

THE OPEN SYSTEM IN PERSONALITY THEORY¹

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OUR orb of common interest has two faces—one turned toward social psychology, the other toward personality. As things stand at the moment the first visage seems to me slightly depressed; the second slightly manic. However that may be, I should like to start this discussion by bringing the two faces into confrontation.

My first observation is that as members of Division 8 we are conspicuously the victims of fashion. Although our persona is sedate and seemly, we have our own hula hoops, flying saucers, and our own way of flagpole sitting. The interquartile range of our crazes I estimate to be about 10 years. McDougall's instinct theory held sway from 1908 to approximately 1920. Watsonian behaviorism dominated the scene for the next decade; then habit hierarchies, then field theory; now phenomenology. We never seem to solve our problems or exhaust our concepts; we only grow tired of them. At the moment it is fashionable to investigate response-set, coding, sensory deprivation, person perception, and to talk in terms of system theory—a topic to which we shall soon return. Ten years ago fashion called for group dynamics, Guttman scales, and for research on the centipedal properties of the authoritarian personality. Twenty years ago it was frustration-aggression, Thurstone scales, and national morale. And so it goes. We are fortunate that each surge of fashion leaves a rich residue of gain.

Fashions have their amusing and their serious side. We can smile at the way bearded problems receive tonsorial transformation. Having tired of "suggestibility" we adopt the new hairdo known as "persuasibility." Modern ethology excites us, and we are not troubled by the recollection that a century ago John Stuart Mill staked down the term to designate the new science of human character. We like the neurological concept of "gating," conveniently forgetting that American function-

alism always stood firm for the dominance of general mental sets over specific. Reinforcement appeals to us but not the age-long debate over hedonism. The problem of freedom we brush aside in favor of "choice points." We avoid the body-mind problem but are in fashion when we talk about "brain models." Old wine, we find, tastes better from new bottles.

The serious side of the matter enters when we and our students forget that the wine is indeed old. Picking up a recent number of the *Journal of Abnormal and Social Psychology* I discover that the 21 articles written by American psychologists confine 90% of their references to publications of the past 10 years, although most of the problems they investigate have gray beards. In the same issue of the journal, three European authors locate 50% of their references prior to 1949. What this proves I do not know, excepting that European authors were not born yesterday. Is it any wonder that our graduate students reading our journals conclude that literature more than a decade old has no merit and can be safely disregarded? At a recent doctoral examination the candidate was asked what his thesis on physiological and psychological conditions of stress had to do with the body-mind problem. He confessed he had never heard of the problem. An undergraduate said that all he knew about Thomas Hobbes was that he sank with the *Leviathan* when it hit an iceberg in 1912.

A PSYCHOLINGUISTIC TRIFLE

Our windows are pretty much closed toward the past, but we rightly rejoice in our growth since World War II. Among the many fortunate developments is rejuvenation in the field of psycholinguistics. (Even here, however, I cannot refrain from pointing out that the much discussed Whorfian hypothesis was old stuff in the days of Wundt, Jespersen, and Sapir.) Be that as it may, I shall introduce my discussion of open systems in personality theory by a crude Whorfian analysis of our

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own vocabulary. My research (aided by the kind assistance of Stanley Plog) is too cursory to warrant detailed report.

What we did, in brief, was to study the frequency of the prefix *re-* and of the prefix *pro-* in psychological language. Our hypothesis was that *re-* compounds, connoting as they do again-ness, passivity, being pushed or maneuvered, would be far more common than *pro-* compounds connoting futurity, intention, forward thrust. Our sample consisted of the indexes of the *Psychological Abstracts* at 5-year intervals over the past 30 years; also all terms employing these prefixes in the Hinsie and Shatzky *Psychiatric Dictionary* and in the English and English *Psychological Dictionary*. In addition we made a random sampling of pages in five current psychological journals. Combining these sources it turns out that *re-* compounds are nearly five times as numerous as *pro-* compounds.

But, of course, not every compound is relevant to our purpose. Terms like reference, relationship, reticular, report do not have the connotation we seek; nor do terms like probability, process, and propaganda. Our point is more clearly seen when we note that the term reaction or reactive occurs hundreds of times, while the term proaction or proactive occurs only once—and that in English's *Dictionary*, in spite of the fact that Harry Murray has made an effort to introduce the word into psychological usage.

But even if we attempt a more strict coding of this lexical material, accepting only those terms that clearly imply reaction and response on one side and proaction or the progressive programing of behavior on the other, we find the ratio still is approximately 5:1. In other words our vocabulary is five times richer in terms like reaction, response, reinforcement, reflex, respondent, retroaction, recognition, regression, repression, reminiscence than in terms like production, proceeding, proficiency, problem solving, propriate, and programing. So much for the number of different words available. The disproportion is more striking when we note that the four terms reflex, reaction, response, and retention together are used 100 times more frequently than any single *pro-* compound excepting problem solving and projective—and this latter term,

I submit, is ordinarily used only in the sense of reactivity.

The weakness of the study is evident. Not all terms connoting spontaneous, future oriented behavior begin with *pro-*. One thinks of expectancy, intention, purpose. But neither do all terms connoting passive responding or backward reference in time begin with *re-*. One thinks of coding, traces, input-output, and the like. But while our analysis leaves much to be desired it prepares the way for our critique of personality theory in terms of systems. The connecting link is the question whether we have the verbal, and therefore the conceptual, tools to build a science of change, growth, futurity, and potential; or whether our available technical lexicon tends to tie us to a science of response, reaction, and regression. Our vocabulary points to personality development from the past up to now more readily than to its development from here-on-out into the future.

THE CONCEPT OF SYSTEM

Until a generation or so ago science, including psychology, was preoccupied with what might be called "disorganized complexity." Natural scientists explored this fragment and that fragment of nature; psychologists explored this fragment and that fragment of experience and behavior. The problem of interrelatedness, though recognized, was not made a topic for direct inquiry.

What is called system theory today—at least in psychology—is the outgrowth of the relatively new organismic conception reflected in the work of von Bertalanffy, Goldstein, and in certain aspects of gestalt psychology. It opposes simple reaction theories where a virtual automaton is seen to respond discretely to stimuli as though they were pennies-in-the-slot. Interest in system theory is increasing in psychology, though perhaps not so fast as in other sciences.

Now a system—any system—is defined merely as a complex of elements in mutual interaction. Bridgman (1959), as might be expected of an operationist, includes a hint of method in his definition. He writes, a system is "an isolated enclosure in which all measurements that can be made of what goes on in the system are in some way correlated" (p. 188).

Systems may be classified as closed or open. A closed system is defined as one that admits no matter from outside itself and is therefore subject to entropy according to the second law of thermodynamics. While some outside energies, such as change in temperature and wind may play upon a closed system, it has no restorative properties and no transactions with its environment, so that like a decaying bridge it sinks into thermodynamic equilibrium.

Now some authors, such as von Bertalanffy (1952b), Brunswik (1955), and Pumpian-Mindlin (1959), have said or implied that certain theories of psychology and of personality operate with the conception of closed systems. But in my opinion these critics press their point too far. We had better leave closed systems to the realm of physics where they belong (although even here it is a question whether Einstein's formula for the release of matter into energy does not finally demonstrate the futility of positing a closed cgs system even in physics). In any event it is best to admit that all living organisms partake of the character of open systems. I doubt that we shall find any advocate of a truly closed system in the whole range of personality theory. At the same time current theories do differ widely in the amount of openness they ascribe to the personality system.

If we comb definitions of open systems we can piece together four criteria: there is intake and output of both matter and energy; there is the achievement and maintenance of steady (homeostatic) states, so that the intrusion of outer energy will not seriously disrupt internal form and order; there is generally an increase of order over time, owing to an increase in complexity and differentiation of parts; finally, at least at the human level, there is more than mere intake and output of matter and energy: there is extensive transactional commerce with the environment.²

² von Bertalanffy's definition explicitly recognizes the first two of these criteria as present in all living organisms. A living organism, he says, is "an open system which continually gives up matter to the outer world and takes in matter from it, but which maintains itself in this continuous exchange in a steady state, or approaches such steady state in its variations in time" (1952a, p. 125). But elsewhere in this author's writing we find recognition of the additional criteria (1952a, p. 145; 1952b, p. 34).

While all of our theories view personality as an open system in some sense, still they can be fairly well classified according to the varying emphasis they place upon each of these criteria, and according to how many of the criteria they admit.

Criterion 1

Consider the first criterion of material and energy exchange. Stimulus-response theory in its purest form concentrates on this criterion to the virtual exclusion of all the others. It says in effect that a stimulus enters and a response is emitted. There is, of course, machinery for summation, storage, and delay, but the output is broadly commensurate with the intake. We need study only the two poles of stimulus and response with a minimum of concern for intervening processes. Methodological positivism goes one step further, saying in effect, that we do not need the concept of personality at all. We focus attention on our own measurable manipulations of input and on the measurable manipulations of output. Personality thus evaporates in a mist of method.

Criterion 2

The requirement of steady state for open systems is so widely admitted in personality theory that it needs little discussion. To satisfy needs, to reduce tension, to maintain equilibrium, comprise, in most theories, the basic formula of personality dynamics. Some authors, such as Stagner (1951) and Mowrer (1959) regard this formula as logically fitting in with Cannon's (1932) account of homeostasis.³ Man's intricate adjustive behavior is simply an extension of the principle involved in temperature regulation, balance of blood

³ In a recent review Mowrer (1959) strongly defends the homeostatic theory. He is distressed that the dean of American psychologists, Robert Woodworth (1958) has taken a firm stand against the "need-primacy" theory in favor of what he calls the "behavior-primacy" theory. With the detailed merits of the argument we are not here concerned. What concerns us at the moment is that the issue has been sharply joined. Need-primacy which Mowrer calls a "homeostatic" theory does not go beyond our first two criteria for an open system. Woodworth by insisting that contact with, and mastery of, the environment constitute a pervasive principle of motivation, recognizes the additional criteria.

volume, sugar content, and the like, in the face of environmental change. It is true that Toch and Hastorf (1955) warn against over-extending the concept of homeostasis in personality theory. I myself doubt that Cannon would approve the extension, for to him the value of homeostasis lay in its capacity to free man for what he called "the priceless unessentials" of life (1932, p. 323). When biological equilibrium is attained the priceless unessentials take over and constitute the major part of human activity. Be that as it may, most current theories clearly regard personality as a *modus operandi* for restoring a steady state.

Psychoanalytic theories are of this order. According to Freud the ego strives to establish balance among the three "tyrants"—id, superego, and outer environment. Likewise the so-called mechanisms of ego defense are essentially maintainers of a steady state. Even a neurosis has the same basic adjustive function.⁴

To sum up: most current theories of personality take full account of two of the requirements of an open system. They allow interchange of matter and energy, and recognize the tendency of organisms to maintain an orderly arrangement of elements in a steady state. Thus they emphasize stability rather than growth, permanence rather than change, "uncertainty reduction" (information theory), and "coding" (cognitive theory) rather than creativity. In short, they emphasize being rather than becoming. Hence, most personality theories are biologicistic in the sense that they ascribe to personality only the two features of an open system that are clearly present in all living organisms.

There are, however, two additional criteria, sometimes mentioned but seldom stressed by biologists themselves, and similarly neglected in much current personality theory.

⁴When we speak of the "function" of a neurosis we are reminded of the many theories of "functionalism" current in psychology and social science. Granted that the label, as Merton (1957) has shown, is a wide one, still we may safely say that the emphasis of functionalism is always on the usefulness of an activity in maintaining the "steady state" of a personality or social or cultural system. In short, "functional" theories stress maintenance of present direction allowing little room or none at all for departure and change.

Transatlantic Perspective

Before examining Criterion 3 which calls attention to the tendency of open systems to enhance their degree of order, let us glimpse our present theoretical situation in cross-cultural perspective. In this country our special field of study has come to be called "behavioral science" (a label now firmly stuck to us with the glue of the Ford millions). The very flavor of this term suggests that we are occupied with semiclosed systems. By his very name the "behavioral scientist" seems committed to study man more in terms of behavior than in terms of experience, more in terms of mathematical space and clock-time than in terms of existential space and time; in terms of response more than in terms of programing; in terms of tension reduction more than tension enhancement; in terms of reaction more than proaction.

Now let us leap our cultural stockade for a moment and listen to a bit of ancient Hindu wisdom. Most men, the Hindus say, have four central desires. To some extent, though only roughly, they correspond to the developmental stages of life. The first desire is for pleasure—a condition fully and extensively recognized in our Western theories of tension reduction, reinforcement, libido, and needs. The second desire is for success—likewise fully recognized and studied in our investigations of power, status, leadership, masculinity, and need-achievement. Now the third desire is to do one's duty and discharge one's responsibility. (It was Bismarck, not a Hindu, who said: "We are not in this world for pleasure but to do our damned duty.") Here our Western work begins to fade out. Excepting for some pale investigations of parental punishment in relation to the development of childhood conscience, we have little to offer on the "duty motive." Conscience we tend to regard as a reactive response to internalized punishment, thus confusing the past "must" of learning with the "ought" involved in programing our future (Allport, 1954, pp. 68-74). Finally, the Hindus tell us that in many people all these three motives pall, and they then seek intensely for a grade of understanding—for a philosophical or religious meaning—that will liberate them from pleasure, success, and duty (Smith, 1958). (Need I point out that most

Western personality theories treat the religious aspiration in reactive terms as an escape device, to be classified along with suicide, alcoholism, and neurosis?)

Now we retrace our steps from India to modern Vienna and encounter the existentialist school of logotherapy. Its founder, Viktor Frankl, emphasizes above all the central place of duty and meaning, the same two motives that the Hindus place highest in their hierarchy of desire. Frankl reached his position after a long and agonizing incarceration in Nazi concentration camps. With other prisoners he found himself stripped to naked existence (1959a). In such extremity what does a person need and want? Pleasure and success are out of the question. One wants to know the meaning of his suffering and to learn how as a responsible being he should acquit himself. Should he commit suicide? If so, why; if not, why not? The search for meaning becomes supreme.

Frankl is aware that his painfully achieved theory of motivation departs widely from most American theory, and he points out the implication of this fact for psychotherapy. He specifically criticizes the principle of homeostasis (1959b) as implying that personality is a quasiclosed system. To cater to the internal adjustments of a neurotic, or to assume that he will regain health by reshuffling his memories, defenses, or conditioned reflexes is ordinarily self-defeating. In many cases of neurosis only a total breakthrough to new horizons will turn the trick.

Neither Hindu psychology nor Frankl underestimates the role of pleasure and success in personality. Nor would Frankl abandon the hard won gains reflected in psychoanalytic and need theory. He says merely that in studying or treating a person we often find these essentially homeostatic formulations inadequate. A man normally wants to know the whys and wherefores. No other biological system does so; hence, man stands alone in that he possesses a degree of openness surpassing that of any other living system.

Criterion 3

Returning now to our main argument, we encounter a not inconsiderable array of theories that emphasize the tendency of

human personality to go beyond steady states and to strive for an enhancement and elaboration of internal order even at the cost of considerable disequilibrium.

I cannot examine all of these nor name all the relevant authors. One could start with McDougall's proactive sentiment of self-regard which he viewed as organizing all behavior through a kind of "forward memory" (to use Goody's apt term—1959). Not too dissimilar is the stress that Combs and Snygg place on the enhancement of the phenomenal field. We may add Goldstein's conception of self-actualization as tending to enhance order in personality; also Maslow's theory of growth motives that supplement deficiency motives. One thinks of Jung's principle of individuation leading toward the achievement of a self (a goal never actually completed). Some theories, Bartlett and Cantril among them, put primary stress on the "pursuit of meaning." Certain developments in post-Freudian "ego psychology" belong here.⁵ So too does existentialism with its recognition of the need for meaning and of the values of commitment. (The brain surgeon, Harvey Cushing, was speaking of open systems when he said: "The only way to endure life is to have a task to complete.")

No doubt we should add Woodworth's recent advocacy of the "behavior primacy" theory as opposed to the "need" theory, Robert White's emphasis on "competence," and Erikson's "search for identity."

Now these theories are by no means identical. The differences between them merit prolonged debate. I lump them here simply because all seem to me to recognize the third criterion of open systems, namely, the tendency of such systems to enhance their degree of order and become something more than at present they are.

We all know the objection to theories of this type. Methodologists with a taste for miniature and fractionated systems complain that they do not lead to "testable propositions" (cf. Roby, 1959). The challenge is valuable in so far as it calls for an expansion of research ingenuity. But the complaint is ill-advised if it demands that we return to quasiclosed systems

⁵ Pumpian-Mindlin (1959) writes: "The focus of clinical psychoanalysis on ego psychology is a direct result of the change from a closed system to an open one" (p. 1051).

simply because they are more "researchable" and elegant. Our task is to study what is, and not what is immediately convenient.

Criterion 4

Now for our fourth and last criterion. Virtually all the theories I have mentioned up to now conceive of personality as something integumented, as residing within the skin. There are theorists (Kurt Lewin, Martin Buber, Gardner Murphy, and others) who challenge this view, considering it too closed. Murphy says that we overstress the separation of man from the context of his living. Experiments on sensory deprivation Hebb (1955) has interpreted as demonstrations of the constant dependence of inner stability on the flow of environmental stimulation. Why Western thought makes such a razor-sharp distinction between the person and all else is an interesting problem. Probably the personalistic emphasis in Judeo-Christian religion is an initial factor, and as Murphy (1958, p. 297) has pointed out the industrial and commercial revolutions further accentuated the role of individuality. Shinto philosophy, by contrast, regards the individual, society, and nature as forming the tripod of human existence. The individual as such does not stick out like a raw digit. He blends with nature and he blends with society. It is only the merger that can be profitably studied.

As Western theorists most of us, I dare say, hold the integumented view of the personality system. I myself do so. Others rebelling against the setting of self over against the world, have produced theories of personality written in terms of social interaction, role relations, situationism, or some variety of field theory. Still other writers, such as Talcott Parsons (1951) and F. H. Allport (1955), have admitted the validity of both the integumented personality system and systems of social interaction, and have spent much effort in harmonizing the two types of systems thus conceived.

This problem, without doubt, is the knottiest issue in contemporary social science. It is the issue which, up to now, has prevented us from agreeing on the proper way to reconcile psychological and sociocultural science.

In this matter my own position is on the

conservative side. It is the duty of psychology, I think, to study the person-system, meaning thereby the attitudes, abilities, traits, trends, motives, and pathology of the individual—his cognitive styles, his sentiments, and individual moral nature and their interrelations. The justification is twofold: (a) there is a persistent though changing person-system in time, clearly delimited by birth and death; (b) we are immediately aware of the functioning of this system; our knowledge of it, though imperfect, is direct, whereas our knowledge of all other outside systems, including social systems, is deflected and often distorted by their necessary incorporation into our own apperceptions.

At the same time our work is incomplete unless we admit that each person possesses a *range* of abilities, attitudes, and motives that will be evoked by the different environments and situations he encounters. Hence, we need to understand cultural, class, and family constellations and traditions in order to know the schemata the person has probably interiorized in the course of his learning. But I hasten to warn that the study of cultural, class, family, or any other social system does not automatically illumine the person-system, for we have to know whether the individual has accepted, rejected, or remained uninfluenced by the social system in question. The fact that one plays the role of, say, teacher, salesman, or father is less important for the study of his personality than to know whether he likes or dislikes, and how he defines, the role. And yet at the same time unless we are students of sociocultural systems we shall never know what it is the person is accepting, rejecting, or redefining.

The provisional solution I would offer is the following: the personality theorist should be so well trained in social science that he can view the behavior of an individual as fitting any system of interaction; that is, he should be able to cast this behavior properly in the culture where it occurs, in its situational context, and in terms of role theory and field theory. At the same time he should not lose sight—as some theorists do—of the fact that there is an internal and subjective patterning of all these contextual acts. A traveler who moves from culture to culture, from situation to situation, is none the less a single person;

and within him one will find the nexus, the patterning, of the diverse experiences and memberships that constitute his personality.

Thus, I myself would not go so far as to advocate that personality be defined in terms of interaction, culture, or roles. Attempts to do so seem to me to smudge the concept of personality, and to represent a surrender of the psychologist's special assignment as a scientist. Let him be acquainted with all systems of interaction, but let him return always to the point where such systems converge and intersect and are patterned—in the single individual.

Hence, we accept the fourth (transactional) criterion of the open system, but with the firm warning that it must not be applied with so much enthusiasm that we lose the personality system altogether.

GENERAL SYSTEMS THEORY

There are those who see hope for the unification of science in what James Miller (1955) called "general behavior systems theory." This approach seeks formal identities between physical systems, the cell, the organ, the personality, small groups, the species, and society. Now critics (e.g., Buck, 1956) complain that all this is feeble analogizing, that formal identities probably do not exist, and that attempts to express analogies in terms of mathematical models result only in the vaguest generalities. As I see it, the danger in attempting to unify science in this manner lies in the inevitable approach from below, that is, in terms of physical and biological science. Closed systems or systems only partly open become our model, and if we are not careful, human personality in all its fullness is taken captive into some autistic paradise of methodology.

Besides neglecting the criteria of enhanced organization and transaction general systems theory has an added defect. The human person is, after all, the observer and interpreter of systems. This awkward fact has recently been haunting the founder of the operational movement, P. W. Bridgman (1959). Can we as scientists live subjectively within our system and at the same time take a valid objective view thereof?

Some years ago Elkin (1947) published the

case of "Harry Holzer," and invited 39 specialists to offer their conceptualizations. As might be expected, many different conceptualizations resulted. No theorist was able entirely to divest the case of his own preconceptions. Each read the objective system in terms of the subjective. In other words, our theories of personality—all of them—reflect the temperament of the author fully as much as the personality of *alter*.

This sad spectre of observer contamination should not, I think, discourage us from the search for objectively valid theory. Truth, as the philosopher Charles Pierce has said, is the opinion which is fated to be ultimately agreed to by all who investigate. My point is that "the opinion fated to be ultimately agreed to by all who investigate" is not likely to be reached through a premature application of general systems theory, nor through devotion to any one partially closed theory. Theories of open-systems hold more promise, though at present they are not in agreement among themselves. But somewhere, sometime, I hope and believe, we shall establish a theory of the nature of personality which all wise men who investigate, including psychologists, will eventually accept.

SOME EXAMPLES

In the meantime, I suggest that we regard all sharp controversies in personality theory as probably arising from the two opposed points of view—the quasiclosed and the fully open.

The principle of reinforcement, to take one example, is commonly regarded as the cement that stamps in a response, as the glue that fixes personality at the level of past deeds. Now an open-system interpretation is very different. Feigl (1959, p. 117), for instance, has pointed out that reinforcement works primarily in a prospective sense. It is only from a *recognition* of consequences (not from the consequences themselves) that the human individual binds the past to the future and resolves to avoid punishment and to seek rewards in similar circumstances, provided, of course, that it is consonant with his interests and values to do so. Here we no longer assume that reinforcement stamps in, but that it is one factor among many to be considered in the programing of future action (Allport,

1946). In this example we see what a wide difference it makes whether we regard personality as a quasiclosed or open system.

The issue has its parallels in neurophysiology. How open is the nervous system? We know it is of a complexity so formidable that we have only an inkling as to how complex it may be. Yet one thing is certain, namely, that high level gating often controls and steers lower level processes. While we cannot tell exactly what we mean by "higher levels" they surely involve ideational schemata, intentions, and generic personality trends. They are instruments for programing, not merely for reacting. In the future we may confidently expect that the neurophysiology of programing and the psychology of proaction will draw together. Until they do so it is wise to hold lightly our self-closing metaphors of sowbug, switchboard, giant computer, and hydraulic pump.

Finally, an example from motivation theory. Some years ago I argued that motives may become functionally autonomous of their origins. (And one lives to regret one's brashness.)

Whatever its shortcomings the concept of functional autonomy succeeds in viewing personality as an open and changing system. As might be expected, criticism has come chiefly from those who prefer to view the personality system as quasiclosed. Some critics say that I am dealing only with occasional cases where the extinction of a habit system has failed to occur. This criticism, of course, begs the question, for the point at issue is why do some habit systems fail to extinguish when no longer reinforced? And why do some habit systems that were once instrumental get refashioned into interests and values having a motivational push?

The common counterargument holds that "secondary reinforcement" somehow miraculously sustains all the proactive goal-seeking of a mature person. The scientific ardor of Pasteur, the religio-political zeal of Gandhi, or for that matter, Aunt Sally's devotion to her needlework, are explained by hypothetical cross-conditioning that somehow substitutes for the primary reinforcement of primary drives. What is significant for our purposes is that these critics prefer the concept of sec-

ondary reinforcement, not because it is clearer, but because it holds our thinking within the frame of a quasiclosed (reactive) system.

Now is not the time to re-argue the matter, but I have been asked to hint at my present views. I would say first that the concept of functional autonomy has relevance even at the level of quasiclosed systems. There are now so many indications concerning feedback mechanisms, cortical self-stimulation, self-organizing systems, and the like (Chang, 1950; Hebb, 1949; Olds & Milner, 1954) that I believe we cannot deny the existence of self-sustaining circuit mechanisms which we can lump together under the rubric "perseverative functional autonomy."

But the major significance of the concept lies in a different direction, and presupposes the view that personality is an expanding system seeking progressively new levels of order and transaction. While drive motives remain fairly constant throughout life, existential motives do not. It is the very nature of an open system to achieve progressive levels of order through change in cognitive and motivational structure. Since in this case the causation is systemic we cannot hope to account for functional autonomy in terms of specific reinforcements. This condition I would call "proprie functional autonomy."

Both perseverative and proprie autonomy are, I think, indispensable conceptions. The one applies to the relatively closed part-systems within personality; the other to the continuously evolving structure of the whole.

A last example. It is characteristic of the quasiclosed system outlook that it is heavily nomothetic. It seeks response and homeostatic similarities among all personality systems (or, as in general behavior systems theory, among *all* systems). If, however, we elect the open system view we find ourselves forced in part toward the idiographic outlook. For now the vital question becomes "what makes the system hang together in any one person?" (cf. Taylor, 1958). Let me repeat this question, for it is the one that more than any other has haunted me over the years. *What makes the system cohere in any one person?* That this problem is pivotal, urgent, and relatively neglected, will be recognized by open-system theorists, even while it is downgraded and

evaded by those who prefer their systems semiclosed.

FINAL WORD

If my discourse has seemed polemical I can only plead that personality theory lives by controversy. In this country we are fortunate that no single party line shackles our speculations. We are free to pursue any and all assumptions concerning the nature of man. The penalty we pay is that for the present we cannot expect personality *theory* to be cumulative—although, fortunately, to some extent personality *research* can be.

Theories, we know, are ideally derived from axioms, and if axioms are lacking, as in our field they are, from assumptions. But our assumptions regarding the nature of man range from the Adlerian to the Zilborgian, from the Lockean to the Leibnizian, from the Freudian to the Hullian, and from the cybernetic to the existentialist. Some of us model man after the pigeon; others view his potentialities as many splendors. And there is no agreement in sight.

Nils Bohr's principle of complementarity contains a lesson for us. You recall that he showed that if we study the position of a particle we cannot at the same time study its momentum. Applied to our own work the principle tells us that if we focus on reaction we cannot simultaneously study proaction; if we measure one trait we cannot fix our attention on pattern; if we tackle a subsystem we lose the whole; if we pursue the whole we overlook the part-functioning. For the single investigator there seems to be no escape from this limitation. Our only hope is to overcome it by a complementarity of investigators and of theorists.

While I myself am partisan for the open system, I would shut no doors. (Some of my best friends are quasiclosed systematists.) If I argue for the open system I plead more strongly for the open mind. Our condemnation is reserved for that peculiar slavery to fashion which says that conventionality alone makes for scientific respectability. We still have much to learn from our creative fumbblings with the open system. Among our students, I trust, there will be many adventurers. Shall we not teach them that in the pastures of science it is

not only the sacred cows that can yield good scientific milk?

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