

# Discussion of Abelson's Talk on Cartwright's Founders' Day

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It is terribly modest of Bob Abelson to classify himself as the retriever of lost concepts, because what he has brought back is not merely a concept but an entire paradigm—and an important paradigm at that.

The paradigm lost was that of *structural dynamics*, and it is this paradigm that Bob has regained for us. I shall say a few words about this paradigm and how it relates to Bob's concept of incompatible alternative construals. I will also say a few words about a paradigm that Bob left behind—a paradigm that waits for retrieval.

The paradigm of structural dynamics goes back not just to Festinger or to Heider, and it is not simply the assumption that inconsistency is aversive, but is a very fundamental idea in perception and in cognition—namely, the idea that the structural arrangements of elements and of parts depend on the distribution of the forces among them, and that conversely, these forces derive from the relationships of the elements to each other.

It was a founding idea for Gestalt psychology, which borrowed it from field theory in physics—a theory that was most powerfully explored by the two founders of Group Dynamics—Kurt Lewin and Doc Cartwright.

The basic paradigm of structural dynamics holds that any two elements of a given system—perceptual or cognitive (or motivational or emotional or behavioral for that matter) exert influence on one another. There is tension between them and the movement of one produces changes in the other. The way that things are arranged in the mind, or in the psychological field (to use the appropriate term) is not a matter of random access. Some things go together—they are in a region of cohesive vectors—whereas other things tend to disperse.

Recall that according to Gestalt principles, elements (such as points or lines in a plane, colors, or shapes) cohere to form a stable structure *because* the cohesive forces—those that attract the elements to each other—balance those that tend to disperse these elements. That is why an open circle will therefore be sometimes misperceived as closed; but a closed circle will never be perceived as open. It is the unequal distribution of forces in an open circle that produces what has been known as “perceptual work,” and the elements tend to move with the vectors that impinge on them to induce *closure*.

It is the same with verbal material. Mozart and Haydn go well together and form a structure quite readily, but Mozart and Hitler do not. There is some

resistance of the one against the other, and they will not be stored in close proximity.

Thus, the paradigm of structural dynamics (of which the notions of cognitive dissonance and the aversion of inconsistency or imbalance are integral successors) has as its basic postulates (a) that the arrangement of parts is not accidental, but it is under the on-line influence of the forces within the structure, and (b) that the arrangement of parts can tell you something about what forces must exist in the structure to keep the parts in their relationships to each other.

Note how different this is from the computer model of memory. The computer doesn't care where you store some items. Whether you store Mozart next to Haydn or next to Hitler is a matter of indifference to the computer. Adjacent items in a list don't care about their addresses. Of course in contemporary cognitive psychology there are some notions of structure—such as nodes and networks—and there is a concept of spreading activation or levels of processing, but these aren't notions of structural dynamics in which the forces within the system hold the system together.

Structural dynamics should not be confused with other types of structural theories, such as associative structures, grammars, rules, categories, networks, frames, or schemata. All of these structures do specify properties of elements and of their interrelationships, but these structures have no dynamics; they do not include the notion of forces or vectors that endow a structure with a potential for movement and change and that explain and determine its stability. Grammatical structures or systems of categories are often quite arbitrary; there is nothing compelling about one arrangement of a list or another. Dynamic structures are never arbitrary. For each pattern there is a corresponding arrangement of vectors that holds the elements in position.

We have now gone through a solid decade during which structural dynamics was completely ignored. It was a decade of "cold cognitions." Some years ago Bob Abelson was one of the early social psychologists who would have liked to make an incursion into the juicier and wilder realm of "hot cognitions." He first used the term, however, when experimental and social psychology both turned toward the cold computer models of the mind and so did he.

I am glad to see Bob back in hot cognition, therefore, and back in the paradigm that has been regained.

The structural theory of emotions that Bob is developing is very exciting, and it will have a profound influence. The notion of incompatible construals is in the best tradition of structural dynamics, because it proposes that a force—an explosion—is produced simply by the meeting of cognitions. The entire energy delivered depends completely on the confrontation of the elements of the structure; in the case of Bob, on the relationship among the construals.

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However, there are two aspects of a shift in emphasis that we have been witnessing over the last couple of years—a shift that is required to complete and

to complement the paradigm of structural dynamics and, as you will see, to complete the idea of incompatible construals.

The paradigm that Bob has regained is the idea that cognitions may have motivational and emotional consequences. This is a most important idea—one that we can never really abandon, although we have abandoned it temporarily for the computer model of the mind. We have ignored the fact that the person, unlike the computer, may be delighted or disgusted with its own output. That is the idea of incompatible alternative construals that Bob is bringing back.

There is a second aspect of the paradigm that is shifting. We are now beginning to ask who turned the computer on, who plugged it in, for what purpose, how fast is it running, what drives it, and who wrote the program? In other words, we are looking not only at the motivational and emotional *consequences* of cognitions, but we are also beginning to look at the motivational and emotional *antecedents* of cognitions.

Note that Bob mentioned the fact that both balance theory and dissonance theory found it necessary to specify that inconsistency or imbalance only works for situations that are consequential.

Now, the theory of structural dynamics and the theory of structural emotions are both modeled on closed energy systems. The generation of energy that derives from structural relationships is related both to field theory in physics and to the theory of thermodynamics. The second law of thermodynamics holds that the distribution of energy (for example, the distribution of molecules in a closed system) will tend toward randomness if no force is applied. In a closed system everything will eventually become random.

When the elements of a closed system are unequally distributed—say, there are some “hot” molecules that move fast and some “cold” ones that move slowly—they will *all* eventually become slower, and in the process of this equalization and randomization of molecules, energy will be expanded and lost. The system will move toward inertness.

Thus, the energy within the system depends on an unequal and uneven distribution of molecules. This is the model from which Gestalt psychologists took their cue when they said that psychological or perceptual work (in the sense of expansion of energy) will be accomplished when there is inequality of cohesive and restraining forces. An open circle will tend toward closure.

Now all this is true only in closed-energy systems. Balance and dissonance and, therefore, Bob’s structural emotion theory, all model themselves after closed-energy systems. All the energy that is considered is *within* the structure, and it comes from the interrelationships among its parts. In the case of dissonance it comes from inconsistency, and in the case of structural emotions it comes from incompatibilities. But Bob noted that both balance and dissonance found it necessary to add an extratheoretical postulate—the postulate that the cognitions or elements (construals) must be consequential; they must be important.

What does it mean for an inconsistency to be important? What does it mean for it to be ego-involving, a la Sherif and Cantril? What does it mean that only

those inconsistencies that touch the self will produce dissonance effects, a la Aronson, or that there must be some prior commitment, a la Brehm and Cohen?

When we ask these questions, we suddenly take a system of relations and impose on them some forces from without. The system is no longer a Gestalt-like closed-energy system; it is an open system. In all of these cases we bring outside forces into the closed system and hence, the rules of structural dynamics no longer apply in a simple way.

Note that when the individual stops and says, "Hey, this is really an important inconsistency—I better think twice before my next move," he or she is experiencing an emotion. It is certainly the case that the importance of inconsistency gives it an emotional quality, but it must be equally true that it was some prior emotion that made the inconsistency important, otherwise, why are they important and consequential? Thus, the on-line theory of structural emotions must consider prior emotions in the time series.

This then is the second aspect of the paradigm that needs to be considered. These prior motivational and emotional states, external to the system of construals, must also be analyzed or else no systematic predictions can be made.

Consider the man who shot a driver who took his parking spot. Now, nosing somebody out of their parking spot is certainly frustrating, but Bob would classify it as one of those trivial inconsistencies that need no drastic resolution. We can live with it. If the man who lost his parking spot had just come back from a great party where he enjoyed himself a great deal, he might have said to himself, "Oh, hell, let him have it. He needs it more than I." So, the fact that he took out his revolver and shot the other driver must have meant that he was pretty angry to begin with. Losing a parking spot to a random driver made his rage overflow; it was, obviously, more than he could take.

We must therefore suppose that the emotional consequences of construals will be influenced by the ambient emotional state of the individual and by his or her prior history.

We must pay attention to those antecedent emotional states that make one structure consequential and another inconsequential. The prior history and the prior course of events are very important. The analysis cannot be completely ahistorical.

There is a great deal to Bob's idea of alternative construals. It will be very influential. It brings us back on the right track of a hot organism. It only needs specifying what makes it hot.

Let me conclude by saying that all of us in the Research Center for Group Dynamics (as witnessed by Bob's current work) and out there in the field have been greatly influenced by Doc Cartwright's thinking and insights. We owe him a great deal, and I can't think of a greater tribute to his work than noting his influence after more than thirty years. It is one thing for one's work to be often cited. But it is quite another that this work contains the ideas that form and will continue to form the basic foundations of formal thinking in social psychology.

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