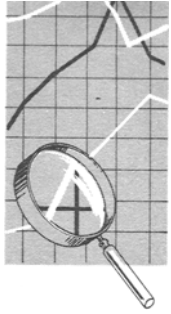

Drive: The Student Must Want Something

A NUMBER of studies show that the viewers of motion pictures are not merely passive but that they can react with strong internal emotional responses, which have a motivating effect. Dysinger and Ruckmick (1933) showed that viewing motion pictures can arouse psychogalvanic responses and produce pulse changes characteristic of strong emotional response. Kleitman (1945) showed that temperature was increased immediately after seeing a motion picture. Renshaw, Miller, and Marquis (1933) showed that seeing a motion picture tended to affect the pattern of behavior during sleep, sometimes for more than one night after seeing a picture. All of these findings are evidence for the fact that motion pictures can arouse strong drive-producing responses. Furthermore, on the basis of a number of studies summarized, Hoban and van Ormer (1950) suggest that motion pictures can motivate students to spend more time on outside reading, special projects, art work, and the like.

Less Knowledge about Influencing Motivation than Communicating Information

We know much less about teaching motivations and attitudes than about teaching factual knowledge. This is true for all media including pictorial techniques. It seems likely that we will have to distinguish clearly between the objective of imparting knowledge and that of influencing motivation, because it is by no means certain

that the short, specific straightforward kind of film which is economical for imparting knowledge will be the best for influencing attitudes and motivation.

Importance of Knowledge about Influencing Attitudes and Motivation

During World War II, a whole series of fabulous films were made by the Hollywood producers with the idea that these would certainly influence the attitudes and morale of the troops. But, in contrast to the large gains which the films produced in factual information, Hovland, Lumsdaine, and Sheffield (1949) found less effect on opinions and little, if any, measurable effect on more general attitudes and motivations. This lack of effect may be partly a defect in the instruments of measurement that were available, but it is quite possible that the huge expenditure of money and effort going into this attempt to influence attitudes was largely wasted.

Today, the United States Government is spending approximately 100 million dollars a year attempting to create respect throughout the world for free enterprise and the principles of democracy. It seems highly probable that we could improve considerably the effectiveness of this program, which is so vital to the struggle for democracy, if we had a better scientific understanding of how to affect motivations and attitudes, especially in foreign cultures.[3] Specifically, a 5 percent (i.e., approximately 5 million dollar) investment in research would almost certainly produce far more than a 5 percent gain in effectiveness.

We desperately need to make a general theoretical-experimental attack on the problem of influencing motivation. This attack must include the development of better techniques of measurement. As a first step, a group of people might be assembled for several weeks of discussion. The group should include specialists in graphic communication, but also people representing other skills, such as

[3] See Williams (1953) for a discussion of the communication of information in the underdeveloped areas of the world.

learning theory, advertising, propaganda, and psychotherapy. The time is right for a clarification of issues and a formulation of some tentative hypotheses.

Some Hypotheses about Changing Motivations and Attitudes

The following hypotheses are put forward as examples of the type which should be investigated:

1. The motivational effects of a film are dependent upon the learned drives which the viewer already possesses.[4] A motion picture cannot create a primary drive such as hunger, pain, or thirst. Its ability to arouse motivation is dependent upon the learned drives which are already attached to the pictorial and auditory cues presented, or to the thoughts which they arouse. An understanding of this principle should help producers and users to avoid the disappointments which are in store for them if they expect the impossible. It should direct their attention to the conditions which must be met if the film is to arouse motivation.

2. The motivation aroused by films must be reinforced in daily life. This is a corollary of the preceding point. To be effective, the motivations involved in films must build on, not run counter to, those in the life experiences of the members of the audience. If the message of the film is confirmed in real life, the effectiveness of successive films will be increased; if it is not, the prestige and effectiveness of the film as a medium will be decreased. It will be impossible to change basic attitudes and motivations if the situation represented in the communication conflicts with the life experience of the audience.

3. Whenever the conditions of life are different for different audiences, their motivations will be expected to vary. Thus different types of appeals will have to be made to different audiences. Some of the main dimensions in which audiences in our society may vary are: age, sex, level of formal education, intelligence, social

[4] For a more detailed discussion of learned drives, see Miller (1951) and Dollard and Miller (1950).

class, geographical region, and ethnic origin. Audiences from a foreign culture will be expected to differ more widely.

4. One way of arousing a motivation for a given action is to show that it is a means to a goal that the subject is already motivated to achieve, or a way of avoiding a consequence that the subject is already motivated to avoid.

5. It is more difficult to motivate people when the reward or punishment for action will be delayed. In training camps, there was no apparent interest in the film "Land and Live in the Jungle." When soldiers were flying over a jungle territory, there was a great interest in this film.

6. The motivational effect of a communication tends to dissipate with time; if possible, it is best to apply your motivational stimulus immediately before you want to get action.

7. Motivation and attitudes can be conditioned and deconditioned. For example, if a Negro is repeatedly represented as a doctor, in situations in which the positive responses to the symbol of doctor are stronger than the negative ones to the color of the skin, this experience will tend to extinguish the unfavorable responses to the dark skin and to condition more positive ones. In order to clarify this hypothesis, the variables found to be important in other conditioning studies should be systematically studied in an attitude-change situation. For example, we should investigate the effects of the strength of the "unconditioned" drive, frequency, and the sequence and spacing of conditioned and unconditioned stimuli.

8. Repetition is needed but experimental extinction (negative adaptation or boredom) must be avoided. Unless the film-maker has very strong motivations at his command, we would expect that a considerable number of repetitions would be required to attach an appreciable amount of motivation to any new cues, for example to build up a strong appetite for studying history. Since the particular cues used to arouse the motivation are not reinforced by any primary drive during the showing of the picture, we would expect that there would be some tendency for them to extinguish and become weaker with repetition. Indeed, experimental evidence

indicates that in general the emotional effects of a film are reduced by immediate repetition. Learning theory suggests two ways of achieving repetition without running into this reduction in effectiveness: one of these is spaced practice with long enough intervals between trials to allow spontaneous recovery and/or reinforcement in real life to occur. The other is to find a variety of quite different cues that will arouse the same motivation and to use a different one of these as the "reinforcement" in each repetition.

9. The summation of a variety of different compatible motives should be more effective than any one of them taken alone. We need more research on the ways in which different drives either facilitate or conflict with each other.

10. Some motivations and attitudes are much harder to change than others. We need to discover how to specify the factors which make motives hard to change so that we will not try to achieve difficult ends with insufficient means.

11. For the factual informational type of film, the intent of the producer should be made clear to the audience, but for a propaganda-type film to have the greatest effect, the intent of the producer should be concealed.

12. Identification with the hero facilitates adopting his motives and attitudes. Although the concept of identification probably points to an important effect, it is somewhat vague and may have to be sharpened before it can lead to significant research. Miller and Dollard's (1941) theory of imitation is a step (albeit all too short a one) in the right direction. This theory of imitation leads one to expect that more motivation will be aroused when the actors are similar to people whom the students have been rewarded for copying. In general, these will be people of high prestige, unless the prestigeful people are completely out of the range copied by the audience. If the characters portrayed are completely unfamiliar to the members of the audience, we would not expect them to have any habits of copying such protagonists, and hence would expect little motivational effect. Perhaps this is one of the reasons why Holaday and Stoddard (1933) and Sturmthal and Curtis (1943) find that familiar settings seem to help learning from instructional

films. Studies by Hoban (1953, 1953a) and Hovland, Janis, and Kelley (1953) support the hypothesis that identification with the protagonist is a significant variable. It would be interesting to investigate the relationships between the spatial perceptions evoked by the film and identification, for example, determining whether or not identification would be facilitated by a judicious use of the subjective camera angle which tends to evoke in the viewer the same spatial perceptions that he would have if he were the protagonist. This effect is intensified in wide screen projection.

13. Whenever fear is used as a motive, it is important to point out very clearly the appropriate ways of avoiding the danger and escaping the fear. Any response which leads to escape from fear or punishment is reinforced (Miller, 1951). If the communicator does not provide desirable means of escape, the audience will find undesirable ways—looking away from the film, paying attention to something else, belittling or forgetting the communication (Miller, 1950). Recent studies reported by Hovland, Janis, and Kelley (1953) support this hypothesis.

Expanding Range of Motives Studied—Intellectual Curiosity Versus Fear of Being Different

Most of the basic research on motivation to date has been confined to a limited number of so-called primary drives such as hunger, thirst, sex, and pain. As we have seen, these are not the drives which can be directly manipulated by graphic communication or are usually important in the classroom. The motives which are significant for education are described by phrases like intellectual curiosity, the desire for approval, and the motivations to pay attention and to rehearse, to achieve, to solve problems, and to have a logical explanation. The very description of these motives is necessarily vague and inaccurate because we know so little about them. There is great need to expand basic research on motivation to include these little-understood but highly important motives.[5]

[5] See Dollard and Miller (1950, pp. 86-94; 116-123; 263-267) for a discussion of the role of such motives in the higher mental processes and in psychotherapy. See also the discussion of "New Trails for Research on Motivation" in Miller (1958).

Many of the foregoing types of motivation have been called *learnable drives* (Miller, 1951) because they are subject to modification by learning. This does not mean, however, that they have no innate basis or that they are in every case solely the product of learning. In fact, one of the important problems is to discover the innate, physiological mechanisms of these motives. Another important problem is to find out how these motives can be directed, strengthened, or inhibited by conditions of learning. For example, what are the principles describing how intense curiosity in intellectual subjects can be developed? How can one avoid inhibiting creativity by developing a strong fear of being different? How can educational films best arouse and use the highly significant motives of curiosity and problem solving?

Work on levels of aspiration, group dynamics, attitude change, and psychotherapy is increasing our understanding of a wider range of motives. Readings selected by McClelland (1955) give a sample of some of this work. Studies by Berlyne (1954), Harlow (1953) and his students, Montgomery (1954), and Myers and Miller (1954) show that something which might be called "curiosity" or "exploratory drive" is a strong motive in mammals and can be studied experimentally.[6] These studies open up the possibility of analyzing under controlled conditions the variables relevant to such motivations. An acceleration of this line of research and its extension to other types of motivation at the animal, child, and human adult levels promises to yield educationally significant principles. Certainly our present list of experimentally studied motives is far too short!

Need for Better Measures of Motivation

A primary difficulty in research on human motivation and attitudes is the lack of suitable measures.

The motivations that are modifiable by various media of communication are the learned, rather than the innate drives. We know

[6] Only the most recent studies are cited; these contain references to earlier ones.

that learned responses can be quite specific to a given type of stimulus situation; the same seems to be true of learned drives. Therefore, in trying to measure learned drives, it is important to be sure that all crucial aspects of the measurement situation are similar to the actual situation in which we expect the motives to operate in real life.

As Dollard (1948-49) has pointed out, the halo of validity from the success of polls in predicting elections may be misleading because the test situation in polling is so similar to the real situation in voting. The danger of extrapolating to dissimilar situations is illustrated by a study by Bennett (1952) who used some of the group dynamics techniques to increase the motivation of students to volunteer for a psychological experiment. By so doing, she was able to increase the number of people who raised their hands to volunteer from 10 percent in the control group to 90 percent in her best experimental group. But the percentage of people in the different groups who actually showed up for the experiment was almost exactly the same—10 percent. That is, she was able to vary the motivation for raising the hand in a social stimulus situation, but unfortunately this stimulus situation happened to be quite different from the one in which the student was alone in his own room and had to decide to start toward the laboratory. Apparently, the factors that increased the motivation in the measurement situation were not transferred to the performance one; the learned drive with which she was dealing seemed to be quite specific to the cues in the social situation. Similarly, the classical studies by Hartshorne and May (1928) showed that school children's motivation to be honest is surprisingly specific to a given type of situation; they found little evidence for any general trait of honesty.

The foregoing theoretical analysis and empirical evidence emphasize the dangers of indirect measures of motivation. We must measure the actual payoff behavior in the real situation. If we use an indirect measure, it must be validated against the behavior it purports to predict. Too many studies of attitude change, which are otherwise technically slick, have used paper-and-pencil, or polling-type tests which have not been validated.

A good example of using the actual behavior in the real-life situation to measure a motivational effect is reported by Vander-Meer (1953). The study compared the effect of two types of personal hygiene films—one of them a straight lecture presentation, and the other a jazzed-up version with folk music in elaborate Hollywood style. The effects of the different versions on the two groups who saw them were studied by recording their purchases of toothpaste and toothbrushes, observing whether or not they washed their hands after going to the toilet, and a variety of other ingenious behavioral techniques. The results showed that both versions were equally effective.

If reliable techniques for measuring motivational effects can be perfected, we can use them to compare the effects of various procedures and to discover more about the laws of motivating people.

We also need to develop techniques for measuring the student's moment-to-moment interest in different parts of a film. Then we should correlate the student's level of interest with his retention of the material presented. Some preliminary work has been done on this problem by Twyford (1951). Using the Film Analyzer developed at the Pennsylvania State University, he found a relatively high correlation between actual learning and prediction of learning by students, but a negative correlation between actual learning and "liking" for the film.

Effects on General Emotion or Mood

We have been discussing motivations to do specific things, such as using toothpaste. Another problem is the measurement of the general level or type of motivation or mood—e.g., anxiety, hostility, depression, or euphoria. For example, Ruesch and Prestwood (1949) found that when they played a tape recording of an interview with an anxious patient, the anxiety was so contagious that the listeners got upset and jittery, started quarreling with each other, and tended to leave the room. In this case, the material on the tape was not changing anybody's attitude toward any specific

thing; it was influencing the general motivation or effect. Similarly, Nowlis (1953) reports that the group working at Rochester has been able to use small doses of certain drugs to manipulate moods—for example, to make college students more withdrawn or more outgoing, more anxious or less anxious. They have devised techniques (self-rating, partner-rating, observer-rating, and adjective check list) for reliably measuring these effects.

It is a commonplace observation that a motion picture can affect one's mood. At the beginning of this section we cited a number of studies which used physiological techniques—psychogalvanic responses, pulse changes, etc.—to demonstrate marked effects. Those techniques measured the strength of the effect; the techniques reported by Nowlis tell us something about its quality—whether it be erotic arousal or anxiety. We should be able to use both kinds of techniques to make scientific studies comparing the effectiveness of different variables in a film. Such studies should clarify the laws involved in using pictures to influence moods.

Motivating Students To Learn from Films

Learning requires effort and must be motivated in order to be efficient. A transfer of the attitudes generated by entertainment films probably has obscured this point as far as educational films are concerned. The effectiveness of training films can be improved if more attention is paid to motivating the students to learn.

Some Motivation Can Be Built into the Film

Suitable material in the introduction and elsewhere in the film should help to motivate the student to learn from it. In preparing this material, the hypotheses in the first part of this section are relevant. There is some evidence suggesting that a suitable introduction in the film may improve its effectiveness, but this is an area in which much more work needs to be done.

Role of Examinations in Arousing Motivation

One of the stronger motivations acquired in school is to do well on examinations, to get good grades. Thus it is not surprising that warning the students in advance that they will be examined on the content of a film or filmstrip can have the effect of increasing their learning (Hovland, Lumsdaine, and Sheffield, 1949). We would expect this effect to be greater with students who would otherwise be poorly motivated than with those who are already strongly motivated.

Role of Teacher in Arousing Motivation

It is generally conceded that a good teacher can have the important effect of interesting the students in the subject and arousing their general motivation to do well. Thus it is not surprising that in Vernon's (1946) study, it was found that students in classes with a better teacher showed more learning from a film, even if the teacher had nothing to do during its presentation. This correlation suggests that the good teacher may have created a higher level of motivation to learn. Similarly, the parents will have an important role on the student's motivation to learn which should affect his learning from films as well as from other classroom methods. Thus, as Davis (1948) has shown, we must expect different motivational problems to be encountered in children from different occupational and social classes.

Finally, Allison and Ash (1951) have shown that telling students that the material in a film is important and difficult improves their learning.

Drives Should Be Relevant

Drives which are reduced by performing the correct responses (e.g., paying attention and rehearsing) should reinforce learning. Drives which are reduced by incorrect responses (e.g., fatigue re-

duced by relaxation) should interfere with learning. Therefore, films should not be shown to fatigued men under poor physical conditions. When the topic is dramatized, we should be careful that this does not introduce irrelevant drives. There is a distinction between interest in a film and interest in the subjectmatter. The entertainment film is primarily concerned with the former, the instructional film with the latter. We should ask ourselves what response we want to motivate—continuous passive looking, attempting to remember, or attempting to understand. Does a specific dramatic effect introduce relevant or irrelevant motivation? Is there a certain level of tension or anxiety which is optimum for a specific kind of learning? We need further studies to supply more exact answers to such questions.

The motivation to be entertained and relaxed by viewing films, a transfer from their widespread use as entertainment, should tend to interfere with learning from them. The more experience students have had with properly used training films—the more they have been motivated and rewarded for learning from them in the past—the more they should be motivated to pay attention to and learn from them. Therefore, we should expect a beneficial, cumulative effect from the increasing use of good training films.