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PSYCHOLOGY *******
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January, 1980

FUNDAMENTAL PRINCIPLES OF HUMAN PSYCHOLOGY

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Most of you have little or no familiarity with the type of basic psychological theory needed as a foundation for this course. The present booklet has been written to remedy that deficit by integrating the leading ideas from a variety of sources--Freud, Rogers, Skinner, Bandura, Ausubel, Festinger, Janis, Richard Lazarus, James Miller, Harold Kelley, and numerous others. Unfortunately, several artificial barriers to communication have made such integration difficult. For example, even though many of the above theorists have made significant contributions to the study of attitudes (e.g., Freud's work on defense mechanisms), their terminologies tend to conflict in highly confusing ways. They also tend to ignore or derogate each other's contributions. As a way of removing these barriers, I have had to develop a new, comprehensive terminology capable of assimilating highly diverse points of view.

Since the booklet's primary goal is to present a theoretical foundation for our course, your performance will be graded primarily on your grasp of the principles set forth here and your ability to apply them to the other readings. Keep in mind that many of these principles are speculative in the sense that their validity has not been completely established by existing research. But they have all received suggestive support if one includes the evidence gathered from exploratory work (such as clinical and field studies).

You will find that the booklet is very concise, with a minimum of elaboration and repetition. This means that you will probably have to study it quite carefully. To increase comprehension, we will discuss most of its central points in class.

OVERVIEW: THE PSYCHOLOGICAL SYSTEM

The general function of the psychological system is to process infor-
mation. Information exists at three levels of complexity. At the lowest
level, a simple quality* is a homogeneous capacity. The color red is such
a capacity because all of its electromagnetic energy can produce the same
effect on the eye. At the next level, a relationship* is a combination
of all the similarities and dissimilarities that exist between two or more
simple qualities. Two red cars are related through their similarity in
color and through their dissimilarity in location. Finally, a configuration*
is a combination of two or more simple qualities and their relationships
to one another. The combination of two red cars resting twenty feet apart
would thus constitute a configuration.

Information Processing

Coding. There are three basic forms of information processing. First,
information undergoes coding* when a given quality is replaced by another
quality in a way that is both repeatable and reversible. For example, a
simple military code might translate letters into numbers: A = 1, B = 2,
C = 3. The sequence ABC would then be written 123. This would only qualify as
true coding, however,   if it is repeatable (the same letters would be
consistently replaced by the same numbers) and reversible (if one can
translate the numbers into letters). For our purposes, it is important to
recognize that psychological coding transforms external physical qualities
(e.g., red) into neurological qualities (i.e., biochemical reactions in
the receptors and brain). The fact that there is often a consistent corres-
pondence between stimulus and response qualities is the key to our ability
to deal intelligently with reality.

The coding process can be further broken down. In discrimination*, mutually dissimilar old qualities are coded with mutually dissimilar new ones. The above example was actually an instance of discrimination because mutually dissimilar letters (A ≠ B ≠ C) were coded with mutually dissimilar numbers (1 ≠ 2 ≠ 3). There are many forms of psychological discrimination. Thus, the colors red and green are coded by dissimilar neural impulses from the eye, and pressures on the hand and leg are coded by dissimilar tactile impulses. In generalization*, which is the other type of coding, mutually dissimilar qualities are coded with mutually similar qualities. This would occur, for example, if A = 1, B = 1, and C = 1. The differences between the letters ABC are ignored by coding them all with the number 1. Generalization is a powerful force in human psychology. At the emotional level, we may be equally startled by a sudden flash of red light as by a sudden flash of green light. At the conceptual level, we may meet ten Canadians who enjoy cold weather and conclude that all Canadians do so. We would then be generalizing if we met an eleventh Canadian and inferred that he too enjoyed cold weather.

The coding of information can vary in complexity the same way that information itself varies in complexity. Some components of the psychological system, for example, code nothing but the mere presence or absence of a simple quality (such as the color red). Other components code relationships (e.g., the distances between two objects). The highest level of psychological coding is performed by cognitions. A cognition is a psychological representation in which the sum of a stimulus' simple and relational qualities are experienced as a configuration (i.e., a coherent whole).

Retention. The second basic type of information processing, retention*, consists of preserving information over time. There are obviously many physical methods of doing this--a printed page, a set of initials scratched in granite, a fossil. The psychological system retains information primarily through changes in the way chemicals are released from the tip of one neuron to the outer membrane of an adjacent neuron. These changes either increase or decrease the functional relationship between the neurons involved. The set of neurons that retains a given body of information is called a trace*. Some traces are nothing more than simple associations, while others are cognitions.

Cognitive traces play an extemely important role in human psychology. They can be analyzed along two major dimensions. The first, organizational function, involves the difference between units and formulations. A unit* is a well-consolidated cognitive trace that can be used in a variety of larger cognitive networks without losing its distinctive content. Thus, even though it may contain many heterogeous components, its associations between these components are always strong enough to enable it to function as a single entity. The highest level of organizational function is performed by a formulation*, which is a set of interrelated units.

Abstractness is the other major dimension in the analysis of cognitive traces. It involves the difference between imaginal and conceptual processes. An image* is a cognitive unit that represents a stimulus in terms of its concrete (i.e., direct sensory) qualities. For example, a visual image of a car allows you to retain information about a car's color, size, and shape. By contrast, a concept* is a cognitive unit that represents only the abstract (i.e., general) qualities in a stimulus. Your concept car

thus enables you to retain information about the qualities that all cars possess in common (such as steering and internal propulsion). This distinction between imaginal and conceptual also extends to formulations. An imaginalization* is a formulation composed of images.   You might integrate your separate images of a specific car, a specific dog, and a specific house into a single imaginalization of your poodle sitting in your Chevette that is parked in front of your farmhouse. It would be concrete because your experience of it would be similar in content to the sensation you would have if your actually looked at such a stimulus arrangement. At the abstract level, a conceptualization is a formulation composed of concepts. It might consist of your concepts car, dog, and house as organized into the formulation The dog is sitting in the car parked in front of the house. This conceptualization would differ from its imaginal counterpart in being more generalized and less sensory.

Transmission. The third basic type of information processing, transmission*,   causes information to exist in a new substance or at a new location. Moving a book from home to class is a physical form of transmission. At a somewhat more complicated level, information about a person's voice qualities can be transmitted electronically over a telephone line. Psychological (neural) transmission occurs when a special chemical reaction travels along a neural fiber and then "jumps" to an adjacent fiber by means of the chemical release mentioned above. Such transmission can sometimes reach across a relatively long expanse--as when information about a wound in one's toes is transmitted up through the leg and spinal cord to the brain.

The Basic Organization of the Psychological System

All these informational functions are performed by the psychological system. A system* is a set of two or more dissimilar structures that work together to produce a set of interrelated processes. Using the term "structures" loosely, we can say that the psychological system contains five types of neural structures. These are shown in Figure 1 below:
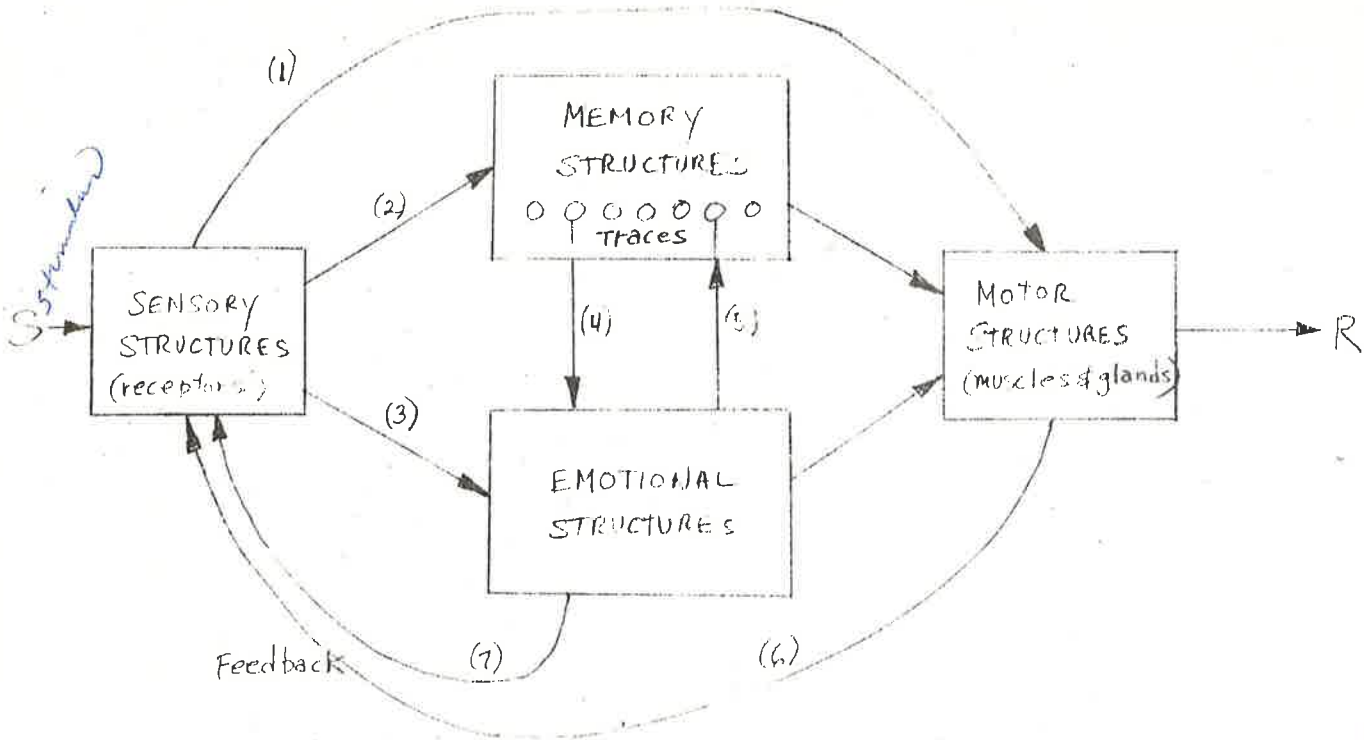

Fig. 1. The Psychological System

An external stimulus (S) is assimilated into the psychological system through the sensory structures , which contain specialized receptors for coding physical qualities into neural qualities. Intrapsychic transmission structures then transmit sensory information to the remaining structures. In some cases (1), the information goes directly to the motor structures , which produce a muscular or glandular response. This process is called a sensorimotor reflex . More often (2), the information is transmitted to the memory structures , which are responsible for retaining information about past stimulus events. If the current stimulus matches a previous one, it will reactivate the latter's trace. Finally (3), sensory information can go directly to the emotional structures, which supply the primitive bases for motivation. Note that information can be readily transmitted back and forth between the memory and emotional structures--so that a trace can arouse an emotional response (4), and an emotional response can activate a trace (5).

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Feedback is one of the most important features of a functioning system. We can define <u>feedback</u>* as an event that is caused by the activity of a particular structure and that is directed back toward that structure in such a way as to influence the structure's future activity. The motor structures often provide feedback to the sensory structures by producing new stimuli (6). If a man sees a black widow spider about a foot from his leg, for example, his traces for danger will arouse fear. The fear will then cause his leg to move away from the spider, and he will be presented with a new stimulus (e.g., the fact that the spider is now located three feet from his leg). Feedback can also exist within the psychological system itself. We know, for instance, that certain emotional responses can alter the functioning of the receptors (7) to increase or decrease their sensitivity to particular types of stimuli.

EMOTION

Let us now discuss the emotional structures in greater detail. They deserve special attention because, as the center of human motivation, they exercise a powerful influence on everything we do. Formally, the function of the emotional structures* is to primitively code the adaptive signi-ficance of stimuli and to use that information to selectively facilitate responses that have generally produced adaptive consequences during the species' evolutionary development and the organism's individual history. As a way of explaining this complex function, let us break emotion down into its three principal components.

The Hedonic Arousal Component

It would be impossible for each individual to learn how to discri-minate all beneficial stimuli from all detrimental stimuli in a single lifetime. For example, he would die of starvation or poisoning before he could try out more than a very limited number of potential sources of food. The psychological system requires some innate criterion for making this decision--some repository of ancestral information about the kinds of stimuli that have generally facilitated the survival of the species. In the present analysis, this function is performed by the <u>hedonic arousal structures</u>*--which primitively code the adaptive significance of stimulation through intense, semi-enduring discriminative responses. In saying that their coding is primitive, I mean that they only respond to certain genetically predetermined classes of stimuli. Some respond only to the taste of fresh food, for instance, while others respond only to the smell of rotten flesh. Let us consider the two general and eight specialized types of hedonic structures.

Pleasure. <u>Pleasure</u>* is a general type of hedonic response aroused by species- adaptive primitive stimuli. This certainly does not mean that pleasure is always adaptive at the individual level. A wealthy American may experience considerable pleasure from the eating of a 12-ounce sirloin steak every night for dinner, even though his resulting overweight and high cholesterol may cause him to die prematurely from a coronary attack. At the species level, however, steak has been quite adaptive over the course of evolution because of its

high nutritional value. There are three specialized forms of pleasure. Sentia* is aroused by various types of sensory stimulation that have frequently accompanied need-reduction and procreation during the species' evolutionary development. This includes things like food, water, moderate warmth, sexual contact, and so on.

The second form of pleasure, effectance* ~~information~~, is aroused by primitive success cues. This emotion has been proposed by Robert White (1963) in his prominent theory on the development of competence motivation. He has found substantial evidence that infants experience pleasure in using their capacity to control the enviornment even when no tangible rewards are received. A baby may thus smile when she succeeds in hitting a rattle and hearing its auditory feedback. There has traditionally been a problem in explaining such pleasure, because we have not been able to imagine how a highly diverse class of events like success could be primitively coded. But the present analysis suggests that we can get around that problem by using certain patterns of other hedonic responses as success cues. I propose that effectance is aroused by a special coding structure that compares the levels of gratification existing at different points in an action sequence to ascertain whether the action has been successful. It is initially activated by an exertion cue (which exists whenever the person is making an effort to attain a goal). This allows it to code the intensity of anticipatory gratification (which is the level of gratification that exists during exertion). The termination of the exertion cue then allows the structure to code the intentity of consummatory gratification (which is the level of gratification that exists after exertion). From this information, it produces a success cue* whenever there is an adaptively favorable hedonic pattern (i.e., one in which consummatory gratification is equal to or greater than anticipatory gratification). This proposal would allow effectance to be aroused by non-tangible success because gratification can come from small increases in animation and decreases in fear.

Lastly, animation* is a moderate form of pleasure aroused by the mere presence of any type of sensory stimulation (whether intrinsically positive or negative). It is described as mildly pleasurable because people often stive to increase it up to a moderate level, but they avoid further increases when it is already at very high levels. This pattern can be explained by assuming that animation itself is always pleasurable but that it tends to excite fear at high levels. Animation helps us cope by sending diffuse excitation to many other psychological structures.

Distress. Just as the environment is not exclusively beneficial, our hedonic responses are not exclusively pleasurable. Distress* is a general type of hedonic response aroused by species-maladaptive primitive stimuli. It has five specialized forms. Exigeance* is aroused by increases in various tissue needs (e.g., the need for food and water). After we have gone sixteen hours without food, for instance, we experience intense hunger,

which is a type of exigeance . Repugnance* is aroused by sensory contact with phenomena whose ingestion has repeatedly poisoned past members of a species. It is thus the primitive mechanism that enables a species to avoid toxic substances or odors (such as the smell of decaying flesh) without each member of the species having to acquire this avoidance through trial-and-error learning. Pain* is aroused by the destruction of free nerve endings, as occurs when our flesh has been burned, cut, or smashed. If we did not have this form of distress, most of us would probably have numerous large scars and severed appendages all over our bodies because we would have no intense, immediate motive for taking the normal precautions to avoid bodily injury.

The fourth form of distress is the opposite of effectance. Frustration* is aroused by primitive failure cues (i.e, when consummatory gratification is coded as less than anticipatory gratification). This emotion performs a very important coping function because it puts pressure on us to cease performing nonrewarded responses. Without it, we would persist in futile acts long after there was any possibility of reward.

The last form of distress, fear; is excited by primitive danger cues' and inhibited by primitive safety cues. Some primitive danger cues consist of sensory patterns that often accompany danger--such as an object making irregular movements (like a snake), an object making rapid approaching movement (like a wolf), a relatively large object (like a bull). a loud, irregular, or complex noise (like that emitted by an animal under attack), and a situation manifesting extended vertical depth (like a cliff). Research (Marks, 1969) has shown that all of these patterns possess the capacity to arouse fear even when the organism has not had any prior contact with them. Another primitive danger cue may consist of a sudden, intense increase in animation, which tends to exist when we unexpectedly confront a danger against which we must exert a great effect to protect ourselves. It is not certain that there are any primitive safety cues, but evidence suggests that the existence of an ongoing pleasurable response (either sentia or effectance) may be one. If it is, then we can expect it to inhibit the fear structures.

Pleasure and distress can be both increased and decreased. For the sake of economy, let us categorize these four possibilities in a way that reflects their motivational significance. We can say that gratification* results from either an increase in pleasure (eating an ice cream cone) or a decrease in distress (having a painful corn removed from one's heel). Any stimulus producing these effects is positive* Similarly, disgratification* results from either a decrease in pleasure (loss of an ice cream) or an increase in distress (gain of a thorn in one's arm). Its stimulus is negative* The quality of being positive or negative is called stimulus valence*.

Our analysis so far has concentrated exclusively on primitive sources of hedonic stimulation. This category includes all stimuli, whether external or internal, that possess the capacity to arouse a hedonic response through

genetically predetermined pathways and coding mechanisms. But arousal can also result from the activation of memory traces that have been associated to hedonic structures. This fact is very important theoretically, since it implies that we are not slaves to the evaluative patterns established by evolutionary experience. Although clearly limited to an appreciable extent by these patterns, we also have considerable freedom to expand and redirect them through individual learning experiences. The next major component of emotion contributes significantly to the power of that learning process.

The Associative Control Component

A specific trace becomes associated to a specific hedonic structure when both are active at the same time. Pavlov's dogs thus learned to associate sentia to the sound of a bell because the sentia response occurred simultaneously with the auditory response to the bell. This process may seem straightforward at first, but research has uncovered a major complicating factor. The association between a trace and a given hedonic structure is not always excitatory (response intensifying). Traces can sometimes exercise an inhibitory (response weakening) effect. I therefore propose a set of associative control structures*that give traces the same type of arousal function as that possessed by the stimulus conditions with which they are paired. Thus, these structures give an excitatory function to traces paired with increases in the intensity of a given hedonic response. Likewise, they give an inhibitory function to traces paired with decreases in the intensity of a given hedonic response. A green light paired with decreases in fear, for instance, will produce a trace that inhibits fear.

The Regulative Component

Once the adaptive significance of a stimulus has been hedonically coded, the system needs a way of using that information to select the most appropriate response toward the stimulus. This function is performed by the regulative structures. Thus, the regulative structures* selectively modulate the activity of other psychological structures in a way that differentially facilitates the assimilation of positive over negative stimuli and the performance of species-adaptive over species-maladaptive motor reflexes. Consider how they promote the assimilation of positive stimuli. I propose that they send excitatory feedback to positive traces. If a child has a positive trace for ice cream, then excitatory regulative feedback will maintain that trace in an active state. This process can be considered the primary mechanism in central attention . But the effect of regulation does not end there. Because the trace is highly active, it tends to transmit excitation to other traces that are associated with it. The trace for ice cream may thus send excitation to traces for actions that would enable the child to obtain an ice cream cone. These associated traces are then hedonically coded on their own merits, and excitatory regulation is shifted toward one of them if it produces more

gratification then the trace for ice cream. In other words, the person's attention may shift away from cognitions about a goal toward cognitions about how to attain the goal. Since this process often leads to the performance of a goal-related motor response, it can influence the type of external stimulus the person subsequently assimilates. The child, for instance, may ask for and receive an ice cream cone. The original memory trace for ice cream will thus have been replaced by stimulation from an actual ice cream cone.

By contrast, it is proposed that the regulative structures send in-hibitory feedback to negative traces. The child's memory trace for the taste of castor oil, for example, will lose attention because the inhi-bitory feedback it receives will decrease its activity level. As a result, its associated traces for action will also receive less excitation, which will decrease the tendency to seek possession of castor oil.

Taken at face value, these principles of hedonic regulation might suggest that people are unable to attend to memory traces that possess a negative valence. But to deal properly with the complexities of that issue, we must consider an additional principle. In general, the regulative structures excite and inhibit individual traces in a way that optimizes the net valence of all active traces taken as a whole. This indicates that a negative trace may receive excitatory feedback if it belongs to a larger associative network whose overall valence is potitive. For example, other things being equal, a trace cognizing a personal academic failure would be inhibited by regulative feedback from frustration. But if the person possesses a strong value for prudence, he will probably think about his failure in the context of other traces that cognize actions he can take to avoid a repetition of the failure. In other words, the gratification he obtains from his sense of prudence in realistically facing the failure may override his desire to ignore the failure. This point has important im-plications for the development of maturity. To be able to deal effec-tively with difficulties, we must go beyond the self-indulgent fantasy life of children and channel our gratification into stable values for various aspects of self-discipline (such as honesty, self-reliance, cooperativeness, and prudence).

The major features of trace regulation are summarized in Figure 2. Information about an external stimulus (S) is coded by the sensory structures and then sent simultaneously to the memory and hedonic structures. If the stimulus increases hedonic arousal, then its trace acquires an excitatory function from the associative control structures. If it decreases arousal, its trace becomes inhibitory. Arousal of a hedonic structure activates a related regulative structure, which sends excitatory feedback to positive traces and inhibitory feedback to negative ones. This feedback may in-directly activate a trace for action, which will express itself through the motor structures. Finally, the motor response may produce external feedback that changes the original stimulus.

Whereas the regulation of traces is a very complex and flexible process, the regulation of motor reflexes is quite rigidly predetermined. When food is placed into our mouths, we automatically salivate. In this case, the arousal of sentia produces excitatory feedback to the glands controlling salivation.

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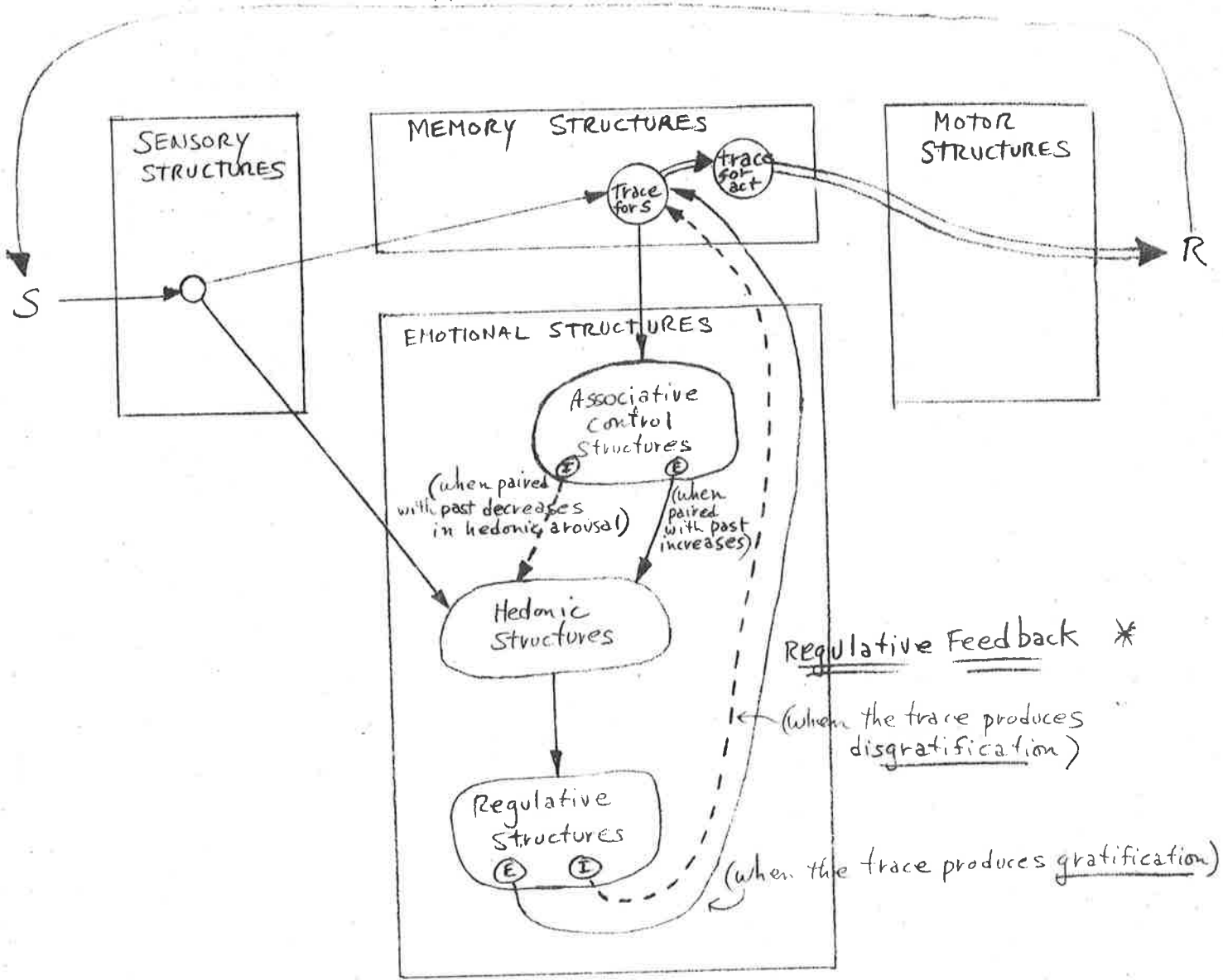
Figure 2. trace regulation

In the next two sections, we will divide cognitive traces into two major classes on the basis of their differences in function. One class serves primarily as an extension of the emotional structures, while the other can be considered an extension of the sensory structures. We will attempt to understand the developmental forces producing this differentiation as well as the impact that it has on the psychological system's capacity to process information.

IDEALIZATION

An idealization* is a specialized set of permanent traces that (a) reliably reproduces the type of hedonic arousal with which a given type of stimulus information has been previously paired and (b) then transmits regulative feedback to other traces relevant to that information. It is thus an acquired extension of the emotional structures that processes personalized information about a stimulus' adaptive significance. As shown in Figure 3, an idealization develops when a stimulus produces a cognitive trace of its   content at the same time that it arouses a hedonic response:
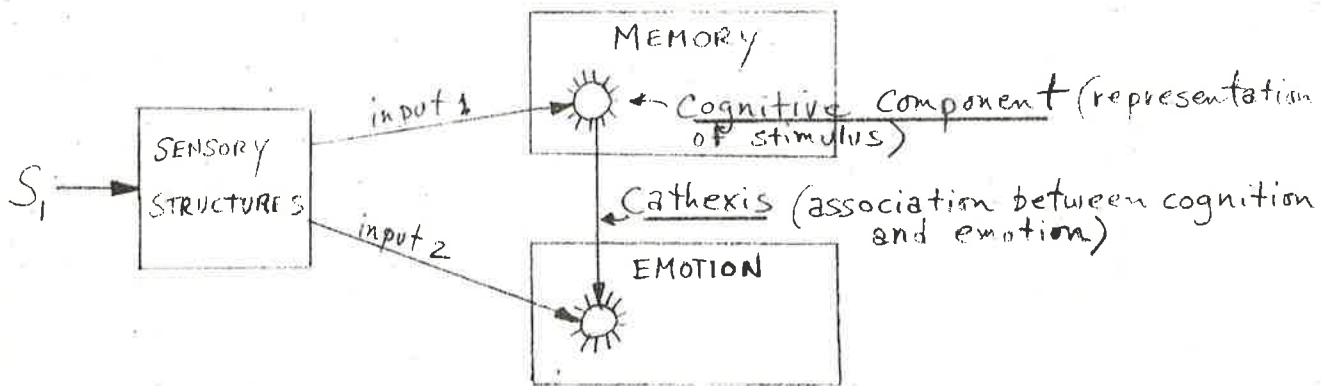

Fig 3. the development of an idealization

The simultaneity of these two responses causes an association to develop between the cognitive trace and the hedonic structure. The more numerous are the pairings of these responses, the stronger will be the association. It can be seen that an idealization contains two distinct components. The cognitive component* is a representation of the stimulus, while the cathexis* (the association between cognition and emotion) is a transmission channel.

Level of Abstractness

The basic differentiation between images and concepts plays an important role in the idealizational process. A concrete idealization is called a hyperimage*. Most people possess hyperimages for the facial features of loved ones. This means that they have a facial image that

has acquired a cathexis as a result of its repeated pairing with hedonic arousal. An abstract idealization, like love, is called a value*. Many values develop out of hyperimages. Thus, after a child has acquired a series of hyperimages for all of his family members and their principal affectional responses toward him, he begins developing the concept love as an abstraction of the qualities common to all of these hyperimages. Since such a concept never loses its associations to the original hyperimages, it automatically acquires their cathexes. In addition, of course, it can acquire its own cathexes through new learning experiences in which it is directly paired with gratification.

The Major Human Metadrives

One of the important challenges of contemporary psychology is to explain the striking motivational differences between humans and other mammals. Why do we work for years to obtain abstract goals? Why are we willing to fight wars to defend our national honor and expand our national power? Why do we seek approval and recognition? These questions are especially troublesome in light of the individual differences that also exist within our species. One person devotes most of her energies to scientific success, while another is dedicated to the raising of five children. Where do such differences come from?

The concept of metadrive helps us to answer these questions. A metadrive* is a nonhedonic condition that tends to produce certain general idealizational similarities in all members of any given species. In describing a metadrive as a nonhedonic condition, I mean that it is independent of the specialized coding performed by the eight basic types of emotions (hence, meta , or "beyond" drives). It may even be a set of external idealizational pressures. The rest of the definition implies that a metadrive influences — but does not completely predetermine — the content and valence of a species' average idealizations. This allows for individual differences resulting from unique learning experiences. Let us briefly examine each of the four major human metadrives.

Controllable consequation. A consequence* is some phenomenon that directly or indirectly influences an organism's gratification and fulfillment of tissue needs. This definition is broad enough to include everything from the availability of ice cream to the loss of a book. Note that a consequence is more than the mere existence of a substance; it is the relationship between a substance and a given organism. The loss of a book is a consequence for the owner even though the book itself continues to exist. An advantageous consequence is called a benefit*, while a disadvantageous one is a detriment*.

Consequences differ in their controllability. The sun's energy is a great benefit, yet we have practically no control over its availability. On the other hand, the growing of food is something that we can directly control through our actions.
A reward* is a benefit that is produced by a prior response of the

organism that receives it, and a punishment* is a similarly response-dependent detriment. A consequence can be considered controllable even when the causal connection between it and a preceding response is indirect. A sales manager is thus considered to have been rewarded when he receives a partial commission from sales made by a subordinate whom he has trained.

These concepts enable us to analyze the impact of the first metadrive, which is the existence of controllable consequation. If none of our consequences were controllable, we would be very apathetic and lazy. We would have no motive to work or improve ourselves. The fact that many consequences are controllable creates an opposite attitude. We positively idealize success-oriented personal traits like competence, self-reliance, and prudence because they enhance our ability to control many of our consequences. We also positively idealize external phenomena that augment our capacities for control--such as tools, communication systems, raw materials, and other people who are responsive to our desires. At a global level, then, this metadrive creates a general tendency for human idealization to be dominated by the theme of control. Other species are also subject to the same set of pressures, but its effect is greater in humans because of other factors that we will discuss below.

Explanatory Cognition. An explanatory cognition* is a psychological representation of causal relationships (e.g., the sound caused Tom to feel uneasy). A rudimentary form of explanatory cognition exists at the imaginal (concrete) level. We can thus develop an imaginalization in which an image of a parent's face is associated with an image of food. Humans are similar to other species in this capacity. But the extraordinary human capacity for abstraction enables us to also develop a much more sophisticated form of explanatory cognition that greatly surpasses that possessed by lower animals. For example, we can develop a conceptual understanding of how to design cars and television sets, how to exert central control over our economy, and how to maintain a complex political system. When combined with the existence of controllable consequation, this metadrive greatly strengthens our general tendency to positively idealize control. In other words, the fact that abstract explanatory cognition promotes control means that it is likely to be paired with reward and to acquire a positive cathexis.

Egocentricity. The third metadrive is the egocentric manner in which people respond to reality. Egocentricity* consists of the psychological limitations that impede an organism's sympathy with and desire to benefit others. There are two major egocentric limitations. One is the egocentricity of our sensory perspective. Our knowledge of external reality depends entirely on the capacities of our various receptors to make contact with and code information about the phenomena occurring around us. In many ways, the receptors fulfill this function quite effectively. We can see a variety of colors, hear a variety of sounds, discriminate a variety of tactile cues, and so forth. But the spatial range of our sensory field is fairly small, and we have no direct access to other people's cognitions. Acquaintances can describe their perspective through words or drawings, but such communication is

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impeded by certain inherent obstacles--like the fact that people are often unaware of their most important cognitions. In addition, people often intentionally conceal their cognitive and emotional responses from fear of the social consequences of too much openness. It is therefore impossible to completely break out of the informational encapsulation imposed on us by our sensory limitations. We cannot   cognize reality from anyone else's point of view.

An interesting implication of these sensory limitations is the way they cause each person to possess an egocentrically exaggerated sense of her own significance. Significance can be separated into three components (salience, uniqueness, and permanence), and each contributes to this effect. First, a person is an especially salient stimulus to herself because her body is physically close to her receptors (e.g., her hands are within a fairly short distance of her eyes), because her own psychological activity is frequently a very intense source of stimulation, and because her motor activities are often the cause of highly valenced external stimuli (like rewards and punishments). Second, a person is an especially unique stimulus to herself because her greater familiarity with her psychological responses relative to those of other people tends to accentuate her distinctive qualities. In other words, ignorance of others' cognitions and emotions tends to make her think she differs from them more than she really does. Hostility toward other people's egocentricity may also intensity her sense of uniqueness as a result of her attempts to deny her own egocentricity. Third, a person is an especially permanent stimulus to herself because her body has a more stable relationship to her receptors than does the outside world. To a lesser extent, the continuity in her memories and emotional patterns as internal stimuli also promotes a sense of permanence. In summary, our sensory limitations promote an exaggerated sense of personal signi-
ficance by causing each of us to be an exceptionally salient, unique, and permanent feature in our overall stimulus field.

The other major egocentric limitation is motivational. I have proposed that the hedonic structures can only be aroused by a person's own receptors and memory traces. I have also proposed that each person's hedonic structures are his ultimate standard for coding the adaptive significance of stimuli. Finally, I have proposed that the regulative structures function in such a way as to maximize a person's own immediate gratification. If correct, these principles indicate that each person's motivation is completely egocentric at the primitive level, since it is directed solely toward the enhancement of his own pleasure and reduction of his own distress. The only way of counteracting this egocentricity is to develop positive idealizations of other people's gratification and the conditions that produce it. But even here we cannot lose sight of the fact that such idealizations can only acquire a positive valence if their activation is somehow paired with our own gratification. In order to develop a positive idealization of the act of taking an injured person to the hospital, for instance, we must experience some initial gratification while we are performing that act. Invariably, that initial gratification comes from some egocentric cognition(e.g., for other people's approval and attention). We have

therefore not really overcome our basic egocentricity.

Romantic Abstraction. The fourth and final human metadrive is the romanticizing effect produced by abstraction. A romantic* idealization is one that possesses unrealistic content and an excessively intense valence. As shown in Figure 4, abstraction promotes romantic tendencies in two ways. First, it produces an artificial segregation of positive and negative stimulus components. In real life, a child's mother is sometimes cheerful and approving, sometimes gloomy and overcritical. A brother is sometimes cooperative and generous, at other times stubborn and stingy. But this mundane balance between positive and negative is lost during the development of abstract idealizations (values). Consider the value love, for instance. It does not cognize a tangible stimulus; one cannot go out and point to some object called love. Love is rather a general class of social responses that are performed by a variety of individuals who, at other times, also perform hate responses. Love and hate thus coexist. But a positive value for love reorganizes stimulus information in a way that groups all the loving qualities into a single cognition. At the same time, a negative value for hate reorganizes all the hating qualities into a separate, opposing cognition. Abstraction has therefore created a set of artificially dichotomous values that possess no direct correspondence to reality.

Abstraction also promotes romanticism by making it easy for cathexes from different emotions to converge on a single cognitive trace. The value love, for example, usually acquires excitatory cathexes from sentia (due to stimulation from food, kissing, and caressing), effectance (due to stimulation from social success), and animation(due to the sheer amount of stimulation received). It also acquires inhibitory cathexes from exigeance (due to the reduction in tissue needs), pain (due to the treatment of bodily injury), frustration (due to the reduction in social failure), and fear (due to the presence of safety cues). The convergence of such diverse cathexes causes the target idealization to acquire a more intense valence than it could otherwise obtain.

Together, these two abstraction-produced effects cause the value love to become something of an irrational, tormenting force in our lives; it drives us into a fervent but futile search for "true love." Other romantic values impel us to seek "national honor", "scientific glory", and "spiritual purity".

Idealizational Content
    Most people have many idealizations. Since we cannot possibly consider them all, we need to find a way of classifying them. At the broadest level, they can cognize either the self or the world. A self-idealization* (abbreviated SD) is a person's idealization of her own actual or potential traits (e.g., her own facial features). By contrast, a world-idealization* (WD) is a person's idealization of an external phenomenon (e.g., her car).
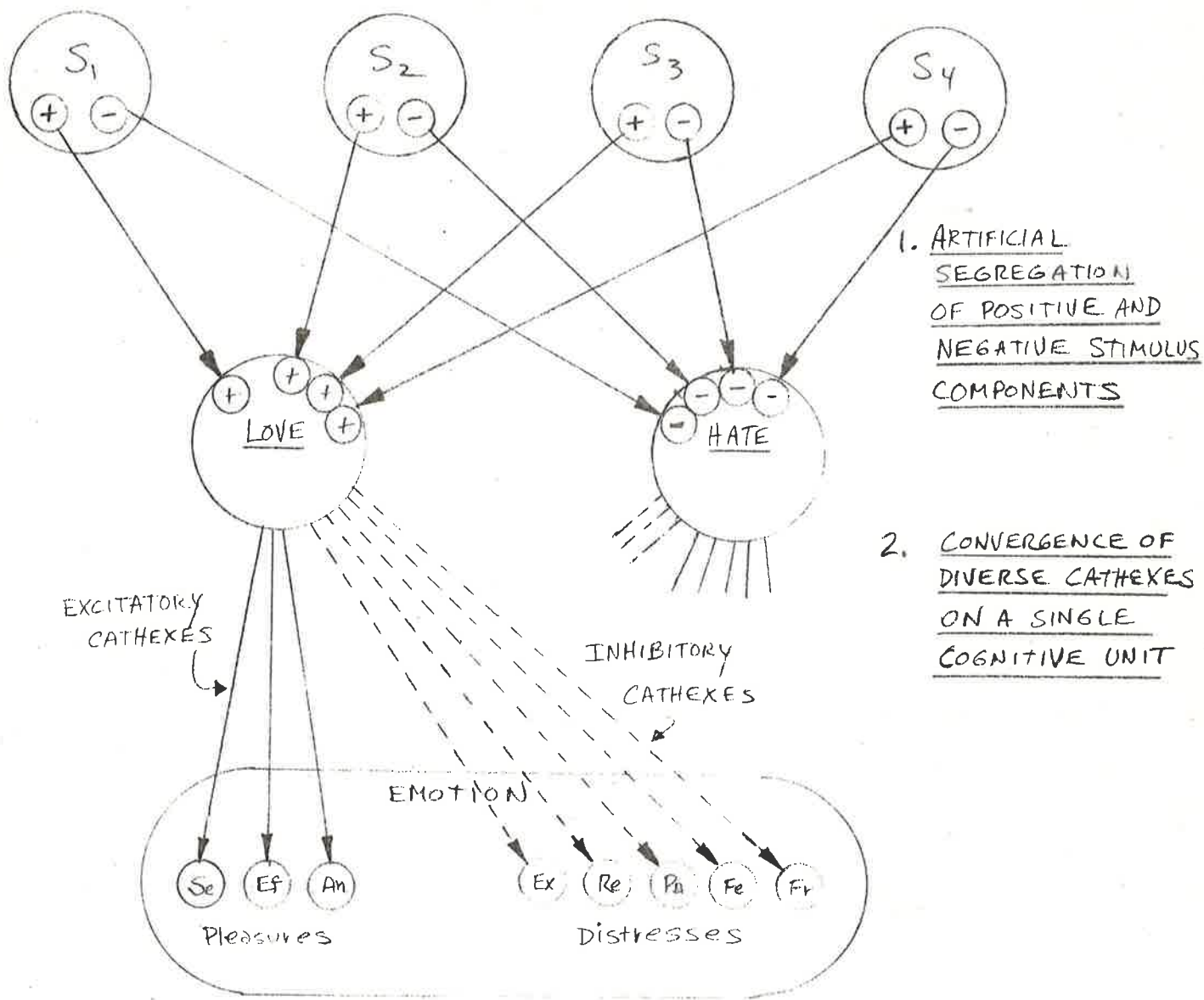
Figure 4. The romanticizing effects of abstraction

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The Dimensions of Central Persona. For the sake of further sim-
plification, we can concentrate on people as the principal source of
idealizational information. The collection of personal traits that
someone displays to himself and others is called his persona*. When
these traits exist entirely in his own body and behavior, they are considered part
of his central persona.* The idealization of central persona can be
analyzed along four primary dimensions, which are applicable to oneself
as well as other people. These dimensions are as follows:

1. Competence* is a person's capacity to interpret reality ac-
curately and to perform the acts that she desires to perform. It pos-
sesses   intellectual and a sensorimotor components, which both tend
to be positively idealized because they enable us to reduce frustration
and fear through the exercise of control.   Since these
particular emotions are exceptionally susceptible to non-primitive
sources of stimulation, we often idealize competence as an end in
itself rather than as a means to some tangible reward.

2. Vitality* is the capacity of a person's body to perform the
basic biochemical functions necessary for psychological activity, motor
activity, tissue growth, and tissue repair. In addition to increasing
our control, it strengthens our significance by promoting permanence
of the self.

3. Physical Attractiveness* is the capacity of a person's bodily
surface to produce gratification and need-fulfillment through visual,
tactile, olfactory, or gustatory contact. Part of the gratification
from physical attractiveness comes from the primitive pathways leading
to the simple emotions like sentia and animation. But its valence is also
heavily dependent on the metadrives. Research has shown, for instance,
that physically attractive people often have an advantage in eliciting the
attention of others.

4. Syntony* is the capacity of a person's emotions and idealizations
to promote gratification and need-fulfillment. This is a very broad
dimension that contains the following eleven components:

a) Attentiveness* is the tendency to attend to adaptively sig-
nificant stimuli. It is positively idealized in the self primarily
because it helps us assimilate the information we need for effective
action. But its display to others is also idealized for its capacity to
produce social rewards in return for reducing others' sense of insig-
nificance.

b) Sympatheticalness* is the tendency to experience spontaneous
evaluations that are similar to those experienced by other people. Note
that the present definition of sympathy differs sharply from its
everyday meaning of "pity" and "compassion." Technically, a sympathetic
person is one who merely shares our interpretations and idealizations.
We positively idealize sympatheticalness in others because we interpret it as con-
firming our interpretations and legitimizing our idealizations. It is
idealized in the self as a means of attaining social rewards.

c) Approvingness* is the tendency to respond with positive
evaluations to most specific stimuli. We positively idealize this trait
in others because it can strengten almost all other facets of our sense
of worth, as when a crowd's applause causes an athlete to feel competent.

d) Communicativeness* is the tendency to intentionally display to
others all of the information that one possesses. Its possession in
others is very gratifying because it helps to reduce some of the ego-
centric barriers that cut us off from them.

e) Sincerity* is the tendency to intentionally control one's ex-
ternal display of information in a way that produces accurate inter-
pretations in others. Most people rate it as the single most positive
trait that a person (either the self or another) can possess. This
is probably due largely to the confusion and intense frustration pro-
duced by its opposite, insincerity.

f) Playfulness* is the tendency, in relatively safe situations,
to relax one's striving for control over significant consequation and
perform pleasurable but adaptively insignificant activities. We
develop positive self-idealizations of it because it reduces fear and
enables us to enjoy the simpler aspects of life.

g) Prudence* is the tendency to readily acknowledge dangers and
limitations, to accept the constraints they impose, and to attempt to
produce benefits through relatively safe transactions. Its valence
comes from its capacity to increase our control, especially insofar as
that control reduces fear.

h) Self-reliance* is the tendency to pursue significant rewards
by oneself despite potentially high punishment in order to increase
one's security without increasing one's dependence on others. Although
similar to prudence in its focus on control, this trait acquires its
positive valence in self-idealization primarily from effectance-arousal
and frustration-reduction rather than from fear-reduction.

i) Amenableness* is the tendency to accommodate oneself to adaptive,
non-coercive external pressure. We positively idealize this trait in
others because it increases our capacity to influence them. It differs
from prudence primarily in the non-coercive nature of the pressure
producing it.

j) Altruisticalness* is the tendency to act with the conscious
intention of benefiting others rather than oneself—despite any ex-
pectation that such action may be punished. It is a combination of
kindness and unselfishness. Given the basic egocentricity of human
motivation, the positive valence of this trait in self-idealization
requires a special explanation. I propose four ways that such valence can
be acquired.

First, it can result from our capacity for sympathetic distress. In early childhood, such distress is largely produced by primitive sensory channels that lead directly to the emotions. But people gradually develop acquired channels through their idealizational and interpretive processes. In either case, the result is that certain types of external distress cues--such as crying, moaning, and verbalized apprehension--automatically cause us to experience a similar distress. We then become motivated to help the other party as a way of eliminating the distress cues. When these efforts succeed, our cognitions of the helping response begin to acquire a strong positive cathexis.

Second, admiration for a heroic figure who displays an altruistic attitude can cause us to acquire a corresponding self-idealization as a way of strengthening our identification with her. Thus, when a child observes an admired parent helping people, he may begin to idealize altruism in himself as a way of becoming like the parent and obtaining the parent's social status.

Third, a person may derogate a villain and then acquire a positive self-idealization of altruisticalness as a way of distinguishing herself from him. If a girl is injured or humiliated by a male playmate, for instance, she will initially feel anger and contempt toward him. Since there is a spontaneous tendency to identify with any other human being, she may then experience intense pressure to protect her sense of worth from her own derogation. This she can do most effectively by becoming more altruistic herself, which leads to the development of positive self-idealizations of altruisticalness.

Fourth, positive self-idealizations of altruisticalness can develop from the desire to gain affection without consciously acknowledging the negative implications of that striving. Consider a boy who wishes to have his mother's "true love." One day the mother punishes him for acting selfishly toward his sister. The punishment is intensely threatening because it implies that he may lose his mother's affection. He therefore tries to develop a strong desire to suppress his selfishness based on his self-idealization of prudence. But this desire creates new problems, since it requires that he acknowledge that his mother's affection is conditional (and hence, "impure"). In desperation, he turns to the only acceptable solution left: he begins internalizing his mother's idealization of altruisticalness. In essence, he concludes that "mother is right." This allows him to please her without facing the limitations of her affection.

Each of these four processes produces a self-idealization of altruisticalness that gratifies the person at an unconscious level without disrupting his conscious belief that he is motivated solely by concern for someone else's welfare. Note that villainousness* is the opposite of altruisticalness. It is a combination of maliciousness and selfishness.

k) Equanimity* is the tendency to maintain a pleasurable, adaptively moderate level of hedonic arousal in most situations. Its self-idealization results partly from the gratification that is inherent in "pleasurable arousal" and partly from the greater self-control that can

be attained under conditions of moderate arousal.

In concluding this discussion of the idealization of central persona, let me mention certain basic points that have been ignored so far. One is that most people acquire both self- and world-idealizations on all of the above dimensions. They thus develop values for other people's competence as well as their own. This is not to say that the two sets of idealizations have equal valences (e.g., we usually idealize our own competence more than anyone else's). But we do have positive idealizations for other people's capacities when they are favorably allied with our own. Another basic point is that world-idealization is usually subordinate to self-idealization. For example, we usually idealize other people's amenableness because it strengthens our sense of competence (e.g., I am competent because I was able to persuade Jane to change her major). But there are some important reversals of this tendency. We positively idealize our own sincerity because we expect it to improve our relationships with others. Even here, however, one can argue that improved social relationships are positively idealized largely in terms of their implications for self-idealization! The final point is that most of us develop negative idealizations for the opposite of each of the above traits (e.g., our own incompetence usually has a negative valence).

The Dimensions of Peripheral Persona. In a sense, the boundaries of certain personal traits extend beyond the individual's body and behavior. A person's salience, for example, depends partly on the attentional capacities of his audience. We will therefore refer to those traits that are partly defined in terms of external phenomena as someone's peripheral persona*. The principal purpose of this division between central and peripheral persona is to deal more explicitly with the two major idealizational forces produced by the metadrives. These forces--the strivings for significance and control--have manifested themselves throughout the central persona, but we have not been able to fully capture either of them in any single trait. Instead, they crosscut all four of the primary dimensions.

a) Significance. Consistent with our earlier discussion, our metadrives express themselves in the development of positive self-idealizations for each of the three components of significance. Thus, we idealize our salience (our capacity to elicit attention from others) because it confirms our egocentric impression that we are the center of reality. Note that as adults we normally seek memory salience more than sensory salience. That is, we want people to be mentally preoccupied with us rather than to crowd around watching everything we do. We idealize our uniqueness (the unusualness of our global configuration of traits) because it confirms our egocentric impression that we are special. Most of us have considerable intrapersonal conflict on this dimension. While we want to be unique, we also fear the rejection often given to the deviate. Finally, we idealize our permanence (the capacity of our existence to continue indefinitely) because it confirms our egocentric impression that we are immortal. This can best be understood in negative terms. The prospect of death threatens our sense of intellectual competence because it implies that one of our most fundamental assumptions--that we have always existed and that we will always continue to exist--is wrong. The resulting doubts that we experience tend to spread to other basic beliefs. We wonder if all appearances are false. The prospect of death is also a threat to our

sense of syntony. Why be prudent, self-reliant, and altruistic if all gratification is merely a transient biological process? At a more global level, the prospect of death creates a profound threat to our sense of control. The one event that we most fervently wish to prevent is the one event that, ultimately, we cannot control. This produces intense frustration and, when not relieved, pervasive depression. Our solution is to seek out permanence symbols (e.g., children, achievements, historical recognition) But we cannot fully escape our predicament merely by shifting our yearning for immortality to others, since we know that they will also die sometime.

b) <u>Control</u>. A person's control is his capacity to intentionally determine the nature of phenomena (i.e., their location, timing, and physical qualities). Although many of the capacities that increase control lie outside the boundaries of a given target person, there are times when it is convenient to include them in his persona. One of the major dimensions of interest here is the person's positive material influence (capacity to provide us with material benefits). In the self, for example, we positively idealize our possession of the raw materials and mechanical instruments needed to attain our goals. The other major dimension is positive social influence (the capacity to produce favorable attitudes and behavior in others). Principally, we wish to induce others to comply with our requests and to faithfully represent our interests to more distant groups. Keep in mind that a person's material and social influence affect the way we evaluate his central persona. We assume that a man who commands armies must be very competent and self-reliant.

An illustration of the relative valences of the various dimensions of persona is presented in Figure 5. It gives the mean ratings of parent-idealization for a group of twenty male and female college students. Syntony was rated as the most important of the four primary dimensions of central persona. Among its subdimensions, sincerity, altruisticalness, and equanimity were highest; sympatheticalness, communicativeness, and playfulness were lowest. It is interesting to note that students want their parents to communicate only a moderate amount of information but to be highly sincere in what they do communicate . Turning to the peripheral persona, note that students do not want their parents to be particularly salient to the surrounding community. As one young lady said, "I want my parents to pay attention to me--not to a lot of other people."

INTERPRETATION

In continuing with our analysis of the different types of cognitive traces, we turn now to those that serve as an extension of the sensory structures. Research suggests that the psychological system is capable of discriminating between truth and falsity. Suppose a mental patient says THERE'S GOING TO BE A SEVERE EARTHQUAKE IN OUR TOWN TOMORROW.

IDEALIZATION SCALE

+10　+8　+6　+4　+2　0　-2　-4　-6　-8　-10

(positive items – negative items)*

* Since the neg. items have a neg. sign, the two are actually add together (e.g. (+3)-(-2)= 5)

na

Positive social infl.
Positive material infl./control } PERIPHERAL PERSONA

Permanence
Uniqueness
Salience
Equanimity
Altruisticalness
Amenableness
Self-reliance
Prudence
Playfulness
Sincerity
communicativeness
Approvingness
sympatheticalness
Attentiveness
Syntony (global) } Dimensions of Syntony } Signif

Physical Attractiveness
Vitality
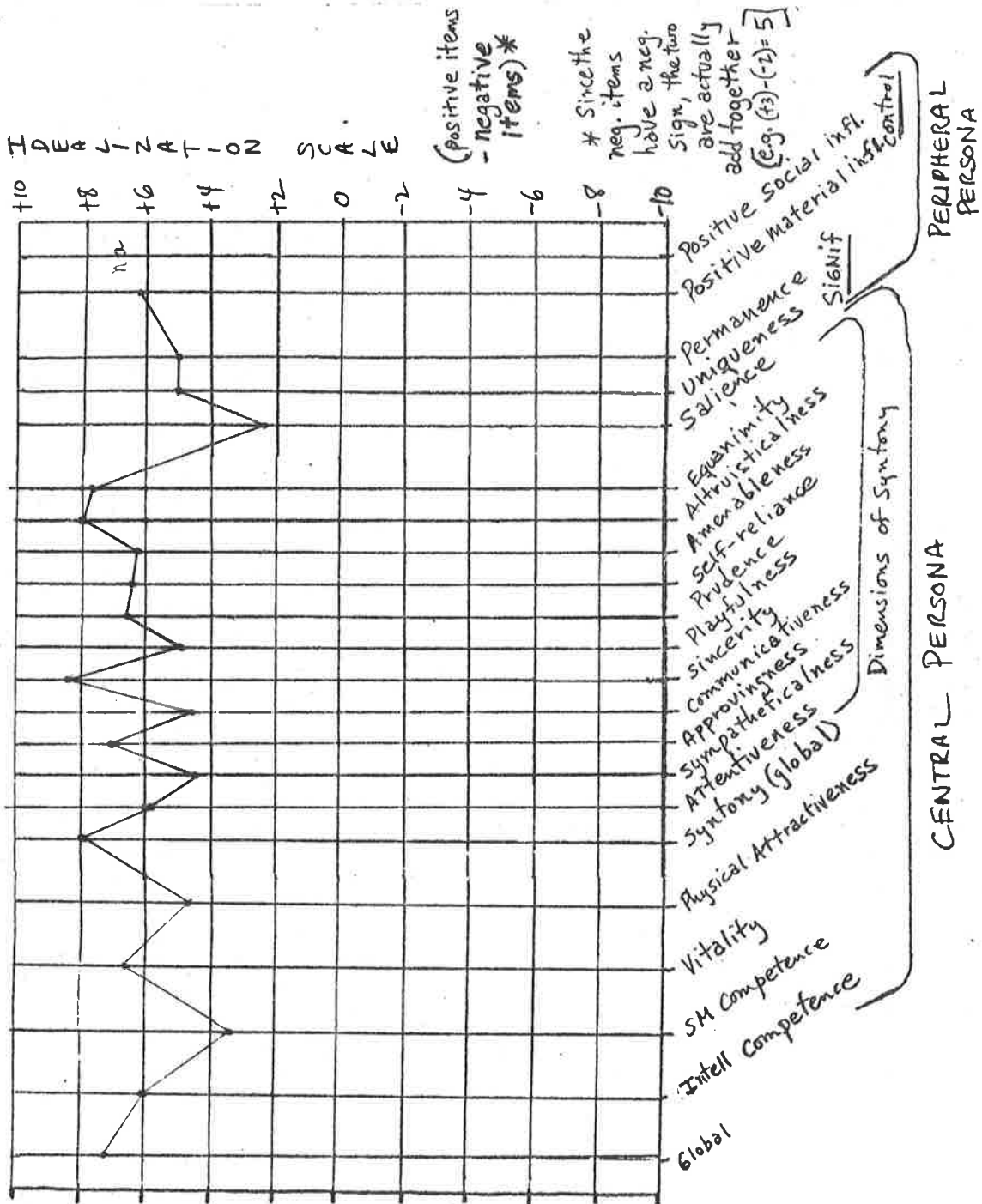SM Competence
Intell Competence
Global

} CENTRAL PERSONA

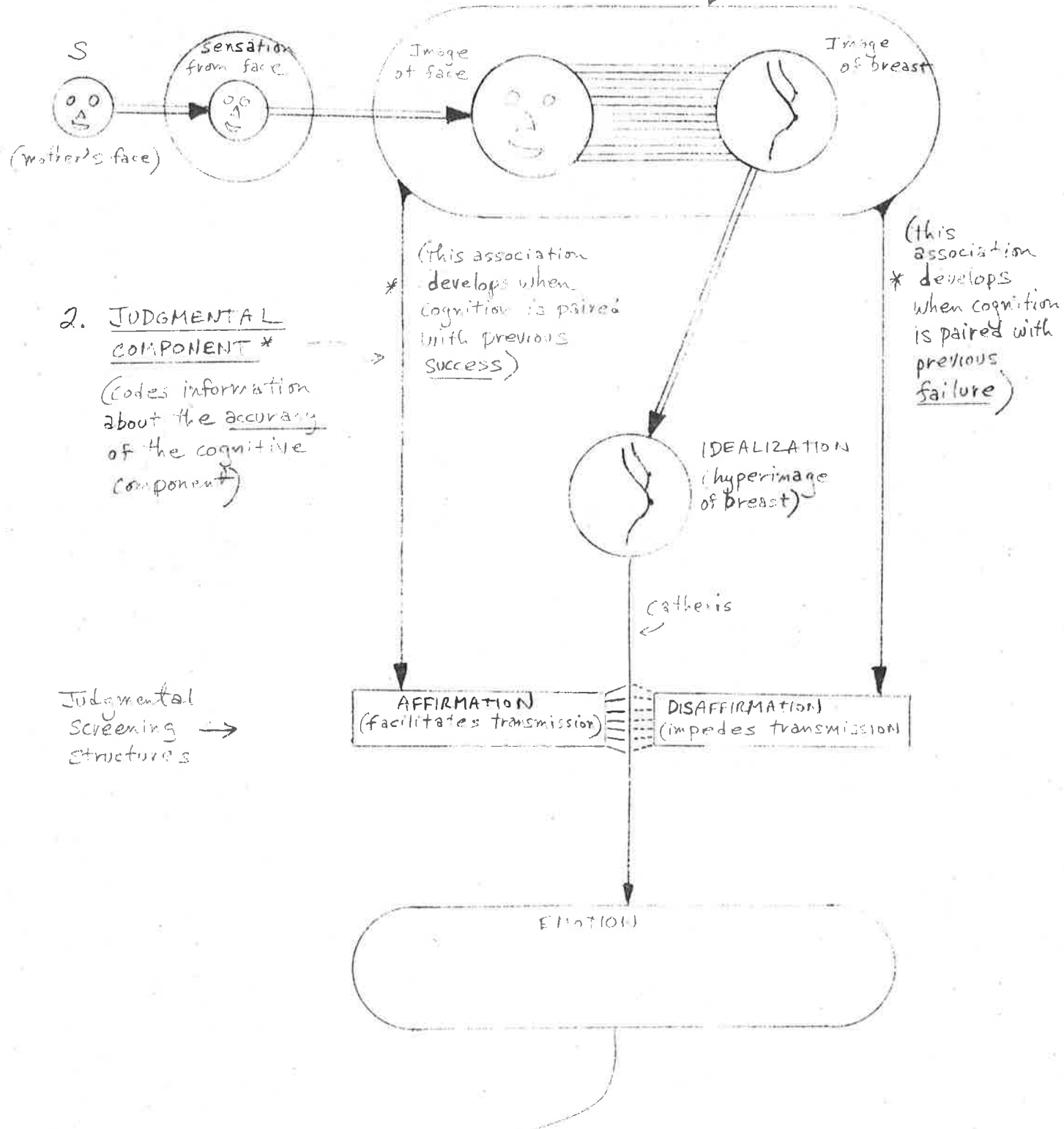Fig. 5. Mean ratings of parent idealization

In light of her emotional disturbance, we will probably laugh at her warning among ourselves. But the same statement from the U.S. Weather Bureau will cause us to rush around frantically making plans to protect ourselves.

Despite the obvious importance of this form of discrimination, psychology has had considerable difficulty formulating a reasonable explanation of it. How can identical words have such dramatically different motivational effects? Some theorists have argued that the difference lies mainly in the types of secondary beliefs activated by the words and their source together. While that explanation is valid up to a point, it cannot adequately deal with the fact that the two sets of words activate the same primary belief and that this belief activates the same values and emotional responses in both situations. It would seem that the difference lies not so much in the types of hedonic responses as in the intensity of those responses. This in turn suggests the hypothesis that the transmission of impulses from the belief to the hedonic structures may be screened according to the belief's accuracy. Note that a screening structure modulates the intensity of neural transmission.

Before this hypothesis can be made workable, however, we must consider an additional technical problem. What primitive yet flexible standard can the psychological system use to code the accuracy of acquired information? I believe that the answer lies in the effect that accuracy has on our capacity to cope. In general, accurate cognitions are more likely to produce successful, gratifying acts than are inaccurate ones. I thus propose that success is an accuracy cue and that failure is an inaccuracy cue. Since success and failure have already been primitively coded in terms of favorable hedonic patterns (see the earlier discussion of effectance and frustration), we already have a mechanism capable of providing accuracy cues.

With these basic considerations in mind, I will now define an interpretation* as a set of traces and related structures that code and retain information in a way that selectively transmits it toward the emotional structures according to its relative accuracy. In other words, an accurate interpretation produces a strong hedonic effect, while an inaccurate one produces a weak effect. This conception of the interpretive process is diagrammed in Figure 6. When an infant sees his mother's face, his receptors produce a sensation that reactivates his image of the face. Since exposure to the face has frequently been followed by exposure to her breasts and food, his associated image of the breasts is also reactivated. These two images together constitute the interpretation's cognitive component. In the next phase, an idealization of the breasts is activated by the cognitive component, and impulses are transmitted to the emotional structures through the cathexis. But this transmission is not rigid and automatic. It is modulated by the judgmental screening structures. If previous activation

of the interpretation's cognitive component has regularly been followed by successful action (e.g., searching for the breasts), then associations will have developed between the cognitive component and the affir-

1. **COGNITIVE COMPONENT** (codes information about the **nature** of stimuli and their interrelationships)

S (mother's face)

Sensation from face

Image of face

Image of breast

(This association develops when cognition is paired with previous **success**)

(this association develops when cognition is paired with previous **failure**)

2. **JUDGMENTAL COMPONENT** *
(codes information about the **accuracy** of the cognitive component)

IDEALIZATION (hyperimage of breast)

Cathexis

Judgmental Screening Structures →

AFFIRMATION (facilitates transmission)

DISAFFIRMATION (impedes transmission)

EMOTION

action tendency is strengthened by affirmation and weakened by disaffirmation

Figure 6. The cognitive and judgmental components of an interpretation.

mation structure. Since the affirmation structure* facilitates interpretive transmission, these associations will strengthen the impulses coming from the idealization. On the other hand, if activation of the cognitive component has been followed by failure, then an association to the disaffirmation structure will develop. Since the disaffirmation structure* impedes interpretive transmission, the latter associations will weaken the impulses coming from the idealization. In summary,

an interpretation's cognitive component codes information about the nature of stimuli and their interrelationships. Its judgmental component then codes information about the cognitive component's accuracy in a way that influences the intensity of the resulting hedonic response.

Level of Abstractness

Interpretations manifest   the same differences in level of abstractness that we observed in idealizations. At the concrete level, a perception* is an interpretation composed of a sensation and a set of corresponding images. Consider the infant's expectation that exposure to his mother's face will be followed by exposure to her breasts and food. This is perceptual because it is entirely concrete. At the abstract level, a belief* is an interpretation composed of concepts. Thus, the belief Women provide love corresponds in content to the infant's perception, but it is entirely abstract. Perceptions and beliefs are closely coordinated in the processing of language. The printed words WOMEN PROVIDE LOVE, for example, must first be processed at the perceptual level--with each letter cognitively represented by a corresponding image. These linguistic images are then coded into corresponding concepts (WOMEN → women). The process is reversed during expression, so that concepts are coded into linguistic images, which in turn are verbalized by the motor structures.

There is an important difference in the way interpretations at the two levels are judged. Most perceptions acquire primary judgment (direct associations between their cognitive components and the judgmental structures). But many beliefs depend on secondary judgment (associations to certain fundamental beliefs that possess primary judgment). As an example of the latter case, suppose you have the fundamental belief Only cats can meow. You then hear an animal meowing outside your house and formulate the conceptualization That animal is a cat. Because the latter   is consistent with an existing belief that possesses primary affirmation, it automatically obtains secondary affirmation. Consider also the earlier example in which the prediction of an imminent earthquake had little emotional impact when expressed by the mental patient. Here, beliefs about the source's low credibility produced secondary disaffirmation.

Special Types of Interpretation

Interpretations can be categorized into four major classes. First, a characterization* is a non-explanatory interpretation of the spatial and temporal (time-based) arrangement of qualities within some object. By non-explanatory, I mean that it does not contain any information about

causal relationships. The characterization The car accident occurred on the wet road, for example, merely describes a setting and an event; it contains no information about the effect that the setting may have had on the event. Characterizations differ in their favorability. An aggrandizement* is a characterization that cognizes a stimulus as superior, and a derogation* is one that cognizes it as inferior. We often aggrandize ourselves (I am kind) and derogate our enemies (She is malicious).

The second major type of interpretation is called an attribution*, which is a belief about the cause of an existing phenomenon. The above characterization can be transformed into an attribution through the substitution of an explanatory unit, as in The accident was caused by the wet road. A large amount of research has been done on attributions in the past decade. Essentially, it shows that their development is influenced by various causality cues. We are more likely to attribute event B to event A when A and B have occurred close to one another in space and time, when A has preceded B, when no other event has preceded B, and when these relationships between A and B have occurred regularly in the past.

After we have formulated a series of similar attributions, we often condense them into an explanatory principle* (a belief about the general causal relationship between two classes of phenomena). We might begin, for example, with the attributions Tom's accident last year was caused by a wet road, Jane's accident last week was caused by a wet road, and Ralph's accident yesterday was caused by a wet road. The similarity in their central units (accident, was caused by, wet road) would then induce us to generalize across these three attributions and conclude that Wet roads cause accidents. Note that this principle has obtained its generality from the transformation of its units into the plural, present tense. Explanatory principles exercise a profound influence on our lives, as evidenced by the impact of such principles as A good education enables one to find a good job and Regular exercise helps prevent heart disease.

The final type of interpretation shifts the focus to the future. An expectation* is an interpretation about the type of future event that will probably occur in a particular situation. At the abstract level, it often arises from relevant principles. We can thus have the expectation This wet road may cause an accident tonight. Since they can cognize the relationship between a potential act and its probable consequence (e.g., Driving carefully will enable me to avoid an accident on this wet road), expectations play a key role in motivation. Keep in mind that they can also be concrete, which suggests that they can develop through simpler processes than have been described here (see the earlier discussion of perceptual expectation).

Interpretive Content

Interpretive content can be categorized along the same lines as idealizational content. There are thus self-interpretations* (interpretations of the self) and world-interpretations* (interpretations of

all phenomena existing   outside the self). These are abbreviated SI
and WI, respectively. In many ways, the self-interpretive process is
the center of all attitudinal activity. Cars, homes, jobs, children--
they are all evaluated in terms of their implications for our self-
interpretation: I am clever because I own a snazzy new car; I am
moral because I sacrifice for my children. Often the boundary between
self and world is obscured by identification*, which is a world-
interpretation that influences one's self-evaluation through its
characterization of an external stimulus as similar to oneself.
Identification can be quite gratifying, as when a father experiences
self-aggrandizement through identification with his son's athletic
ability. In the opposite process, disidentification*, self-evaluation
is influenced through the characterization of an external stimulus
as dissimilar to oneself. Disidentification is often used defensively,
as when a girl disidentifies with a sister who is ugly or crippled. It is
interesting to note that one's similarity to a negative stimulus frequently
intensifies one's tendency toward disidentification with it. The fact that
the crippled sister belongs to the girl's own family thus increases the
social threat to herself, which intensifies her desire to disidentify with
the sister.

COMPLEX ATTITUDES

    We have now completed our analysis of the three elementary attitudinal
processes--emotion, idealization, and interpretation. Our next task is
to examine how these processes function together during the integrated
assimilation and expression of information.

Evaluation

    Evaluation* is the assimilative integration of all interpretations of
a given stimulus, all idealizations relevant to those interpretations, and
all hedonic responses aroused by those idealizations. If you believe that
Richard Nixon is insincere, for example, your evaluation of this facet of
his personality will consist of your characterization of him as insincere,
your negative value for insincerity in others, and the fear and frustration
aroused by that negative value. This would be a simple evaluation* because
it would only involve a single stimulus quality (i.e., insincerity). Since
most stimuli have many different qualities, our response to any given
stimulus usually contains numerous simple evaluations. Accordingly, the
sum of all the simple evaluations of a given stimulus is called a composite
evaluation*. Your composite evaluation of Nixon might contain simple
evaluations of his insincerity, conservatism,   ambitiousness,
cleverness, and persistence. Obviously, the net valence of this composite
evaluation could be positive even though it contained a few negative components.
That is, your positive simple evaluations of his ambitiousness, cleverness,
and persistence could outweigh your negative evaluation of his insincerity.

    Level of Abstractness. A major theme throughout our study of attitudes
has been the differentiation of cognitions into two levels of abstractness.

This differentiation plays a very important role in evaluation. At the concrete level, our imaginal processes provide a powerful but relatively simplistic channel to the hedonic structures. Their power comes from their capacity to recapture the intensity and spontaneity of childhood emotion. Their simplicity comes from their high responsiveness to raw stimulus dimensions (such as color, shape, and size) and from their frequent lack of extensive internal differentiation. At the abstract level, our imaginal processes provide a more analytical and flexible channel to the hedonic structures. They enable us to ponder the pros and cons of an issue for hours, to devise clever and deceptive plans of action, and to erect an elaborate network of values that refines and condenses decades of information about success and failure, safety and danger. Their hedonic impact can be even more powerful than that produced by concrete cognitions, but it is usually more subdued and carefully tuned.

A major point to remember about these two channels is their parallelism. For every concrete cognition, we usually have an abstract one that corresponds to it in content. Consider your response to the female breast. As we saw earlier, the concrete channel contains a highly affirmed perceptual expectation that the breast will provide food and other forms of sensual comfort, which is associated to highly positive hyperimages. When you see a breast as an adult, then, your initial response consists primarily of a strong dependent yearning for the tender care you received as an infant. But this is soon followed by the fear aroused through the abstract channel—where you have beliefs about society's punishment of overdependency and physical immodesty. The two channels thus produce a momentary state of confused ambivalence. Usually this is soon resolved in favor of the abstract channel, which forces your attention away from the concrete channel. In summary, the parallel content but dissimilar hedonic functions of the concrete and abstract channels cause them to compete for control over our emotions. Since they can both contribute to our happiness, the healthiest adult is one who can maintain a balance between them. He relies heavily on the abstract channel for rational direction, but can yield to the simpler urges of the concrete channel when there is no realistic danger from doing so.

Levels of Consciousness. A cognition is conscious* when it possesses mutually corresponding imaginal and conceptual components that are simultaneously active in short-term memory. Active availability in short-term memory is seen as essential to consciousness because of the integrative and intensifying functions that are performed there. Thus, when a man says he is conscious of having just experienced a childhood visual memory, he probably means that the intensity of the memory's processing in short-term memory enabled him to reassimilate it at both levels. He would achieve concrete reassimilation by passing it through the sensory register, where sensory input is first coded in the brain. Abstract reassimilation would be achieved by translating the memory into introspective beliefs about its content (e.g., I just recalled the party I had on my ninth birthday). The dual criteria of imaginal and conceptual coding is proposed

because the former provides extra vividness and the latter extra meaningfulness. Vividness and meaningfulness seem to be the essential qualities of consciousness. There is a strong temptation to assume that consciousness cannot exist without language. To be sure, language is an exceptionally powerful facilitator of consciousness due to the way that its strong interunit associations automatically bring imaginal and conceptual processes together. But we must remember that non-linguistic images can be just as vivid as linguistic ones and that meaningful concepts can exist without language. Consciousness therefore does not depend on language.

Variations in consciousness can have a profound influence on the evaluative process. Suppose you have an older brother who frequently smirked at you when you were a child, which you resented intensely. The traces for this resentment are no longer conscious after so many years of dormancy, but they still retain the capacity to arouse frustration. One day you meet a man, named Tom, whose facial features remind you of your brother. Through generalization to your brother, you immediately feel a surge of resentment that causes you to dislike Tom. Later, in trying to understand your strange reaction, you are unable to recognize the causal relationships involved because of the unconsciousness of your resentment for your brother. You therefore continue to dislike Tom even though he has never insulted you in any way. This example illustrates both the power and irrationality of unconscious processes.

Specialized Evaluations. There are several specialized types of evaluation that deserve careful definition. These are as follows:

I. General Content

 a) Ambivalence* is a composite evaluation that contains equally intense positive and negative components.

 b) Hope* is a positive evaluation based on an uncertain expectation of possible future benefit.

 c) Anxiety* is a negative evaluation based on an uncertain expectation of possible future detriment.

 d) Disappointment* is a negative evaluation based on a disconfirmed expectation of benefit.

II. Content Relevant to the Self: A sense of worth* is a positive composite evaluation of oneself. It is subdivided according to the basic dimensions of persona (e.g., a sense of competence, a sense of vitality, and so forth).

III. Content Relevant to the world: A sense of support* is a positive composite evaluation of one's environment. Some especially important forms of world-evaluation are:

 a) Admiration* is a positive evaluation of the possibility of possessing another person's traits based on one's interpretation of those traits as superior to one's own.

 b) Trust* is a positive evaluation of another person based on one's interpretation of him as altruistic, sincere, and competent.

c) Gratitude* is a positive evaluation of another person that is based on one's attribution of a specific intentional benefit to him.

d) Affection* is an intensely positive composite evaluation of another person that is based on one's interpretation of him as an exceptionally significant source of personalized, altruistically motivated support and on one's resulting identification with him.

e) Anger* is a negative evaluation of another person that is based on one's attribution of a specific intentional detriment to him.

f) Hostility* is an intensely negative composite evaluation of another person based on one's interpretation of him as an exceptionally significant source of personalized, villainously motivated adversity and on one's resulting disidentification with him.

g) Resentment* is a negative evaluation of an act by another person that one believes was motivated by a derogatory interpretation of oneself.

h) Empathy* is one's intentional imaginative reproduction of another person's attitudes.

The Evaluation of Persona. People are evaluated along the primary idealizational dimensions described earlier. To facilitate the analytical measurement of such evaluation, a special instrument has been constructed that follows these dimensions. Called the Persona Profile Inventory (PPI), it is composed of 80 pairs of bipolar descriptors (e.g., friendly-unfriendly) that are rated in two ways. First, the subject rates the general idealizational significance of each pair. Second, she rates her characterization of a given target's persona by selecting the point at which the target falls between the two polar extremes of each pair. Third, each idealizational rating is multiplied by its corresponding interpretive rating to obtain an index of simple evaluation. Fourth, the scores for all the simple evaluations that belong to the same primary dimension are averaged to obtain an index of composite dimensional evaluation.

To gain a clearer understanding of the PPI, let us examine the bipolar descriptors that have been selected for each primary dimension:

I. Global (beneficial-harmful; likable-dislikable)

II. Competence

A. Intellectual (intelligent-dumb; possesses a good insight into human nature--lacks insight into human nature; imaginative-unimaginative; logical-illogical; knowledgeable-ignorant; expresses ideas well--expresses ideas poorly; possesses a good memory--possesses a poor memory)

B. Sensorimotor (graceful-clumsy; physically skillful-
physically unskillful)

III. Vitality (healthy-ill; vigorous- feeble)

IV. Physical Attractiveness (clean-dirty; physically attractive-
physically unattractive)

V. Syntony (considerate-inconsiderate; mature-immature; happy-
unhappy; friendly-unfriendly)

A. Attentiveness (seeks the company of others- avoids the company
of others; interested in learning about the world- unin-
terested in learning about the world; listens closely to
others when they are speaking - tends to ignore others when
they are speaking; attentive-absent-minded)

B. Sympatheticalness (in agreement with my attitudes on most
important issues--in disagreement with my attitudes on most
important issues; similar to me in interests and feelings -
dissimilar to me in interests and feelings; similar to me
in beliefs - dissimilar to me in beliefs; similar to me
in personality - dissimilar to me in personality).

C. Approvingness (courteous - insulting; readily praises other
people's strengths and successes - expresses too much
criticism of other people's weaknesses and failures; modest -
conceited; feels a warm liking for other people - feels
an intense dislike for other people; appreciative - unappre-
ciative)

D. Communicativeness (self-disclosing - self-concealing;
communicative - secretive; talkative - silent)

E. Sincerity (sincere - insincere; truthful - untruthful;
genuine - phony)

F. Playfulness (humorous - humorless; adventurous - unadventurous;
playful - overly serious; romantic - unromantic)

G. Prudence (practical - impractical; careful - careless;
thrifty - wasteful; cautious - reckless; realistic -
unrealistic)

H. Self-Reliance (assertive - overly submissive; decisive -
indecisive; self-reliant - overly dependent; industrious -
lazy; self-confident - self-doubting)

I. Amenableness (tolerant - intolerant; open-minded - close-
minded; cooperative- uncooperative; flexible - inflexible;
obedient - defiant)

J. Altruisticalness (kind – cruel; compassionate – hardhearted; unselfish – selfish; generous – greedy; fair – unfair)

K. Equanimity (tends to look at the bright side of life – tends to look at the dark side of life; self-accepting – self-hating; calm in the face of danger – easily frightened; stable – erratic; contented – frustrated)

VI. Significance

A. Salience (acquainted with many people – acquainted with few people; frequently in the news – never in the news; the object of many people's attention – the object of few people's attention)

B. Uniqueness (unique – commonplace; special – ordinary)

C. Permanence (leaves an enduring legacy to future generations – leaves no legacy to future generations; safe from death in the near future – vulnerable to death in the near future; permanent – temporary)

VII. Control

A. Positive Material Influence (improves my standard of living – hurts my standard of living; improves my financial security – hurts my financial security)

B. Positive Social Influence (exercises a favorable influence over other people's behavior – exercises an undesirable influence over other people; helps me increase my influence over other people – interferes with my influence over other people.

Before we begin our next topic, which is motivation, we need a couple of preliminary definitions. A program* is a trace or structure that retains information about how to perform a response. A motor program for driving a car, for example, tells a person how to turn on the ignition, how to steer the wheels, and how to control the throttle and brake. We also have processing programs that enable us to control our own psychological processes ─ as when we intentionally search our memory for a specific name, intentionally reduce anxiety before giving a public speech, or intentionally rehearse some factual information that we have just assimilated. When a program undergoes execution*, its information is expressed in a way that produces the type of response that it codes. Execution of a program for walking thus produces the action of walking itself.

Motivation

Whereas evaluation occurs during the assimilative phase of attitudinal functioning, motivation takes place during the expressive phase. This essentially means that the two processes perform different emotional functions. Evaluation uses hedonic arousal to code adaptive significance, while motivation uses regulation to control programs. Motivation* can thus

be defined as the integrated attitudinal process that uses regulation to
control execution in accordance with information about the adaptive sig-
nificance of all available programs. In other words, it uses idealizations
and interpretations as a channel for the emotional control of programs. Since
its regulative component tends to maximize immediate net gratification,
motivation's ultimate effect is to selectively excite positive programs
and inhibit negative ones.

Simple Motives. The overall motivational process can be broken down
into specific motives. At the most elementary level, a simple motive* is
the combination of an expectation of obtaining some consequence from the
attempted execution of a given program, all idealizations of that consequence,
and the resulting regulative impulses that are transmitted to the program.
These three components are diagrammed in Figure 7, which depicts one's hypo-
thetical motive for walking over to talk with a friend who has just entered
the library. The expectational component consists of a characterization
of the program, (walking over to my friend), the causal concept will
enable, and the characterization of the consequence (me to have a con-
versation with her). The idealizational component consists of positive
values for receiving approval and interesting information from friends.
After the consequence has been evaluated, regulative feedback is first
transmitted through the idealizations to the consequence characterization.
But sustained evaluation of the consequence is frustrating, so that
regulation is soon shifted over to the characterization of the program.
If the regulation is sufficiently excitatory, it then causes the program
to be executed. Note that the intensities of regu-
lation and execution both depend on the type and strength of the
expectation's judgment. When the expectation is highly affirmed, its
excitatory screening produces a very strong motive; when highly disaffirmed,
its inhibitory screening produces a very weak one.

The above analysis is based on an important cognitive principle.
Research on word association suggests that the activation of a given
cognition automatically causes impulses to be transmitted to any other
cognitions that possess similar content. Activation of the concept justice,
for instance, tends to activate concepts like judge, law, peace, and right,
which possess a certain amount of parallel content. This process is
especially important in understanding how regulative feedback is trans-
mitted from the program characterization in a motive to the program itself.
We assume that there is sufficient similarity between the characterization
and the program to allow automatic transmission from one to the other. This
principle of cognitive association also explains the transmission of impulses
from an interpretation to a corresponding idealization during evaluation.

Composite Motive. Typically, several consequences are expected from
execution of a given program. The act of going to a party, for instance,
might be expected to produce an exchange of jokes with friends, exposure to
potential future dates, and relief from the pressures of studying. Since
each expected consequence contributes to the total strength of our motive
to attend the party, we need to combine them. Accordingly, a composite
motive* is the sum of all the simple motives relevant to a particular
program. If the strength of the motive to exchange jokes with friends was

MOTOR STRUCTURES ⑨

PROGRAM FOR WALKING RESPONSE ⑧

S ①

EXTERNAL STIMULUS (appearance of friend)

SIMPLE MOTIVE

INTERPRETATION (Expectation)

CHARACTERIZATION OF PROGRAM ⑦

Walking over to my friend

CAUSAL CONCEPT ⑥

Will enable

CHARACTERIZATION OF CONSEQUENCE ②

me to have a conversation with her,

RELEVANT IDEALIZATIONS ③

Screening

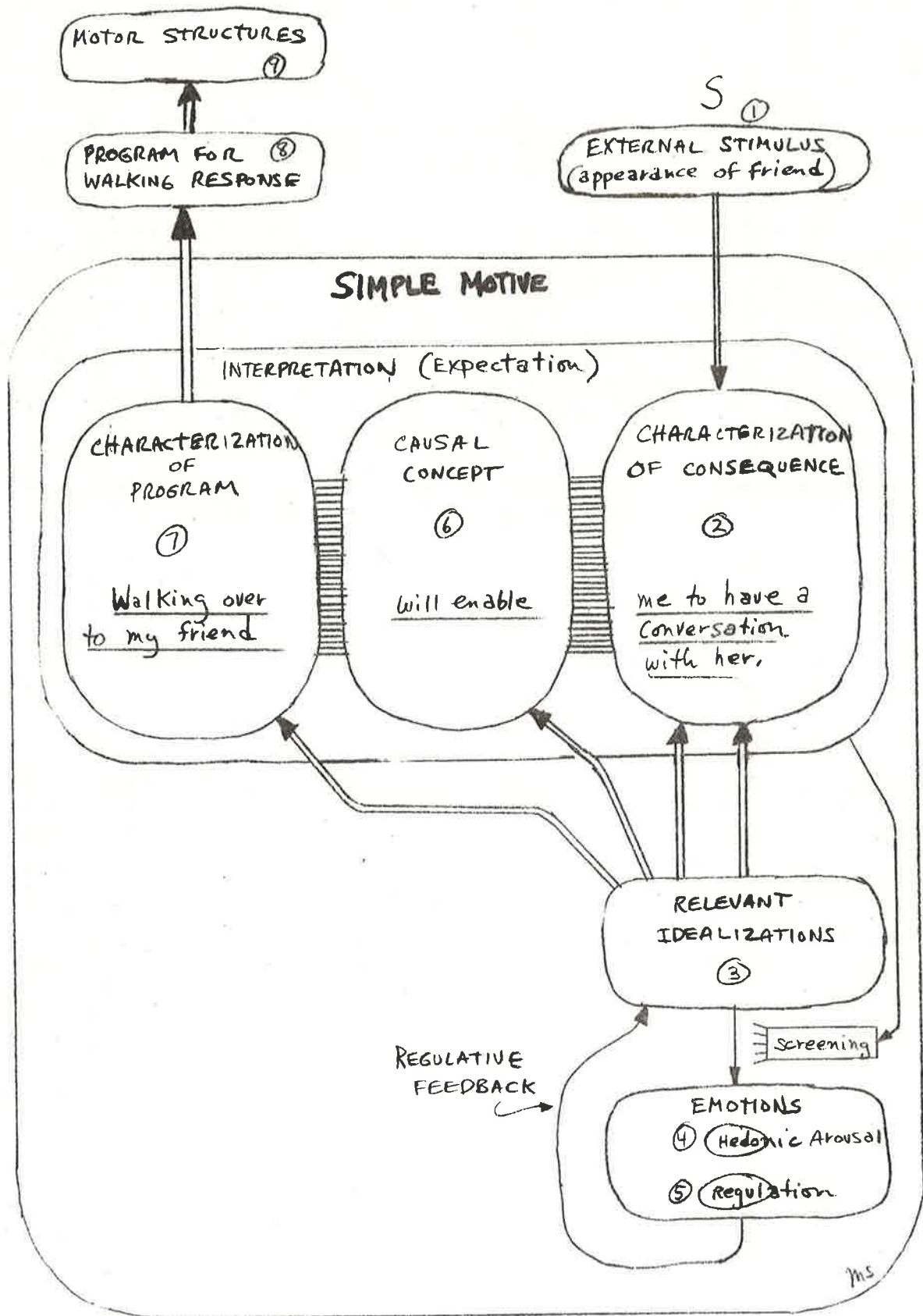REGULATIVE FEEDBACK

EMOTIONS ④ Hedonic Arousal ⑤ Regulation

ms.

Fig 7. The simple motive involved in getting up from one's desk at the library and walking over to a friend who has just entered the room.

+4, to meet potential dates was +2, and to obtain relief from the pressures of studying was +3, then one's composite motive for going to the party would be +9.

Simple Motivational Conflict. A very important complicating factor in motivation is the possibility of conflict between two or more simple motives. Such conflict results from the fundamental opposition between excitatory and inhibitory regulation, which tend to neutralize one another when they are focused on the same program. This opposition is expressed in the definition of desire and aversion. A desire* is a motive that transmits excitatory impulses toward a program due to the expectation of reward. By contrast, an aversion* is one that transmits inhibitory impulses toward a program due to the expectation of punishment. We can thus say that simple motivational conflict exists when a person has a desire and aversion for the same program.

These two types of motives have been diagrammed in Figure 8, which depicts the conflict in a college student who is trying to decide whether or not to argue with her stern father. On the left is her expectation Arguing with Father will enable me to display my self-reliance. Since she has a positive self-idealization of self-reliance, this expectation produces anticipatory gratification and excitatory regulative feedback to the program for arguing with her father. It is therefore an example of a desire. On the right side, her expectation Arguing with Father may cause me to lose his material support produces disgratification and inhibitory feedback. It is an example of an aversion. Since the excitatory impulses tend to be neutralized by the inhibitory impulses, the student may remain ambivalent and undecided about what to do. It is more likely, however, that she will try to reduce the conflict as rapidly as possible, since conflict tends to arouse frustration. One way she could to this would be to intentionally strengthen her affirmation of one of the expectations. She could also selectively focus her attention on the idealizations relevant to one of the expectations. The effect in either case would be a shift in the predominance* (relative strength) of the two motives, so that one would now prevail over the other.

When execution of a desire is blocked by an opposing aversion, there is a tendency to displace the desire toward a more favorable target. Dis-placement* is a defensive process in which excitatory regulative impulses are directed away from the characterization that originally produced them and toward a characterization possessing similar content but arousing less distress. In the above case, the college student might displace her desire to argue away from her father and toward her mother. Assuming that she expected equal reward but less punishment from the latter, this shift would thus allow her to obtain substitute gratification with less danger.

Motivational Cues. As we move through our stimulus field, we are constantly barraged by cues that influence our motivation. A giant yellow arch encourages us to buy a hamburger, a smile encourages us to wave or say hello to a friend, the sight of a patrol car discourages us from speeding, and a verbal warning about lung cancer discourages us from smoking. The first two examples are incentives. An incentive* is a set of motivational cues that strengthen one's desire to perform a given act. The second two are deterrents. A deterrent* is a set of cues that increase one's aversion toward performing a given act.

Although incentives and deterrents are often quite complex, all of their components belong to one of two basic classes. First, an instrumental cue displays information about the conditions controlling the production of a consequence. Suppose a carnival operator tells you that the object contained in a sealed cardboard box can be purchased for $5.00. His words are instrumental cues because they provide information about the action needed to produce a consequence. Second, a terminal cue displays information about the valenced qualities in a potential consequence. Here the carnival operator might tell you that the box contains a very attractive panda bear
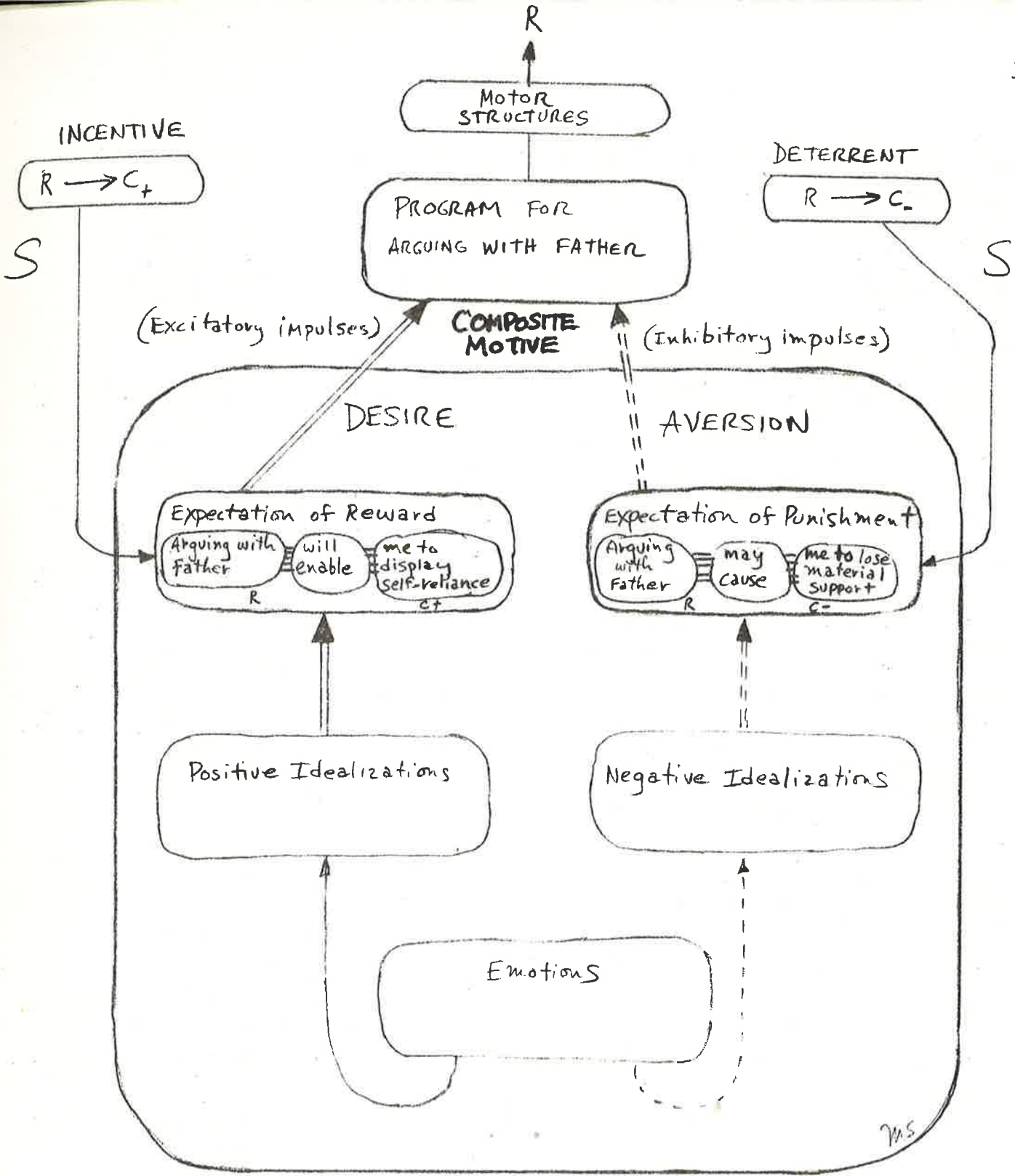
R

MOTOR STRUCTURES

INCENTIVE

$R \longrightarrow C_+$

DETERRENT

$R \longrightarrow C_-$

S   S

PROGRAM FOR ARGUING WITH FATHER

COMPOSITE MOTIVE

(Excitatory impulses)   (Inhibitory impulses)

DESIRE   AVERSION

Expectation of Reward

Arguing with Father | will enable | me to display self-reliance

R   c+

Expectation of Punishment

Arguing with Father | may cause | me to lose material support

R   C-

Positive Idealizations

Negative Idealizations

Emotions

M.S.

Fig 8. The *simple motivational conflict* produced by a desire and an aversion toward the same program.

without saying anything about how the bear can be purchased. In most everyday situations, the two types of cues usually exist together rather than independently. The typical classified ad is a complete incentive, for example, because it tells us how an item can be purchased and describes the item's desirable qualities. Likewise, a statement from our boss that we will be fired if we continue to take five coffee breaks a day is an effective deterrent because it identifies the act that will be consequated and describes the undesirable nature of the consequence.

The motivational cues that operate in social life are often very subtle. One afternoon a father may complain to his daughter about her heavy smoking. Later in the day he may offer to let her drive his new Jaguar to college one semester. Even though the potential relationship between act and consequence has not been stated explicitly, the daughter will probably lose no time in inferring it. In this case, some of the cues were presented in the past and the retained in the form of explanatory principles about her father's general behavior patterns.

Complex Motivational Conflict. The only form of conflict that we have discussed so far involved a desire and an aversion for the same program. But conflict can also involve multiple programs. Complex motivational conflict* occurs when a person possesses two or more desires that are directed toward incompatible programs. For example, a student may have a desire to go to a party between eight and ten o'clock on Saturday night and another desire to go to a movie during the same period. Since these two programs cannot be executed simultaneously, there is conflict. This form of conflict is resolved by a selection process that automatically executes only the most predominant programs at any one moment. In other words, programs compete on the basis of their net activity level, and only the most active prevails.

Intention. The term intention has been very difficult to define within the narrow limits of traditional psychological theories. While cognitive theories can deal adequately with the cognitive aspects of intention, they have little to say about the emotional aspects. Behavioristic theories have brought some important aspects of emotion to our attention through the concept of "reinforcement," but they have not developed a clear explanation of how reinforcement works. The diversification and integration in our framework enables us to overcome these dificiencies.

An intention* is an effective desire or a potential desire that one is emotionally committed to execute. In saying that it is a desire, I imply that it is based on an expectation of reward, since all desires by definition depend on such an expectation. Intention is thus more sophisticated than a motivational reflex, which depends entirely on primitive pathways. In describing the first type of desire as effective*, I am saying that it predominates over all competing motives, which means that it is actually producing execution at the present time. The second type of desire covers the case that has traditionally been more difficult to define. A person may intend to do something even though he is not currently doing it. I describe this type of desire as potential* because it lacks current effectiveness, but we

also say that it contains an emotional commitment to its execution to indicate that it is much more predominant than the typical potential desire. It is a desire that has gained superior potential predominance within the context of a given expected future situation, so that it will become effective as soon as that situation exists. Finally, when we say that it possesses an emotional commitment*, we mean that the person expects to be punished for not executing it when the proper situational cues are present. Such a commitment usually results from a prior interpretation of oneself as having decided to execute the program. Failure to actually do so then threatens to arouse a negative self-evaluation along the dimensions of competence and self-reliance. All of these considerations testify to the complexity of intention.

Intention is very useful in defining other terms. An act*, for example, can now be defined as an intentional motor response – which makes it the most complex and sophisticated form of human response. A transaction* is an act, the consequences produced by that act, the assimilation of those consequences by either the actor or someone else. Society generally evaluates an individual's responsibility for an act according to the level of intention behind it. A man who intentionally runs over a child is pro-secuted for murder, whereas one who does so inadvertently while attempting to avoid a pot-hole in the road is prosecuted for manslaughter or is exonerated of all responsibility. Intentionality implies that the person possessed sufficient anticipation of an act's consequences to have controlled them. It also implies that he evaluated those consequences as personally acceptable--otherwise he would not have performed the act. An act whose consequences were intended is therefore considered to be a highly diagnostic* (reliable and valid) indicator of personality. It is an accurate expression of a person's true underlying attitudes.

A guiding principle in our analysis of motivation is that most motives are directed toward improving one's self-evaluation. You might wonder why self-evaluation is so important. Why do we not eventually become satisfied with ourselves— after making a number of friends and winning election to a class office in the seventh grade, for example, why do we continue to seek approval and social success? There are three major forces that maintain our self-evaluative strivings. First, self-interpretations   are subject to the same associative decay   that weakens all traces over time. Thus, by the time we are college students, our recall of a social success in elementary school has usually faded into a faint, indistinct memory at best. In this weakened state, its capacity to produce gratification through the activation of positive self-idealizations is quite inferior to that of competing self-interpretations generated by more recent events. Second, the affirmation of older positive self-interpretations is continually assaulted by counter-pressure from more recent negative events. Over the years we have all lost elections, been passed over for invitations, and generally met with innumerable small and large social failures. These events have produced negative self-interpretations that arouse chronic distress and disaffirm our positive self-interpretations. Third, every success causes our self-idealizations to grow increasingly demanding due to the underlying ego-centric and romanticizing tendencies discussed earlier. A person who once

would have been satisfied with election to class office finds that her
standards for measuring personal worth have become more severe as she
has grown older. She now wants to be mayor, to belong to an exclusive
country club, or to be an award-winning salesperson. No matter how great
our past and current success, then, these three forces impel us to seek
ever mor evidence of our personal worth in the future.

The search for a positive self-evaluation can be clearly seen in
the way we display* information (i.e., make it available for assimilation).
During introdisplay*, one causes information about some stimulus to be
displayed to oneself, as when a woman gives money to a charity in order
to display her altruisticalness to herself. The desire that motivates
introdisplay of one's own traits is usually unconscious, since otherwise
its self-manipulative aspects would intensely threaten one's sense of syntony.
Introdisplay is a very powerful motivational channel, but there are limits
to the amount of gratification it can provide. Our need for supplementary
external feedback impels us to engage in a large amount of extrodisplay*,
which involves presenting information to others. Here the woman's charitable
donation might be motivated by a desire for approval from the recipient.

In the next section, we will examine how motivation controls the
search for well-being.

COPING

Coping* is the sum of a person's
motivated responses that influence his gratification and need fulfillment.
At the simplest level, intrapsychic coping* can provide gratification solely
through the regulative control of interpretations and idealizations. If
a farmer's crop fails, he may try to reduce his frustration by thinking about
his son's recent successes at college. At the most complex level, trans-
actional coping* provides benefits through some action involving the en-
vironment. The farmer may thus cope transactionally with his crop failure
by planting a new crop. When either form of coping is motivated by a
desire to reduce distress, as in the present examples, it is referred to
as defensive*.

Much of coping is elicited by external pressure*, which consists of
outside   information that tends to facilitate the development of
new attitudes or the modification of existing ones. A friend's statement
that he disagrees with your Democratic political views is an example of
such pressure. Note that external pressure does not automatically produce
attitudinal change. It only produces tendencies in that direction.
There are two basic methods of responding to external pressure. In accom-
modation*, one responds in a way that has been
encouraged by an external stimulus or that increase the correspondence
between one's attitudes and the information contained in an external stimulus.
In the above case, you might adopt your friend's Republican political
views in order to reduce interpretive conflict and maintain your identifi-
cation with him. You might also accommodate behaviorally by pretending to

agree with your friend's views while actually maintaining your original views. Here you would be accommodating to the pressure for a display of sympathy while not accommodating to the pressure for genuine sympathy. In the other method of responding to external pressure, one resists* when one does not accommodate. If resistance is motivated primarily by a desire to display one's independence of external pressure, it is called defiance*. Thus, a boy who is goaded by a companion to jump out a window may respond with simple resistance because he does not want to be injured. But he would be defiant if his motive for refusing was hostility toward the friend's dominating attitude. In most cases, accommodation and resistance can be considered coping responses because they are motivated.

Looking at external pressure from the opposite point of view, assertion* consists of an attempt to produce or maintain a correspondence between one's attitudes and some external phenomenon by influencing the latter. If one wishes to own a red house, for instance, then assertion might involve painting one's house red. When the target of one's assertion is another person's attitudes, then one goes about this by imposing pressure on him relevant to those attitudes.

The major part of our analysis will be devoted to intrapsychic coping, to which we now turn.

Basic Forms of Motivated Interpretation

Since interpretations can be modified more easily than idealizations, they are the principal means of intrapsychic coping. Our earlier principles about interpretation suggest that such coping can take four basic forms, of which three involve modifications in cognitive content and the last involves modifications in judgment.

Motivated Characterization. The first form of motivated interpretation occurs when regulation produces changes in the way we characterize a stimulus. Thus, a young man sitting on a park bench may formulate a self-characterization that accentuates his handsome physique and disaccentuates the pimples on his face. This means that the cognitive units for his physique become more predominant as a result of excitatory regulative feedback, while those for his pimples become less predominant as a result of inhibitory feedback. Sometimes a positive unit is substituted for a negative one, as when a person thinks I am clever at fooling people rather than I am dishonest. Because a particular unit is evaluated within its larger cognitive context, we cannot say that motivation always favors the accentuation of positive over negative units. We can only say that motivation favors the formulation of characterizations that produce gratification within the context of all interpretations active at a given moment. A prejudiced person may thus formulate the derogatory characterization Blacks are lazy because it bolsters the self-aggrandistic characterization I am better than Blacks. The only way to predict the direction that motivated characterization will take is to analyze the valence of all idealizations relevant to the characterization. This principle also applies to all other forms of motivated interpretation.

Motivated Attribution. The tendency to explain past events in a gratifying way is one of the most powerful forces in our thinking. We tend to credit* (attribute benefits to) ourselves and blame* (attribute detriments to) others. Research has shown, for example, that each member of a team tends to credit himself for team successes and to blame his teammates for team failures. Similarly, we tend to decredit* others (interpret them as not causing benefits) and to exonerate* ourselves (interpret ourselves as not causing detriments). Keep in mind, however, that there are some important exceptions to these general tendencies. Research indicates that people will sometimes exaggerate their responsibility for a detriment if such self-blame enables them to obtain a compensatory display on some highly valenced dimension of self-evaluation. After doing poorly on a test of skill, for example, you may overblame yourself as a way of displaying your objectivity and self-reliance.

Motivated Expectations. Since the future holds many of our most important consequences, our interpretations of it are bound to have a substantial impact on our current hedonic responses. The coping functions of optimism*, or positive expectation, are relatively easy to explain. Optimism's positive content enables it to activate corresponding positive idealizations, which in turn arouse anticipatory pleasure and reduce anticipatory distress. In addition, optimism can perform a more indirect coping function by encouraging initiatives that we might otherwise not make. Most of us would not pursue our studies if we were not optimistic about the chances of graduating and ultimately securing an advantageous position. This optimism may then actually increase our chances of success by intensifying our efforts.

The coping functions of pessimism*, or negative expectation, are more complicated. Pessimism primarily serves as a defense against frustration and related anxiety by reducing one's emotional involvement in some detriment. Thus, the expectation that one will definitely be detrimented tends to weaken one's attempts to prevent the detriment. This shifts one's attention away from the detriment, which reduces fear. It also eliminates the exertion cues and anticipatory gratification that would be aroused by the expectation of success. According to our principles of hedonic arousal, this greatly reduces the possibility of later frustration. We can see, then, that pessimism can provide very powerful gratification in individuals who are highly prone to fear and frustration.

An especially important instance of such defensiveness has been studied in individuals with chronically negative self-interpretations. When such individuals fail at a task, they tend to place excessive blame for the failure on themselves instead of trying to shift the blame to external factors like most people do. This phenomenon has traditionally been explained in terms of cognitive consistency theory (e.g., Festinger, 1957), which argues that the striving for logical compatibility between cognitions is so strong that it frequently predominates over other motives. In this particular case, the theory contends that some people blame themselves for failure as the only way of maintaining logical consistency with their chronically low self-interpretations. Thus, they

think I am basically incompetent--therefore the failure must be my fault. But our general motivational framework suggests that a more compelling explanation can be found in the principle of defensive pessimism. Since people with negative self-interpretations are highly vulnerable to distress, they are inclined to blame themselves as a way of promoting pessimistic expectations that reduce their emotional involvement in future failure.

Motivated Judgment. In addition to its effects on interpretive content, motivation can also influence the underlying judgmental process. Recall that an interpretation can receive judgment from secondary sources. The belief I am a good tennis player, for example, can obtain secondary affirmation from its consistency with the corroborative beliefs I won my last five matches and I am a good athlete. This principle suggests that a belief's judgment can be substantially influenced through the selective accentuation and disaccentuation of secondary beliefs. One can thus intensify affirmation of I am a good tennis player by focusing attention on I won my last five matches. A delusion* occurs when motivation intensifies the affirmation of a grossly inaccurate belief. A mental patient may delude himself into thinking that he is Jesus Christ by accentuating beliefs about his similarity to Christ (e.g., Christ was persecuted, and I am being persecuted). Denial* exists when motivation causes a person to strongly disaffirm an accurate belief despite clear evidence corroborating the belief. The would-be Christ might deny his mortality by accentuating beliefs like I've never been seriously ill. When one successfully resists the temptation to deny a negative fact, the process is called acknowledgment*. Motivation can also reduce the intensity of judgment, which enables a person to have fantasies and dreams. These often provide gratification through their unrealistic positive content.

Specialized Forms of Motivated Interpretation

We are now ready to examine the way the basic processes discussed above can combine to produce more complex, specialized forms of motivated interpretation. These include projection, intellectualization, humor, justification, and belief internalization.

Motivated Projection. To project* is to incorporate valenced information about oneself into one's interpretation of an external stimulus. In affiliative projection*, one projects a personal quality onto another person as a means of strengthening one's identification with her. A youth who intensely enjoys ballet might project this attitude onto a companion as a way of feeling supported by a sympathetic environment. In disowning projection*, one projects a personally negative quality onto another person as a way of preventing oneself from consciously acknowledging one's own possession of the quality. A soldier with an exaggerated self-idealization of masculine courage might project his fear of the enemy onto his buddies. This allows him to think about fear without having to acknowledge that he is himself frightened.

Motivated Intellectualization. We are continually bombarded by threatening information about events we cannot control. Well-educated individuals are especially prone to cope with the resulting distress through intellectualization*, which is a process that uses highly abstract concepts to reinterpret threatening information in a more neutral manner. A man

who is threatened by news of widespread starvation in India, for example, might think <u>The Indian economy is currently producing insufficient food to meet domestic demand</u>. This interpretation reduces his vicarious distress by substituting the impersonal and emotionally neutral concepts <u>insufficient food to meet domestic demand</u> for the more personal and valenced concepts <u>people are starving</u>.

  <u>Motivated Humor</u>. <u>Humor</u>* is an attitude of playful cleverness that enables one to accept a positive egocentric fantasy. It contains three interpretive components. First, there is an interpretation that reduces some prior inconsistency. This can be seen most clearly in the punch line of a joke, where a clever shift in meaning unexpectedly eliminates the perplexity in some previous statement. The cleverness of this response provides a gratifying sense of competence and encourages further inter-pretive flexibility. Second, humor contains a positive reinterpretation of a previously threatening stimulus. This often takes the form of a forbidden derogation or romantic fantasy that reduces some underlying distress. Many of Johnny Carson's jokes, for example, promote the fantasy that national problems like the energy crisis are the fault of corrupt and incompetent leaders in Washington, thereby encouraging us to ignore our contribution to these problems as consumers and voters. Third, there is a playful interpretation that enables one to deny the gratification obtained from the second interpretation. This playfulness often takes the form of a display of intentional exaggeration and inappropriate pleasure. In effect, the person is saying "It's all right if I have fun playing around with these facts--no harm will result because I really don't believe what I'm saying." Unconsciously, however, he is giving the second interpretation enough affirmation to derive substantial gratification from it.

  <u>Motivated Justification</u>. A <u>justification</u>* is a belief that a given exertive response is, or has been, motivated by accurate interpretations and syntonic idealizations. The pressure for justification is ever-present because we place a substantial part of our sense of worth in jeopardy every time we perform an exertive response. To respond foolishly is not only to risk punishment and lack of reward from the environment; it is also to risk severe self-imposed damage to our sense of worth. Research on justification has shown that the desire to justify a response increases with (a) the degree to which the person believes the response is diagnostic of her worth, (b) the intensity of her prevailing desire for self-ag-grandizement, and (c) her expectation that the justification will not be be contradicted by future information.

  <u>Motivated Internalization</u>. When a person <u>internalizes</u>* someone else's attitudes, he assimilates information about those attitudes in such a way as to develop attitudes of his own that are similar in content and function. An important motive for belief internalization is a desire to accommodate oneself to others without deceiving them and without acknowledging such accommodation to oneself. A girl may thus internalize her father's political beliefs so she can avoid his disapproval while at the same time avoiding the sense of insincerity and overdependency she would feel if she merely pretended to agree with him. The internalization of beliefs can also be motivated by a desire to strengthen one's identification with someone whom one admires. The girl may thus adopt her father's beliefs so she can beel a vicarious sense of competence.

This concludes our analysis of motivated interpretation as a coping process. We shall next examine motivated idealization.

Basic Forms of Motivated Idealization

Idealizations are more difficult than interpretations to control by short-term regulative feedback, but they can be gradually shaped by long-term regulative influences. There are four forms of such motivated idealization.

Self-Idealization Through Admiration. Since admiration of someone else often produces an initial sense of inferiority, there is a tendency to weaken that distressful response by strengthening one's identification with the admired person. A boy tho admires a famous football player may thus reduce his sense of inferiority by accentuating the athletic skills that he shares with his hero. If a person identifies with a sufficient number of heroes possessing the same trait, he will gradually transform these identifications into a stable, positive self-idealization of the trait. The boy, for instance, will develop strong hyperimages and values for football skills as part of his self-idealization of competence.

Self-Idealization Through Contempt. A feeling of contempt tends to produce an idealizational effect opposite to that produced by admiration. One thus disidentifies with a contemned trait and develops a negative self-idealization of it. After observing the ridicule received by a timid classmate who refuses to play football, the boy in the above example may then disidentify with the classmate and begin to develop a negative self-idealization of timidity. This process is especially important in promoting the development of positive self-idealizations for altruisticalness. For example, a typical child first learns to contemn the villains who have victimized her. Then, under new circumstances, she victimizes someone herself. The latter act causes her to feel contempt for herself as a result of her identification with the villains in her own life. Finally, to reduce this self-contempt, she begins developing a positive self-idealization of altruisticalness that weakens her identification with the villains.

Self-Idealization as a Defense Against the Negative Implications of Compliance. Compliance* is a form of accommodation in which a person performs an act explicitly requested or demanded by someone else. When a compliant act conflicts with the person's own preferences, it tends to threaten his sense of worth by implying that he is too overdependent to resist social pressure. To avoid this distress, the person may internalize the requester's implied idealizations so he can then more easily justify his compliance. In other cases, compliance poses more of a threat to a person's sense of support than to her sense of worth. Consider a girl who is punished by her mother for hurting a neighbor child. Since the punishment evokes apprehension that the mother's affection may be lost, the girl quickly develops a desire to avoid the disapproved act. But that desire itself soon becomes threatening because it implies that the mother's affection is imperfect and conditional (i.e., that it is not "True Love"). To get herself out of her dilemma, she then

unconsciously begins internalizing her mother's values for altruisticalness so that she can feel that she is complying with her mother's rules out of genuine sympathy with them rather than as a means to reward.

The Idealization of Justice as a Defense. Justice is one of the most powerful but ambiguous concepts in our thinking. Basically, we develop positive idealizations of justice as a defense against the intense distress often aroused by our unsatisfactory transactions with others. Chronic conflicts and disappointments cause us to see others as alien forces existing largely outside our control. We then develop customs or laws that force people to be more accommodating and altruistic, which we call justice. As a reflection of its flexibility and cultural relativity, justice* can be formally defined as a condition in which everyone receives the consequences she deserves according to the rules of deservingness prevailing in her culture.

There are five major rules of deservingness in our culture. First, we feel that a person should be given the consequences that we would desire if we were in his position. This is a derivation of the biblical golden rule. Second, a person should receive a net consequence from a social transaction proportional to his relative contribution to the net total consequence to all parties concerned. This is usually called the equity rule since it is similar to the financial concept of equity, where profits from the sale of property are divided according to the relative size of the investment initially made by each party. Third, everyone should receive the same consequences regardless of their contributions to the total group consequence. This rule obviously conflicts with the second, just as capitalism conflicts with socialism in political philosophy. Individuals often disagree over which rule is the more fundamental. Fourth, a consequence should be predictable. It would thus be unjust to punish someone without warning them first. Fifth, a person possessing inadequate competence or syntony should not be forced to adhere to the same rules of justice imposed on other members of society unless those inadequacies are within the person's capacity to rectify. An example of this rule would be the provision in the law that prevents the state from punishing someone like the Son of Sam killer, who was judged insane by the court. A more common application is the giving of welfare benefits to the disabled.

Major Principles of Intrapsychic Coping

As our discussion of intrapsychic coping comes to a close, I would like to give special emphasis to the following five superordinate principles.

1. The Principle of Pervasive Defense. There are many aspects of life that are dominated by pleasure-seeking motives. Effectance, for example, is a wonderful emotion that brightens our lives and gives a positive tone to some of our intrapsychic coping. But frustrations large and small are continually annoying or enraging us, and fears are aroused by everything from the prospect of rejection to the unpredictability and inevitability of death. As a result, a large part of intrapsychic coping--perhaps the major part--is spent reassimilating negative information in ways that reduce distress. This principle implies that intrapsychic coping has a certain driven, compulsive quality that it would not have if pleasure-enhancement were its primary function.

In some cases, distress is aroused very indirectly through threats. A threat* is a body of information that activates a negative inference. A smirk is thus a threat because it implies that the smirker has a derogatory characterization of one's worth. Like many threats, a smirk is primitively neutral. It only arouses distress through the mediation of an inference about the type of attitude behind it. This suggests that an effective defense against threats is to modify the inference involved. Instead of inferring that a smirk is an indication of one's own faults, one can infer that it indicates the smirker's egocentricity and deceitfulness. Such intrapsychic coping is often a more effective way of dealing with threats than is transactional coping.

2. <u>The Principle of Pervasive Self-Aggrandizement</u>. The second principle is that coping activities are largely directed toward improving one's self-evaluation. In addition to direct strivings for self-aggrandizement, we try to maintain attributions and expectations that indirectly bolster our self-interpretations. Even overt self-derogation can be considered a manifestation of this tendency in the sense that its underlying target is usually the obtainment of some form of compensatory self-aggrandizement (e.g., I may be a terrible athlete, but look at how objective I am about my faults). One might think that pessimism is an exception to the self-aggrandizement principle. But this highly defensive response is often motivated by an aversion to disappointment in the self. A pessimist would thus rather inhibit all emotional involvement--including pleasure-seeking--than risk reactivating his numerous negative self-interpretations. At the level of more specialized processes, the self-aggrandistic tendency can be seen in the projection of weakness onto others, through the ceaseless search for justification of one's acts, and through the seemingly innocent, but often self-flattering, mechanisms of humor.

3. <u>The Principle of Unconscious Self-Deception</u>. We have seen that coping often involves self-deception. A young man exaggerates his physical attractiveness, an athlete unfairly blames his team's failure on the other players, a girl convinces herself that she shares her father's political beliefs when in fact she does not. To effectively perform this pervasive self-deception, large segments of intrapsychic coping have to operate at an unconscious level. There is no way that a sane person can affirm an interpretation when he is conscious of its distortion. Such distortions have to be produced by processes lying outside of one's awareness.

4. <u>The Principle of Compensatory Objectivity</u>. Despite the pervasiveness of self-deception, people are sometimes capable of fairly objective intrapsychic coping. The athlete who has begun exaggerating his teammate's errors may suddenly realize his self-deception and make strenuous efforts to counteract it. This phenomenon presents an interesting theoretical problem. If the emotions create continual pressure for immediate gratification, then how can we explain a person's efforts to correct, and thereby neutralize, a gratifying distortion? The answer lies in the self-idealization of <u>objectivity</u>* (the capacity to interpret stimuli without motivated distortion). This trait obtains its positive valence from its affinity with both competence and syntony. We have learned that distortions are often punished by some form of practical or social failure and that objectivity is often rewarded in a similar manner. The resulting positive cathexes to our concept of objectivity enables us to obtain compensatory gratification whenever we try to be objective. If that gratification is greater than the gratification provided by a particular distortion, then objectivity predominates.

5. <u>The Principle of Individualized Coping</u>. Another major theoretical issue involves individual differences in coping. There are no general rules that enable us to reliably predict the type of coping response that everyone will use in a given situation. But our framework indicates that, in principle, we can predict each individual's selection of coping responses if we know the relative strengths of the components of all these responses.

Thus, a person will choose optimism over pessimism to the extend that she idealizes traits like self-reliance, amenableness, and equanimity and interprets her preferred response as diagnostic of those traits. At present, researchers are not able to measure all of the variables that influence intrapsychic coping. But they have measured enough variables, and obtained enough orderliness in their results, to justify my belief that the major tenets of the present analysis of intrapsychic coping are reasonable.

Transactional Coping Processes

Most of the complexities of transactional coping are beyond the scope of the present paper. But keep in mind that considerable insight into transactions can be drawn from our preceding analysis of intrapsychic coping. Above all, remember that all transactions are motivated by intrapsychic processes. If Tom searches for a snack in the refrigerator around midnight one evening, his ultimate goal is not consumption of the food but rather production of some form of gratification (e.g., increased sentia, decreased exigeance). In assessing coping effectiveness, then, we must always examine the nature of the hedonic state existing after an act has been completed and its consequences assimilated. Suppose Tom's mignight eating was motivated by fear of failing a test the next day rather than by exigeance. Since eating has only a weak, short-term effect on fear, it would be considered a maladaptive response to Tom's situation if he needs to spend his time studying.

The relationship between the two forms of coping can be seen more clearly in social transactions. If a girl feels inferior to her older sister, she may learn to cope with this negative self-interpretation by engaging in grandiose fantasies about vanquishing her sister in the Miss America content. But such pure intrapsychic coping is often inadequate. Reality continually contradicts and disrupts unrealistic fantasies, so that they usually fail to provide adequate control over the distress motivating them. When faced with that failure, we often turn to transactions as a more powerful source of gratification. The girl might decide to prove her superiority by becoming a better tennis player than her sister. If she is successful, the favorable sensory feedback made available by her action will provide a more enduring improvement to her self-evaluation than she could ever have obtained from her fantasy. The key point, however, is that the primary change--a new self-interpretation--is the same in both cases. It is for this reason that I say that intrapsychic coping provides a useful framework for analyzing transactional coping. In a sense, transactional coping is nothing more than an extension of intrapsychic coping. It provides an external channel for producing desired interpretive changes that, for one reason or another, cannot be produced intrapsychically.

COMPLEX LEARNING PROCESSES

Although we have already examined many basic aspects of learning, we need to consider a few principles about complex learning that have not yet been covered. Learning* can be defined as the development of a relatively permanent, stimulus-induced change in the way the psychooogical system processes information. Remember that information is processed in three stages: assimilation, retention, and expression. Learning primarily involves

retention, but the other two stages also play important roles. Assimilation determines the nature of the information retained. Whether or not a person learns to like an acquaintance, for example, depends on how he interprets the acquaintance's behavior during assimilation. By the same token, expression often exercises influence over the stimulus and provides information about the stimulus' controllability. It can also intensify the learning process, as during the active rehearsal of a new response. Finally, expression provides most of the information we have about the strength and content of learning, as when we give a written test of verbal retention.

Over the years many different types of learning have been identified by theorists, and many different schemes have been invented for comparing the different types to one another. Out of all of this work, one dimension emerges as an especially valuable tool for analyzing human learning. This dimension is the degree of learner participation in the stimulus situation. A learner participates* by making physical contact with a stimulus, by evaluating a stimulus as a consequence for herself, or by personally influencing the nature of the stimulation she is receiving. As one can see, each of these conditions in some way personalizes the learning experience. Their presence is therefore likely to increase the associative strength and motivational significance of the traces that the learner acquires. When the learner is not participating in her stimulus situation, we say that she is observing* it. Observation usually involves vision or hearing (rather than the more emotionally potent channels of touch, taste, and smell). It also involves consequences for other people rather than for the learner. Finally, its stimulus information is independent of the learner's behavior.

There are two types of observation. In direct observation* , the original stimulus is made available to the learner's own senses. An example would be an observer at a football game, who directly witnesses the action on the field. In indirect observation*, the learner is presented with a second-hand representation of the primary stimulus event. Here the football fan might read a newspaper account of the game or watch the action on television. A major point to keep in mind here is that direct observation often has greater credibility because of its concreteness and freedom from distortion by an intervening communicator. "Seeing is believing." But indirect observation, especially when it involves verbal symbols, has the advantage of providing a concise abstract interpretation of the stimulus. Barbara Tuchman's book The Guns of August, for instance, provides an excellent description of the events leading up to World War I. She has reorganized an enormous body of information in a way that adds to the understanding of even those who particpated in the original events.

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