

Experiments on Mass Communication

Carl Hovland

新闻学与传播学经典丛书·英文原版系列

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大众传播实验

Carl Hovland 著
[美]卡尔·霍夫兰

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PREFACE

THE present volume is the third of a series describing the work of the Research Branch of the Army's Information and Education Division. The function of the Research Branch as a whole is described in Chapter 1 of the first volume. Briefly, the Branch's mission was to collect and analyze data on soldiers' attitudes and opinions. These data, obtained primarily through anonymous questionnaires answered by enlisted men, were for general use by Army policy makers—particularly by those responsible for planning the information, orientation, and education programs. Much of the work of the Research Branch consisted of large-scale cross-sectional surveys, carried out by the Survey Section of the Branch. Other studies, involving controlled experimentation, were the primary responsibility of the Experimental Section. A number of these experimental studies, dealing with the effectiveness of films and other mass-communication devices, are described in the present volume. The studies reported here are the ones thought to be of general interest to persons concerned with the use of mass-communication methods and those engaged in research on the effectiveness of these media.

The main mission of the Experimental Section was to make experimental evaluations of the effectiveness of various programs of the Information and Education Division. The first study of this type was done soon after Pearl Harbor to provide data on the effectiveness of the existing lecture system when compared with documentary films as a means of imparting information concerning the events leading up to America's participation in the war. Subsequently extensive experimental studies were carried out on the first four of the "Why We Fight" series of orientation films prepared for the Division to explain the background of the war, as well as briefer studies of a series of educational and general interest films.

In addition to these studies of films, a number of experimental and

nonexperimental studies were made of other media used by the Information and Education Division. These were quite diverse in character. One of them was an extensive study for the Information Branch of readership interest in *Yank*—the Army weekly magazine—conducted in four overseas theaters as well as in the United States. A similar study of book readership, based on library card records and other indices of use, was made for the Library Branch. Studies concerned with the optimal phonetic representation of foreign language words were conducted for the Education Branch. At the request of the Radio Branch, listening habits and program preferences of Army hospital patients were studied by direct observational methods. Extensive studies were conducted to evaluate various unit orientation programs, materials for which were supplied by the Division's Orientation Branch. Some of these results are presented in Chapter 9 of Volume I. In still another study, comparisons were made of commentator and documentary radio presentations. Some results obtained from this study are described in Chapters 4 and 8 of this volume.

The research of the Experimental Section was not, however, confined to studying the program of the Information and Education Division. Almost from the outset, requests for assistance in psychological research were received by the Experimental Section from other Divisions of the War Department lacking suitable personnel or research facilities of their own. Thus, one of the first experiments performed was a comparison of the effectiveness of the standard Army physical conditioning program with a new program proposed as an alternative by a committee of athletic coaches. Another study, requested by the Office of the Surgeon General, investigated combat veterans' reports of the relative fear-producing effects of various kinds of enemy weapons and tactics. An extensive series of psychological studies was undertaken at the invitation of the Paratroop School at Fort Benning, including an experiment to determine the optimal time for trainees' first training jump from a practice tower. In another study, personnel from the Experimental Section were called upon by the Air Corps to carry out intensive interviews with returnees as a basis for policy decisions concerning redeployment from the European Theatre to the Pacific.

Partly because the Information and Education Division was originally charged with responsibility for reporting on the status of Army morale and the factors affecting it, a continuing interest in this area led to several studies on various aspects of "morale." These in-

cluded studies of leadership practices among commissioned and non-commissioned officers in both training and operational situations. A general interest in training problems led to the undertaking of several collaborative research projects on military training films, requested by the Military Training Division of Army Service Forces. Results from some of these studies of training films are reported in the present volume.

The members of the Experimental Section who had major responsibilities for the planning, conduct, or analysis of experimental studies over an extended period of time were the following:

Frances J. Anderson
John L. Finan
Carl I. Hovland
Irving L. Janis

Arthur A. Lumsdaine
Nathan Maccoby
Fred D. Sheffield
M. Brewster Smith

Others in the Section whose work covered a briefer period included John M. Butler, David A. Grant, Donald Horton, Eugene H. Jacobson, Ansel Marblestone, Alice H. Schmid, and Adeline Turetsky.

Throughout, there was a very close link between the Experimental Section, which was composed mainly of psychologists, and the Survey Section, which was staffed mainly by sociologists. Not only was there constant interchange of ideas, but borrowing of personnel frequently occurred, sometimes for extended periods of time. Robert Ford, Edward A. Suchman, and Paul Wallin were the three members of the Survey Section who spent the most extended periods of time working on Experimental Section studies. In overseas operations there was no clear distinction between Experimental Section and Survey Section personnel and, since the feasibility of conducting controlled experimentation was much more limited than in the United States, Experimental Section personnel engaged mainly in survey and other nonexperimental work. Both in the United States and overseas a common pool of officers functioned in making arrangements for the administration of studies in the field for both survey and experimental studies. Similarly, pooled facilities and staff services for processing of data and for editing and printing of reports and questionnaires were employed in the conduct of both types of studies.

Special appreciation is expressed to a number of consultants who contributed to the work of the Branch. Those who consulted most frequently on Experimental Section studies were John Dollard, Paul F. Lazarsfeld, Quinn McNemar, and Robert K. Merton. In

the studies of training films, valuable assistance was rendered by Lester F. Beck and Major Arthur Weimer of the Military Training Division. Needless to say, the research reported in this volume could not have been accomplished without the constant support of Samuel A. Stouffer, civilian head of the Research Branch professional staff, Lt. Col. Charles Dollard and others who served as officers in charge of the Branch, and Major General Frederick H. Osborn, Director of the Information and Education Division.

The diversity of topics covered by the research of the Experimental Section made it unfeasible to publish a single cohesive account of all of the studies. However, it did appear possible to integrate the group of studies on the effects of motion pictures, film strips, and radio programs into a systematic treatment concerning the effectiveness of mass communication media which would be of general scientific interest. Results of most of the other Experimental Section studies are available in Washington to qualified investigators in the form of summary War Department reports and IBM punch cards, and some of the findings are included in Volumes I and II of this series.

The writing of the present report was the joint work of the undersigned. The planning and writing of the original draft and revision were done in such close collaboration that it is difficult to allocate credits on an individual chapter basis. The writers wish to express their appreciation to the other members of the Experimental Section who participated in the conduct and analysis of some of the studies on which this report is based. Special acknowledgment is due to the following: Frances Anderson, Mary Arnold, and Robert Grose for assistance in organizing the files and tabulations in New Haven; Ruth Hays for aid in reading proof and preparing the index; Dean Manheimer, for editorial assistance, particularly in the graphical presentations; Leland C. DeVinney, for general editorial supervision; Frederick C. Mosteller, for a careful reading of the final draft of several portions of the Appendix; and Leonard Doob, Charles Dollard, Quinn McNemar, Paul F. Lazarsfeld, and Robert K. Merton, for a reading of the first draft in the fall of 1946.

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New Haven, Conn.
November, 1948

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*EXPERIMENTS ON
MASS COMMUNICATION*

CHAPTER 1

INTRODUCTION

THE Army's unprecedented utilization of films and similar mass communication media during World War II provided a favorable opportunity for experimental studies on the effectiveness of these devices. This volume describes a series of such studies conducted by the Experimental Section of the Research Branch in the War Department's Information and Education Division. The films studied included the "Why We Fight" series, designed for indoctrination of members of the Armed Forces concerning the events leading up to American participation in the war, and a number of training films studied in cooperation with other divisions of the War Department. The methods used in these studies and the results obtained are described here in the belief that there will be increasing use of such procedures both for determining whether motion pictures and similar media really do succeed in attaining their objectives and for modifying the products in accordance with the results obtained by research.

These experimental studies comprised a large-scale attempt to utilize modern socio-psychological research techniques in the evaluation of educational and "indoctrination" films. In nearly all cases, however, the studies had an immediate practical purpose and did not constitute a systematic research program. The present volume is, therefore, essentially a report on those by-products of the applied research that are thought to be of scientific interest. In preparing the report, an attempt has been made to give some systematization to the results and to present a rationale of the general field of research on mass educational media.

In the majority of the studies motion pictures were used as the communication medium. For this reason the discussion that follows is phrased mainly in terms of films. However, the primary interest throughout is not restricted to films as such, but rather is in principles which would apply more generally to any mass communication medium. It is to be expected that ultimately the re-

sults of film studies will become part of a more general body of principles concerning mass communication. Mass communication principles in turn will presumably become integrated into a larger body of principles concerning the manner in which ideas and ways of reacting are acquired through learning. A systematic treatment of educational film research therefore should ultimately include principles at three different levels of generality:

1. *Basic learning principles*—common to all educational devices.
2. *Mass communication principles*—applying to films and similar educational media.
3. *Film principles*—related specifically to the medium of films.

The *basic learning principles* would be phrased in terms of very general concepts, such as "repetition," "response," "motivation," "interference." *Mass communication principles* would translate these principles into the terms of more specialized learning situations—"participation," "interest," "initial attitude," "attention," etc. *Film principles* would be generalizations at the most specific level, translating from the two more general levels into a specialized terminology for films. This might include terms like "dramatic presentation," "animation," "voice-over narration," "discussion breaks," etc.

The research to be described is mainly restricted to analysis of *the effects of films on the audience*. Therefore many types of research connected with films will not be covered here: problems of film distribution, methods of maximizing voluntary attendance, library "research" on background material, curriculum analysis, etc., are excluded. Even with this restriction to analysis of the educational effects, a number of different kinds of film research may be classified, each with its own requirements and restrictions as to conclusions that may be drawn.

Objectives of Film Research

A basic distinction can be made between studies where the purpose is to evaluate a completed product and those where the purpose is to investigate variables by controlled variation. These two kinds of research may each in turn be divided into two subtypes, giving four general classes of film study:

- 1a. Evaluation of a single film.
- b. Evaluation of a class of films.
- 2a. Experimental investigation of a single variable by controlled variation.

- b. Experimental analysis of two or more variables in combination.

Each of these classes of film research is briefly characterized below. The studies described in Part I of this volume are *Evaluative* (1a and 1b) while those of Part II employ *Controlled Variation* (2a and 2b). In both kinds of studies the main emphasis was on the measurement of changes in knowledge, opinion, or behavior produced by a film or other communication device. This contrasts with most commercial film research, which is limited to polling the audience to determine what they think of the film.

1a. *Evaluation of a single film.* A film may be produced to achieve a particular educational objective and a purely practical research project can be carried out to determine the extent to which this objective is achieved. The adequacy of the research is determined by the representativeness of the sample audience, the representativeness of the conditions of testing, and the validity of the measuring instrument. The sample of people must represent the population for which the film is designed, the experimental presentations must approximate the actual conditions of use of the film, and the measurements made must reflect the behavior changes desired of the film as an educational device. The measurements need not reveal all of the behavior changes produced by the film but may be primarily focused on designated objectives. For example, a film may have the purpose of explaining the structure of the American government and it would be unnecessary to measure any American history that might be taught by the film. Or, a film may be designed solely to stimulate discussion on a subject, in which case only the effects of discussion stimulated need appropriately be measured, although the audience may incidentally have learned a number of facts from the film.

It is important to note that conclusions from an evaluative study of a single film apply to *that particular film*; generalizations to other films have the status of untested hypotheses. Some film studies may not actually have the purpose of evaluating a single product but nevertheless may conform to the pattern of such a study and have the same limitations on generalizability. Thus a test of the effects of a single film may be conducted "to determine the utility of films as educational devices"; obviously the conclusion from such a study would normally have little generality.

Aside from their limited scientific value in contributing testable hypotheses which may lead to the development of principles, evalu-

ative studies are useful as a form of *applied* research. If the evaluations are made when the films are finished products, the most the results can tell the film producer is whether he has succeeded or failed in attaining specified educational objectives. If he has failed in major respects, the only recourse is to reject the film or design supplementary materials to reinforce its weak points. Further application of the results is possible only to the extent that the implications of the findings can be generalized to future films of a similar nature.

However, if a "rough cut" or preliminary try-out version is used in the evaluative study, prior to the completion of the finished product, the results can be more useful to the producer. They may then be utilized in modifying the film, or if need be in redesigning it, so as to try to correct or reinforce the weak points in its presentation. Ideally such evaluations should be carried out as early in the stage of production as feasible, and repeated after each major stage of revision. By successive correction and re-evaluation one might achieve a far more effective communication than if the product had been carried through to completion as originally designed.

1b. *Evaluation of a class of films.* A research project may seek to evaluate a class of films rather than a single product. In this case, besides the problems of adequate audience sampling, representative conditions for testing, and validity of the measuring instrument, there is the additional problem of adequate sampling of the class of products about which the conclusions are to be made. The conclusions have to apply to the *average* film of a particular kind—a consideration which greatly multiplies the size of the project as compared with evaluation of a single film.

For example, a study may be done to determine the effectiveness of films in teaching a particular subject, such as general science. Even if an adequate sample of existing films of this type were used and compared with an adequate sampling of other instructional devices, the conclusion would apply only to *existing* films of this type and would not determine how effective such films *could* be.

This form of research has also been used in attempts to get at the effect of a particular film variable. For example, the question may be, "Which is more effective for educational purposes—silent film or sound film?" The variable here would be sound accompaniment in educational films. A number of examples of sound and silent films—comparable in varying degrees in other respects—are compared to determine their "relative effectiveness." The results of this

mode of attack have doubtful generality. At best they could give only the typical effects of the variable as usually employed; when the sampling of films is small, even this conclusion cannot be drawn.

2a. *Experimental investigation of a single variable by controlled variation.* A more efficient mode of attack on the type of question discussed in the preceding paragraph is one in which the variable under consideration (in this case, the use of sound) is studied by means of controlled variation. Here all factors are held constant except the one being investigated. For instance, in the case of sound vs. silent films controlled variation would involve comparing the effectiveness of sound and silent films having the *same subject and pictorial content*. This would require the use of two films (or of pairs of films) differing only in the particular of having representative sound accompaniments for the pictorial material in one film (or set of films), with the appropriate portions of the sound replaced by visual titles in the parallel film or films. Thus instead of trying to "average out" differences due to noncomparability, the experimental and control forms of the film presentation are constructed so as actually to be comparable.

Even where this form of research is undertaken, there may be difficulties in achieving comparability with respect to irrelevant variables. To use the above example of the effects of sound accompaniment, this factor might be controlled by using a sound film with the sound omitted, or a silent film might be used with sound "dubbed in." But if the techniques of sound and silent film differ, the result might be quite different when the sound is omitted from a sound film and when the sound is added to a silent film. Sound accompaniment might turn out to be an important factor in the former case and a detriment in the latter case. With other types of variables, the problem of achieving comparability of control and experimental conditions might readily be solved. For example, a comparison of a color film and an achromatic print of the same film would probably involve no similar difficulties, nor would the measurement of the effects of showing a film twice as contrasted with a single showing.

Probably one of the greatest difficulties in the way of drawing useful conclusions from this type of film study is the problem of generality. An inherent feature of such research is that it seeks a conclusion about a single variable without respect to other variables with which it might interact. Thus sound accompaniment might be an aid to learning under some conditions and a detriment in