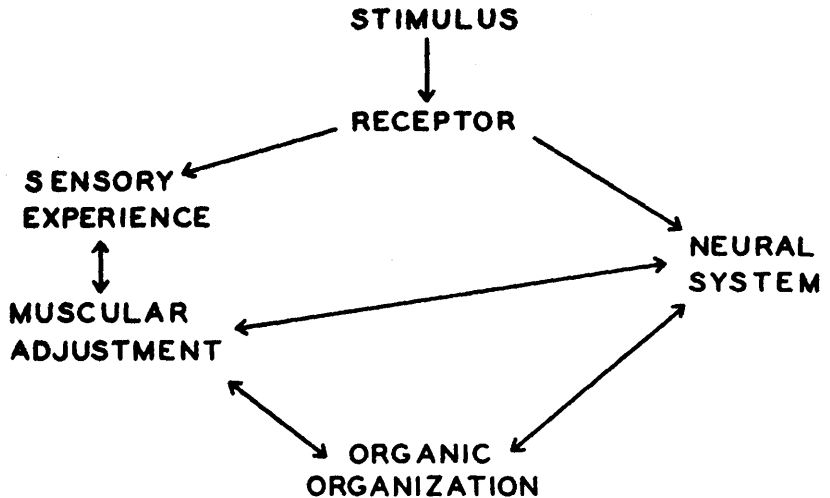

Some Relationships Between Factors Involved in the Perceptual Process

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On the chart below are the primary factors involved in the perceptual process. The relationships between the factors are indicated by the lines and arrowheads. This paper, for the most part, is an elaboration and explication of this chart.

Before entering upon a discussion of the chart, a few general statements are in order. For the sake of simplicity of treatment enforced by time limitations, I shall consider only the perception of objects in the



external world. However, as far as is known, what will be given applies equally to all perceptions.

Every discussion bases on certain assumptions. I shall assume that so called external objects are only objectified sensory components present as a factor in the perceptual process. That is, when a person perceives a chair, he objectifies a pattern of visual experience and calls it a chair. When one perceives a bell ringing, he objectifies a pattern of auditory experience and calls it a ringing bell. The same is true for every perceived object no matter what the sense modality, or modalities, may be. Thus, one resultant of the perceptual process is the creation of a world of objects through the objectification of sensory experiences.

A second resultant of the perceptual process, it will be assumed, is the preparation of the organism to react in connection with these objects in an adjustive manner.

In addition, I shall assume that what we call meaning is the muscular adjustment present as a factor in the perceptual process. I shall also assume that the determinant of any reaction, verbal or overt activity, is a phase of this same muscular adjustment. Literally we do respond in terms of meaning. I shall further assume that all postulates and theories must eventually base on the inherent nature of the organism and on modes of functioning inherent in that nature. Lastly I assume that the factors primarily involved in the perceptual process are the ones named on the chart.

A word about concepts! Concepts are legitimate working tools. One has a right, however, to demand that the concept be based on observable data. This is mentioned because I shall use such concepts as factors, objects, meaning, sensory experience, organic organization and its modification, learning, adjustive behavior and others. You have the right and the duty to demand the directly observable data on which any one or all of these concepts base.

The word factors is used advisedly to indicate the product character of perception. The relationships which yield this product are of the nature of dynamic interactions. All factors are present simultaneously and every factor interacts dynamically with all other factors, except probably, the

first two. The perceptual process is not one of successive time linkages; it is a globular unitary process.

Now to the factors and their relationships! A stimulus, I shall define as any pattern of energy or energies which activates a receptor organ in such a way as to arouse sensory experience and neural process. A mosaic, spatial, temporal or both, of individual receptors is activated. The perception of an object probably never arises from the arousal of a single receptor call for an instant in time.

The stimulus is thus an initiating energy and it is nothing more as far as the dynamical interaction between the various factors is concerned. For this reason a single headed arrow is drawn from stimulus to receptor.

The receptor is the point at which physical energy stops and what I shall call biological energy takes over. The term biological energy refers only to the energy involved in biological processes. Some of this biological energy, in a way which no one fully understands, operates with biological mechanisms to give us our sensory experiences—our sights, sounds, smells, tastes, touches, kinesthesia, and organic hurts, pains and pressures. This biological energy appears also in the form of neural impulses. For these reasons one single-headed arrow points to sensory experience and another to the neural system. Neither of these factors interacts directly with the receptor to alter what has already transpired as far as we know.

In terms of what was just given, the initial impulse in the neural system and the characteristics of sensory experience are fully determined by the stimulus and the receptor. This must stand for the moment in the face of numerous studies which indicate a marked influence of such factors as a person's values, his temporary set, his habits, his personality structure not only on what is perceived but on the very characteristics of sensory experiences themselves.

Let us pass next to the bottom of the chart. Here we find, what for want of a better term, I call organic organization. Under this term I subsume, first, all the bodily organization which we take to be native to a normal living human being. This native organization involves the neural, the muscular, the glandular, the circulatory, the skeletal, the digestive, the respiratory, and any other organic systems. This organization does not arise independently of functioning but neither does it depend on special training. This normal organization within the body makes it an organism and serves as the foundation of all coordinated functioning and of all further functional development. Without it, perception could never begin and learning would be impossible. Without it, man would be less than a jellyfish, which does have some organization.

But as everyone seems to assume, organization, especially the neural and the muscular, and perhaps less obviously the other systems, undergoes modification with further functioning. This, you see, is only an extension of what occurred during development. Thus, secondly, organic organization is made the repository for all changes in organization brought about by functioning. Here is found the deposit from all past training, all learning, all past functioning. As is apparent, organic organization undergoes change continuously for all except the complete and perfect slave of habit who probably does not exist at the normal level.

Because muscular and neural functioning affect organic organization and the functioning of both are in turn affected by organization double-headed arrows are placed between organic organization and both the neural system and muscular adjustment.

Very little will be said about the nervous system for the very excellent reason that I do not know what to say about it. We are all very certain

about the importance of the neural system for cooperative organic functioning. However, I do not know the exact pattern of neural functioning for any given perception and, consequently, do not know the difference between patterns of neural functioning for different perceptions. Nevertheless, a double-headed arrow indicates a dynamic relationship between muscular activity and neural processes and a reverse relationship between muscular activity and the neural system. It may be needless to point out the close relationship assumed by almost all writers between neural organization and specific patterns of muscular activity but as yet this picture cannot be presented in detail. Equally, almost everyone assumes neural processes which result from muscular activity.

This brings us to the one remaining factor—muscular adjustment. I use the term adjustment rather than activity or contraction because we are concerned only with tonic muscular action in the form of slight tensions.

The dynamic relationships of muscular functioning to organic organization and to the functioning of the neural system have been presented already. A little more will be said about the relationship to organization later.

The dependence of fully developed sensory experiences on muscular adjustment is a very significant relationship. It is a relationship not mentioned very often. All available experimental evidence supports the notion of dependence of every phase of functioning on every other phase. The functioning of the organism in an adjustive manner is truly a dynamically cooperative matter.

Just as important for understanding the perceptual process is the reverse relationship between sensory experience and muscular adjustment. As adjustment helps to bring the sensory into being, the adjustment is altered to fit its own creation—the sensory. That is, in part we adjust muscularly in terms of the sensory given.

There is still more in this relationship between the sensory and muscular adjustment which is indicated on the chart by a double-headed arrow. Attention which, almost everyone now agrees, is a matter of muscular adjustment, or set, helps to determine what energies can serve as stimuli. Furthermore, adjustment helps, to a high degree, to determine the figure and ground organization of the sensory patterns. Since the objects of perception are the objectified figures of the sensory pattern created in part by muscular adjustment, the adjustment and sensory, of necessity are consonant with each other.

May I call attention next to the relationship of organic organization to muscular adjustment and in turn the relationship of muscular adjustment to sensory experience? This set of relationships is the avenue through which personality factors as well as knowledge enter into and influence the perceptual process. Under personality factors I include attitudes, prejudices, beliefs, ego, and all varieties of individual peculiarities, quirks, and twists. That these factors affect perception everyone, almost, is willing to grant. The unsettled question is, Do they affect only the meaning, i.e. the muscular adjustment, or do they affect the sensory characteristics as well? Does a hypnotized subject actually see a yellow pencil as green under the suggestion that it is green or does he still see yellow which under the suggestion means green? Much evidence can be marshalled in support of each of these positions.

Every point in the presentation needs supplementation, but the broad outlines of the picture, I hope, are clear.