COMMUNICATION RESEARCH TRENDS

Communication and The Environment

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The greatest problems facing humankind in the twenty-first century--in the moral order and the practical order, as well--may lie in the field of environment and ecology. Failure to recognize the damage done by the wrong kinds of development already has seriously harmed the quality of life of people in several countries and threatens those in many more.

The mass communications media have dealt with environmental questions on and off for years, with little discernible effect. The Rio Summit of 1992 inspired a feeling of euphoria that, finally, a worldwide consensus had been reached and concerted action taken. But after Rio media coverage returned quickly to normal and membership in at least one environmental organization actually declined.

What are the pitfalls in the path of effective communication about the environment? How can the mass media tailor their handling of environmental issues to provide the information, rationale and motivation necessary if we are to meet the challenge?

Since it impacts so directly on every human being and is emerging as such a central moral issue, environmental communication is an especially appropriate topic for *Communication Research Trends* to address.

--The Editor

Introduction

Craig L. LaMay and Everette E. Dennis (Eds.). *Media and the Environment*. Washington DC: Island Press, 1992.

The environment as a social problem has gained a secure place on the public and media agenda in recent decades. However, it is still a problematic area in journalism. Journalists traditionally have had as their central interest conflicts between people. Now they must find a way to cope with a new awareness of another kind of conflict: people versus nature.

In LaMay and Dennis (1992) several authors point out the difficulties of covering news about the environment.

The interaction between media, society and science in environmental news is itself a problem. Expertise in all three is required for adequate coverage, and often has been lacking. In the first part of the book the general weaknesses of environmental journalism are pointed out and suggestions are made to help journalists improve it.

The second part discusses particular aspects of environmental reporting. Journalists must make choices which involve critical appraisal of their own role and of the way they do their job in this new type of journalism. Certain recurrent defects should be remedied, such as imbalances between coverage of local and global issues and the lack of media attention to problems of the poor and of minority communities.

In his essay in the next section of the book Herman Daly stresses the need for journalists to question the myth of economic growth as a measure of development. Serious distortions have arisen from placing too much stress on such deceptively facile indices of development, while others, equally or more important to a decent quality of life are ignored, as other authors in that section also testify.

The fourth part of the book is devoted to the role of the media according to three international views of environmental change. This section examines how environmental movements and environmental journalism emerged in different parts of the world, often galvanized to action by local events. Judith Vesarhelyi, for example, describes how a dam project in Hungary resulted in the emergence of an environmental movement and how this movement used different media to mobilise the people.

The authors in the LeMay and Dennis book illustrate the many sides of media coverage of the environment. In this issue of *Communication Research Trends* we try to suggest a broad outline of these many aspects.

Historically, environmental reporting had been sporadic at best until recently, and usually sparked only by critical local issues. In the United States, President Theodore Roosevelt was able to generate interest in conservation for a few years at the turn of the century, but the attention of the public and the press slackened until the dust storms of the 1930s generated another spurt of concern. Recently, however, multiplying ecological problems have attracted more systematic journalistic attention, aided perhaps by space exploration which has alerted the public to the loneliness and fragility of our small blue and green planet.

An increasing number of books have discussed problems of environmental journalism. Many of these problems stem from the scientific and technical nature of environmental issues. But only communicating technical aspects of environmental risk to the public is not sufficient. Different approaches are, and should be, taken. Finding the right rhetorical approach to environmental communication is especially important, and some authors have even returned to Aristotle in their search for models to deal with it. In the last section we discuss studies on the impact of environmental messages and the role of the media in raising public awareness.

Like any survey, this issue of *Trends* can only touch the high points. One region insufficiently treated is ex-Communist countries, where only limited research has been done, and news reporting has remained sporadic despite burgeoning environmental threats. Despite such limitations, we hope that this issue can contribute to the development of a global awareness of the importance of environmental communication, and of the need for further research to help improve it.

I. The Media and the Construction of the Environment as a Social Problem

Anders Hansen. 'The Media and the Social Construction of the Environment'. *Media, Culture and Society*, Vol. 13, No. 4 (1991), pp. 443-458.

A. Clay Schoenfeld, Robert F. Meier and Robert J. Griffin. 'Constructing a Social Problem: The Press and the Environment'. *Social Problems*, Vol. 27, No. 1 (1979), pp. 38-61.

Fluctuations in Press Interest

Over the last few decades public interest in environmental problems has followed a certain trend. The environment as an issue developed at the beginning of the 1960s. After the 60s there was a peak in environmental awareness at the beginning of the 70s. Towards the 80s surveys showed a drop in public interest, but at the end of the 80s interest revived (Dunlap & Scarce, 1991). The media coverage of environmental problems has followed much the same trend (Strodthoff et al., 1985; Love, 1990).

The U.S. daily press seems not to have taken the initiative to provide a platform for the early environmental claim-makers. Other forms of communication seemed to play a more constructive role in bringing the environment to social awareness.

Prerequisites for Press Interest

Schoenfeld and his colleagues (1979) try to answer the question: why was the press in the U.S. so late in adopting the terms used by the early claim-makers?

They base their answers on a review of studies concerning particular problems of environmental reporting: for instance, understanding the concept 'environment'. Especially during the time the term environment emerged as an issue, journalists had difficulties in writing about the connections among the environment, the economy and energy. 'This was an era of a journalism of uncertainty' (p.42).

Schoenfeld et al. identify five prerequisites to determine the extent of press involvement in the construction of a social problem. These five prerequisites aim to clarify 'why the daily press was more thermometer than barometer' (p.49). First, the claim-makers have to provide journalists with stories about the problem that fit into newsroom values. The environment as a story did not fit news values. 'It simply took time for holistic environmentalism to acquire news value in the U.S. city rooms' (p.50). The environment also had the disadvantage of not fitting into the daily rhythm of the press.

Second, the problem should correspond with an already conventional news beat. The usual environmental story was too broad to fit into a conventional beat. Consequently, environmental stories had no distinct location in the newsroom.

The third prerequisite is that the early claim-makers and the reporters needed to have more class consonance, especially in the use of language. The difference in the way the early claim-makers and the reporters worked was too large. This 'prevented reporters from more accurately perceiving the broad scope and deep significance of what the early claim-makers were claiming was so important' (p.54).

Fourth, participant-journalists dealing with a new area have to infiltrate the newsroom to have a significant effect. For environmental issues that did not happen till the beginning of the 70's.

Finally, the editors had to cease looking at environmental stories as an economic threat. The environmental movement was, and maybe still is, regarded as anti-business and anti-capitalist. Publishers were reluctant to run stories about the environment because they were too controversial.

Sustaining Interest

Although many studies have looked at particular problems the environment had in becoming its own news 'beat', most of these problems have since been resolved. Hansen points out that now most newspapers have an environmental reporter, and the environment has become a news-beat. The coverage of the greenhouse effect and the ozone-layer seems to contradict the view that environmental stories have no news value because of the time-scale in which they occur.

Hansen's main argument is to turn to a constructivist framework that looks beyond the media and does not have a linear notion of the communication process. He stresses the need for the constructivist framework to demonstrate the importance of cultural resonances in giving one issue more attention than another. A constructivist framework focuses on social problems rather than on the media, and that permits a recognition of the interactive and parallel processes in which the perception of the environment as a social problem has grown.

A 'transmission' view of the communication process, as messages simply 'transported' from sender to receiver, in the construction of the

environment as a social problem would neglect the interactive nature of meaning construction. Burgess (1990) describes this interactivity clearly: 'environmental meanings and values are produced and consumed in a complex circuit of cultural forms which are continually being transformed by the activities of all participants in the process' (p.157).

Many have tried to find a link between media coverage and public awareness about environmental problems (see, for example, Atwater et al. 1985). Hansen holds that attempts to relate 'two macro-categories which, because of their sheer macro-ness, obscure more than they reveal'(p.445), are fruitless. Their intention is to find media influence on public opinion and that is what they will find.

The Schoenfeld article, although it emphasizes a constructivist perspective, still maintains the notion of a linear communication process. Hansen emphasizes that although the 'claims-making about a social problem may start in a particular forum (notably, in the case of environmental issues, in the science forum) the growth and the inflection of such a problem takes place through complex interaction, involving influence and feedback processes, between a number of key fora' (p.448).

The Role of Authority

Both Hansen and Schoenfeld et al. mention the fact that the media have a tendency to follow the 'authority' fora: politics and science. Environmental groups have complex relations with reporters and the media as a whole, partly because of the fact they are an advocacy group and therefore are looked upon with suspicion. An issue needs legitimation by an authority before it gets any media attention.

Whereas this was especially the case in the early phase, several recent studies (for example Einsiedel, 1990; Greenberg et al., 1989; Hansen, 1990a) show that 'governmental' sources are still mentioned the most in media coverage. So 'continued media coverage and the wider elaboration of certain environmental problems hinge crucially on the extent to which they become part of, articulated through, the agendas of these "established fora"' (Hansen 1991, p.451).

Culture and Ideology

Hansen concludes that we need to step back from the media's point of view and take cultural givens into account to answer the question: Why do the careers of different environmental problems differ? In order to gain prominence an issue has to be cast in terms which resonate with existing and widely held cultural concepts. For instance, in reporting the Chernobyl disaster the American media reflected Cold War ideology (Luke, 1987). The same can be said of the Bhopal disaster (Wilkins 1987). The cultural givens here are the all-too-common Western notion that Third World countries can not handle Western technologies. Other cultural appeals are less reprehensible and less ideological, but they are necessary links between the 'bare facts' of an event and reportage that will interest its audience. Not all environmental stories have these imaginary resonances and therefore suffer a disadvantage in competition with other stories. 'But it is precisely the extent to which they can be anchored in and made to activate existing chains of cultural meaning which helps determine whether they become part of media coverage and wider social elaboration' (Hansen 1991, p.453).

II. The Production of Environmental News

Dorothy Nelkin. *Selling Science: How the Press Covers Science and Technology*. New York: W.H. Freeman and Company, 1987.

Sharon M. Friedman. 'Environmental Reporting: Problem Child of the Media'. *Environment*, Vol. 25, No. 19 (1983), pp. 24-29.

Persisting Defects in Coverage

Environmental stories have much more access to the media nowadays. Several studies indicate that the quantity of environmental reports has remained generally constant over the last few years. The quality of the coverage

however shows several defects (Lowe and Morrison 1984; Dahlan 1989; Einsiedel 1990; Anderson 1991; and Won 1992). The coverage remains mainly within the traditional journalistic approach. The reports focus on events and reactions to those events, and the situation is defined by 'legitimate' sources. Friedman (1990) argues that an important problem for the quality of environmental reporting is the complexity of the issues.

Journalism and Science

Environmental issues often have a complex scientific nature. This means that science and scientists play an important role in the construction of environmental stories. In constructing an environmental story, media journalists have to translate the complex scientific information into lay discourse in order to make the issues meaningful for the public. Both groups, journalists and scientists, work in their own discourses. Nelkin (1987) examines the two different cultures and the tension between them. She describes the culture of science journalism and identifies the inexperience of the journalists as a significant factor in the problems they encounter.

Journalists are not usually trained as scientists, so their transmission of scientific information can be problematic (see Singer, 1990). Errors arise in the translation of technical terms into lay language. Other problems derive from the lack of knowledge of journalists concerning scientific procedures. This makes it difficult to recognise what results mean and which results are important.

Another aspect of the complexity is the uncertainty of scientific information. For many issues there is no consensus among scientists. Journalists have to cope with conflicting information that makes it even more difficult to assess what is going on.   Because journalists have trouble grasping the complexity of the issues, they tend to rely heavily on press releases.

Friedman (1983) explores the problems of environmental reporting. She recognises three kinds of uncertainty in it. First is the uncertainty that stems from lack of agreement or even the lack of knowledge among scientists;   second, the uncertainty that is inherent in the scientific process, namely the tentative character of scientific knowledge; and

third, the uncertainty of how to treat the issues from a journalistic point of view. Other factors that contribute to the complexity, according to Friedman, are the slow development of environmental issues and the many aspects it manifests (technical, financial, social, political, etc.).

Journalistic Practice

The problems described above are inherent in environmental information, arising chiefly from its complexity and uncertainty. Journalistic practice on the other hand poses some constraints on reporting as well.

In the practice of journalism one sees an effort to meet the norm of objectivity. According to Nelkin this norm has been copied from science. Killingsworth and Palmer (1992) argue that the norm of objectivity in journalism is hard to accomplish because journalists depend on secondhand information and thus on sources, which endangers objectivity.

Although it is now commonly held that objectivity is unattainable, journalists still try to approach the ideal with unbiased reporting. Nelkin stresses that the idea that objectivity can be approached by presenting balanced views is trivial in science, because in science 'not balance, but empirical verification of opposing views' counts (1987, p.96).

Another value with a profound influence on the way environmental issues are reported is the predominant hard news format. Environmental problems are dramatised and taken out of context because of the emphasis on fast breaking disasters (Friedman, 1983).

Apart from these abstract values, there are also concrete constraints in the daily routine of journalism. Several studies indicate time as an important obstacle to sufficient environmental reporting (Nelkin, 1987; Friedman, 1983; Einsiedel, 1990). Journalists face the daily rhythm of the press, so they have little time to investigate complex stories. Therefore they reduce the number of sources, mainly rely on press releases and focus on 'breaking news'.

Editors have a considerable influence on the news. Journalists anticipate what the editor desires, to make sure their work gets published. Editors have in mind a certain perception of what the audience wants. They

think the public wants to read how events will influence their own lives, reading analytical reports. Journalists take the presumed wishes of the audience into account. This has resulted in a focus on drama and controversy and a short news format to keep the readers attention (Nelkin, 1987).

The regard for the wishes of the audience springs from an economic concern. Newspapers, especially, depend on two sources of income, the people who buy the newspaper and the advertisers. Editors will avoid aggressive environmental stories that might offend advertisers (Friedman,1983). In reporting local environmental issues these economic pressures of audience and advertisers play a bigger role, because the interests at stake are much closer to home. This results in 'Afganistanism', the tendency to report on distant issues and to minimise the seriousness of local issues (see also Friedman, 1990). In the case of television the strong influence of viewer ratings for advertisements makes the economic pressure even higher, resulting in uncritical, entertaining environmental coverage (Nelkin,1987).

III. Sources

Philip Lowe and David Morrison. 'Bad News or Good News: Environmental Politics and the Mass Media', in *The Sociological Review*, Vol. 32, No. 1 (1984), pp. 75-90.

Kandice L. Salomone, Michael R. Greenberg, Peter M. Sandman and David B. Sachsman. 'A Question of Quality: How Journalists and News Sources Evaluate Coverage of Environmental Risk'. *Journal of Communication*, Vol. 40, No. 4 (1990), pp. 117-130.

Dependence on Sources
As mentioned previously, journalists depend greatly on sources in environmental reporting. They use various groups to get information. Greenberg et al. (1989) conducted a study of environmental risk coverage on television news in which they analyzed the distribution of the sources from which news was obtained. The main sources were ordinary citizen bystanders, government and corporate officials. Experts and environmental advocates were the least cited.

Hansen (1990b) compares the coverage of the environment in British and Danish television news. Looking at the 'primary definers' of environmental issues, he found that public authorities and government representatives acted as primary definers in 44% of the cases. Scientists or experts, management representatives and industrial labourers each appeared as primary definers in 10% or more cases. The least used as primary definers were opposition groups, individuals and representatives of interest groups and others. Hansen concludes that 'environmental issues coverage is remarkably similar to other, more mainstream types of coverage, in the sense that environmental issues and problems, in the television news-

discourse, are defined largely by and through established and "legitimate" social institutions. The potentially alternative definitions that could be expected to emerge largely through environmental pressure groups are given only relatively small platform in the news-discourse' (p.48).

Environmental Pressure Groups as Sources
Lowe and Morrison (1984) argue that the environment is an 'alternative case', and that it may be a case in which news does not serve as a preserver of the existing social order. Environmental problems are in essence threats to capitalism and industrialism. Environmental disasters attract media attention because the media focus on the negative and dramatic. The media therefore allow environmental advocacy groups to present their case to the public. In doing this, they offer the possibility of presenting an alternative ideology. They continue the argument by saying that although the environment is very political, it is not seen as such. Their non-partisan character makes it easier for environmental claim-makers to win the sympathy of journalists. Lowe and Morrison conclude that the media have been

rather supportive of the environmentalists. As long as the environmental case remains non-partisan, and the environmental groups non-radical, the media will continue their support.

Hansen (1990c) doubts whether this non-partisan image of the environment still holds, now that mainstream politics has assimilated the environmental issue. The media now turn more and more to the normal routine of using 'established' sources instead of groups with alternative cases. This shift from the environmental advocates as source to the state as source is also mentioned by Minke (1990). Anderson (1991) also discusses the politicization of the environment, and she expects that this development will go on.

In order to keep the environment on the agenda, the environmental pressure groups have professionalised their media relations (Lowe and Morrison, 1984; Hansen, 1990c; Anderson 1991). Anderson (1991) describes how environmental groups tried, and still try, to manage the media agenda. Pressure groups used to stage events to obtain attention. This method is no longer useful because it has lost its originality. They now turn to more professional methods, like supplying footage and press releases and lobbying. Despite this professionalisation they are not seen as very reliable sources. Killingsworth and Palmer (1992) argue that their 'subversive' image of the past still influences the way the environmental groups are perceived. Anderson therefore claims that environmental pressure groups still need to give top priority to media relations.

Scientists as Sources
Nelkin (1987) describes the relation between science and the media. Both feel responsible for informing the public and try to influence policy decisions. They are interdependent to achieve these goals, but their approaches differ. The problems journalists encounter in dealing with scientific information already have been discussed. The scientists are facing different dilemmas in the interaction between the media and science.

Their relation with the press is ambivalent. On one hand, they seek media attention to get support for their work. On the other hand, they are anxious about publicity, because it might harm their reputation or their work.

Therefore they actively try to manage the media as other interest groups do, not only by increasingly promoting their work through public relations but also by controlling the input of information. The latter means that scientists develop strategies to keep information within the scientific community, for instance by discouraging each other from talking to the press or demanding a preview of the articles.

Hansen and Dickinson (1992) conducted a content analysis of science coverage and a survey of scientist sources. They found that science has not been very successful in setting the media agenda. Most of the time scientists are merely used for background information, and they can only initiate coverage on issues that take place within a relevant context for the public.

Cold Facts vs. Sensationalism
As mentioned before, much criticism has been levied against environmental reporting. One complaint is that the media have magnified and sensationalised environmental risk. Salomone and her co-authors (1990) examined criticisms by different news sources and journalists concerning environmental reporting. More than 200 stories were evaluated by journalists, representatives of industry, government and environmental pressure groups and scientists. Journalists thought the most important element of a quality story was risk information. Further they preferred alarming stories with reference to seriousness of health risk over reassuring stories. Industry and government representatives favoured accurate and reassuring articles. Environmental advocates and scientists gave the highest ratings to stories that were accurate and included risk information. Thus, all the news sources valued accuracy as an important element of a quality story. Journalists gave low ratings to this element. Salomone et al. think this might be because accuracy is a basic principal of journalism and is therefore not included in journalists' judgement of a story. Another surprising result was that environmental advocates favoured risk information over alarming the public. The authors conclude that 'the findings of this research suggest that there is a deeper desire among traditional

news sources to support the status quo than there is among journalists and advocates to undermine it' (p.128).

IV. Environmental Reporting in the Third World

Third World Dilemma

Some important issues concerning the global environmental problem are linked to the Third World. Poverty correlates with overpopulation, degradation of land and deforestation. The Third World therefore has to face a dilemma: should it give priority to development or to environmental protection? This hampers the work of journalists. Friedman and Friedman (1989) argue that although Third World journalists encounter some of the same constraints as Western journalists, they also experience specific problems.

They start describing the situation by analyzing the difference in role perception of journalists in the West and in Asia. Asian journalists are supposed to support national development, which makes it more difficult to write about environmental implications of this development. On the other hand, Asian journalists are mainly seen as educators and not mere informers. Their role in creating environmental awareness and mobilising public participation is widely acknowledged.

Pressures

Although many journalists are willing to take up the task of creating environmental awareness, there are still some obstacles to overcome. One is censorship. In many Asian countries both electronic and print media fall under government control. In some countries state censorship is permitted by law. The state often has financial control over the media, either as owner or as major advertiser. There is also financial pressure from industry because of the conflict between commercial interests and environmental issues. Ninan

(1990) describes how this governmental and financial pressure hindered environmental coverage in India. Friedman and Friedman found that sometimes censorship is even enforced by violence, which makes journalists very careful of what they write.

Another difficulty that Asian journalists have to face is the limited space available in the media. Because Asian newspapers have many fewer pages than is typical in North America or Europe, it is difficult to get stories in. With the environment low on the priority list of the editors, this is a serious problem for environmental reporters. A study of Indian television coverage of the environment shows a similar trend (Ninan, 1990).

Friedman and Friedman continue by discussing problems that are also prominent in Western journalism, such as lack of journalistic and scientific training. Lack of knowledge and skills results in inadequate reporting. This so annoys officials and scientists that it is getting more and more difficult to find sources. Printed sources, such as reports and periodicals, for background information are also scarcely available. Friedman and Friedman argue that journalists rely mostly on government sources because they are available and have credibility. But Won (1992) states that people in South Korea mistrust the news because of this reliance on government sources.

Friedman and Friedman think improvement can be achieved not only by better training but also by the formation of networks of environmental journalists where they can help each other. This need for networks is also stressed by Shrestha (1990) and Stuart and Fernandez (1992).

V. Communicating Environmental Risks

Risk Communication: A New Era

Risk communication is a relatively new research area. It was not until the mid-80s that study of the information exchange about environmental and health risks emerged as an important research object. Especially in the case of fast-breaking environmental disasters, people want to know what the risks are. Several studies have analyzed the quality of the media coverage on risks of the Chernobyl accident (Friedman et al., 1987; Rubin, 1987; Nohrstedt, 1991).

Risk communication is often seen as teaching the ignorant public about certain hazards. It is seen as the one-way flow of information from the 'knowing' to the 'unknowing'. In this view, risk communication can be made successful by properly translating expert knowledge into laypeople's language. In Wilkins and Patterson (1991) this passive perception of the audience is criticised.

They stress that public rationality has a role to play in risk communication. There is more to a risk story than technical knowledge. Media coverage of hazards should incorporate the public perception of risk.

Hazards always take place in a given cultural context and trigger emotional responses. Because the public is directly involved and must make decisions, people actively seek channels of information. The public thus defines what is going on for itself. This construction of reality is often seen as 'irrational', but according to Friedman (in Wilkins and Patterson, 1991) it is, in fact, a public rationality, just as important as expert rationality.

In the second part of the book several authors examine the media coverage of various risks, in order to show that this coverage is shaped by journalistic routines and the image of science, as addressed in an earlier section on the production of environmental news. They emphasize that journalists must try to alter the way they work by using different approaches.

The last section of the book discusses the information dilemmas--for journalists, policy makers and the public--involved in risk communication. This includes not only questions about what to tell and what to keep secret, but also how to get attention and what to give attention to. The outcome of these dilemmas depends upon the cultural and political climate in which decisions are made.

Differing Constructions of 'Risk'

Krimsky and Plough (1988) approach risk communication in a similar way. They view risk as a problem taking place in a complex sociopolitical web in which different perceptions of risk problems emerge. As in Wilkins and Patterson, they propose a broad definition of risk communication which includes both the conventional meaning of risk (concerned with the transmission of technical, scientific information) and its symbolic meaning. By using this broad definition they include any form of communication concerning risk in their analysis.

Krimsky and Plough analyse five environmental risk events. In each case they examine the historical and regulatory background, the risk assessment as constructed by experts, different forms of communication that occurred concerning the risk, and the lessons that can be learned from the case.

First, they found that risk communication indeed is like a 'tangled web', with many different risk communicators defining the situation in different ways and through different channels at the same time. Second, they conclude that one cannot predict which of these communicators will dominate as a source. They found that experts are only one of many possible sources. The third important conclusion from the cases is that the community context has a profound influence on the public response to the risk situation. Fourth, they found that the media dramatise and simplify the events by emphasising the existing conflicts and uncertainties.

Finally, the cases show that there are two models, technical and cultural, by which to understand risk information. These models resemble what Wilkins and Patterson call expert and public rationality.

Krimsky and Plough argue that they should not be seen as competitive rationalities. They

argue that technical rationality is part of cultural rationality. To communicate risk successfully, a bridge is needed between the two models.

VI. Rhetoric in Environmental Writings

M. Jimmie Killingsworth and Jacqueline S. Palmer. *Ecospeak: Rhetoric and Environmental Politics in America*. Carbondale: Southern Illinois University Press, 1992.

Judy Z. Segal. 'The Structure of Advocacy: A Study of Environmental Rhetoric'. *Canadian Journal of Communication*, Vol. 16, Nos. 3/4 (1991), pp. 409-415.

The Aristotelian Model

Judy Segal examines the values within environmental rhetoric generally, in order to show that in a way its own rhetoric undermines environmental advocacy. To support her claim she uses Aristotle's classification of artistic appeals: *logos* (rationale), *ethos* (credibility of the speaker) and *pathos* (emotions in the audience).

Much of the logos of environmental argument depends on future facts. This means that much of the argument is hypothetical ('if we don't do this, this and that will happen'). This makes it difficult to convince people of the seriousness of the case. Because we cannot prove things in the future, evidence from the present can be used to illustrate the likelihood of future facts, but this can be problematic as well. First, the evidence is not always perceptible and second, it is not always clear what the evidence indicates. Evidence cited in the media can mislead due to simplification or the writer's point of view. Or evidence can mislead because spokespersons create a false sense of security. Examples of these problems can be found in studies of Farrell and Goodnight (1981) and Young and Launer (1991).

The argument from ethos matters too, because this can strengthen or weaken the logos argument. In the case of the environment, speakers are often scientists or others who create an 'ethos of science' by using scientific language. Environmental advocates are often associated with 'marginal' groups with little credibility and this can weaken the effect of the argument of logos.

The argument of pathos at the same time must find a balance between despair and hope. People must be convinced of the seriousness of the case, but positive advice must accompany the negative appeals.

Metaphors

Segal also spots the use of metaphors as a weakness of the environmental argument. Metaphors can be useful because they describe the unknown in terms of the known. This makes it easier for the audience to identify with the problem and thereby enlarges the chance that the argument will appeal to them. Metaphors used in environmental rhetoric are, for example, metaphors of mastery ('we will 'attack' the problem') or finance ('we have to 'invest' in the future'). But the strength of the argument, the grounding in the language and beliefs of the audience, is also its weakness. Metaphors speak in values of the past, the very values that environmental rhetoric wishes to change. According to Segal, rhetorical analysis proposes to determine what makes arguments appealing or not.

In this light we can view the work of M. Jimmie Killingsworth and Jacqueline S. Palmer, who conducted an extensive rhetorical analysis of the discourse of various participants in the environmental debate.

A Three-Sided Problem

The environmental dilemma is a complex problem, not only because of the issues involved, but also because of the complicated origin of the debate. Killingsworth and Palmer argue that the problem has three sides to it. First of all there is a difference in ethical grounds between the involved participants. This ethical divergence emerges from the second problem, which is epistemological: people's alienation from nature. People have different views of their relationship with nature. Some people may look upon nature as a resource for the satisfaction of human needs, while others may see human beings as a disturbance in the delicate ecosystem. This means that writers and speakers for the

environmental cause often must change the reader's ethical attitudes as well as the way the reader views the relation between human beings and nature. Killingsworth and Palmer argue, thirdly, that the problem of these writers and speakers involves a problem of discourse, in addition to the ethical and epistemological questions.

Differing Sources of Differing Solutions

Distinct social groups participate in environmental issues, and they all propose different solutions to the crisis. These solutions stem from distinct sources. Moreover, groups use different kinds of information and have different goals. They use various methods, values, and languages in the construction of their answers to the environmental dilemma. An example of how a different view of nature is reflected in the way people approach environmental problems in their writings occurs in a study by Patrick Daley and Dan O'Neill (1991). Daley and O'Neill compared the coverage of the *Exxon Valdez* oil spill in the mainstream press with the Native Alaskan minority press. The narrative in the native newspaper is profoundly different from the narrative used by the mainstream newspapers. Indians see themselves as part of nature and write about it in that way, whereas the mainstream narrative sees nature as something to be exploited in the industrial system.

In recent years ethnographic approaches to studying the differing value perspectives of different ethnic groups have been given a powerful tool in the form of portable, easy-to-use video equipment. One of the most ambitious of these projects which is directly related to the environment is being conducted in Lesotho by the Institute for Social and Economic Research of the University of Durban-Westville, Durban, South Africa (Quinlan 1993). A community video approach, based on the critical pedagogy of Paulo Freire (Freire 1971 and 1985, and Freire and Shor 1987) is being used 'to promote communication of Basotho herders', stock owners' and the researchers' ecological knowledge, and to improve each other's understanding of the ecology of livestock management in an alpine environment' (Quinlan 1993).

The distinct views from the different participants in the environmental debate come together in the public sphere. Here writers and speakers must try to forge links between distinct social groups to create the conditions for social action. Rhetorical 'appeals' by means of identification must try to dissolve barriers between groups.

'Ecospeak' as Problem

In the case of the environment, writers have failed to fashion these rhetorical and communicative links. This failure has resulted in a hardening of the division of environmental politics into two sides: environmentalism versus developmentalism. This is what Killingsworth and Palmer call 'Ecospeak'.

Ecospeak, they say, has 'emerged as a makeshift discourse for defining novel positions in public debate' (1992, p.8). Writers aim to facilitate identification by using 'old' language and disputes to describe new problems. But by doing this they strengthen the existing differences instead of breaking them, and this blocks the possibilities of cooperation for social change.

According to Killingsworth and Palmer rhetorical analysis can play a role in diminishing the power of ecospeak by identifying different discourses. By so shading the crude dichotomy of ecospeak, possible identifications or hidden conflicts can be revealed. Killingsworth and Palmer analyzed the works by authors representing various ethical and epistemological perspectives on environmental issues. The analysis included works of representatives of environmental movements, scientists, media institutions and economists.

This analysis revealed a great variety of points of view. All the authors had to struggle to find a language that would state their position and that at the same time would appeal to other publics.

Positive Thinking Needed

As Segal has said, positive advice about what we can do to change the situation should accompany the negative message of environmental advocates. This type of communication is necessary to achieve social action. Although many of the works described have contributed to the raising of public

awareness, none of them has succeeded in developing an environmental action program. Science, for instance, has not proposed problem-solving; the mass media follow events instead of ideas or historical and future conditions; and environmental action groups do not offer a set of 'sustainable' actions that ordinary people can employ in their daily lives.

'Sustainability'
Killingsworth and Palmer believe that the answer lies in the concept of 'sustainability', which globally orientated economists, like Herman Daly and Lester Brown introduced. They outline a set of actions to create a new

economy, based on sustainable development and call for a revision of liberalism towards a social ecology. The concept of sustainability might be able to break the deadlock between developmentalism and environmentalism. In the work of Lester Brown and his colleagues, especially the 'State of the World' series (1988, 1989 and 1990), Killingsworth and Palmer see the model for a future discourse. These writings are highly accessible, well organised and easy and fast to read or scan. The content is not radical but is based on factual information with an optimistic tone. This does not entirely solve the problem. There is still a gap to bridge between popular and scientific discourse.

VII. Raising Public Awareness

Riley E. Dunlap and Rik Scarce. 'Poll Trends: Environmental Problems and Protection'. *Public Opinion Quarterly*, Vol. 55, No. 4 (1991), pp. 651-672.

John Abraham, Ian Bride and Colin Lacey. 'Can the Media Educate About the Environment?' *Media Development*, Vol. 37, No. 2 (1990), pp. 6-8.

As noted in the first section, public environmental concern follows a certain trend. The concern developed quickly in the 1960s. The rapid pace of its development led Erskine (1972, p.120, as cited in Dunlap and Scarce, 1991, p.651) to say that the emergence of environmental concern was a 'miracle of public opinion.' Even now the environment still ranks high on the public agenda. The persistence of the public environmental concern 'can be labelled as a "second miracle"' of public opinion' (p.652).

Dunlap and Scarce continue by noting that although the environment has become a salient problem in America in the last few decades, in comparison with other problems it rarely counts as the major problem facing the U.S.. The strength of environmental concern is hard to measure. Surveys looked to see if people voted for candidates with a strong environmental program, but results did not provide any clear data as to the strength of the issue.

Although the authors mention that the surveys find a positive effect in the increasing individual actions on behalf of environmental protection, the problem with findings from

polls is that they measure reported and not observed behaviour.

In fact, another study by Dunlap (1991) shows that the public's actual behaviour has not changed much over the years. Respondents indicated that they feel unattached and out of control because of the breadth of the problem. They indicated that they need more information about how to make an individual change. Dunlap's (1987) conclusion was much the same when he mentioned that the trend in public concern is good and bad news: the concern persisted, but it does not affect political action.

The Media's Role
These studies do not show what role the media had or can have in raising environmental awareness. Abraham et al. (1990) examine the role that media can play in environmental education. They try to define the most suitable regulatory framework for this educational role. There are three types of motivation for media production: the bandwagon approach (depending on market forces), the public educator approach (informing the public for the sake of personal and societal development)

and the critical public educator approach (in which a public educator, tries to involve people in evaluating the issue). Although the bandwagon approach moves the public to take an interest in environmental issues, it fails as a starting point for an educational role of the media, because the primary motivation is not an educational one. The critical public educator approach is the one most dedicated to the educational function, but it has not yet succeeded in reaching a large public. Abraham and his collaborators think that in order to achieve a larger public, it can be useful to lessen the distinction between entertainment and education. 'Why should education not be entertaining and entertainment not educative?' (p.7).

Abraham et al. argue that it is necessary to democratise the media to allow the critical public educator approach to exercise its goal of involving the public, but they think this is unlikely to happen. They stress the need to ease the task of the critical public educator by creating a 'more open debate about the criteria for selecting the content of newspapers and the scheduling and content of broadcasting' (p.8).

Audience Studies

Ronald E. Ostman and Jill L. Parker. 'Impact of Education, Age, Newspapers, and Television on Environmental Knowledge, Concerns and Behaviors'. *The Journal of Environmental Education*, Vol. 19, No. 1 (1987), pp. 3-9.

Christine C. Brothers, Rosanne W. Fortner and Victor J. Mayer. 'The Impact of Television News on Public Environmental Knowledge'. *The Journal of Environmental Education*, Vol. 22, No. 4 (1991), pp. 22-29.

Jacqueline Burgess, Carolyn Harrison and Paul Maiteny. 'Contested Meanings: The Consumption of News About Nature Conservation'. *Media, Culture and Society*, Vol. 13, No. 4 (1991), pp.499-519.

Ostman & Parker (1987) evaluate the effect of environmental news on people's level of environmental awareness, knowledge and behaviour, and the influences of age, education and media use. They conducted a random telephone survey of adults in Ithaca, NY. Results showed that as people were more aware of environmental issues they had more environmental knowledge and reported subsequent behaviours. Age had no connection with the effect of environmental news, but education and the use of newspapers were good predictors of environmental knowledge and subsequent behaviour. However television use for environmental information had a negative effect on environmental awareness. 'In general, newspaper reading seems to encourage relevant environmentally positive behaviour, whereas television viewing tends to discourage it' (p.8).

TV News Impact

Brothers et al. (1991) conducted another effects study. They measured the impact of television news on public environmental knowledge. They assume, first, that most people use television as the main source of information, including environmental information. Second, they assume that environmental knowledge positively correlates with attitudes and that such knowledge is a prerequisite for bringing about a quality environment. They measured the impact of information on a regional (Cleveland, Ohio) environmental issue, broadcast on the local television station. Respondents reported television as their main information source on local environmental issues, followed by newspapers. But the newspaper readers knew more about the local environment. The newspaper readers tended to have higher educational levels, and education was most closely linked to environmental knowledge. However, the results showed that television can be effective in raising environmental knowledge. Because the survey used a voluntary response technique the question remains to what extent the respondents represent the general public.

Burgess and her colleagues (1991) used a local issue as a starting point as well. They organised group discussions about a proposal to 'cultivate' an expanse of green land near London. They formed two groups: local environmentalists committed to this problem and local people with no affiliation with environmental organisations. Both groups watched a documentary on the subject and afterwards discussed it. The results of this stu-

dy showed that people make sense of information in different ways, adjusting it to their own needs. Both groups used news media selectively to obtain information which they then incorporated into their own discourses. 'People transform some media stories into stories of their own to support or elaborate their beliefs and to justify their particular points of view' (p.505). People who are not involved in nature conservation experience the media stories as distant from their own local concerns. They mistrust the environmental claims made and do not see their importance for their own lives.

VIII. Environmental Awareness in the Third World

S. Theodore Baskaran. 'The Rise of the Environmental Movement in India'. *Media Development*, Vol. 37, No. 2 (1990), pp. 13-16.

Victor T. Valbuena. 'Using Traditional Media in Environmental Communication'. *AMIC Occasional Paper No. 21*. Singapore: AMIC, 1987.

Margot Aguilar and Günther Maihold (Eds.). *Hacia una cultura ecológia* (Towards an Ecological Culture). Mexico City: Centro Coordinador y Difusa de Estudios Latinoamericanos, DDF, n.d.

Appropriate Philosophy Needed

As was noted previously, raising environmental awareness in the Third World differs from the process in developed countries, because developmental issues can conflict with environmental issues. Bandara (1989) stresses the fact that we all need an appropriate environmental philosophy to provide the ideological base to support action. It is no use to have sketchy environmental information that does not correspond with developments on the economic front. Another difference between developing and developed countries involves the use of mass media: illiteracy and lack of equipment exclude part of the population from directly receiving newspaper and television messages.

Traditional Media

For this reason, Third World countries started to explore the use of traditional media in raising environmental awareness. Valbuena and his team (1987) implemented environmentally related issues through traditional media like theatre and story-telling. The experiment took place in three countries: Indonesia, the Philippines and Thailand. This form of education proved successful, but some limitations were found. One of the constraints they experienced was the conflict between economic circumstances and environmental claims. For instance, in Thailand deforestation could not be used as a topic because the public consisted of people who depend on logging for their daily bread.

Baskaran (1990) records both the traditional and modern methods that the Indian environmental movement uses to raise awareness. The traditional methods, mainly used in rural areas, include things like scroll-paintings, dance, folk songs and even Gandhian methods like pilgrimages on foot and passive resistence. The modern methods-- electronic and print media -- are used mainly in urban regions. Most of the print material occurs in the English press, with material in the local language scarcely available.

Dilemmas Breed Inaction

Although South Korea can no longer be considered to be in the 'Third World', some of the media and environment dilemmas of developing and newly developed countries are reflected in a study done by Kim Young-Khee, of Chonnam National University, on attitudinal typologies among Korean environmentalists, on the one hand, and journalists on the other. Although both were conscious of the seriousness of environmental problems, the journalists were significantly more inclined to favour development over environmental preservation. Neither group seemed either well informed about the causes of environmental degradation or able to propose practical solutions (Kim 1991).

An 'Ecological Culture'

The Mexico City conference, whose papers are collected in the book edited by Aguilar and Maihold (n.d.) focussed on the need to create an entirely new mentality, an 'ecological culture', in which environmental concerns will be so much in the forefront, for journalists and public alike, that they can no longer be neglected. This conference is illustrative of the rising environmental awareness in Latin America, which is more adequately covered in the section on 'additional bibliography', below.

Perspective

Reporting on the environment is one of the most problematic and challenging types of journalism. Not only has it been difficult for an environmental 'beat' to find sustained acceptance in newsrooms governed by habit and traditional patterns of organization, but also it is an extremely complex field. It requires media expertise but also expertise in science and sociology--the ability to understand and evaluate the kinds of discourse which characterize the natural and social sciences. The different sorts of values juxtaposed in environmental dilemmas need to be acknowledged and any tendency towards reductionism--particularly towards reducing everything to the economic terms favoured by so much of today's discourse--must be carefully avoided.

Despite these cautions, environmental problems are gradually assuming an important place in the public awareness. Many of the problems are critical--some of them potentially lethal to large numbers of people. Consequently, they carry a moral responsibility for the appropriate media to inform the public quickly and accurately, so that defensive measures can be taken in time. Despite their difficulty, no communication organization--particularly, no news organization--can any longer afford to treat lightly those environmental questions which fall within its purview.

The environmental journalist needs to be able to balance sources against each other, to see through fallacious arguments on all sides. He or she also needs courage, since accurate environmental reporting frequently has to question the status quo and to challenge powerful vested interests.

Jargon often creeps into environmental discourse and has to be interpreted. Jargon, alarmism (even when it is justified), repetition (oil-soaked seabirds on TV, from Alaska to the Gulf to the Shetlands), and the slow development of many environmental stories all combine to create a sense of boredom and *déjà vue* among audiences. Crises, such as oil spills near populated or ecologically sensitive areas, are complex but can be dealt with much as other news events. It is the subtle, long-term problems which are most difficult. The vast scope of many chronic environmental problems tends to generate a feeling of impotence and hopelessness. In reporting such problems the sense of crisis must be tempered by suggesting ways the problems might be ameliorated or solved. Awareness and hope both must be communicated, since awareness without hope only breeds despair.

Some of the authors cited have emphasized 'positive thinking', 'sustainability' and an effort to create an 'ecological culture'. The creation of such a broad-based attitude certainly is desirable, but even if the media spoke with one voice on the issue--rather than at cross-purposes, as they now do--could they hope to create an 'ecological culture'? Experience suggests that they might help to do so but would need the full cooperation of schools, families, churches and businesses to make a lasting impression.

Although there is universal agreement that the environment should be preserved, many points of view exist on the subject, and many approaches can be advocated. They include some which are diametrically opposed to each other. Economics plays a role: the starving are not likely to place environmental preservation before their own survival. Those who do not stand to lose money from 'green' policies are more predisposed to favour them than people who might suffer financial loss. Developing nations may see environmentalism as hampering their efforts to 'catch up' with the industrially developed world from which come most of the environmental activists. Many of the areas under Communism were devastated, environmentally, as a result of similar

pressures to 'catch up' and the priorities which resulted from them.

Culture also is a factor: Native Americans in Alaska, for example, are said to regard environmental damage as a violation of the sacred natural world of which they are an integral part, in contrast with their neighbours whose worldview places them somehow 'outside' the nature which is being damaged. The way the native communities would construct environmental understandings would consequently be very different, and the argumentation of an industrialized culture would not be very effective.

Despite all its problems and pitfalls environmental reporting is growing around the world, and research to monitor its progress may be growing even faster. Ingenuity and resourcefulness are needed to communicate environmental awareness effectively. They are especially needed to sustain audience interest and to insipire individuals and groups to move beyond passive awareness to undertake practical action.

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Afterword

by the Editor

Ecology and the environment do not merely pose social and technological problems, they are also, and perhaps preeminently, theological and moral issues. The human mind is the meeting point of spirit and matter. In a real sense, the material universe knows God through the minds of men and women. Because of this mediation, and because only we among all material things can foresee the future and control, to a degree, the destiny of the world, we assume a unique responsibility for the natural world.

Looked at from that, admittedly rather Teilhardian perspective, environmental issues present us with a daunting moral imperative. It is, however, one of which religious people-- including religious communicators--have only recently begun to be conscious. Avowed materialists have been quicker to recognize the threats modern life poses to the ecological equilibrium, perhaps because a high quality of life in their brief occupancy of this fragile world is all they can look forward to with certainty. But ultimately (as usually seems to happen) the moral burden on religious believers is greater, once the role of humanity as mediators between God and matter is recognized. The environment assumes a sacred character, and its abuse becomes sacrilege.

One of the biggest stumbling blocks in the path of honest and constructively critical handling of environmental questions by the media is conflict of interests. For economic, ideological or social reasons, media ownership often favours the interests of industries whose operation might be complicated by too much environmental concern. To ameliorate this conflict, the media might place more stress on the long-term advantage to the industries themselves, as well as to the general public, of improved environmental practices.

Journalists in developing countries have a special problem, as some Asian writers have pointed out, in that they are expected to support their countries' efforts to industrialize by positive reporting, rather than 'undermine' it by ferreting out environmental hazards. Again, greater stress on the long-term benefits to the common good of both the general population and the industries themselves might help develop a new interpretation of their role.

Religious and other media which are relatively free of such conflicts-of-interest might recognize their consequent responsibility to fill in for what the situation of the regular media cannot realistically be expected to do in this regard. In particular, these independent media often can place greater stress than the commercial or government media might do on the social and human impact of environmental problems. This would remedy a frequent bias towards purely economic and political concerns often noted in the 'regular' media.

For such independent media to assume such a role would, of course, involve assuming concurrent responsibilities. Among these would be the need to carefully check sources-- an expensive precaution sometimes neglected by under-funded media such as the religious

press, but one which is necessary to ensure fairness to all parties while communicating the basic facts, their human implications and an accurate estimate of the risks involved. The tendencies toward, on the one hand, sensationalism or, on the other, creating a false sense of security, both are strong in environmental reporting and constant restraint is needed to curb them. Crusades and 'bandwagon' campaigns are ill-advised and no substitute for sustained balanced reporting of the issue.

Balanced reporting requires continually updated knowledge of complex issues: scientific, economic and social. This does not come easily, especially for understaffed, underfunded independent media organizations. But it is necessary for making independent judgements in an area where biased claims abound on all sides. 'Handouts'--whether from industry, government or advocacy groups--tell only part of the story. The media must try to tell *all* of it.

The world is an ecological unity, and accuracy requires that the interrelatedness of all its parts be kept in mind. Much past reporting has focussed on local crises, to the exclusion of regional, national and international factors which may play a role. On the other hand, crises in far away places need relating to local factors. For example, Japan and South Korea both have achieved remarkable progress in reforestation in recent years; but the demand of both countries for timber and wood pulp have contributed to deforestation in the Philippines, Borneo, western North America, and now parts of Siberia. And, do North Americans--even the most environmentally conscious among them-- often think about how their driving habits deplete irreplaceable world petroleum reserves?

Some authors mentioned in our review article touched on the self-defeating character of some environmental reporting. It can easily become repetitious and boring to audiences, especially in its more contentious forms. There is no substitute for interesting writing and production, in this as in other journalistic efforts. Related to this is the need to take account of different cultural values among different audiences, which may lead them to have widely differing interpretations of the same event. This is illustrated by the Native American press reactions to the *Exxon Valdez* oil spill, which one of the cited authors has described.

Various research findings suggest that television suffers from greater handicaps than print media or radio in environmental reporting. TV tends to want sensational visual images, which can be temporarily impressive but also can easily be misleading. Then, too, many programmes dealing with ecological problems inevitably must show such similar images that a sense of *déjà vue* can easily infect the audience. At the same time, much of modern life is interpreted -- and almost lived -- in terms of what appears on TV; so environmental coverage on that medium is essential to keeping it high on the public agenda at all. Consequently, new ways of interpretation on television, as in other media, must constantly be sought.

The moral intensity of environmental questions is growing as the earth's population growth places greater and greater pressure on dwindling resources. This consequently places an increasingly greater responsibility on religious and moral leaders and opinion makers to understand the issues clearly and to make decisions based on accurate information, which it becomes the duty of communicators, in their turn, to supply.

Current Research on Environmental Communication

The following list is of individuals and centres around the world known recently to have been engaged in research on environmental communication or closely related topics. It cannot, of course, hope to be complete, but is intended to provide contact points for those interested in learning more about such research in particular areas or on particular subtopics.

Africa
The theme of the biennial conference of the **African Council for Communication Education** held in Cairo, 19-23 October 1992, was 'Communication and the Environment in

Africa: Challenges for the Future.' Details from Dr. Charles Okigbo, ACCE Executive Co-ordinator (P.O. Box 47495, Nairobi, Kenya).

Australia
R.A. Schibeci (Murdoch University, Murdoch, WA 6150, Fax: +61-9-332-2507, Tel: +61-9-332-2211) is interested in science reporting.

Bangladesh
Mohd. Tawhidul Anwar (Department of Jour-nalism and Mass Communication, University of Dhaka, Dhaka 1000, Fax: +880-2-419-812, Tel: +880-2-862-622) participated in the AMIC seminar-workshop on environmental policies and media reporting (Singapore, 1992).

Belgium
Giovanni Canini (Vrije Universiteit Brussel, Centre for the Study of New Media and Information Technology, Pleinlaan 2, 1050 Brussels, Fax: +32 (0)2 641 2861, Tel: +32 (0)2 641 2860, e-mail: gcanini@vnet3.vub.ac.be.) is examining the availability and accessibility of scientific information about environmental problems within organisations.

Brazil
Beatriz Helena Gelas Lage (University of São Paulo ECA/USP, School of Communication and Arts, Av. Caxingui, 283 Ap 41, São Paulo SP, CEP 05579, Brazil, Fax: +55 11/815 4272, Tel: +55 11/813 3222) has studied the mass media and the environment in the Amazon.

Olga Guedes (Universidade Federal do Ceará, Av. da Universidade 2853, CP 1000, 60000 Fortaleze, CE; University Tel: +55 (0)85/223-0233) is scheduled to present a paper, 'The Role of the News Media in Environmental Education in Brazil', at the 1993 meeting of the International Communication Association.

Canada
Carol Corbin (Cape Breton College, P.O.Box 5300, Sydney, Nova Scotia, B1P 6L2, Fax: +1-902-562-0119, Tel: +1-902-539-5300) analysed the rhetoric in Montana surrounding environmental conflicts from a metaphorical perspective.

Edna Einsiedel (University of Calgary, Communication Studies Program, 2500 University Drive, North West Calgary, Alberta T2N 1N4, Fax: +1-403-282-6716, Tel: +1-403-220-6357) conducted a case study of communicating environmental pollution and the consequent risks. She is also contributing a chapter in the forthcoming book edited by Anders Hansen on the environment and the media.

At **Université de Montréal**, **Jean-Guy Vaillancourt** (Départment de Sociologie, C.P. 6128, Succursale A, Montréal, Que. H3C 3J7, Fax: +1-514-343-5722, Tel: +1-514-343-5959) is doing research in the field of environmental sociology; and **Brigitte Dumas** of the same department (same address and fax, but Tel: +1-514-343-7304) has done research on the social representations of environmental problems in different specialised journals and newspapers to assess their treatment of environmental concerns.

At **Simon Fraser University**, **Ian Angus** (Department of Sociology and Anthropology, Burnaby, British Columbia V5A 1S6, Fax: +1-604-291-5799, Tel: +1-604-291-3146) is working on a book on the construction of English Canadian identity as a function of a relation to the environment; and in the Department of Communication of the same University **William Leiss** (Fax: +1-604-291-4860, Tel: +1-604-291-4152) is working in the field of environmental risk communication.

Ecuador
Fundación Natura (Casilla 17.01-253, Av. América 5653 y Voz Andes, Quito; Tel.: +593-2-447 -341 (also: 447 342 and 447 343); Fax.: +593-2-434- -449) has environmental communication as one of its principal topics for research.

Finland
At the **Department of Journalism and Mass Communication, University of Tampere** (PO Box 607, SF-33101 Tampere 10, Fax: +358-31-156-248, Tel: +358-31-156-111, e-mail: tibrla@uta.fi) **Pertti Suhonen** examines the relationship between the mass media, the public and environmental politics, and **Esa Väliverronen** is mainly concerned with the debate on forest damage in Finland and environmental argumentation and rhetoric in

the media in general, with special interest in the role of experts and the legitimacy of science in the public sphere. In the same Department, **Kaarina Melakoski** (address and phone same, Fax: +358-31-134-473) is interested in environmental journalism.

Germany
Renate Bader (Institut für Publizistik und Kommunikationspolitik, Arbeitsgebiet Wissenschaftsjournalismus, Freie Universität Berlin, Malteserstrasse 74-100, D-1000 Berlin 46, Fax: +49-30-776-2149, Tel: +49-30-779-2300) is interested in science reporting, including the coverage of risks.

Renate Ell (Dreschenauer Strasse 5, W-8581 Neudrossenfeld, Fax: 9203 68185, Tel: 9203 6433) studies media coverage of global environmental risks in different countries.

Hans M. Kepplinger (Institut für Publizistik, Johannes Gutenberg Universität Mainz, Jakob-Welder-Weg 20, 6500 Mainz, Fax: +49-6131-394-239, Tel: +49-6131-392-670) has done a case study of the coverage on environmental polution in Germany.

Hans Peter Peters (Research Centre Juelich, Programme Group 'Humans, Environment, Technology', P.O. Box 1913. D-5170 Juelich, Germany. Fax: +49-2461-612496, Tel: +49- - 2461-612496, Bitnet: MUT005@DJUKFA11) is working on public controversies about environmental risks, mass media coverage of environmental risks, credibility of experts, and expert-journalist interaction.

Ghana
Akosua Boatema Boateng (National Council for Women and Development, PO Box M53, Accra) is concerned with the use of the mass media in implementing environmental messages in Ghana.

Hong Kong
The following are involved in research on communication and the environment, but no further details were available at press time:

Lo Wai-yan (The Conservancy Association, Shop 301, Lai Mei House, Lai Kok Estate, Cheung Sha Wan, Kowloon; Fax: +852-728-5538).

Lai On-kwok (Department of Social Work and Social Administration, University of Hong Kong, Pokfulam Road, Hong Kong; Fax +852-858-7604).

Man Si-wai (Faculty of Education, Chinese University of Hong Kong, Shatin, New Territories: Fax: +852-603-6129).

India
Keval J. Kumar (Dept. of Communication and Journalism, Poona University, Ranade Institute, Pune 411004) is conducting research on the role of the media in communicating environmental messages in India as part of the SOAS-project (see UK).

Iran
The following are interested in research on communication and the environment in Iran, but no further details are available as of press time:

Mr. Dawari-Nejad (Assistant Director for Informatics, Plan and Budget Organization; Fax: 3118712 and 306394).

Mr. Shahab (Assistant Minister for Communications, Ministry of Post, Telegram and Telephone; Fax: 899023).

Mr. Mohammed-Hassan Hagh-Goo (General Department for Commercial Affairs, Ministry of Mines and Metals; Fax: 8820488).

Messrs. Nahvi and **Navid-Bakhsh** (Scientific and Industrial Researches Organization of Iran; Fax 8808340).

Mr. Jahedi (Remote Sensing Centre of Iran; Fax 8083392).

Japan
Sakae Ishikawa (Journaism Department, Sophia University, 7 Kioi-cho, Chiyoda-ku, Tokyo 102) has written on the role of the Japanese media in pollution disasters.

Kenya
Margaret G. Karembu (Faculty of Environmental Studies, Kenyatta University, PO Box 43844 Nairobi) is interested in communication research to preserve the environment from a Kenyan perspective.

Korea
Young-Khee Kim (Department of Communication, Chonnam National University, 300 Yongbong Dong, Kwangju 500; Fax: +82-62-520-6715, Tel: +82-62-520-6772) has studied in attitudes towards environmental questions among environmental activists, on the one hand, and journalists, on the other.

Woo-Hyun Won (Department of Mass Communication, Korea University, 1, 5 ga Anam-Dong, Sungbuk-ku, Seoul, Fax: +82-2-926-3601, Tel:+82-2-576-1027) is interested in environmental reporting in Korea.

Netherlands
Jaap Willems (Faculty of Sciences, University of Nijmegen, Toernooiveld, 6525 ED Nijmegen, Fax: +31-80-553-450, Tel:+31-80-613-003) studied the coverage of the environment and nature on Dutch television.

Nigeria
Hilary C. Ozoh (Department of Mass Communi-cation, Enugu State University of Science and Technology, P.M.B. 01660, Enugu) conducted content analysis of Nigerian newspapers coverage of environmental issues.

Luke Uka Uche (Department of Mass Communi-cation, University of Lagos. Tel: +234-1-821111, Fax: +234-1-822-644) is interested in the use of communication for a sustainable environment in Africa.

Pakistan
Nisar Ahmed Zuberi (Department of Journalism and Mass Communication, University of Karachi, Karachi, Fax: +92-21-465-788, Tel: +92-21-463-523) participated in the AMIC seminar-workshop on environmental policies and media reporting (Singapore,1992).

Philipines
Teresa Stuart (Institute of Development Com-munication, University of the Philipines at Los Banos, 4031 College, Laguna, Fax: +63-2-817-0598) participated in the AMIC workshop on environ-mental policies and media reporting and has studied media coverage of the environment in the Philipines.

Saudi Arabia
At the Saudi government's Meteorology and Environmental Protection Administration (P. O. Box 1358, Jeddah 21431; Fax: +966-2-6511424) **Abdul-Aziz Al-Eisha** and **Saleh Bedran** are involved in research on environmental communication.

Sri Lanka
Nalake Gunawardena (Communication Specialists, IUCN, 7 Vagira Lane, Colombo 5, Sri Lanka, Fax: +94-1-580-202, Tel: +94-1-587-031) is engaged in research on environmental communication.

Mr. D. Wickramarathne (Sri Lanka Environ-mental Journalists Forum, P.O.Box 30, 5 Fourth Lane, Nawala, Sri Jayawardenapura, Sri Lanka, Fax: +94-1-698-316) is doing research in the field of communication and the environment.

Swaziland
Eronini R. Megwa (Communication Studies, English Department, University of Swaziland, Private Bag 4, Kwaluseni) studied environmental news sources in two newspapers in Swaziland.

Sweden
Stig Arne Nohrstedt (Department of Politics and Administration, University of Örebro, Box 923, 70130 Örebro, Tel: +46-19-140-100) has conducted several studies of communication processes and problems in Sweden following the fallout from the Chernobyl nuclear accident. He is also contributing a chapter to the book edited by Anders Hansen on mass media and environmental issues.

Switzerland
Michael Schanne, Andreas Diggelmann

and Werner Meier (AGK Arbeitsgruppe fur Kommunikationsforschung und -beratung, Venusstrasse 29, CH-8050 Zurich, Fax: +41-1-312-5016, Tel: +41- 1-311-6173) are interested in science journalism and environmental risk communication.

Thailand
The Faculty of Communication Arts, **Chulalongkorn University** (Phayathai Road, Bangkok 10330) and the **National Research Council** (196 Phaholyothin Road, Chatuchak, Bangkok 10900) may be involved in work on environmental communication, but further information was not available at press time.

Turkey
Gül Göktepe (Turkish Atomic Energy Authority, Cezmece Nuclear Research Center, P.K. 1 Havaalani, 34831 Istanbul, Fax: +90-1-548-2230, Tel: +90-1-548-4050) has done research on nuclear risk perception, and participates in the World Health Organization's Europe Risk Communication Network.

Konca Yumlu (Ege University, School of Press and Broadcasting, Bornova, Izmir, Fax: +90-51-182 -867) has done research (content analysis) on the coverage of environmental issues in the Turkish newspapers.

Uganda
David O. Balikowa (Mass Communication Pro-gramme, Makerere University, PO Box 7062 Kampala) has studied environmental coverage in newspapers in Uganda.

United Kingdom
John Abraham (Education Network for Environment and Development, University of Sussex at Brighton, Arts Building, Falmer, Brighton BN1 9QN, Fax:+44-0273-678466, Tel:+44-237-678449) conducted an empirical study of the production and reception of the BBC's 'One World One' series.

Alison Anderson (Faculty of Human Sciences, Department of Applied Social Science, University of Plymouth, Drake Circus, Plymouth, Devon PL4 8AA, Fax: +44-752-233-194, Tel: +44-752-233200) is involved in the SOAS project on the mass media and global environmental learning, and is contributing a chapter in a forthcoming book on the environment and the media, edited by Anders Hansen.

Jacqueline Burgess and Carolyn Harrison (Department of Geography, University College London, 26 Bedford Way, London WC1H 0AP, Fax: +44-71-380-7565, Tel: +44-71-387-7050) study the way audiences make sense of news about nature conservation.

Adrian Cleasby (Third World and Environment Broadcasting Project, c/o IBT, 2 Ferdinand Place, London NW1 8EE, Fax: +44-71-284-3374, Tel: +44-71-482-2847) is researching factual coverage of international issues on the four UK TV channels.

Walter Leal Filho (Department of Environ-Rmental Science, University of Bradford, Bradford, West Yorkshire BD7 1DP, Fax: +44-274-385259, Tel: +44-274-733-466) is interested in the role and use of the media in environmental education.

Philip Gray (School of Environmental Sciences, University of East Anglia, Norwich NR4 7TJ, Fax: +44-603-507719, Tel: +44-603-592547) works for the Environmental Risk Assesment Unit, which carries out research on all aspects of risk management, including the perception of and communication about environmental risk.

Anders Hansen (Centre for Mass Communication Research, University of Leicester, 104 Regent Road, Leicester LI1 7LT, Fax: +44-533-523874, Tel: +44- 533-523866) is interested in communication on the environment and science. He is also editing a book on environment and the media.

Jack Meadows (Dept. of Library and Information Studies, Loughborough University, Loughborough, Leicestershire LE11 3TU, Fax. +44-509-223053, Tel: +44-509-223058, e-mail: lsajm@uk.ac.lut) is interested in information needs of the public concerning the environment.

At The Science Museum, Imperial College, University of London (Science Museum Library, South Kensington, London SW7 5NH, Fax: +44-71-938-8213, Tel: +44-71-938-8201) **John Durant, Martin Bauer, Ann Gosling,** and **Geoffrey Evans** have been researching the communication of scientific information to the public.

At **SOAS, Graham Chapman, Caroline Fraser and Charlotte Reisch** (South-North Centre for International Environmental Policy Studies, School of Oriental and African Studies (SOAS), University of London, Russell Square, London WC 1H OXG, Fax: +44-71-436-3844, Tel: +44-71-637-2602) and **Ivor Gaber** (Goldsmiths' College, Lewisham Way, New Cross, London SE14 6NW) are conducting a research project on the role of the media in communicating environmental messages in the UK and India.

United States of America

James Cantrill (Communication and Performance Studies, Northern Michigan University, Marquette, MI 49855-5362, Fax: +1-906-227-1333, Tel: +1-906-227-2061) studies mental categories used in understanding environmental communications and the linkage between the self and environmental conditions. Also coordinates conference, 'Communication and Our Environment' and is editing a book with Christine Oravec on environmental advocacy.

Donal Carbaugh (Department of Communication, University of Massachusetts at Amherst, Amherst, Massachusetts 01003, Fax: +1-413-545-6399, Tel: +1-413-545-1311) is interested in language and landscape.

Caron Chess (Rutgers University, Environmental Communication Research Program, Cook College, P.O.Box 231, New Brunswick, New Jersey 08903-0231, Fax: +1-908-932-7815, Tel: +1-908-932-8795) is director of the research program, working in the field of risk communication.

Robert Cox (University of North Carolina, CB 3285 Bingham Hall, Chapel Hill NC 27599 -3285) is concerned with rhetoric of environmental communication.

Patrick Daley (University of New Hampshire, Department of Communication, Horton Social Science Center, Durham, New Hampshire 03824-3586, Fax: +1-603-862-0178, Tel: +1-603-862-2292) focuses on the environmental narratives concerning the Exxon Valdez oil spill in mainstream, native and specialised press.

Kevin DeLuca (University of Iowa, Iowa City, Iowa, Fax: +1-319-335-0381) is interested in the cultural, social, political and economic implications of living in an environment defined by a continuous transaction and translation among a plurality of media.

Nancy Dickson (Harvard University, Center for Science and International Affairs, J.F. Kennedy School of Government, 79 J.F.K. Street, Cambridge, MA 02138, Fax: +1-617-495-5776) is contact person for the international project on 'social learning in the management of global environmental risks'.

Wimal Dissanayake (East West Environment and Policy Institute, East-West Centre, 1777 East-West Road, Honolulu, Hawaii 96818) is engaged in research on environmental communication.

Sharon Dunwoody (School of Journalism and Mass Communication, University of Wisconsin at Madison, Vilas Communication Hall, 821 University Avenue, Madison, Wisconsin 53706, Tel: +1-608-262-3690) and **Robert J. Griffin** (Marquette University, 615 N. 11th St, Milwaukee, WI 53233; University Fax: +1-414-288-3300, University Tel: +1-414-288-7700) will present a paper, 'Impacts of Information Subsidies and Community Structure on Local Press Coverage of Environmental Contamination', at the 1993 meeting of the International Communication Association.

Sharon Friedman (Department of Journalism, Lehigh University, University Centre 29, Bethlehem, Pennsylvania 18015) is active in the field of environmental and science reporting.

George Gerbner (The Annenberg School of Communication, University of Pennsylvania,

3620 Walnut Street, Philadelphia, PA 19104, Fax: +1- 215-898-2024, Tel: +1-215-898-6776, e-mail: internet: FGG@ASC.UPENN.EDU. USA) is leading a 'Cultural Environment Movement', designed to counteract the market forces which tend to monopolize the shaping of the cultural environment.

Peter Grahame (Dept. of Behavioral Sciences, Bentley College, Waltham, MA 01701-4357, Tel: +1-617-891-2954, Fax: +1-617-891-3410, e-mail: pgrahame@bentley. bitnet) is interested in revealing the contribution made by different discourse forms in cultivating audiences for environmental messages.

Roger Kasperson (Clark University, Center for Technology, Environment and Development, 950 Main Street, Worcester, MA 01610-1477, Fax: +1-508-751-4600, Tel: +1-508-751-4622) is interested in risk communication.

Jimmie Killingsworth (Texas A & M University, English Department, College Station, TX 77843, Fax. +1-409-845-4373) is interested in rhetoric in environmental communication and is involved in the organisation of an upcoming conference on this topic.

Jim LaLumia (Dept. of Speech Communication and Theatre, Youngstown State University, Youngstown, Ohio 44555-3631, Fax: +1-216-742- 3499, Tel: +1-216-742-3631) and **Thomas Baglan** (Arkansas State University) examine the manner in which environmentalists are portrayed on the evening news cast of the three major U.S. networks.

Jonathan I. Lange (Department of Communi-cation, Southern Oregon State College, 1250 Siskiyou Blvd., Ashland, Oregon 97520-5023. Fax: +1-503-552-6329, Tel: +1-503-552-6424) is writing on environmentalist and timber industry infor-mation campaigns and 'how they are "locked into" a less than fully functional political communication system'. He also has studied the communi-cation strategy of 'Earth First', a radical environmentalist movement.

Hamid Mowlana (School of International Service, American University, 4400 Massachusetts Ave., NW, Washington, DC 20016; University Tel: +1 202-885-1000) will chair an interdisciplinary session at the 1993 meeting of the International Communication Association on 'Invisible Crises: Origins, Maturation and Representations', to study approaches to 'deep-structured crises' which often go unrecognized by both journalists and academics.

Christine Oravec (Dept. of Communication, University of Utah, Salt Lake City, Utah 84112, Fax:+1-801-585-3510, Tel: +1-801-581-6888) is interested in environmental rhetoric and edits a book with James Cantrill on environmental advocacy.

Ramona Rush (College of Communications, University of Kentucky, 248 Grehan Building, Lexington KY 40506-0042, Tel: +1-606-257-7809, e-mail: rrrush@ukcc.uky.edu) is interested in global eco-communication.

Kandice L. Salomone (Rutgers University, POB 2101, New Brunswick, NJ 08903, and University of North Texas, Denton, TX 76203) is scheduled to chair a panel, 'Toward Setting an Agenda for Environmental Risk Communication Research: Recent Investigations and Outreach Efforts' at the 1993 meeting of the International Communication Association.

James Shanahan (Boston University, College of Communication, 640 Commonwealth Avenue, Boston, Massachusetts 02215, Fax: +1-617-353- 3405, Tel: +1-617-353-3492) is analysing the content of environmental images in U.S. prime-time programming, and conducted research on the effect of television on environmental awareness.

Jo Ann Myer Valenti (College of Journalism & Communications, University of Florida, Gainesville, FL 32611, Tel: +1-904-392-0466) is interested in environmental communication.

Lee Wilkins (School of Journalism, University of Missouri at Columbia, Box 838, Columbia, MO 65205) conducts research in the field of risk communication.

Zambia
Juma E. Nyirenda (Department of Mass Communication, University of Zambia, PO Box 32379, Lusaka) studied newspaper coverage of environmental issues in Zambia.

Upcoming Conferences

'Earth Talk: Saving Our Planet and Our Selves Through Communication Empowerment'/ ECA: April 29 - May 2, 1993, Park Plaza Hotel New Haven, Connecticut. Information: Thomas L. Veenendall, Eastern Communication Association (ECA), Dept. of BSCDT, Montclair State College, Upper Montclair, NJ 07043, U.S.A. Tel: +1-201-893 - 5193, Fax: +1-201-893-5279.

'Conference on Communication and Our Environment'/Speech Communication Associ-

ation: 23-25 July (1993), Big Sky, Montana. Information: James Cantrill, Dept. of Speech, Northern Michigan University, Marquette, MI 49855, U.S.A.

'Global Forum on Environmental and Developmental Education' / The Indian Environmental Society: 24-28 September (1993), New Delhi, India. Information: Dr. Desh Bandhu, President Indian Environmental Society, U-112 (3rd Floor), Vikas Marg, Delhi 110092, India.

'Environmental Consciousness and Mass Media': 14-17 October (1993), Germany. Information: Patrick Wilkinson (Conference Coordinator), Deutsche Hygiene Museum, Ungnerplatz 1, DO 8010, Dresden, Germany, Tel: +37-51-484-6206, Fax: +37-51-495-5162.

Additional Bibliography

Journals

Some journals on environment that focus regularly on communication questions:
Environment
Journal of Environmental Education
International Journal of Environmental Studies

Special Issue Numbers:

Chasqui (Quito), 37 (January-March 1991). 'Comunicación y Medio Ambiente' (Communication and the environment).
Comunicación (Caracas), 79 (Third Trimester, 1992). 'Cuestión de Vida o Muerte: Dilemas Ambientales' (A question of life and death: environmental dilemmas).
Gannett Center Journal, (4)3 (1990): 'Covering the Environment'.
Media Asia (Singapore), (19)2 (1992): 'Media and Environmental Policies'.
Media, Culture and Society, (13)4 (1991): 'Covering the Environment'.
Media Development (London), (37)2 (1990) 'Media and Environment'.
Quaderni: La Revue de la Communication, 17 (Spring 1992) 'Discours de l'écologie' (Ecological Discourse). Université Paris I Sorbonne, Departement de Sciences Politiques.
Revista Mexicana de Comunicación, 24 (July-August 1992) 'Comunicación y Ecología' (Communication and ecology).
Tiedotustutkimus, (14)3 (1991): (Finnish title not available) (Media and the Environment).

Books and Articles on 'Communication and the Environment':

Abraham, John, Colin Lacey and Roy Williams (Eds.). *Deception, Demonstration and Debate: Towards a Critical Environment and Development Education*, London: WWNF & Kogan Page, 1990.

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Alemán Velasco, Miguel. 'El papel de la revolución de las comunicaciones en la conservacion del ambiente' (The Role of the Changes in Communications in the Conservation of the Environment). *Comunicación*, 79 (Third trimester, 1992), pp. 101-107.

Barrios, Juan C., Juan P. Ruiz and Maria E. Fernéndez. 'Publicidad y medio ambiente. Los estereotipos del consumidor reflejados en los anuncios' (Advertising and Environment: The Stereotypes of the Consumer Reflected in Advertisements). *Telos* (FUNDESCO, Madrid), 21 (1990), pp. 129-138.

Bennulf, Martin. 'Miljφopinionen under âttiotalet' (Environmental opinion during the 1980's). In

Svensk opinion i empirisk belysning, edited by Søren Holmberg and Lennart Weibull. Gøteborg: Gøteborgs Universitet, 1989, pp. 77-86. Describes the development of environmental opinion.

Bowers, J.K., G. A. Donohue, C. N. Olien and P. J. Tichenor. 'Environment and Public Opinion'. *Journal of Environmental Education*, (2)4 (1971), p. 38.

Bowman, James S. 'American Daily Newspapers and the Environment'. *The Journal of Environmental Education*, (10)1 (1978), p. 2.

Cacua, Antonio. *Medio Ambiente y Desarrollo Social en la Mira de los Medios de Comunicación* (Environment and Social Development in the View of the Media of Communication). Bogotá, Colombia, n.d., 15 pp.

Canter, David, Martin Krampen and David Stea (Eds.) *Environmental Policy, Assessment and Communication*. Aldershot, Hants: Avebury, 1988.

Cantrill, James & Oravec, Christine (Eds.). *Proceedings of the Conference on the Discourse of Environmental Advocacy*. Salt Lake City: University of Utah, 1992.

Cassirer, Henry R. Communications vs. the Environment, in: *InterMedia*, (18)1 (1990), pp. 10-11.

CIEDESCO. *Uso de los medios de comunicación social en campañas de educación ambiental* (The Use of the Communication Media in Fields of Environmental Education). Caracas: Centro Internacional de Estudios en Desarrollo y Comunicación (CIEDESCO), December 1991.

Covello, Vincent T., David B. McCallum and Maria T. Pavlova (Eds.). *Effective Risk Communication: The Role and Responsibility of Government and Nongovernment Organizations*. New York: Plenum Press, 1987.

Dahlan, Alwi. 'El Enfoque Ecológico en la Cobertura' (The Environmental Focus in Coverage). *Revista de la Organización Internacional de Periodistas*, 1991, 3-4 (March-April), pp. 22-23.

Daley, Patrick, and Beverly James. 'An Authentic Voice in the Technocratic Wilderness: Alaskan Natives and the Tundra Times'. *Journal of Communication*, (36)3 (1986), pp. 10-30. Describes how the Tundra Times came in to being as a result of the threat of U.S. ventures into nuclear testing and wildlife regulation.

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Dunlap, Riley E. 'Public Opinion in the 1980s: Clear Consensus, Ambiguous Commitment'. *Environment*, (33)8 (1991), pp. 10-15/32-37. Analyses public opinion on environmental issues.

Dunlap, Riley E. 'Public Opinion on the Environment in the Reagan Era : Polls, Pollution, and Politics Revisited'. *Environment*, (29)6 (1987), pp. 6-11 and 32-37.

Dunwoody, Sharon, and Hans Peter Peters (1992), 'Mass Media Coverage of Technological and Environmental Risks: A Survey of Research in the United States and Germany'. *Public Understanding of Science*, 1 (1992), pp. 199-230.

Durant, John R. *Copernicus and Conan Doyle: or, Why should we care about the public understanding of Science?* Centre for Science Education Occasional Paper No. 2. Milton Keynes: Open University, 1991.

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E. Hardoy, Jorge, and David Satterthwaite. *Las ciudades del Tercer Mundo y el medio ambiente de la pobreza* (The Cities of the Third World and the Environment of Poverty). Buenos Aires: Instituto Internacional del Medio Ambiente y Desarrollo (IIED-AL), 1987.

Ercegovac, Zorana, 'Environmental Research: Communication Studies and Information Sources'. In *Annual Review of Information, Science and Technology, Vol. 29*, edited by Martha E. Williams. Medford, NJ: Learned Information, Inc., 1992, pp. 173-225. Reviews literature on environmental machine-readable sources.

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Esteinou, Javier. 'Cultura Ecológica y Medios Electrónicos' (Ecological Culture and Electronic Media). *Revista Mexicana de Comunicación*, 24 (July-August 1992), pp. 15-16.

Farrell, Thomas B., and G. Thomas Goodnight, G.T. 'Accidental Rhetoric: The Root Metaphors of Three Mile Island'. *Communication Monographs*, (48)4 (1981), pp. 271-300. Examines the failure of available discourse to explain the crisis to the public.

Filho, Walter D.S. Leal. 'Using the Press for Environmental Education in Brazil'. *Nature and Resources*, (28)2 (1992), pp. 38-46. Describes an educational program with a local newspaper.

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Book Reviews

Book Reviewers: Paul A. Soukup, S.J. (PAS)
                   José Martínez Terrero, S.J. (JMT)
                   William E. Biernatzki, S.J. (WEB)

Berger, Arthur Asa. *Media Research Techniques*. Newbury Park, CA; London; New Delhi: Sage, 1991. Pp. vii, 148. ISBN: 0 8039 4179 X;(hb.) UK£25.95. ISBN: 0 8039 4180 3 (pb.) UK£11.95.

Communication teachers dream of instilling in their students a love of research. The best way to accomplish that, of course, is to fuse the students' natural curiosity with a research experience. In his brief book Berger proposes eight inexpensive (and readily available) 'guided research projects' that students from any course might carry out.

Posing the metaphorical equivalence of research and detective work, he describes the process as one of asking questions: Who? Why? How? What? When? Which? Where? Each question calls for a different technique.

The first part of the book describes the research projects. Berger introduces each one with a description of the process, an outline of its characteristic problems, a discussion of its comparative advantages and disadvantages, and specific instructions for carrying it out. The first, a research log, he suggests can apply to any project. The second, content analysis, fits quantifiable materials; the sample project involves the comic pages of a daily newspaper. A survey interview (the third project) takes the students onto their campus to discover media utilization among their peers. An investigation of social roles sends the students off to watch soap operas. An in-depth inter-view examines student preferences for singers and records. Rhetorical analysis (the sixth project) turns to magazine advertising. A traditional library research project helps the students to discover the importance of documentary sources by learning about radio talk shows. Finally, the focus group technique has them explore people's motivations for film viewing. Berger provides each research project with a detailed set of directions, including charts and illustrations where necessary, as well as suggestions on how to present the findings.

The second part of the book more specifically addresses the presentation of research findings. Titled 'Writing and Thinking,' it gives hints on organizing material, writing style, avoiding common writing errors, and constructing a research paper.

This book is neither a handbook of research nor a guide to statistical techniques. However, as an introduction to the process of research, it provides an enticing invitation to a field that sometimes frightens students away. 'The goal is not to turn you into a professional researcher, but to help you understand something about research so that you can function more effectively when you are working--regardless of the position you hold' (p. 12).   (-PAS)

Blumler, Jay G. (ed.). *Television and the Public Interest: Vulnerable Values in West European Broadcasting*. (London; Newbury Park, CA; New Delhi: Sage, 1992). [Published in association with the Broadcasting Standards Council] Pp. viii, 242. ISBN: 0 8039 8649 1 (hb.) UK£35.00; ISBN: 0 8039 8650 5 (pb.) UK£11.95.

During the 1980s a series of economic, techno-logical, and political changes swept through European broadcasting: the growing acceptance of market-based economics, the advent of affordable satellite and cable delivery services, and growing governmental desire to widen broadcast representation. How will these changes affect long-upheld values? This book assembles the reactions of a group of participants at a 1990 conference, 'Vulnerable Values in Multichannel Television Systems: What European Policy Makers Seek to Protect.'

The Western European broadcasting trad-ition emerged from a public service legacy that, in turn, gave it six characteristics:

1. Television, in particular, has a comprehensive charge since the same broadcasting authorities must provide both specialized and general programming.
2. Public broadcasting corporations received broadly-worded mandates, giving them great flexibility.
3. Broadcasting systems were highly pluralistic and diverse.
4. Broadcasting accepted a cultural mandate from the state.
5. Broadcasting organizations became highly politicized in both their attention to reporting on governments and their need to deal with government bodies.
6. Broadcasting generally embraced a non-commercial structure (pp. 5-14).

The book presents reviews of broadcasting in eight countries: Germany, Britain, Italy, The Netherlands, Sweden, Switzerland, France, and Spain. Each essay gives a brief history of the country's broadcasting authority, presents an overview of regulations, discusses reasons for change in the last decade, and deduces the key values that emerged in debates about broadcasting. Looking across the board, Blumler summarizes the 'vulnerable values' under these headings: programme quality, diversity, cultural identity, independence of programme sources from commercial influences, the integrity of civic communication, the welfare of children and juveniles, and the maintenance of standards (pp. 30-38).

Several essays, which look to the future, conclude the volume. One explores ways to defend the threatened values, particularly regulation, but also notes the dilemmas involved in too much enforcement. Another looks at roles for public service television and a third, at public accountability in broadcasting.

The authors of this work have developed an analysis tool for broadcasting system performance--

the identification and clarification of social values--that has not appeared before. Together with the historical material they present, they provide a helpful look at European broadcasting. (-PAS)

Mattelart, Armand. *La internacional publicitaria: Primera edición en castellano, revisada y aumentada por el autor.* (International Advertising: First Edition in Spanish, Revised and Annotated by the Author). Madrid: Fundación Social de las Comunicaciones (FUNDESCO), 1989. pp. 232. ISBN 84 86094 56 9 (pb.) n.p.

The attitude towards advertising has changed substantially during the last decade. There is less criticism of it and there are more professional textbooks about it. More and more people feel themselves attracted towards the 'industry of public noise.'
This is because of the huge social transformation we have experienced. We have passed from a welfare state and the importance of public service with its control to a regimen centred around business, private interests and the market.
Mattelart analyses advertising in this new global situation. He recognises that advertisements are omnipresent and the advertising agencies are very powerful. Mattelart studies its economic mechanisms, its functioning and its patterns, its origins, its evolution, its volume of business, their ranking, their relation to power and their strategies. He also shows how their advertising and audiovisual industries act, which methods they use to control audiences, the 'bartering', the secret of making the literary 'fast food' adapted to different audiences. All of this is described in a global way, taking into consideration the geostrategics of the networking of advertising that goes through culture and worldwide economics.
The book will be useful for professionals, politicians, sellers and consumers, experts and people who are just curious, for all those who still stop puzzled in the face of the marketing culture, and for all those who think that 'the critical conscience still has a meaning.'
Although this French-Belgian author wrote this book in French, he revised the present Spanish publication and added new insights.
(- JMT)

Musser, Charles. *Before the Nickelodeon: Edwin S. Porter and the Edison Manufacturing Company.* Berkeley/Los Angeles/Oxford: University of California Press, 1991. pp. xii, 591. ISBN 0 520 06080 6 (hb.) $60.00; ISBN 0 520 06986 2 (pb.) $29.95.

This is a biography of Edwin S. Porter, one of the most important figures in the early history of American cinema, in the last decade of the nineteenth century and the first decade of the twentieth. Among other accomplishments, he produced 'The Life of an American Fireman' and 'The Great Train Robbery', both in 1903, which often are cited as the first successful American narrative films, marking the take-off point of the American film industry.
Although the book focuses on Porter's work with Edison, the first major U.S. film company, it provides an in-depth history of the whole U.S. film industry in its formative period, from Thomas A. Edison's resolution to invent the 'kinetoscope', in 1888, through Porter's entry into the Edison company in 1896, to the parting of the ways between Edison and Porter in 1909. By that time, the commercial and cultural significance of the industry was obvious.
The American industry was greatly stimulated by competition from the more rapid technological advances in Europe, in the early 1890s, especially those of the French Lumière brothers. Edison's kinetoscope--'peep show'--machine obviously could not compete against projected films. The company finally came up with the 'projecting kinetoscope', which made possible the 'nickelodean'--'five-cent theatre'--craze of 1906-1907, and ultimately the U.S. motion picture industry. Porter, as Edison's chief producer, director and cinematographer, was at the centre of these developments.
Some of Musser's remarks about that period strike a chord in today's media world. The mass entertainment of the films had 'a sense of farce and anarchistic play' which was feared to 'threaten the status quo'. Also, 'audiences tended to appropriate pictures for their own purposes, which were often quite different than those intended by the filmmakers and production companies'. (- WEB)

Piccini, Mabel (ed.). *La Imagen del Tejedor. Lenguajes y Políticas de la Comunicación* (The Image of the Weaver: Languages and Politics of Communication). Mexico City: FELAFACS/G. Gili, 1987. pp. 212. ISBN: 968 887 117 6 (pb.) n.p.

Contemporary studies on language and social communication diverge in many directions, but they also show both theoretical and disciplinary convergences. Everywhere there are rituals, discursive acts, figurative operations and policies that are expressed through those symbolic processes. Many come from people worried about the abuse of power and their loss of cultural identity. How can their ideas and feelings be intercon-

nected? The authors feel it can be done through a text which is the expression of those people, themselves.

The words 'text' and 'texture' both come from the Latin. The Spanish word 'tejedor', weaver, comes from the same Latin root. The weaver links and connects spaces, ideas and fragments that are radically or at least partially different. A text-texture can be considered as a final product, behind which the meaning (truth) exists. But the text also can be considered as something that is worked out through a perpetual process of interlacing.

This book gathers reflections on the policies and the poetics of communication, about the intention and the word, about images and 'imaginaries (Sp.: *imaginarios*), as they are continuously and perpetually linked in dialogue and interchange.

(- JMT)

Powe, Lucas A., Jr. *The Fourth Estate and the Constitution: Freedom of the Press in America.* Berkeley/Los Angeles/Oxford: University of California Press, 1991. pp. xii, 357. ISBN 0 520 07290 1 (hb.) $29.95.

This sketches the whole history of the development of the constitutional status of freedom of the press in the United States, but the author feels justified in devoting most of the book to the period since the libel case, *New York Times v. Sullivan*, which began in 1962 and was decided by the U.S. Supreme Court in 1964. He points out that before 1964, 'press litigation invoking the First Amendment was haphazard and, like most defense litigation, reactive.' Consequently, 'for all practical purposes the modern constitutional law of freedom of the press began with the Supreme Court's constitutionalization of the libel in *New York Times v. Sullivan* (1964)'.

The right of the public to be informed will always be in tension against the need of the state to reserve access to particular kinds of information necessary to the well being of that same public. Consequently, legal decisions concerning the press must always walk a narrow line. Discussing 'prior restraints' on publication, frowned upon by Anglo-American jurisprudence at least since Blackstone, Powe notes that even in the Supreme Court decision in favour of the *New York Times* and *Washington Post* in the *Pentegon Papers Cases* five justices warned 'that a criminal indictment of those responsible for publishing national secrets in the newspapers might be favorably received'.

The increasing concentration of media ownership in the United States and the actual disappearance of newspaper competition in most major cities,

raise new questions about press power and press freedom which are critical but have yet to be seriously addressed, either by new legislation or in the courts. As Powe indicates in the final chapter, more regulation seems necessary to curb irresponsible press power, but it must at the same time protect essential press freedom.

(- WEB)

Prinsloo, Jeanne, and Costas Criticos (eds.). *Media Matters in South Africa.* Durban: Media Resource Centre, University of Natal, 1991. pp. 301. ISBN 0 86980 802 8 (pb.) R39.60 (US$20.00).

In 1985 the University of Natal initiated an annual series of conferences on educational resources, most of which have been directly or indirectly relevant to communication. The sixth conference, 'Developing Media Education in the 1990s', on whose proceedings this book is based, was held in 1990 and directly addressed the nature of media education, its necessity and how it might best be promoted in South Africa.

Bob Ferguson, chair of the Joint Department of English and Media Studies at the Institute of Education, University of London, delivered the keynote address and contributed a paper on 'The Necessity of Theory in Media Education', in which he argues not only that the most practical thing in media education is a good theory but also that theory and the potential for theoretical development should be made accessible to students of the media at all levels. The other twenty-eight contributors are South African, most of them from the vicinities of Durban or Cape Town.

Their perspective is generally that of 'critical/cultural studies', with the usual search for concealed ideologies. But the conference was not without internal debates about differing interpretations of evidence in critical papers. For example, John Chapman's paper criticizing the American film, *Running on Empty*, for its alleged rightist ideology disguised in leftist-appearing sheep's clothing, is in turn criticized by John Higgins. 'I would submit,' says Higgins, 'that his analysis of the film *Running on Empty* was disabled by a refusal to actually read the text of the film.' The editors then gave Chapman space for a rebuttal. Both Higgins and Chapman address the question of the degree to which literary types of analysis can be applied to cinema (and, implicitly, television). Both acknowledge the value of critical analyses of films to help in understanding the contemporary South African situation.

(- WEB)

Skovmand, Michael, and Kim Christian Schrøder (eds.). *Media Cultures: Reappraising Transnational Media*. London/New York: Routledge, 1992. pp. viii, 222. ISBN 0 415 06384 1 (hb.) £35.00; ISBN 0 415 06385 X (pb.) £11.99.

The six Danish, two Norwegian and two British authors of this volume take up themes which call into question the negative academic view of the 'cultural industries' which has followed the pattern set by Max Horkheimer, Theodor Adorno and other scholars of the Frankfurt School in the 1940s and 1950s. Furthermore, they refuse to characterize the complex influences interacting in transnational media flow in such simplistic terms as 'Americanization'.

Graham Murdock points out in his contribution that traditional patterns of broadcasting, whether commercial or 'public service', cannot 'meet the challenge posed by the new formations of culture and citizenship, either nationally or internationally.' Instead, a whole new pattern of 'public communication space' is needed, which will meet the new needs of political and cultural diversity.

Michael Skovmand, after comparing German, Danish and Swedish versions of the American quiz programme, *Wheel of Fortune*, concludes that audiences use the programmes in widely varying ways which defy any 'bombastic, heavy-handed conclusions' about it or other generes of popular television. Kirsten Drotner discusses 'panics' about the supposed dire effects of the media. David Morley discusses the relation of cultural consumption to European cultural identities. Peter Larsen deals with news in 'the multi-channel universe' now emerging in European mass media. Søren Schou confronts the meaning of 'Americanisation' in the 'mental transformation' of post-war Denmark. Ib Bondebjerg analyzes the television fiction of Dennis Potter. Jostein Gripsrud highlights the 'appropriation' of Hollywood 'low-culture' genres, signs and styles by European 'high-culture' producers and audiences, using French examples. Anne Jerslev discusses the event of viewing 'cult films' as a process of textual deconstruction, in which the audience knowingly participates. Finally, Kim Christian Schrøder asks if 'quality' in television is not, to a large degree, a function of the relationship between cultural product and different audiences.

(- WEB)

Soares, Ismar de O., and Joana T. Puntel. *Comunicaçao, Igreja e Stado na América Latina* (Communication, Church and State in Latin America). Sao Paulo: Ediçoes Paulinas/UCBC, 1989. pp. 236. No ISBN (pb.) n.p.

About 800 journalists, university professors and communication researchers from Brazil and five other Latin American countries gathered for the Thirteenth Brazilian Social Communication Congress in 1984, to analyze the 'discourse' and practice of the churches in Brazil regarding social communication. The principal papers and discussions of the Congress are presented here. Central to their interests were the commitment of Christian communicators to the indigenous people, the land problem, culture and human rights.

(- JMT)

Teixeira, Nereu. *A Comunicaçao Libertadora*. Sao Paulo: Ediçoes Paulinas, 1983. Pp. 207. No ISBN (pb.) n.p.

Written from a liberation theology perspective, this book discusses various types of communication relevant to Christian social involvement in Brazil.

(- JMT)

Tomaselli, Keyan, and P. Eric Louw (eds.). *The Alternative Press in South Africa* (Studies on the South African Media, 3) Belville/London: Anthropos/James Currey, 1991. pp. 236. ISBN 0 620 11190 9 (Anthropos); ISBN 0 85255 312 9 (James Currey, pb.) £11.95.

The progressive-alternative press began to emerge in South Africa in the early 1980s and, according to the editors, 'played a crucial role in catalyzing political processes resulting in the demise of the P. W. Botha faction within the Cabinet' making way for the massive liberalization which has occurred under F. W. De Klerk. The revolutionary process which gradually gained headway through the 1980s went largely unreported in the establishment press, but was well documented by the alternative media throughout the decade.

The twelve chapters, by eight authors, include an initial chapter by the editors which sketches developments in both the establishment and left-wing presses between 1980 and 1989. They define eleven broad categories of press, representing an equally broad spectrum of black, white and coloured interests; Afrikaans, English and Zulu; left and right. *New Nation*, one of the most effective of the 'left-commercial' publications, started as 'a "national Catholic" newspaper designed to enter into the life, struggles, needs and burning aspirations of the majority of South Africa's people.' Although started with Catholic Church support, it accepted advertising to guarantee sustained publication. It collaborated closely with other left-oriented papers in pooling news. Although it coordinated its editorial policy with the

United Democratic Front, the coordinating body of the anti-apartheid movement, it was not 'alternative' in the sense that the various 'people's media' were. Protected by the Church, it was able to serve left-wing information needs the more fragile 'people's media' could not, especially during the 'states of emergency' when the left-wing infrastructure suffered severe damage at the hands of the government.

Other chapters discuss various aspects of the media struggles during the decade, with special stress on the character and problems of black journalism. Case studies of one of the most important alternative papers, *Grassroots*, explore the differing contexts of the first and last halves of the decade through which it managed to survive.

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Trujillo, R., Antonio D. *La Censura Cinematográfica en Venezuela* (Cinema Censorship in Venezuela). Caracas/Merida: Universidad de los Andes, Departamento de Cine, 1988. pp. 272. No ISBN (pb.) n.p.

Different types of censorship in Venezuela are described, with many examples, including ecclesiastical, military, economic and political cases. One case, in particular, that of the film 'Triple Crimen de Mamera', is traced through the legal proceedings which were brought against it.

Note: This issue of *Communication Research Trends* is accompanied by a twelve page book review supplement.
                                        The Editor