PCT and other theories

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

Date: Wed Jun 23, 1993 7:42 am PST
Subject: PCT and other theories

[From Bill Powers (930623.0700 MDT)]

Yesterday I got a total of 35 posts. If I took an average of 15 minutes to consider each one and reply to those about which I had something to say, I would have devoted 8 hours and 45 minutes to the mail. This has been going on for many months, and I'm not the only one who has been swamped. What is it that's been taking up so much of our time?

By and large, it's the same thing that has caused PCT to take 40 years to get where it is: arguing with people who have other points of view to promote. I am coming close to concluding that this is a waste of time.

Consider the information-theoretic thread. Does it really matter what information theory has to say about control theory? To those interested in information theory, obviously it does. Does it really matter how PCT fits in with various (competing) concepts in linguistics? How PCT compares with existing sociological theories? With personality theories? With theories of education? With cognitive theories? With chaos theory, or optimal control theories, or action theories? To those whose primary interest is in promoting those theories, or whose expertise lies in those areas, it is clearly important to discuss how control theory relates to, or can be absorbed into, each of those theories. But is that important to the development of PCT?

In each case the answer is no. The development of PCT rests on putting it to experimental test, discovering its flaws, and working out ways to correct the flaws by improving the theory. Trying to work out its relationship to all the other theories of behavioral organization that exist is a waste of time, because by the time PCT has developed enough to deal with the kinds of problems implied by these other theories, assuming it ever does, NONE OF THESE OTHER THEORIES WILL EXIST ANY LONGER. By the time PCT has developed enough to handle the same subject matter, the subject matter itself will have taken on a completely new appearance. What will PCT have to say about intelligence, or aggression, or you name it? Nothing, because those words won't mean anything any more.

A little light went on in my head this morning. Why, I thought, are PCTers asked so often what PCT has to say about this fact or that theory or the other explanation of behavior? Obviously, because the askers have not worked out any answers for themselves. They are throwing up a challenge and waiting for someone else to meet it. In many cases, they are waiting for an answer to knock down. But why do they need to ask?

Obviously, because they don't understand PCT well enough to answer the question themselves. But if they don't understand PCT well enough to answer the question, how are they going to understand the answer? In fact they generally don't: the next word they utter following the answer is "But ..." The answer makes sense within the context of PCT, but not within the context of whatever other theory they're coming from. So they are left with the same problem: not understanding PCT.

Of course those who are trying to teach other theories have exactly the same problem: an information theorist offers an explanation, and the PCTer replies "But ...". This shows the futility of trying to use one theory as the medium for understanding another, particularly when they deal with orthogonal subject matters (for which expression we may thank Hans Blom).

In teaching PCT, the object is for the learner to grasp its principles and structure to the extent that they have been developed, so that when a question comes up regarding observations of behavior or other proposals concerning behavior, the learner can apply PCT to working out an answer -- or, given enough advancement in the art, so the learner can realize that there is something wrong with the theory that needs fixing. When a student is learning

how to solve the quadratic equation, the point is to learn the method of solution and the principles involved; it's not to deal with every new algebraic expression by going to the teacher and saying, "I solved the last problem, but this one is different -- how do you solve this one?" This is not learning how to solve the quadratic equation; it's avoiding learning. You learn by trying to apply the principles and the method, and when you fail, asking about the principles and the method, not about the answer. The answer has no importance at all; when you understand the principles and the method, you'll know when the answer is right.

One of the giveaways concerning the degree of understanding is in the reaction to PCT "slogans." We say "It's all perception." We say "Control systems control their own inputs." We say "Control systems control outcomes, not outputs." To a person who doesn't understand PCT, these are indeed just slogans; they sound like the basic dogma of PCT. But to a person who does understand PCT, these statements are simply succinct summaries of deductions that rest on a closely-reasoned analysis of the way all control systems work: they're conclusions, not premises. They're where you end up, not where you start.

A lot of the verbiage I've churned out on the net has been by way of offering answers to questions. That's fun; it shows how much I know, or think I know. But what good does it do anyone who doesn't understand how I got to the answers? I don't have any magical tricks or any genie whispering in my ear. All I do is apply PCT. If I can do that, so can anyone else. There's nothing secret about it. Or there isn't any secret once you have assimilated the theory. That's what's so gorgeous about PCT: no secrets. No arbitrary assumptions "for the sake of the argument." No appeals to philosophical generalizations. No references to 200 authorities you must have read before you can understand the answer (although reading an algebra book would help).

As a way of opening a conversation, answering a question about some aspect of behavior isn't a bad move. As soon as the "But..." occurs, however, the next thing to do isn't to try to convince the listener of the truth of the answer. It's to ask "Do you want to know how I got to that answer?" If the reply is "no" the conversation is finished: all the person wants is for his conclusion to win. If we want to teach PCT, what we have to teach is PCT. It's tempting, I can tell you, to play guru and just come up with a series of mysteriously penetrating answers. But what's rewarding is to see a person (like a lot of people I could name in the CSG), START to ask a question, and then say "Oh, never mind, I see."

I am definitely not saying that PCT should go its own way and ignore everyone else's ideas. That's not the point. The point is that we shouldn't keep on pitting the conclusions of PCT against other people's conclusions. Well, _I_ shouldn't. All that does is prolong the agony. If PCT has something to say about another person's field of expertise, the best person to work that out is the other person.

I've found myself pretending to be a linguist, a mathematician, a neurologist, a biochemist, a sociologist, a psychotherapist, and God knows what else, when all I really am is a control theorist saying how I would think about problems in those areas. If I were talking to a biochemist-control-theorist, or a sociologist-control-theorist, and so on, I would be talking about PCT, not about the other person's discipline. And the other person would be saying all the same things I would say and a lot more, because that person would know his own field AND PCT.

All of our problems come from trying to talk with people who don't understand PCT. The solution is to get them to understand PCT. The rest will take care of itself.

Best to all, Bill P.