Coorientation and communication in problem identification: The public and the legislators' perception of priorities in environmental protection

by

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A thesis submitted to the graduate faculty

in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Department: Journalism and Mass Communication

Major: Journalism and Mass Communication

Major Professor: Lulu Rodriguez

Iowa State University

Ames, Iowa

1996

Graduate College
Iowa State University

This is to certify that the Master's thesis of

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has met the thesis requirements of Iowa State University

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ABSTRACT

As the process of shaping environmental policy becomes critical in environmental protection, it is important to understand the perceptions of the public and the legislators concerning environmental protection efforts in the state of Iowa. Being the two most important stakeholders in environmental protection efforts, the public and the legislators need to understand how each other perceives problems related to the environment and how these can be solved. Without an accurate understanding of each other's perception of environmental problems, it is almost impossible to arrive at effective environmental policy decisions.

This thesis reports the findings of a quantitative study that examined the relationships between the public and the legislators' perception toward environmental protection concerns and issues. By employing the coorientation model, this thesis analyzes the public and the legislators' perception of priorities in environmental protection.

The study was conducted using a one-shot REAP baseline statewide random population survey throughout the state of Iowa. The questionnaire was designed and mailed to 1,150 respondents in October, 1995. The response rate was 43% after second wave mailing. Data were analyzed using SPSS (Statistical Package for Social Sciences) version 6.1.

The study found that the public and the legislators assessed Iowa's top environmental problems differently. The public assessed water pollution, waste management, and indiscriminate fertilizer and pesticide use as the top three environmental problems which need the governments' urgent attention. On the other hand, for the legislators, the top three environmental problems were water pollution, policy failure, and soil erosion. Both groups assessed that Iowa's spending for environmental protection is between "too little" and "about right." Results also show that both groups seem to be satisfied with the extent of current government regulations on environmental protection.

But the two groups did not agree on the extent of the state government's environmental efforts. The public rated it as close to "too strict." On the other hand, legislators thought it is closer to "adequate." They also did not agree on how REAP is doing its job of enhancing and protecting the state's natural resources. The public assessed REAP as doing "a fair job"; the legislators thought REAP is doing "a good job."

The public accurately predicted that the legislators rating of REAP's performance would not be significantly different from their own. Also, the public's estimation on the legislators rating of REAP's performance was not significantly different from the actual responses of the legislators.

CHAPTER 1.
INTRODUCTION AND STATEMENT OF THE PROBLEM

Many claim that environmental protection is the concern of the decade. Environmental disasters such as the Exxon Valdez oil spill, the pollution of ocean beaches, the contamination of water supplies, global warming and ozone depletion have all contributed toward heightening the public's concern with environmental problems (Dunlap, 1991). Today, more than ever, environmental protection emerges as one of the most serious problems nations have to face.

It is, however, a complex problem. For one, environmental policies are difficult to fashion. Secondly, the formulation of policy, if it is to be effective at all, requires the input of all sectors of society. The stakeholders are diverse and the actors are many: policy makers, industries, environmental groups, media, among others. When all exert pressure on policymaking, consensus is difficult to reach (Friedman, 1991).

One of the reasons for this is the fact that individuals view problems differently. Risk communication studies (e.g., Rodriguez and Peterson, 1996) indicate that people have different perceptions of events and issues and that these perceptions are fashioned by different backgrounds and experiences.

While policy making is often dictated by what the "experts" usually recommend, it often falls short because it does not take into account what people actually think of an issue or a problem. Common sense is not always correct, experts say, but neither is scientific data. Enlightened policy making, therefore, is a product of a conscientious, holistic perception of an issue.

This study is an attempt to examine how consensus is built between the public and policy makers (legislators) toward environmental protection concerns and issues. As more and more environmental problems get out of the purview of public action and public pressure on legislators for more effective environmental policies and regulations increases, the process of shaping environmental policy becomes critical.

Aware of the requirements of good citizenship, an active public continues to clamor for its opinions to be heard although it claims to be apathetic to other political practices (O'Keefe, 1989). On the other hand, legislators who design environmental policy need to understand how the general public perceive problems related to the environment and how these can be solved. Without an accurate understanding of the general public's perception of environmental problems, it is almost impossible for policy makers to arrive at effective environmental policy decisions. From this perspective, it is important to ask:

1. To what extent do the legislators and the public agree or disagree about the problems related to Iowa's environment (agreement)?

2. To what extent are the legislators and the public able to predict their orientations toward policies necessary to protect the environment (congruency)?

3. To what extent are the legislators and the public able to predict similarities and dissimilarities between their own orientation toward environmental protection

(congruency)?

4. To what extent do legislators' estimate of the public's cognition toward environmental protection matches what the public actually think and vice versa (accuracy)?

To answer these questions, this study uses the coorientation approach to map out ways of effecting agreement and understanding between these two sectors.

Many communication studies have employed the coorientation model to describe relationships between and among actors in social systems. Originally presented by Chaffee and McLeod (1969) as a strategy for analyzing interpersonal perceptions of two individuals, the model is proving useful in studying larger social systems.

This study is part of a larger public information campaign for the REAP (Resource Enhancement And Protection Act) program being conducted by the Department of Journalism and Mass communication at Iowa State University. The REAP Act was originally passed by the Iowa Congress in 1989 to improve Iowa's natural resources and outdoor recreational opportunities, but the program has grown to include much more than land preservation. REAP programs also include conservation education, administration of the Department of Natural Resources projects statewide, county conservation, soil and water enhancement, city parks and open space development, and roadside vegetation. This study is part of preproduction formative research aimed at designing and implementing a communication campaign to assist the REAP program.

CHAPTER 2.
THEORETICAL FRAMEWORK AND LITERATURE REVIEW

This analysis of the relationships between the public and the legislators' perception of environmental problems and the policies they entail derive from the coorientation model of communication. The model, developed by Jack McLeod and Steven Chaffee of the University of Wisconsin in the late 1960s, is an extension of two earlier communication models: Newcomb's A-B-X or "psychological model" and Carter's "paradigm of affective relations."

Newcomb's A-B-X model was focused on the relationship and interaction between two people (A and B) and how this relationship affects each persons' view toward each other and an external object (X). In a paper published in *Psychological Review* (1953), Newcomb explains his coorientation (A-B-X) system this way:

> Every communicative act is viewed as a transmission of information, consisting of discriminative stimuli, from a source to a recipient. For present purposes it is assumed that the discriminative stimuli have a discriminable object as referent. Thus in the simplest possible communicative act one person (A) transmits information to another person (B) about something (X). Such an act is symbolized here as AtoBreX.
>
> The term "orientation" is used as equivalent to "attitude" in its more inclusive sense of referring to both cathectic and cognitive tendencies. The phrase "simultaneous orientation" (hereinafter abbreviated to "co-orientation") itself represents an assumption; namely, that A's orientation toward B and toward X are interdependent. A-B-X is therefore regarded as constituting a system. That is, certain definable relationships between A and B, between A and X, and between B and X are all viewed as interdependent (p. 393).

A social system, according to Newcomb's operational definition, is made up of two persons who are simultaneously oriented to X, a common object. A and B "know" about X and about each other. The relationship or orientation between A and B, A and X, and B and X can be summarized as positive or negative attitudes. At any given point in time, he explains, the orientation can either be symmetrical or asymmetrical. When A and B have a common understanding of X (cognitive orientation) and share common feelings about X (affective coorientation), Newcomb asserts, the orientation is symmetrical. He contends that social systems will "strain toward symmetry" to achieve a common understanding of X and share similar feelings about X. The greater the degree of liking between A and B, the stronger the strain toward symmetry (Tan, 1985). Figure 1 illustrates this model.

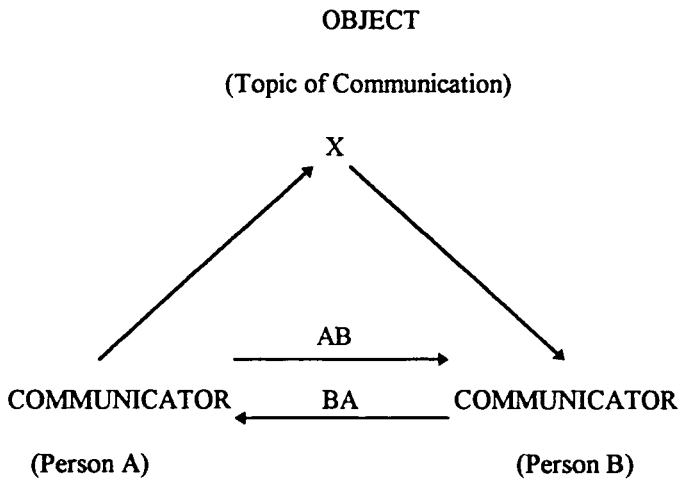


Figure 1. A social psychological model of communication

Source: Adapted from Newcomb. 1953.

Studying this proposition, Richard Carter in 1965 proposed what he called a paradigm of affective relations in an orientation situation. His model provides a detailed analysis of how we assign value to an object in our environment. In doing so, he explains how A or B in Newcomb's model assigns value to X, the object of their communication. In a paper published in *The Journalism Quarterly* (1965), Carter discusses his paradigm of affective relations:

> I shall start by considering the concept of psychological relevance. It is through an explication of this concept that I have arrived at the present point of view. There appear to be three different usages of the concept of relevance.
>
> First, there is the sense of any psychological implication for an element in the environment. We shall call this the *situational relevance*. It is seen in the definition of "situation" by English and English as part of the environment which is psychologically meaningful.
>
> The second usage is in the nature of *salience* or the closeness of an object to the individual. This usage is consistent with the historical definition of salience as protuberance, that is, physical location with respect to another object.
>
> The third usage of relevance is with respect to the relationship between two objects, indicated by the concept of *pertinence*. Such usage is exemplified in the familiar legal objection, "incompetent, irrelevant and immaterial." That is, the introduced element is not considered to be related to the element already under consideration (Carter, 1965, p. 203-4).

In the model, I is an individual; O_1 and O_2 are objects in the individual's environment. The value that a person assigns any given object is based on salience and pertinence. Salience is psychological closeness and results from a person's history of experience with an object. The more positive the history, the more salient X is to A or B; therefore X gains greater value. Pertinence, however, is based not only on past experience, but also on situational variables. In any given situation, we usually evaluate

objects in comparison to other objects and on the basis of an attribute shared by the objects which happens to be important to us at the moment. The pertinence of an object is the degree to which it possesses the shared attribute (Tan, 1985). The model is illustrated in Figure 2.

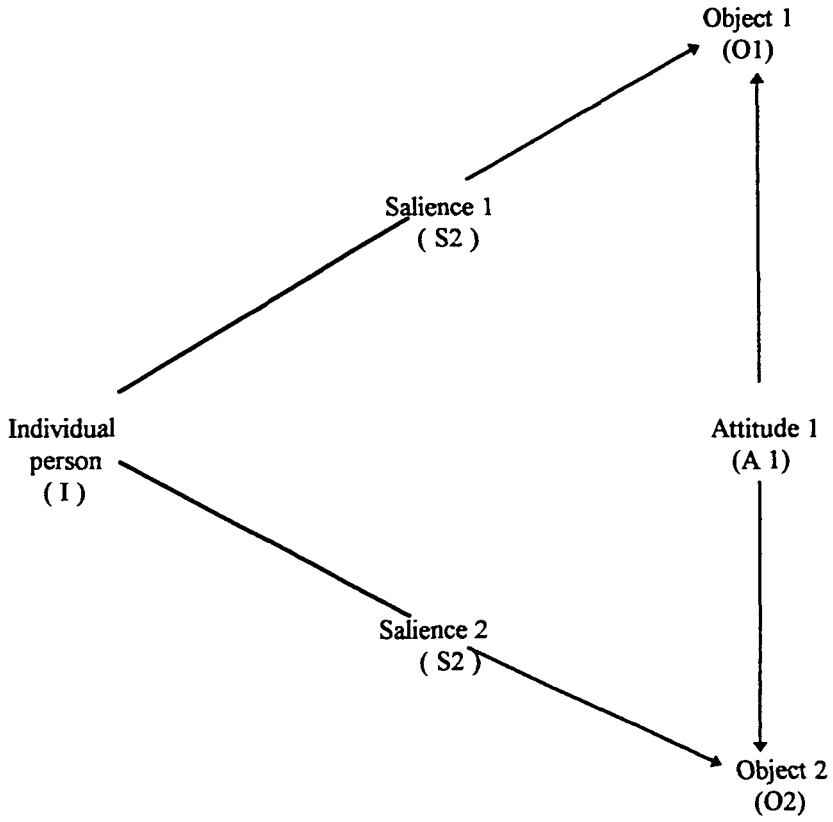


Figure 2. Carter's paradigm of affective relations

Chaffee and McLeod's model extends Newcomb's model by elaborating on how A and B assign value to X and uses Carter's model to explain A's relationship to X and B's relationship to X. Chaffee and McLeod discuss how the model was developed:

> Our main change from Newcomb's model is to elaborate on X, the object or issue toward which A and B are cooriented. We have followed the thinking of Carter (1965), who points out that a person does not orient himself to a single object in his environment, but to a discrimination between objects. Given two objects, a number of discrimination might be made – one for each attitude on which the person can compare the objects (McLeod and Chaffee, 1973, p. 479).

In the model, persons A and B are simultaneously oriented toward object X, which means that they are both aware of X and can communicate about it. Each person in a coorientating pair is assumed to have two sets of cognitions: he knows what he thinks and has some estimate of what the other person thinks.

The importance of the coorientation model is that it allows us to examine the similarity or dissimilarity of A's and B's orientations toward X, but also A's perception of B's cognitions of X, B's perception of A's cognitions of X, and the perceived agreement of A's and B's cognitions of X. And it also provides an alternative way of looking at communication effects. Traditional persuasion research considers attitudinal and behavioral changes to be the major effects of communication. The coorientation model, on the other hand, maintains that accuracy and understanding are the major and the more significant communication effects (Tan, 1985). The three kinds of relationships found in the model are congruency, agreement or understanding, and accuracy (Figure 3).

Congruency is the degree of similarity between a person's own cognition and his or her perception of another person's cognition. It is the extent to which a person thinks the other person agrees or disagrees with him or her regarding the evaluation of object X. The more agreement there is, the more congruency there is (Tan, 1985).

Agreement (A-B understanding) is the extent to which A and B have the same salience evaluations of X on. It is the extent to which A and B agree on what attributes to evaluate X. It is also their evaluations of the importance of these attributes. Theoretically, two persons are "cooriented" when there is complete understanding (Tan, 1985).

Accuracy is the extent to which a person's estimate of the other person's cognition matches what the other person actually thinks. Chaffee and McLeod suggest that accuracy is the ideal criterion for communication effectiveness. The more accuracy there is in the system, the more effective communication can become (Tan, 1985).

The coorientation model has been used to analyze agreement, congruency, and accuracy between two individuals (dyads), families, and larger groups such as formal organization and communities.

The major finding of research on coorientation in dyads has been that communication more often results in accuracy or congruency. In other words, after communication takes place, A is not more likely to agree with B about X or think that B is more likely to agree or disagree with him or her about X, but A is more likely to be

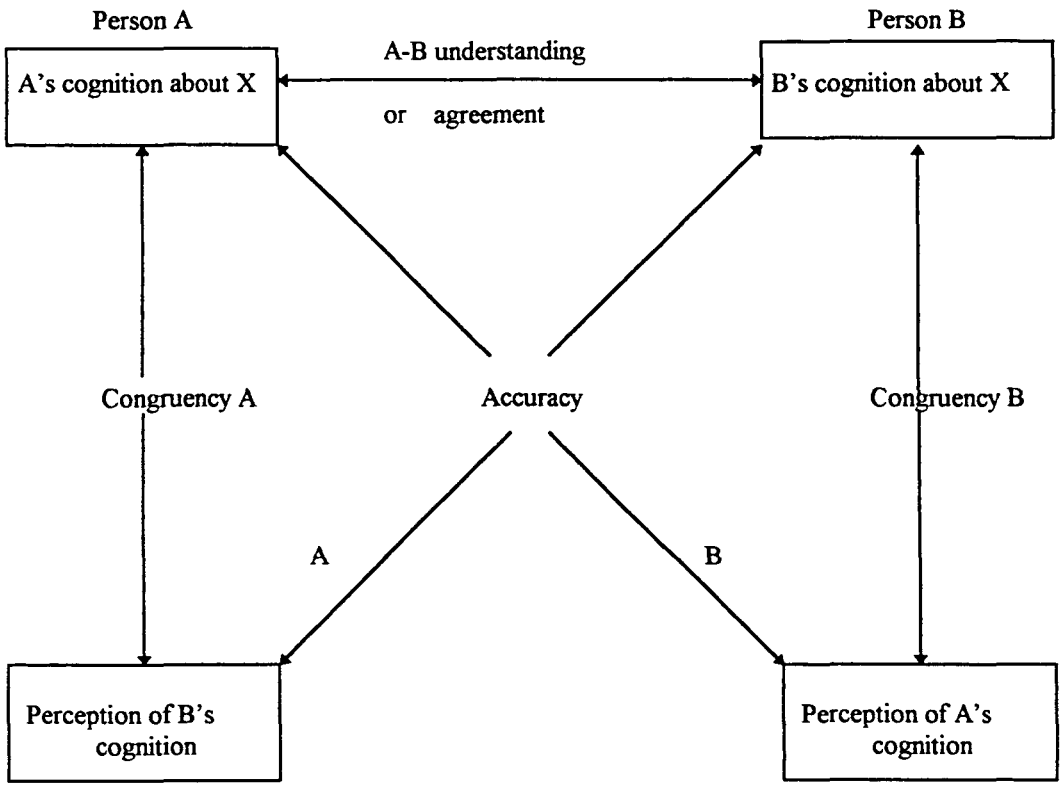


Figure 3. The coorientation Model

Source: Adapted from McLeod and Chaffee, 1973

able to accurately estimate what B actually thinks about X. Wackman (cited in Berger, 1987), for example, conducted a study in which they paired two subjects who did not know each other but who disagreed strongly about a topic. After the study, he notes that interpersonal discussion over time tends to increase accuracy more than agreement: People do not necessarily end up seeing eye to eye on a controversial topic after debating it, but they come away from discussions with a better understanding of how other people think. The research results show that there was no significant increase in agreement or congruence, but accuracy was improved. Similar results were also found in other studies.

In a study by Chaffee and McLeod with 70 married couples who discussed one or two topics for about fifteen minutes, the study found that there was no significant increase in agreement or congruence, but accuracy was significantly increased. Finally, in Newcomb's (1961) study of college students living in a dormitory, he also found that the major change over time was increased accuracy, not increased agreement or congruency. As mentioned before, these highly consistent results of coorientation studies between two individuals suggest that the major function of interpersonal communication may be information exchange, rather than persuasion (Wackman, 1973).

The coorientation model has also been used to describe the coorientation variables on various social issues between larger groups of people.

In 1973, Grunig and Stamm looked at coorientation relationship between government agencies in the Washington D.C. area and interests groups. The main focus of the study was to determine the level of accuracy, understanding, and agreement these groups had with the issue of low-income housing in a wealthy suburban community.

Results from the study showed that the government respondents had high levels of accuracy when it came to predicting how the poor felt. At the same time the government respondents were unable to achieve high scores in the areas of congruency and agreement. On the other hand the economic interest group measured low in accuracy, congruence, and agreement with the poor.

Pearce, Stamm, and Strentz (1971) also studied intergroup coorientation during campus demonstrations in 1970. They looked at two groups of students, demonstrators and non-demonstrators, and asked them about their views on the Vietnam war and their estimates of how the other student group felt. Results showed that the two groups actually agreed on the issues, but the non-demonstrating group held exaggerated perception of intergroup opinion differences. They perceived that the entire group of demonstrating students held the same attitudes as those of most visible demonstrators who maintained more extreme attitudes.

Stamm and Bowes (1972) also used the coorientation model to measure the generation gap in the orientation of college students and townspeople to the local police in Grand Forks, North Dakota. Students and Grand Forks residents were asked their opinions of the local police and their assessments of the each other's opinion. The results of study showed that the orientation of both groups to the police was not significantly different, but the townspeople ascribed more negative orientations of students toward the police than they were in reality. On the other hand, students thought that the townsfolk had a more positive perception of the police than they did in reality.

Another study that used the coorientation model examined the relationships between the Army Corps of Engineers and a neighborhood that will be affected by a flood control project the engineers were planning. The study examined how similar the two groups' view points were on specific project effects. The effects include: flood control, environmental changes and tax changes. Participants were asked to first rate their own responses and then predict the responses of their counterparts. Stamm and Bowes (1972) compiled the data and discovered that there were large differences between the community members' views and their estimation of the engineers' perceptions. The study results showed that the Corps had overestimated enthusiasm for a multiple-use recreational proposal and had been ignorant of public objections to the project. People thought that the structure will inundate farms and timberlands, destroy wildlife habitat, and possibly increases tax (Grunig, 1973).

Ryan (1979) used the coorientation model of communication to examine the relationships between science journalists and scientists toward science news coverage. The study found that although the attitudes of science journalists and scientists toward science news coverage were similar, each group perceived a larger gap in both groups' opinions on science news coverage than actually existed (Ryan, 1979).

Peterson (1987) also applied the coorientation model of communication to study the relationships and orientations of high school journalism teachers, high school principals, and newspaper editors toward high school journalism issues and each other. The study found that high school teachers are oriented differently from both principals and news editors concerning the value of high school journalism. Editors and principals

share similar orientations toward the value of high school journalism to the high school student. The study also found that high school teachers, principals, and newspaper editors do not predict each other's responses nor the responses of those who belong to their own groups. Peterson also found that high school teachers accurately predicted the responses of both high school principals and newspaper editors to questions concerning the value of high school journalism. High school principals and newspaper editors did not accurately predict the responses of any other group (Peterson, 1987).

As these studies demonstrate, the coorientation model has been used not only in dyadic relationships wherein two individuals perceive each other's orientation toward a certain issue, but also to study how various groups and organizations perceive each other's orientations toward issues, to analyze consensus between communities, and even to measure intergeneration opinion gaps. The coorientation model of communication appears to provide a promising model for the study of understanding, congruency, and accuracy of the public's and the legislators' perception of environmental problems confronting Iowa and the consequent policies necessary to alleviate these problems.

Considering the above results, this study attempts to answer the following research questions:

RQ 1: Is there agreement between the public and the legislators about the problems related to Iowa's environment? (agreement)

RQ 2: Is there agreement between the public and the legislators about

a. how much is being spent on environmental protection?

b. the extent of state government regulation in the area of environmental protection?

c. adequacy of the state government's environmental efforts?

RQ 3: Does the public accurately predict the legislators' orientations toward REAP's performance in enhancing the state's natural resources and protection? (congruency)

RQ 4: Does the public's estimate of legislators' evaluation of REAP's performance match what the legislators actually think? (accuracy)

RQ 5: Do the public and the legislators agree about REAP's performance in enhancing the state's natural resources and protection? (agreement)

CHAPTER 3. METHODOLOGY

This chapter describes the research hypothesis, sampling method, sampling frame, and the questionnaire design. In addition, the coding scheme, operational definition of variables, and statistical analysis procedures will be presented.

A. The design

To gather data for this study, a one shot survey was implemented as part of the REAP baseline statewide random population survey. This survey was conducted to establish a framework for the development of a comprehensive public awareness and communication campaign that focuses on resource enhancement and protection within the state of Iowa.

As part of a formative research plan, this survey aims to (1) identify target groups, their knowledge of and attitudes toward resource enhancement and protection in particular and environmental protection in general. It attempts to analyze demographic, economic and institutional structures as they impinge on environmental education efforts. The survey also (2) threshes out socio-economic status data, geodemographics, as well as the psychographic profiles of target audience to bring to light (3) a feasible audience segmentation strategy.

The results of this survey will also assist campaign implementers (4) determine appropriate messages and channels to reach the intended clientele. Ultimately, a synthesis of survey results will help design or formulate policy regarding environmental protection and conservation throughout the state.

In summary, the survey addresses the following issues:

- What is already known about the problem?
- What kinds of information will be needed to assist program implementation?
- Who is the target audience? What is known about them?
- Overall, what changes are planned?
- What measurable objectives can be established to define success?
- How can progress be measured?
- What should the target audience be told?
- Which channels are most appropriate for reaching the target audience?
- What materials format will best suit the channels and the messages?

The questionnaire (Appendix A) was mailed in October 1995 to 1,150 respondents, with follow-up letters sent to nonrespondents six weeks later. Post cards were also sent to non-respondents to encourage their participation in the study. The response rate was 43% after second wave mailing.

B. Sampling method and sampling frame

The respondents for this study were drawn by accessing data collected from white page telephone directories all over Iowa and supplemented with auto registration information from counties that release this data. A total of 1,000 Iowa residents were asked to answer the mailed questionnaire.

Systematically nth-selected from the database which is sorted by county and ZIP code, the public respondents were randomly chosen across the entire state. Recognizing

that the REAP campaign will be a statewide effort, no attempt was made to specify areas by any segmentation factor.

The research component of REAP's Action and Awareness campaign expected a deliverable rate of between 60% to 75% which may have been affected by two factors. First, anywhere from 12% to 15% of the names included in the mail sample may have changed due to normal population mobility. And second, 10% to 20% of records statewide are rural – with addresses consisting of two lines only – and are sometimes considered to be undeliverable by local post offices.

To maintain the representiveness of the sample, probability methods were also applied to the selection of respondents within a given household. The addressees were specifically given instructions as to the other likely person to answer the questionnaire should he or she find himself of herself in a difficult position to complete the survey. The population under study includes all adults 18 years of age and over. If there were several eligible household members, the addressee was asked to select the adult whose birthday comes closest to August 15.

A special group of respondents is composed of 150 Iowa state legislators who represent the 99 counties in the State Legislature. The total N, therefore, came to 1,150.

C. The questionnaire

The measurement instrument used is a questionnaire mailed along with a return envelope and cover letter to Iowa residents and Iowa state legislators.

Identical versions of the questionnaire were designed for both the public and the legislator respondents. The questionnaire for both respondent groups was composed of

six parts. Part I asked how interested both groups are in environment and natural resources protection. Part II of the questionnaire was designed to figure out how both respondent groups use the mass media to get information about the environment and natural resources. Part III measured the trustworthiness and believability of information sources for environmental issues. Part IV assessed agreement, congruency, and accuracy about the environment and natural resource protection issues. The questions and statements were used to measure the degree of understanding, congruency, and accuracy toward environmental issues between both respondent groups. Part V asked how concerned respondents are about environmental problems. The last part of the questionnaire was composed of a series of demographic questions.

D. Coding

To code open-ended questions, a coding scheme was established and pretested. All qualitative answers were analyzed to design the most appropriate categorization scheme. All categories were assigned a numerical code to facilitate analysis. For example, to code answers for research question 1, which asks for perceived environmental problems, 14 different categories were designed for analysis. This included Pollution in general (01), Water: contamination, quality of drinking water, lagoon, water management, lake, river, stream (02), Air (03), Soil: erosion, land pollution, conservation, stabilization (04), Hog confinement: pig operation, livestock confinement (05), Wetlands: restoration, protection, preservation (06), Wildlife: animals, hunting, habitats, fishing (07), Woodlands & Prairies: wild flowers, forestry (08), Fertilization & Pesticide: herbicide, chemical pollution, spills, insecticide (09), Waste management: recycling, garbage,

sewage, storage tanks, landfill (10), Policy failure: government ineptitude, too much regulations, wrong legislation, ordinance, acts (11), Noise pollution (12), Parks: development, improvement, outdoor recreation facilities (13), others (14).

Two graduate students coded the quantitative responses. Inter-coder reliability was high at about 0.85.

E. Conceptual and operational definition of variables

In this study, coorientational and other data were obtained on two groups, the public and the legislators. This section lists the research questions and how the variables in each question were conceptually and operationally defined.

The first research question asks if there is agreement between the public and the legislators about the problems related to Iowa's environment. It is a question designed to measure agreement.

Agreement, according to Chaffee and McLeod (1969), is conceptually defined as the extent that one person's or one group's evaluation resemble the other's. In this study, agreement is operationally defined as the correlation between the means of the scores given by one group and the means of the scores given by another group for the questions designed to measure the extent to match the two groups agree or disagree about the problems related to Iowa's environment.

For the research question, respondents were asked "What do you think are the top three environmental problems or conservation needs in Iowa that require the federal, state, and local governments' most urgent attention?"

The second research question asks if there is agreement between the public and the legislators about

a. how much is being spent on environmental protection?

b. the extent of state government regulation in the area of environmental protection?

c. adequacy of the state government's environmental efforts?

For (a), respondents were asked "We are faced with many problems in this state, none of which can be solved easily or inexpensively. Think about the problem of protecting and improving the environment." In general, are we spending too little, too much, or about right amount on it? They were asked to choose among

1	2	3
Too little	About right	Too much

To determine (b), respondents were asked: "In general, do you think there is too little, too much, or about the right amount of state and local government regulation in the area of environmental protection?" The possible responses were the same as that of (a).

For (c), respondents were asked: "Aside from the laws themselves, do you think the local government's environmental efforts are adequate, have been too strict, or are not strict enough?" They were requested to choose among

1	2	3
Adequate	Too strict	Not strict enough

Research question 3 deals with congruency and asks if the public accurately predicts the legislators' orientations toward REAP's performance in enhancing the state's natural resources and protection.

Congruency, the extent to which a person thinks the other's opinions resemble his/her own, is operationally defined in this study as the correlation between the means of the scores given by one group and the means of the scores that the group estimated another group would give for the questions designed to measure the extent to which both groups predict their own orientation toward environmental protection.

Operationally this was measured by people's responses to the following questions:

"Based on what you know about REAP, do you think it is doing a good job of enhancing the state's natural resources and protecting the environment?"

1	2	3	4	5
A very good job	A good job	A fair job	A poor job	A very poor job

"Imagine that you are a state legislator. How do you think your state legislator will rate REAP's performance in enhancing the state's natural resources and protecting the environment?"

1	2	3	4	5
A very good job	A good job	A fair job	A poor job	A very poor job

Research question 4 aims to measure accuracy by asking if the public's estimate of legislators' evaluation of REAP's performance match what the legislators actually think.

Accuracy, the extent to which one person's perception of the other's evaluation resembles the other's true evaluations, is operationally defined in this study as the correlation between the means of the scores one group estimates another group will give to the questions and the means of the actual scores given by that latter group.

Operationally, it was measured by analyzing respondents' answers to the same two questions asked for research question 3 above.

Research question 5 aims to determine if the public and the legislators agree about REAP's performance in enhancing the state's natural resources and protection. This was operationalized by matching legislator and public assessment of how REAP is doing its job. In a scale of 1 to 5 where 1 means "a very good job" and 5 means "a very poor job."

F. Statistical analysis

Data entry for this study was done using the program SPSS/DE version 5.0.2. Each research question was tested using the SPSS statistical package (Windows version 6.1). Research question no. 1, attempting to find out the general differences between the public and the legislators' perceptions of environmental problems in Iowa, was tested using the Spearman rank correlation test. To test the difference between the means of two groups in research questions 2 to 5, t-tests were used.

CHAPTER 4. RESULTS AND ANALYSIS

This chapter first presents a profile of the respondents in terms of their "environmental" characteristics. The second part details the results of statistical testing.

A. "Environmental" characteristics

Three hundred forty five Iowa residents, 83% of the total (N=415), represented the public group. Seventy legislators (17%) also responded to the survey and comprise the policymaking group of this study (Table 1).

An overwhelming majority of respondents (95%) consider the environment moderately to very important. About 91% of them claim they are moderately to very interested on this topic. About 96% of the public and 90% of the legislators say that they

Table 1. Respondents to the study by category

Category	Distribution of respondents (N = 415)	Percent of total
Public	345	83.1
Legislator	70	16.9

are moderately to very interested in news about the environment and natural resources. A similar result was shown when the respondents were asked how important is enhancing and taking care of natural resources to them. About 96% of the public and 97% of the legislators say that enhancing and taking care of our natural resources is moderately to very important to them.

About 51% also say that environmental protection should be given priority, even at the risk of holding back economic growth. Only 15% of respondents say that growth should be given priority, even if the environment suffers to some extent. About 54 % of the public and 47% of the legislators claim that protection of the environment should be given priority, even at the expense of economic growth. Meanwhile, only 13% of the public and 23% of the legislators say that growth should be given priority over environmental concerns.

When asked about the overall quality of environment and natural resources in Iowa today, many Iowans (about 60% of the public and 48% of the legislators) think it is somewhat to much better today than it was five years ago. Only about 16% of the public and 21% of the legislators say that the overall quality of the environment and natural resources in Iowa today is somewhat to much worse compared to that five years ago.

About 71% of the public and 66% of the legislators strongly to somewhat disagree that the environment is a subject best left for the government to regulate. It was interesting to see that not one respondent agrees that the environment is solely a governmental concern. This shows openness to the possibility of greater individual and community participation in efforts to protect and conserve the state's resources. In fact,

45% of the public claim they are willing to spend a few hours a week to help reduce environmental problems. About 64% of them claim they will support legislative measures passed to enhance and protect natural resources. When asked if they will be willing to give up convenience products and services they currently enjoy if it meant helping preserve natural resources, 64% of the public and 73% of the legislators said they would.

About 62% of the public claim that they are highly concerned about the impact of wasteful resource use on the health of their families and those in their communities, saying that their communities are very much aware of the health and environmental risks associated with indiscriminate use of natural resources.

Iowans in general gravitate to the extremes when asked about how they assess national, state, and local government environmental regulation efforts. Many (35% of public and legislators combined) think that these are not strict enough, but more (43%) believe that current rules are adequate. State regulation, however, is perceived as "just about right" by 43% of respondents. Close to 34% of respondents, however, thinks it is too much; only 22% claim that it is too little. There was, again, an even split when they were asked to make judgments about the level of government spending directed toward resource enhancement and use. Government is spending too much for environmental protection, opines 46% of respondents. Meanwhile, 45% of respondents claim that it is about right. Only 9% of respondents claim that government expenditure for environmental protection is too little.

Respondents were also asked about their behavior toward environmental protection. A large majority of them (78%) reports that they have made behavioral changes over the last five years in recognition of how important the environment is to their lives. A little more than 49% of them have contributed money to an environmental conservation or wildlife preservation group.

Sometimes, measures that are designed to protect the environment cause industries to spend more money and therefore raise their prices. When asked which they think is more important, majority of both groups (about 72% of the public and 66% of the legislators) agree that protecting the environment is more important than keeping prices down. Only 15% of the public and 13% of the legislators say that keeping prices down is more important than protecting the environment.

Despite this, however, many (66%) have not experienced boycotting a company's product(s) because of its record on the environment; a great majority have not done volunteer work for any resource enhancement cause. Still an even bigger majority have never bothered writing their congressperson (80%) and have never written an editor (86%) about an environmental concern. A large majority, however, claim they recycle voluntarily (88%) and generally do not litter (92%).

The awareness level for REAP is low. Only 40% of the respondents have actually heard or read about it. And, the difference of awareness level for REAP between the public and the legislators was large. About 86 % of the legislators indicate that they have heard or read about REAP while only 31 % of the public had. Of the total member of persons saying they have heard about REAP, 13% claim to know "some" to "alot" about

it, but only a few can define REAP's purpose. In general, only 20% give REAP a "good" to "very good" performance rating. Of the 166 respondents who knew about REAP, 47% were able to give a general definition of what the program is all about. The difference in knowledge level concerning REAP between the public and the legislator was also large. About 81% of the legislators said they know "some" to "alot" about the REAP program while only 11% of the public said they do. This large difference in awareness and knowledge levels between the public and the legislators indicates that REAP has not performed a successful job in informing the general public about the program regardless of the high awareness and knowledge levels of the legislators about it.

B. Statistical testing

Research Question 1: Is there agreement between the public and the legislators about the problems related to Iowa's environment? (*agreement*)

According to the public, water pollution, waste management, and indiscriminate fertilizer and pesticide use are the top three environmental problems or conservation needs in the state. These, they say, are the problems that require the federal, state, and local governments' most urgent attention. The legislators, on the other hand, agree with the public's perception that water pollution is a critical problem, but consider policy failures and soil erosion, as two of the state's most serious environmental problems (Table 2). Is this difference statistically significant? A Spearman rank correlation test indicates that there is no significant difference between the public's and the legislators' assessment of Iowa's environmental problems (Table 2).

Table 2. Environmental problems or conservation needs in the state requiring the federal, state, and local governments' most urgent attention by category as perceived by legislators and the public

Problems mentioned	Public Total mentioned (n = 706)	Legislators Total mentioned (n = 132)
Pollution in general	17	3
Water	168	25
Air	60	7
Soil	69	17
Hog confinement	44	15
Wetlands	12	5
Wildlife	50	6
Woodlands & prairies	31	5
Fertilization & pesticide	76	4
Waste management	94	15
Policy failure [1]	49	25
Noise pollution	3	1
Parks	10	2
Others	23	2

* Spearman rank correlation coefficient: 0.745 (not significant at $\alpha = .05$)

[1] Policy failure involves such responses as "government ineptitude", "too much regulations", "wrong legislation, ordinance, or acts

Research Question 2A: Is there agreement between the public and the legislators about how much is being spent on environmental protection?

A t-test comparing the difference between the means of the public's assessment of the level of Iowa's spending on environmental protection with those of the legislators (Table 3) shows a t-value of 0.09 ($p \leq 0.929$). Therefore, the null hypothesis cannot be rejected. This suggests that there is no significant difference between the public's and the legislators' judgments of Iowa's environmental expenditures. The results therefore show that there is agreement between the public and the legislators about how much is being spent on environmental protection in the state.

Table 3. T-test of difference between the means of public's versus legislators' assessment of Iowa's expenditure on environmental protection

Category	Mean	Standard deviation	t-value	2-tailed probability
Public (n = 312)	1.6314	.648	.09	.926
Legislator (n = 61)	1.6230	.687		

Research Question 2B: Is there agreement between the public and the legislators about the extent of the state government's regulation in the area of environmental protection?

A t-test analysis to determine if there is any difference between the public's and the legislators' assessments of the extent of state and local governments' environmental regulations (Table 4) show a t-value of -0.43 ($p \leq 0.666$). Again, the null hypothesis cannot be rejected. The public's responses ($x=1.8714$) are not statistically different from the legislators' responses ($x=1.9167$) regarding the extent of government regulation to protect the environment. Results show that there is agreement between the public and the legislators about the extent of state environmental protection efforts

Table 4. T-test comparing the public's versus the legislators' assessment of state and local government regulation for environmental protection

Category	Mean	Standard deviation	t-value	2-tailed probability
Public (n =311)	1.8714	.734	-.43	.666
Legislator (n = 60)	1.9167	.743		

Research Question 2C: Is there agreement between the public and the legislators about the adequacy of the state government's environmental efforts?

T-test results on the public's versus the legislators' assessment of state government's efforts to improve the environment (Table 5) show a t-value of 2.41 and a significant probability ($p \leq 0.018$) that the means are different. Therefore, the null hypothesis (no significant difference in the means) can be rejected. This means that there is no agreement on this issue: the public's responses ($x=1.9614$) is statistically different from those of the legislators' responses ($x=1.6610$) regarding their judgments of state government's efforts to improve and protect the environment. The public assesses state's environmental efforts as "too strict" while legislators tend to think that they are "adequate."

Table 5. The t-test comparing the public's and the legislators' assessments of the state government's efforts to improve the environment.

Category	Mean	Standard deviation	t-value	2-tailed probability
Public (n = 311)	1.9614	.943	2.41*	0.018
Legislator (n = 59)	1.6610	.863		

Research Question 3: Does the public accurately predict the legislators' assessment of REAP's performance in enhancing the state's natural resources and protecting them? (congruency)

Results of a paired t-test predicting the public's actual assessment of REAP's performance and their prediction of their legislators responses to the same question (Table 6) show a t-value of -0.82 ($p \leq 0.424$), indicating no statistical difference between the means. Therefore, the null hypothesis cannot be rejected again. The public judges REAP as doing "a good job" ($x=2.3333$). This is not different from how they predicted that the legislator's assessments ($x=2.5714$). Thus, the public have predicted that the legislators' assessment of REAP's performance are not different from their own.

Table 6. T-test results comparing the public's own assessment versus their prediction of their legislators' judgments of REAP's performance

Category	Mean	Standard deviation	t-value	2-tailed probability
Public (n = 84)	2.5714	.811	-.82	.424
Public's prediction of legislators' responses (n = 61)	2.3333	1.102		

Research Question 4: Does the public's estimate of their legislators' evaluation of REAP's performance match what the legislators actually think? (accuracy)

Results of a paired t-test comparing the public's prediction of the legislators' assessment of REAP's performance ($x = 2.6875$) with the legislators' actual responses ($x = 2.0000$) show a t-value of -1.84 ($p \leq 0.085$), indicating that the means are not statistically different (Table 7). Again, the null hypothesis cannot be rejected. The public indeed has been able to predict how the legislators rated REAP's performance. They predicted that their legislators will rate REAP as doing "a fair job."

Table 7. T-test results comparing the public's predicted legislators' assessment of REAP's performance with the legislators' actual responses

Category	Mean deviation	Standard	t-value probability	2-tailed
Public's predicted legislator assessment (n = 84)	2.6875	1.138	-1.84	.085
Legislator (n = 61)	2.0000	.894		

Research Question 5: Do the public and the legislators agree about REAP's performance in enhancing the state's natural resources and protection? (agreement)

The results of a t-test comparing the public's and the legislators' assessment of REAP's performance show a t-value of 3.67 and a highly significant probability ($p \leq 0.0000$) (Table 8). This means that the public's rating ($x=2.6310$) is statistically different from that of the legislators ($x=2.1148$). The public and the legislators, therefore, do not agree on how REAP is faring in terms of its stated objective: that of enhancing and protecting the state's environment and natural resources. The public thinks REAP is doing "a fair job" while the legislators rated REAP as doing "a good job.

Table 8. T-test results comparing the public's and the legislators' assessment of REAP's performance

Category	Mean	Standard deviation	t-value	2-tailed probability
Public (n = 84)	2.6310	.861	3.67 ***	.000
Legislator (n = 61)	2.1148	.819		

C. Analysis summary

The public and the legislators agreed on the problems related to Iowa's environment. Results indicate that there is no significant difference between the public's and the legislators' responses on that matter. The public assesses water pollution, waste management, and indiscriminate fertilizer and pesticide use as the top three environmental problems or conservation needs in the state requiring the federal, state, and local governments' most urgent attention (Table 2). This was echoed by policymakers whose choices are the same except that of policy failure which didn't show up in the public's top three environmental problems in the state. It is interesting to note that the legislators appear to be more critical of themselves, assessing policy failure as one of the top environmental problems Iowa is facing. On the other hand, although policy making is generally believed to be critical in environmental protection efforts, Iowans assess more imminent problems related to their lives as more serious environmental concerns than distant issues like policy failure. That legislators named policy failures as imminent problems suggest their acquaintance with environmental policy making. Both groups' assessments clearly illustrate that environmental concerns are "backyard" concerns, usually coming out of their own direct experience.

Results indicate that the public and the legislators agree on how much is being spent to enhance and conserve Iowa's environment. Both groups assessed that Iowa's spending for environmental protection is between "too little" and "about right" (Table 3). It seems that though the mean scores of the two groups suggest that Iowa needs to spend

"a little more" for environmental protection, the agreement on the issue illustrates that there is a sort of mutual understanding on the issue between the two groups.

There was also agreement between the two groups about the extent of the state government's regulation in the area of environmental protection. Both groups thought that the state government's regulations to protect the environment are just "about right" (Table 4). Results indicate that the public and the legislators seem to be satisfied with the state's "policing" of the environment. The extent of this satisfaction is also illustrated when asked about the overall quality of Iowa's environment today. A majority of the respondents think it is somewhat to much better today than it was five years ago.

However, there was no agreement on the adequacy of the state government's environmental efforts. The public rated the state government's environmental efforts as close to "too strict." On the other hand, legislators thought it is closer to "adequate" (Table 5). The disagreement on this may explain why it is difficult to arrive at a consensus on the issue between these two groups. In a situation where legislators want to impose stricter regulations to prevent any environmental disasters in the future and the public is basically satisfied with the current environmental situation, it is always difficult to determine a middle ground.

The public and the policymakers did not agree on how REAP is doing in its job of enhancing and protecting the state's natural resources. The public registered a higher mean than the legislators (Table 8). The public assessed REAP as doing "a fair job"; the legislators thought REAP is doing "a good job." The public wants more out of REAP,

but there are limits to what REAP can do. The legislators understand this and therefore assess REAP's performance more positively than the public.

However, the public accurately predicted that the legislators' rating of REAP's performance would not be significantly different from their own (Table 6). Also, the public's estimation of the legislators' rating of REAP's performance was not significantly different from the legislators' actual responses (Table 7). The agreement found on accuracy and congruency variables indicates that the public does not seem to distinguish themselves from the legislators on this regard, believing that because they also live in Iowa, they could assess Iowa's environment. Results show that although there were high levels of congruency and accuracy between the public and the legislators in their evaluations of REAP's performance, they do not indicate that there was agreement between the two groups. This supports the major finding of coorientation research: that communication more often results in accuracy or congruency rather than in agreement (Tan, 1985).

CHAPTER 5. CONCLUSIONS

The study has some limitations that need to be acknowledged. First, the study was not able to relate the results of with demographic information. Differences that might have been the result of demographic variables should have been identified and controlled for. This could have provided a better understanding of the results. Second, the response rate (43%) might have obscured some of the differences. This is especially true with regards to the few who answered questions about REAP. Recognizing these limitations, we arrive at following conclusions.

As mentioned earlier in Chapter 1, the formulation of environmental policy requires consensus between the public and policymakers toward environmental concerns and issues in order to be successful. However, building consensus is not easy, especially without an accurate understanding of each other's orientation toward the issues. Thus, it is almost impossible to arrive at effective environmental decisions without knowing each other's position on the issues. Therefore, this study was undertaken to examine the orientations of two different groups (the public and the policymakers) toward environmental issues by adapting Chaffee and McLeod's coorientation model to the study. The study also examined the orientations of both public and policymakers toward a specific environmental program called REAP.

First, the study found that the public and the legislators agreed on the environmental problems and conservation needs requiring the federal, state, and local governments' most urgent attention in Iowa. Results indicate that there is no significant

difference between the public's and the legislators' responses on that matter. In general, the public and legislators are concerned more about environmental problems they directly encounter in their daily lives such as water, waste, and fertilizer pollution.

Second, the study found that the public and the legislators agreed on how much is being spent on environmental protection in Iowa. Both groups assessed that Iowa's spending for environmental protection is between "too little" and "about right." Though both groups thought that Iowa still needs to spend a little more money for environmental protection, both groups seem to consider the issue realistically rather than idealistically.

Third, the study found that the public and the legislators agreed on the extent of government regulation to protect the environment. Both groups assessed that the state government's regulations to protect the environment are just "about right." Results show that both groups seem to be satisfied with the extent of current government regulations on environmental protection.

Fourth, the study found that the public and the legislators did not agree on the extent of the state government's environmental efforts. The public rated it as close to "too strict." On the other hand, legislators thought it is closer to "adequate."

Fifth, the study found that the public and the legislators did not agree on how REAP is doing its job of enhancing and protecting the state's natural resources. The public assessed REAP as doing "a fair job"; the legislators thought REAP is doing "a good job." The low level of public awareness of REAP found in the study should be also notified. REAP needs to inform the public more about the program and involve with the public more closely.

Sixth, the study found that the public accurately predicted that the legislators rating of REAP's performance would not be significantly different from their own. Also, the public's estimation on the legislators rating of REAP's performance was not significantly different from the actual responses of the legislators.

APPENDIX A. SURVEY INSTRUMENT

I. How do you use the mass media?

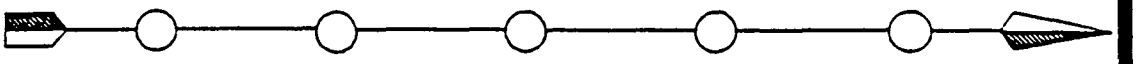
1. How many days in the last seven did you read a newspaper? [ ] days

2. How many different newspapers do you read? [ ] papers

3. On an average day when you read the paper, about how much time do you spend reading it?

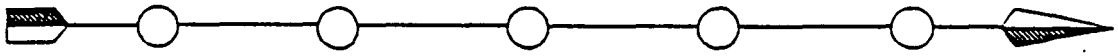
   [ ] hours [ ] minutes

4. This past seven days, about how often have you read stories about the environment and natural resources? Please check the circle that best applies.



Hardly ever | Once in a while | Somewhat often | Often | Every day

5. When you are reading the newspaper and come across stories about the environment and natural resources, how closely do you attend to them on a scale of 1 to 5 where 1 means not closely at all and 5 means as closely as you can? Please check the circle that best applies.

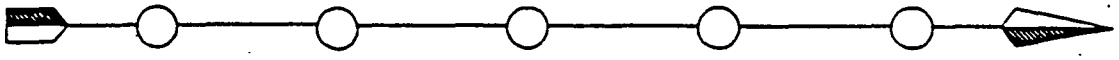


No attention at all | Very little attention | Fair attention | Close attention | As closely as I can

6. How many hours in the last seven days did you watch television?

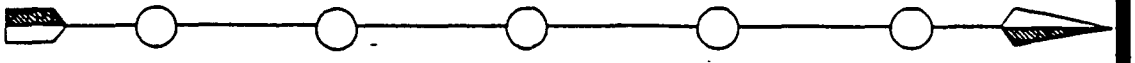
   [ ] hours [ ] minutes (If 0, please go to question 9)

7. When you have watched television during the past seven days, how often have you watched news, talk shows or other information programs which talk about about the environment and natural resources?



Hardly ever | Once in a while | Somewhat often | Often | Every day

8. When you are watching television and come across information about the environment and natural resources, how closely do you watch or attend to it on a scale of 1 to 5 where 1 means no attention at all and 5 means as closely as you can.



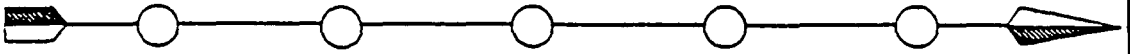
No attention at all | Very little attention | Fair attention | Close attention | As closely as I can

9. How many hours in the last seven days did you spend listening to the radio?

[ ] hours [ ] minutes

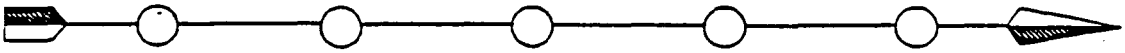
(If 0, please go to Part II next page)

10. When you are listening to the radio, how often have you listened to news, talk shows or other information programs about the environment and natural resources?



Hardly ever | Once in a while | Somewhat often | Often | Every day

11. When you are listening to the radio and come across information about the environment and natural resources, how closely do you listen or attend to it on a scale of 1 to 5 where 1 means **no attention at all** and 5 means **as closely as you can.**



No attention at all | Very little attention | Fair attention | Close attention | As closely as I can

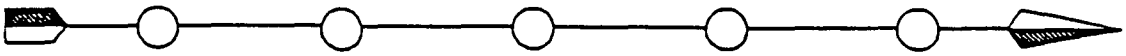
12. How many days in the last seven did you read a magazine? [ ] days

13. How many magazines do you read? [ ] papers

14. On an average day when you read magazines, about how much time do you spend reading it?

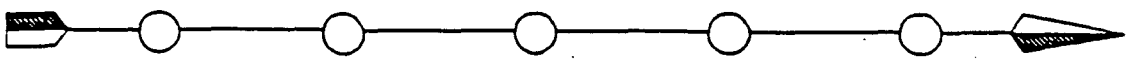
[ ] hours [ ] minutes

15. This past seven days, about how often have you read stories about the environment and natural resources? Please check the circle that best applies.



Hardly ever | Once in a while | Somewhat often | Often | Every day

16. When you are reading magazines and come across stories about the environment and natural resources, how closely do you attend to them on a scale of 1 to 5 where 1 means not closely at all and 5 means as closely as you can? Please check the circle that best applies.



No attention at all | Very little attention | Fair attention | Close attention | As closely as I can

17. People rely on different sources for their information about the environment. Among the choices below, which one do you depend on most often for information about this issue? (Please indicate your first choice, and mark the appropriate blank with a "1." Do the same for your second, third, etc. most often used source" until all sources are ranked.)

	Your ranking
1. Newspapers	_____
2. Family members	_____
3. Television	_____
4. Friends	_____
5. Magazines	_____
6. Neighbors	_____
7 Radio	_____
8. Extension workers and other professionals	_____
9. Universities, colleges, schools	_____
10. Others (please specify)	_____

18. Why do you depend more on the source you rated as no. 1 in the preceding question as an information source for this particular topic?

_____

_____

II. How interested are you in . . .

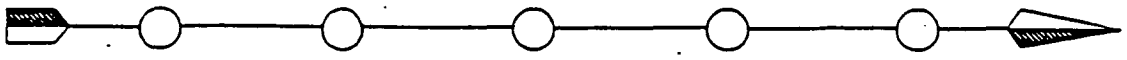
1. Of all the problems confronting the nation and your community today, what are the three issues that you consider most important?

a. _____

b. _____

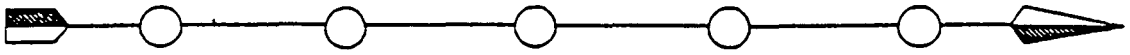
c. _____

2. How *interested* are you in news about the environment and natural resources? Please pick a number in this scale of 1 to 5 where 1 means not at all interested and 5 means very interested.



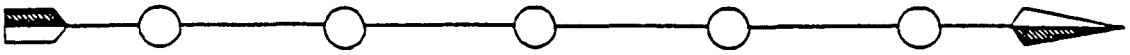
Not interested — Moderately interested — Very interested

3. Again using a five-point scale where **1 means not at all important** and 5 means **very important**, how *important* is enhancing and taking care of our resources to you?



Not important | Moderately important | Very important

4. What do you think about the overall quality of the environment in Iowa today compared to that five years ago? Is it



Much better | Somewhat better | Neither better nor worse | Somewhat worse | Much worse

Why or what makes you think that?

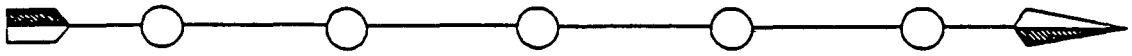
_____

_____

_____

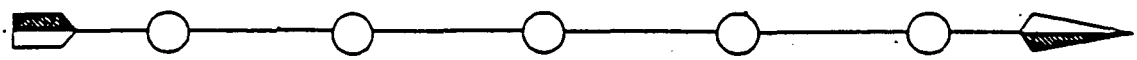
III. Which do you believe?

1. Based on your experience with the mass media, how much expertise would you say today's mass media have in informing you about resource protection and conservation measures?



Very little | A great deal

2. And how trustworthy do you find them — in terms of telling you the truth?



Very little | A great deal

3. Here's a list of information sources. Please indicate how *believable* you personally find each regarding environmental issues, on a scale of 1 to 5 where 1 is not at all believable and 5 is extremely believable:

	1 Not at all believable	2	3	4	5 Extremely believable
Newspapers					
Television					
Radio					
Magazines					
Friends and acquaintances					
Extension workers					
Government officials					
Scientists					
Private organizations					
Universities, colleges, schools					
Others (please specify					

4. Looking at the same list of information sources. How expert do you personally find each — in the sense that they really know what they are talking about — regarding environmental issues?

	1 No expertise whatsoever	2	3	4	5 Very knowledgeable
Newspapers					
Television					
Radio					
Magazines					
Friends and acquaintances					
Extension workers					
Government officials					
Scientists					
Private organizations					
Universities, colleges, schools					
Others (please specify					

IV. Tell us a little about you.

The following questions are about you. Please remember all of your answers will be kept confidential. We need to ask these questions so that programs can be designed to better serve your needs.

1. What is your current occupational status? (Please circle only one.)

[1] working now outside the home
[2] temporarily laid off (please go to question 3)
[3] unemployed (please go to question 3)
[4] retired (please go to question 3)
[5] permanently disabled(please go to question 3)
[6] student (please go to question 3)
[7] homemaker (please go to question 3)
[8] others (please specify) _____

2. What sort of work do you do? _____

3. What is the highest educational level you have attained?

[1] some elementary
[2] elementary graduate
[3] some high school
[4] high school graduate
[5] some college
[6] college graduate
[7] vocational school education
[8] post graduate education

4. What was your age on your last birthday? _____ years

5. We would like an estimate of your total 1994 household income before taxes. Please estimate the combined income for all household members from all sources. What was your total household income before taxes in 1994?

[1] Less than 10,000
[2] 10,001 to 20,000
[3] 20,001 to 30,000
[4] 30,001 to 40,000
[5] 40,001 to 50,000
[6] 50,001 to 60,000
[7] 60,001 to 70,000
[8] 70,001 to 80,000
[9] 80,001 and above

6. Including yourself and your spouse, how many people 18 and older live in this house?

[ ] persons

7. Of those who live with you in this house, how many are under 18?

[ ] persons

8. What is your gender? [1] female [2] male

9. Do you farm? [1] Yes [2] No (please go to question 14)

10. How many acres do you own ? [ ] acres

11. How many acres do you rent or lease? [ ] acres

12. How long have you been farming? [ ] years

13. To what racial group do you belong?

[1] AfricanAmerican
[2] Asian American
[3] Caucasian
[4] Native American
[5] Hispanic
[6] Other (please specify) _____

14. Are you a member of any local, national, or international organization?

[1] Yes [2] No (please go to Part V, next page)

15. If yes, to which organization(s) do you belong?

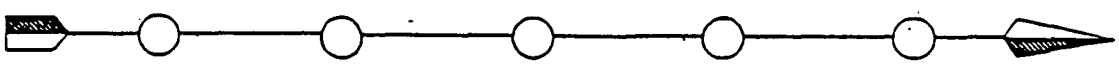
_____ _____

V. Have you ever heard about REAP?

1. Have you ever heard or read about the Resource Enhancement and Protection (REAP) Program?

[1] Yes [2] No (please go to question 4, next page)

2. How much would you say you know about the REAP Program? Please circle the best answer.



A little Some A lot

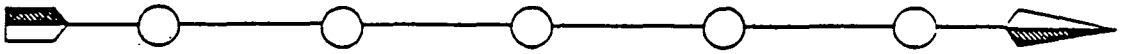
3. In your own words, what would you say is the purpose of the REAP Program?

_____

_____

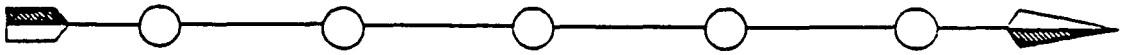
_____

4. Based on what you know about REAP, do you think it is doing a good job of enhancing the state's natural resources and protecting the environment?



A very good job | A good job | A fair job | A poor job | A very poor job

5. Imagine that you are a state legislator. How do you think your state legislator will rate REAP's performance in enhancing the state's natural resources and protecting the environment?



A very good job | A good job | A fair job | A poor job | A very poor job

6. What do you think are the top three environmental problems in Iowa that require the federal, state, and local governments' most urgent attention?

a. _____

b. _____

c. _____

7. We are faced with many problems in this state, none of which can be solved easily or inexpensively. Think about the problem of protecting and improving the environment. In general, are we spending too much, too little, or about the right amount on it?

1 Too little | 2 About right | 3 Too much

8. In general, do you think there is too much, too little, or about the right amount of local government regulation and involvement in the area of environmental protection?

1 Too little | 2 About right | 3 Too much

9. Aside from the laws themselves, do you think the local government's environmental efforts are adequate, have been too strict, or are not strict enough?

1	2	3
Adequate	Too strict	Not strict enough

10. Please name and describe a REAP-supported project(s) you are aware of in your county or elsewhere.

_____

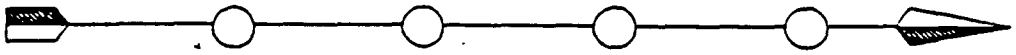
_____

VI. How concerned are you about . . .

	1 A great deal	2 A fair amount	3 Not very much	4 Not at all
1. Where you live now, how worried or concerned are you about the following? Following the scale above, please choose a number between 1 and 4.				
• the purity of your drinking water			☐	
• noise pollution			☐	
• quality of air due to industrial pollution and animal smells			☐	
• damage done to the landscape			☐	

	1 A great deal	2 A fair amount	3 Not very much	4 Not at all
2. Now about Iowa as a whole, how worried or concerned are you about the following problems?				
• contamination of bodies of water			☐	
• air pollution			☐	
• chemical and industrial waste			☐	
• ground water contamination from pesticides and herbicides			☐	

3. How interested are you about politics in general?



4. How often do you talk to friends and acquaintances about politics?

5. On the following 10-point scale in which 1 means "left" and 10 means "right," where would you position yourself when it comes to your political orientation or inclination?

1	2	3	4	5	6	7	8	9	10
Left									Right

6. Sometimes, measures that are designed to protect the environment cause industries to spend more money and therefore raise their prices. Which do you think is more important: protecting the environment, or keeping prices down? Please check the appropriate box.

Protecting the environment ☐

Keeping prices down ☐

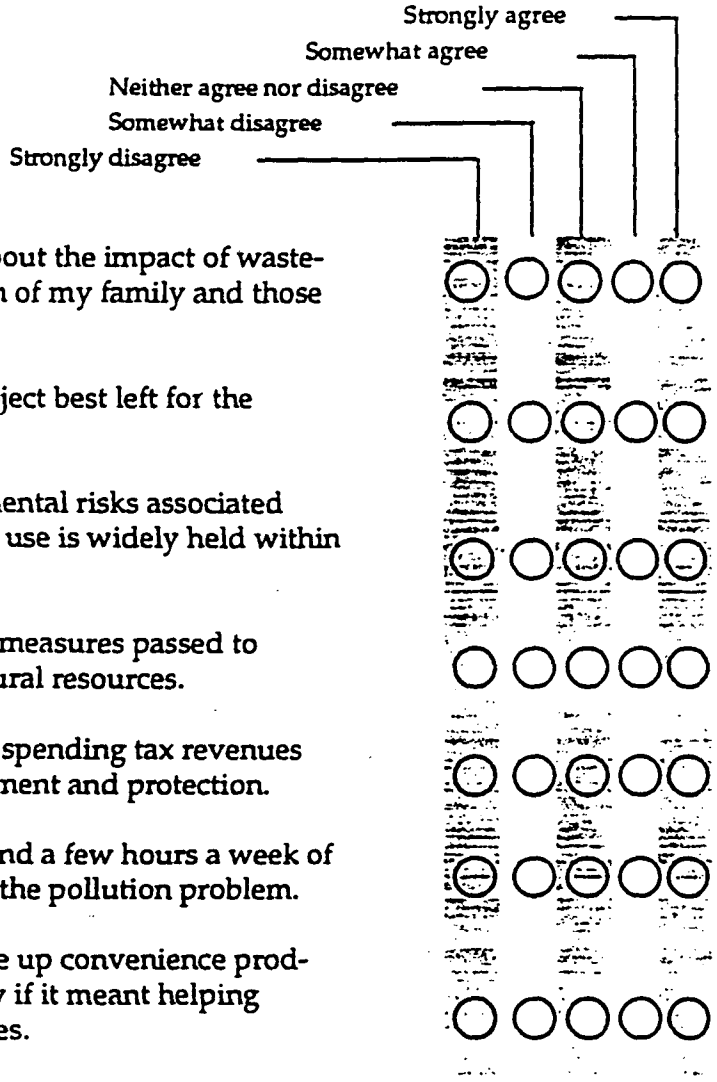
7. Here are two statements that people sometimes make when discussing the environment and economic progress. Which of these statements comes closest to your own point of view? Please check the appropriate box.

Statement A: Protection of the environment should be given priority, even at the risk of holding back economic growth. ☐

Statement B: Growth should be given priority, even if the environment suffers to some extent. ☐

Not sure ☐

8. The following are statements people sometimes make when discussing the environment. On a scale of 1 to 5 where 1 is **strongly disagree and 5 is strongly agree**, where do you position yourself on eace of these statements?



a. I am highly concerned about the impact of wasteful resource use on the health of my family and those in my community.

b. The environment is a subject best left for the government to regulate.

c. The health and environmental risks associated with indiscriminate resource use is widely held within my community.

d. I will support legislative measures passed to enhance and protect our natural resources.

e. There are better ways of spending tax revenues other than resource enhancement and protection.

f. I would be willing to spend a few hours a week of my own time to help reduce the pollution problem.

g. I would be willing to give up convenience products and services I now enjoy if it meant helping preserve our natural resources.

9. Using a scale from 1 to 7 where 1 means do not identify at all and 7 means strongly identify with, how much do you identify yourself with the label "environmentalist"? Please circle the number that applies.

1 2 3 4 5 6 7

Do not identify Neutral Identify

10. In the past year, have you donated to or been active in a group or organization working to protect the environment?

[1] Yes [2] No

11. Which of the following things, if any, have you or other household members done in recent years to try to improve the quality of the environment?

	Yes	No
a. Contributed money to an environmental, conservation, or wildlife preservation group	○	○
b. Boycotted a company's products because of its record on the environment	○	○
c. Did volunteer work for an environmental conservation or wildlife protection group	○	○
d. Voluntarily recycled newspapers, glass, aluminum, motor oil, or other items.	○	○
e. Generally tried not to litter	○	○
f. Voted for a candidate based on his/herenvironmental platform	○	○
g. Written a letter to your congressman about an environmental concern	○	○

12. Over the past several years, have you made changes in your day-to-day behavior because of your concerns about the environment? Please circle the number that applies.

[1] Yes [2] No

13. How much more per month would you personally be willing to pay for all the goods and services you use as a consumer, if you knew that as a result of your paying higher prices business and industry would be able to operate in a way that did not harm the environment?

$ _____ per month

Thank you very much for your time.

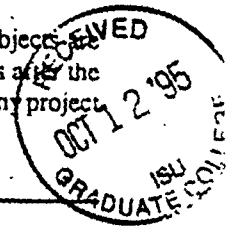
APPENDIX B. HUMAN SUBJECTS COMMITTEE FORM

Information for Review of Research Involving Human Subjects

Iowa State University

(Please type and use the attached instructions for completing this form)

1. Title of Project: Resource Enhancement and Protection Public Awareness and Information Survey



2. I agree to provide the proper surveillance of this project to insure that the rights and welfare of the human subjects are protected. I will report any adverse reactions to the committee. Additions to or changes in research procedures after the project has been approved will be submitted to the committee for review. I agree to request renewal of approval for any project continuing more than one year.

Typed Name of Principal Investigator	Date	Signature of Principal Investigator
Lulu Rodriguez	10-10-95	

Department	Campus Address	Campus Telephone
Journalism and Mass Communication	114 Hamilton Hall	4-0484

3. Signatures of other investigators

Signatures of other investigators	Date	Relationship to Principal Investigator
Olan F. Farnall	10-10-95	co-faculty member
Jane W. Peterson	10-10-95	co-faculty member
Joel Geske	10-10-95	co-faculty member

4. Principal Investigator(s) (check all that apply)
☒ Faculty ☐ Staff ☐ Graduate Student ☐ Undergraduate Student

5. Project (check all that apply)
☒ Research ☐ Thesis or dissertation ☐ Class project ☐ Independent Study (490, 590, Honors project)

6. Number of subjects (complete all that apply)
110 # Adults, non-students 40 # ISU student 0 # minors under 14 0 other (explain)
___ # minors 14 - 17

7. Brief description of proposed research involving human subjects: (See instructions, Item 7. Use an additional page if needed.)

Please see attached sheet.

(Please do not send research, thesis, or dissertation proposals.)

8. Informed Consent:
☐ Signed informed consent will be obtained. (Attach a copy of your form.)
☐ Modified informed consent will be obtained. (See instructions, item 8.)
☒ Not applicable to this project.

9. Confidentiality of Data: Describe below the methods to be used to ensure the confidentiality of data obtained. (See instructions, item 9.)

   1. Respondents are informed in the cover letter that participation is voluntary.

   2. Respondents will be guaranteed in the cover letter that all responses will be kept confidential and will be used only for the purpose of soliciting opinions to help in the design and formulation of state policies regarding natural resources enhancement and protection.

   3. Respondents are assured that in no way will responses be traced to their names nor to their places of residence.

10. What risks or discomfort will be part of the study? Will subjects in the research be placed at risk or incur discomfort? Describe any risks to the subjects and precautions that will be taken to minimize them. (The concept of risk goes beyond physical risk and includes risks to subjects' dignity and self-respect as well as psychological or emotional risk. See instructions, item 10.)

    None.

11. CHECK ALL of the following that apply to your research: N/A
    - ☐ A. Medical clearance necessary before subjects can participate
    - ☐ B. Samples (Blood, tissue, etc.) from subjects
    - ☐ C. Administration of substances (foods, drugs, etc.) to subjects
    - ☐ D. Physical exercise or conditioning for subjects
    - ☐ E. Deception of subjects
    - ☐ F. Subjects under 14 years of age and/or ☐ Subjects 14 - 17 years of age
    - ☐ G. Subjects in institutions (nursing homes, prisons, etc.)
    - ☐ H. Research must be approved by another institution or agency (Attach letters of approval)

If you checked any of the items in 11, please complete the following in the space below (include any attachments):

Items A - D Describe the procedures and note the safety precautions being taken.

Item E Describe how subjects will be deceived; justify the deception; indicate the debriefing procedure, including the timing and information to be presented to subjects.

Item F For subjects under the age of 14, indicate how informed consent from parents or legally authorized representatives as well as from subjects will be obtained.

Items G & H Specify the agency or institution that must approve the project. If subjects in any outside agency or institution are involved, approval must be obtained prior to beginning the research, and the letter of approval should be filed.

"Resource Enhancement and Protection Public Awareness and Information Survey"

Last Name of Principal Investigator Rodriguez, JLMC

Checklist for Attachments and Time Schedule

The following are attached (please check):

12. [x] Letter or written statement to subjects indicating clearly:
    a) purpose of the research
    b) the use of any identifier codes (names, #'s), how they will be used, and when they will be removed (see Item 17)
    c) an estimate of time needed for participation in the research and the place
    d) if applicable, location of the research activity
    e) how you will ensure confidentiality
    f) in a longitudinal study, note when and how you will contact subjects later
    g) participation is voluntary; nonparticipation will not affect evaluations of the subject

13. [ ] Consent form (if applicable) N/A

14. [ ] Letter of approval for research from cooperating organizations or institutions (if applicable) N/A

15. [x] Data-gathering instruments (please see attached questionnaire)

16. Anticipated dates for contact with subjects:

First Contact	Last Contact
30 October 1995	30 November 1996
Month / Day / Year	Month / Day / Year

17. If applicable: anticipated date that identifiers will be removed from completed survey instruments and/or audio or visual tapes will be erased:

30 November 1997
Month / Day / Year

18. Signature of Departmental Executive Officer | Date | Department or Administrative Unit

Jane W. Peterson | 10-10-95 | Journalism and Mass Communication

19. Decision of the University Human Subjects Review Committee:

[X] Project Approved [ ] Project Not Approved [ ] No Action Required

Patricia M. Keith — Name of Committee Chairperson

10/13/95 — Date

Signature of Committee Chairperson

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