

**The Effects of Mass Communication (the Media)
and the Dissemination of Information on Shaping Consumer and
Provider Values in Health**

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We live in a society in which the mass media of communication play an increasingly important role. The broadcast media of television and radio, the print media of newspapers, magazines, books, leaflets and billboards, the movies, all provide us with a continually fuller stream of communications. The total number of hours per week spent by persons in this country attending to all media is growing and formidable. Wilbur Schramm (1973) points out that on any weekday evening some 75 million Americans are likely to be watching television, and over 90 million people read newspapers. Radio listening has been on the rise in the last decade after being badly cut into by the development of television. In other words, as new media of communication develop, and let us not forget that still further new media are coming along, they replace old media at first. Over time, however, there is an increase in the total amount of exposure to mass media. Television sets are turned on an average of about six hours a day, but radio listening, newspaper reading, and book and magazine reading

Paper presented at Conference on Health Care and Changing Values.
November, 1973. National Academy of Sciences, Washington, D.C.

are also up. Only movie attendance is going down, but movie watching because of TV is up because movies constitute the largest single fare offered on TV.

It is clear enough that of all these media, TV is the most prevalent one. Furthermore, on TV, approximately 15% of all broadcast time is devoted to advertising. In addition, of course, the contents of a great many telecast hours may really constitute indirect influence on the consumer. For example, what physicians are like and how they interact with patients is even more likely to be communicated by Marcus Welby, M.D. than by ads for pharmaceuticals.

How potent is all this material in influencing people? To what extent are people learning how to protect themselves from illness and disease via the mass media? To what extent are they being induced to engage in activities and pursuits that are harmful or damaging? How about children? Are they peculiarly defenseless in the face of the onslaught of purchasing and other behavioral instructions?

These are very difficult questions to answer with scientific validity. The ideal method for ascertaining the effects of a communication is like the ideal way of measuring the effects of anything; namely, the controlled experiment in which the independent variable(s) is (are) manipulated under controlled conditions, and changes in the dependent variable(s) is (are) measured against those, if any, in the control(s). Experiments of such classic design can be and are

done to measure communication effects. However, when carried out under laboratory-type conditions, they leave something to be desired about understanding what happens under ordinary conditions of exposure. When the effectiveness of a film in influencing information and/or attitudes--say about smoking cigarettes--is measured by a controlled evaluation experiment, the audience is necessarily a "captive" one. Audience members did not select themselves to be viewers as is the case in "real life." If they did, the condition of random assignment to cells would not be met. This problem of self-selection of exposure is in itself a complicated problem, and a good deal of work has been done in this area (Freedman and Sears, 1965). Hypotheses on who elects to expose himself to a given type of communication can also be tested experimentally. Random sub-populations can be subjected to such treatment as sensitizing with particular kinds of information prior to being given the opportunity to elect exposure to a given communication.

One group can be sensitized to a given problem or issue, and a comparable group held as a control. The effects of such sensitization can be assayed by giving both groups an opportunity to elect exposure. For example, in a major study designed to discover effective ways of getting people to change their behavior in particular ways so as to reduce risk of heart disease, we have intensively interviewed and medically examined samples of people in three communities. We are concerned with attempting to change habits via differing communication patterns in the several communities. We suspect strongly

that people interviewed and examined in this way are likely to elect to pay more attention to our mass media material than comparable others not so treated. The extent to which such is the case is being assessed (at least in part) by selecting a comparable sample not interviewed until after the communication intervention is over. This is dubbed an "after only" control group.

In measuring television effects on general populations viewing in their own homes under ordinary everyday circumstances, such elegant designs are generally not feasible. In recent years, considerable improvement in designs aimed at teasing out causal connections in the absence of controlled experimentation in the laboratory have been developed. McGuire (1973) points out in a recent paper that there is a definite need for field experiments and towards sophisticated correlational analysis in naturalistic settings. Campbell has pioneered in the development of such methods (Campbell & Stanley, 1972). Parker some years ago used cross-lagged correlations to test the effects of television on library usage (Parker, 1963).

Eventually the logic of these methods is to rule out potential falsifiers, i.e., possible alternative explanations, one by one. In any case, there is an increasing amount of research on communication that is aimed at assessing effects with some precision in field or naturalistic settings. Some of the relevant recent research on communication effects as it pertains to health-related matters will be discussed below.

Sources of consumer information, attitudes and behavior with respect to health values

In a certain sense, it is an incredible state of affairs that by far the overwhelming amount of information about health matters is communicated via advertising by profit-making producers and purveyors of drugs and goods. The marketers of products sell these to more or less unsuspecting consumers. They push vitamins, laxatives, pain relievers, cures for hemorrhoids, arthritis, hypertension and a host of other cure-alls for what does and does not ail one.

While the evidence is not all in on the extent of harm to individuals who follow the health instructions of product advertisers, it is clear that little if any good can come of it. Evidently the need for supplementary vitamins for most Americans is absent; laxatives are generally harmful. (Bowel movements do not need to occur at least once a day with everyone, and artificial stimulation at least interferes with normal habit formation and maintenance, and at worst can contribute to cancer of the colon.) Hemorrhoids, arthritis and hypertension are not generally cured by advertised drugs, suppositories and pills; and so it goes.

In a recent survey done for the Food and Drug Administration by National Analysts of Philadelphia many public misconceptions came to light. Almost three-quarters of the population, for instance, believe that by taking extra vitamins a person can gain extra pep and vitality. Even before Linus Pauling's advocacy of Vitamin C

hit the national press, 58% of the survey respondents expressed the belief that the vitamin can prevent colds. Two-thirds of those interviewed felt that a daily bowel movement is essential to good health. Americans revealed an enormous faith in the power of drugs in curing their ills. One-third of the subjects interviewed by National Analysts said that as long as they themselves felt they were gaining some benefit, they would go on using a medicine even if their doctor told them it was worthless. This willingness to try anything, coupled with the placebo effect and the notion of uniqueness (It will work for me!), has led a huge number of Americans to put their trust in useless drugs, and sometimes to avoid the less zealously-promoted advice of their doctors.

The mass media, especially in advertising, have fostered the belief that there is a medicine for every ailment. The survey reported above also found that a great many people believe that advertisers are so well regulated that they dare not make false claims. Yet a recent analysis of advertising content in television conducted by Wayne State researchers and reported in the New England Journal of Medicine shows that of the seven percent of the ads which were health related, seventy percent were unsatisfactory or misleading. It is not too surprising, then, that the attitudes and opinions of most Americans tend to be similar to the distorted and inadequate information provided by their mass media. Before examining the information available to the health-seeking consumer, let us review the dynamics of advertising's contribution to consumer knowledge.

During the fiscal year of 1969-70 drug companies invested almost ten percent of their sales dollars in advertising. Manufacturers of tobacco products used a little over five percent and food packagers and processors around three percent of their total sales revenue in the same manner. For the purveyors of these products the money was well spent. National advertising, especially in health-related products, is an enormous boost to the legitimacy of any ordinary product. Bayer aspirin provides a good example. There are numerous other brands which are equally effective and cost much less. Why will most Americans spend more than they have to for the privilege of buying Bayer aspirin? One answer is that they trust it more. Having seen its quality attested to on an almost nightly basis, usually in the context of network news reports, consumers come to believe that Bayer is more dependable than other less well-known brands might be. Thus to gain a reasonable share in a competitive market, many firms selling health-related products are forced to advertise.

Often, however, simply having a product legitimized by the media is not enough. There may be other, equivalent products which were there earlier and have thus previously accrued considerable legitimacy. To sell the product in a competitive market, the advertisers must present the consumer with some reason why his product is newer and better and should be chosen over its competitors. This leads to a clamorous cacaphony of claims and counter-claims, added and extra-added ingredients.

Such frenzied economic competition has unfortunate effects on the values of both consumers and providers. Consumers are led to develop unrealistic notions of the power of pills. They come to believe that there is a "miracle" or "wonder" drug for every problem. Providers in this competitive situation are led to value expensive and marginally excusable additives for which they can make exaggerated claims. It is more profitable for them to present the public with the puffed-up rhetoric of advertising, a modern version of the old medicine shows, than with the reliable information needed for intelligent decisions.

Advertising in the mass media has the effect of legitimizing the product advertised. For example, if a product is regularly advertised over TV, people tend to think that the advertising must be reasonably truthful or it would not be permitted.

Apparently, advertising of medicines goes back at least to Roman days. J. A. C. Brown (1963) in his book Techniques of Persuasion refers to the small stone printing stamps used by quacks to impress messages on their salves and ointments. Some of these printing stamp stones are in the British museum. (The relationship between what is claimed in the ads for remedies for disease and what they actually accomplish doesn't seem to have changed much over the centuries.)

Brown refers to a green salve named "Chloron" (even the names sound familiar) advertised by the Roman merchandisers in Britain as an unbeatable ointment. With the advent of the mass media of communications made possible by the invention of the printing press,

medical advertising really got going. Daniel Defoe in his Journal of the Plague Year describes posters inviting people to come to doctors for remedies during the 1665 plague.

However, the real bonanza in the drug business came with the discovery of the wonder drugs and their marketing in the years since World War II. Penicillin, aureomycin, the sulfas, and the steroids have produced fortunes for a number of pharmaceutical manufacturers and distributors. It should be pointed out that the marketing of so-called ethical drugs is not done so much via mass media advertising as via practicing physicians. These are called upon by detail men, and in more recent times are simply flooded directly by mail with samples and literature. An excellent set of studies by Coleman, Menzel and Katz (1966) has documented the manner by which drug prescriptions by physicians are adopted. Style setters among physicians play a critical role in which drugs become fashionable for particular ailments at particular times in particular locales.

It is a curious phenomenon that when attempts are made to market helpful health practices on a wide scale, little is currently known about how to do it successfully. It has been almost twenty years since the Surgeon General officially pronounced that smoking cigarettes is likely to be injurious to health, that it might well be a major source of alarming rises in lung cancer and a significant cause of heart disease, a really big killer.

While there have been variations from time to time in the rate of cigarette smoking in this country, certainly cigarette marketing

and cigarette smoking has not been materially reduced. The most that can be said of all the efforts to reduce or eliminate cigarette smoking is that they have succeeded dramatically in convincing people that cigarette smoking may be indeed bad for their health. However, such beliefs do not mean people quit smoking. For example, in a recent study we are conducting in three central California small towns referred to above, over 85% of all smokers report believing that smoking is bad for their health, but over a third have continued to smoke none the less. National sample data are consistent with this finding. The statement on the back of a package of cigarettes reports that the Surgeon General has found that "smoking may be hazardous to your health" has been fully accepted; but has done very little, if anything, either to deter new smokers from beginning or veteran smokers to stop except for selected groups, notably physicians.

The drug market is not the only public health area that has been damaged by the competitive fervor of advertising. The Journal of Nutrition Education recently published a report which indicated that the "dietary habits of the American public have become worse, especially since 1960." Their study also found that children in higher income families--targets of most advertisers--were often less well nourished than those in lower income families. Action for Children's Television (ACT) spokesmen have reported, as an example of the total situation in food advertising, that a child watching Channel 7 in Boston from 7 a.m. to 2 p.m. on Saturday, October 4, 1972, would have seen 67 attractive messages urging him to eat or drink

sweetly-flavored products. Robert Choate, Chairman of the Council on Children, Media and Merchandising, has been a most vocal critic of children's food advertising. In an article in Nation he states that, "With no accompanying warnings, a child is invited ten times per hour to establish food habits which his dentist or doctor will later deplore. . . Nutrition is human ecology and television is a master polluter."

All the broadcaster and advertiser can say is "Nutrition just doesn't sell." This trend shows signs of reversing, at least in cereal advertising. Note the recent upsurge of ads for health cereals such as Quaker's Granola. In competing for the food dollar, manufacturers find it most profitable to offer people what they want, not what they need. But for young children the gap between wants and needs in food products is, as any mother will attest, considerable. The willingness of food providers to cater to immature tastes has grave consequences for the values of young consumers, and for those who provide them with sustenance. Children are reinforced in their desire for sweets and their mothers led to believe that flavored synthetics (with vitamins added) are sufficient for their children's nutritional needs. Providers emphasize both in the products they sell and the sketchy information they provide, only the most superficial notions of what a good diet really is.

A solution which is often offered to the advertising problem in public diet and drug consumption is the same one that was recently used in attempting to eradicate the public health menace of tobacco advertising. The Fairness Doctrine is a Federal Communication Commission requirement that broadcasters provide rebuttal time for their editorial

opinions. John Banzhaf (1967) was able to convince the courts to extend that doctrine to require public service announcements warning of the health danger of cigarette smoking as a rebuttal to the many ads promoting smoking which appeared on television every day. Though the courts originally held that the situation was unique and that the doctrine would not be extended in the case of other types of advertising, more recent court decisions have held that it may be applied in a wide variety of circumstances. Consumer advocates concerned with the advertising problems discussed on the previous pages have thus proposed that such counter-advertising be used as an antidote to misleading food and drug information promulgated by commercial messages.

If such a system were adopted, consumers might learn that pills are not the final solution to their ills and that cereals and candy pseudo-meals do not provide the nutritional benefits they seem to promise. Public awareness on these issues might then lead the providers of food and drugs to value true dietary usefulness and sensible views of drug effectiveness, but some voices argue that counter-advertising will destroy the economic foundation of broadcasting and leave consumers worse off than they were to begin with. It remains to be seen if a policy of counter-advertising can be applied judiciously enough to accomplish appropriate results.

Cartwright (1949) some 25 years ago found that in order to get people to behave differently than they do they must be not only prepared cognitively and emotionally to change, but that they must also learn new behavior. This acquisition of new knowledge (in our

present example that smoking is hazardous to health) and the desire to quit sets the stage for change (quitting smoking), but is not sufficient to actually achieve the change (stopping smoking). The behavior indicated must be tripped off in some way. People need to learn new habits which are incompatible with the old ones. (In this case doing something else when smoking a cigarette is the indicated act.) There are a variety of ways of tripping off this new behavior. B. F. Skinner (Ferster & Skinner, 1957) has developed the concept of behavior shaping, a form of training in which the learner is rewarded as he gets closer and closer to performing the desired response. C. B. Ferster, a former protege and collaborator of Skinner's, as well as many others, including my colleague Dr. A. J. Stunkard, have applied Skinnerian ideas on schedules of reinforcement and Bandura's on modeling to the health field. Rewards are administered for behavior of the desired sort. In the process of getting people to perform the correct or desired responses, responses close to the desired ones are initially rewarded and then only responses even more similar to the desired ones are rewarded in subsequent instances. One of the most interesting aspects of this kind of training is the means used to maintain the change. Mark Twain once cogently observed that quitting smoking was easy; he had done it hundreds of times. This is precisely the problem with getting people to quit smoking. Leventhal has pointed out (personal communication) that there are a number of techniques that have been attempted to get people to stop smoking and that all seem to be about equally effective; namely they all seem to result in getting about 25% of smokers to quit. Few, if any, however, seem to be very effective in keeping people from resuming the habit--from backsliding.

Reward during training, instead of being administered on the occasion of every successful response could be administered only some of the time. For example, every nth successful response could be rewarded, with the number of successful trials between rewards randomly varied around n to control for "expectancy." This procedure has the interesting effect of producing a response that is more resistant to extinction, that is, it will continue to be elicited long after all reinforcement is stopped in contrast to the response learned via 100% reinforcement. Thus, in training people to quit smoking, one could apply these so-called operant conditioning techniques involving random ratio reinforcement and hope thereby to reduce the frequency of backsliding. If in training people to stop smoking cigarettes, one reinforced "not smoking" with decreasing frequency, one could expect "not smoking" to last longer.

There are other approaches to learning to change undesirable health habits that have been used. Research on persuasion began in a serious way during World War II and subsequently at Yale by the late C. I. Hovland and his associates. Since then, it has become a major area of investigation by experimental social psychologists and other communication researchers. While it would be inappropriate here to attempt anything like an exhaustive summary of this area of research, a brief description of some of the most relevant approaches may be indicated. Most of the work in this field is done via controlled experimentation, although some has been based on correlational field studies. The methodological problems are of the sort discussed earlier.

If the hypotheses about attitude change are tested under controlled conditions, with captive audiences, the communications responsible for the changes might or might not be attended to by the relevant people in real life settings. Thus, if a particular kind of communication is effective in getting smokers to stop when applied to captive audiences, will it be effective when presented over television or some other mass medium? Will heavy smokers expose themselves to the communication and really attend to it, or will they avoid it?

Another even more serious problem is that most studies on attitude change involve measures of verbal statements as dependent variables. These may or may not involve changes in actual behavior. We have already seen that campaigns on smoking have had much more effect on people's attitudes towards the hazards of smoking than on smoking itself.

In spite of problems of this sort, I feel confident that there is a great deal to be learned from the research literature on persuasion. There have been a great many experiments testing a variety of hypotheses about persuasion. While there are many ways of grouping these studies, a simple way is to employ a neo-Lasswellian model of "Who says what via what channel to whom?" Thus some experiments deal with characteristics of the source of the persuasive message; some with the content of the message; some with the nature of the media or channels through which the message is sent; and finally some are concerned with the role of the characteristics of the receiver. To illustrate, Hovland and Weiss (1951) did a study in which exactly

the same message was attributed to different sources. Four different messages were used as replications, but the one of most interest to us here was one dealing with the issue of whether or not antihistamines should continue to be sold without the prescription of a physician. In one condition, the New England Journal of Medicine was stated as the locus of the article; in the low credibility condition a mass circulation monthly pictorial magazine was the attributed source. As might be expected, the high credibility source worked better than the low one. However, two interesting other findings occurred. First it should be noted that even the low credibility source was influential, and secondly and more important was the finding about how enduring the effects were. After four weeks subjects were retested in order to assess the duration of the change. The differences between the effects of the communications attributed to the high and low credibility sources disappeared completely. Subsequent experimentation demonstrated that this finding was due to the dissociation of the source from the message. Clearly, conclude the authors, to the extent that such dissociation occurs, the acceptance of the message will be independent of the source. In other words, people will tend to accept a message no matter from what source provided the content of the message and who said it get separated.

Of course, advertising is not the only content of the mass media which has an effect on consumers and providers in health-related areas. Entertainment, journalism and news, as well as formal health education are all part of the media content and each has its own way of

affecting health care in America. Though its contribution to public attitudes concerning health matters is often overlooked, the entertainment content in the mass media can exert a profound influence. People tend to be easily persuaded by information which has no obvious or overt persuasive intent. It has been demonstrated that more attitude change results when a message is prefaced by a statement disclaiming persuasive intent than when the same message is presented without a disclaimer. Similarly, overheard communications are often more persuasive than are those obviously intended to persuade (Allyn and Festinger, 1961). Dramatic television programs, especially those which take a serious approach and attempt to create an air of verisimilitude in dealing with health care matters, can color the viewers' perceptions and future evaluations of health care in real life.

A whole series of experiments deal with questions pertaining to the nature of arguments included or omitted from the message. The first study was done by Sheffield of the Hovland group in World War II. He used the issue of how long the war with Japan would last given that the war in Europe was ending. In one condition, he cited arguments advocating that the war would end soon (opposing arguments) prior to stating his intended message as though it were refuting the opposition. In other conditions, no opposing arguments were mentioned. Interestingly enough, both treatments proved equally effective, but there were important differences depending on the receiver. Of more interest to us here is that subsequent experiments first by Lumsdaine and Janis (1953), and then a long and highly systematic series by McGuire (1964),

demonstrated that while the initial impact might not vary by whether or not opposition arguments were included, backsliding did. Those trained by the positive arguments only were easy victims of subsequent communications advocating the opposing point of view. However, those originally exposed to a communication containing opposition arguments (or even references to the fact that opposition arguments existed) resisted to varying extents the blandishments of the opposing communication. It was as if mentioning the opposition position in some way had an inoculating effect on the receiver of the communication that the one-sided presentation lacked.

Another and perhaps equally relevant problem area in this rubric is a series of experiments begun by Janis and Feshbach (1953) on the effects of fear arousal in achieving persuasion. Is strong fear more effective than moderate or mild fear in producing attitude change? While common sense would seem to argue that strong fear arousal would be superior, some consideration of the possible interference effect caused by strong fear such as avoiding paying attention might lead to a different prediction. In any case, the researchers found that strong fear-arousing communications were less effective in getting people to brush their teeth in prescribed ways than were milder fear-arousing messages. Subsequent research has, I am afraid, clouded the picture considerably. Sometimes results replicated the above ones, and on occasion they have been contradictory. Leventhal (1970) has presented a systematic account of the state of theory in fear-arousal communications. Chu (1966) has posited a model which takes account not only of the intensity of the fear aroused by the

communication, but also of the direness of the threat, how soon the blow would strike, and how effective was the proposed remedy. Taking these variables into account, Chu has helped make sense out of what appeared to be conflicting research results. One of the important findings that emerges is that strong fear arousal is most effective when the threat of bad consequences appears to be imminent and when the proposed remedy is likely to be highly effective in dealing with the threat. Clearly these findings do not give much aid and comfort to those concerned with getting people to change their ways so as to reduce the likelihood of their getting heart disease or cancer.

The channel or medium through which the communication is sent has been the least systematically studied. McLuhan, a humanist who writes a great deal about communication theory, has made the channel or medium through which the communication is transmitted the central point of his analysis. Following from his history instructor, Innis, McLuhan argues that technological change in the media of communication such as the development of the printing press, movies, radio, and television are critical to the processes of human communication. Not only that, but they tend to shape the way people perceive and react to their environment. Very little theory-based empirical research has as yet, however, employed the medium of communication as its main focus. Salomon (1968) has done some research involving varying simultaneity versus successive observation, but it does not involve attitude change. The many experiments comparing mediated versus live instruction have generally showed no differences. However,

these studies for the most part lack any conceptual base. If exactly the same information is transmitted via a sound television receiver as in the live, and there is an equivalent captive audience in both instances, there is no reason to expect a difference in learning, and of course none occurs.

Finally, the area of characteristics of the receiver of the communication is proving to be a productive one for attitude change research. The self-esteem of the person to whom a communication is directed is, for example, a very important factor in whether or not the communication will be effective in persuasion. The extent to which an individual is initially committed to his position affects his resistance to persuasive communication. There is evidence to suggest, however, that once such a committed person is changed, he is more likely to stay changed than is a more easily influenceable non-committed receiver of a persuasive message. One could characterize the latter person as "easy come; easy go," but the former are hard to change, but once changed stay changed.

In the last decade or so, there have been attempts at building more systematic theory in the scientific study of persuasion. Early attempts at formulating hypotheses for testing and at explaining experimental results usually grew out of applications of learning theory derived primarily from studies of animal behavior to this more complex area of human social behavior. We have seen the application of Skinner's operant conditioning. Many students of persuasion continue to employ this approach. Other varieties of learning theory have

also been applied. Hovland himself was a student of Hull, and Hull had developed perhaps the most sophisticated approach to reinforcement theory. Learning for Hull like for Skinner was conditioning via reinforcement. However, unlike Skinner, for Hull the stimulus had to be specifiable, and he was willing to infer a set of intervening stimulus-response units that are not directly observable. This author was a student of Guthrie's and has attempted to develop theoretical principles and hypotheses about persuasion growing out of Guthrie's contiguity theory of learning. Guthrie posited a model based on the simultaneous occurrence of conditioning or substitution of a new stimulus for an old one when that new stimulus happened to accompany a response. The Roberts-Maccoby piece in the Sage volume (1973 in press) reports theory and experiment on the nature of the persuasive process along these lines.

Another widely-used approach to persuasion has been a theory developed by Festinger to apply to a wide range of social behavior known as cognitive dissonance. Festinger points out that when two cognitions are held simultaneously, and if one is the obverse of the other, motivation to reduce this dissonance occurs. If one designs an experiment such that changing one's attitude is the most feasible way of reducing such dissonance, one can achieve persuasion. Researchers in attitude change have been attracted to this approach, among other reasons, because it frequently leads to non-obvious predictions.

Particularly, it may lead to predictions that are contrary to what simple reinforcement theory would lead one to expect. For

example, Festinger and his student Carlsmith, in one of the earliest studies stemming from this approach, predicted and found that smaller rewards could lead to more persuasion than larger ones. They had subjects who had performed a boring task tell their successors that the task was highly interesting. If they were not paid much, people would tend to believe that the boring task actually was interesting; if they were paid a great deal, however, they knew they were lying.

There are a number of other additional theoretical approaches to attitude change that may have some relevance to the persuasion process as it applies in "real life" settings. One more is perhaps important enough to mention here. It is called social judgment theory and grows out of the work of Sherif and Hovland, and continued by the former, his wife Carolyn, and their students. It is a perception-based formulation which posits there are anchors in making judgments. Positions being advocated that are in part not too different from the one the receiver of the communication already holds tend to be perceived as being more or less synonymous with that attitude. As Sherif and his colleagues put it, such positions in communications tend to be assimilated by the recipient. On the other hand, when the communication advocates a point of view that differs considerably from the receiver's initial position, the latter tends to perceive that point of view as being even more different than it really is; it is said to be contrasted. This type of reasoning and research has led to a number of interesting predictions about persuasive communications.

For example, Hovland, Harvey and Sherif used this approach to account for the fact that in many persuasive communications--even those that are effective with many receivers of the message--there is often a boomerang effect. Thus while many people may be persuaded to adopt the position being advocated in the message, some will actually move in the opposite direction and be even more against the point of view of the communication than they were prior to being exposed to it. They found that this is particularly the case when the message receiver holds his initial position very strongly. In such cases the assimilable distance between the initial position held and the one being advocated shrinks and the zone of contrast expands to cover points of view not so very different from one's own. The application of such kinds of research to public education on preventive health practices is clear. People who strongly hold erroneous views on such matters as diet, drugs, exercise, smoking, etc. are more likely to be influenced by communications advocating positions not too far from their own. Communications urging extremely different points of view could well boomerang. There is one more important lesson here. People may differ considerably from one another not only in the initial points of view on an issue, but they may also differ greatly from one another on how strongly they hold that point of view. Addressing the same communication to everyone, which is what the use of the mass media usually involves, may have its drawbacks.

I have only been able to touch briefly here on the state of theory and research in the area of persuasive communication. I do want

to mention one other experiment because it may help to bring sharply into focus a serious ethical problem posed by this type of research. Almost a decade ago, Festinger and Maccoby (1964) reported an experiment whose published report we entitled On Resistance to Persuasive Communications. Actually we were concerned with ways of overcoming resistance. We reasoned that when people are exposed to a communication which strongly advocated a point of view that was anathema to them that they would tend to resist. We predicted further that this resistance would, among other means, take the form of engaging in debate or counterarguing against the advocated position. In a mass media setting in which there was a large live audience, this counterarguing would have to take place silently by thought rather than by overt speech. We therefore designed an experiment in which two visual versions of a film were made, both with the same sound track, which carried a persuasive message.

One visual version was straightforward showing the speaker in front of a red velvet backdrop after some campus scenes used as establishment shots. The alternative version consisted of an edited version of a diverting film about a hippy painter. The message advocated the abolition of college fraternities. Fraternity members--assumed to be strongly opposed to the message--who were shown the latter or distracting version of the film were more likely to be convinced by its message than were comparable undergraduates shown the normal version. Furthermore, this did not happen with non-fraternity

members. Evidently, the "painter" film was not diverting enough to keep people from receiving the message--indeed it was engineered to have precisely enough redundancy in the message to make sure the arguments were clearly received by audiences. The film evidently did serve to distract people from engaging in covert counterarguing and thus got through their defenses. Subsequent research by Roberts and Maccoby (1973 in press) substantiate that when people have counterarguments available and are involved or committed to their initial point of view and are given the opportunity to counterargue, they will do so as a way of defending themselves against persuasion.

My colleague social psychologist Darryl Bem and his associates have formulated a somewhat different approach to persuasion. If somehow a person can be induced to change his behavior, the perception of this changed behavior as originating with that individual can result in a change of his attitude. Instead of the paradigm information-attitude-behavior, the order goes information-behavior-attitude. Particularly in the area of prejudice, it has often been noted that it is sometimes easier to get people to engage in non-prejudiced behavior than it is to get them to change their verbal statements or attitudes.

Clearly in all this, some very serious ethical problems arise. Persuasion is usually done without the permission of the person being changed. While presumably the changed behavior may be more beneficial to that person being changed than his old habit--say cigarette smoking or diet or exercise changes--does anyone have the right to impose his will in this way on another? Certainly our

Stanford Chicano students raised serious questions with us in the Stanford Heart Disease Prevention Program about this issue. They were concerned about several implications of our research on behavior change. Suppose, they said, people whose motives were not so noble as ours learned from our work how to change people. Suppose advertisers interested solely in selling their products without regard to the welfare of the purchasers study our research and apply our findings to their activities. Certainly, the advertisers whose activities we discussed above would not be above using such applications.

Another point these students raised was: what were we doing to the life styles characteristic of the culture?; particularly in the area of diet. After all, when researchers from one culture study another, and this was particularly relevant in this instance, diet is especially likely to be different, and its values are difficult for an outsider to understand. I should point out that of course we had taken considerable pains to consult with and obtain the cooperation of Chicano leaders in the communities we were studying. With their cooperation, we had developed a comprehensive media campaign in Spanish and had pretested all materials carefully prior to their use. In fact, as one highly vocal and powerful Chicano labor leader put it to us when we told him of the student objections, since this research was supported by the Federal government and since Chicanos' taxes were being used to finance it, they insisted on being included in the research.

We could find no easy answers to these ethical questions. We have, of course, a Human Subjects Committee at the University--a committee of our peers who review each research proposal involving the use of humans as research subjects--and projects like this one

are not easy for them to handle. What we finally did was to set up an ad hoc working committee of Chicano students, Chicano faculty and project researchers. This committee reviewed each communication, each interview measure and each data analysis plan in advance of their use. Many changes in protocols resulted which, in the judgment of the researchers, did not damage the research and, in the judgment of the students, minimized their concerns.

How might current medical drama programs affect consumers' image of health care? Marcus Welby, M.D., Young Dr. Kildare, Medical Center, The Bold Ones and others are seen by millions of people every week. What they see is an idealized version of the medical world. When they see doctors who take very close, often intensely personal interest in their fictional patients, viewers may be frustrated when they do not receive such personal interest from their own doctors. From programs like Emergency! they learn methods of dealing with traumatic situations which they may attempt to apply in emergencies in their own lives. Viewers with real-life concerns with various diseases see these diseases dramatically handled in television dramas and get ideas as to how they should approach their own real problems.

These considerations make it apparent that great caution must be taken in dealing with medical affairs in dramatic television programming. Toward that goal PAC, the Physician's Advisory Committee on Television, Radio and Motion Pictures recruits members to review medical dramas for "medical accuracy, medical plausibility and upholding of professional ethics." But such a negative, censoring approach is

not the only one available. While taking care that nothing dangerous appears in these programs, an effort should be made to see that every possible positive educational opportunity is taken. Harold Mendelsohn (1968) has suggested that in the context of dramatic entertainment it may be possible to present health-related information for the public benefit that has much greater impact than information presented in the traditional channels. Not only will people be happy to devote time to information packaged as entertainment, they may also be more willing to accept that information if it is not in the traditional context of a persuasive appeal. Perhaps a viewer may even be more likely to overtly model a dramatic heroine's example.

Such a communication system could be easily developed. A set of public health experts could be drafted to recommend information to be disseminated. Each coherent bit could be given to the script writer of the dramatic series for which it is best suited and incorporated in an upcoming program.

News reports also have strong effects on the health-related values of consumers and providers. Information presented in news presentations is probably the single greatest media determinant of consumption behavior. News scares concerning contaminated canned goods, for instance, have succeeded in nearly wiping out entire industries despite vigorous advertising campaigns to counteract them. When they are poorly or inaccurately handled, news reports in the health sphere may have grave results. An example occurred in 1972 when irresponsible reporters puffed up a routine cancer research news item from the National

Cancer Institute and led people to believe that BCG, an organism previously used as an anti-tuberculosis vaccination, was 100% effective with animals in eradicating cancers and that experimentation and therapy with humans was just around the corner. Hundreds of people began to call, and some poor cancer victims went all the way to the Tennessee research center asking to be treated. With thousands of people desperately wanting to believe that a cure for cancer was imminent, it was very difficult for researchers to clear the air and get out the truth.

Such poor handling of health-related news is starkly contrasted by the American Cancer Society's style of dealing with the news media. Each year the Cancer Society holds a seminar for science writers at which the latest factual information about cancer research is presented by experts. Though the Society has been accused of managing the news in its favor at these seminars, the information which is presented is accurate, and the reporters get a good schooling to help prevent fiascos of ignorance like the cure panic described above. The American Heart Association holds similar meetings. Such formal, systematic handling of news in health care should be encouraged by the establishment of clearinghouses and authorization or review boards which would make health news available and insure its accuracy.

Closely related to health journalism are the numerous magazines and paperback books which are available with health information.

Such material has very high readership, especially among women. Many magazines take care to include only sensitive and accurate treatment of health topics and should be congratulated for the informational service they provide. Some sources are very expert. Other information sources, especially some in the paperback book market, are somewhat less credible sources of medical information. In the diet fad area a few books offer health information of questionable or negative value. While flagrant examples are generally repudiated in the press, consumers might be well serviced by some kind of professional review service which grants or withholds approval according to the merits of the information provided.

Another mass media source of consumer information in health-related matters is the formal educational system that operates through government or private public interest funding. This source of information has been responsible for most of the increases in general health knowledge in recent years. In 1940 only 38% of the population knew a symptom of cancer. By 1955 nearly 70% of the nation had that knowledge, largely as a result of national information campaigns in magazines and newspapers, on radio and even on billboards. But such programs are not always successful in reaching their goals. Many of the recent drug education campaigns have included film materials which may actually incite rather than discourage drug abuse. Great care should always be taken to see that such unwanted, dysfunctional effects are avoided.

A more general problem with health education programs in the mass media is that they tend not to reach those individuals who need them most. Media exposure and comprehension are nearly always greatest among the social groups with the greatest income and education. Thus a middle-class youngster may be exposed to many different messages about venereal disease while his lower-class counterpart, much more likely to come into contact with syphilis or gonorrhoea, may have only sporadic contact with a single source of venereal disease information. There is no simple solution to this paradox in information dissemination. One would hope that media planners in information campaigns will take careful stock of the channeling options that are available to them in order to reach the audience for which their facts will be the most useful. Commercial advertisers are very conscious of the need to reach such target audiences. Perhaps public health agencies can learn from them.

Yet in and of itself, the presentation of information is often not enough to accomplish the goals of a public health campaign in the mass media. Simply providing target individuals with information in a health-related area may not have any real effect on their behavior in the segments of their life which it concerns. An example previously noted is the recent anti-smoking campaign. While nearly everyone is willing to agree smoking is bad for one's health (opinions were not nearly so unanimous a decade ago) many individuals continue to smoke in spite of that information. In other words, while the media campaign has been

highly successful in changing attitudes, it has done little to alter actual behavior. An example of this lack of effect on behavior is reported by Auger, et al. (1972). The amount of cigarette smoking was surreptitiously measured in an office complex before and after gruesome anti-smoking posters were placed on the office walls. The introduction of the posters had no effect on the number of cigarette butts that were found in ashtrays at the end of a day.

The problem here is that it is often not enough merely to educate individuals about health hazards. They must also be persuaded to take action on the basis of that education. Current research employing behavior modification is having some success: However, it is difficult to apply behavior modification techniques on a wide-scale basis. We are hoping to discover ways to train people to modify their risk-increasing habits via mass media in the present Stanford Heart Disease Prevention Program.

We have discussed some of the problems arising from various kinds of efforts to get individuals to change their health-related behavior. We have seen the emergence of serious ethical problems arising even when the efforts that are being made are made with the best of intentions and with the aim of scientific discovery whose target is learning how to help prevent disease. Tentative efforts at the solution of these problems have been discussed.

Far more serious ethical problems arise from the attempts to market products when the marketer's aim is primarily profit making.

While Federal law and Federal Trade Commission and Federal Communications Commission regulations can make some contribution towards alleviating the problem, the very nature of the system of advertising mitigates against simple truth telling. Theory and research on persuasion suggests that in the long run the only real defense against illegitimate attempts at persuasion lies in knowledge on the part of the receiver of the communication. I trust that few if any physicians are taking daily laxatives or are succumbing to other wiles of the other drug advertisers. A well-informed population is the best defense. Meanwhile, perhaps strengthening the hands of the FTC and FCC and other regulatory efforts to contain false claims in advertising can be of help.

Finally, I think we can learn a great deal from studying how other countries deal with these problems. In such a study we should examine not only societies which are organized politically and economically in a similar fashion to ours, but perhaps even more importantly, what differently-organized societies are doing. We might well learn a great deal in this way if we can successfully avoid ideological stereotypes and study empirically how various so-called Communist countries deal with advertising and consumer education in health matters.

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