problem long and carefully enough?

4. How sure are you of your own view, compared to an expert?

5. Is more than one point of view possible regarding the question of what should be done to reduce the number of goose-related problems?

6. (If yes) Could more than one point of view be right?

7. How much would you say you know about this topic, compared to the average person?

8. How important is this topic to society as a whole?

9. How important is this topic to you personally?

**Additional Questions**

1. Where do you encounter geese in Clarkstown?

2. What has been done in Clarkstown in the past to try to reduce conflicts between geese and people?
APPENDIX B:

Interview Guide for Second Phase, Focus on Normative Reasoning and Brochure Feedback

Introduction:
As I told you over the phone, one reason for this interview is to get feedback on the brochure I sent you. We developed this brochure based on the interviews I conducted last year. It is intended to represent people’s views on both sides of the goose management controversy. I’d like to ask you some questions to see how good a job you think we did with the brochure.

Anything you say in the interview will be completely confidential. I may use a direct quotation from the interview but it will never be associated with your name.

Is it all right with you if I tape record the interview? I have trouble writing everything down and the tape helps me to make sure I heard you correctly.

Feedback on Brochure:

1. How well do you think the brochure describes different citizens’ views about the goose management issue? Possible probes:

   1a. How well do you think it describes the different kinds of complaints that people make about geese?

   1b. How well do you think it describes the different factors that contribute to the large number of goose-related complaints?

   1c. How well do you think it describes the different solutions that citizens have proposed for addressing the large number of goose-related complaints?

   1d. How well do you think it describes citizens’ views about the real problem underlying the large number of goose-related complaints?

2. How well does it describe your own views about the issue?

3. How well do you think it describes the views of other citizens?

4. What is missing from the brochure that you think should be there?

5. What, if anything, do you think is inaccurate in the brochure?

6. What parts of the brochure do you think do a particularly good job of describing citizens’ views?

7. How could we improve the brochure?

8. Were any of the ideas in the brochure new to you? What were they? How useful were they for thinking about the goose management issue?

Normative Questions:

Now I want to shift gears a little bit. I’d like to ask you some questions about what you think should be done about the goose-related complaints in Rockland County. This is a little bit like what we talked about last year, but it won’t be in as much depth.

1. What do you think should be done to reduce the number of goose-related complaints in Rockland County?

2. Anything else?

Reasoning

3. What reasons do you have for thinking that this action should be taken to reduce goose-related complaints?

4. If you were trying to convince someone else that this would be a good action to take, what reasons would you give to try to show this?

5. Can you be very specific, and tell me some particular things you might say to try to convince the person?

6. Is there anything further you could say to help show that what you’ve said is a good action to take?

Arguments against Preferred Technique

7. Addressing goose-related complaints in Rockland County is very controversial. Suppose now that someone disagreed with your view that this action should be taken to reduce goose-related complaints. What might they say to try to show that this was not a good way to manage deer?

8. What particular reasons might this person give to try to show that this action was not a good way to reduce goose-related complaints?

9. Is there anything else this person might say to try to show that this was not a good action to take?

Arguments for Alternatives

10. (If no alternative action has been suggested yet.) A person like we’ve been talking about whose view is very different from yours -- what might they say should be done to reduce goose-related complaints?
10a. *(If the respondent still has not suggested an alternative action.)* Suppose that someone disagreed with you and said that goose-related complaints should be reduced by *(alternative action).*

11. What reasons might this person offer to support their argument?

12. Can you be very specific and tell me some particular things this person might say to try to show that this would be a good action to take?

13. Is there anything further this person might say to try to convince someone that this would be a good way to reduce goose-related complaints?

**Rebuttals of Arguments for Alternatives**

14. What could you say to argue against this other person's view?

15. What reasons might you give to try to show that this action was not a good way to reduce goose-related complaints?

16. Is there anything else you might say to try to show that this was not a good action to take?

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**APPENDIX G:**

**Workshop Agenda and Description of Activities**

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**Educating Citizens about Natural Resource Policy Disputes**

**WORKSHOP AGENDA**

September 9, 1997

10:00 am - 4:30 pm
Cornell University

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(1) Overview and Introductions (10:00 am)

(2) Rockland County Goose Management Controversy Background (10:30 am)

(3) The Nature of Controversial Environmental Issues (10:45 am)

(4) Lunch (12:00 noon)

(5) Implicit Assumptions in Citizens' Reasoning (12:30 pm)

(6) Choosing Educational Objectives and Strategies (1:45 pm)

(7) Break (3:00 pm)

(8) The Role of the Extension Agents in Public Policy Education (3:15 pm)

(9) Summary and Evaluation (4:00 pm)

(10) Adjourn (4:30 pm)
Overview
10:00-10:15 am
(Bruce Lauber)

Points to make:

- The focus of workshop is public policy education for controversial natural resource and environmental issues. It is organized as case study of the Rockland County goose management controversy, but has lessons for other conflicts.

- Provide brief background on Rockland County research.

- We will address 4 questions: (1) what makes environmental conflicts tough to resolve? (2) how do citizens make decisions about where they stand on policy issues? (3) what kinds of gaps exist in their reasoning? (4) how should we approach public policy education?

- The workshop will be activity based, including work with verbatim excerpts from interviews with citizens. We targeted agents with experience with/interest in environmental conflicts. We will rely on their expertise in making sense of citizens' reasoning. The importance of participants describing their relevant personal experience with other environmental issues (throughout the workshop) will be stressed.

- Provide brief background of each workshop organizer: Andy Turner (extension agent in Rockland County who has dealt firsthand with issue). Paul Curtis (technical expertise in nuisance wildlife management and experience as facilitator in citizen task force process). David Deshler (faculty member in Education with strong interest in adult and extension education). Bruce Lauber (researcher with strong interest in adult education and citizen participation). The role of the organizers is to provide perspective where appropriate — but not to provide answers.

- Provide brief overview of agenda. Stress flexibility.

Introduction of Participants
10:15-10:30 am
(Bruce Lauber)

All present will be asked to: (1) introduce themselves; (2) tell something about their background; and (3) say what they hope to get out of the workshop. Personal goals for the workshop will be listed. A brief discussion of which goals we expect the workshop to address will follow.
Issue Background
10:30-10:45 am
(Paul Curtis)

Paul will discuss the history of the goose management issue -- when the problem originated; what we know about why it originated; who is interested in the issue; what they are concerned about; what they disagree about; what management actions have been proposed or implemented; and how the public has responded to proposed actions.

The Nature of Controversial Environmental Issues
10:45 -12:00 noon
(Bruce Lauber)

Role Play Exercise (35 minutes) (See Appendix D for Role Descriptions)
Participants will become familiar with the issue through a role playing exercise. Each participant will play the role of a stakeholder in the issue. Stakeholders will interact as a government-citizen task force organized to make a recommendation about how the community should address the goose management issue. One participant will be designated as the facilitator.

Participants will be given the opportunity to look over brief written descriptions of their stakeholder role. Then the person designated as the facilitator will facilitate a 35-minute meeting intended to identify: (1) what concerns members have about geese; (2) how they think citizens concerns about geese should be addressed; and (3) the reasons they have for thinking what they do.

Large Group Discussion (40 minutes)
After the role play exercise is finished, the entire group will address the following questions:

- How easy will this issue be to resolve?
- What is it about this issue that makes it more difficult to resolve?
- How is it possible to have such strong disagreement over this issue?

Participants will be encouraged to compare this with other natural resource or environmental policy issues with which they are familiar.

At some point during this discussion, Bruce will introduce the concept of ill-structured-problems -- problems involving substantial uncertainty and disagreement. Ill-structured problems will be contrasted with problems that can be solved with logic only. Participants will be asked to identify areas of uncertainty in the goose management issue. These areas will be listed on newprint. Participants will also be asked to compare the areas of uncertainty identified for the goose issue with other environmental issues with which they are familiar.

After some of the discussion of the inherent uncertainty involved with environmental policy problems, Bruce will ask participants to list some of the different reasons that were offered in support or opposition of various management options. These will be listed on newprint. This discussion is intended to reflect some of the diversity of reasons that are important to citizens. This discussion will lay the groundwork for the next section of the workshop -- a discussion of the implicit assumptions that are reflected in citizens' reasoning about policy issues.
Implicit Assumptions in Citizens' Reasoning
12:30 - 1:45 pm
(Bruce Lauber)

Small Group Exercise (40 minutes) (See Appendix E for List of Interview Excerpts)

Participants will be introduced to the idea that people must make assumptions when reasoning, and that some of these assumptions may be widely accepted while others may not. Examples will be given to illustrate this idea.

Each participant will be given another set of interview excerpts. Excerpts will be organized into 10 pairs. The purpose of the exercise is for small groups to identify the implicit assumptions reflected in the excerpts. Excerpts within a pair are intended to reflect related assumptions - both excerpts may reflect the same assumption, or excerpts may reflect incompatible assumptions.

We will work through one pair of excerpts as a large group before breaking into small groups. As an aid in identifying assumptions, Bruce will suggest that groups look for points in each excerpt that people on another side of the issue might challenge. Each small group will be asked to keep a list of the types of assumptions they encountered. At least one group will be asked to start with the 10th pair of excerpts (rather than the first) to make sure that someone has attended to each pair if time runs out.

Large Group Exercise (35 minutes)

We will work through each pair of excerpts, one at a time, asking small groups to identify the implicit assumptions reflected in each pair. After each pair, participants will be asked to relate these types of assumptions with those they encounter in other environmental issues.

Choosing Educational Objectives and Strategies
1:45 - 3:00 pm
(Bruce Lauber)

Brainstorming Exercise (15 minutes)

As a large group, we will brainstorm a list of possible educational objectives for the Rockland County goose management issue given the preceding discussion of implicit assumptions that citizens make and the reasons that are important to citizens for supporting or opposing policy alternatives.

Small Group Exercise (20 minutes)

Small groups will be asked to prioritize several educational objectives from the brainstorming exercise. They will then be asked to: (1) identify who in the community they would target for each objective (e.g. general public, specific interest groups, etc.); and (2) design strategies for achieving their priority objectives.

Large Group Discussion (30 minutes)

Small groups will identify their priority educational objectives; explain why they chose their objectives; explain who in the community they would target, and describe their educational strategies.
The Role of Extension Agents in Public Policy Education
3:15 - 4:00 pm
(Andy Turner)

Andy will lead a discussion of the practical and ethical issues involved in extension agents playing a role in public policy education.

Summary and Evaluation
4:00 - 4:30 pm
(Bruce Lauber)

Large Group Discussion (15 minutes)
Participants will be asked to identify aspects of the workshop that they liked or make suggestions about how it could be improved. Positive aspects of the workshop will be listed on one sheet of newsprint. Improvements will be listed on another.

Written Evaluation (15 minutes)
Participants will be asked to complete a brief written evaluation:

- What did you expect to get out of the workshop?
- How well did the workshop meet your expectations?
- What did you like most about the workshop?
- How could the workshop be improved?

The evaluation will also allow participants to rate each component of the workshop (as listed on the agenda) on a 5-point scale (Excellent, Very Good, Good, Fair, Poor) with room for written comments.
APPENDIX D:

Stakeholder Descriptions for Role Play Exercise

Stakeholder: Goose Activist

You are a member of the Coalition to Prevent the Destruction of Canada Geese — an organization that was founded specifically to prevent geese from being killed in Rockland County. You believe that most of the complaints about geese in the community are not legitimate. In particular, you think that goose droppings are not a health threat. No credible scientific evidence exists linking goose droppings with human diseases. Because geese are plant-eaters, their feces do not contain the same dangerous bacteria that the feces of meat-eating animals contains — a distinction the county health department ignores.

You think that most of the complaints about geese originate in an intolerance for nature. People react to geese the way that they react whenever nature intrudes on their lives — they try to stamp it out. And all because they might get their tennis shoes dirty from goose droppings when they walk in the park! As far as you're concerned, that is not a good enough reason for killing a complex living organism.

You believe that much of the support for killing geese in Rockland County comes from the Department of Environmental Conservation (DEC). DEC is dependent on hunting for its very existence because the vast majority of its funds for "wildlife management" comes from the sale of hunting licenses. Consequently, they have a vested interest in encouraging people to kill wildlife, and you do not trust any propaganda that they put out on the Rockland County goose management problem.

Furthermore, killing geese would not solve the problem. Geese are in Rockland County because people have created a habitat that geese love — lawns, parks, schoolyards, and other grassy areas next to ponds and lakes. As long as this type of habitat is present, geese from nearby areas will simply fill the gap left by any geese that are killed. Trying to solve the problem by killing geese would require an annual slaughter. So geese would be forced to pay the price for a problem humans created! The only way to reduce the number of geese in Rockland County is to change the habitat, replacing cultivated lawns with more natural vegetation — unmowed grasses, native shrubs, and trees.

Stakeholder: Local Homeowner

Ten years ago, you bought a house in "Lakeside Village," a new development on the eastern shore of a local pond. After you'd lived there a few years, you started noticing geese in your neighborhood. The problem has grown steadily worse since that time.

Large flocks of geese routinely invade people's yards — eating grass and leaving droppings behind everywhere. Whenever your kids go out to play, they come back with their clothes and shoes dirty from the goose droppings. When you try to go for a run in the park, it is impossible to avoid the droppings. You can't even drive down your own street without having to swerve to avoid geese. And every adult goose is followed by ten little goslings! Not only is it annoying, but you're concerned about the health risks of having so much goose feces around. The director of the county health department has said that contact with animal feces always carries a potential risk.

You and your neighbors have tried various ways to keep the geese away — using noisemakers, putting up fences or planting shrubs between the pond and your properties, you've even chased them with a broom. Nothing does anything more than scare the geese away for a short time.

As far as you're concerned, the only way to address the problem is to restore a more natural balance to Rockland County by reducing the goose population — by whatever means necessary. For the past few years, the county has been quietly destroying the eggs of geese in their nests, and you think they should keep doing that. You also think killing some of the adult geese is necessary if the problem is ever to be resolved.

Stakeholder: Environmentalist

You belong to a local environmental organization. You consider yourself a middle-of-the-road in relation to the controversy over goose management. You think the problems being caused by the local goose population are serious enough that they have to be addressed. Nevertheless, you love wildlife and the environment, and you realize that some people are overreacting to the situation.

You're not sure what actions will be effective to reduce the problems people are having with geese. As far as you're concerned, there is not enough information out there on what works and what doesn't. However, you think a combination of actions will probably be necessary — the use of deterrents along with actions to reduce the goose population (perhaps by destroying the eggs of geese in their nests). You are not comfortable with killing adult geese, but would probably support it if it seemed to be the only way to control the problem.

You are very concerned about the polarization within the community over this issue. Most people seem to be at one extreme or the other, and you don't think they are really listening to each other. Therefore, it is important to you that efforts are made to reduce this polarization and incorporate citizen input as the decision about how to manage geese is made.

Stakeholder: Golf Course Attendant

You work at a local private golf course associated with a country club with very wealthy members. The golf course started to have problems with geese several years ago. The geese were attracted to the combination of water and grass on the course. Pretty soon, goose droppings were everywhere on the fairways and greens, and the members were not very happy about it.

Since that time, the golf course has purchased a border collie to help drive away the geese. The dog is very well-trained and perfectly suited to the job. All day long it roams the golf course, chasing any geese that land. It will even follow them into the water. The border collie has been very effective at controlling the problem at the golf course.

Nevertheless, you are still concerned about the overpopulation of geese within the community at large, and you don't think border collies are the answer everywhere. The county just doesn't have the workforce to be able to oversee trained dogs in all the local parks. Recently,
you've seen conditions at the park down the street from your home grow worse and worse. It is not possible for kids to play ball or anything else in the park without running through or falling in goose droppings. You think the conditions are unpleasant and unsafe — a potential health risk.

You strongly support plans to kill adult geese and give them to the poor for food. Because there are no predators of geese in the suburbs, some human intervention is necessary to restore some kind of balance to the area. You don't trust the "animal rights advocates" who oppose killing geese. You think they deliberately lie to get what they want.

**Stakeholder: School Principal**

You are the principal of a local school. For several years now, geese have been a big problem at the school. During some times of the year, flocks of 100 geese or more will be at the school day after day after day. And 100 geese can leave behind an awful lot of droppings! And it's not just on the grass. The droppings are on the blacktop and the walkways, too.

Many days you can't even let the kids go outside for recess. There is no way they can play outside without getting feces on their shoes, clothes, and hands. And it's not practical to have an entire school full of kids go to the bathroom to wash up after recess. You've tried it, and it takes far too long. Your primary concern is about hygiene. During the school day, parents entrust their children to you, and you can not risk that they will pick up some illness or parasite from coming into contact with the goose droppings.

You think that something has to be done to control the problem. You don't really know what will work. Last year, the town government wanted to experiment by spraying a chemical repellent on the school lawns. The repellent was supposed to taste bad to geese and keep them away. Although they guaranteed you that the repellent was safe for people, you had some concerns about the children coming into contact with it. So you decided not to participate in the experiment.

You don't like the idea of killing geese. However, somehow the natural controls on the goose population don't seem to be working in Rockland County. Some type of human action seems to be necessary to restore nature to its proper balance. In other situations, people hunt to control animal populations, so you think that killing geese could be necessary.

**Stakeholder: County Health Department Staff Member**

You are a staff member of the Rockland County Health Department. The director of your department has stated publicly that he believes goose droppings, in high enough concentrations, are a potential health risk to humans. Nevertheless, you are aware that there is some disagreement over just how much of a risk goose feces does pose. Some citizens advocating for the protection of geese brought a wildlife disease expert town for a presentation. This expert argued that there was no known link between goose feces and human disease. Despite this testimony, the health department maintains that "feces is feces," and poses at least the possibility of a risk to people.

You personally believe that a reduction in the local goose population is needed, and that killing adult geese will be necessary to achieve this. However, you don't think that goose management should rely only on killing geese. There are a wide variety of goose deterrents available that you think would be useful in some areas.

You distrust many of the citizens advocating on behalf of the geese. In your experience, these citizens have advanced a simplistic agenda and have shown no willingness to listen to other perspectives.

**Stakeholder: Environmental Educator**

You are an environmental educator working for a local, non-profit organization. You are deeply concerned about proposals to kill geese in an attempt to reduce the problems that people experience with them. As you see it, these proposals are symptomatic of a more general intolerance for nature in our society. Over the years, you've watched as people from New York City have moved into Rockland County to escape some of the problems of city life. These people do not seem to recognize our interconnectedness with nature. Rather, they see nature as at best an inconvenience that must be controlled. It is this kind of attitude that has led to the numerous environmental problems our society faces.

From your point of view, education is the most important way to address the large number of goose-related complaints. People need to learn about the importance of nature, in general, and geese, in particular. If they do, you believe that they will become more accepting of the inconveniences that geese cause.

You do recognize that large numbers of geese can occasionally become a major frustration for local residents, and you are sympathetic to people who have to deal with these frustrations. You think that these problems are localized, however, and can be minimized by using methods that have been proven to discourage geese from congregating in particular areas by altering the habitat so that it is less attractive to geese. Not only do you think killing geese is wrong, but you also think it would be ineffective because geese from nearby counties would simply replace the ones killed if the habitat is not changed.

**Stakeholder: Town Official**

You work for the town supervisor in Clarkstown, one of the towns in Rockland County. Clarkstown has been particularly hard hit by the goose overpopulation because it has many small lakes and ponds, which attract the geese. The supervisor has been a consistent, vocal proponent of killing geese in order to resolve the problem. You are on the task force to represent his interests.

As you see it, the goose population is far too large for the area. The town has received numerous complaints about the geese and their droppings. Most of the town residents seem to support some type of goose control. The opposition to killing geese seems to come from animal rights activists outside of the town.

You don't think that most of the non-lethal methods that have been suggested to control the geese are practical to implement. People have suggested using noisemakers or dogs to scare away the geese and changing the landscaping of local parks and residences so that the geese find
you've seen conditions at the park down the street from your home grow worse and worse. It is not possible for kids to play ball or anything else in the park without running through or falling in goose droppings. You think the conditions are unpleasant and unsafe - a potential health risk.

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You don't think that most of the non-lethal methods that have been suggested to control the geese are practical to implement. People have suggested using noisemakers or dogs to scare away the geese and changing the landscaping of local parks and residences so that the geese find
them less attractive. Not only would these methods be costly and disruptive, but they would require a continual effort on the part of the town government if they were to succeed.

You support killing some of the *excess geese* on an annual basis and providing the goose meat to the poor.

**Stakeholder: County Legislator**

You are a county legislator in Rockland County. You believe that most of your constituents oppose the idea of killing geese, and you have taken a strong public stand against such proposals. As far as you're concerned, killing geese is an inhumane way to address a problem that just isn't that serious. A few county residents complain about geese in the parks and in their yards, but you think that most of these complaints are rooted in an intolerance of nature.

Furthermore, you think there are plenty of non-lethal alternatives which would be very effective for reducing the problems that people experience with geese. You know of communities that have used noisemakers and trained dogs to drive geese away from areas where they congregate. The most effective way to discourage geese from using parks and homeowners' lawns, however, is to change the landscaping practices used in those areas. Planting shrubs and trees between water and cultivated grass discourages geese from feeding in grassy areas. Leaving some expanses of grass unmowed also tends to deter geese. A program to kill geese just isn't necessary.

Ultimately, you think it is most important to try to educate the public to be more tolerant of the natural world. People need to understand how important nature is to the survival of our species. If they understood that better, they would be more willing to put up with some of the minor "inconveniences" of geese.

**Stakeholder: NYS Wildlife Manager**

You are a wildlife manager working for the New York State Department of Environmental Conservation. Your agency is involved in regulating any efforts to manage geese. You personally believe that some type of action is necessary to reduce the number of geese in Rockland County. However, officially you have taken the stand that your agency will support what the community wants to do (as long as it is legal).

Throughout the conflict in Rockland County, you have tried to fill the role of providing technical expertise to the community. You do not believe that some of the non-lethal alternatives that have been proposed to manage geese will be effective. These include using dogs or noisemakers to scare geese away from problem areas or changing landscaping practices to make these areas less attractive to geese. You believe that the goose population is just too large for these methods to work.

The only way of reducing the problems people experience with geese is to reduce the goose population. From your perspective, this can be done in one of three ways: (1) transporting geese out of the area, (2) destroying the eggs of geese in their nests so that the young won't hatch (egg culling), or (3) killing adult geese. Option 1 will not be effective because geese can fly long distances and will simply return if they are removed. Option 2 will take a long time to be effective because you still have to wait for the adult geese to die off before the population will be reduced. Option 3 seems the most reasonable option to you:

However, you are prepared to go along with the will of the community. If the county is willing to put up with the problems geese cause in order to keep from killing them, that is their decision.

**Stakeholder: Facilitator**

You are a Cooperative Extension agent who has agreed to facilitate the citizen task force that has been convened to address the goose management problem. Ultimately, you would like to reach a consensus recommendation from the task force on how the goose-related problems should be addressed. At this early stage in the process, however, you are concerned primarily about giving all task force members the opportunity to hear each other's perspectives.

In particular, you would like task force members to be able to say:

- what concerns they have about geese;
- how they think citizens' concerns about geese should be addressed; and
- the reasons why they think what they do.

You are also interested in trying to identify information needs — issues about which not enough information is currently available in order to make a decision.

During task force discussions, you would like to maintain a respectful atmosphere in which members make a genuine effort to understand each other's perspectives. You hope to keep people focused on the problem of reducing the large number of complaints that people have about geese rather than on their personal feelings about each other.
APPENDIX E:

Interview Excerpts Used in Exercise in Identifying Assumptions

Pair 1

Historically, [the geese] come here in the spring to breed. In the winter . . . because the lakes freeze, they're going to have to leave. With . . . global warming, the lakes don't freeze. They've stayed longer.

[In this excerpt, the respondent is speaking about a management plan coordinated by the federal and state governments in an effort to increase the population sizes of geese and other waterfowl]: To actually get a person to read the darn plan . . . . they would be appalled. If someone actually read it, they would be furious. Why? Because . . . [the government] created this issue all along. This is not a natural inflation [of the goose population]. This is not natural. They deliberately created the whole thing.

Pair 2

They . . . laid claim to the fact that goose feces cannot be placed in the same category as human feces or other animal feces because the bird eats only a diet of vegetative material. But . . . I would challenge them to go out and play a game of soccer, or softball. Or let their kids do it . . . . I just can't imagine a caring adult allowing children to stop these activities, go ahead and eat their snacks, and have this fecal material there. The potential is there as far as we're concerned, and we believe that there is enough scientific evidence to support our claim. We would encourage people to avoid unnecessary contact with this fecal material.

I don't see how . . . the idea of rounding up and killing wildlife -- especially very mobile wildlife, herds of geese -- [is practical]. If we were talking about turtles -- maybe rounding up and slaughtering 200 turtles, if they'd overtake a park -- that might actually have a lasting effect. But I don't know how many Canada geese there are in New York State. Maybe 100,000? . . . . Nothing makes any sense. . . . Say there are 100,000 geese within a couple of wing flaps away . . . . And so [others will] come back [soon after the geese are removed].

Pair 3

[In this excerpt, the respondent describes a rally held to lobby for the protection of the geese. Alec Baldwin, the actor, attended the rally.]: Well, it was held at the Helen Hayes Theater down in Nyack. And I would say that the theater . . . . must have held close to 250 to 300 people. Now . . . . I was seated fourth row up from the stage with my co-worker. I looked around and I said to her: "you know, I'm the only male in this entire section." I suspect as I looked around that a number of people were there to hear and see Alec Baldwin . . . . they were younger females who were swooned by his presence. He is, I guess, a draw, and I don't know how many people in the audience were there for the goose issue or for the Baldwin presence.

You hear all sorts of things about sharing the parks with the wildlife. Things about [how] you shouldn't kill the animals. People wearing leather shoes [say these things]. I'm sure they all have turkey for Thanksgiving!

Pair 4

I have a problem with developing [a larger goose population] to kill it, OK?

I don't think I would validate certain attitudes that exist. I wouldn't validate the attitude that it's OK to kill wildlife to protect turfgrass. I think that's a pretty fundamental, philosophical difference. I don't see how anyone can defend that.

Pair 5

[In this excerpt, the speaker responds to arguments she has heard that geese need to be killed because their feces poses a potential threat to human health]: You had people being executed in World War II on that same premise. Potential threat! Mother of God! Is this what we're reducing ourselves to? So I'm furious with the level of ignorance.

There's nothing unusual about rounding up excess wildlife. We round up stray dogs. We round up stray cats. We round up rats. We round up mice.
Pair 6

This speaker responds to arguments he has heard against plans to feed local geese to the poor. Some citizens claim goose meat is not healthy to eat. They criticize government officials for being willing to feed "contaminated goose flesh" to the poor. And the emotion over using terms like "contaminated goose flesh" and "homeless" -- I think that just clouds the issue. If something could be done to prevent the extreme from garnering most of the airwaves and most of the print, the public would be better off looking for that balance. And that's what most people want. They don't want to get wrapped up in extremes. But middle-of-the-roaders aren't the people that normally make headlines. We kind of just plod along and do our thing.

This respondent describes the perspective of citizens who want geese killed. "I'm furious about geese," for example. Here's one perspective. "I'm fed up with geese. I'm close to going out with a shovel and killing geese with a shovel." The emotional point that I would get at that point. They're not really interested in what other people are thinking. I hate to say it but people are not really open-minded to other views. Generally, they become emotionally involved in an issue.

Pair 7

I keep yellow jackets. I let them out of my house when they are trapped. I really value life. This to me is a crime.

There are times when I've had a stressful day and, to survive in this fast-paced world that we're building for ourselves, you want to walk in the park. Your walk is spoiled if you have to walk through goose droppings.

Pair 8

I'm a believer that if the scientist-type says we have x amount of birds, and we can safely reduce it by a number y -- by maybe taking the eggs and not allowing them to hatch -- and not endanger the species -- that scientific kind of thing, I'm in favor of that. I'm not against the scientists telling me. "The environment is telling me if we kill and harvest 1,000 of these birds, it's not going to hurt the species." They do this very same thing for a deer herd. I get The Conservationist magazine and every year you can see the studies come through -- of the 10-15,000 number of deer that we take, yet the population in NY is still fine. We have a herd. And because of the harvest, we're not overrun with these things.

As far as the Canada geese, my passion for wildlife is all-encompassing. I have a mutual respect and admiration for wildlife. I have put myself in danger many, many times, so it's not a question of playing it safe. It's a value call. Some people do not value these animals. They are not considered an essential part of life. And I can't help that. They are [to me].

Pair 9

They are a wild animal that's kind of been taken out of the chain of nature. They weren't hunted for many years. They're still really not hunted. They have few natural enemies.

If you build a new home on a pond or something or other and you put in turf grass, the consequences of your action are predictable. By laws of nature. As a society, I think we have to be responsible for our actions. It's not a mystery that if you create a waterfowl habitat the birds in the area they will come. Build this and they will come.

Pair 10

I guess when you're dealing with people's beliefs, beliefs are obviously quite real, but whether they're based on anything resembling fact is another issue. One could put together a brochure of factual information that would supersede any beliefs. It's interesting, but I think people would prefer to have facts, although I think we live in an age where fact and beliefs it's rather difficult for people to understand that there is a difference. Even when things are a matter of facts.

You have contrasting viewpoints on everything. But you're dealing with a very definite issue here, and if you want to be of service, you need to give the facts and at least a good solution.
Geese in Rockland County

Citizens' Views about Geese and the Problems they Cause
Geese in Rockland County

Rockland County is home to a large goose population. Some citizens have complained to state and local government about problems caused by the geese. People have complained that the geese and the droppings they leave behind:

- make it harder to enjoy parks, schoolyards, and private property.
- may be a threat to human health.

Citizens have very different opinions about what the government should do to try to reduce these problems. We believe that as a first step towards resolving this controversy, it is important for citizens to understand each other's views, even if they don't agree with them. This brochure describes the views held by different citizens of Rockland County about geese and the problems they cause.

Are there too many geese in Rockland County?

Historically, geese have spent the winter in Rockland County but migrated north in the spring to breed. Today, many more geese stay in Rockland County year-round. Some citizens complain that there are now too many geese. Others point out, however, that the belief that there are too many geese may be caused by:

- the habits of geese. Geese tend to gather in grassy areas that people also use, like parks, schoolyards, and lawns.
- people's attitudes. Some people do not want to live with the problems geese cause.

Whether or not there are too many geese in Rockland County, the number of citizen complaints is large enough that state and local governments have considered what they should reduce these complaints.

What can be done to reduce the number of goose-related problems?

Citizens have suggested three basic ways to reduce goose-related problems:

1) Deterrents.
Geese cause problems when they gather in areas like parks or schoolyards that people also use. Some citizens, therefore, have suggested using "deterrents," or ways to discourage geese from gathering in these areas. These include:

- making these areas less attractive to geese by reducing the number of ponds or the amount of grass.
- driving geese away from these areas using dogs, noise makers, or other means.

2) Education.
Citizens' tolerance for geese affects the number of goose-related complaints.

- because these controls are missing, the number of geese has unnaturally grown out of balance with the rest of the system.

Many of these citizens think that human actions are needed to restore a more natural balance. They argue that:

- although killing geese should be a last resort, it may be necessary to restore balance to the environment.
- deterrents and education are only a quick fix that won't work for long because the real problem is that the goose population is out of balance with the rest of the environment.
- geese will simply return to Rockland County if these changes are not reversed.

The natural world and the human world are closely intertwined.

Other citizens see the natural world and the human world as intimately interconnected. They believe that:

- Rockland County is part of a system that people have changed so that many of the natural controls on geese are missing.

Some citizens have argued that it is important to educate people so that they are more accepting of geese and know how to avoid the problems geese cause.

3) Population Reduction.
Some citizens believe that no matter what other actions are taken, the number of geese in Rockland County must be reduced. Several ways of doing this have been suggested including:

- moving geese out of the county.
- destroying the geese's eggs.
- killing adult geese.

Many citizens disagree about the best way to reduce the problems that geese cause. The question of whether it is all right to kill geese or destroy their eggs has been particularly controversial.

Why is this issue so controversial?

One reason this issue has been so controversial is that citizens have different ideas about what the real problem is behind the large number of goose-related complaints. Although there are many views on this issue, two common views are described on the next page.