# **Attitudes and Safety in Recreation**

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MUCH has been written about attitudes, and many accidents are blamed on them. But there are few facts beyond this. During the past 30 years more than 10,000 books and articles have been published in English on the topic of attitudes. The yield is some agreement, some contradiction, and much confusion. Yet there must be discernible within this mass of information a framework of sound knowledge of attitudes and of the ways in which they can be measured and changed. It is particularly important to identify this framework for accident prevention, for on reviewing accident literature, one is forced to the conclusion that faulty attitudes are responsible for a large number of accidents or that the more unclear or complex the cause of an accident, the more likely it is to be blamed on someone's faulty attitude. It seems desirable, then, to define attitudes, assess their role in accidents, and discuss ways for modifying them.

#### **Definition of Attitudes**

I think an attitude can best be defined as an accumulation of information and experience that predisposes an individual to certain behavior. In this sense, all people have attitudes which result in tendencies to respond positively or negatively to another person, a group of people, an object, a message, a situation in-

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But who are these people who have accidents?

#### The Role of Attitudes in Accidents

On studying the literature we see that attitudes cannot be separated from the concept of personality (4). A review of research into the personality characteristics of accident repeaters may therefore be in order.

Freud, and others, had many times suggested that accidents might be a type of need fulfillment. The story goes that when any of Freud's children suffered a cut or a bruise and came to him for sympathy, he would ask, "Why did you do it?" (5). The early 1940's saw this theory documented in a monumental study by Dunbar and associates (6,7). They found that fracture patients had a common pattern of emotional reactions and personalities. Patients who had had several accidents in childhood remembered that at the time of each accident they had experienced combinations of outside pressure and inner tempest.

In the accident group Dunbar found impulsiveness, concentration on daily pleasures to the exclusion of long-range goals, a strict bringingup, and resentment of authority—parents, guardians, relatives, spouse, church, and employer. She also found they were active people who did not like to be idle.

Others have observed clinically "that the aggressive drive lies behind accidents, that the accident becomes a vehicle for turning one's aggressive drive against himself as a self-punishment or against others as a form of revenge" (8). Also, emotional instability is frequently found among the accident involved, and their feelings of insecurity sometimes seem to demand that accidents happen to them as a means for focusing attention on them and feeding their sense of or need for importance (9).

Still other investigators have found these same characteristics in those who for one reason or another were in trouble with the law (4, 10-12). The presistent breaker of laws is virtually identical in personality with the persistent breaker of bones.

Even children among the accident repeaters have definite personality patterns. Krall (13) concluded that juvenile accident repeaters showed significantly more aggression, less inhibition, greater need for assurance, and less delay in showing aggression. They used more commands, threats, and prohibitions in doll play and showed more affection and solicitation of affection than accident-free children.

Essentially the repeaters seem to vent their protest feelings through accidents. Social or parental demands conflict with inner needs and wishes, and pressures become greater than the individual can stand. As a consequence, the child finds himself driven into reckless action.

There seem to be at least two elements in the actions of these children:

1. Anger and guilt over parents' demands and the child's own disobedience.

2. Conflict between strong conscious desire to be brave and grown-up coupled with a repressed wish to remain a baby and be protected and sheltered. To such a child the need to be dependent is so painful and unacceptable that he sets out to prove to himself—through daring and reckless deeds—that he is not a coward and can compete with other children. He must jump over the widest ditch or ride a bicycle on streets heavy with traffic. As long as the need to be brave rules him, he does all right. But if the deep desire to be dependent surges up, he slips on the edge of the ditch, falls when he jumps, or becomes careless in judging his bicycle's distance from the car.

Stiles (14) found that accident-repeating children had many more unsatisfied emotional needs than accident-free children. The repeaters were emotionally unstable, tended to feel inadequate, and behaved immaturely.

In short, among both adults and children, the accident-involved person is maladjusted, and one symptom of the poor adjustment is accident involvement. There is much evidence to support this hypothesis.

Evidence also suggests that there is no clearcut line between safe and unsafe people. Just as the mechanisms of psychoses or neuroses operate to a lesser degree in everyday behavior of "normal" people, so do the critical factors in unsafe behavior tend to appear to some degree in average people (4), so much so that it is to the average group that we must attribute the great majority of accidents. Even if we could remove the entire group of accident repeaters, only a small reduction would occur in a total accident rate. In a study by Schulzinger (15) 86 percent of the accidents were due to infrequent, solitary experiences of a large number of individuals, while only 0.5 percent were due to accident repeaters, with 13.5 percent accounted for otherwise. Except for a small accident repeater group, it seemed wiser to Schulzinger to speak of varying degrees of "accident-proneness" rather than of the presence or absence of proneness.

It should be made clear that the degree of "proneness" at any given time can be influenced by many things. This theory (16) has been developed for driving, which is much like many motor skills exercised in recreation (skiing for example). Therefore, one may make some generalizations about driving, which is itself a prime recreation for many.

Driver behavior is at any moment a point on a continuum, with safe driving at one end and unsafe driving at the other. The initial position and stability of this point are determined largely by the characteristics of the individual. Some of these have a constitutional basis; others develop over time. Most are a combination of both. Examples are (a) physical characteristics such as age, size, sex, and condition of the body; (b) physiological characteristics such as sensory discriminative capacities, perceptual abilities, response capacities, and central and autonomic nervous system functioning; (c) intellectual characteristics such as the ability to learn, comprehend, remember, and judge; (d)personality characteristics such as role in society and socioeconomic level; and (e) educational characteristics such as formal and informal driver training.

In constant interaction with these characteristics are hundreds of forces, usually transient, which relate to a particular driving episode. Examples are the behavior of other drivers, presence of enforcement officials, signals, flow of traffic, and conditions and characteristics of both highway and vehicle. Also influencing the driver are such factors as where he is going, how much time he has to get there, what he has been eating and drinking, how he is feeling, what he is thinking about, looking at, and listening to, and his immediate relationship with his passengers, his wife, his boss, and other persons important in his life.

As these forces interact with one another and with characteristics of the individual, they may move the point representing driver behavior toward the safe or the unsafe end of the continuum. Forces moving the point toward the safe end are positive; those moving it toward the opposite are negative. Forces which move the point only slightly are weak; those which move it considerably are strong.

The position of the point on the continuum differs markedly among individuals. For some drivers it is so close to unsafe that a minimum of negative forces makes them dangerous. For others, the point is far enough from the unsafe end that even considerable negative forces might not be harmful. The position of the point may also vary markedly in a person from day to day (he may be unusually fatigued or emotionally upset) or even from moment to moment when strong forces like alcohol or drugs are operating.

But most important is the understanding that for each driver, the unsafe end of the continuum can be reached. When sufficient negative forces are operative, no one is immune to unsafe driver behavior. It is easy to visualize how this same continuum operates in other areas of potential accident during recreation.

An understanding of this continuum should also make one more realistic about the role of attitudes. One authority (17) has isolated 250 different characteristics and forces contributing to accidents. While it is probable that attitudes are influential in the exercise of some of these, it is improbable that attitudes alone ever get someone into or keep him out of a particular accident. To understand more fully what role attitudes might play, let us consider a motor task, like those engaged in during recreation.

Any motor task consists of at least three performance components: input, organization, and Input represents all of the stimuli output. reaching a performer: what he sees, hears, and feels. Organization is the process whereby he decides what to do about what reaches him, and this involves perception of a hazard, judgment (take the risk or avoid it), and the influence of attitude on these. Output is the physical action of the performer in taking the risk or avoiding it. Of course, output provides feedback which may influence input and organization; the components are interrelated. It is especially significant that psychophysical abilities (such as visual acuity, hearing, and depth perception) which relate to input and reaction time and manipulative motor skills which relate to output do not per se differentiate accident repeaters from others. The repeaters may in many instances excel in the functions as presently tested, while the accident-free may be inferior without apparent jeopardy to good performance (18-21).

We must conclude then, at least temporarily, that the deficiencies of accident repeaters are in the organization component and that they are at least partially attitudinal. We should also assume that most accidents to normal individuals occur because of deficiencies in organization. Either they did not perceive the hazard, or they did perceive it and took the risk anyway. This gives us perspective for assessing the role of attitudes in accidents. They are only one of many factors operative, but they are part of the organization component—which seems to be the most important—in the safe or unsafe performance of a motor task. If we successfully influence attitudes we shall not eliminate accidents, but we may help reduce them.

# **Modifying Attitudes**

Basic to measuring change in attitudes is ability to measure attitudes. What is the state of this art? Many investigators have tested to differentiate chronic violators, accident repeaters, and various control groups (10, 11, 18, 22, 23). But the differentiation was accomplished ex post facto, and even the most optimistic investigators would not expect test scores to change appreciably within a reasonable period of time, short of having the subjects go through depth psychotherapy. The tests usually measured basic personality, and the standard way to gauge change in this personality was through change in behavior as revealed in followup accident and violation records. Such tests are not practical for mass administration, because they take much time and trained personnel.

Measuring change in attitudes through change in behavior is common and, in view of the definition of attitudes set forth in this paper, legitimate. After all, change in behavior is the final test. The usual method is comparing accident and violation records before and after subjects have experienced a program to improve their behavior. However, most such studies lack adequate experimental controls, and it is not possible to tell whether the program itself or other factors produced the change in behavior. Furthermore, the difficulty of obtaining valid followup records is pronounced.

By far the most usual method of measuring change consists of ascertaining the attitude of a group toward a given situation by means of an interview, questionnaire, or attitude scale and then introducing a device by which the attitude is assumed to be modified. After the group has been exposed to the modifying influence, a recheck of its members' attitudes is made through readministration of the interview, questionnaire, or attitude scale. However, the information really provides only an indication of the degree of a change in attitude in terms of the subjective impression of the person evaluating the interview or as measured on a verbal scale (24). There is little information on actual change in behavior or on whether or not a change takes place. In addition, these techniques are usually easy to fake, that is, the "right" or socially acceptable answer is simple to find.

In view of current limits in attitude measurement, it is difficult to accept the glib assurances of those who claim to be improving safety attitudes. How do they know? I, for one, would be far happier if some of the proponents of attitude change, particularly educators, would devote their efforts to improving the knowledge and experience which are the base for attitudes, and which, incidentally, are far easier to measure.

Suppose better attitude measures do become available. Of what use will they be? They might certainly have a limited predictive and screening value. For instance, if an attitudinal measure can help predict who will be involved in driving accidents, it might be used for special screening processes in licensure. But suppose we applied the same test to skiers. Could we use the scores to keep them off the slopes? I think not. The greatest value in learning more about measuring attitudes is that we can then hope to isolate those most important in accident causation and to deal with them more effectively in the knowledge and experience base for attitudes.

A number of safety experts speak of the need to create an overall safety attitude so that an individual will have a general awareness which he can apply to all hazardous situations. I am skeptical of such a need. In the first place, I doubt that a general safety attitude can be developed because safety is related to specific tasks and, like an individual's honesty (25), varies from situation to situation and should be so taught.

Knowing when you have reached the breakpoint in skin diving is quite different from using a guard on a bench saw as a "do-it-yourselfer." While the buddy system is a safety feature common to many water sports, it is not readily applicable to sky diving. In short, a general safety attitude would have to be built of many safety specifics which related directly to the performance of specific tasks—the parts would make the whole. It would be hoped that in the selection of the parts, only the most important and the most generalizable would be chosen, for there is much of value in life besides safety. Attempting to build a general safety awareness might convey vague general safety rules to the neglect of those that are task related.

I am skeptical of general safety on another count. If we seek to develop a general attitude we run the real risk of creating an unhealthy fear of activities which involve risk taking and which have in the past produced and will continue to produce social progress and welfare. The characteristics which make a person safe are probably not those which bring him to greatest personal or social fulfillment (26). Quite the contrary. A group of ultrasafe drivers we examined were highly constricted, compulsively safe individuals (19).

#### **Techniques for the Accident Repeater**

A number of techniques have been proposed for modifying safety attitudes. Short of intensive psychotherapy I can think of nothing entirely satisfactory to do for the accident repeater, particularly for the limited purposes of accident prevention alone. But doing anything is better than doing nothing. We recently surveyed 200 programs for rehabilitating chronic traffic violators and found a variety of remedial measures employed. Oddly, whether their effectiveness was measured subjectively or by accident and violation reduction, all of them seemed to improve the behavior of the violators. It became obvious that the "somebody cares" factor was at work (27).

Stiles (14) suggests that we: (a) allow the accident repeater child to express pain at the time of injury and treatment; (b) talk the causes of his accident over with him; (c) listen considerately to his idea of what might have caused the accident; (d) lead him to find his errors and depend on him to correct them; (e) encourage him to talk about the cause of his accident, whether from his own actions or from other explainable reasons (she believes accident repeaters frequently assign causes of accidents to mystical or mysterious reasons); and (f) examine with him the limits of safety and require him and ourselves to observe these limits.

Others who work with accident repeaters suggest that any tendency to have minor accidents or to make what appears to be an unnecessary mistake should be regarded as signs of an impending accident. For this group no accident should be laughed off, and near misses should be reported and analyzed as promptly as possible in an attempt to disrupt the accident sequence.

But what can be done about the average person, the normal risk taker who accounts for the vast majority of accidents? The following suggestions were developed primarily from experimental psychological studies in related fields (the work of Hovland and co-workers (28) is one example), as well as from pragmatic evidence from current educational and recreational programs.

### Normal Risk Taker

A person should be taught the skill he is expected to perform safely by a person competent to teach it. Skillful performance is usually safe performance. The safety aspects of a skill are an inherent part of the skill, and they should be taught while the skill is being taught.

There should be a judicious selection of the skills, and they should be taught as closely as possible to the time they are to be used. To burden anyone with safety rules remote from potential usage is "flat, stale, and unprofitable."

Decision-making behavior should be considered in the teaching of a skill. The performer, who will have to make decisions, should be realistically acquainted with the likelihood of risks and helped to perceive dangerous situations. This will reduce the lag between judgment and reality and may pierce the veneer of "personal invulnerability" (accidents happen to the other fellow). Likelihood of risk and perception of hazards can be taught in a number of ways. Filmstrips of potential hazards can be shown with decreasing exposure time to force the viewer to observe the hazards and to decide what to do about them more and more quickly. The closer this training occurs to the performance of the task, the better. And the more supervised is the experience in the performance of the task, the better. At some point the decisions which the performer initially

makes deliberately and consciously will have to be made automatically. The nature of motor tasks is such that if we should have to decide conceptually what action to take, the opportunity to incorporate the action might be past.

What does the teaching of a skill have to do with attitude? If we teach a skill thoroughly with competent teachers, the learner knows we think the skill is important. If we teach it with incompetent teachers, the learner knows we do not think it important, and we also convey the lack of importance of anything associated with it, such as safety attitudes.

To teach something effectively a teacher must believe what he teaches and demonstrate this by his own example. Albert Schweitzer has said, "Example is not the main way to teach, it is the only way." One of the most patently illogical absurdities is having health education teachers advise teenagers not to smoke on the basis of good scientific evidence and then to smoke themselves. What do youngsters think about the rules for safe conduct in swimming areas as they observe lifeguards engage in horseplay? For many years community officials blamed the lack of fallout shelters on public apathy, only to realize they did not have a program they could support themselves.

Sometimes what we say we believe is contradicted by public advertising. What does the newly initiated hunter think of the value of safety rules he was just taught when he sees them flouted by the hundred in the pictorial ads of our leading sports and field magazines? Attitudes are probably caught more than taught.

Another way to show we believe in what we teach is to make sure that where we teach it is adequately supervised, including regulations for safety. The regulations should be prominently posted, specific, reasonable, clear, and enforced. It is remarkable how well such regulations are honored. There is something contagious about good safety practices in wellsupervised areas. Once the tone is set, problems are few. This is as true of running a swimming pool as it is of waiting on the curb for the traffic light to change.

Supervision, from parents who "just looked away for a moment" to recreation supervisors, is related to the nature and character of accidents (29). At a recent professional meeting films, taken surreptitiously, were shown of playground supervisors with high and low accident incidences during their supervisory periods. The high-incidence supervisor gave her charges a "speed ball" at the beginning of the period and then talked with a crony until the end of the period. It is difficult to think of a single playground safety rule not violated during that period. She had previously thoroughly indoctrinated her students in playground safety. What a waste! Ironically, signs with safety advice were prominently displayed all over the playground.

Of course it is not enough to put up signs. A paper program is meaningless. Unless regulations can be enforced, it is better to reduce or eliminate them because they can create disrespect for authority.

People want regulations or guidelines because they want to know what is expected of them. In some cases, good clear regulations help to protect a performer from himself. The young man on the ski slope who wishes to show off by attempting to ski beyond his ability will not be able to attempt it in face of stringent regulations. He may well welcome this control as a face-saving device. Unfortunately, the slope operators rarely have such controls, and the pile of accident victims among such young men is remarkably high. The transportation agencies do not help by making skiing weekends alluring to beginners, without giving them any indication that skill is needed. Nor do the ski shops, which sell equipment to anyone without concern for who is using it and how. What chance do those seriously concerned about safety hazards in skiing stand against the slope operators, transportation agencies, and ski shops? And what chance is there to convince skiers that we really believe there are hazards which are to be taken seriously?

There is even some experimental evidence, slight though it might be, in favor of regulations. In a classic research study Lewin (30)tested the reactions of 10- and 11-year olds to three different classroom atmospheres, each of which has its counterpart in home and community life: (a) laissez-faire, in which the teacher is passive and each pupil is free to do as he pleases; (b) autocratic, in which the teacher determines everything; and (c) democratic, in which all policies and details are discussed, and the students make the decision. Hostility was found to be 30 times higher in the autocratic than in the democratic atmosphere, and there were more demands for attention and more tension. But in the laissezfaire group, aggressive behavior was even higher than in the autocratic. Any type of regulation seems to be better than none.

This same study has interesting implications. If aggressiveness and related attitudes or personality characteristics play as significant a part in accident involvement as some studies seem to indicate, the democratic or group process, as it is more commonly called, is important. In fact, evidence now supports the fact that group methods may indeed be the most effective means for modifying attitudes, and one particular technique called group discussiondecision has been used with good effect (31-33). In essence this technique allows no one to tell a group what to do; instead a trained person leads discussions so that behavior decisions come from the group itself. In one experiment Lewin worked with two groups of women who had never eaten or cooked hearts, kidneys, or brains (34). The lecture method was used in one group; the discussion-decision technique was used in the other. Ten percent of the first group subsequently used these items in their menus. But 52 percent in the second group did so.

Recently, to combat some late-evening mischief among the youngsters 12-18 years old, school authorities and parents of my former hometown set up a code of activities and a time schedule. The youngsters did not honor them; in fact they seemed to take special satisfaction in flaunting them. It was then suggested that the young people establish their own code with assistance of an adult leader trained in the discussion-decision technique. group The youngsters' code did not differ greatly from the adults', but it was far more effective. If the technique worked well in this situation, might it not work well in developing codes for the public swimming area or the community playground?

This technique might have an additional value which, it seems, has not yet been ade-

quately explored. A communication to be acceptable to an audience must be authentic and credible. What better way to assure that than to have the message developed by a group representative of the audience for which it is being prepared? If attitudes as we have defined them have at least a partial base in knowledge, it is important to know how to get a safety message across.

A communication has three elements: content, form, and audience-and the last should be first. To appeal to an audience a message has to stand out from the background which constitutes the normal environment. To be effective in this regard, the message should raise a minimal amount of emotional response or precisely the right level (interpretations differ with people) and capitalize on the response by suggesting specific actions to reduce the emotional effect (35). Ironically, a large amount of safety material is "scare" messages. They attempt to raise a high level of emotional response and are often vague and sometimes complicated (36). As presently conceived, such programs run the risk of creating an unresolved high level of anxiety which might be accompanied by high muscular tension whose spread can destroy organized patterns of motor response, decreasing perception and adversely affecting concentration (37). The results could be disastrous.

The content of a message should be specific and accomplishable. Vague or complex messages such as "Be careful," "The life you save may be your own," or, with Uncle Sam pointing a finger at you from a colorful Fourth of July poster, "Don't you be a casualty on my birthday !" are largely meaningless.

Because attitudes are so difficult to understand, let alone change, we should seize every opportunity for short-circuiting them by attempting directly to change behavior. For example, many attempts have been made to measure attitudes and personality characteristics of users and nonusers of seat belts in the hope that findings can be applied to improve usage. The results have been disappointing, and much time during which people should be using seat belts is going by. It might be more rewarding to work with selected groups throughout the country using the following plan.

1. Show a film like "Safety Through Seat

Belts," which realistically describes the value of seat belts.

2. Follow the film with a group discussion of the value of seat belts, guided by a trained leader, and have an authority in seat belts present to contribute as called upon.

3. Provide seat belts at a reduced price for members of the group who wish to purchase them.

4. Arrange with local agencies to install the belts by appointment at a reduced fee.

5. Have group members sign a group pledge at the end of the meeting that they will have belts installed by a specified date and that they will use them.

6. Provide a separate pledge card, signed by each group member, which the installation agency mails to the group secretary after installing the seat belts.

Through such a concentrated approach a significant percentage of the group would probably install seat belts. Whether they will use them is another question, but, in any event, you can't use what you don't have. The application of portions of such a plan to selected areas of recreational safety are probably obvious.

We should also keep in mind that safety measures based upon passive acceptance by a group will undoubtedly offer more substantial gains in the long run than those which require active cooperation of individuals. This is true for a central source of fluoridated water as opposed to individuals taking fluoride pills; it is true for controlling the quality of cylinders of compressed air at the source as opposed to having individual scuba divers check their own supplies for purity. According to a recent informal report, we seem to have built American playgrounds to get rid of our children because most playgrounds are paved with materials that will almost guarantee injury to a child who falls. Those of us intent upon changing safety attitudes would have much less to do if there were more effective safety controls built into the equipment and the supervision of facilities used for recreation.

Let me end with a plea for balance. In a recent discussion with some distinguished scientists from abroad I learned that while Americans are becoming bigger on the outside (morphologically, that is), their endurance and other indices of physiological maturity are not keeping pace. The foreign scientists believe this lag is due to the fact that while we have been getting more food and sunshine, we have abandoned usual means for developing endurance such as walking and manual labor. They talked of our vast recreational program as the means for reducing this lag. In addition, it is easy to understand the great emotional value of recreation in this tense life of today. Since recreation means so much to us, let's not impose so much safety, so obviously, with such a heavy hand, that we diminish its value.

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## Time Loss Caused by Accidents

More than 90,000 accidental deaths and about 45 million accidental injuries occur each year in the United States. Accidental injuries in the U.S. civilian population caused a yearly average of 460 million days of reduced activity between July 1959 and July 1961, according to estimates by the U.S. National Health Survey, Public Health Service. This figure includes 114 million days spent in bed, 84 million workdays lost by gainfully employed persons, and 12 million school days lost.

Falls accounted for more than 37 percent of both the restricted activity days and the days in bed and for about 30 percent of work loss days. Accidents involving moving motor vehicles caused about 19 percent of the days of reduced activity, more than 22 percent of the days spent in bed, and 20 percent of the time lost from work.