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Mass Media Functions, Knowledge and Social Control

A macro-system position is developed that treats mass media as a subsystem which interpenetrates all others, sharing control of knowledge; examples are given from the reporting of science.

► The importance of knowledge as a basis for social power has been noted by a number of scholars,[1] but less well appreciated is the fact that *control* of knowledge is central to development and maintenance of power. The knowledge industry, of which mass communication is part, currently accounts for more than a fourth of the gross national product and attests to the social importance of the demand for knowledge production and distribution.[2]

In present-day society, large scale organizations in both public and private sectors are structured to carefully control both the assimilation and dissemination of information.[3] The rapidly growing data-processing agencies represent overt recognition of the role of information and its control in modern social organization.[4] Professional specialists in modern corporate structures are integrated into a configuration of organized intelligence which is often beyond the comprehension or concern of any one of them as individuals.[5]

It is still important to study the micro-processes of mass communication, but given the growing importance of infor-

mation control in society, it appears equally important to take a macro-view of mass media as interdependent parts of a total social system in which they share facets of controlling, and being controlled by, other subsystems. A major purpose of this paper is to relate the subsystems of mass media to the total pattern of social organization and social control and to point up the crucial nature of knowledge *control*, rather than knowledge *per se*, as a basis for social power.

The concept of "social system" is viewed here as a series of interrelated subsystems with primary functions including the generation, dissemination and assimilation of information to effect further control as a means to an end or as an end in itself.[6] Mass media rep-

[1] See for example, Ben H. Bagdikian, *The Information Machines, Their Impact on Men and the Media* (New York: Harper and Row, 1971); John K. Galbraith, *The New Industrial State* (Boston: Houghton Mifflin, 1967); Michael Harrington, "The Social-Industrial Complex," *Harper's* (November 1967), pp. 55-60; Fritz Machlup, *The Production and Distribution of Knowledge in the United States* (Princeton: Princeton University Press, 1962); J. McDermott, "Knowledge is Power," *Nation* (April 14, 1969), pp. 450-60; Robert E. Park, "News as a Form of Knowledge," *American Journal of Sociology,* 45:669-86 (March 1940); Douglas Carter, *The Fourth Branch of Government* (New York: Random House, 1969), pp. 11-20; Kenneth E. Boulding, *The Meaning of the 20th Century: The Great Transition* (New York: Harper and Row, 1964); Sanford A. Lakoff, "Knowledge, Power and Democratic Theory," *Annals,* 394:4-8 (March 1971).

[2] Machlup, *op. cit.;* Clark Kerr, *The Uses of the University* (Cambridge: Harvard University Press, 1963).

[3] Galbraith, McDermott, *op. cit.* Also see James Burnham, *The Managerial Revolution* (New York: John Day Co., 1941).

[4] J. Stefan Dupre and Sanford A. Lakoff, *Science and the Nation, Policy and Politics* (Englewood Cliffs, N.J.: Prentice-Hall, 1962), pp. 20-42; C. V. Kidd, "Implications of Research Funds for Academic Freedom," *Law and Contemporary Problems,* Vol. 28 (Summer 1963); Russell Kirk, "Massive Subsidies and Academic Freedom," *Law and Contemporary Problems,* 28:606-12 (Summer 1963) and L. C. Mainzer, "Scientific Freedom in Government-Sponsored Research," *Journal of Politics,* 23:212-30 (May 1961).

[5] Galbraith, McDermott, *op. cit.*

[6] Melvin L. DeFleur, *Theories of Mass Communication* (New York: McKay, Inc., 1966).

► The authors, all of the University of Minnesota, as a team, have been frequent contributors to this journal.

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resent subsystems which cut across other subsystems and transmit information among and between them. The examination of the nature of the process by which this transmission occurs and the systemic relations among the various subsystems, is a major focal point for this paper. To sharpen this focus, the communication of scientific and technological knowledge is used as a case in point, to illustrate the various forms of system control that occur in mass communication.

One should not assume from the above that social control is the only function served by mass communication, but rather that all communication processes have a control function within them, either latent or manifest. A principal question for research is not *whether* information is controlled. Instead, the main questions are:

a) How the control is exercised

b) Where in the process it occurs; and

c) What its consequences are for the total social system as well as for the interdependent subsystems.

This model assumes that mass communication of scientific and technological knowledge is controlled primarily in the interest of system maintenance.[7] The system being maintained may be the media subsystem itself, a source subsystem with which the media have systemic relations (such as the medical community or a space research agency), or the

[7] Current discussions of social systems theory include Talcott Parsons, "A Paradigm for the Analysis of Social Systems and Change," pp. 189-212 and Talcott Parsons and Neil J. Smelser, "The Primary Subsystems of Society," pp. 131-40 and Pierre Van den Berghe, "Dialectic and Functionalism: Toward a Synthesis," pp. 293-306, in N. S. Demerath and R. A. Peterson, eds., *System, Change, and Conflict* (New York: Free Press, 1967); Daniel Katz and Robert L. Kahn, *The Social Psychology of Organizations* (New York: Wiley, 1966).

[8] "Regulatory" is used here in the sense of the traditional concept in social systems theory. See Herbert Spencer, *The Principles of Sociology* (New York: D. Appleton and Co., 1898), Vol. 1.

[9] See William Hocking, *Freedom of the Press* (Chicago: University of Chicago Press, 1947); William A. Hatchten, "The Press as Reporter and Critic of Government," *Journalism Quarterly*, 40:12-18 (1963); Bryce Rucker, *The First Freedom* (Carbondale: Southern Illinois University Press, 1968), p. 217.

social system as a whole. This maintenance function may be fulfilled by two sets of processes which, while different, do overlap. They are the *feedback-control* and *distribution-control* processes.

The feedback concept, in much recent communication research, has often been limited to controls on the media subsystem itself, referring to such activities as letters to the editor and readership research. Here, however, feedback-control is used in a much more inclusive sense, with the media subsystems themselves conceived of as providing a feedback, or regulatory, function for other subsystems and/or for the total social system.[8] The feedback-control function of mass media in the total system finds both its empirical basis and its philosophical expression in the historic conception of the fourth estate or "watchdog" role of the press.[9]

Distribution control, which can occur either independently or jointly with feedback-control, serves a maintenance function through selective dissemination and a wide variety of distributional techniques, as well as by selective withholding of information. "Censorship," for example, is regarded in this perspective as one special case of distribution-control, but not the **only** type.

Information control in the interest of system maintenance takes many forms and is not the exclusive property of any one subsystem. For example, what is functional feedback control at one system level or for a particular subsystem may be dysfunctional for control and maintenance of another subsystem. Herein lie some major social conflicts and problem areas for mass communication research. The mass, pluralistic social system model assumes a certain amount of conflict as subsystems interact, and it also assumes that modern media systems are designed for conflict control through information control. Conflict control may include the *generation* of conflict situations as well as the direct dissipation of tension. This principle is widely recognized in the political realm; the point here is that it applies equally well to the scientific area

but is expressed by different means. Media reporting of a clash between scientific opinion on supersonic transports and governmental policies regarding such technology represents a generating of conflict. From a systems perspective, such reporting is functional for maintenance of the total system in that it increases the likelihood of preserving an equilibrium state.

Media Systems and System Dependency

Dependence on secondary media by other institutions is much greater in a modern pluralistic society than was true in the small community. System stability is one of the more general needs; a proposition about stability which counterposes the consensus and conflict models is that:

> The less complex and differentiated the system, the more likely mass media within that system are to confine themselves to the distributive aspect of system maintenance.

The corollary is that:

> The more differentiated and pluralistic the system, the more likely mass media are to perform a feedback-control as well as a distributive function.

This proposition applies to several social situations and is especially relevant for current technological and environmental crises. In the small town or suburb, there is often a tendency to manage conflict at an informal level to prevent social disruption. Small community media tend to refrain from reporting social and technological controversies, concentrating instead on cohesion and consensus and publicizing public decisions after the fact. Data from studies in Minnesota and other locations support this proposition and indicate that norms of both media and political subsystems of small communities tend to be supportive of this pattern.[10] Implications for transmission of relevant technological information seem to be clear. Media in small communities will tend to confine themselves to descriptive reporting of technological issues, unless outside forces intervene.

Outside forces may appear, however, as confrontations develop between subsystems and agencies of another subsystem of the total pluralistic system. A control attempt by a regulatory agency, such as a state anti-pollution bureau, over a small town industry is an illustration. Metropolitan media whose coverage includes that community may report the issue, but in a way oriented toward their feedback function for the larger, pluralistic system. In such a case, mass media are serving as system regulators, applying corrective pressures to subsystems that may be out of functional balance in relation to others. In this perspective, "muckraking" by mass media performed the same maintenance function in an earlier era. This is far different from seeing muckraking as a wayward act of newspapers sensationalizing for sensation's sake. Rather, as Lippmann viewed it, muckrakers applied dominant social norms to social groups and institutions which were new, deviant or not yet fully integrated into the social structure. Similarly, Lasswell's "surveillance" and "correlation" functions seem to refer to feedback-control processes in system terms. Merton and Lazarsfeld refer specifically to "the enforcement of social norms" as a prime example of the "power of the press."[11] These writers referred to social issues of an earlier era. More recent examples of mass media reporting serving a feedback-control function for the total social system included Rachel Carson's "Silent Spring," sub-

[10] C. N. Olien, G. A. Donohue and P. J. Tichenor, "The Community Editor's Power and the Reporting of Conflict," JOURNALISM QUARTERLY, 45:243-52 (1968); also see Alex S. Edelstein and Blaine Schulz, "The Leadership Role of the Weekly Newspaper as Seen by Community Leaders: A Sociological Perspective," in Lewis Anthony Dexter and David Manning White, eds., *People, Society and Mass Communications* (New York: The Free Press of Glencoe, 1964).

[11] Walter Lippmann, *Drift and Mastery* (Englewood Cliffs, N.J. Prentice-Hall, 1961); Harold D. Lasswell, "The Structure and Function of Communication in Society," pp. 37-51, and Paul F. Lazarsfeld and Robert K. Merton, "Mass Communication, Popular Taste and Organized Social Action," pp. 95-118, in Lyman Bryson, ed., *The Communication of Ideas* (New York: Harper, 1948).

sequent environmental. reporting, consumer research reporting and mass media treatment of the Vietnam War.

These forms of feedback-control media behavior, such as muckraking, environmental reporting and political controversy, are regarded within the systems perspective as more likely in broader gauged media that serve the total system. Conflict reporting is a form of conflict management, but ordinarily not conducive to conflict management at the nonpluralistic subsystem level. Once a major issue is "in the news," however, reporting of that issue is legitimized, if not in fact imperative, for local subsystem media. The subsystem media, however, structure their reporting of the issue in a supportive way. Through various distributional control of techniques (including content and timing) local media tend to support local norms and social arrangements. Tension-laden information may be restructured, or distribution may be timed to have maximum maintenance effect. This is what would be expected in a consensus system.

The difference between media serving less pluralistic subsystems and those serving more pluralistic total systems is clear in the contrast between small town and metropolitan newspapers. This type of variation occurs in the industrial sector; reporting of conflict increases as the system being served by the medium becomes more pluralistic and encompassing. The house organ of a company is functionally similar to the small town weekly in that reports of controversy are absent or, at most, restrained. At a more inclusive system level, publications of the National Association of Manufactur-

ers will report more conflict. At the total system level, the *Wall Street Journal* reports more conflict than any of the media serving less complex subsystems. By fulfilling different functions, small and large system media jointly serve to manage conflict and maintain the total system as a whole.

Media Systems and Science Systems

Along with deepening involvement of science in public decision-making has come an increased amount of science content in mass media.[12] Most of this content may be described as "knowledge of" rather than "knowledge about." "Knowledge of" refers to familiarity with a topic or events surrounding it, whereas "knowledge about" includes analytic and formal knowledge.[13] One reason for this concentration on "knowledge of" in science, as well as in most specialized knowledge areas, stems from the limitations of the media system and the controls exerted on media personnel. Media and science systems do not accommodate each other as readily as, say, media and political systems.[14] Norms for entry and participation in political and science groups are quite different. The first is literally "everybody's game," and the control orientation of the political reporter is thus directed more toward the total system. Science, however, is more for the specially educated and the journalistic orientation toward public affairs reporting does not mesh easily with the scientist's particular control orientation toward knowledge.

A fundamental proposition about control of science content in media may be stated as:

> Control over mass media content concerning science and technology by the science system is a function of the degree to which media channel members identify with the science system.

An operational implication is that science writers who are highly trained in fields which they cover, and have high

[12] Hillier Krieghbaum, *Science and the Mass Media* (New York: New York University Press, 1967).

[13] See Robert E. Park, *op. cit.*; Robert S. Lynd, *Knowledge for What?* (Princeton: Princeton University Press, 1939).

[14] Cater, *op. cit.* This view is notwithstanding the argument by Tom Wicker that "in science coverage, a first class reporter . . . is allowed more leeway than a political reporter." Wicker, however, is referring to media system control rather than source control alone. See Tom Wicker, "The Greening of the Press," *Columbia Journalism Review* (May/June 1971), p. 10.

levels of association with scientists in those fields, will be less likely to report science in a way that deviates from the norms of the scientific community, particularly in areas of controversy involving scientists. To the extent that this hypothesis is supported, it raises some question about fulfilling the feedback, or fourth estate function, in science reporting by science reporters. Such an apparent paradox may be a logical consequence of the predominant scientific orientation toward knowledge and its spread.

Accumulation of knowledge is fundamental to growth and development of a scientific field, and control of knowledge flow is crucial to the field's legitimacy and survival. A scientific group feels it has arrived when it possesses a unique body of knowledge which is considered necessary and can be dispensed to the nonscientific world, that is, other subsystems, in a therapeutic fashion. Research organizations by their very nature are control-oriented: being called an "authority" is high acclaim for a scientist.[15] Procedures established by professional scientific organizations for review and criticism serve as feedback, or deviancy control, mechanisms at that subsystem level.[16] What scientists call "professional" behavior is, from this perspective, "control" behavior.

Maintenance of status position and conflict control are closely related bases for information control in the science subsystem. Members of elite scientific groups know that if they appear not to possess exclusive and mutually acceptable knowledge, they may not be elite for long. Monopoly of knowledge is as attractive a social goal as monopoly of a commercial market. Also, a knowledge monopoly must be seen by the larger system and other subsystems as agreed upon. Dissent among scientists may be functional for the science subsystem, but only to the extent that it provides a testing ground for relative acceptability of different perspectives in the interest of eventual consensus.

Scientific dissent reported to the larger community, however, may be dysfunctional from the scientific community's viewpoint, however enlightening it may be in feedback terms for the audience system.[17] Sanctions in the scientific community serve to temper any debate that breaks into the open through mass media.[18]

Patterns of media coverage of science point to a wide variety of *direct* distributional controls over science content in ways that serve to prevent the performance of a pluralistic function and, instead, serve to maintain the science system itself. The fact that a majority of reporters may accept a measure of prior review by scientists before publication attests to the amount of science system control over mass media today.[19] Reporters who abide by scientists' wishes "to be left alone" are submitting to distributional control. It may be highly desirable from the point of view of a scientific organization to withhold data and "not rock the boat," regardless of media arguments that such data are necessary "for the public right to know."

Control of science content in media may also be **indirect,** in that reporters may adopt procedures that give the source control without overt demands. The general tendency to report science as an area of consensus, even though the conflict model is fundamental to organized science, is an example. That is, although managed conflict is fundamental to science, the general value structure and popular definition of science appears to reinforce reporters' tendencies to present science as providing singular answers to technical and social problems. Until the early 1960's, media accounts of science rarely dealt with scientific dissent. Par-

[15] Warren O. Hagstrom, *The Scientific Community* (New York: Basic Books, 1965), pp. 34-5.

[16] Donald Fleming, "Big Science Under Fire," *Atlantic* (September 1970), p. 99.

[17] Hagstrom, *op. cit.*, p. 18.

[18] *Ibid,* pp. 254-86.

[19] Hillier Kriegbaum, *When Doctors Meet Reporters* (New York: New York University Press, 1957).

ticularly in medicine and agriculture, research as recently as 15 years ago was largely reported on a fairly descriptive, one-project-at-a-time basis. The apparent current shift to more critical, conflict-laden coverage of science in some areas (the SST, environment, drug effects) seems to stem from the growing relevance of scientific problems to the political system. When a scientist testifies before Congress, the public definition of his role changes and politically-oriented media personnel tend to do the reporting.

Dependence vs. Autonomy

Research on these questions requires a measure of channel member *autonomy*, or the extent to which the channel communicator achieves both behavioral independence and legitimacy, simultaneously, in the source system. The lack of such autonomy may be a major barrier facing reporters who strive to perform the watchdog role in their own special areas. As it is, political columnists may outdo science reporters in some areas of major scientific controversy. When Glenn Seaborg reported the discovery of a new element a few years ago at a professional science meeting, the specialized science reporters at his press conference confined their questions to that discovery. After the science writers were through, political reporters questioned Seaborg on this view as AEC administrator about nuclear radiation levels and regulations. No single channel communicator focused on both issues, and differentiation by specialty was complete.

Control over scientific information may also occur within the media system itself.[20] In fact, empirical evidence suggests that media system control and science system control, when

they occur jointly, may have direct and additive effects on communication accuracy, defined as the extent to which a message produces agreement between source and receiver.[21] From the standpoint of veracity in transmitting "knowledge about" a specialized area, such high control appears in many situations to be functional. On the other hand, from the standpoint of the total social system, such control may be dysfunctional to the extent that it results in greater "knowledge of" science and technology topics, when "knowledge about" may be essential for decision-making.

Audience Reception of Information

The tendency noted above to restrict information flow about science and technology to "knowledge of" rather than "knowledge about" may be seen as a final outcome of the various media controls and limitations and science system controls on information. A characteristic pattern of reporting major technological issues repeats itself on several topics. Initially, reporting includes a certain amount of technical information which is repeated frequently but in progressively less detail. A rather homogeneous, almost stereotyped image of the topic develops and recurs in successive media content—as was the case with the SST issue, nuclear fallout, breakfast food controversies and automobile safety, to mention a few. Mass media reporting of science is often confined to *events* surrounding decision situations and the rationale given by officials, technicians and scientists making public statements. The analytic media report of technical details behind a decision about nuclear radiation, for example, is rare for the reasons stated earlier. An illustration is the article written by Paul Jacobs about the Atomic Energy Commission and the nuclear fallout controversy. The article was financed by the Fund for Investigative Reporting and appeared in

[20] P. J. Tichenor, C. N. Olien, Annette Harrison and G. A. Donohue, "Mass Communication Systems and Communication Accuracy in Science News Reporting," JOURNALISM QUARTERLY, 47:673-83 (1970); Warren Breed, "Social Control in the News Room," *Social Forces*, 33:326-35 (1955).

[21] Tichenor, Olien, Harrison and Donohue, *op. cit.*

The Atlantic.[22] The fact that a reporter needs special funding to do an investigative feature on a scientific issue for a nationally circulated magazine testifies to the limitations placed upon media systems.

Information Control and the Knowledge Gap

If the existing pattern, growing out of information control, limits the ability of general population members to acquire information which may be used as inputs for public decisions, it also has consequences for maintenance of elite groups. The specialized nature of training and education is a powerful determinant of information reception. Persons who take part in knowledge-input and knowledge-processing activities at the office or plant are the ones most likely to absorb information relevant to scientific and technological issues from the mass media at home. Social consequences of this tendency have been summarized in a general "knowledge gap" hypothesis:

> As the infusion of mass media information into a social system increases, segments of the population with higher socioeconomic status tend to acquire this information at a faster rate than the lower status segments so that the gap in knowledge between these segments tends to increase rather than decrease.[23]

Data bearing on this hypothesis, while generally supportive, are based largely on messages transmitted through print media, and the question remains whether television may be a "knowledge leveler." For example, certain programs have been designed presumably for the low SES child. Even here, the outcome is doubtful; while high-viewers of "Sesame Street" among low SES children did learn as much as high-viewing, high SES children, the data also show that high status children were much more likely to view at these high levels.[24] In the total social system, then, it appears likely that "Sesame Street" may have created more of a gap between high and low SES children than existed initially.

It appears likely, then, that as far as knowledge transmission through mass media is concerned, there is a strong tendency for media content in scientific and technical areas to reinforce the status of the intellectual elites in society. This tendency may hold, not merely *in spite* of media tendencies to report only "knowledge of" content, but *because* of it. Highly educated, high status professional persons are the ones who can best make sense of superficial information.

Whether the long-range consequence is development of a rather generalized elite group with generalized scientific knowledge, or further reinforcement of specialized elites, may depend to a great extent on future information delivery systems. If, in fact, cable TV systems make it possible to "dial up" specific information, one would predict, from past experience and evidence, that such seeking of information about the SST, for example, will be concentrated among those already most informed about it. Such a system will be highly functional in information control terms for a specialist. He need never fear "missing something" related to his field on the news, because now he can check it all out in minutes, from his living room.

In a systems framework, there is considerable reason for expecting selective *interpretation* and *judgments*, based on the individual's group and organizational affiliations—his integration in various social subsystems. It is consistent with the general theme of this paper that some of the most intense public issues of the day have to do with the way in which information is controlled. While some U.S. citizens did refuse to believe a massacre occurred at My Lai, the more striking poll finding is that a majority believed

[22] Paul Jacobs, "Precautions Are Being Taken By Those Who Know," *Atlantic* (February 1971), p. 45.

[23] P. J. Tichenor, G. A. Donohue and C. N. Olien, "Mass Media Flow and Differential Growth in Knowledge," *Public Opinion Quarterly*, 34:159-70.

[24] Samuel Ball and Gerry Ann Bogatz, "A Summary of the Major Findings," in "The First Year of Sesame Street: An Evaluation, "Princeton: Educational Testing Service, 1970).

the incident should never have been reported. The question in the minds of members of the general public is not whether information should be controlled, but *how* it should be controlled and toward what ends.

Summary

A macro-conceptual frame of reference is presented here as an approach to the study of mass communication processes, based on the assumption that control of knowledge is basic to development of social power. Mass media are viewed, in this perspective, as interdependent parts of a total social system in which they share problems of controlling, and being controlled by, other subsystems. A major goal of research within this perspective is to point up the crucial nature of knowledge *control*, rather than knowledge in and of itself, as a base for social power.

Mass media are viewed as subsystems which cut across other subsystems and transmit information among them. The principal question for research within this framework is not whether information is controlled, but how the control is exercised, where in the process it occurs, and what its consequences are for the overall social system as well as for the interdependent subsystems. The communication of scientific and technological knowledge serves as a case in point, illustrating the various forms of system control that occur in mass communication.

Propositions relevant to this systems-control approach include:

1) The less complex and differentiated the system, the more likely mass media within that system are to confine themselves to the distributive aspect of system maintenance.

2) The more differentiated and pluralistic the system, the more likely mass media are to perform a feedback-control as well as a distributive function.

3) Control over mass media content about science and technology by the science subsystem is a function of the degree to which channel members identify with the science subsystem.

4) As the infusion of mass media information into a social system increases, segments of the population with higher socioeconomic status tend to acquire this information at a faster rate than the lower status segments, so that the gap in knowledge between these segments tends to increase rather than decrease.

The widespread acceptance of knowledge control in society is illustrated by poll findings indicating that a majority believe some events (such as war atrocities) should not be reported to the public. The question in the minds of individuals at large tends to be not *whether* information should be controlled, but *how* and toward what ends.

Writing the Truth

► Your challenge will be to call things by their right names—to call a spade a spade, instead of "an agricultural implement." Your challenge will be to publicize the deeds of the saint as well as those of the sinner. Your challenge will be to anchor your interpretation in plain good common sense. Finally, you will seek to develop a mature style, a style that doesn't have to depend upon fortissimo adjectives, gutter verbs, and nouns from the lexicon of "G.I. rhetoric."—RALPH T. EUBANKS, professor and chairman, Faculty of Communication Arts, University of West Florida, in speech to a district conference of the Florida Scholastic Press Association.