MODELS ILLUSTRATED
Seeing, Testing, &Improving our Model for Action

The Nature of System, Intersystem, Developmental and Changing Models: Note: This reference came from a book that I came across on one of David Kantor's bookshelves. The book is currently out of print. The piece I include here is what I would call "Required Reading" for any aspiring model builder. It does a superb job of describing the distinguishing attributes of different kinds of change models.

*The content below is from Robert Chin The Planning of Change, pg 199-214 12/03 BCH Model Building References used as inputs to The **INNERpath** Model by BC Huselton.*

The purpose of this material is to present a concept relevant to, and the benefits to be gained from using a "system" model and a "developmental" model in thinking about human events. (1)

All practioners have ways of thinking about figuring out situations of change. These ways are embodied in the concepts with which they apprehend the dynamics of the client-system they are working with, their relationship to it, and their process of helping with its change. For example, the change-agent encounters resistance, defense mechanisms, readiness to change, adaptation, adjustment, maladjustment, integration, disintegration, growth, development, and maturation as well as deterioration. He uses concepts such as these to sort out the processes and mechanisms at work. And, necessarily so. No practitioner can carry on thought processes without such concepts; indeed, no observation or diagnoses are ever made on "raw facts," because facts are really observations made within a set of concepts. But lurking behind concepts such as those stated above are assumptions about how the parts of the client-system fit together and how they change. (2)

For instance, "Let things alone, and the natural laws (of economics, politics, personality, etc.) will work things out in the long run." "It is only human nature to resist change." "Every organization is always trying to improve its ways of working." Or, in more technical forms, we have assumptions such as: "The adjustment of the personality to its inner forces as well as adaptation to its environment is the sign of a healthy personality." "The coordination and integration of the departments of an organization is the task of the executive." "Conflict is an index of malintegration, or of change." "Inhibiting forces against growth must be removed."(3)

It is clear that each of the above concepts conceals a different assumption about how event achieve stability and change, and how anyone can or cannot help change along. Can we make these assumptions explicit? Yes, we can and we must. (4)

The behavioral scientist does exactly this by constructing a simplified model of human events and of his tool concepts. By simplifying he can analyze his thoughts and concepts, and see in turn where the congruities and discrepancies occur between these and actual events. He becomes at once an observer, analyzer and modifier of the system of concepts he is using. (5)

These models provide "mind-holds" to the practioner in his diagnosis. They are, therefore, of practical significance to him. This suggests one essential meaning of the oft-quoted and rarely explained phrase that "nothing is so practical as a good theory." We will try to show how the "system" and "developmental" approaches provide key tools for diagnosis of persons, groups, organizations, and communities for purposes of change. (6)

We need to keep in mind the difference between an "analytic" model and a model of concrete events or cases. For our purposes, an analytic model is a constructed simplification of some part of reality that retains only those features regarded as essential for relating similar processes whenever and wherever they occur. (Theory of Practice – BCH comment here) A concrete model is based on an analytic model, but uses more of the content of the actual of the actual case, though it is still a simplification designed to reveal the essential features of some range of cases. (Practice Model – BCH comment here) (7)

As Hagen puts it: “An explicitly defined analytic model helps theorist to recognize what factors are being taken into account and what relationships among them are assumed and hence to know the basis of his conclusions.

The “System” Model:
Psychologists, sociologists, anthropologists, economists, and political scientists have been “discovering” and using the system model. In so doing, they find intimations of an exhilarating “unity” of science, because the system models used by biological and physical scientists seem to be exactly similar. Thus, the system model is regarded by some system theorists as universally applicable to physical and social events, and to human relationships in small and large units. (8)

The terms or concepts that are a part of the system model are “boundary,” “stress or tension,” “equilibrium,” and “feedback.” All these terms are related to “open system,” “closed system”and“intersystem “models. (9
The Terms:

System: It is helpful to visualize a system by drawing a large circle. We place elements, parts, variables, inside the circle as the components, and draw lines among the components. The lines may be thought of as rubber bands or springs, which stretch or contract as the forces increase or decrease. Outside the circle is the environment, where we place all other factors, which impinge upon the system. (10)

Boundary: In order to specify what is inside or outside the system, we need to define its “boundary “line. The boundary of a system may exist physically: a tightly corked vacuum bottle, the skin of a person, the number of people in a group, etc. But, in addition, we may delimit the system in a less tangible way, by placing our boundary according to what variables are being focused on. (11)

Tension, stress, strain, and conflict: Because the components within a system are different from each other, are not perfectly integrated, or are changing and reacting to change, or because outside disturbances occur, we need ways of dealing with these differences. The differences lead to varying degrees of tension in the system. Examples: males are not like females, foremen see things differently from workers and from executives, children in a family grow, a committee has to work with a new chairman, a change in marketing conditions requires a new sales response from the factory. To restate these examples in conceptual terms: we find built-in differences, gaps of ignorance, misperceptions, or differential perceptions, internal changes in a component, reactive adjustments and defenses, and the requirements of system survival generating tensions. Tensions that are internal and arise out of the structural arrangements of the system may be called stresses and strains of the system. When tensions gang up and become more or less sharply opposed then, we have a conflict. (12)

A word of warning. **The presence of tension, stresses or strains, and conflict within a system often are reacted to by people within the system as if they were shameful and must be done away with. Tension reduction, relief of stress and strain, and conflict resolution become the working goals of practioners but sometimes at the price of overlooking the possibility of increasing tensions and conflict in order to facilitate creativity, innovation, and social change. System analysts have been accused of being conservative and even reactionary in assuming that a social system always tends to reduce tension, resists innovation, abhor deviancy and change. It is obvious, however, that tension and conflict are “in” any system, and that no living system exists without tension. (13)**

The identification of and analysis of how tensions operate in a system are by all odds the major utility of system analysis for practitioners of change. The dynamics of a living system are exposed for observation through utilizing the concepts of tension, stress and strain, and conflict. These

tensions lead to activities of two kinds: those which do not affect the structure of the system (dynamics), and those, which directly alter the structure itself (system change). (14)

Equilibrium and "steady state."
A system is assumed to have a tendency to achieve a balance among the various forces operating within and upon it. Two terms have been used to denote two different ideas about balance. When the balance is thought of as a fixed point or level, it is called "equilibrium." "Steady state," on the other hand, is the term recently used to describe the balanced relationship of parts that is not dependent upon any fixed equilibrium point or level. (15)

A system in equilibrium reacts to outside impingements by:

1. Resisting the influence of the disturbance, refusing to acknowledge its existence, or by building a protective wall against the intrusion, and by other defensive maneuvers. Example: A small group refuses to talk about a troublesome problem of unequal power distribution raised by a member. (16)

2. By resisting the disturbance through bringing into operation the homeostatic forces that restore or recreate a balance. The small group talks about the troublesome problem of a member and convinces him that it is not "really a problem. (17)

3. By accommodating the disturbance through achieving a new equilibrium. Talking about the problem may result in a shift in power relationship among the members of the group. (18)

The concepts of equilibrium (and steady state) lead to some questions to guide a practioner's diagnosis.

a. What are the conditions conducive to the achievement of equilibrium in this case? Are there internal or external factors producing these forces? What is their quality and tempo? (19)

b. Does the case of the client-system represent one of the typical situations of equilibrium? How does judgment on this point affect intervention strategy? If the practioner feels the situation is tense and precarious, he should be more cautious in intervention than in a situation of stable type. (20)

c. Can the practioner identify the parts of the system that represent greatest readiness to change, and the greatest resistance to and defense against change? Can he understand the functions of any variables in relation to all other variables? Can he derive some sense of the direction in which the client system is moving, and separate those forces attempting to restore an old equilibrium and those pushing toward a new equilibrium state? (21)

Feedback:
Concrete systems are never closed off completely. They have inputs and outputs across boundary; they are affected by and in turn affect the environment. While affecting the environment, a process we call output, systems gather information about how they are doing. Such information is then fed back into the system as input to guide and steer its operations. This process is called feedback. Example: Improving the feedback process of a client-system will allow for self-steering or corrective action to be taken by him or it. In fact, the single most important improvement the change-agent can help a client system to achieve is to increase its diagnostic sensitivity to the effect of its own actions upon others. In diagnosing a client system, the

practioner asks: What are the feedback procedures? How adequate are they? What blocks their effective use? Is it lack of skill in gathering data, or in coding and utilizing the information? (22)

Diagnosing the client as a system of variables, we have a way then of managing the complexity of "everything depends upon everything else" in an orderly way. Use of system analysis has these possibilities: (23)

1. diagnosticians can avoid the error of simple cause-and-effect thinking;

2. they can justify what is included in observation and interpretation and what is temporarily excluded;

3. they can predict what will happen if no new or outside force is applied;

4. they are guided in categorizing what is relatively enduring and stable, or changing, in the situation;

5. they can distinguish between what is basic and what is merely symptomatic;

6. they can predict what will happen if they intervene; and

7. they are guided in selecting points of intervention

The "Intersystem" Model:
An Intersystem model involves two open systems connected to each other. The term added here is connectives. Connectives represent the lines of relationship of the systems. Connectives tie parts (mechanics) or imbed in a web of tissue that separate organs (biology); connectives in an industrial establishment are the defined lines of communication, or the leadership hierarchy and authority for the branch plants; or they represent the social contract entered into by a therapist and patient; or mutual role expectations of consultant and client; or the affective ties between family members. (24)

The Intersystem model exaggerates the virtues of autonomy and the limited nature of interdependence of the interactions between the two connected systems. This model leads us to examine the interdependent dynamics of interaction both within and between units and pay close attention to system differences. For change-agents, the essence of collaborative planning is contained in an intersystem model. (25)

What are some of the positive advantages of using intersystem analysis?

1. The external change-agent or the change-agent built into an organization, as a helper with planned change does not completely become a part of the client-system. He must remain separate to some extent; he must create and maintain some distance between himself and the client, thus standing apart "in another system" from which he relates. (26)

2. Intersystem analysis of the change-agent's role leads to fruitful analysis of the connectives – their nature in the beginning, how they shift, and how they are cut off. Intersystem analysis also poses squarely an unexplored issue, namely the internal system of the change-agent, whether a single person, consulting group, or a nation. Helpers of change are prone at times not to see that their own systems as change agents have boundaries, tensions, stresses and strains, equilibria, and feedback mechanisms which may be just as much parts of the problem as are similar aspects of the client-system. Thus relational issues are more available for diagnosis when we us an intersystem model. (27)

3. The Intersystem model is applicable to problems of leadership, communication, and conflict in organizations, intergroup relations, and international relations. Example: Leadership in a

work group with its liaison, negotiation, and representation function is dependent upon connectiveness to another group and not solely upon the internal relationships within the work group. (28)

The "Developmental" Model:

By developmental models, we mean those bodies of thought that center around growth and directional change. Developmental models assume change; they assume that there are noticeable differences between the states of a system at different times; that the succession of the states implies the system is headed somewhere; and that there are orderly processes which explain how the system gets from its present state to wherever it is going. In order to delimit the nature of change in developmental models we should perhaps add the idea of an increase in value accompanying the achievement of a new state. With this addition, developmental models focus on process of growth and maturation. This addition might seem to rule out processes of decay, deterioration, and death from consideration. Logically, the developmental model should apply to either. (29)

There are two kinds of "death" of concern to the practitioner. First, "death" or loss of some part of sub-value, as a constant concomitant of growth and development. Second, "death" as a planned change for a group or organization – the dissolution of a committee or community organization that has "outlived its purpose and function." (30)

The developmental model has tremendous advantage for the practitioner. It provides a set of explanations about the future of the client-system. By clarifying his thoughts and refining his observations about direction, states in the developmental process, forms of progression, and forces causing these events to occur over a period of time, the practitioner develops a time perspective which goes far beyond that of the more here and now system-model, which is bound by time. By using a developmental model, he has a directional focus for his analysis and action and a temporal frame of reference. In addition, he is confronted with a number of questions to ask himself and of his observations of the case: Do I assume an inherent end of development? Do I impose a desired (by Me) direction? How did I establish a collaboratively planned direction? What states in the development process may be expected? What form of progression do I foresee? What causes the development? His diagnoses and his intervention can become strategic rather than merely tactical. (31)

The Terms:

Direction:

Developmental models postulate that the system under scrutiny – a person, a small group, interpersonal interactions, an organization, a community or a society – is going "somewhere"; that the changes have some direction. The direction may be defined by: (32)

a. some goal or end state (developed, mature);
b. the process of becoming (developing, maturing) or
c. the degree of achievement toward some goal or end state (increased development, increase in maturity.

Identifiable State:

As the system develops over time, the different states may be identified and differentiated from one another. Terms such as "stages," "levels," "phases," or "periods" are applied to these states. No uniformity exists in the definition and operational identification of such successive states. But since change-agents do have to label the past, present, and future, they need some terms to describe successive states and to identify the turning point, transition areas, or critical events that characterize change. Here, system analysis is helpful in defining how parts are put together, along with the tensions and directions of the equilibrating processes. We have two polar types of the shifts of state: (33)

a. small, nondiscernable steps or increments leading to a qualitative jump
b. a cataclysmic or critical event leading to a sudden change.

Form of Progression:

Change-agents see in their models of development some form of progression or movement. (35)

a. it is often stated that once a stage is worked through, the client-system shows continued progression and normally never turns back.
b. it is assumed that change, growth, and development occur in spiral form.
c. another assumption more typically made is that stages are really phases which occur and recur. There is an oscillation between the various states, where no chronological priority is assigned to each state; there are cycles
d. still another assumption is that the form of progression is characterized by a branching out into differentiated forms and processes, each part increasing in its specialization, and at the same time acquiring it own autonomy and significance.

Forces:

Forces or causal factors producing development and growth are most frequently seen by practitioners as "natural," as part of human nature. (36)

a. environmental factors act as "triggers" or "releases," where the presence of some stimulus set off the system's inherent growth forces.
b. a smaller number of practitoners and social scientists think that the response to new situations and environmental forces is a coping response which gives rise to growth and development.
c. When stresses and strains of a system become too great, a disruption occurs and a set of forces is released to create new structures and achieve a new equilibrium.

Potentiality:

Developmental models vary their assumptions about potentialities of the system for development, growth, and change. That is, they vary in assumptions about the capabilities, overt or latent, that are built into the original or present state so that the necessary conditions for development may be typically present. (37)

a. does the "seed' – and its genetic characteristics – represent potentialities?
b. are the supporting conditions of its potentiality available?

c. is the intelligence or emotional capability or skill potential sufficient for development and change in a social and human process?

Intervention Implications:

The Social Scientist generally prefers not to change the system, but to study how it works and to predict what would happen if some new factor were introduced. So we find his attention focused on a "Theory of Change," of how the system achieves change. In contrast, the practitioner is concerned with diagnosis: how to achieve understanding in order to engage in change. The practitioner, therefore; has some additional interests; he wants to know how to change the system, he needs a "theory of changing" the system. (38) **(Note to BCH..This "theory of changing" is a Theory of Practice).**

A theory of changing requires the selection, or the construction, by the theoretically minded practitioners, of thought-models **(Practice Models)** appropriate to their intended purpose. **(Theory of the Thing)** This has to be

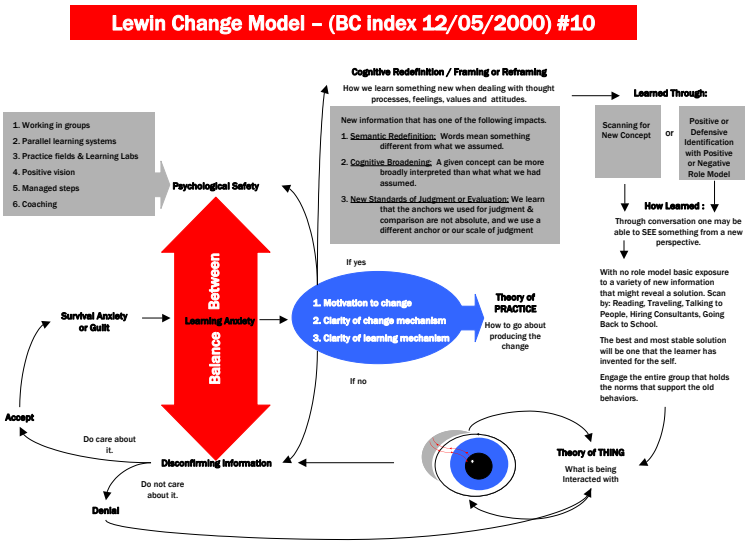
done according to explicit criteria. A change agent may demand of any model answers to certain questions. The following questions are guidelines for examining a conceptual "theory of changing" (39)

1. Does the model account for the stability and continuity in the events studied at the same time that it accounts for the change in them?
2. How does the process of change develop, given the interlocking factors in the situation that make for stability?
3. Where does the model locate the "source" of change?
4. What place among these sources do the deliberate and conscious efforts of the client-system and the change-agent occupy?
5. What does the model assume about how goals and directions are determined?
6. What or who sets the direction for movement of the process of change?
7. Does the model provide the change agents with levers or handles for affecting the direction, tempo, and quality of these processes of change?
8. How does the model "place" the change-agent in the scheme of things?
9. What is the shifting character of his relationship to the client system, initially and at the termination of the relationship, that affects his perception and actions?
10. The question of the relationship of the change-agent to others needs to be part and parcel of the model since the existential relationship of the change-agent engaged in the processes of planned change become "part of the problem" to be investigated. (40)

A Summary:

A System Model emphasizes primarily the details of how stability is achieved, and only derivatively how change evolves out of the incompatibilities and conflicts in the system. A system model assumes that organization, interdependency, and integration exist among its parts and that change is a derived consequence of how well the parts of the system fit together, or how well the system fits in with other surrounding and interacting systems. **The source of change lies primarily in the structural stress and strain externally induced or internally created. This process of change is a process of tension reduction. The goal and direction are emergent from the structures or from imposed sources.** Goals are often analyzed as set by "vested interests" of one part of the system. The confronting symptom of some trouble is a reflection of difficulties of adaptability (reaction to environment) or of the ability for adjustment (internal equilibration). The levers or handles available for manipulation…**BCH BAD Word …for MOVEMENT! Better.** Are in the "inputs" to the system, especially the feedback mechanisms, and then in the forces tending to restore a balance in the system. The change-agent is treated as separate from the client system, the "Target System." (41)

A Developmental Model assumes constant change and development, and growth and decay of a system over time. Any existing stability is a snapshot of a living process – a stage that will give way to another stage. The supposition seems to be that it is "natural" that change should occur because change is rooted in the very nature of living organisms. The laws of the developmental process are not necessarily fixed, but some effects of the environment are presumably necessary to the developmental process. **The direction of change is toward some goal, the fulfillment of its destiny, granting that no major blockage gets in the way. "Trouble" occurs when there is a gap between the system and its goals. Intervention is viewed as the removal of blockage by the change-agent, who then gets out of the way of the growth forces.** Developmental models are not very sharply analyzed by the pure theorist nor formally stated, usually, as an analytic model. In fact, very frequently the model is used for studying the unique case rather than for deriving "laws of growth"; it is for descriptive process. (42)



A Model for Changing is a more recent creation. It incorporates some elements of analysis from system models, along with some ideas from the developmental model, in a framework where direct attention is paid to the induced forces producing change. It studies stability in order to unfreeze and move some part of the system. The direction to be taken is not fixed or "determined," but remains in large measure a matter of "choice" for the client-system. The change-agent is a specialist in the technical process of facilitating change, a helper to the client-system. The models for changing are as yet incompletely conceptualized. (43)

An Intersystem Model pays attention to the Change-Agent as a system intervening into the Client-System and examines how this relationship is part of the change model. (44)

Notes (1) – (44) R. Chin Content