

## Definitions of Behavior

Unedited posts from archives of CSG-L (see INTROCSG.NET):

Date: Sun, 14 May 1995 12:04:15 -0700  
Subject: Behavior, Pop PCT

[From Rick Marken (950514.1200)]

I have had several nice phone conversations with Mark Abrams and I promised him I would post on a couple subjects so there they are:

## I. Behavior:

PCT calls attention to the fact that the word "behavior" is ambiguous. It is used to describe "actions", "controlled results" and "uncontrolled results". PCT shows that it is important to distinguish these three phenomena. "Actions" are organism-produced effects on a controlled result that bring that result to its reference state and protect it from disturbance; "controlled results" are results of actions that are protected from disturbance; "uncontrolled results" are irrelevant side effects of action; they are any results of action that the control systems is not itself controlling.

## Examples:

Action	Controlled result	Uncontrolled result
Finger taps	Typed w	Clicks of keys
Eye positioning	Foveal view of well-turned ankle	Rear-ending car in front
Flip switch	Light on	Wake partner

## II. What I think should be the essential components of any popular treatment of PCT.

1. The FACT that people are controllers. Popular treatments should always explain that people are controllers, not behavior generators.
2. The THEORY that controllers control perceptions. Popular treatments should explain that controllers control perceptions, not "reality".
3. The FACT that controllers determine the states in which they want their perceptions.
4. The FACT that it is difficult for controllers to avoid conflict but that conflict avoidance is essential because conflict results in loss of control.
5. The ways for people to recognize when they are IN conflict and ways to get OUT of conflict -- mainly by changing goals (references), changing perceptions, and reorganizing.

Best Rick

Date: Sun, 14 May 1995 21:37:00 -0600  
Subject: Defining behavior

[From Bill Powers (950514.2000 MDT)]

Like Rick Marken, I got a call from Mark Abrams asking me to define behavior.

OK. I agree with Rick's general discussion, so I'll try to go at it from a few slightly different angles. Off the top of my head ...

I: Point of view.

For each of us there are two basic kinds of behavior: the behavior of other people, and our own behavior. They are completely different.

When we see other people behaving, we see their movements, the way their hands and arms and legs and bodies move about and affect things in the environment. We hear the sounds they make and the expressions on their faces. We see how they are standing. We see how their hair is parted. We see, in other words, the impressions that their motor activities make on our own perceptions.

When we see our own behavior, we see something quite different. The movements of our arms, legs, bodies and so on, the expressions on our faces, are seldom of any concern to us. What matters to us is the effect that our own activities have on aspects of the world we perceive, that we are paying attention to, that we care about. Of this world, other people know practically nothing. They can see our movements, but they can't see why we are making them. They can even see that our movements are having effects on the environment, but which of those effects matters to us they can only guess. They often guess wrong.

When, through artificial aids, we are shown how we look and what we do as others see it, we are usually surprised, and often dismayed. In a video or a right-angled mirror we see someone's face, but it is far less familiar than the faces of other people we know -- the part in our hair is on the wrong side and the asymmetries of our faces are wrong, too. When we raise a hand, the wrong hand moves. When we laugh, the face exhibits wrinkles and distortions that have no connection with how it feels to laugh. When we see ourselves in profile, a total stranger appears. Hearing a tape recording of our own voices for the first time is also unsettling; it is full of unfamiliar overtones, mumbling and ungrammatical, interrupted by embarrassing mannerisms and hesitations.

But perhaps most surprising (especially in a video) is seeing ourselves doing all kinds of things that we didn't know we were doing. We pick things up and hold them, and put them down again. We scratch. We make faces. We clear our throats. We sigh, and twitch. We knock things to the floor, oblivious. When we hear ourselves speaking, we want to stop the recording because what we hear ourselves saying is not what we meant, or it's so incoherent that we can't imagine anyone else having understood us. We interrupt other people, we seem unaware of what they are saying; we seem completely unaware of the effects we're having.

When we see ourselves as others see us, it becomes obvious that what we think of ourselves as doing is very likely to be different from what others see us doing. And it becomes obvious that others can't see the essential (to us) aspect of what we're doing: what it is that we intend to happen in our own perceptions, looking with our eyes and sensing with our other senses.

From such experiences, we can learn some things about behavior. We have to separate the actions, the movements we make, from the effects that they are supposed to have. A given action is just a movement, a change of posture or bodily configuration. When we act, our attention is not on the action itself, but on its effects, consequences, outcomes. We seldom notice the effects that were not those we intended, as long as the ones we intended are occurring. We are usually unaware of what our body parts are actually doing, what efforts are really involved. When we see ourselves from outside, we can't see any of the things that matter from the inside.

## II. Actions versus effects of actions.

Distinguishing actions from their effects is not made any easier by language. We say "Close the door," not "exert a force on the door that will result in its closing." We say "turn on the light" or "steer left" or "pick up your socks" or "wait for me under the clock on the corner," as if these were actions rather than consequences of unnamed actions. This lends a rather magical air to the way we talk about behavior. We name what is supposed to happen as a result of physical activities, and talk as if somehow we could make these results occur without any actual physical activities.

In ordinary discourse we can usually figure out what is meant when an action is named in terms of its effects. We just imagine one of the actions that would produce such an effect. But in scientific discourse, this problem

becomes a major impediment to understanding. What does it mean to say that a rat "pressed a bar?" It means that the rat exerted efforts of some kind which resulted in the bar moving downward. But it does not actually tell us what the rat did. If behavior is supposedly caused by stimuli, those stimuli must result in the creation of muscle forces; there is no way they can act directly to cause the bar to move. To describe a behavior as a "problem-solving response" is to suggest that there is some physical action a person can take which has as its main property the solving of a problem.

III: An organized way to think about behavior.

When we want to be exact about describing behavior, we have to consider three things. The central consideration is what it is that measures the behavior. If we are describing a behavior called "closing a door," the central consideration is the door that is open, and then swings closed. We measure it by measuring the angle of the door. We are clearly talking about something happening in the environment, not about what an organism is doing.

Next, we have to ask what brings this effect about. The closing of the door is brought about by someone or something exerting a force on it. When a person closes a door, therefore, the action produced by the person is not the closing of the door, but the application of a force to the door using arms and hands (or legs and feet, or heads or hips, or whatever the means happens to be). The cause of the door's closing is the action taken by the person. We describe that action not as "closing" but as "pushing" or "pulling." We can describe the action (applying a horizontal force of a certain amount) independently of what its effects are (closing a door, knocking a vase off a table, pulling a puppy along on a leash). The action is the immediate physical effect of what the nervous system is doing via muscles. The effect is what happens in the environment as a result of the action.

And finally, we have to ask which of the many effects of any given action is the one being perceived and compared with a reference condition. When the door is closed, its angle changes, the opening of the door is visually blocked, and the transmission of sound through the opening is much reduced. Also, if there is a mirror on the door, it becomes oriented so you can see yourself in it, and if there is a cat following you, the cat is kept out. If the house is cold, closing the door will keep heat in while you take a shower. And closing the door can be a message: do not disturb.

All of these effects of the action, both direct effects on the angle of the door and indirect effects on other variables, occur and can be seen by someone else. So the question then becomes, which of these effects is being perceived by the person producing the action? To ask which is perceived is also to ask which is intended.

Of course the fact that one effect of action is intended while a number of others is not does not prevent the other effects from occurring or being perceived by others. This is why our own behavior looks so different to us than it does to others. We know which effect is intended, and we adjust our actions until the intended effect, as we perceive it, matches what we wanted to perceive. But in doing that, we unintentionally change the states of many other variables. An onlooker does not necessarily know which of the variables that changed state was the one that was intended to change, and which other changes are only side-effects. So the onlooker may see us as keeping the cat out while what we were really doing was checking our hair in a mirror.

If we get in the habit of parsing behavior into the physical action, the effects of that action on the environment, and the perceived effect that is intended, we will understand the behavior of other people much better. More important, we will realize that there is more than one way to understand another person's behavior, and we will thereby avoid jumping to wrong conclusions. We will realize that when we see a person "doing" something, that person may actually be doing something entirely different. We will look more carefully at what is going on, instead of, for example, overlooking the camera and lights when we see a mugger attacking an old lady on the street.

Best, Bill P.