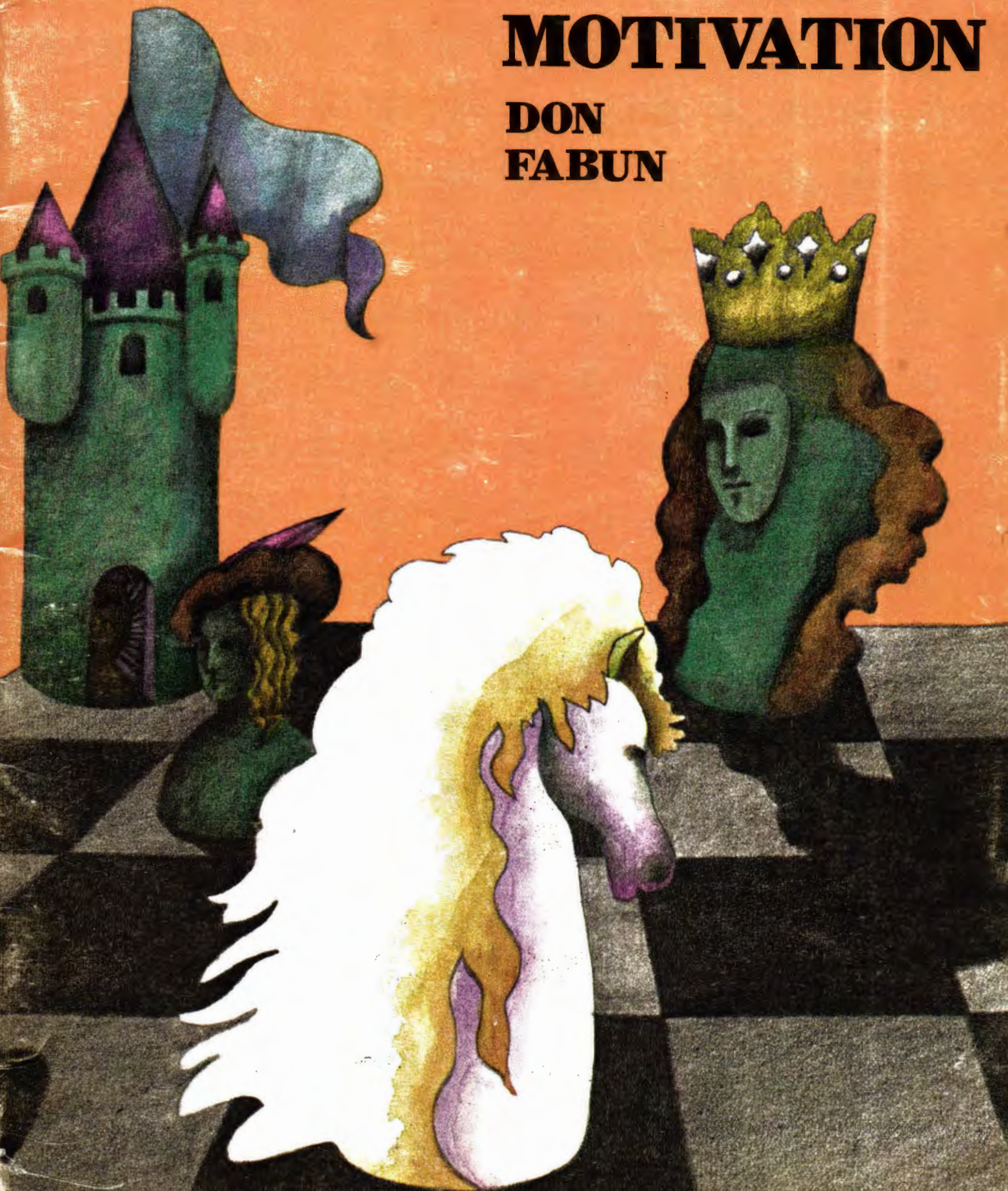
ON MOTIVATION

DON FABUN



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by Don Fabun, Director of Publications
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"The force that through the green fuse drives the flower"

OF MICE AND MEN: To consider the subject of motivation is, in the end, to ask ourselves the meaning of man, and why he does the things he does. In that form the questions are improperly asked; the answers faltering and inconclusive.

The question "why?" is not scientific—it is philosophic. It is infinitely regressive—behind every "why?" lurks another "why?"

The question "how?" is scientific; it can be observed, measured, recorded and put in little boxes with labels on them. Sometimes they even make sense.

Motivation, in the scientific sense, may be defined as the measure of the direction and intensity of the expenditure of animal energy. Motivation in the social or philosophic sense is a value judgment.

Human institutions may be said to be formed primarily to motivate men. A business or corporation focuses human energies toward the profitable production of goods or services. Governments are formed to channel the diffused energies of the citizenry toward social survival. Educational systems are designed to motivate human beings to accept a cultural heritage. And so on.

The man who goes fishing instead of showing up at the job; the student who plays hookey or drops out instead of attending school; the politician who plays golf instead of attending legislative sessions—all are motivated, in the scientific sense—but are likely to be considered "poorly motivated" in the institutional sense.

Just as the creative act must be considered as something quite apart from the created object, so must motivation be thought of apart from its social consequences.

It might be said that the purpose of organic evolution is to increase the number of directions in which energy may be expended. Primitive man was *driven*—by cold and hunger and thirst—to perform certain acts. Modern, technological man is *led*—through the manipulation of symbols—to choose the directions in which he will expend his energy. The study of human motivation thus becomes an examination of the stimuli a technological environment can provide. □

Every discipline has its own special terminology, and motivational theory is no exception. What makes it more difficult than most is that it uses quite ordinary words in a special way. Here we have used some of them to describe "Casey at the Bat"* as a motivational theorist might.

There was ease in Casey's manner
as he stepped into his place.
There was pride in Casey's bearing
and a smile on Casey's face.

It might be said that Casey's *primary drive* is survival. Playing baseball is his way of making a living. His *secondary drive* is to hit the ball safely. The two drives are related, in that the secondary supports the primary, but they are not the same. One way they differ is that the desire for survival is *instinctive,* whereas the ability to hit the ball is an *acquired* or *learned characteristic.*

And now the leather-covered sphere
came hurtling through the air,
And Casey stood a-watching it
in haughty grandeur there.

Close by the sturdy batsman
the ball unheeded sped;
"That ain't my style,"
said Casey,
"Strike One," the umpire said.

In motivational theory, responses are triggered by a *stimulus.* Here the stimulus is the ball. Actually the *whole situation* is the stimulus; the game, the crowd, the pitcher. Casey is responding to a *set of stimuli,* and his range of possible responses includes *not* swinging at the ball. He is a lousy subject for study by motivational scientists.

With a smile of Christian charity
great Casey's visage shone;
He stilled the rising tumult,
he made the game go on.
He signaled to the pitcher,
and once more the spheroid flew;
But Casey still ignored it,
And the umpire said, "Strike Two."

Casey's response, you will note, is not toward the *primary stimulus*—the ball—but to a part of the *stimulus set*—the crowd. Note also that the stimulus — i.e., the ball — is repeated. This could be considered a form of *reinforcement.* A reinforcement may be either *positive* or *negative,* a *reward* or a *punishment.* Here it is positive in that it increases Casey's

*By Ernest Lawrence Thayer, *San Francisco Examiner,* 1888.

resolve to hit the next pitch, because it has reduced the number of times the stimulus will be offered again.

They saw his face grow stern and cold;
they saw his muscles strain,
And they knew that Casey wouldn't let
the ball go by again.

Here strong motivational forces are in operation: *pain* (at letting two opportunities go past), *anxiety* (that he might miss the next one—a form of future pain), and *shame* (that he has let the crowd down). His demeanor now exhibits *arousal* and *activation*. He is ready for a discharge of physical energy.

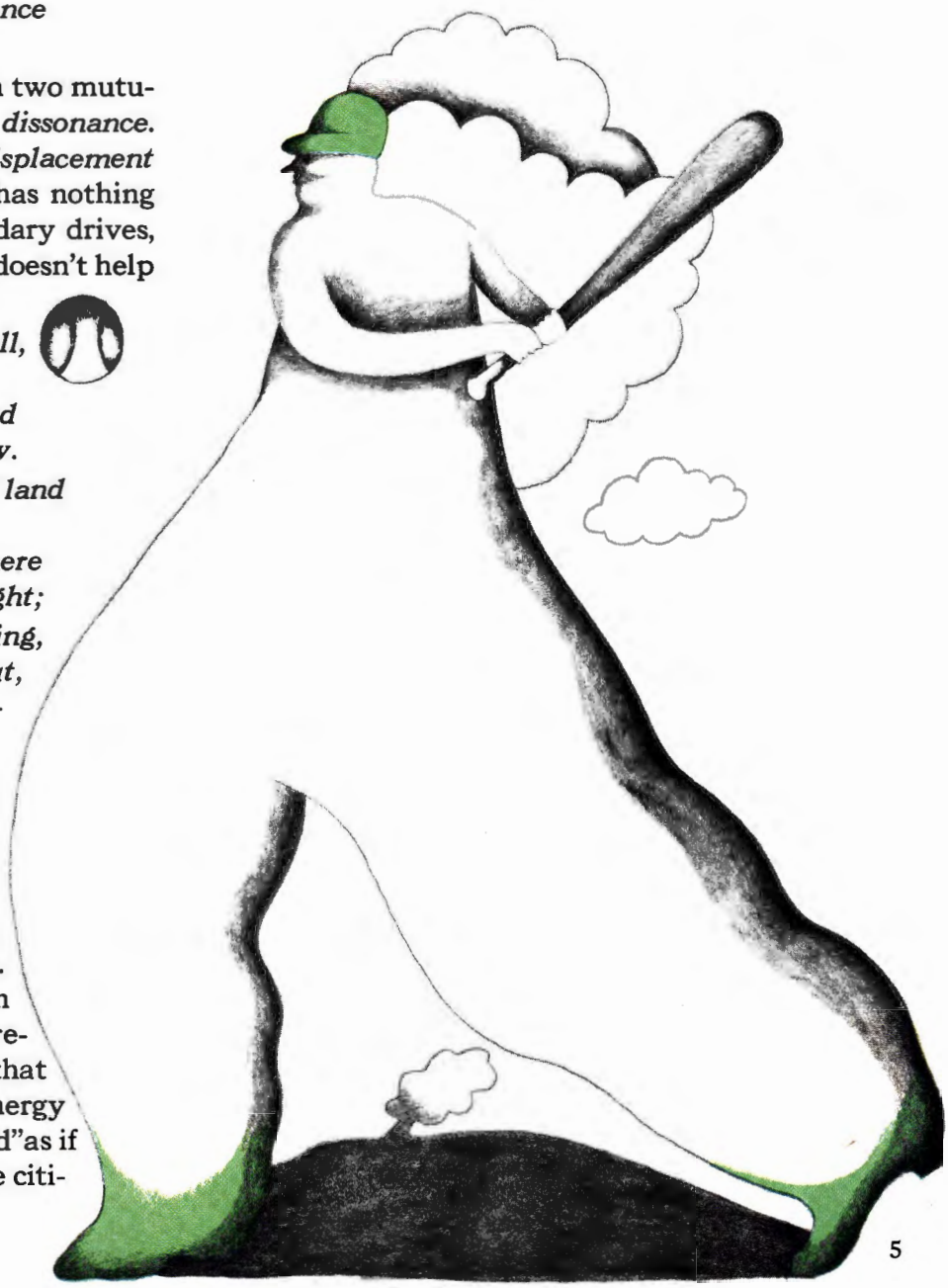
The sneer is gone from Casey's lips,
his teeth are clenched in hate,
He pounds with cruel vengeance
his bat upon the plate.

When an organism is confronted with two mutually exclusive responses—we have *dissonance*. Dissonance here resolves itself into *displacement* activity; i.e., pounding the plate. It has nothing to do with Casey's primary or secondary drives, but it does serve to release energy. It doesn't help the ball game very much.

And now the pitcher holds the ball,
and now he lets it go,
And now the air is shattered
by the force of Casey's blow.
Oh, somewhere in this favored land
the sun is shining bright,
The band is playing somewhere
and somewhere hearts are light;
And somewhere men are laughing,
and somewhere children shout,
But there is no joy in Mudville—
mighty Casey has struck out.

Here we approach the heart of the matter. From the standpoint of theorists, *drives* are directed toward *stimulus* reduction — but with Casey the stimulus was not reduced. He did not hit the ball. What did happen was that certain neuro-physiological tensions were reduced by swinging at it. We suggest that motivation consists in the release of energy and that Casey was just as "motivated" as if he had hit a home run. Obviously, the citizens of Mudville did not think so.

And that's the whole point.



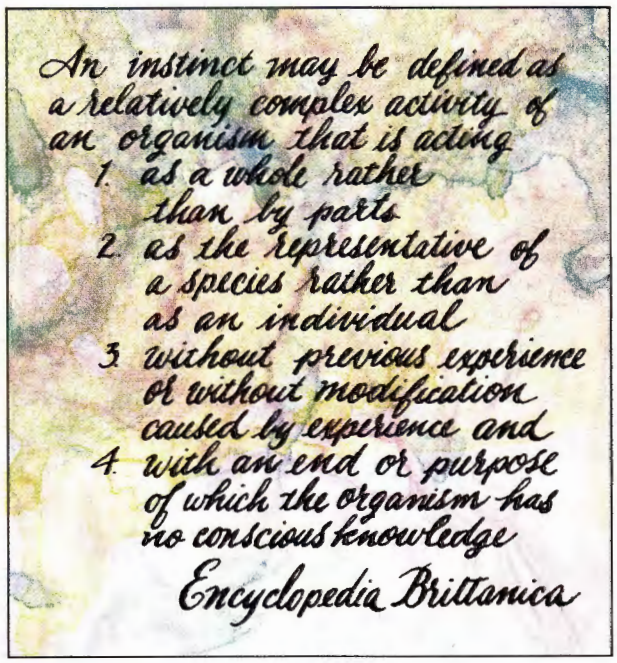
Instinct and Reason

THE COMING OF FUTURE MOUSE: There is this big fat cat, see, and one afternoon he gets bored and jumps out of the window and goes exploring for mice in a vacant lot. We would say this was *motivated* behavior. In accord with older theories, it might have been said that the cat went hunting because of *instinct*. Later theories would have said that he might have an instinct for hunting but that catching mice is an *acquired characteristic*. Still later theories would have said that the cat was engaged in *stimulus reduction;* that is that the cat was hungry and in order to *reduce* the stimulus of hunger, he went hunting. Or, it might be said that the mouse was the stimulus, and when the cat catches him, he is effectively reduced. (Assuming of course that the cat eats him, which being a big, fat, overfed cat, he probably won't do.) Still later theories would simply say that he had to work off his surplus energies somehow, and hunting mice was one way of doing it. The motivation in this case would simply be to relieve the tension of surplus energy.

There is nothing wrong with any of these theories; to a certain extent they all may be true, they are just different ways of describing the same phenomenon.

We are going to go a little bit further, though, and suggest that unless we believe *all* acts are motivated—which leaves us with nothing very specific to talk about—then we must be able to distinguish the motivated act from just any old act. And we think we can do this by pointing out that the *mouse* is non-existent, at the time the cat went hunting. In short, the cat was selecting certain ways of expending its energy that were related to an *idea*—a general idea of *mouse in field*.

We would maintain here that the motivated act defines itself because it is related to some *future condition* that was desirable to the cat (namely catching a mouse) and whose probability of occurrence was increased because of the selective way in which the cat released his energy (jumping down



from the window, proceeding to the empty lot, beginning his search and destroy operations). The critical point is that the *mouse as stimulus* was not present in the situation at the time the cat began his motivated activity.

So, what we are saying here is that at the heart of a motivated act lies a general idea of a desirable future condition, and that the selectivity of energy expenditure is designed to increase the probability of the future condition actually happening.

Consider a man whose idea of a desirable future condition is that he wants to be rich. He will select that range of activities, working hard, saving money, investing it, etc., that will increase the probability of reaching the future state which he desires. This selectivity clusters around a "fantasy" (the dream of wealth) which is only incrementally present in the environment at the time each energy expenditure is made; i.e., each act may make him a little "richer" but the goal of richness which determined the selection lies in the future. Similarly for the person who wants to become president of the Greater Metropolitan Petulia Watchers Society. He or she will select certain sets of activities that will make friends, gain support, etc., clustered around improving the probability of achieving the future desired state; namely, getting elected.

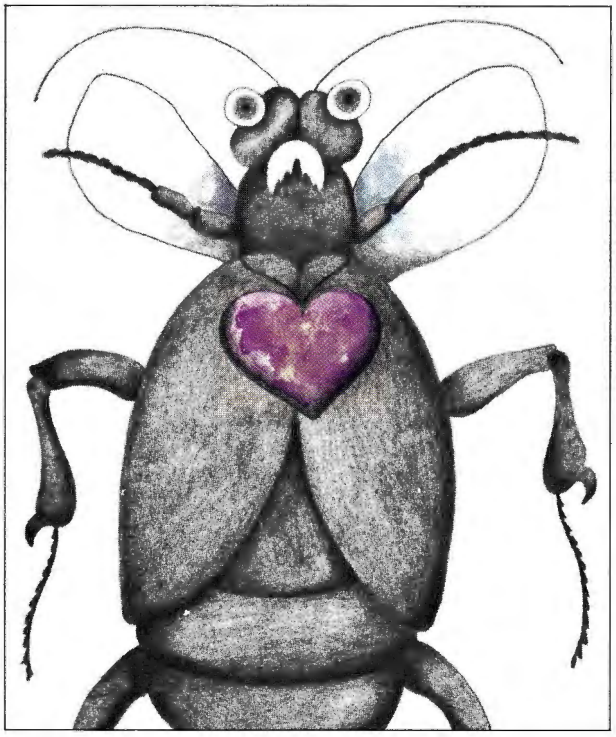
If we can accept this as a working proposition — that the motivated act is determined by an idea of a future condition whose probability of occurring is increased through selective action—then we can see, for instance, how motivation is tied into both the *creative process* and interpersonal *communication.* The former creates the new patterns of desirable future states and the latter imprints them on the organism as guides to selecting the directions in which energy will be expended.

Motivating men, then—or cats, or mice —is to create general ideas of desirable future states which can be attained through selective systems and sets of actions.

THE GREEKS HAD A WORD . . . The *social* definition of motivation grew out of the philosophic, rather than the scientific, distinction between "instinct" and "reason." It is worth spending some time on how the philosophic concept of motivation developed, because legal systems, our ethics and morals, and all our social institutions are built around the social definition of motivation—i.e., in what directions *should* men's energies be channeled?

"After the horror of atheism, there is nothing that leads weak minds further astray from the paths of virtue than the idea that the minds of other animals resemble our own, and that, therefore, we have no greater right to future life than have gnats and ants."

René Descartes —"A Treatise on the Passions of the Soul"— 1649



Let's see how it came about.

In our society, the concept seems to have been stated first by Heraclitus in the Fourth Century, B.C. He claimed there were two types of creation. Men were created in the image of gods and both had the capacity for reason, which was what distinguished them from other living beings. He further said that men and gods had "souls" which persisted after death. These two concepts began performing a stately *pas des deux* down the centuries that still influences much of our thinking about motivation.

Some 300 years after Heraclitus, Seneca said that no matter how complex their behavior, animals cannot reason and what they do "takes place without reflection." Thus the distinction between "instinctive" and "rational" became hardened into a philosophical artery.

The distinction between the instinctive behavior of men continued for about two thousand years—through Albertus Magnus, Descartes, Darwin and Freud. What was at issue here was that if man has a soul and the power to reason, then his road to salvation lies in making the correct choices between "right" and "wrong." Upon this concept were built great economic, political and religious systems, each designed to motivate men to expend their energies in the "right" way.

This approach was reinforced by a system of rewards and punishments. "If you do what we want you to, you will be rewarded." "If you do not, you will be punished." For the individual, heaven or hell, riches or poverty, even life or death lay at every motivational crossroads.

This rather oversimplified view of motivation appears to have been well suited to a pre-technological, agrarian type of society operating in an economy of scarcity. Whether it works as well or can be made to work as well in a highly technological "economy of abundance" is something we will discuss further on.

In any event, recent advances in the be-

havioral sciences, in psychology and psychiatry, lead us to suspect that the distinction between instinct and reason is not as firm as we once thought (certainly there appear to be elements of reason in the behavior of the higher animals, and certainly a lack of it in some of the behavior of modern man). We are beginning to find that what once appeared to be a rather clear-cut concept of a motivated act now appears to be a whole system of responses operating in a selective way in a storm of stimuli, the whole interaction being channeled by forces that reach far back into the history of the species and that reach far forward toward futuristic "clouds" of probability.

It is much like what has happened to our concept in physics of the atom. The simple little "ball" of Democritus has become a highly complex interaction between fields of force; so, too, with motivation.

WHAT PEOPLE-WATCHERS WATCH: Our most common pastime is people watching, and when we watch what people do, we feel we can distinguish between different types of behavior. In the popular sense, some of them appear to be "motivated," some do not.

There appear to be *instinctive* acts; those which are common throughout the species and which do not appear to involve either learning or thinking on the part of the individual, although they do preserve, in coded language, the "learning" of the species.

The lower we go on the scale of living things, the more it appears that the choices for individual action are limited by instinct, and the higher we go, the greater the opportunities for purposeful choices of action.

One might say that the purpose of evolution, then, may be to create more opportunities for individual choices of behavior—for "motivated" acts, if you like.

If this is true, and of course we don't know for sure that it is, then it would appear that institutions and societies, insofar as they create a wider opportunity for motivated acts to occur, are continuing socially what Nature began biologically.

As individuals we can do little or nothing to change our instinctive behavior and, within our definition, we can say that such acts are "unmotivated."

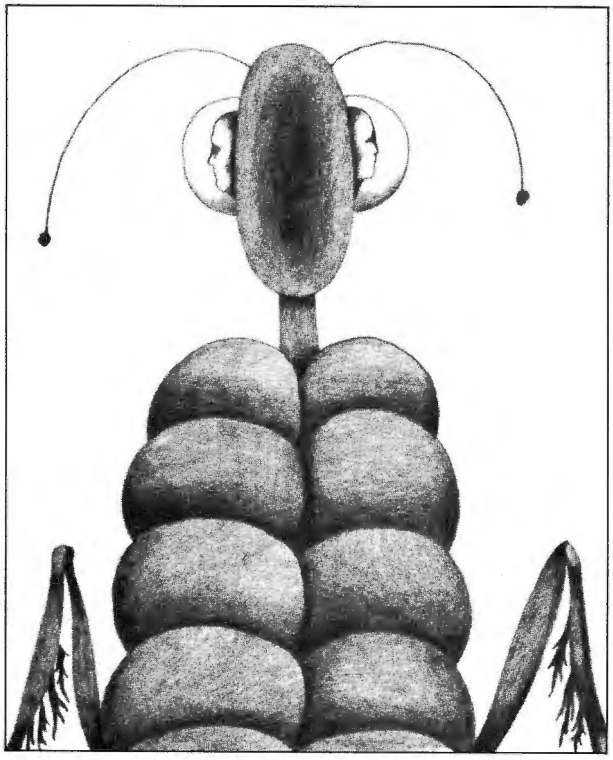
In addition to instinctive behavior, we observe *"reflex actions,"* such as the contraction of the iris and the blinking of an eye when some objects approach our face, or coughing when something sticks in our throat. These acts, too, are unmotivated, in the sense that they do not involve a conscious choice; they appear to occur automatically.

Somewhat less rigid, but still not consciously controlled, are *conditioned reflexes.* We weren't born with them, nor were they inherited, but they are so ingrained in our behavior patterns as to seem almost instinctive and certainly reflexive. We may, for instance, salivate with any stimulus (ringing of a bell, cooking odors, sight of food) that suggests we are about to eat. We may begin to perspire and our heartbeat may quicken at the sight of the dentist reaching for his drill.

Conditioned reflexes, then, in the sense we have used the word motivation, are not motivated acts.

"Perhaps . . . insects are little machines in a deep sleep, but looking at their rigidly armored bodies, their staring eyes, and their mute performance, one cannot help at times wondering if there is anyone inside."

V. G. DETHIER —"Microscopic Brains"
Science—March 13, 1964

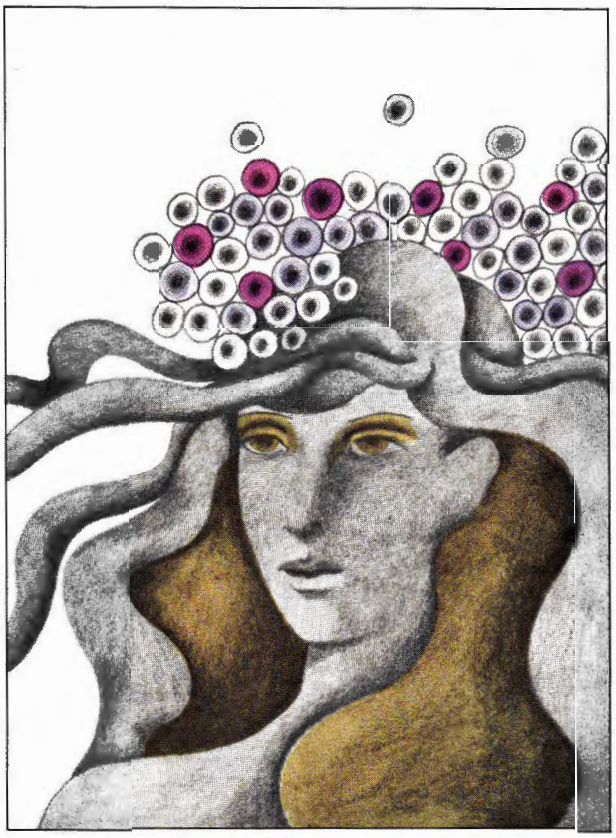


Imprinting

WATERWINGS FOR GOLDFISH: Finally, we arrive at *learned* or *acquired* behavior, and it is at this point that we begin to consider the general area of motivated processes, because with learning, the individual creates a multiplicity of choices for action.

The motivated act, as we have said, is one that is consciously chosen from an array of possible actions and is based both on past learning and future expectancy.

Is has only recently been discovered that learning begins much earlier in life than had been thought. It is now believed that half of all the growth in human intelligence takes place between birth and age four, another 30 per cent between the ages of four and eight, and the remaining 20 per cent between eight and seventeen.



From work in a Swedish laboratory, Dr. Holger Hyden has discovered that when human neurons are stimulated, some of the millions of ribonucleic acid (RNA) molecules inside them give orders to the glial (brain tissue) cells to manufacture new proteins. The nature and pattern of these proteins contain an imprint of something that has been perceived and may become a part of memory.

TIME—May 17, 1968

There appears to be a chemical reason for this. During the learning process the neurons in the brain's cells manufacture new protein and blood-sugar combinations. It is believed that the nature and pattern of these new combinations contain an imprint of something that has been experienced. This constitutes memory, without which learning could not take place.

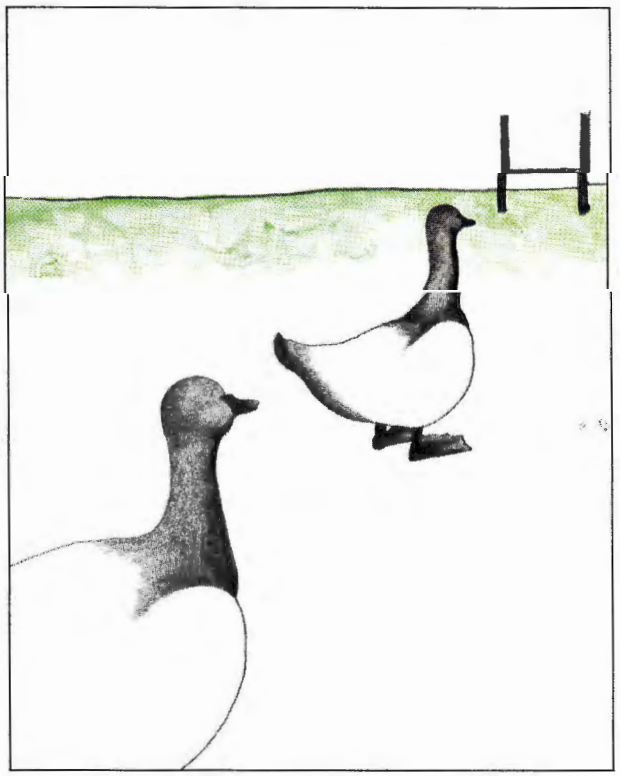
Human brain cells seldom divide and replace themselves, as do most other cells in the body. The neurons that a child has at six years must last him a lifetime. As he ages, some of them become damaged or die so that the brain's output of proteins in learning situations is constantly decreasing.

Thus it is that the very earliest experiences—most of them occurring prior to exposure to formal education—strongly determine adult behavior and set limits for what motivated acts are "possible."

The phenomenon of *"imprinting,"* as this process of early learning has been called,

"We placed four-inch hurdles in the runway so that ducklings not only had to follow the model (a decoy duck which they thought was their mother) but also had to clear the obstacles. As we suspected, the birds which had to climb the hurdles, and thus expend more effort, made higher imprinting scores than those which traveled the same distance without obstacles."

ECKHARD H. HESS —"Imprinting in Animals"
Frontiers of Psychological Research—1964



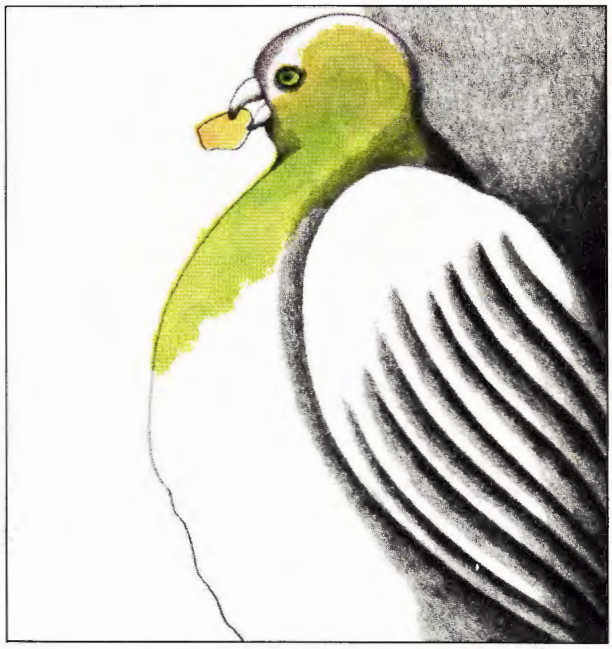
may consist partly in the shapes of brain proteins manufactured as the result of early experience. These patterns serve as blueprints that shape future responses of the organism, and thus are fundamental to determining what kinds of motivations are possible as the organism grows older.

One might think of early "imprints" as a mesh or screen *through which all subsequent experience is filtered.* The size and general configuration of the screen is culturally determined—that is, it comes from the earliest influence. Generally it is from the mother and father (but also from other members of the household) during the earliest years of life.

Since they serve to shape and form the perception of subsequent experience, and through repetition deepen associational patterns, imprints may be self-reinforcing, to the extent that they become extremely strong and difficult to break in later years.

When a normally lefthanded rat was forced to learn to use his right paw to get food out of a tube, cells in the most highly developed part of the brain (the cortex) produced a special kind of RNA as well as proteins.
A similar thing happened to goldfish that were forced to learn a new kind of swimming by having a buoyant plastic foam stuck under their chins by Dr. Victor Shashoua of M.I.T.

TIME—May 17, 1968



Dr. Samuel Bogoch of Boston's Foundation for Research on the Nervous System taught pigeons to peck a particular button to get a kernel of corn from a machine. He found that the chemical brain reaction was not only the creation of new brain protein, but protein-sugar combinations as well. From his observations, Dr. Bogoch postulates that memory is encoded in the protein-sugar combinations.

TIME—May 17, 1968

At an early age, and through the imprint process, are formed most of our ideas about space and time, up and down, backward and forward, right and left, cause and effect, good and bad, love and hate, and all the other culturally determined "polarities" that, while helpful in establishing communication, also may make a mess out of our later life. It is not thoughts that are imprinted so much as *ways in which thoughts can be formed.*

(It should be said here that imprints in themselves are not "bad." Without establishing points of reference, the organism could not orient itself in space and time. *Cultural* imprints may, however, so structure an individual's channels for future responses as to leave his behavior rigid and stereotyped in the face of social change. Many racial, political and religious attitudes may well, for instance, be the result of cultural imprinting by the family at a very early age.)

A considerable amount of contemporary psychotherapy is directed toward discovering the source of early imprints that lead to

"irrational" fear, anxieties or actions in later life — like the fear of harmless dogs or snakes, or even just the fear of any "new" experience just because it is new.

Since most imprinting is done by parents, who are passing on *their own* childhood imprints, the social configuration of a society may change very slowly, even though the technology (i.e., the physical environment) may be changing rapidly.

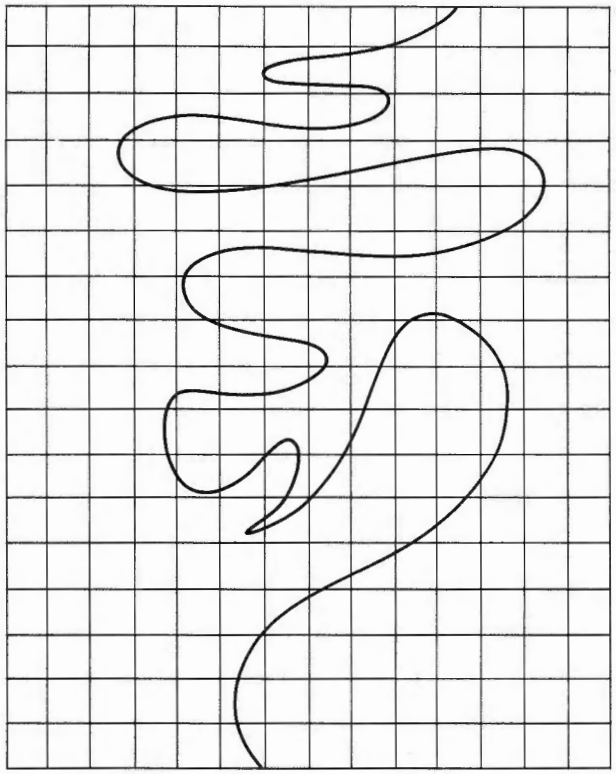
Many of the characteristics of motivated acts can be accounted for by a consideration of what imprints the person is channeling them through. A child reared in a home where there is constant awareness of time, of the need for productive work and for abiding by the rules (all of them imprints) is likely to continue that way the rest of his life. Our society (because he spends his time working hard and obeys the rules) would call him "highly motivated."

Similarly, the reverse might be true. A child raised in a slum environment, where time has no special meaning (there might not even be a clock in the house), where work has no meaning because there isn't any, and where rules are not enforced, is a difficult person to "motivate" to regular working hours, because his imprints are different. Neither reward nor punishment, as usually offered, are likely to "motivate" him to socially desired activities.

This is not to say that imprints cannot be broken or modified, but that unless they are taken into account, social efforts to motivate people may be difficult or fail entirely.

So far, what we have been talking about are "structures" that predetermine the direction a motivated act can take; they are not themselves forces. The coding of the genes that determines instinct, the rigid patterns of reflex actions, the "memory blue-prints" of protein-sugars developed by the learning process, and the "meshes" of early acquired behavior, as in imprints, are constructions that inhibit or limit the number of choices an individual can consciously make in order to perform a motivated act.

We are, to this extent, prisoners in a cage built by our early experiences.



"Millennia ago, some genius discovered that such wiggles as fish and rabbits could be caught in nets. Much later, some other genius thought of catching the world in a net. By itself, the world goes something like this:

"The net has 'cut' the big wiggle into little wiggles, all contained in squares of the same size. Order has been imposed on chaos. We can now say that the wiggle goes so many squares to the left, so many to the right, so many up, or so many down, and at last we have its number. Centuries later, the same image of the net was imposed upon the world as the lines of both celestial and terrestrial latitude and longitude, as graph paper for plotting mathematical wiggles, as pigeonholes for filing, and as the ground plan for cities. The net has thus become one of the presiding images of human thought. But it is always an image, and just as no one can use the equator to tie up a package, the real wiggly world slips like water through our imaginary nets. However much we divide, count, sort or classify this wiggling into particular things and events, this is no more than a way of thinking about the world; it is never *actually* divided."

ALAN WATTS
"The Book"— Pantheon Books—1966

One of our most persistent "imprints" is that there is a cause and an effect. Hear Alan Watts on this: "It is a problem which comes from asking the wrong question. Here is someone who has never seen a cat. He is looking through a narrow slit in a fence, and, on the other side, a cat walks by. He sees first the head, then the less distinctly shaped furry trunk, and then the tail. Extraordinary! The cat turns around and walks back, and again he sees the head, and a little later the tail. This sequence begins to look like something

regular and reliable. Yet again, the cat turns around and he witnesses the same regular sequence, first the head and later the tail. Thereupon he reasons that the event *head* is the invariable and necessary cause of the event *tail*, which is the head's effect. This absurd and confusing gobbledygook comes from his failure to see that head and tail go together; *they are all one cat*. The cat wasn't born as a head which sometime later, caused a tail; it was born all of a piece, a head-tailed cat." (From "The Book," by Alan Watts).

Drive and Stimulus

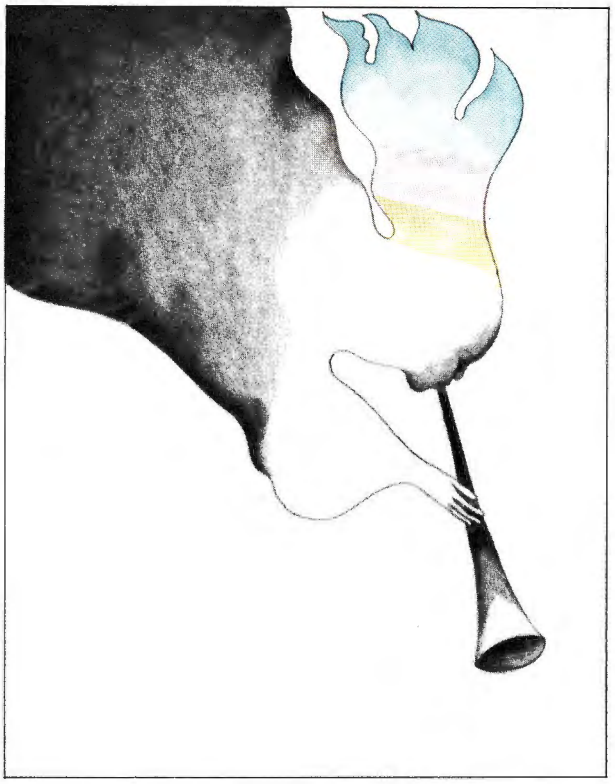
THE DRIVER AND THE DRIVEN: We use the word "drive" in many ways. We speak of driving a car for instance, by which we usually mean that we guide the vehicle. We speak of "he was driven by rage or jealousy," in which case there is less guidance than force. "You're driving me out of my mind" is a fairly common expression. We may call highly motivated people "hard drivers." Or we may use the word to mean not guidance but the force itself, as in "chain drive" or "four-wheel drive."

In motivational psychology, the word "drive" is, as Ralph Norman Haber puts it, "a highly technical, precisely defined term. A primary drive is a general energizer (motive power) whose direction is reinforcing (guidance)." Another word for reinforcement is "reward" and so what is being said here is that a drive continues in the direction in which it is rewarded.

The most common way of describing "drive" which is another way of saying "motive," is that it is an activity that "reduces" the stimulus. That is, "drive" is the focusing of the expenditure of energy in such a way that whatever was bothering the organism is "reduced." For instance, I am thirsty, I get a drink of water, and this reduces the stimulus, thirst. Or I am hungry and eat something and this reduces the stimulus—hunger. Or I am frightened by a snake and I run away, and thus "reduce" the stimulus (fear) by increasing the distance between the "cue" (snake) and myself. A "cue" might be defined as something in the "external" environment that provides a target for a drive.

"Drives" are usually separated into "primary" and "secondary." Primary drives are considered to be thirst, hunger, pain and sex. What mostly defines them as primary is that they are inherited and are built into the response structure of the organism. "Secondary" drives are learned or acquired: like, if a hot stove burns me, I will not touch it a second time because I know better.

Here we see our old friends "instinct" and "reason" showing up at the party in fancy dress clothes. They really haven't changed very much.

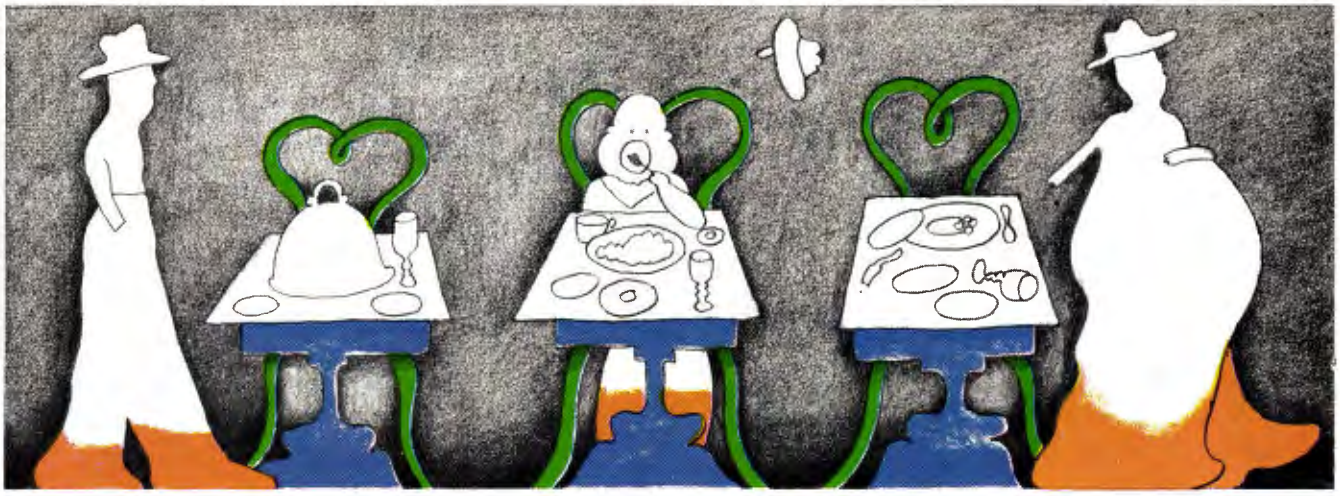


"A drive is a strong stimulus which impels action. Any stimulus can become a drive if it is made strong enough. The stronger the stimulus, the more drive function it possesses. The faint murmur of distant music has but little primary drive function; the infernal blare of the neighbors radio has considerably more."

N. E. MILLER —"Drive Reductions and Reinforcements"
Social Learning and Imitation—1941

Now, the trouble with the drive theory is that it at once explains too much and too little. It seems to attempt to describe both force and guidance as the same events where, in our experience, they appear to be as different as the engine and the steering wheel of a car. In any event, when we try to describe a motivated act or "drive" in terms of stimulus reduction we almost immediately think of important exceptions—such as playing games, reading, exploring, etc.—where the goal is not stimulus reduction but reinforcement of the stimulus. And, of course, we can think of all sorts of human activities, any one or series of which does not, in fact, reduce the stimulus at all. The case of the man going out to eat dinner in a restaurant (illustrated on the next page) is a common example.

Attempts to strengthen the "drive" theory have led to some elaborations which,



while interesting, do not appear to take us much further. For instance, it has been suggested that there are two basic kinds of thinking; drive-organization and conceptual organization, the former representing primary process, the latter secondary process. The drive-organization is compulsive; we cannot help but react in that manner; the conceptual one has to do with expectancy of some future reward—as when we take a long trip to a favorite restaurant in the expectancy that the food will be as good as it was the last time we were there.

Another distinction that is sometimes made between primary and secondary drives is that the former involves large amounts of energy and the latter small amounts. We are talking about *psychic* energy and not physical energy. The analogy is sometimes made that the difference between the two is like that between a steam boiler (primary) and the thermostat (secondary) that controls it by expenditures of minute amounts of directed energy.

To summarize "drive," N. E. Miller (in "Social Learning and Imitation") says: "Drive impels the person to make responses to cues in the stimulus situation. Whether

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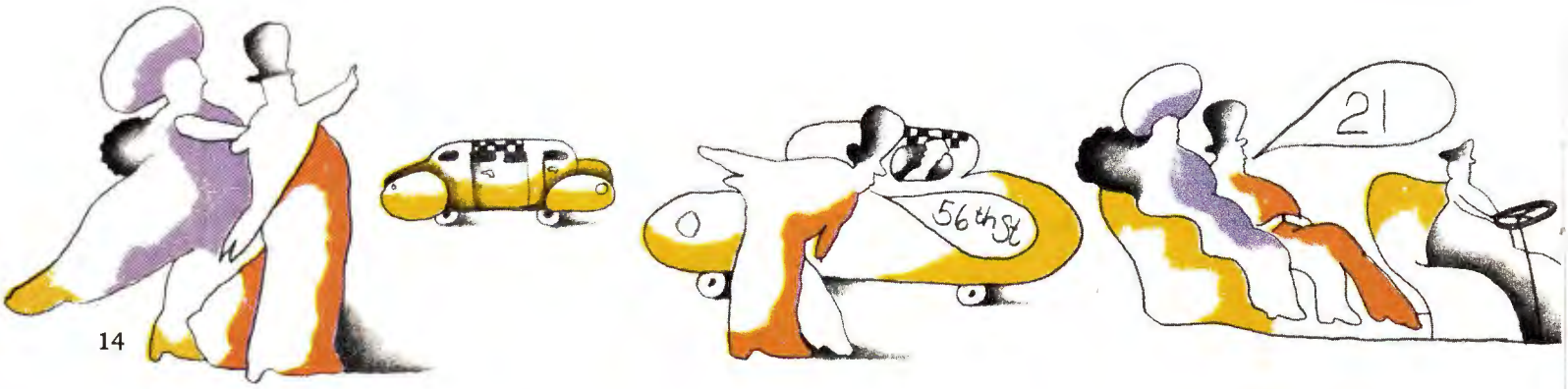
"The behavior of going to a restaurant is composed of a sequence of responses, early members of which (for xample, going along a certain stret) are reinforced by the appearance of discriminative stimuli which control later responses (the appearance of the restaurant, which we then enter). The whole sequence is ultimately reinforced by food, and the probability varies with food deprivation. We increase the chances that someone will go to a restaurant, or even walk along a particular street, by making him hungry. We do not say that there are special drives associated with the early responses in the sequence, because there are no parallel operations of deprivation. Sush traditional terms as 'needs,' 'wants,' and so on recognize these subsidiary steps. For example, we might say that a man first *wants* a taxi, that he then *wants* the driver to take him to Fifty-sixth Street, that he then *wants* to find a particular restaurant, that he then *wants* to open the door, that he then *wants* a table, a menu, and the roast beef. But since there are no processes of satiation



these responses will be repeated depends on whether or not they are rewarded. If the response is non-rewarded, the tendency to repeat it to the same cues is weakened. Pavlov called this process *extinction.*"

The physiological basis of "drive" has been described by C. L. Hull (in his book, "Principles of Behavior") who says: "Most, if not all, primary needs appear to generate and throw into the bloodstream the more less-characteristic chemical substances, or else to withdraw a characteristic substance. These substances (or their absence) have a selective effect on the more less-restricted and characteristic portions of the body (e.g., the so-called 'hunger' contractions of the digestive tract) which serves to activate resident receptors. This receptor activation constitutes the drive stimulus."

What is interesting here is that the *stimulus* is not something "outside" the body, but within the body. When we see a snake, and are frightened enough to run away from it, what we are reacting to is the stimulus of an outpouring of adrenalin in our bloodstream. The snake is not the stimulus—he is only a "cue." But does the snake know that?

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and deprivation appropriate to the behavior which is involved here, except for the last item, we have no reason to set up corresponding drives. A man does not need a taxi in the sense of not having had a taxi for a long time. Certain behavior which requires a taxi for its execution is strong and occurs as soon as a taxi is available. The appearance of the taxi reinforces any behavior which brings it about. It is also an enabling event which makes a later response possible and hence brings the earlier behavior to an end. It would only confuse the issue, however, to say that the appearance of the taxi had satiated the behavior of hailing taxis. The practical use of the relation reveals its essentials. If for some reason we want to induce a man to hail a taxi, we strengthen any behavior requiring a taxi; we do not deprive him of taxis. He will not hail a taxi if he already has one because other behavior then intervenes."

B. F. SKINNER
Science & Human Behavior
The Macmillan Company — *1953*

OF FROGS AND FLASHLIGHTS AND LOADED GUNS: As an explanation or description of human behavior, the concept of "drive," though useful, appears to be too limited and too mechanistic to account for the variety of responses we actually observe.

In the drive concept, the analogy might be a loaded gun. When the gun is pointed at a target, the firing mechanism is activated, the cartridge goes off, and the bullet is discharged toward the selected target.

Or one might consider a flashlight in the night whose beam searches out a desired object in the dark.

Certain questions remain. When applied to the living organism, what corresponds to the charge in the cartridge or the electrical force built up in the flashlight batteries? What determines the action to pull the trigger or push the "on" button on the flashlight? What determines the target?

Let us see if some other analogy might be made to work.

When we discuss motivation, we are discussing probabilities. We are saying in effect that if the circumstances are known, a human being is *more likely* to expend his energy in a certain direction than in others.

(It is a little like tuning in a television set —a number of channels are operating at any given time. If we know enough about the person involved, and what is being broadcast by the various stations, we can predict with high probability which channel he is most likely to turn to.)

Let's start with the energizer. This is the whole system—the total organism. It is constantly building up energy through the ingestion of oxygen, hydrogen, nitrogen and carbon. Because the capacity of the system is limited, it must expend some of this energy to keep from "blowing up." Some of the energy will be used up internally. Some remains to be discharged. The question of motivation is: What determines the direction and the intensity of the discharge?

The motivation for the White Knight is to take the Black Pawn (between him and the castle) in order to check the Black Queen and force her to move. Human motivations may be much more complex than this, but they seem to work the same way.

It used to be thought that the nervous system was more or less inert—waiting to be prodded into action by some stimulus, such as pain or thirst or hunger. Now we begin to think of it as an energy system "in need of" release. One might think of a frog on a lily pad. He sits still enough, until a bug passes within range. Then his tongue flicks out and he gulps down the bug. In other words, the bug provided the cue for the response (flicking out tongue) to reduce the stimulus (hunger).

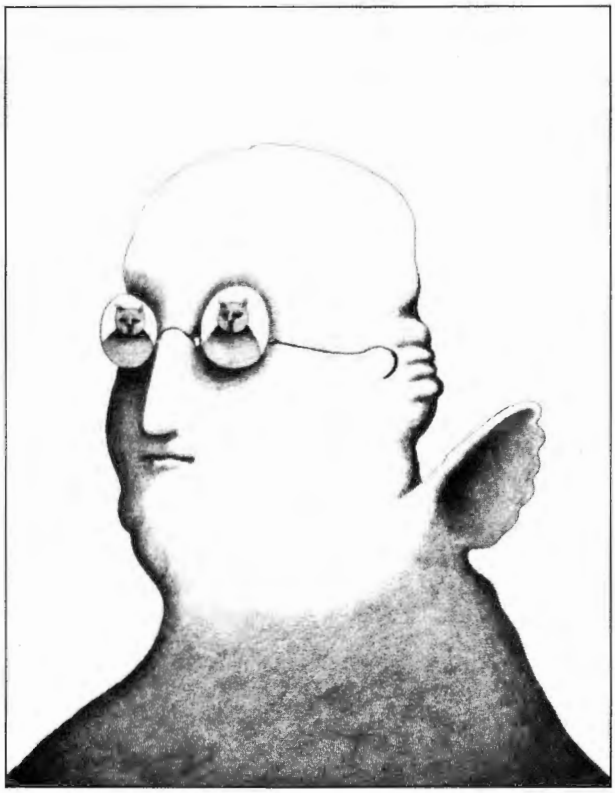
But if we think of the frog as a pulsating system of stored energy with a capacity to expend it in a number of ways, the drive may not be so specific as "need to eat," but rather is a need "to do something." He might just as easily have gone for a swim or hopped from pad to pad. The energy exchange transaction would have still been carried out. In this case the bug was fortuitous but not necessary; the stimulus it reduced was not hunger but the expenditure of surplus energy.

"When we see a man moving about a room, opening drawers, looking under magazines, and so on, we may describe his behavior in fully objective terms. 'Now he is in a certain part of the room; he has grasped a book between the thumb and forefinger of his right hand; he is lifting the book and bending his head so that any object under the book can be seen.' We may also interpret his behavior or 'read a meaning into it' by saying that 'he is looking for something' or, more specifically, that 'he is looking for his glasses.' What we have added is not a further description of his behavior but an inference about some of the variables responsible for it. This is so even if we ask what he is doing and he says, 'I am looking for my glasses.' This is not a further description of his behavior but of the variables of which his behavior is a function; it is equivalent to 'I have lost my glasses,' 'I shall stop what I am doing when I find my glasses,' or 'When I have done this in the past, I have found my glasses.' "

B. F. SKINNER
Science and Human Behavior
The Macmillan Company — *1953*

"According to the new theory, perception is a functional affair based on experience and probability. The thing perceived is an inseparable part of the function of perceiving, which in turn includes all aspects of the total process of living. This view differs from the old, rival theories: the thing perceived is neither just a figment of the mind nor an innately determined absolute revelation of a reality postulated to exist apart from the perceiving organism. Object and percept are part and parcel of the same thing."

W. H. ITTELSON —"Experiments in Perception"— 1951



(This viewpoint can have important conseqences for the theory of human motivation. Employers, for instance, may consider whether employees might not be more "motivated" if they concentrated less on the "drive" concept as narrowly related to reward and punishment and considered the employee as an energy storage system capable of a wide range of responses. Changing the nature of the job frequently, providing more breaks in routine, furnishing more cues for the secondary drives—curiosity, exploration, games, puzzles, etc., if they can be related to increased productivity—might be more effective than the simple "reward and punishment" systems that generally prevail in industry and business.)

What all this appears to amount to is that motivational theory is moving away from the rather simple linear system: stimulus—response—reward, to the concept of energy levels, systems of response, and arrays of cues.

D. O. Hebb (in "Drives and the Conceptual Nervous System") says: "Motivation refers here in a rather general sense to the

energizing of behavior, and especially to the sources of energy in a particular set of responses that keep them temporarily dominant over others and account for continuity and direction of behavior."

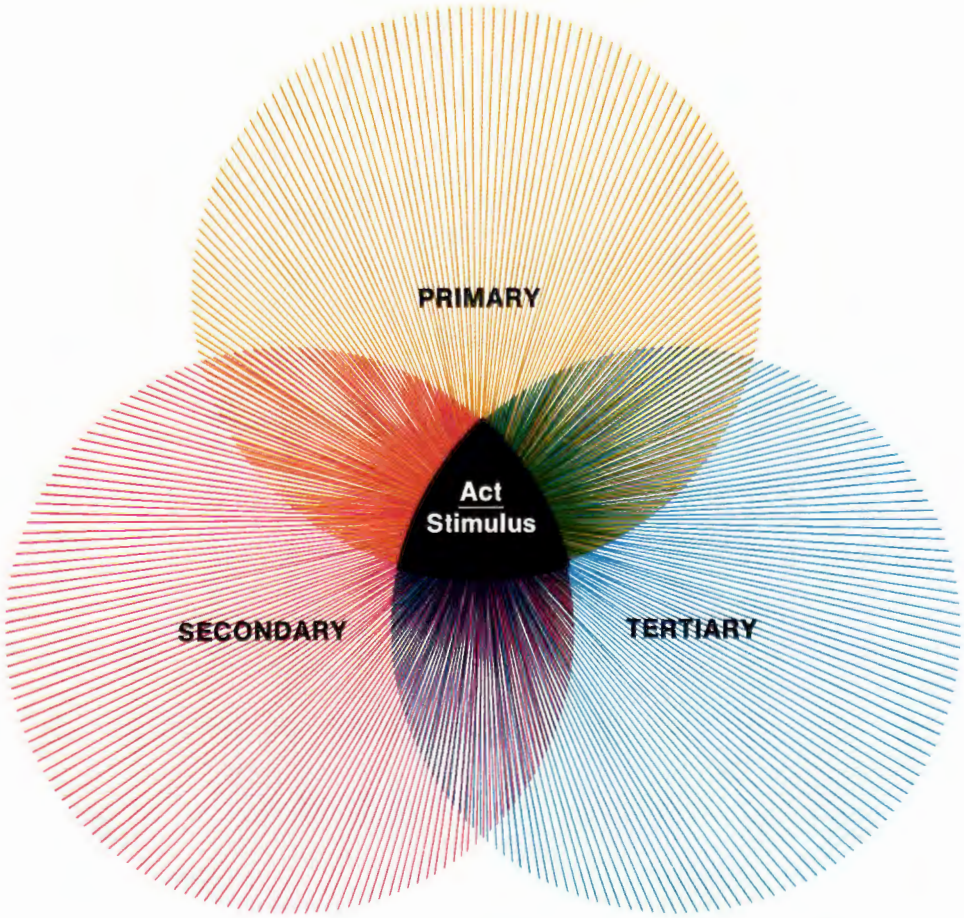
Speaking of energy levels, Elizabeth Duffy (in "The Nature and Development of the Concept of Activation") says, "An individual—that is, an organism taken as a whole—is sometimes excited, sometimes relaxed, and sometimes in a variety of intermediate conditions. While the various systems of the organism are not equally activated at a given moment, it seems apparent that it is the organism *as a whole* that is showing the higher degree of excitation, and not just a particular system within the organism such as the skeletal muscles."

Again, this is a little like the physicist's progress from nuclei and electrons to systems of forces and fields of probabilities.

Having established that at any given time the entire living organism contains many different energy levels and degrees of excitation, we can proceed, if we like, to a consideration of the possible responses that are available to it.

Michael Argyle (in "Two Origins of Achievement Motivation") says, "One of the important ways in which motivated behavior may be identified is in terms of the coordination of responses or in terms of some kind of a *response sequence,* which terminates when the organism arrives somewhere with respect to a source of effect. The terms *approach* and *avoidance* imply a sequence of responses which has a *goal*—e.g., arriving at or away from a situation-producing effect."

So, then, if we want to go into the third world of the human experience (we already have established a system of energy levels, and systems of possible responses), we might consider the "cues" in the environment. What these are we still do not know, except there



seems to be something "out there" that helps to shape and form our internal experience.

Dr. Alfred D. Kleyhauer (in "A Study of Visual Semantic Thresholds") has this interesting speculation about the cues in our environment. "It has long been assumed that the 'real object,' word or thing outside the organism determined what would be perceived. We are coming to believe that awareness flows *out from the perceiver* to his surroundings. It is becoming apparent that our perceptions lie all around us if we are able to see them. Only as we pin the object down do we pour out from our memory storage banks all we have on it.

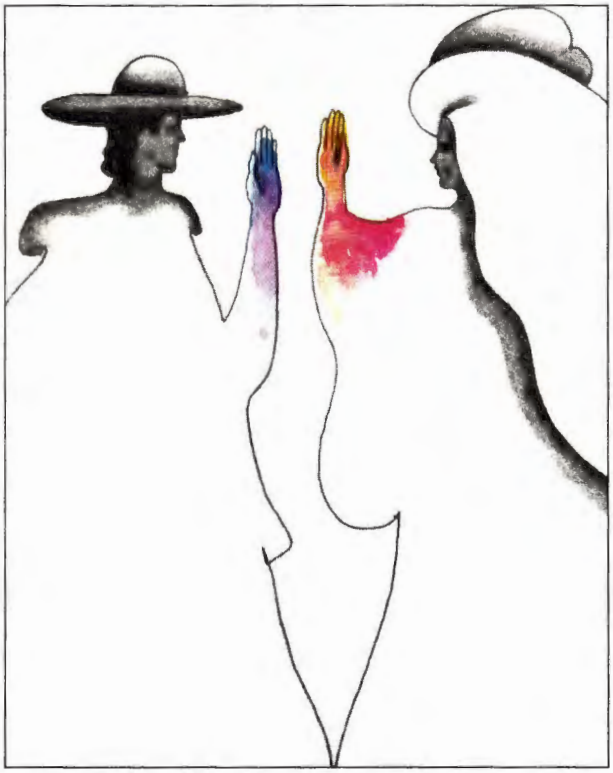
"The concept held by ancient Greek philosophers, that rays of light or illumination travelled from the observer's eyes to the object, rendering it thus visible and comprehensible to the observer, here comes into a modern possibility."

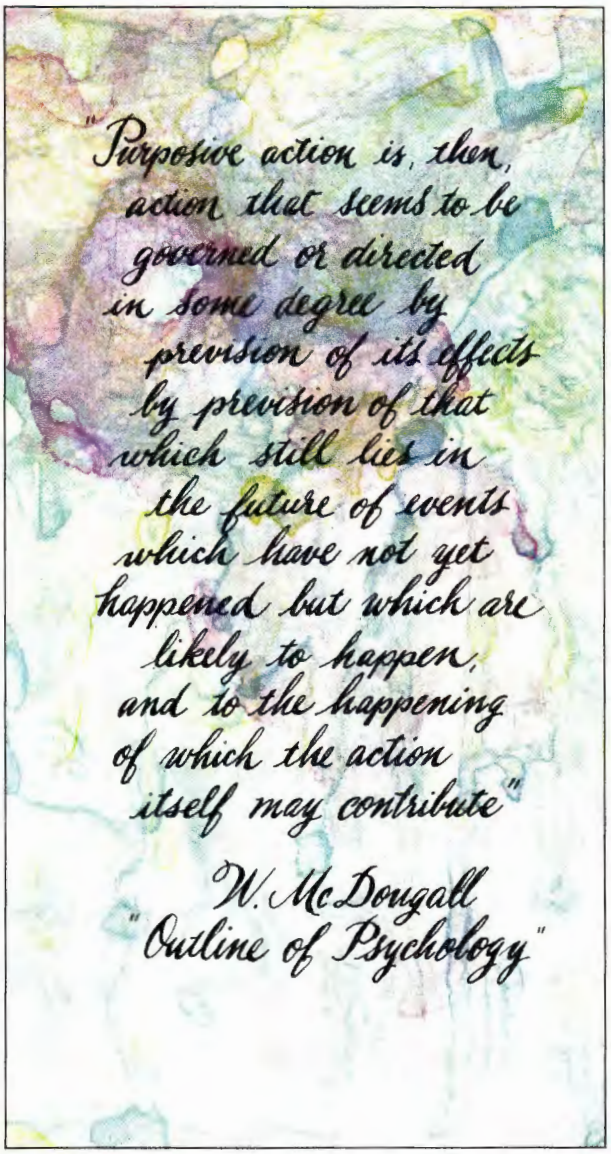
Be that as it may—whether we ourselves create the "clues" in the environment toward which we expend our energies, or whether they are somehow out there already —what we finally come up with is that energy accumulates and must be expended, that the ways of expending it are marvelously diverse, and that they may seek as a target not a single clue in the environment, but arrays of clues, some of which we may have created just by wanting.

If, as theory, it is not as precise as "instinct and reason," or "drive and stimulus," it does seem to have the appeal that it keeps intact the extraordinary variety and richness of human experience rather than the rather pathetic vision of ourselves as rats in a maze, predetermined to seek the grain at the end of the road. We may be, after all, something more than this.

"The theme of the view which I am advocating might be summarized in the words of a once popular song, whose title is 'Every Little Movement Has a Meaning of its Own.' I should perhaps restate this to read, 'Every little action has a motive of its own.' My point, of course, is not that sex has been overrated, but rather that it already has enough to account for, without our burdening it with more than its fair share of responsibility."

H. W. NISSEN —"Drive as Instinctive Energy"





Reward and Punishment

THE CARROT AND THE STICK: Most human motivational systems are based on the belief that, through the offer of rewards and the threat of punishment, individuals can be led to expend their energy in a desired direction. All of our institutions — business, government, education, military, religious — are based on that premise.

Historically, these institutions were forged in a tough furnace; they were created in a world-economy of scarcity—a largely agrarian society where rewards were meager, hard to come by, and therefore treasured, and where punishment was apt to be sudden and severe, and for that reason, all the more feared.

This may still be true in many parts of the world, but in the highly developed Western technological societies, neither economic reward nor punishment appear to have the motivational force they once had. Nevertheless, most of our institutions continue to operate their motivational systems *as if* they were still in the pre-technological age. There is nothing intrinsically wrong with this approach, except that it fails to take into account the infinite multiplicity of responses of which human beings are capable, nor does it provide the environmental "cues" that would enable the individual to develop his own personality while still expending his energies in the interests of the institution.

It is possible that much of the growing alienation and non-involvement of some members of our society is due to the narrow and doctrinaire interpretation of rewards and punishments preserved by the "establishment" of each type of institution.

The apparent disinclination of top college students to desire positions in business may be one reflection of a business attitude that conceives of rewards primarily in terms of money.

The disinclination of many people to enter the government bureaucracy may well be the result of a policy that interprets rewards largely in terms of security and gradual promotion within a rigid hierarchy.

Perhaps one reason more young people do not become active in church organizations is that the promise of salvation in a hereafter does not seem as challenging to them as an opportunity to be of service to others in the here and now.

In an increasingly affluent society, the power of money rewards as a motivator decreases, because beyond a certain point the difference in living styles becomes marginal and for this reason less motivating.

B. J. Hoffman, Jr. (in "Behavioral Aspects of Motivation") says: "It is easy to understand why managerial practices become antiquated or to see how the environment of most working people has changed . . . Environment in its larger sense takes in

not only the physical confines of a person. Consider the general upgrading in education of almost everyone. Think about the demand for the worker that makes him more independent. Realize that most workers are paid adequately so that they require more satisfaction than the mere providing of desirable food and general living conditions . . . Motivational methods which worked quite well until recent times are increasingly ineffective today."

It is not only that rewards in the economic sense are not as motivating as they once were. In an increasingly socialized society, punishment is less of a motivator because the loss of a job is not as disastrous as it used to be. Workmen's compensation, social security, medical aid programs, retirement plans, savings plans and welfare programs tend to decrease the importance of punishment as a motivator.

With both monetary rewards and the threat of punishment decreasing as effective motivators, institutional management may have to search for other means to enlist and direct men's energy. These probably will involve providing environmental "cues" for the elaboration of the "secondary" drives—curiosity, exploration, greater personal identification with the over-all goals of the institution, opportunities for the individual to extend his education, new opportunities for social contacts within the working environment (seminars, workshops, group projects), and increased opportunities for social service in the community with appropriate recognition by top management.

The basic concepts of the "new" moti-

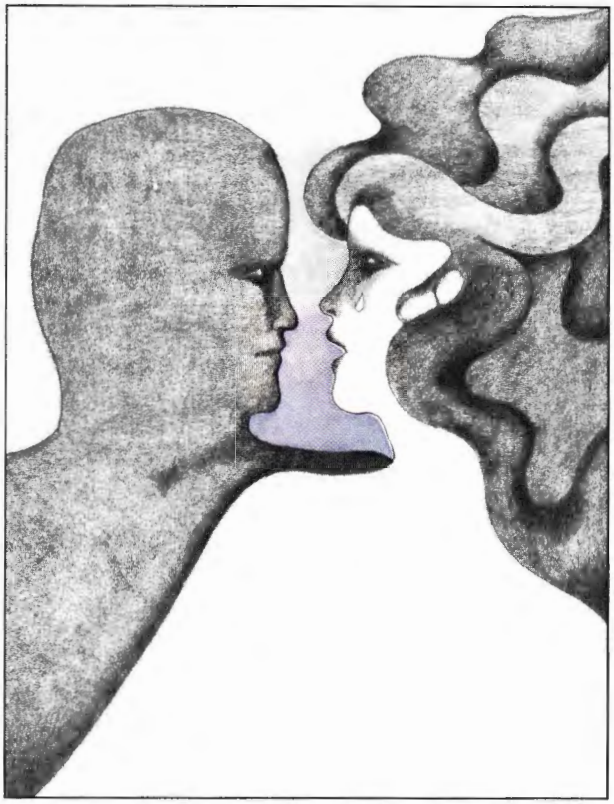
vational theory are (1) to make the job itself so challenging that it becomes its own reward and (2) to create an institutional environment in which the employee finds opportunity for personal growth and the development of his own personality and self-fulfillment.

Many business organizations, taking their cue from an earlier era when most employees had little formal education, have broken down the production process into relatively simple, repetitive tasks. The employee who has such a job is playing a child-like role. Like any child, he resents being placed in this inferior position and takes frustration out against the "parental authority" (management) by restricting his productivity, thus "punishing" his "parents." When his job is redesigned to give him a more mature role, he may respond by trying harder to prove he is worthy of it. If the challenge is not too great, most men rise to meet it; but if they feel their job is beneath their dignity, they may not try at all.

The changing value of the "reward-punishment" concept also applies to our educational system. Like the business application, it developed out of an era of scarcity, when money was short and jobs hard to get. The concept does not work as well in an "economy of abundance." Under the still-prevailing concept, getting "good grades" leads to the reward of getting a "good job," which in turn leads to making "good money."

Such a scheme no longer motivates many of today's students and they find it irrelevant to the concept they have of themselves in today's society, which is that they are agents for social and economic change in an era of transition. Awareness of the irrelevancy of an educational system that fits them for a now-mythological world of economic scarcity underlies much of the unrest on university campuses today. For these students, at least, the old motivators no longer work.

The same thing, in reverse, would appear to happen at the junior high and high school level for students from the "disadvantaged" ethnic and economic groups. They find little



"It seems clear that the inclination to engage in behavior after extrinsic rewards are removed is not so much a function of past rewards themselves. Rather, and paradoxically, such persistence in behavior is increased by a history of nonrewards or inadequate rewards. I sometimes like to summarize all this by saying that rats and people come to love the things for which they have suffered."

LEON FESTINGER—*American Psychologist—1961*

or no motivation in educating themselves for jobs that, within the realities of our contemporary society, they are unlikely to get or, worse yet, may not exist at all by the time they graduate, because mechanization and cybernation will have eliminated them. Nor does punishment act as a motivator; one cannot fear the loss of a job that he isn't going to get.

If the education system were based on a reward program for the development of the individual human personality in all its manifestations, perhaps there would be fewer "drop-outs" (and this includes those who may be physically in attendance but have *mentally* "dropped out"). Failure to develop a sense of personal value is its own punishment and needs no reinforcement from "the system."

Because it so permeates most conventional applications of motivation, it may be worthwhile going a little deeper into the

idea of why monetary reward is considered so important by one generation and is not considered so by the next.

Earlier we discussed "imprinting" and said that it occurs during the very early years of life, that it is largely non-verbal, that it consists in part of the emotional aura around an event, and that it is virtually ineradicable in later years.

Consider, then, that most people who today have children old enough to attend high school and college were small children during the early 1930's. This was an era in which money and jobs were extremely pressing problems for most families.

REWARD AND PUNISHMENT SYSTEMS IN OUR SOCIETY

REWARD	PUNISHMENT
If you expend your energy the way we want you to,	
you'll get . . .	if you don't you'll get . . .
Business	
A job	Fired
Advancement	No promotion
Salary increases	No raises
Prestige	Non-recognition
Security	Insecurity
Religious Order	
Acceptance	Non-acceptance
Participation	Excommunication
Salvation	Damnation
Heaven	Hell
Educational Institutions	
Acceptance	Non-acceptance
Advancement	Non-advancement
Graduation	Expelled
Higher degrees	No degrees
Chance for a better job	Poorer job
Political Institutions	
Participation	Ineligibility
Appointment	Passed over
Elected	Defeated
Diefication	Obscurity
Military	
Accepted	Not accepted
Promotion	Passed over
Permanent rank	Temporary rank
Medals and honors	Court martialed
Retirement at rank	Dishon. discharge
Social and Fraternal	
Acceptance	Blackballed
Exposure to others	Excluded
Committee work	Not appointed
Officer position	Not elected
Retirement banquet	Expulsion

Consider, further, that imprinting involves the exposure of a young child to the emotional aura surrounding an event. The principal emotional event in most households at that time was the lack of a job and thus lack of income. Fear and anxiety were predominant. The imprint on the young child was clear and indelible. It could be paraphrased something like this: "Lack of money is painful, it 'hurts;' it makes mama cry and daddy get angry. Whenever there is some money coming in, things are better. When I grow up, I'll make sure I always have plenty of money, so that I won't hurt."

And so the present "older" generation (now "the power structure," now "the Establishment") grew up with that thing inside it. Nearly all of our subsequent experience was strained through the mesh of that imprinted screen: "Will it make money?"

The offer of money for the older generation has been—and is—a most important motivator. We measured other people by "how much he makes," rather than the kind of person he is. We measured our own place in society by how much "we made" and accumulated as compared to others of our generation. And, for the most part, we still do.

But the present young generation, who are in high school and college now, were "imprinted" in the early 1950's—the post-war boom and pre-Korean war boom eras. Jobs were relatively easy to get; wages and salaries were good; the economy was expanding. The family was still concerned about money, but the concern no longer had the powerful emotional aura about it that it had in the households of the early 1930's.

And so the older generation (ours!) imprinted with the desire for money (because having it reduced deeply rooted anxieties), reinforced over the years because the more we had, the more secure we felt, had become involved in a compulsion, an acting out in our adult lives of a childhood fantasy, "If I have money, I won't hurt."

When, today, we try to motivate young people with promises of "good jobs" and "good money" we are trying to motivate *ourselves* as we were at the age of 18 or 20. It's not working very well, and so perhaps new systems of motivation may be necessary.

Again, it appears that these may lie in the direction of the elaboration of "secondary drives."

What existing institutions produce, for the most part, is boredom—particularly the big, bureaucratic institutions that more and more dominate our society. To see what *might* be done in the motivation field, consider the extraordinary transformation that takes place among secretaries after five o'clock; of nearly everyone as quitting time approaches on Friday afternoons; on the ebullience of people who are suddenly "freed" to go on vacation. This outpouring of energy, this exuberance, is seldom manifested within the confines of a routine job, in the same old office or factory, day after day.

Yet, it is possible that this energy *can* be harnessed. This is exactly what is done with executives in business firms and officials in government: a rather constant switching around of job responsibilities, with the new challenges they create; frequent trips for changes of environment, with all the releases of energy that these bring: private offices that they can decorate to suit their own mood and taste: occasional leaves of absence to perform socially valuable services or to further personal education—all these things work to release energy through secondary drives—challenge, curiosity, exploration and self-expression.

It could be argued that all these things "cost money," and that therefore they still represent "monetary reward." And this may be true. But for the individual the motivation does not appear to be money, but excitement through new experience.

It may well be that increasingly the motivators in our society will be more and more directed toward creating excitement as means for releasing energies that are no longer called forth by traditional reward and punishment systems.

Conflict, Dissonance and Displacement

THE AUTOMATIC PENCIL SHARPENER: A year or so ago this writer's wife, noting that he frequently broke off writing to spend an inordinate amount of time sharpening a pencil, bought him a battery operated pencil sharpener. It is in the shape of a little golden globe and when the pencil is inserted in a hole at the North Pole, the little monster grinds away and "Presto!" the pencil has been sharpened.

It is seldom used, this little gem of modern technological genius.

Trouble is, you see, that pencil sharpening, tediously and by hand, is a "displacement" activity for the writer. Faced with the "either/or" problem of writing something or not writing (a conflict situation), he stops and sharpens a pencil instead. Because it is

It is now suggested that dissonance is aroused whenever any event occurs which disconfirms a strong expectancy. Thus, one can make the following prediction: If a person expects particular event (x) and instead a different event (y) occurs, he will experience dissonance. Consequently, he would judge (y) to be less pleasant than if he had had no previous expectancy.

J. Merril Carlsmith
Journal of Abnormal and Social Psychology 1963

so efficient, the automatic pencil sharpener takes away the "reward" of sharpening by hand, which is to delay having to go back to work as long as possible.

Any study of the motivational process must ultimately include some consideration of "conflict," if only because conflicting situations occur so frequently in the process of living.

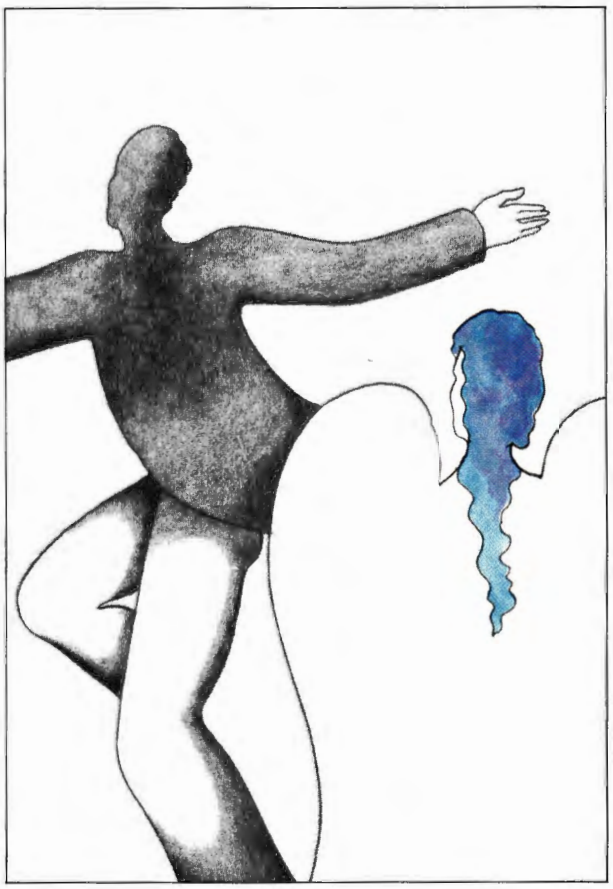
An organism faced with two irreconcilable choices (as, when confronted with an antagonist, whether to flee or fight) is in a conflict situation. A non-Aristotelian "way out" is to engage in a "displacement activity" instead. This has been widely observed in animals; when faced with conflicting alternatives, they may peck as if hunting food, or preen themselves, pretend to be nest building, or (if birds) go into a courtship dance.

Humans do this, too. Faced with two contradictory choices of action (such as making a phone call or not making it, adding a column of figures or not adding them, typing or not typing) we often engage, instead, in a displacement activity, such as tugging at our ear, gazing absently out the window, getting up to get a drink of water, or perhaps lighting a cigaret or pipe.

It should be noted here that displacement activity, which probably occupies a great deal more of our "working" time than we would like to admit, is just as much a "motivated" act as either of the conflicting choices for action. This does not fit the "drive reduction" or "stimulus reduction" concepts very well, but it does satisfy the expenditure of energy function suggested by the "arousal and activation" theory.

What is expended is energy, and what is purchased is delay.

Not quite the same thing as "conflict" in the motivational process is "dissonance." This might be best explained as a motivated act whose consequences were not what was expected. For instance, a person might take a course of action, such as working very hard, expecting to get a raise or a promotion, but instead gets neither. The resulting effect on future motivated acts may be to reduce the energy expenditure or to change its direction. In other words, the person experiencing "dissonance" might very well decide not to work as hard in the future.



"The terms *approach* and *avoidance* must not be understood simply as "going towards" or "away from" a stimulus in a spatial sense. Thus "rage," when it goes over into attack, is an "avoidance" response, even though it involves "going towards" something. *Avoidance* must be defined in terms of its objectives—to discontinue, remove or escape from a certain type of stimulation and not in terms of its overt characteristics. Attack has, as its objective, removal of the source of stimulation in the same way that withdrawal does. *Approach* must also be defined functionally—i.e., it is any activity, the objective of which is to continue, maintain, or pursue a certain kind of stimulation."

MICHAEL ARGYLE—*British Journal of Social and Clinical Psychology—1962*

Many incentive and bonus systems in the business world, for instance, may have the long-term effect of reducing the energy output from all those who did not "win."

Dissonance and displacement have powerful and long-reaching effects on motivation in an institutionalized society because they siphon off energy that might have been directed toward achieving the institution's goals. An organization that fails to take these two phenomena into account and to allow for them, may well end up as a "company of pencil sharpeners."

Pain, Fear and Anxiety

GOOD GRIEF, CHARLIE BROWN. In any list of primary "drives" one is likely to examine, "pain" will be one of them. It is pain, or the fear of pain, that makes punishment so powerful a motivating force.

Strangely enough, despite all that has been written about it, not too much is known about pain. It appears to be the overloading of a neural circuit; even the most enjoyable pleasure can be painful if continued too long; or if it is so intense as to overload the sensory system. The threshold at which pain is felt differs from person to person, and in the same person, from time to time. The ability to withstand pain can be changed for the same individual in many ways. In some Indian cultures, for instance, the woman gives birth to her baby and returns to work in the field, apparently feeling no pain, while her husband, lying in bed at home, goes through all the torment of childbirth.

Throughout the literature, from the Marquis de Sade to Pavlov, pain, and the avoidance of pain, are treated as extensions of pleasure. In recent experiments, for instance, cats can be "turned off" from eating by applying mild electrical shocks to their paws every time they bend over to take a bit of food. But the experiment can be turned around and a mild electrical shock may be used as a signal that food is about to be served. The pain thus becomes a pleasure; the cat "turns on."

Physiological pain can be a direct motivator, causing behavior to "reduce" the source, as in snatching one's hand away from a hot surface. Here, the action is reflexive. We are motivated in this way all day long; we try not to have accidents that would result in pain, or to avoid situations (the doctor, the dentist, the lawyer, crowded freeways, falling down escalators) that might be painful.

The *fear* of pain is probably more of a motivator in our daily lives than is pain itself. The fear of pain appears to be both instinctive and acquired. We may, for instance, flee a poisonous snake or a mad dog, even

Sculpture by Joel E. Edwards
Photo by Bob Fraser

though we never actually experienced any pain from the apparition.

In fact, there does not even have to be a "real" object (cue) that could cause pain, in order for us to fear it and govern our responses and thus our motivated acts. There are people who fear other racial or ethnic groups, or even other ideologies and religions, even though they never have experienced pain from them and, perhaps, have never even had any sort of experience with them. Politics, as frequently practiced, is often the manipulation of the fear of pain.

However, pain, or the fear of pain, is not a sufficient explanation for the many anxieties and distresses that mark our daily lives. For one thing, infant animals and humans may react with fear even when they are not actually threatened, as in the case of a loud noise or the loss of support. For another, people who suffer from "congenital analgesia" (physiological inability to feel pain) nevertheless exhibit the same range of anxieties and distress symptoms that "normal" people do.

The older, simplistic view that anxiety states are derived from the fear of pain now appears too narrow a concept to account for much that we observe in human behavior. This is of special importance to the study of motivation because it is the creation of anxiety that makes punishment such a powerful motivator in our society.

Fear of losing a job, or money, or prestige, or friends, motivates many of our daily acts, although no actual pain is involved. Nor even, for that matter, the fear of pain, since it is not necessarily painful to lose a job.

What we actually appear to be looking at when we study the system—pain, fear, anxiety—in relation to punishment (or the threat of punishment) is a *general* tendency in the organism to feel distress (the psychophysiological symptoms of anxiety) that can be triggered by either the presence of certain arrays of cues or the absence of them. In the first instance, the cue may be some event (object) in the external environment that triggers a general response of anxiety or distress; in the second, it may be an *imagined* circumstance that may arise in the future (I may lose my job; I may lose money, etc.) that has all the motivating power that a real or experienced set of cues might have.

Equally motivating may be the absence of a certain cue or arrays of cues; i.e., not enough money, not wearing the clothing appropriate to an occasion, not being able to find a desired object (I've lost my glasses, wallet, lipstick, pipe), not having familiar surroundings (arrays of cues), as when awakening in a strange place.

The motives of fear and anxiety influence social affiliation behavior differently: the greater the fear aroused, the more the subjects choose to be together with others while they await actual contact with the fear arousing object. Conversely, the greater the anxiety elicited the more the subjects choose to be alone while they await contact with the anxiety-arousing object.

Irving Sarnoff
Anxiety, Fear, and Social Affiliation 1961

These anxiety states do not necessarily have to be conscious. Vague senses of distress, despair, uneasiness, or of alienation may result from unconscious or subconscious tensions and forces. These may have an influence on both the direction and the intensity of the energy transaction that we have identified as a motivated act.

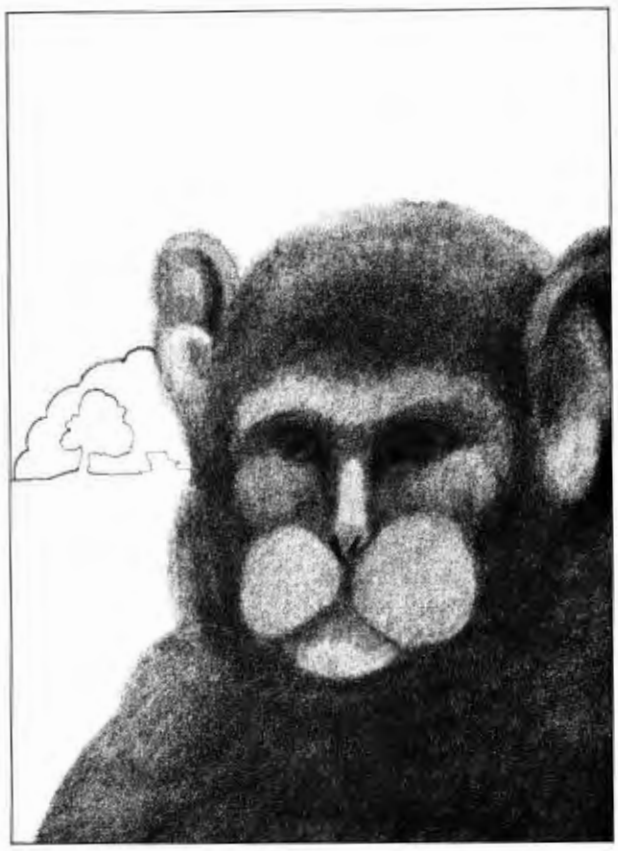
Anxiety behavior may, under some circumstances, be reverberatory, in that it begins with one system (a pain in my stomach)

and spreads to others (maybe I have appendicitis) leading to motivated acts (putting on an ice pack, calling the doctor, lying down and curling up) that are inappropriate to the inner array of cues (it was only indigestion, after all).

In our society and in our times, the examination of the "money motive" is of particular importance, and it relates directly to anxiety states and (like the pain in the stomach) to frequently inappropriate activities. It seems to have something to do with the absence or deficiency of cues (there's never enough money; I'll go broke) and is based on a fear of future pain (I'll go hungry; I'll not have a place to live) even among those who have never experienced either. This anxiety state may be so powerful that people who "already have it made" will compulsively go on working to "make money" even though such activity is entirely inappropriate to the situation in which they find themselves. We see this in the phenomenon of the miser or hoarder, and in the compulsive activity of persons in the business world, for instance, who "work themselves to death" for a reward they have long since obtained. (Many other factors enter this, as well, and we have mentioned these elsewhere.) These people are not working for a reward but to reduce anxiety states.

Both reward (the expectation of pleasure) and punishment (the fear of pain) appear, in our culture, to be the acting out of fantasies that are predicated on the probability of some future events that *might* be experienced. Many of our moment to moment, day by day, actions are motivated by our expectancy of the probabilities of arrays of cues that may occur at some future moment. Reward and punishment, then, do not appear to be two sides of the same coin; they are, as experienced, the same side.

The function of motivators in our society may be, it seems, to create the expectancy of the probability of the occurrence of arrays of cues in the future. This is, of course, what is meant by "goals and objectives" and they are directed toward the reduction of anxiety states in the individual. He will react, rather

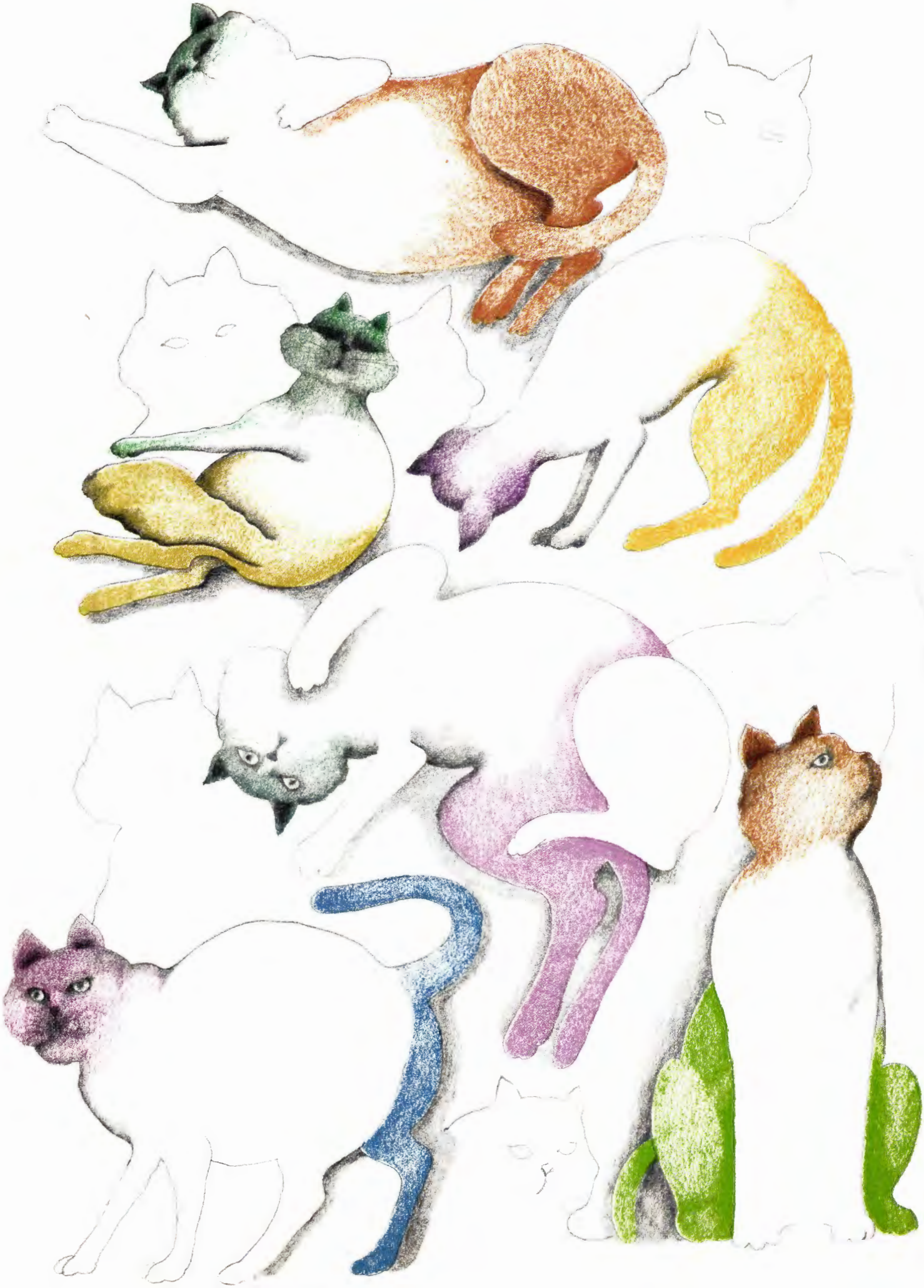


"When a child is taken to a strange place, he usually remains composed and happy so long as his mother is nearby. If the mother gets out of sight, however, the child is often seized with fear and distress. We developed the same response in our infant monkeys when we exposed them to a room that was far larger than the cages to which they were accustomed. In the room we had placed a number of unfamiliar objects, such as a small artificial tree, a crumpled piece of paper, a folded gauze diaper, a wooden block and a doorknob. If the cloth mother was in the room, the infants would rush wildly to her, climb upon her, rub against her and cling to her tightly . . . If the cloth mother was absent, however, the infants would rush across the test room and throw themselves face down on the floor, clutching their heads and bodies and screaming their distress . . ."

HARRY F. HARLOW—"Love in Infant Monkeys"—1959

predictably, in the desired direction in order to increase the probability of the appearance of those cues that will, at some future time, relieve his anxiety states. He is equally motivated to reduce the probability of other sets of cues in the future that might sustain or increase his anxieties.

In short, the job of the motivator in our culture may be to create symbols of arrays of cues whose probability can be increased or decreased by the direction and intensity of individual energy transactions in the present. Motivation, to this extent, becomes information systems based on the communication of appropriate symbol configurations (arrays of future cues with varying probabilities).



Curiosity, Exploration and Games

CLOSELY WATCHED CATS:—If we seem to be kind of hung up on cats in these pages, maybe it is only that we know cats somewhat better than we do dogs, rats, pigs or sheep. We don't know a chimpanzee at all.

Anyway, we have this little white cat (we call him "Little White Cat" which may say something about us, as well as him). And there is this place on the stairway at our house where the railing is like a fence of planks with holes in them. Now what this cat likes to do is to have someone poke a finger through one of the holes so he can bite it. Not hard, mind you. Gently. This is his own game and he made it up all by himself. It has absolutely nothing to do with thirst or hunger or pain or sex or any of the things that are supposed to drive cats around. He just likes it. When he can't find anyone to play "the game," he spends a great deal of time just "exploring."

It is possible that people are very much like cats (or vice versa, if you like) and that much human activity has to do with curiosity, exploration, games and risk taking.

The would-be-motivator — whether in business or school or any other institution— might well consider the possibilities inherent in the motivating forces provided by curiosity, risk taking and games playing. These appear to take effect after the primary drives have been satisfied; and, indeed, these primary drives are, for the most part, so easily satisfied in our society that we scarcely need to consider them.

Except at the highest levels, few occupations offer too much in the way of exploration (an activity that results from curiosity). Most jobs, in most places, are little cages in which people are trapped. Yet here, in curiosity, is an extraordinary motivating force that can be harnessed and directed with little or no additional economic input.

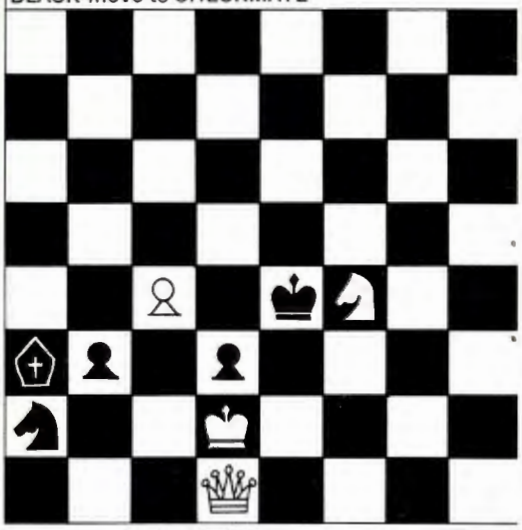
As living organisms we are possessed by curiosity; about our environment; about each other; about ourselves. Many of us seek

GAMES PEOPLE PLAY

The kind of natural appeal offered by games and puzzles (which involve aspects of curiosity and risk-taking) may be a promising area for further motivational research by institutions, such as business, where present reward and punishment systems don't seem to work well anymore. A job problem can have the same sense of challenge that a good puzzle has, providing that the "thresholds" set up, like hurdles in a race, are neither too low nor too high. As with games and puzzles, jobs that are either too simple to present a challenge or too difficult even to attempt are poor motivators, but those that are suited to the person's interests and abilities may be good motivators. On pages 34-35 we have indicated several types of games and puzzles varying from easy to hard, depending on the individual. The "best motivators" for most people are probably somewhere in the middle of the spectrum.

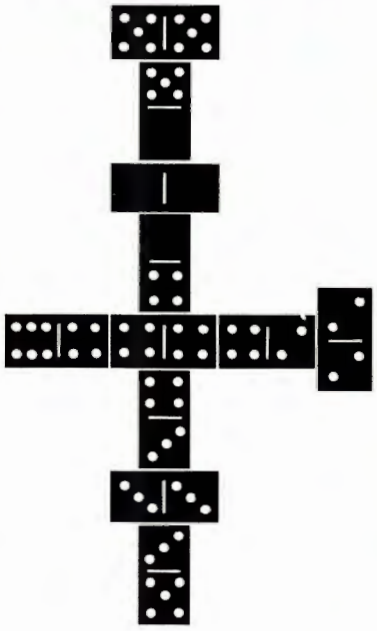
MOISTEN + P = NEPOTISM
ESCALATOR + D = _____
LEADERS + I = _____
EDUCATORS + C = _____
MECHANIZE + P = _____
POTATOES + H = _____
SIMPLE + G = _____

BLACK move to CHECKMATE



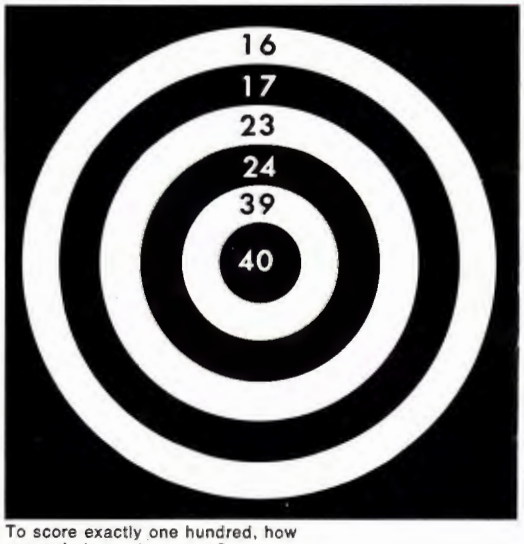
Definitions	Words
Yearly	12 8 21 5 25 32 31 3
"I___ if I could, but I can't"	29 27 5 14 6
"Origin of the Species" author	6 20 10 29 1 28
Quietly; gently	26 7 2 9 13 22
Having a top covering, as a house	23 4 34 2 11 33
Willingly; without hesitation	18 19 17 33 30 32 15
Lately	18 24 16 19 28 9 14 3

Solution: _____
1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18 19 20 21 22
23 24 25 26 27 28 29 30 31 32 33 34



I	T	Y	R	A	U	R	B	E	F	D
E	N	U	J	D	F	R	E	T	S	A
I	H	D	E	H	A	E	G	U	R	T
T	J	S	E	P	T	E	M	B	E	R
C	W	K	R	P	P	M	N	R	B	S
H	F	L	R	Q	E	A	A	P	M	O
R	L	T	N	R	S	N	S	V	E	A
I	A	J	T	T	S	R	D	S	V	R
S	G	U	U	D	E	E	E	E	O	W
T	D	L	A	Z	C	R	T	B	N	V
M	A	Y	D	E	C	O	A	S	O	C
A	Y	H	M	G	E	L	F	D	U	T
S	F	B	G	N	I	R	P	S	H	G
M	E	M	O	R	I	A	L	D	A	Y
R	J	M	A	R	C	H	A	L	Z	R

JR INZR N GXHFXV OL JWND JR VRD, OED JR INZR N GZUR OL JWND JR VXHR—EFZFTJF
Decode to form a quotation.



To score exactly one hundred, how many darts must you use?

$$\bar{x} = \frac{\int_0^2 x^2 \sqrt{2dx}}{2\sqrt{2}} = \tfrac{1}{2}\left[\tfrac{4}{3}x^3\right]_0^2 = \tfrac{4}{3}$$

Decode cryptogram to form a sentence. Punctuation is not indicated.

RQNRKQ JINH GFQEQC INGFDIB HENIB HDGF S BNNT RNKDGDUSK VNJQ WIKQCC DG BQGC QKQUGQT

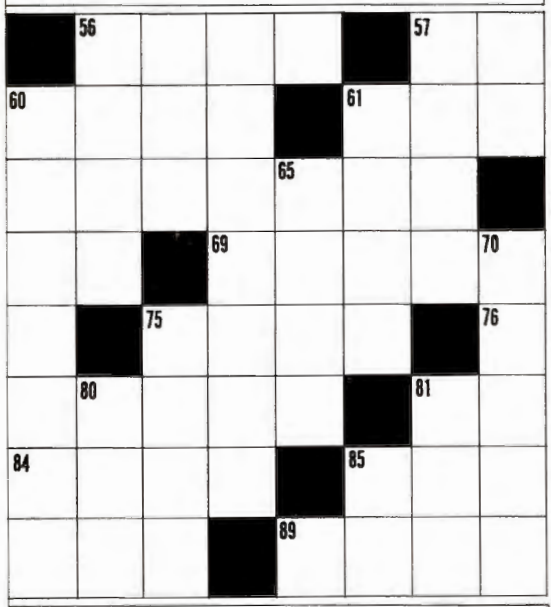
Neither vulnerable. South deals.

North: ♠K 5 4 ♥K 8 6 5 ♦A 5 ♣Q J 10 4

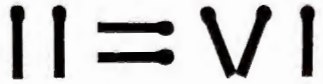
West: ♠7 2 ♥Q 9 7 4 3 ♦K Q 10 9 4 ♣3

East: ♠Q 10 8 6 3 ♥10 ♦J 8 7 2 ♣9 8 5

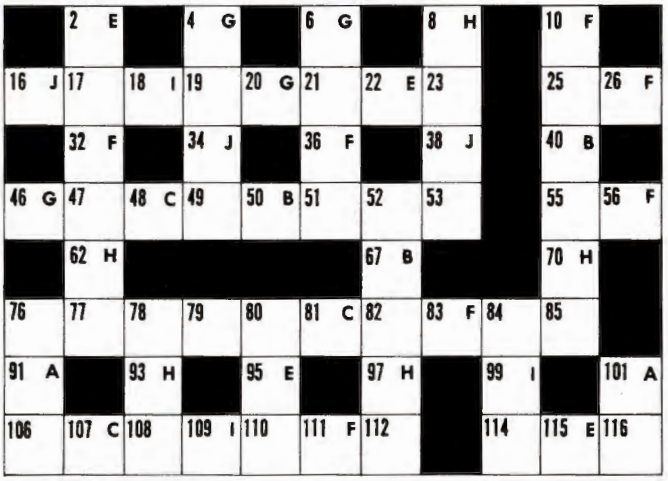
South: ♠A J 9 ♥A J 2 ♦6 3 ♣A K 7 6 2



A false equation:



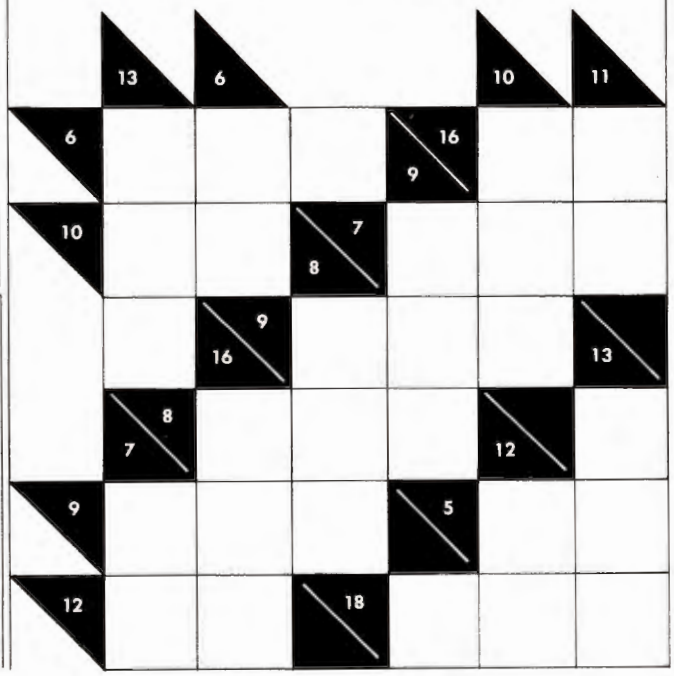
The matches forming the equality sign may not be touched. Only one match may be moved, and it must be moved from one side to the other side to form a mathematically true equation. There are two correct solutions.



Decode each letter to form a numerical long division problem. Letters correspond to same numerals throughout.

```
        BOY
LIE / HORROR
      HENB
      ----
      BRIO
      HYIO
      ----
       LNNR
       RGLY
       ----
        OEL
```

Numbers in the black squares refer to TOTALS for numbers you fill in the empty squares (1-9 only). Above slash is total for numbers to right; below slash is total for vertical digits. Use no zeros.



Puzzles and games can be strong motivators, but each individual has his own thresholds. In this spectrum, at what points do *you* drop out because the puzzle is too simple—or too hard?

novelty and change as once our ancestors sought grubs beneath a rock.

There does not at present appear to be any very good explanation of why we should be curious or why exploration "does something" to us. Perhaps it is merely an extension of the infantile learning process (through encounter we are stimulated to produce more protein cells in the brain, or change our blood sugar level). Perhaps new associational paths in our neural networks are established, or existing ones are hooked up in new ways. We just don't seem to know.

In any event, something seems to happen to us; new energies are made available to us whenever our curiosity is aroused and we engage in exploratory activities.

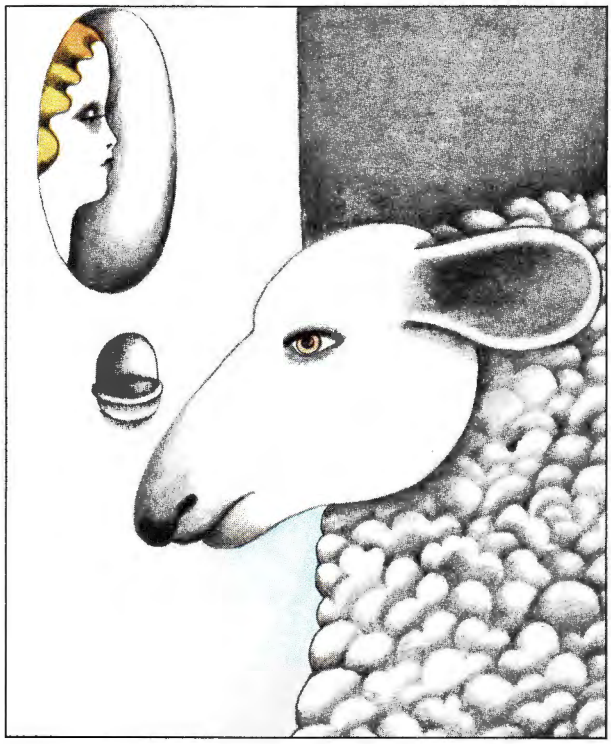
Both curiosity and exploration appear to be related to playing games. It may be that playing games is related to mild anxiety states that release energy. Anyway, we do play games which have as their core the risk of losing. We may play the stock market, or run a business, or engage in all sorts of competitions with ourselves or with nature—cards, golf, fishing—which seem to have the common denominator that we conceive of as arrays of cues in the future (my hand of cards against yours) that may, or may not, "win." This is where the anxiety creeps in and its function appears to be to heighten the release of energy.

In a society where the primary drives are easily satisfied by advanced technology, the most important areas for motivating people may well lie in the area of games, puzzles and the opportunity for exploratory activity, carefully calibrated to fall somewhere between the lower and upper thresholds of each individual.

"A man's reach should exceed his grasp, or what's a heaven for?"

"Another source of annoyance in our study of learning was the sheep's insistence on running through the maze for its own reasons—not for the reasons or 'motives' that we attributed to it. We had supposed that the desire for food or to join the flock was the animal's only motivation for mastering the maze. But after many months . . . we began to entertain grave suspicions about this. In spite of their invariable mistakes, the normal sheep seemed eager to run the maze day after day. The experimenter, on coming into the barn to start the day's work, would regularly find these animals clustered about the screen door leading to the maze, as children congregate around the ticket window for the Saturday afternoon movie."

HOWARD S. LIDDELL—
"Conditioning and Emotions"— 1954



"When you stop to think about it, it is nothing short of extraordinary what trouble people will go to in order to get into more trouble at the bridge table, or on the golf course; and the fascination of the murder story, or thriller and the newspaper accounts of real-life adventure or tragedy, is no less extraordinary. This taste for excitement *must* not be forgotten when we are dealing with human motivation. It appears that, up to a certain point, threat and puzzle have positive motivating value, beyond that point, a negative value."

D. O. HEBB —"Motivation and the Conceptual Nervous System"

Metamotivation

A STREETCAR NAMED DESIRE: We have, for the most part, talked about "normal" people, "normally" activated. We have tried to indicate that genetic patterns, neural codes and early imprints form the structural limits in which, or through which, the motivated act can take place.

We have further suggested that most motivated acts take place in response to "cues" that exhibit, or that we expect will exhibit, a higher probability of occurring because of the actions we take. We have tried to relate this to a surplus energy state in which the organism, to achieve equilibrium, finds it necessary to expend this surplus energy in a transaction with either its internal or external environment, and this direction is toward arrays of desirable cues.

The transaction that results is, as we have defined it, a motivated act. We hold it to be motivational even if it has no desirable social or economic function, feeling that this is a value judgment that differs from culture to culture and time to time.

Institutions, we feel, are systems of communication whose primary purpose is to provide "cues" toward which energy can be expended.

None of this quite accounts for the highly motivated person in our society—the leaders in business, government, the arts and sciences, whose directed energy expenditure — i.e., motivated acts — are well beyond the norm.

Abraham Maslow (in the "Journal of Humanistic Psychology," Fall, 1967) calls this "metamotivation." Just as in the effort we make to define the highly creative person in any field, we find ourselves faced here with a phenomenon that seems somehow larger than life.

How, indeed, can we account for "metamotivation?" Most of our society, to function and to progress, is largely dependent on the acts of a relatively small number of highly motivated people. Can we consider how that number could be increased?

Maslow, who has made a study of this subject (he is, incidentally, president of the American Psychological Association), finds a number of characteristics that appear to be related to the "metamotivated" person. For those institutional leaders and programmers who have taken upon themselves the burden of trying to motivate the rest of us, Maslow's ideas are worth looking into.

To begin with, the metamotivated people seem to have some sense of a "calling," as if some supernatural force were working through them. There appears to be a sense of compulsion about their acts that transcends ordinary responses to conventional cues and stimuli. Where this compulsion, this need beyond need, comes from, Maslow does not try to guess, and perhaps at our present, primitive stage of studying behaviorism, no one knows.

"For the meta-motivated person the self has enlarged to include aspects of the world and therefore the distinction between self and not-self (outside, other) has been transcended. There is now less differentiation between the world and the person because he has incorporated into himself part of the world and defines himself thereby."

ABRAHAM H. MASLOW —"A Theory of Motivation"— 1967

It is quite possible that these people are motivated by powerful unconscious or subconscious forces that have somehow managed to establish contact with the conscious. Or there could be a collective unconsciousness that finds some few individuals to express itself through. The thought is unscientific, by present standards, but intriguing nonetheless.

Another characteristic of the metamotivated person is that his motivated activities may be ends in themselves, as with an artist or writer who creates things with little or no thought about who might buy, or even see, the product of his efforts. Maslow has likened it to a chess player who finds his reward in the intricacies of the game, rather than in the winning of it.

What Maslow finally says is that the metamotivated individual has somehow transcended himself to explore value systems that go far beyond his actual needs or wants. It is a sort of exploratory operation (and here the description is ours) in which the subject of the exploration is the interface between the human organism and its experienced environment. The exploration may, indeed, become an end in itself, but it re-

leases energies that in "ordinary" people remain untapped.

Whether it is possible to construct a society largely made up of "metamotivated" people or not, or even whether such a thing would be desirable, we don't know. But it is an interesting speculation; what a society *that* would be!

Some months back, we attended a meeting of disadvantaged black teenagers. We asked them, "How would you define motivation?" And one of them, a boy about sixteen, said, "It's a hole that needs filling."

Perhaps that's all we've really said.

COMMUNICATIONS

About the book . . .

This book provides an excellent introduction to motivational theory as it applies to life in a modern technological age. Highlighted by four-color illustrations, it presents the ideas of philosophers and behavioral psychologists from Descartes to Abraham Maslow.

About the author . . .

Don Fabun is Director of Publications in the Public Affairs Department of Kaiser Aluminum and Chemical Corporation. The magazine *Kaiser Aluminum NEWS*, which he writes and edits, has been a consistent award winner among company-sponsored publications.

Mr. Fabun is the author of *The Dynamics of Change* and has edited and published his own science fiction magazine, *The Rhodomagnetic Digest*.

Other Glencoe Press books by Don Fabun:

Communications: The Transfer of Meaning
You and Creativity
The Children of Change

The motivation for the White Knight is to take the Black Pawn (between him and the castle) in order to check the Black Queen and force her to move. Human motivations may be much more complex than this, but they seem to work the same way.

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