IMPACT OF A LOCAL EARTH-DAY PROGRAM

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Environmental Quality Note 01

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FOREWORD

The Environmental Quality Program at Texas A&M University might be regarded as one of the responses to a nationwide concern about pollution that reached an emotional peak in 1970. This university response has been rather slow and deliberate to those who urged immediate crash programs of pollution abatement, drastic controls on industry, and even new life styles for the American people.

Dr. Philip Abelson, Editor of Science, recently pointed out,*

> "An emotional peak, such as that witnessed in 1970, cannot be sustained. Earth Day activities this year were a pale shadow of those of a year ago. The mass media are beginning to diminish their coverage of environmental matters, and debunking stories are starting to appear. More important for the long haul is a growing recognition that environmental improvement is going to cost a lot of money and that the costs are going to be paid by everyone...."

> "We are entering a new phase in efforts to attain a better environment. In future, emotional appeals based on inaccurate information are not so likely to be effective. As it becomes apparent that the public must pay for improvements, new criteria will enter discussions concerning the environment. Benefits will be weighed against costs. Intellectual leadership in environmental matters will be shared by economists who are already beginning to hold useful symposia on these topics."

It is this new phase, which promises to be much longer and produce more significant public decisions than the first phase, which A&M's program is designed for. The public and its representatives must be provided with information, not only on the possible adverse consequences of present pollution, but on the costs and benefits of amelioration alternatives, before stable decisions can be made.

The 1970 phase of environmental concern, however extreme some of the position statements of the time may now appear, had a substantial base in fact, represented widespread public attitudes, and had considerable impact on political expression and on individual behavior.

The first report in a series of Environmental Quality Notes to be made available by the A&M Environmental Quality Program was chosen because it represents one of the few attempts to assess the impact of

* Science, v. 172, n. 3983 (7 May 1971), p. 517.

an Earth-Day (1970) program on the attitudes and behavior of those exposed to it.

Granted that the event and the affected population were local and small, and that the human resources deployed in the investigation were inadequate for a thorough analysis, still Mrs. Levenson presents some thought-provoking results which should prove useful to those concerned with the evolution of public perception, attitudes, and behavior related to environmental problems.

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IMPACT OF A LOCAL EARTH-DAY PROGRAM

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The importance of ecological issues

Recently there has been much talk about pollution, waste, conservation, and in general, environmental quality and environmental degradation. Public-opinion polls show that the American public ranks the importance of fighting pollution next to that of fighting crime. According to a 1970 Gallup poll of statesmen, scientists, jurists, publishers, educators, and leaders in other fields, air and water pollution was named as the third most urgent problem facing the United States, after crime and inflation. President Nixon expressed his views in a message to Congress on February 10, 1970:

> "The time has come when we can no longer wait to repair the damage already done, and to establish new criteria to guide us in the future....Pollution may well become the major concern of the American people in the decade of the 70's."

Not only are the average citizen and his elected representatives becoming concerned, but also big business and industry have become sensitive to environmental issues. There has been a rapid increase of enthusiasm in what were formerly matters for stodgy, unpopular conservation groups. Most of the current ecology action groups are less than 18 months old. Many of the publications on pollution are relatively new, as are the recent enforcement of old anti-pollution laws and the creation of new standards and policies. So enthusiatic has been the recent response, that some have even called it a fad which will soon fade.

Many think the "newly found environmental dangers are being vastly exaggerated " (Etzioni, 1970, p. 921). Others similarly think that the scare technique is being overdone, and that it will lead to a "what's the use" attitude in young people.

Despite the increased activity of eco-groups and the tremendous amount of eco-publicity and information on television, in the newspapers,

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and in magazines, it is uncertain as to what the impact on the local average citizen is. Is there in fact any change in the attitudes of people? Are there any behavioral changes? Did the nationwide effort culminating in Earth Day on April 22, 1970, have any consequences beyond the momentary plans and organization? While it was the hope of national, state, and local environmental program leaders to make the people aware of the issues and perhaps to motivate some action, little is known about the realization of this hope.

This study is an attempt to understand more fully the impact of a local Earth-Day program on the individuals and groups in the academic and civic community of Bryan-College Station, Texas. To gain this understanding an exploratory study was made, incorporating four sources of information: (1) a survey of 171 people who attended Earth-Day activities; (2) more than 50 formal and informal interviews; (3) attendance at numerous meetings of various groups; and (4) a careful review of local news about environmental issues. The results reported here cover the time period from March 1970 to September 1970.

The following section deals with Earth Day and its programs on national and local levels. The third section contains the survey information on those attending local Earth-Day programs. The 171 people who were asked to complete brief questionnaires were selected randomly as they came to the programs. The information thus obtained is extremely informative with regard to the prior knowledge and attitudes of those people who were sufficiently motivated to attend such an environmental forum.

Sections four, five and six are an attempt to assess the impact of Earth Day. The information in these sections was obtained through interviews with the faculty and students of Texas A&M University and with the citizens of the Bryan-College Station community. The interviews were informal and consisted chiefly of open-ended questions. For example, people were asked for their assessment of present environmental conditions, whether or not they attended any Earth-Day activities, and what they thought the impact of Earth Day was. Each interview took approximately one hour. The people who were interviewed by no means represent a random sample of people in the community. In fact, most were selected as being people best informed about environmental concerns in the community. Some were interviewed as representatives of community groups or campus departments. Given the limitations as outlined above, it is obvious that this study should be considered exploratory in nature: while not providing the answers, it should serve to guide future research. Because all interviews were conducted as confidential, names of individuals are not used in this report.

Earth Day and its programs

National

A national "Teach-In on the Crises of the Environment" was planned

for college campuses across the country for April, 1970. The stated objective was to make people aware of the destruction of the environment and to help halt the increasing pollution. Senator Gaylord Nelson (D-Wisc.) and Congressman Pete McClosky (R-Calif.) were co-chairmen of the effort. The "Teach-Ins" were for the most part shaped by the students as they saw fit at individual colleges.

Although most campus groups presented environmental seminars and programs as part of the April 22nd activities, the range of events was varied. Earth-Day activities were also carried out by individuals and groups in more than 2,000 communities. Traffic bans were scheduled in parts of New York and Philadelphia. Elsewhere, automobiles were buried. In Jamestown, N. Y., a civic club dumped 20 tons of sand in the downtown area to demonstrate how much dirt falls in one square mile of city during 30 days of maximum air pollution. Ponds were cleaned, chemical corporations boycotted, tin cans returned to manufacturers, and anti-litter trash drives conducted. The national response to Earth Day was not totally affirmative. The national D.A.R. branded the Environmental Movement as "distorted and exaggerated." Several politically-left organizations and individuals charged that the government focus on ecology reflected the motives of a pollution-industrial complex, in which big business would profit from anti-pollution tax incentives. Similarly, pollution was seen as an attempt to turn people from the true issues of race, war, and poverty (e.g., Ramparts, May 1970, entire issue).

Local

The Symposium for Environmental Awareness (SEA) was created on the Texas A&M University campus to bring about a general awareness of environmental problems in the community. The creation of SEA and its planning were chiefly in the hands of students. They planned several activities to precede the Earth-Day program, as well as morning and afternoon education sessions to be held on campus on Earth Day. The evening program was chiefly organized and executed through the combined efforts of two local chapters of women's civic groups (the League of Women Voters and the American Association of University Women), in conjunction with the Symposium. It is important to understand the role played by these two women's groups, since unlike SEA, their main reasons for existence are not environmental concerns. SEA, on the other hand, was formed explicitly to express environmental concerns. In abstract one might think that the latter type of group, because of its concentrated efforts, might have the greater impact; however, it is important to realize that the women's groups are continuing groups with long-range goals and with access to individuals already committed to the larger values of the group.

SEA organized 13 committees in order to fulfill its Earth-Day educational goals. Before Earth Day, environmental speakers were made

available to the public schools, and movie and slide presentations were delivered to civic groups, faculty members, and students. There were environmental displays in the library and distribution of articles and bumper stickers on campus. Environmental slogans were painted on dumpsters and there was a series of faculty lectures. An assessment was also made of the amount of environmental degradation in Brazos County.

On Earth Day, many events were presented on campus, including movies, lectures, panels, and discussions. (See Appendix A for a complete listing of speakers.) In the evening, at a "Town Meeting," local government officials and environmental experts presented their views and answered questions from the audience.

Publicity

In addition to the aforementioned events, the citizens of Bryan-College Station were exposed also to a large amount of local, state, and national publicity on environmental problems. It was found impossible to measure the impact of the local SEA efforts as distinct from that of the total national push for more ecological concern. It is possible, however, to obtain an indication of the increase in such local publicity as a direct result of local Earth-Day activities.

Beginning on March 12 with a report on the first SEA-sponsored lecture and concluding with a two-page coverage on the SEA programs (April 23), a record was kept of all local environmental publicity and reporting in the local newspaper, The Daily Eagle. During this time the coverage was relatively abundant. Other SEA-related articles appeared on eleven of the days prior to and including April 22nd (see references cited for dates and page nos.)

These articles were not only informative, but they also appeared to support the student efforts; for example, a front-page story on April 19 was titled, "B-CS Earth Day Promises to be one of State's Best." And an editorial on April 21st ended with the paragraph,

> "We hope the Earth Day programs will receive wide support. Though the afternoon activities will center on the campus, they merit the support of the entire community. After all, it's the community's environment, too."

The mayors of both College Station and Bryan issued proclamations declaring Earth Week. In general, by the time Earth Day arrived it could be said to have had the approval of both academic and civic leaders.

Other articles in the newspaper during this time also reflected local concern for the environment. There were articles on zoning, on sanitary landfills, about the formation of a new environmental group, on dam proposals, and 12 editorials on the necessity for anti-pollution

efforts. Several letters to the Editor of the Eagle, dealing chiefly with litter, as well as stories on individual and group efforts to clean up years, were given prominent coverage.

In general, it can be said that the people of the community were repeatedly exposed to information and opinion on local environmental programs and concerns, and that much of this information was a direct result of SEA activities.

Of those people who presumably heard about the planned events on Earth Day, who attended? Were there any differences between those who heard lectures on campus as compared with those who chose to attend the evening town-hall meeting forum? What were the attitudes of those attending as compared with those people who did not attend? To answer these and similar questions, a random-sample survey was conducted of those people attending local Earth-Day activities. The methodology and results are reported in the next section. The detailed survey report is to be found in Appendix B.

A survey of those attending Earth-Day activities

Introduction and method

This survey was an attempt to define the types of people who did and did not attend an information program on the environment and their ways of learning about the program. It was also designed to yield information about the degree of previous involvement of such people and about their knowledge of specific environment-related issues.

A short questionnaire was designed and given to every fifth person who entered the room or building in which an Earth-Day program was scheduled. Most people took one to two minutes filling it out. The questionnaire asked the respondent's sex, sources of information (for the local program and Earth Day in general), occupation, involvements with various groups on environmental issues, and knowledge about two specific environmental topics (to name environmental problems and people dealing with environmental problems). For a sample of the questionnaire, see Appendix B, page 39.

Findings

A total of 171 people filled out the questionnaire. The present discussion concerns 137 of these people who attended an Earth-Day program. (The remaining 34 people filled out the questionnaire during a classroom session and their answers may give some indication of the knowledge of people not attending any Earth-Day program. For a discussion of non-attenders, see Appendix B.)

Of the people attending, 30% were freshmen or sophomores, 26% were juniors or seniors; 12% were graduate students; 20% were professors, and 12% were not University-affiliated.

The students used the student newspaper, The Battalion, most often to find out about the local Earth-Day activities. They also used personal information sources. Graduate students utilized a number of sources such as memo-notices, professors, and other students to find out about local Earth-Day activities. The professors' communication patterns are even more varied; they obtained their information chiefly from the local town paper and memo-notices.

In general, those attending Earth-Day activities answered well when they were asked to name a local environmental problem. Approximately three-fourths of the graduate students and professors named one problem. About half the undergraduates named a problem.

Those attending, however, did not appear so well-informed when they were asked to name a person working in the area of environmental problems. Once again, three-fourths of the graduate students and the professors responded, but only a third of the juniors and seniors and only a fifth of the freshmen and sophomores named such a person.

In general, those who attended Earth-Day programs were those who were already involved in groups or activities dealing with environmental problems. Approximately 40% of the students (undergraduates and graduate students alike) and 75% of the professors were involved in at least one such activity. Three-fourths of those who attended but were not affiliated with the University also were active in at least one other environmental activity.

Of all the groups of people attending, only the professors attended with equal frequency both the campus Earth-Day programs and the evening Town Meeting program. The students attended mainly campus activities, and those who were not affiliated with the University attended mainly the evening off-campus program.

Impact: the University faculty and students

Introduction

The information in the next three sections was obtained through interviews with faculty, students, and citizens in the community. The interviews were informal and took approximately one hour each. Unlike the survey, the people who were interviewed do not represent a random sample. Many were selected as people most informed about environmental matters or as representatives of community groups or campus departments.

One of the first places to look in assessing the impact of a campus-based organization would be the campus. The University's concern with the environment has been lengthy and diversified. Founded in 1876, the Agricultural and Mechanical College of Texas (now Texas A&M University) focused on the teaching of agriculture theory and techniques. As a land-grant institution, Texas A&M has an agricultural experiment station and an agricultural extension service; these suggest the depth of its concern with research and education in the area of land use.

Attendance

In view of the wide-spread formal, or lip-service interest, many people who were involved in SEA were disappointed by the low attendance at the afternoon and evening Earth-Day functions. Although there are no precise attendance figures, a reasonable estimate can be made from a knowledge of how many were interviewed in the survey described in the previous section, since every fifth person attending was asked to respond to the survey. In round figures, then, approximately 225 people attended the morning program, 300-400 the afternoon program, and approximately 200 the evening program.

It is interesting to note the comments made by the people interviewed concerning the numbers of people who went to Earth-Day activities. Most people realized that the crowds were small, but they claimed that "those who were interested went," and "the crowd was small in quantity but large in quality." A very few persons claimed that attendance was high. One woman stated that "all the parking places were taken, so I couldn't even get to hear the speakers."

The reasons given for the low attendance were varied. Many thought that the programs planned were dull or did not receive enough publicity. Some thought that the community's attitudes were too conservative politically, or that it was a busy time of year academically. Others explained that "it was church night." A small percentage of the campus people interviewed thought that although the motives of the Earth-Day planners were pure, the program lacked objectivity by not presenting the more positive side of agricultural techniques in providing people with an abundance of varied foods.

Faculty

In general, the faculty interviewed thought that the students had more freedom than they themselves did to participate in such Earth-Day activities, and that this was appropriate behavior for students. Others said they saw the Symposium as an opportunity for the faculty to toot their own horns. Whether or not as a direct impact of Earth-Day activities, several faculty members or groups are now trying to institute

Perceived impact

Although some university people agreed that Earth Day probably made legislators more responsive to ecological needs, these same people felt that there would not be many long-term results from Earth Day. "It's as its name implies--just for a day." "People are basically selfish-you're not going to change their opinions overnight." "You have to get your neighbors with it, and that isn't done by Earth Day." "It's gonna be a long fight to change people's attitudes." They perceived the ecological awareness goal as something that will have to be accomplished over a long period of time. Yet, almost everyone interviewed--whether in favor of Earth Day or not--agreed that Earth Day did help to increase the amount of awareness in the community.

How accurate was this judgment? Did the members of the community become more aware? If so, did this awareness lead to action?

Impact: individual responses to Earth Day

Behavioral changes

As the attendance counts indicate, only a handful of those attending Earth-Day activities were not directly connected with the University. The survey seems to show that these people were already informed in the area of environmental problems; it was, in other words, a case of the concerned becoming more concerned.

To gain an understanding of any impact from these events, it is important to see if there were any observed behavioral changes after Earth Day. The local press was checked as a first source, because it was thought if the change were large it would be reported in the press.

There were some isolated cases in which direct behavior as a result of Earth-Day activities was reported in the local newspaper. Perhaps these instances are only a small sample of the actions of many others. Six letters to the Editor dealing with environmental concerns were published in March and April. Most of these were about litter problems. A sampling from these letters follows:

> April 13: "I would like to know if the B-CS area has an ordinance regarding litter?. . . The thing that brought this to my mind is an article that appeared in Sunday's edition. . .(reporting) one half a ton (of litter) per mile."
>
> April 9: "Why don't citizens form clean-up campaigns and do something about the problem?"

April 24: "Thus far the planned April 22 Environmental Teach-In has produced a lot of talk. Let's not waste all this 'environmental awareness' and convert this 'talk' into action."

March 18: "Local interest in the environment appears to be at a high point. This interest is not likely to produce lasting results so long as it centers on such issues as weed covered lots..."

As can be seen from the content of the letters, some people in the community have indeed felt an impact from Earth-Day publicity. The letter dated April 13th even mentioned that the stimulus for her writing was part of a report by one of the SEA committees. Another person (April 24) mentioned the Earth-Day program. And another (March 18) claimed that "interest is now at a high point." It can be assumed that there were many other people who felt the same way as the writers of these letters, but that only a very few actually took such a behavioral step as to have their opinions published with their names.

In addition to letters to the Editor, an indication of an increased environmental concern is to be found in the articles reporting on people cleaning up their community. Some of these refer to organized annual efforts to be discussed in the section on "Impact: community groups." Most of these were reports of individual efforts, such as a group of teens participating in a clean-up (Daily Eagle, May 1, 1970, p. 3), or members of an eighth-grade science class cleaning the school grounds (Daily Eagle, May 4, 1970, p. 1), or "Local citizens observing earthday with clean up" (Pictorial Press, June 11, 1970, p.1)

From the press accounts, it seems obvious that the concern aroused by Earth Day and related activities eventually led to some behavioral attempt either to express an opinion or to rectify a situation.

Litter appears to be the most easily understood environmental problem, as well as representing a condition about which each individual presumably feels he can do something. There has therefore been a lot of publicity about the ecological advantages of buying soft drinks in returnable bottles rather than in disposable cans, which add to trash and litter problems.

Previous to and during Earth Day, there was much publicity about the advisability of buying returnable bottles. Because there is some effort involved in paying a deposit and in returning a bottle, an increase in bottle sales over can sales would be an indication of a more ecologically-concerned public.

Some supermarket managers in the local area were asked (1) how the sales of soft drinks in returnable bottles compared with that in

throw-away cans, and (2) if they had noticed any change in the amount of returnable bottles they were required to handle each week. Some managers found it impossible to answer either of the questions, claiming that they had no records nor any intuitive idea. Those who were able to answer the questions stated that much of their volume was in returnable bottles. They perceived this as keeping with their usual sales and noticed no particular increase in their purchase since Earth Day.

One manager stated that the reason people buy bottled drinks is because they are much cheaper than in cans, and that if canned drinks were the same price, they'd buy cans. From his viewpoint, he wished that the store would just sell cans, although he was aware of some litter problems with cans. His reason was that he had to employ someone 30 hours a week just to handle the returned bottles.

A number of women were interviewed. For the most part, these women were contacted because they had made their concern for the environment known, either by writing letters to the paper or through community or civic organizations. It must be remembered that these women interviewed represent a very small portion of the community; these were involved, informed, educated women, and consequently, their responses may be very different from those of the majority.

In talking with these women, one gets the feeling that they changed their buying styles because of an ecological concern. Most of them claimed they now bought drinks in returnable glass bottles rather than cans, ran their garbage disposals infrequently, and used low-phosphate detergents. One woman was even trying to grow her garden organically without the use of pesticides; she felt that unless she could do this herself, she had no right to expect agriculture to do it. These women felt that they were doing their part, and they were optimistic about the chances for improving the environment.

Of those interviewed, a few stated that their interest stemmed specifically from Earth-Day programs and the informational materials dispersed at the time. Most felt that their interest was sparked by national publicity and chiefly television news coverage. In general, they represent an active group who are politically concerned.

One woman claimed that she became involved in the selling of biodegradable detergents as a result of local and national information. These detergents are sold from door to door or at neighborhood "parties," not through supermarkets. There are currently two such companies operating in the community, and both report an increasing number of sales as well as a growing number of people interested in selling these products. The chief selling points made about these cleaning products are that they are non-toxic, biodegradable, and cheap to use.

As another indication of behavioral change in respect to litter, the Bryan Department of Parks and Recreation was contacted. Although the Department keeps records on attendance at park recreational programs, it is difficult to interpret attendance figures because they fluctuate depending on the person in charge, location, and program. When asked if there appeared to be any changes in public interest in the parks and their up-keep, the reply was that the recent environmental programs probably did lead to an increased awareness on the part of the public, but that this awareness did not manifest itself in any behavioral changes--e.g., amount of litter in parks was about the same. There were some exceptions to this, however, and since they concern the impact on groups, the discussion will appear in the next section.

Because the role of the schools was considered important in assessing impact, principals and the local newspaper were consulted regarding any school programs conducted for Earth Day. It was reported that the schools held orientation sessions before Earth Day and had speakers in the schools. One principal reported that the fourth-grade teacher took children on a field trip to see what they could pick up around the school yard. It was reported that the children were amazed at the amount of junk they found. Letters were written as part of one class effort to get information, and there was even an anti-litter poster contest sponsored by some principals. Although the schools perceived their concern with the environment as part of a long-term, continuing educational program, they did report an increase in interest and availability of speakers as a result of local Earth-Day activities.

Attitude changes

Attitude changes related to Earth Day appear to be more widespread than behavioral changes. This is not surprising, since much previous research has shown that attitudinal change is often the precursor of behavioral change. All people interviewed who had heard about SEA programs agreed that the activities and information had increased their awareness of environmental problems, in themselves, in others, or in both themselves and others. However, while Earth-Day programs were given credit, in general, citizens of Bryan-College Station felt the efforts of faculty members and long-term research and programs at the University were responsible for their increased sensitivity and understanding. Departments of the University were given credit for taking important environmental actions and acting as consultants for other people and industry. When asked about their local sources of information, respondents repeatedly mentioned University people who were experts in the environmental field.

The two reasons most frequently given for pollution were overpopulation and a belief in a progress-consumer ideology. Most people interviewed reported that they had changed the following:

(1) Their desire for many children. Couples were not planning to have as many children as their parents, preferably only two.

(2) Their desire for growth of community. People contended that they liked the rural features of the Bryan-College Station area and did not want more industries. For the most part, people were pleased with the local environment and thought it attractive and without many of the major pollution problems of big cities. Interestingly, university growth and plans for expansion were rarely mentioned as negative aspects of community growth in population.

It is difficult to measure any increase in the amount of information held by the public as a result of Earth Day. The interviews gave some indication that the amount of information had increased, but the new knowledge seemed superficial. For example, some women knew that they should not buy colored tissue because the dyes in the tissue were harmful, but they did not know why. Further study is needed here to see if, as some ecologists think, ecological principles are too complex to be understood and employed successfully by the layman.

Attitudes were not only reported changed toward environmental concerns, but also toward the University itself. Many of the respondents said that they were glad to see members of the University faculty speaking out on matters of their expertise, and these people seemed pleased that the University faculty were taking a more active role in the community. There also seemed to be some indication of approval of what were seen as changes in the University. People said that several years ago there would not have been a program such as SEA on campus--either because of restrictions imposed by the University administration or because of the lack of motivation on the part of faculty and students. One person reacted negatively to this involvement, contending that Earth Day had no impact because people were reluctant to "join that type of movement with what might be radical students."

Of those people interviewed who were not directly affiliated with the University, the general feeling was that Earth Day brought faculty and students out into the community and that this was a positive move for the community as well as the University.

Impact: group response to Earth Day

Local government groups

Departments or committees existed within the structure of Bryan's and College Station's city government before Earth Day to deal with the

environment from an aesthetic point of view. A representative from one of these committees was interviewed to gain a better understanding of how Earth Day was perceived by that committee and what effect it might have had on changing the role of that group. It was the personal opinion of this representative that Earth Day had little or no impact.

The committee's efforts after Earth Day followed the same lines as in the past, although there was an increased emphasis on imforming the community about munincipal ordinances of the city governing litter, garbage and trash services, and the like. Furthermore, a program was being instituted to supply clean-up help to those public and private areas needing it, as "sort of an incentive to induce people to keep their yards and gas stations in good appearance." These actions were not seen as related to the recent Earth-Day programs.

Community groups

There appear to be a multitide of volunteer groups in the community. The Bryan-College Station Chamber of Commerce lists 122 such groups and the number continues to grow. Several of these groups are interested chiefly in specific aspects of the environment, for example, six garden clubs. A representative of Bryan's Parks and Recreation Department stated that members of these groups have been contacted by newly formed environmental groups and that some new action (the planting of flowers) was contemplated.

Many of these civic groups have environmental programs or committees as part of a larger community effort. The members are already committed to the goals and values of the group, and this commitment is a potent source of community action. Mention has already been made of the two women's civic groups (LWV and AAUW) which planned the evening program on Earth Day. Most of the non-University people who attended the Earth-Day assemblies were members of these two groups. Their interest in the environment preceded Earth Day. Through study units, the LWV and AAUW have been examining pollution and natural-resource problems for several years. Their members are well educated. This environmental concern in part reflected group leadership from the national level.

The women of these groups are politically active. They write to congressmen, attempt to initiate or change legislation, try to obtain land for parks, and they seek to inform themselves as well as the public on civic issues. Representatives of both organizations tried to form a distinct community group to deal with problems of the local environment. For a discussion of this attempt, see the subsection on new groups.

Not only women have been concerned with environmental problems; several men's civic groups have had, as a continuing part of their programs, some kind of environmentally-focused activity. One local branch of a

national men's organization was responsible for building the wading pools in the community. Another has an annual litter clean-up campaign in which volunteers clean the roadsides and haul away trash and large items of junk. One of the men who had been in charge of this clean-up effort pointed out that the garden clubs and the state Highway Department had given help. It was his opinion, however, that an annual effort such as this had really limited results. He observed that not many individuals helped out in this campaign and even businessmen did not come out to help those who volunteered to clean the areas in front of their stores. He concluded that many people did not mind others cleaning up, but were reluctant to do the dirty work themselves.

New environmental groups

At least two new conservation-conscious groups have formed in this area since Earth Day, the Environmental Action Council of Brazos County and the Friends of the Navasota River. To find a direct link between the Earth-Day activities and the formation of these groups, however, one must look to earlier conditions and forces. The main impetus for one of these groups came concurrently with Earth-Day activities. Some of the women in the civic interest groups found that their concerns were chiefly in the environmental area and wanted a group which would work full time on these matters. They also felt that they had studied the problems and now wished not only to learn more but also to institute some significant action in the community.

With the help of experts in the University as well as the support and approval of the community leaders, they formed the Environmental Action Council to help initiate action and educational programs. The people who began the group and who later supported it appear to be primarily those same people who came to the evening Earth-Day program--the people who were already informed and wished to learn more.

It is still too early to measure any community impact from this group, although it has already formed committees to deal with local issues. Although the founders do not perceive their group as a direct outgrowth of Earth Day, many of its members do. The possibility of the formation of such a group was announced at the evening Earth-Day program and several of its current members joined as a direct result of Earth-Day publicity and action.

The other newly formed environmental group, the Friends of the Navasota River, is composed of environmental experts who are seeking specific changes regarding some proposed construction in the area. There is already some indication that their efforts have had some effect (Thomas, K., 1970). As with the community group discussed above, it is doubtful that this expert group was a direct outgrowth of Earth-Day activities, although Earth Day may have been partly responsible for the mobilization of community action and participation in its behalf.

Earth Day and its related activities should not be viewed as representing a single distinct stimulus; therefore, measuring its isolated impact is an impossibility. Rather Earth Day should be viewed as the result of a new atmosphere created and fostered by University and community groups which were able to capitalize on national publicity and concern.

Future research is needed in this area in order to understand more fully the impact of such informational programs. In the future, a more random sample procedure for selecting interview populations would increase the generality of the findings as well as reveal which populations within the community were relatively unaffected and why. It would also be interesting to take a closer look at the differences in types of action taken by members of groups formed solely for environmental purposes, by contrast with the actions taken by groups of long-standing whose goals and values are of a broader nature.

Frequently, past research in the field of social impact has concentrated on the sociological factors of those who become involved--e.g., age, sex, socioeconomic status. The results of this study are in keeping with the findings of previous work (Campbell and Kahn, 1954; Dahl, 1961; Glaser, 1959); people who became involved were for the most part highly educated, already informed, and of high status positions.

If the impact of programs like those of Earth Day is to be analyzed, however, a more dynamic approach is needed than can be obtained by the study of demographic variables alone.

Summary, conclusion, and suggestions for further research

From the recent polls and publicity there can be no doubt that environmental problems are a major concern of individuals, industry, and government. Many new eco-groups have formed and Earth-Day observances were nationwide. As yet, however, there has been no reported study to measure the impact of this "enthusiasm" on the layman. This present study is an attempt to measure, in an exploratory fashion, the behavior and attitudinal changes of the people in a small community as the result of a local Earth-Day program and related activities.

Given the inadequacies of the measuring techniques used, and the sampling problems, it can still be stated that there appeared to be a very definite impact on the community (or segments of it) from the Earth-Day activities. First of all, the actual amount of space devoted to environmental news in the local paper increased. There were many stories on SEA activities and even an editorial which urged attendance at Earth-Day programs. Since this is the community's only commercial daily newspaper, most people subscribe to it. It can therefore be assumed that at the very least, there was impact on the citizen through this increased local news coverage.

In general it can be stated that those people who attended Earth-Day activities were more informed than those who did not attend and that community attendance was by those who already belonged to groups dealing in some way with environmental issues. Attendance at the afternoon and evening sessions was smaller than expected.

A chief source of informational impact appears to have come from lectures and presentations to the community by University faculty members. The faculty interest should not be interpreted as a result of Earth Day but rather was of long standing. The students who were most involved in Earth Day similarly were those who were already involved in specific environmental research or programs. The faculty and students believed that Earth Day fulfilled its goal in helping to increase the awareness of those in the community.

If one examines the attitudes of those in the community, it appears that there has been an increased awareness and an increased amount of information about the environment, although there is some evidence that this new knowledge may be superficial.

Looking at the behavioral changes of some involved people, there is evidence that Earth Day did have behavioral impact as well as an attitudinal one. There were several letters to the editor and stories on individual clean-up efforts published in the paper. Their content indicates that they received their impetus to action from Earth Day and related activities. Schools held programs on Earth Day and children became involved in litter and publicity efforts related to environmental degradation.

Some women reported that they were now buying more ecologically-beneficial products as a direct result of Earth-Day information. There is some evidence from supermarket managers and park officials, however, which suggests that these behaviors may not be very wide-spread. A personality-social interactionist model, such as that suggested by Marlowe and Gergen (1969) would provide a useful framework in which to assess impact. What types of personalities, working within what types of groups (or communities) become involved in community action programs? Concentrating on the personality of the individual within a social context instead of looking at his age, sex, and income to predict behavior, may not only lead to a better understanding of the dynamic aspects of involvement but also may lead to the increased effectiveness of issue-oriented programs.

The variables of personality and social interaction which it might be fruitful to examine would include the perception of self, competence, and locus of control (White, 1959; Riesman, 1954; Rotter, 1966). The involvement of students and professors cannot be understood solely as an expression of their professional interest. Part of their involvement within the community probably is due to their feelings that they are worthwhile people and that can exert some control over their surroundings.

Feelings of high self-esteem may be crucial in understanding the reinforcing effects of involvement behaviors. One gets involved presumably because he feels that he has a potential for controlling or influencing events. The results of this involvement may lead to expectations of future control and therefore more esteem for self which in turn leads to greater chances for future involvement.

Perecption of self from an interactionist viewpoint would be helpful in understanding involvement activities undertaken by individuals acting alone. To understand why an individual would seek a group in which to become involved, however, one needs to know more about interpersonal perception. Secord and Backman (1964) reason that a person will seek out others who will view him as he views himself. Congruency is said to exist when the person's behavior and other people's evaluations of him are consistent with his own self concept.

There are several researchers in the field of psychology who are concerned with one's general attitudes toward other people. The role of one's philosophy of human nature (Wrightsman, 1964) and faith in people (Rosenberg, 1957) appear to be attitudes which come into play everyday in people's lives and probably would be informative in understanding the form of involvement activities; solitary or in a group, education or action-oriented, expressive or instrumental.

Acknowledgments

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APPENDIX A

Earth-Day Program, Bryan-College Station, Texas
April 22, 1970

Morning Program:

Memorial Student Center, Political Forum, Texas A&M University.
Sen. H. J. Blanchard: "Air Pollution--What Can Be Done About It?"

Afternoon Program:

G. Rollie White Coliseum, Texas A&M University:
Keynote Address: Dr. Donald D. Dunlop, Assistant and Science Advisor, U. S. Department of Interior.

State Agency Representatives who spoke:
- Charles Bardon, Executive Secretary, Texas Air Quality Board
- Howard B. Boswell, Executive Director, Texas Water Development Board
- W. J. Cutbirth, Director of Administrative Services, Texas Parks and Wildlife Department
- Joe Sorrells, Texas Water Quality Board

Texas A&M University representatives who spoke:
- H. R. Byers, Vice-President for Academic Affairs
- G. Geistweidt, Student Senate Representative
- Donald Coon, Symposium Coordinator

Evening Program:

Bryan Civic Auditorium.
Opening remarks: Dr. Richard Baldauf
Moderator: Dr. Betty Unterberger
Panel Members:
- D. A. Anderson, Mayor, College Station
- Charles Bardon, Texas Air Quality Board
- William Clark, Department of Biology, Texas A&M University
- Glenn Cook, Brazos Valley Development Council
- Rezneat Darnell, Department of Oceanography, Texas A&M University
- William Davis, Department of Environmental Engineering, Texas A&M University
- Fred Sandlin, Bryan City Manager
- Joe Sorrells, Texas Water Quality Board
- William Vance, County Judge
- Jerome Zubik, Mayor, Bryan

APPENDIX B

A SURVEY OF THOSE ATTENDING AND NOT ATTENDING EARTH-DAY ACTIVITIES

METHOD

Procedure

A short questionnaire was designed and given to every fifth person who entered the room or building in which an Earth-Day program was scheduled. The printed questionnaire placed on a clip-board and a pencil were handed to each respondent. (A copy of the questionnaire may be found at the end of this paper.) Most people used one to two minutes to fill it out, and then handed it back. The three audiences sampled were those attending the three programs listed in Appendix A.

Questionnaire

Seven questions were printed on narrow strips of paper. Replies required circling an appropriate answer and filling in blanks. The questionnaire asked the respondent's sex, sources of information (for the local program and Earth Day in general), occupation, involvements with various groups on environmental issues, and knowledge about two specific topics (environmental problems and people working in the area of environmental problems). See page 39 for a copy of the questionnaire.

Subjects

To minimize the self-selection factor involved when people volunteer to fill out questionnaires, every fifth person was approached and asked if he would mind filling out a questionnaire requiring only a minute or two of his time. The interval of five was chosen to fit the constraints of time and available interviewers (two).

In order to sample subjects who did not attend the programs, a class was asked to fill out the questionnaires. A general sociology course was selected because of accessibility to the class members and presence of almost equal numbers of freshmen, sophomores, juniors and seniors.

FINDINGS

Subjects

A total of 171 respondents filled out the questionnaire. Thirty-four of these questionnaires were filled out by students approached in the sociology course who either indicated that they had (10) or had

not (24) attended at least one program on Earth Day. Questionnaires were filled out by 137 respondents as they entered the programs. Except for two people who refused to fill out the form, these 137 respondents consist of every fifth person who entered. In the case of the two refusals, the sixth person was sampled. Subject attendance was as follows:

		Morning Program:	43
TOTAL SAMPLED WHILE ATTENDING -----	137	Afternoon Program:	55
		Evening Program:	39
TOTAL SAMPLED WHILE IN CLASS ------	34	Attenders:	10
		Non-Attenders:	24
TOTAL SAMPLED -----	171		

Although it is possible that the same individual filled out the questionnaire twice or even three or four times, only one person of the later groups reported having filled out the questionnaire at an earlier time.

TABLE 1

Classification of University-Affiliated Attenders by Status and Major

Depts.	Freshmen Sophomores	Juniors Seniors	Graduate Students	Professors	Totals
No classification	4	6	0	0	10
Dean	0	0	0	1	1

Agriculture	1	0	0	0	1
Ag. Engineering	0	0	1	0	1
Ag. Journalism	0	1	0	0	1
Architecture	3	3	0	4	10
Biology	0	1	2	3	6
Business	3	1	0	0	4
Chemistry	0	0	1	0	1
Chemical Engr.	3	0	1	2	6
Civil Engineering	0	3	0	1	4
Education	1	2	3	1	7
Electrical Engr.	2	2	0	0	4
English	3	0	0	0	3
Entomology	1	0	0	3	4
Floriculture	0	1	1	0	2

TABLE 1 (Continued)

Depts.	Freshmen Sophomores	Juniors Seniors	Graduate Students	Professors	Totals
Forestry	0	0	0	1	1
Geography	0	0	1	0	1
Health, P.E.	0	0	0	1	1
History	0	1	0	1	2
Industrial Engr.	0	2	0	0	2
Journalism	1	2	0	0	3
Liberal Arts	1	0	0	0	1
Marketing	0	1	0	0	1
Mathematics	1	0	0	0	1
Modern Languages	0	0	0	1	1
Oceanography	0	0	0	1	1
Physics	1	0	0	1	2
Political Science	2	0	0	1	3
Pre-medicine	0	1	0	0	1
Pre-veterinary	2	0	0	0	2
Psychology	3	1	0	0	4
Range Science	0	0	1	0	1
Recreation/Parks	1	0	0	0	1
Science	1	0	0	0	1
Sociology	1	0	0	0	1
Wildlife	1	2	3	1	7
TOTALS	36	30	14	23	103*

*Since some persons did not specify occupation (i.e., status ranking) the total number of Ss interviewed is not represented.

Table 1 shows the classification of attenders by major department, and status (i.e., undergraduate, graduate student, professor).

Status Rankings

For most comparisons, Ss were grouped into categories according to their status (which was indicated on the questionnaire under "occupation"). Students were further subdivided into three subcategories; (1) Freshmen/ Sophomores, (2) Juniors/Seniors, and (3) Graduate students. 31% of those attending were Freshmen/Sophomores; 26% were Juniors/Seniors; 12% Graduate students; 20% Professors and 12% Others (not University affiliated). See Table 2.

TABLE 2

Questionnaire Responses of Students, Faculty, and Others Who Attended Earth-Day Activities

	Freshmen Sophomores		Juniors Seniors		Graduate Students		Professors		Others	
	%*	N	%	N	%	N	%	N	%	N
Sex: male	89	(32)	87	(26)	71	(10)	4	(1)	21	(3)
female	11	(4)	13	(4)	14**	(2)	96	(22)	79	(11)
Where did you hear about this program you are attending?										
Student paper	44	(16)	53	(16)	36	(5)	43	(10)	36	(5)
Town paper	11	(4)	13	(4)	7	(1)	65	(15)	36	(5)
A metropolitan paper	11	(4)	7	(2)	7	(1)	39	(9)	7	(1)
Radio	11	(4)	17	(5)	14	(2)	39	(9)	36	(5)
T.V.	14	(5)	7	(2)	14	(2)	43	(10)	36	(5)
Memo/Notice	36	(14)	40	(12)	50	(7)	65	(15)	29	(4)
Person: Professor	36	(14)	50	(15)	50	(7)	52	(12)	21	(3)
Student	36	(14)	50	(15)	50	(7)	43	(10)	21	(3)
Other	8	(3)	20	(6)	21	(3)	52	(12)	50	(7)
All of the above		(3)		(2)		(1)		(9)		(1)
Where did you hear about Environmental Day on the national level?										
Student paper	33	(12)	33	(10)	21	(3)	30	(7)	29	(4)
Town paper	17	(6)	20	(6)	14	(2)	52	(12)	29	(4)
A metropolitan paper	25	(9)	27	(8)	21	(3)	39	(9)	21	(3)
Radio	22	(12)	50	(15)	21	(3)	30	(7)	29	(4)
T.V.	42	(15)	50	(15)	36	(5)	52	(12)	50	(7)
Magazine	28	(10)	30	(9)	36	(5)	48	(11)	14	(2)
Memo/Notice	19	(7)	17	(5)	29	(4)	39	(9)	21	(3)
Person: Professor	36	(13)	37	(11)	29	(4)	35	(8)	36	(5)
Student	53	(19)	43	(13)	43	(6)	43	(10)	29	(4)
Other	19	(7)	17	(5)	14	(2)	35	(8)	36	(5)
All of the above		(5)		(2)		(2)		(6)		(1)
In the last year have you been involved in any of the following which have dealt with environmental problems?										
A study group	14	(5)	13	(4)	21	(3)	48	(11)	29	(4)
A political organiz.	5	(2)	7	(2)	0	(0)	17	(4)	21	(3)
A civic organization	8	(3)	23	(7)	14	(2)	8	(2)	21	(3)
A church organization	11	(4)	0	(0)	7	(1)	17	(4)	14	(2)
Individual activity (e.g., letter writing, lecturing)	5	(2)	13	(4)	21	(3)	43	(10)	29	(4)
None of the above	61	(22)	60	(18)	57	(8)	26	(6)	29	(4)
Other	8	(3)	7	(2)	14	(2)	22	(5)	7	(1)

*Since Ss checked more than one item per question, the N's and percentages add to over 100%.

**Some persons did not identify sex.

Sample size by % and number of those attending seminars (N=117):										
	31	(36)	26	(30)	12	(14)	20	(23)	12	(14)
Sample size by % and number of those attending and not attending (N=151)***:										
	24	(36)	20	(30)	9	(14)	15	(23)	9	(14)

***20 Ss did not specify occupation (status) and were not included (N=171).

TABLE 2 (continued)

Questionnaire Responses of Students Who Did Not Attend Earth-Day Activities

	Freshmen Sophomores %	N	Juniors Seniors %	N
Sex: male	92	(12)	100	(11)
female	8	(1)	0	(0)
Where did you hear about this program you are attending?				
Student paper	61	(8)	64	(7)
Town paper	8	(1)	27	(3)
A metropolitan paper	15	(2)	9	(1)
Radio	23	(3)	27	(3)
T.V.	15	(2)	27	(3)
Memo/Notice	46	(6)	18	(2)
Person: Professor	38	(5)	64	(7)
Student	46	(6)	36	(4)
Other	8	(1)	18	(2)
All of the above		(1)		(1)
Where did you hear about Environmental Day on the national level?				
Student paper	31	(4)	36	(4)
Town paper	8	(1)	18	(2)
A metropolitan paper	15	(2)	45	(5)
Radio	31	(4)	73	(8)
T.V.	23	(3)	73	(8)
Magazine	23	(3)	36	(4)
Memo/Notice	8	(1)	18	(2)
Person: Professor	31	(4)	55	(6)
Student	15	(2)	55	(6)
Other	0	(0)	27	(3)
All of the above				(2)
In the last year have you been involved in any of the following which have dealt with environmental problems?				
A study group	15	(2)	9	(1)
A political organization	0	(0)	0	(0)
A civic organization	0	(0)	0	(0)
A church organization	0	(0)	0	(0)
Individual activity (e.g., letter writing, lecturing)	0	(0)	0	(0)
None of the above	77	(10)	91	(10)
Other	8	(1)	0	(0)

Sample size by % and number of those attending seminars (N=117):

	0	(0)	0	(0)

Sample size by % and number of total (N=151).

	9	(13)	7	(11)

Students in sociology class who attended but not included in data analysis:
7% (10)

Sex

In all academic status positions, the number of men was greater than the number of women. This is to be expected as the University became coeducational only a few years ago. In the "Other" category, the women outnumber the men. These "others" are primarily housewives--members of the League of Women Voters (LWV) and the American Association of University Women (AAUW) who attended and were responsible for the Evening Program. (See Table 2.)

Sources of Information About Local and National Earth-Day Activities

A. Freshmen/Sophomores, Attending and Not-Attending

Local Activities: Comparison between Freshmen/Sophomores who did and who did not attend the programs, in relation to their sources of information concerning local activities, indicates little difference between their sources of information (see Table 2). Data for this comparison were obtained from the responses to question #2 on the questionnaire.

For both groups of Ss, the Battalion, the University newspaper took priority over other sources. Memo/notices in both cases were secondary sources of information, and personal contact with professors and students were also rated highly. There is little differentiation between the two groups on other sources for local programs. Interestingly, the non-attenders registered almost a 20% higher use of the student paper as a source of information than did the attenders. All students stated awareness of the local programs through at least one source.

While one must be careful about drawing any conclusions from such small samples, other information supports the observation that Freshmen/Sophomore attenders and non-attenders did not seem to differ in their use of information sources. The frequencies with which both groups used the various media were ranked in order of most use to least use. A rank-order correlation was then computed between the two groups, $r = +.91$. It therefore appears that not only do the two groups not differ in magnitude of use or sources, but also they do not differ with regard to which sources they consider most important.

National Level: Freshmen/Sophomore attenders had somewhat different sources of information about Earth Day on a national level that did non-attenders, although there is not a marked difference. Those sources which were ranked highest for the attenders were (1) personal "contact" with students, (2) television, (3) personal "contact" with professors, and (4) radio and the student paper. The non-attenders, however, ranked sources of information in three areas equally high: student paper, radio, and personal contact with professors. The rank-order correlation between the two groups' frequency of use of the media for national imformation was $r = +.69$.

B. Juniors/Seniors, Attending and Not Attending

Local Activities: Comparison between Juniors/Seniors who did and who did not attend the programs in relation to their sources of information indicates as with the Freshmen/Sophomores, little difference between sources. As with the Freshmen/Sophomores, the student paper was used most often for a source of communication, although the non-attenders also used as frequently (64%) communication through professors. Communication with professors was the second most-used source for attenders, and both groups used communication with other students as their third means of finding out about Earth-Day local activities. In general, sources of information are similar for those who attended and those who did not. The rank-order correlation between groups is $r = +.79$. All students had heard about Earth-Day activities on the local level through one or more of the sources listed.

National Level: The Juniors/Seniors who attended Earth-Day activities learned about it on a national level chiefly through (1) radio and television, and (2) communication with other students and professors. There is a noticeably higher percentage of non-attenders use of means of communication than there is of the attenders, which leads one to speculate that the means of communication for Juniors and Seniors have little to do with their participation in events. The rank-order correlation between the two groups is $r = +.93$, which indicates that regardless of which group uses more of the sources, they both turn to the same types of sources to get their information.

C. Freshmen/Sophomores vs. Juniors/Seniors

Local Activities: Comparison between Freshmen/Sophomore and Junior/Senior attenders shows that there is not much difference between groups in the sources of information concerning local activities. Both groups rate the student paper most frequently, with a slight preference on the part of the upper-classmen for personal, informational contacts, 50% and 36% respectively. The rank-order correlation between the two groups is $r = +.70$, indicating that regardless of year, undergraduates turn to the same types of sources to get their local information.

National Level: While the Juniors/Seniors appear to use more radio as a source of information about national Earth Day (50%) than do the Freshmen/Sophomores (33%), one is more impressed with the magnitude of the similarities between groups. Most of the percentages are within a few points of each other, and the rank-order correlation is $r = +.81$. In general, then, there does not seem to be much difference between undergraduates in their use of sources for either local activities or national information.

D. Graduate Students

Local Activities: Graduate students who attended Earth-Day activities utilized sources other than the mass media with the greatest

frequency. Memo/notices, professors, and other students were used by 50% of those Graduates attending. Though the student paper was used as the fourth highest source of information of local activities, it was used relatively little when compared to all other status categories of people (e.g., Professors, Others, etc.) attending the programs (with the exception of the "Others" category which includes a large number of off-campus persons who do not have access to the student paper.)

National Level: Comparing the Graduate students to those closest in age (i.e., Juniors/Seniors), may give one an indication of how communication sources differ between groups. The undergraduates use more TV and radio, and in general appear to use more as information sources than do the Graduates. The rank-order correlation is r= +.53, which is not as high as those previously reported, for correlations between other groups of Ss. There is some indication, then, that Graduates depend to a greater extent on people as a source of information than do undergraduates who use other people and mass communications as sources.

E. Professors

Local Activities: Professors' communicational patterns differ drastically from those of students in terms of their awareness of local programs. They obtained their information from many different sources, with about an equal frequency; that is, as a group, Professors do not seem to be receiving their information from a few, select persons or places. They obtained their information primarily from the local town paper and memo/notices. Undergraudate and Graduate students, on the other hand, ranked their use of the town paper as last or next to last. With the exception of two slight differences, the Professors attending a local environmental program used more means of communication than any of the other status categories. Not only is this a difference of magnitude, but also of order of importance of various sources. The rank-order correlation, for example between Professors and Juniors/ Seniors is only r= +.25.

National Level: Extensive use of all forms of communication can be seen in the data on Professors' means of communication on the national level. They used the local paper, a metropolitan paper, television, magazines, and memo/notices by much greater percentages than any other group evaluated. It is interesting to note, that while interaction with students does not rate as one of the highest sources of information for professors, interaction with students does rate higher than interaction with other persons or communicational media such as the student paper and radio.

Comparing the rank-ordering of the importance of sources of the Professors with that of the Others, should give one an indication of how

two groups of adults differ in their use of various media. The rank-order correlation between Professors and Others is r= -.09; in other words, there is no correlation between what one group uses for its most frequent source and what the other group uses. In general, the Professors use more of the local paper, more of a metropolitan paper, and more of magazines than the others. This striking difference may be accounted for my more education and presumably higher intelligence on the part of the Professors and their reading habits.

F. Others

Local Activities: Others (persons other than students or professors) attending the Earth-Day activities listed as their most frequent source of information, people who were not professors or students. The Others and the Professors made much greater usage of radio, television, and the local paper than did any group of students. Yet the rank-order correlation between Others and Professors is only +.26. Professors and Others differed chiefly in their rankings of university-related communication, e.g., memo/notices (sent out only within the University) and contact with professors and students. Such a finding lends some strength to the assumption that the questionnaire is a valid measuring instrument of sources of information.

National Level: On the national level the rank-order correlation between Professors and Others drops to -.09. Television was the primary means by which Earth Day on the national level was communicated to persons in the "Others" category.

Sources of Information: A Comparison between Local and National Activities

If correlations are computed between the rank-ordering of the frequency of use of the media for local information and the rank-ordering for national information, one can get an estimate of the degree to which the same sources are used for both national and local information. Below are the correlations between local and national sources for each of the status categories.

A. Freshmen/Sophomores

The rank-order correlation for Freshmen/Sophomores between local and national sources is r= +.51. This indicates that there is a slight correlation between the sources used most frequently for local news and those used most frequently for national news. As expected, television was used more for national information and memo/notices for local.

B. Juniors/Seniors

The rank-order correlation for Juniors/Seniors between local and

national sources is r= -.22. While there is no difference in the rank assigned the use of the local paper, television is listed as first for national and last ranking for local. As would be expected, the student paper was used more for local news about Earth Day than for national.

C. Graduate Students

The rank-order correlation for Graduate Students is r= +.60. This is fairly high and indicates perhaps that Graduate Students use the same types of sources for both local and national information. Upon inspecting the data, one finds television is used primarily for national information and used relatively little for local information about Earth Day. This finding is not surprising, because the local activities were not given much exposure frequently on television.

D. Professors

The rank-order correlation for Professors is r= +.35, which indicates that there were many sources which ranked differently in frequency depending on whether they were for national or local activities on Earth Day. As with the other groups of Ss, television was used more frequently for national information. Also there was a higher use of a metropolitan paper for national news.

E. Others

The rank-order correlation for Others is r= +.52. While most of the sources were used in the same order of frequency for local and national information on Earth Day, one surprising finding is that professors provided the second most frequent source about national Earth Day, yet next to last for local activities.

In general, it may be said that the data on comparisons of local and national sources of information serve as a validity check on the use of the questionnaire. The fact that television was frequently used (relatively speaking) for information about national Earth Day activities and relatively little used for local activities is in keeping with the fact that television did not carry much news about local activities. In conclusion to the section dealing with sources of information, it can be stated that there seems to be higher agreement in rankings of sources between status categories (e.g., between Freshmen and Seniors) than between the two categories of national and local informational sources, (i.e., questions 2 and 3 on the questionnaire).

Knowledge about Environmentally-related Topics: Quantity

An important part of this study was to see to what extent knowledge about events was related to other types of factors (e.g., involvement, status, etc). To attempt to measure the amount of knowledge of a

S in a brief amount of time is of course impossible. But a crude indicator was designed and its construct validity seems to indicate it is of some merit. Two questions were asked: the first one asked the S to name any specific local environmental problem he knew about. The second one asked him to name any person in the area of environmental problems he knew about. They shall be referred to in this paper as knowledge about "problems" and knowledge about "people," respectively.

A. Attenders vs. Non-Attenders

Problems: In this analysis, only the Ss (both Attenders and Non-Attenders) who were approached in their sociology class were used. This was done to minimize any effects of pre-selection of those who take sociology and to keep constant the mode of filling out the questionnaire (i.e., in a classroom). This sample will be indicated as Class Attenders (N=10) to distinguish them from those Ss sampled as they entered the various programs on Earth Day (N=137).

The Class Attenders gave a problem 80% of the time, while only 33% of the Non-Attenders did so ($\chi^2_y = 4.16$, $p<.05$).* While the quality of the response will not be discussed until a later section it can be seen that attenders have more knowledge about problems dealing with the environment than do non-attenders. One may speculate that it is another example of the informed attending informational programs.

Persons: Sixty percent of the Class Attenders (N=10) mentioned the name of a person, while only 12% of the non-attenders (N=24) did so. These differences are significant ($\chi^2_y = 4.10$, $p<.05$), and indicate that not only are attenders more knowledgeable with regard to problems of the environment but also with regard to persons in the field. The percentages for "persons" is lower, perhaps indicating that this question is more difficult than that asking the S to name a problem. The next section deals with the differences between those who attended one or more activities on Earth Day.

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* Yates' correction was applied to the chi-square value according to the following criteria: "Yates' correction is obligatory whenever the value of (frequency) in any cell of a fourfold table is 5 or less. However, it is becoming more and more the general practice to make the correction whenever df = 1. . . . Its effect is always to reduce the value of χ^2 and hence to . . . reduce its significance." from S. Diamond, Information and Error. NY: Basic Books, 1959, p. 154.

B. Attenders: Status Position Differences

Problems: The over-all χ^2 measuring the association between one's status (e.g., professor, graduate student, etc.) and amount of knowledge (reported a problem or not) is significant ($\chi^2 = 10.17$, $p<.05$). However, when the conservative χ^2_y individual comparisons are made between two status positions no significant differences are found. Professors and Students do not differ significantly in whether a response was or was not given to a problem ($\chi^2_y = <1$, n.s.); Professors and Graduate Students ($\chi^2_y = .10$, n.s.); Undergraduates and Graduate Students ($\chi^2_y = 3.44$, n.s.); Freshmen/Sophomores and Juniors/Seniors ($\chi^2_y = 1.42$, n.s.). See Table 3 for the percentages in each category who gave a problem response, (i.e., named a problem in the environment).

TABLE 3

Percentages of Subjects Giving a Problem Response

		N
Freshmen/Sophomores	39%	36
Juniors/Seniors	57	30
Graduate Students	78	14
Professors	74	23
Others	57	14

Persons: The over-all χ^2 indicates one's status is associated with mentioning a person involved in environmental problems ($\chi^2 = 27.87$, $p<.001$). Although there is no significant difference between the frequency of responses from Professors and from Graduate Students ($\chi^2_y = .86$, n.s.), nor between the responses from Freshmen/Sophomores and Juniors/Seniors ($\chi^2_y = 2.47$, n.s.), nor between Professors and Others ($\chi^2_y = .86$, n.s.), there are significant differences between Professors and all other Students ($\chi^2_y = 16.23$, $p<.001$) and between Undergraduates and Graduate Students ($\chi^2_y = 6.86$, $p<.01$). One may conclude that the older and more learned people on campus (Professors and Graduate Students) know significantly more people in the area of environmental problems than the undergraduates. But these same learned people do not know significantly more than other adults off campus (i.e., Others). Table 4 gives the percentages in each category who gave a name of a person.

TABLE 4

Percentages of Subjects Giving a Person Response

	%	N
Freshmen/Sophomores	17	36
Juniors/Seniors	33	30
Graduate Students	64	14
Professors	78	23
Others	64	14

Conclusion: The lack of association on individual status category comparisons with regard to response to problems contrasts with the significant association found with regard to response to people. It may be that since environmental problems permeate our daily existence, it should not be expected that knowledge of an environmental problem should differentiate people with high and low levels of overall information.

Knowledge about Environmentally-related Topics: Sophistication

The previous section's results were computed by taking into account just the quantity (response-no response) of the answer. It was thought that a measure of the specificity of the response would present a clearer picture of the complexity or simplicity of the response. Therefore, responses to the knowledge questions were rated according to the following system: an answer received an arbitrary 2 points if a specific problem (e.g., Finfeather Lake) or person (Dr. Ehrlich) was mentioned. An answer received 1 point if a general problem (e.g., water) or person (Sen. Blanchard) only minimally involved with environmental problems was mentioned. No answer or an answer which did not meet the two categories above was scored as 0 point. These ratings were then summed for each of the status categories and means were obtained. See Table 5.

TABLE 5

General Knowledge by Status Classification
Sophistication of Response *

	Mean Problem Rating	Mean Person Rating
Freshmen/Sophomore Attenders (N=36)	.58	.31
Freshmen/Sophomore Non-Attenders (N=13)	.38	.15
Juniors/Seniors Attenders (N=30)	.77	.57

TABLE 5 (Continued)

	Mean Problem Rating	Mean Person Rating
Juniors/Seniors Non-Attenders (N=11)	.54	.36
Graduate Students Attending (N=14)	1.14	1.29
Professors Attending (N=23)	1.09	1.52
Others Attending (N=14)	(.84)	(1.29)
No occupation (N=4)	1.50	2.00
Business (N=1)	1.00	2.00
Government Official (N=2)	.00	.00
Others (N=7)	.86	1.14

* Point Rating System:
Using the questions "Name any specific local environmental problem you know about" and "Name any person in the area of environmental problems you know about," answers were rated by two judges according to specificity and amount of knowledge according to the following scale:

2 points--a specific problem or person

1 point --a general problem or a person not directly associated with environmental problems

0 point --no answer or an answer which did not meet the two categories above

It can be seen from Table 5 that the Non-Attending students' rated knowledge of local environmental problems and persons is less than that of the Attending students. While not much can be said statistically using these means of an arbitrary scale with such small N's, one can see definite trends over groups and status positions and type of knowledge question.

Upper-classmen have more knowledge in both categories of persons and problems than lower-classmen within their attendence categories (e.g., comparing upper-classmen Attenders with lower-classmen Attenders). But upper-classmen Non-Attenders have almost the same ratings as those

for lower-classmen Attenders. It is as though participation leads to that type of knowledge usually gained through age.

In keeping with the trend, Graduate students have more specific knowledge in both areas than undergraduates, and Professors have approximately the same amount of problem knowledge and a bit more specific person knowledge than the Graduate students.

Despite the small numbers of those listing "no occupation," the very high ratings are consistent. Each of the four in that category were able to identify a specific person and three of the four were able to identify a specific problem. Most of these no occupation people may be assumed to be members of women's civic groups who have been very active in the area of environmental concerns and planned the Evening Program. In general, Others had a relatively high specific mean rating for persons in the area and a somewhat lower rating for problems (with the exception of two government officials who gave no responses to either question).

Involvement in Environmentally-related Groups

A. Class Attenders vs. Non-Attenders

Question #5 was asked to ascertain the degree of involvement of the Ss with various groups and activities which have dealt with environmental problems. The comparison between Class Attenders and Non-Attenders is informative. While 60% of the Attenders were involved in at least one activity, only 17% of the Non-Attenders had done anything in the last year concerning environmental problems. ($\chi^2_y = 4.47$, $p<.05$). It therefore appears that the involved persons get more involved.

B. Attenders: Knowledge and Involvement

Problem: The over-all χ^2 for five levels of involvement (none, 1 activity, 2, 3, 4-5-6) and for amount of knowledge or problems is not significant ($\chi^2 = 5.97$, n.s.). That is, the level of involvement is not significantly associated with one's amount of knowledge of problems in the area of environment.

Person: The over-all χ^2 for five levels of involvement (none, 1 activity, 2, 3, 4-5-6) is significantly related to whether or not a person is mentioned ($\chi^2 = 17.65$, $p<.005$). When the individual χ^2_y comparison is made between those who have never been involved with those who have been involved in only one activity, however, there is no significant association, ($\chi^2_y = 1.14$, n.s.). There is a significant difference in the responses of people who are involved only in one activity versus those involved in two ($\chi^2_y = 4.78$, $p<.05$). Those who are involved in one activity respond approximately 40% of the time

(i.e., name a person), while those who are involved in two activities respond 70% of the time. One may speculate that being involved in one activity may not indicate a new level of awareness. Perhaps with two or more involvements, a person may be said to be committed to the goals of a quality environment--and such a person would have more information.

Conclusion: While involvement level tends to be positively associated with amount of knowledge of people, it appears that is not associated with amount of knowledge of problems. This conclusion reinforces the conclusion of the section on status category differences in which it was found that while status positions were not associated with knowledge of problems, they were associated with knowledge of people. It therefore appears that knowledge of people may be a crucial correlate of people who are experts and learned in the field of environment and also of those who become involved in various activities. It is assumed that knowledge of people demands a different type of awareness.

C. Attenders: Status and Involvement

Amount: By distinguishing between those people who were involved in at least one activity and those involved in no activities, no significant association was found between the status positions and level of involvement. Of those who attended, 40% of the Freshmen/Sophomores and 40% of the Juniors/Seniors were involved in at least one activity ($\chi^2_y = .01$). Similarly, 43% of the Graduate Students were involved in at least one activity ($\chi^2_y = .01$).

While 74% of the Professors were involved in at least one activity, this type of involvement was not significantly different from the other status groups ($\chi^2_y = 2.36$, n.s.). Likewise, 71% of the Others were involved in at least one activity. Therefore, it appears that the range of at least one involvement across status categories is 40%-74% of those attending, with no significant differences in level of involvements between status categories. Participation or lack of participation, then, seems to be dependent on factors other than status.

It was found earlier that the Attenders were already involved and the Non-Attenders were not involved. This section on status and involvement leads one to conclude further that people of different status are involved to a relatively equal extent.

Type: While the previous section indicated no significant difference in range of involvement among people of different status positions, it would be informative to look at the type of the involvements.

When Freshmen/Sophomores are involved in environmentally-related activities, it is primarily with study groups and church organizations (14% and 11%). (See Table 2.) Juniors/Seniors are mainly involved in civic organizations (23%), study groups (13%), and individual activity such as letter

writing (13%). The emphasis on individual activity can also be seen as the most frequently reported for Graduate Students (21%), with an equally high percentage involved in study groups. Professors likewise rate highest on study groups (48%) and individual activity (43%) as do the Others (study groups--29%; individual activity --29%).

In looking at types of involvements, one is more impressed by the similarities than by the differences. Graduate Students, Professors, and Others all rate individual activities and study groups as constituting most of their previous involvement. Juniors/Seniors mention civic organizations, which is a little surprising for a group of students who call the campus their "home." The mentioning of church organizations for the Freshmen/Sophomores may be more an indication of home-town involvements as none of the other status groups mentions church involvements as being very important. Also if these under-classmen have not yet undertaken much individual activity (lowest in frequency), those who wished to become involved may have to do so through such existing organizations and institutions as the church.

Program Effects

A. Status

Since there were three different programs on Earth Day, it might provide some interesing information (as well as a validity check on the questionnaire) to look at status differences in attendance at the various programs. In general, status position was found to be associated with attendance at particular programs ($\chi^2 = 36.78$, $p<.001$). The main difference was between Others and Professors ($\chi^2 = 6.33$, $p<.05$), with 50% of the Professors attending campus activities and only 20% of the Others doing so. This was to be expected, since in fact Professors received more communication about campus programs and were already present on campus.

There did not seem to be any significant difference between Graduate Students and undergraduates ($\chi^2 = 3.78$, n.s.) with both groups poorly attending the evening session off campus (17% and 7%, respectively). There was also no significant difference between Freshmen/Sophomores and Juniors/Seniors ($\chi^2 = 2.68$, n.s.) with 17% from each group attending the evening session.

The main conclusion to be gained from this information is that of all the status groups, only the Professors attended campus activities and the evening program with equal frequency. The students attended mainly campus activities and Others (non-university affiliated) attended mainly the evening off-campus program. One may speculate that since the

Questionnaire (continued)

radio
TV
magazine
memo/notice
person: professor
student
other
all of the above

Your occupation: (fill in blanks if needed)

professor department_____
student year_____
department_____
business
no occupation
government official
other_____

In the last year have you been involved in any of the following which have dealt with environmental problems?

a study group
a political organization
a civic organization
a church organization
individual activity such as letter writing of lecturing
none of the above
other_____

Name any specific local environmental problem you know about:

Name any person in the area of environmental problems you know about: