

The Electronic Bulletin Board: A Computer-Driven Mass Medium

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Abstract: The public access electronic bulletin board is a medium which serves middle-sized audiences. It is a growing medium both in terms of audience size and in proliferation of outlets. Its public image has been charged with a mix of exaggerations. The present paper argues that the medium and its audiences deserve an investigation that precedes assumptions of positive or negative massive effects. Instead, its special participative and interactive nature prescribes a uses-and-gratifications approach to the study of motivations and actual use. In a survey of the participants in one such electronic bulletin board the findings paint a picture of quite extensive use, usually carried out for purposes other than those emphasized by either pessimists or optimists. The role of Ludenic (or play) motivation and behavior is given special attention in the context of studying the use of this computerized application as a medium.

Electronic bulletin boards are a special kind of mass communication arrangement. They are a prototypical use of the computer as a medium, marrying the technological innovations of computer networking with the twin interests in communication: interpersonal conversation and mass

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propagation of messages. Technically, a combination of software and hardware resides on some host computer system, and users access it through terminals or microcomputers by dialing in over dedicated or general purpose telecommunication lines. The bulletin board "posts" announcements, messages and entire discussions written by, and intended for, the users of the system. Different from electronic mail or teleconferencing, which are designed for a finite list of users or nodes, electronic bulletin boards are broadcast systems. Each message placed on them is intended for a wide audience; systems often seek out and encourage new users to sign on. More than a thousand such bulletin boards operate currently in the United States, and their numbers grow by the week. As the users of such systems multiply rapidly (Plumb, 1984; Manning, 1985), bulletin boards increasingly deserve the title "mass medium," despite their qualitative differences from the original bearers of this name.

With respect to structure and sophistication, electronic bulletin boards vary widely. Some emulate the traditional billboard, serially and indiscriminately carrying all messages that are posted. Others offer their users different representation schemes for the information they store. One popular nonserial scheme is the tree structure, in which the content organization is based in a "trunk" which branches off into various topical subsections. Elaborate subroutines allow storing, retrieving, replying, indexing and other "massaging" of messages. In the degree of topical segmentation there is considerable variance (Glossbrenner, 1983). Some extremely specialized boards offer a discourse arena for a specified topic such as hobbies, commercial

advertising, sex, games, education or computing, while others are oriented to general purposes.

Ownership also varies. Although originated by computer hobbyist groups (Seger, 1983), bulletin boards are currently operated by a wide array of interested entities. These include non-computing organizations that wish to provide a communication enhancing tool for their constituents, such as research organizations (Hiltz and Turoff, 1978), political groups (Garramone, Harris and Anderson, 1985), or churches (Plumb, 1984). Among other typical sponsors: computer stores that use the medium for marketing purposes, and altruistic individuals who engage in this activity for the ages-honored purpose of "chatting, joking and meeting new friends" (Ferris, 1983). Sign-on is generally free, except for the telephone call and/or the timesharing rate. Even with narrower diversity than that of most mass media, they appeal to wide and growing segments of the population.

Conceptual issues raised by the electronic bulletin board

Because they are a new kind of mass medium, electronic bulletin boards offer an exciting challenge for students of mediated human communication and the social context of computers, a medium that combines communication concepts in a novel and strange way. Several seeming paradoxes are inherent to them, especially when examined within the conceptual framework of traditional media.

Although based on print, the electronic bulletin board is both electronic and nonlinear. While differences from print usage cannot be detected by a microlevel analysis of reception and perception of messages by audience members, a macrolevel perspective should uncover a different structure of opportunities to access content. Although they are a mass medium, bulletin boards afford their users an inordinate amount of potential control that stems from the unmitigated ability, at the tips of each user's fingers, to shape the message content. Although disseminated at the speed of light, the content is retained and accessible immediately for long periods. In this sense the electronic bulletin board decouples the correlation between speed and evanescence typical of other mass media. Both spontaneous and asyn-

chronous, the communication between two or more actors is free from concurrent presence (which is required for traditional radio or television) but allows close-to-natural, real-time transactions in a manner not afforded by print.

The "rules of the game" on electronic bulletin boards express democracy in its purest form, yet access is limited (so far) to the relative few who can afford or otherwise gain access to the necessary hardware. One utopian scenario, which draws on the democratic potentials afforded by such media, was sketched by Etzioni (1972). Etzioni's MINERVA is still beyond reach if only because of vastly inequitable access to hardware and training.

Electronic bulletin boards can be very intimate or extremely anonymous. Thus, for example, there are systems devoted to "matchmaking," simulations of Citizen Band radio discussions, political conversation, technical discussions, professional information exchange, and fantasy games. The very provision for or prevention of anonymity, determined by those who control the medium, is of interest (Hiltz and Turoff, 1985). Some systems require the users to mask their identities and use pseudonyms or "handles."

These paradoxes highlight the intellectual challenge that is special to the study of electronic bulletin boards. In some respects, however, electronic bulletin boards are very typical mass media. Very clear forms of "electronic gatekeeping" are performed by "Sysops," the system operators who are in the instrumental position to trim or censor the message flow. On many of the systems, "status conferral" could be detected in user names allocated by seniority, authority or other trappings. Communication behaviors (amount of writing, and of response to one's messages) are related to implicit social codes. Knowledge gaps, cultivation effects, agenda setting—all are mass communication concepts and processes that should be applicable to public access electronic bulletin boards.

In sum, this medium constitutes a new form of mass communication. As it rapidly diffuses, it represents several novel concepts and processes. But because it is a mass medium, it should be studied as such, utilizing the theory (and some of the methods) developed in studying traditional mass media. Proliferating electronic bulletin

boards and their use challenge researchers to provide the appropriate theoretical framework for dealing with them.

Theoretical models for electronic bulletin boards

How should we study the medium of electronic bulletin boards? Danowski (1982) suggests a focus on message content and network structure as the appropriate approach. Danowski's model, synthesis of several research methodologies, intends to measure "activity" on a system, and to provide a tool for "changing its course." Close in nature and emphasis to the traditional design and evaluation of computer teleconferencing (e.g., Kerr & Hiltz, 1983; Johansen, Vallee & Spangler, 1979), this model approach is related to the sociotechnical tradition of computer system analysis (Pava, 1983; Dutton and Kraemer, 1985). However, while the technology of computer teleconferencing is identical or very similar to that employed by public access electronic bulletin boards, the nature and functions of these two media are very different. Public access electronic bulletin boards are a *mass* medium, while computer teleconferencing systems are, more often than not, organizationally sponsored and closed systems, designed with a particular finite (and generally small) group of users in mind. System-driven, goal-oriented and sociotechnical approaches are therefore not conceptually appropriate.

Alternatively, electronic bulletin boards as media were studied in the context of their effects on individuals and society. Studying effects seems to be a reflexive reaction by all social scientists confronted with new phenomena. Each mass medium has received its share of mass-effects studies. This tendency is understandable in view of the natural inclination of the owners, controllers, participators, critics, and/or audiences to rationalize, attack, or advocate the new medium (be it print, film, radio or television). In the early days of a new phenomenon it is only natural that opponents and proponents choose to express themselves in the sweeping and appealing terms that only mass effects theories can provide. Electronic bulletin boards received this type of coverage, too.

Thus, the early focus on effects brought about

a concomitant tendency of overoptimism or exaggerated pessimism. The evaluation of public access bulletin boards was tied in with the rest of computer technology subculture, and a rather harsh judgment was passed. Under the dramatic title "The Hacker Papers," *Psychology Today* (1980) carried an excerpt of some discussions held on one of the earliest electronic bulletin boards. It included a discussion among a group of "hackers" on the personality of computer addicts and the phenomenon of computer addiction.

In a reaction to this publication, Zimbardo (1980) provided one of the early and most famous indictments of the effects of the computer as a medium:

I believe that the basic quality of our social lives is being diluted, distorted, and demeaned by a host of profound structural changes in society. Because these new forces are systemic and not just transient developmental stages, they won't simply be outgrown but are likely to become permanent fixtures in our daily existence. The consequences are serious. (p. 72)

This theme, the social isolation and loneliness brought about by a computerized society, is repeated in later research (e.g., by Kiesler, Siegel and McGuire, 1984) into computer mediated communication. One of their conclusions suggests that such settings could be restricting personal feedback and individuating information, a process that might lead to behavior that is "more impulsive and assertive, and less bound by precedents set by societal norms of how groups should come to consensus" (p. 1130).

It seems ironic that in illustrating his point, Zimbardo's choice of "villain" (the electronic bulletin board) is the very application of computers that is the least isolationist. In fact, the argument can be made that electronic bulletin boards produce the exact reverse effect. Rather than engendering loneliness and isolation, they may very well serve to link people. Rather than removing societal norms, they may well be a vehicle for establishing them. The typical "hacker" addressed by Zimbardo and the "Hacker Papers" could, in the absence of this medium, be a lot more lonely and isolated. No evidence is presented that the computer *begets* the hacker personality.

Other potential effects addressed include dehumanizing aspects of the medium (Kiesler, Siegel and McGuire, 1982), and the political dangers inherent in a system that is easily monitored and controlled (Carey and Quirk, 1973). In his seminal treatment of computer effects, Weizenbaum (1976) provides the slogan for the pessimistic view that "the computer has thus begun to be an instrument for the destruction of history" (p. 238).

The negative view of the effects of computers as media has permeated popular culture. The old genre of gangster movies, for example, featuring young men toting guns and knives, is being replaced by movies about even younger boys toting modems.

In a much more favorable view, computerized conferencing has "a great deal going for it" (Panko, 1977), not just because of the efficiency, speed, lower cost and so-called "user friendliness," but also for its goal of "facilitating human communications" (Hiltz and Turoff, 1981). The argument on this side of the debate uses the term "Information Society" lovingly. Both researchers and the entrepreneurs have high hopes for beneficial effects.

One commercial organization providing electronic bulletin board services (for a fee) described its own service in the following laudatory terms:

[the bulletin board is] a tool for social revolution. People all across the country are meeting and talking without ever seeing each other. And sometimes really lasting relationships develop, leading to personal phone calls, letters, the trading of pictures and occasionally (good grief!) even marriage. . . [with public access electronic bulletin boards] prejudices we may have aren't exercised. (*Compu.Serve Update*, May 1983).

The effects controversy between optimists and pessimists is treated by Vallee (1982) who equates it to a discussion of choices faced by society, rather than a technologically determined issue. Our choice, he says, is between "The Digital Society" and the "Grapevine Alternative." In the Digital Society massive amounts of computer technology are used to control people by reducing

them to statistics. In the Grapevine Alternative people use computers to create networks through which they can interact and take control of their lives. These networks, Vallee argues, can become a

dynamic force of group communication. . . , people in large numbers discover in these networks gateways to other minds, windows to unsuspected vistas, bridges across their loneliness, and precious understanding. (p. 5)

At first glance, free, public access, electronic bulletin boards seem to hold a great promise for the Grapevine Alternative side of the balance sheet. They are sure to be exploited as "proof" or evidence in the debate about effects, much as they were used by pessimists on the issue of computer-based communication impacts.

In light of these diametrically opposed conclusions, perhaps the very orientation of studying and debating effects should be reconsidered. From a theoretical point of view, an unmitigated effects approach to the study of any mass medium, when standing alone, has already proven to be problematic. In lieu of a theory that would explain discovered effects, this approach can render more rhetoric than substance. There exists a definite need for a theoretical framework to drive empirical investigations of the issues.

An alternative to the effects strategy should be sought in the accumulated experience of studying mass media. Many researchers have arrived at the realization that media and their effects are not best examined as black-or-white entities. Nor does the natural inclination to list the "good" or the "bad" characteristics of a medium necessarily produce the most insightful of findings. The major drawback of effects studies and polemics is in their partisan nature, exacerbated by the near impossibility of methodological limitations, together with reality, to prove causality in social processes.

Additionally, a premature effects perspective misidentifies novelty effects. A methodological challenge is involved in the isolation of permanent effects from temporary phenomena. Mistaking novelty effects for qualities inherent to a medium can lead to very wrong assumptions and decisions.

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Lastly, the study of effects does not necessarily provide the most interesting cultural and social-psychological data about a medium and its role in society. According to Dutton, Kovaric and Steinfield (1985),

... the implications of computing, like those of television, are likely to be far more subtle and indirect (albeit not less powerful) than the direct effects forecast by the early proponents and critics of new technology. (p. 8)

The alternative to focusing on effects is analyzing new communication media as cultural institutions with social and psychological functions and dysfunctions. The theoretical basis of this approach derives from the sociological tradition of functional analysis (Wright, 1959; Katz, Gurevitch and Haas, 1973). Its focus is on the audience rather than the message or the medium. Researchers employing this approach examine the needs, expectations, uses and gratifications of and for audiences in relation to a particular medium-environment. Rather than debating the nature and extent of the medium's effects, the uses and gratifications paradigm studies the mechanism under which such effects might operate (McLeod and Becker, 1974).

Value judgments about the cultural significance of mass communication should be suspended while audience orientations are explored on their own terms. (Katz, Blumler and Gurevitch, 1974, p. 22)

Inasmuch as the new communication technologies, especially computer-mediated mass communication, are intensively interactive, an updated uses and gratifications paradigm seems the most appropriate theoretical framework for studying them. The single most important characteristic of interactive media is the *active* role afforded to members of its audience. The theoretical perspective that played the most important part in tearing down the old and wrong conception of a *passive* audience in mass mediated contexts was the uses and gratification paradigm.

Furthermore, drawing upon the uses and gratifications tradition of research, scholars can

assume a more constructive role vis-a-vis these new technologies. Rather than investing in the continuous, inconclusive, and rather nonconstructive debate between optimists and pessimists, uses and gratifications research of electronic bulletin boards can both help in strengthening the "Grapevine Alternative" and contribute to the understanding and explanation of whatever effects do exist.

One extension of a uses and gratification approach to the study of mass media in general, and of electronic bulletin boards in particular, is "play" or "Ludenic" theory. Originally offered in contradistinction to the uses and gratifications paradigm, the theory considers the "earmarks of play" the main motivation for readers and reading behavior (Dozier and Rice, 1984). There exists an intuitive appeal in classifying and explaining as play activity the activity of computer systems' users for "nonserious purposes." Some scholars venture further to place a normative premium on play as motivator for using communication technology. For example, Marvyn (1983) says that

Instead of permitting new communications technologies to narrow our lives... we should strive to enlarge the domain and variety of humane interaction by building ample opportunities for playfulness into newly extended systems of communication. Just as we mandate and support playgrounds and parks in our cities and provide informal spaces for relaxation and association in our buildings, we need intellectual parks in our computer systems—dedicated blocks of computer time and memory... in which many different people can mingle. (p. 51)

In sum, the theoretical approach mandated by the uses and gratifications paradigm is toward a study of motivations of users mapped upon an empirical assessment of actual use. In addition to the obvious questions about the identity and nature of users and uses, there should be a special interest in the role of fun and play in describing and explaining such systems' use. In most general terms, bulletin boards commend themselves for such study because they embody communicative applications of computers which include poten-

tials of home and business, work and leisure contexts.

Method

An opportunity for just such a study came about recently. The motivations and uses of the same electronic bulletin board system featured by *Psychology Today* and Zimbardo (1980) were examined. The medium studied here, an instructional, timesharing computer system at Stanford University, provides free accounts to all interested students, faculty, staff and their families. At any time during the academic year, over 5000 students and faculty (about one third of the total community) held active accounts on the system for classwork or research purposes.

One of the services provided was an electronic bulletin board, called BBOARD. This active communication medium was free for any student, faculty, staff member or spouse. It was publicly accessible in at least one more sense: dialing-in to the system from home terminals or microcomputers was encouraged. The computer in which it resides was networked via simple and transparent gateways to numerous other computers, and thus was made available to users of other systems, too.

BBOARD is a simple system to use. Its messages are displayed serially (according to time of submission). Instead of complicated logical structures or search procedures, users answer yes/no questions. At the same time, BBOARD offers its more experienced users "short cuts" that allow faster access, processing, scanning and other operations. On first access, the users are shown a single-line caption for each message not read yet, and then asked to indicate which of these messages should be displayed. The users can control which ones they read or skip. From the users' perspective, and at least in the technical sense, BBOARD is typical (and at times identical) to other electronic bulletin board medium environments on mainframe hosts.

To examine the usage of BBOARD as a study of the uses and gratifications of electronic bulletin boards, messages on BBOARD were monitored during an academic year. For sampling purposes, patterns of use, as well as users (readers and writers) were identified through machine-

monitored and -collected data. A random sample of these users (both "active" writers, and "passive" readers) were sent questionnaires. Respondents were assigned randomly into two groups: half were sent an interactive questionnaire online, while the others were contacted by mail. The questionnaire, identical for both groups, covered users' attitudes toward electronic bulletin boards and BBOARD, their use of the medium, their needs related to this use, and some demographic information.

As part of an effort to minimize novelty effects the survey was conducted late in the second academic quarter (of 1985). Bulletin boards are still in a very early stage of their evolution. Partial compensation for this methodological problem is attempted through the choice of a fairly veteran system for study, and the effort to collect data at a late stage in its usage time-cycle.

Results

On an average day, BBOARD carried about 50 new messages, generated by both veteran and newly joining users. These messages covered a wide topical spectrum. "Discussions" included technical, political, humorous, educational, commercial and philosophical comments. At any given time there were several strands of ongoing discourse. The serial nature of display allowed the reader to confront the topical mixture serially. While most posted notices were identified by a single subject caption, some reflected the medium's eclectic flavor: by addressing several of the ongoing topics at once. To deal with this heterogeneity, readers developed differential "scanning" strategies.

Once posted, messages were not removed other than at periodic, system-wide backup and load reduction. The system and its users developed a distinct anti-control and anti-censorship norm. Even the few obscene and abusive messages evoked a "libertarian" consensus of condemnation accompanied by support for freedom of speech.

Over 2000 account owners accessed BBOARD at least once during a six-week period in the middle of one academic quarter. The list of those who did so at least once served as the universe from which respondents were sampled. Table 1 presents the response rates.

Table 1
Sample and Response Rates

		Sent Out	Returned	Response Rate
=====				
Mail Sample	Total	85	70	82%
	reader sample	77	65	84%
	writers	8	5	
Online Sample	Total	87	42	48%
	reader sample	80		
	writers	7	(unknown distribution)	
TOTAL		172	112	65%

The response rate was clearly higher for the mailed portion of the sample. The overall response rate, although probably a conservative estimate for "real response," was 65 percent. Machine-monitored data indicate that many of those in the online sample, not having read their online mail, did not receive the questionnaire. Further analyses of the different response rates between online and mailed samples are therefore likely to mislead. No significant differences between members of the writer and reader samples were found in the distribution of responses or the response rate.

In all, the response rate is high enough to warrant considerable confidence in the data, especially with regard to the general population of BBOARD users.

Who are the users? Table 2 displays the demographic breakdowns.

The BBOARD users were highly male, mostly in their early twenties, and mostly native English speakers. By their own definition, they were rather experienced with computers, but most did *not* define themselves as "hackers." The representation of significant "minorities" in this sample (women, non-engineering or -science majors, older people, non-undergraduates, etc.) was smaller than their distribution in the "real" population. However, the sample was not homogeneous in any sense. There were 26% females, 10% non-native speakers of English, 30% non-engineering or "hard" scientists, and about 10% novices with computers.

Usage behavior was measured by self-report of frequency and amount of reading, and were corroborated by sporadic machine-monitored checks. Findings regarding usage are summarized in Table 3.

Table 2Demographics of the Users(*)

Gender	26% female 74% male
Age	95% under 28; (bimodal distribution with peaks at 19/20 and at 25/26)
Status	55% undergraduate students 38% graduate students, 7% others
Academic Major	33 different academic departments represented, Many from sciences and engineering. However, more than a third of the users were affiliated with humanities and social sciences departments. Six student respondents majored in more than one department.
Time on Campus	median = 4 years, range from 1 to 8.
Native Language	90% were native English speakers
Hackers (selfdefined)	30% yes, 70% no
Computer Experience	64% "very experienced" 27% "somewhat experienced" 6% "first year with computers" 2% "first quarter with computers"

(*) N = 112

Table 3Structural Patterns of BBOARD Use(*)

Frequency:

72% more than once a week
 22% more than once a month
 3% once a quarter
 3% less frequently

Proportion of messages read in each session;

33% read most or all of the messages
 28% read more than half
 38% read "only a few" messages
 1% less than a few messages

Time spent on BBOARD each session;

11% less than five minutes each time
 62% 5 to 15 minutes
 22% 15 to 30 minutes
 5% more than half an hour each time

Ever written to BBOARD (**)?

65% Yes
 35% No

(*) N = 112

(**) N = 96 (Excluding the writers sample)

The users of BBOARD could be characterized as both a faithful and active audience. Most of those who ever used it signed on several times a week, and spent about 15 minutes reading most of the accumulated messages since their last sign-on. A large proportion were "active" users, in the sense that they left at least one message (this datum computed from responses of members of the readers sample alone). Responses to other questions (not reported here) indicated that users split fairly evenly on the questions of whether BBOARD "is useful" and whether the information carried on it "is credible." Most thought it is not for hackers only.

Respondents were asked whether they would be willing to pay for using BBOARD. While most said they would not (currently, access to BBOARD is free), 15% of the respondents indicated willing-

ness to pay for both reading and writing on the system. Interestingly, those who have written to BBOARD tended to respond more favorably to the question about paying for the right to read. In general, there was more support for taxing the right to read than the right to write. With regards to attitudes about paying for such services, there was no difference between active and passive users.

A series of questions inquired about the popularity of different types of messages. The system allowed users to "skip" or choose to read messages on the basis of short summary captions provided by the author. Table 4 shows that while only a small minority of respondents consistently skipped any type of message, there was variance in the selective behavior of audience members.

Table 4
Topical Patterns of BBOARD Use (*)

	<u>Usually read</u> =====	<u>Always Skip</u> =====
Messages "by people I know"	72%	1%
Jobs and Things for Sale	72%	2%
Upcoming Events	66%	5%
Humorous messages	62%	4%
Computing and "Hacking"	51%	4%
Student organization and local politics	28%	19%
Philosophical debates	27%	16%
World and National politics and events	24%	20%

(*) N = 112

Overall, people seem to have read a large portion of the messages. Utilitarian informational messages (jobs, sales, events, computing information) were in the lead. While people naturally read messages by "people they know," this factor is hardly significant, given the vast numbers of readers. Humorous messages were a close second in this "ratings" competition. However, more than a quarter of the respondents read BBOARD to get information about local and national politics, as well as philosophical debates. Active selec-

tive exposure (that is, consistently skipping a certain type of message) seemed to occur (when at all) mainly with the political messages. Nevertheless, these were the favorites of a larger group than the 20% who "tune them out."

Finally, respondents were queried about their own motivations for using the board. Ten possible reasons were presented, in closed-ended, Likert-type format. Responses are tabulated in Table 5.

Table 5
Motivations for using BBOARD (*)

	% Agree =====	% Disagree =====
<u>I read BBOARD for- or because</u> =====		
Recreation, Entertainment	75	11
Diversion	63	26
Learn what others think	51	27
Controversial content	48	28
People who matter to me have access to the board	41	36
Link to the community	38	34
Learn about student's interests	35	38
BBOARD is part of my education	13	55
My friends discuss messages on BBOARD	12	69
Learn about computing	7	78

(*) N = 112

If the self-reported motivations for attending BBOARD are to be believed, its use is a "light" interlude, rather than a heavy, intellectual task. The board's main intended function is diversion, recreation, entertainment. Information seeking and surveillance, however, are tied for a respectable second place, following entertainment and diversion on this list of self-reported motivations. Less than one in seven members of the sample gave general educational or specific computer learning reasons for using the medium.

The respondents' gender, age, position or academic major were not related to the ranking of uses or reported motivations for use. The respondents who chose to define themselves as "hackers" differed from the others mostly in amount of reported use (self-designated hackers report a more frequent pattern of exposure). Self-proclaimed hackers are also slightly more likely than others to have written in the past. Nevertheless, most of those who have written to BBOARD (in both subsamples) do not view themselves as hackers. Furthermore, self-described hackers do not differ from the others in the pattern of motivations.

The comparison between passive and active users of the system (those who put the interactive features of the system to full use vs. those who only read messages) is interesting. Respondents who have written to BBOARD were also more experienced with computers. They also tended to use the system more frequently, as is the case in general for those more experienced with computers. But active and passive users did not differ in the rankings of types of messages they spend time with, or in the reported motivations for use. Similarly, experience with computers did not predict differential uses or reported motivations.

Discussion

One social science approach to looking at systems like BBOARD is to express concern or adoration about the threats or promises inherent to them. This study attempted to demonstrate an alternative approach. The purpose is not to eliminate effects research, but rather to provide a framework for explaining effects which might exist.

Regarding their generalizability, the data and analyses presented in the above have three obvi-

ous limitations. First, BBOARD is obviously *not* a typical public access bulletin board. It is located at Stanford University, an atypical environment, and its users are members of that community. They belong to a limited stratum, in terms of education, SES, age, and perhaps even needs and interests. Second, BBOARD is rather new. Although it had been operating for four years at the time of the study, Hiltz and Turoff's caveat should be kept in mind: "initial uses of teleconferencing systems often serve as a poor basis for generalizing about future uses" (1981, p.740). Last, the comparative properties of mainframe- or microcomputer-based systems are not investigated here, though they may be of consequence. These data are limited to free access (or subsidized) systems. Furthermore, no suggestion is made here for an explicit uses and gratifications model for bulletin boards or the more general Public Access Message Systems (PAMS, Townsend, 1984). Such a model will evolve eventually from research such as this, and should include a more clear-cut distinction among uses, gratifications and motivations.

Nevertheless, at least during the next few years, users of most electronic bulletin boards will not be representative of the general population. Studies of such users will have to rely on limited samples of members of this audience. Furthermore, while caveats regarding the novelty of systems should be noticed, the relative youth of a medium should not preclude research on it. This study itself should be treated as tentative, but the need for such research cannot be dismissed. The past and projected growth of computerized media require such research, tentative as it may be.

The findings regarding reasons expressed for using BBOARD, actual use, and the nature of the users are informative in several ways. The purpose is to suggest a theoretical approach, and perform the first step in its implementation.

The first set of findings relates to the extent of use. The electronic bulletin board, at least on the Stanford campus, is a *mass* medium. Usage ratings of over 40% (the proportion of actual to potential users, or the ratio of actual audience size to the number of computer account owners) would be envied by any commercial medium. The high rate of use is reflected in the composition of the audience. BBOARD is (counter-intuitively) a

highly interactive medium, in the sense that more than half its users are active (both reading and writing). Even though the designation of "hacker" has achieved a respectable status in the computing subculture, most members of BBOARD's audience do not assume it in self-description. The distribution of demographic characteristics (gender, status, departmental affiliation and experience with computers), even though skewed, is more even and heterogeneous than would be expected given the prevailing stereotypes. Is the electronic bulletin board a *specialized* or *general purpose* medium? Only time will tell. The BBOARD instance seems to indicate a possibility of general service. All of the above hint at the potential (if not its fulfillment) of a "Grapevine-like" medium, growing in the vineyard of computer-mediated communication technology. The democratic potential of such a medium (in Etzioni's "MINERVA" sense) remains interesting too.

As a communicative genre, BBOARD's service of a miniature mass market differentiates it from both teletext and viewdata. Weaver (1980) discusses these two closely related technologies, predicting that online viewdata systems will prove attractive to largely business or elite segments, while over-the-airwaves teletext systems hold the larger potential for mass markets. BBOARD is closer in technology and structure to viewdata systems, yet it is surprisingly successful in diffusing to wide sectors at least within its potential audience. Smith (1980) addresses the location of computerized systems of information and discourse on a map defined by the dimensions of audience size and age of information. Following Japanese researchers, he claims that the blank area which computerized systems will occupy is for topical information (up to one day old) and moderately specialized audiences (100-10,000 people). This description fits the electronic bulletin board studied here and its users.

The most interesting finding is the discrepancy between reported usage and the reported reasons for using BBOARD. The motivations that respondents name for their use indicate that seeking lighter content is the main motivation, while utilitarian, political interest, and curiosity/learning uses tie for second place. At the same time, reports about choices of messages by content

seem to point to a more utilitarian pattern of behavior.

The actual content of BBOARD is heavily skewed toward the nonutilitarian. Most of the messages are parts of ongoing debates concerning local and external issues, political, philosophical and/or humorous. According to an informal content analysis of 500 messages posted during the survey period, fewer than 15% of the actual messages were utilitarian (i.e., factual or purely informative in nature). In terms of volume (beyond raw numbers of messages), the ratio of utilitarian content is even smaller. BBOARD might be different from other electronic boards in that it does not serve directly as a medium for the exchange of computer programs or data. Nevertheless, a large component of reading behavior is directed at the factual or informative messages; this type of content is "skipped" least. These results, therefore, suggest an apparent discrepancy between perceived needs, uses, and gratifications. Such an inconsistency is not an uncommon finding with traditional media (see Palmgreen, et al., 1980). It stands as a call for future research and seems to have interim theoretical implications. In discussing theoretical approaches to studying electronic newsreading, Dozier and Rice (1984) posit play theory of newsreading as an *alternative* to the traditional uses and gratifications approach. The findings reported above do not settle this dispute. But the data do point to the *coexistence* of several motivations (at least in the minds and behavior of members of the audience). Furthermore, and in contrast to one prediction that could be derived from the arguments of ludenic theory, users are more likely to mention diversion and entertainment as motives that report playful activities as actual use behaviors.

Employing a modified version of the uses and gratifications approach, this study is offered as an inducement to further explore the medium of electronic bulletin boards. The special, active nature of the participants suggest this theoretical approach as the appropriate framework. As a mass medium, the electronic bulletin board is found to attract high levels of use, and its interactive feature appears to be used by a substantial portion of its audience. An interesting discrepancy between self-described motivations and the actual behaviors shed some light on a mistaken

popular image of the medium as a fringe environment. Instead, electronic bulletin boards should be viewed as an evolving mass medium which serves audiences of a fairly large size across a fairly diverse set of topics. Further research should treat the electronic bulletin board as a medium and should focus on the special paradoxes it brings forth.

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