

PCT intro to Business Process Reengineering list

Posts from the archives of BPR-L:

Date: Sat, 28 May 94 23:45 EST  
Subject: Human dimension & Feelings

[From Dag Forssell (940528 2140) PST]

Introduction:

My professional background is that of engineering manager with marketing responsibility in an industrial manufacturing company. I am now an independent educator.

I have been interested in TQM, particularly the Deming Management Philosophy, for several years, but only recently heard of BPR-L and through it QUALITY and TQM-L. I have listened in on all three, and find that human issues are discussed with vigor:

Loads of research, and plain old common experience, indicates that the human element is the most critical, yet hardest to get right, part of any change effort. Business Process Reengineering is not exempt from this.

-robert padulo on BPR-L, May 5, 1994

There is a strong lack of attention to the human aspects of TQM implementation, and the implications are many and somewhat profound for everyone involved!

R. Ivan Blanco on TQM-L, May 23, 1994

The human emotion has proven to be the most complex of ingredients in any effort for implementation of any plan anywhere on earth.

Sandra M. Winn on TQM-L, May 24, 1994

Managers strike fear into the hearts of employees because that is the way we have all been brought up, (from fear of parent, to fear of God, to fear of teacher). ... Psychology tells us that a certain level of fear & pressure is necessary to assure focus. ...

Kevin Laframboise on QUALITY, May 23, 1994

Dale Worley guesses (guessing is the essence of internet communication):

> My guess would be that it is beneficial to the company to have workers be afraid.

Seems to me that it would not be beneficial. Fear and the high stress and anxiety ridden environment engendered by fear should lead to a significant underutilization of the workforce skills, not to mention the detrimental effect on safety and health of the worker. ...

Michael Koopman on QUALITY, May 23, 1994

These issues are important for our well being and productivity.

I have come to believe that the basic reason it is so hard to get the human element right is that people lack a theory of human behavior that fits the way human beings work.

Purpose:

This post introduces an emerging science called Perceptual Control Theory (PCT), that does explain the way human beings work. From the perspective of PCT, people engaging in debates about emotions and other aspects of the human

dimension take for granted many things that just are not so. It will take some time to explain why. A short post commenting on any one issue might be confusing. I believe the best contribution I can make to the practice of TQM and BPR is to simply invite you to study the perspective of PCT yourself, so I'll post this introduction on all three lists.

I know from experience as well as PCT that new information that does not fit the ideas a person already has learned and decided to believe in is either not comprehended or resisted as a disturbance.

PCT does not fit well with today's predominant understandings. I shall introduce it as clearly as I can, point out the contrast with current science and offer literature and other references. Please excuse some redundancies. I believe it is desirable to illustrate the concept several ways, in order to connect with existing ideas and interests at different levels and areas of experience. This post is no longer than some conference announcements, so I won't apologize for length.

I have organized this post under these headings:

- Introduction
- Purpose
- Background
- Excerpts from a PCT Introduction and Resource Guide.
- Other comments
- Feelings explained
- Analogy
- Free information

Background:

Current social science has ignored the purposiveness of human behavior, considering purpose unscientific. So models of human nature assume that behavior is an effect that is caused -- by external stimuli or internal (mental) events. Perceptual Control Theory puts the purpose back into behavior; and it not only shows that purpose is real and scientific, it shows that you can do scientific research of much higher quality when you deal with the real phenomenon -- purposeful behavior.

Purposeful behavior is also known as "control" -- it is the process of producing intended results doing whatever is necessary to make these results happen.

The basic principle of control was introduced into behavioral science in the 1940's by Norbert Wiener's book: Cybernetics or Control and Communication in the Animal and the Machine.

The technical concept of control proved easy to misunderstand. People interpreting Wiener's presentation using their existing event-based framework created the impression that control is a step by step process, internal to the organism. This allowed the incorporation of cybernetics into the basic cause-effect scheme. It also allowed the understanding of cybernetics and control theory to mean control of the organism's actions or output, a misunderstanding that is widespread to this day. As a result of these early misunderstandings, every psychologist, cognitivist and behaviorist alike, KNOWS that the cybernetic model, also known as the negative feedback model, can't explain human behavior.

PCT does not build on Wiener's work, but has been developed independently based on physics, neurology, and engineering science and is testable to the standards of these sciences. -- Meaning correlations in the high 90's in tests to date.

In the field of social science, with a multitude of verbal theories, none of which can be tested clearly, it seems customary to respectfully accept them all. But PCT challenges both the core assumptions and the conclusions of the well established and widely quoted social sciences and therefore the expertise and life work of many famous scientists. Publication in relevant journals has been resisted by reviewers who dismiss PCT as old hat and without merit. PCT is presently understood by a rather small group of people.

I hope this introduction will be read by independent thinkers in business, engineering, schools, homes, -- anyone who is concerned about human relationships and not satisfied with the psychological and sociological explanations offered today.

As you study the literature and duplicate the experiments, you will be able to demonstrate the principles and basic observations of PCT to yourself. Once you grasp the structure and logical implications of PCT, you can begin to reconsider many things you already KNOW. You can do this as you apply the PCT explanation to questions that arise in daily life. This process can take months and years, but will be well worth it. You will find that the new science of PCT is clear, deep and already quite well tested in simple experiments. Application guidelines are available, but since situations vary, the principles of PCT are themselves the simplest guide. When you have internalized PCT, you will have a different mindset about human behavior -- your own and that of those around you.

Sociologist Clark McPhail comments on this process of discovery:

Most people find it very difficult to break out of Stimulus-> Response thinking. Of those who do, most either reject any form of systematic scientific thinking and research on human experience and action and resort to philosophical nonsense or post-modern interpretations and the like; the remainder who reject Stimulus->Response thinking sometimes view cognitive models as a useful alternative to Stimulus->Response models. That was my entre' to PCT and it took a while to understand that PCT was not about the control of action outputs. My perception is that this always comes as a shock when newcomers realize this counter-intuitive "truth". It is a disturbing epiphany. They have to start over again and re-think their way back through the entire PCT argument.

Maybe someone should forewarn those who "rush to judgment" that they don't have it until they can wake up in the morning, walk around throughout the day, and try to fall asleep in wonderstruck realization that "all I know about the world and all I can accomplish regarding what I and others do in the world reduces to my perceptions".

Excerpts from a PCT Resource Guide.

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Here are pages 1, 2 and 8 of the recently compiled -----  
PCT RESOURCE GUIDE (page 1)

Cut to save space. See the file RESOURCE.PCT  
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Other comments:

The role of management is to provide leadership and resolve conflict, but ironically, our common practice of suggesting and evaluating behavior as we attempt to lead creates conflict instead of resolving it. PCT explains why.

Behavior is the only thing clearly visible when we look at what another person is doing. Naturally, it attracts your personal attention as you grow up and gain experience. That's why it is the focus of all mainstream contemporary

psychological theories, public debate, and most leadership programs. Unfortunately, this obvious perspective looks only on the outside. Incomplete and therefore misleading, it provides little useful insight into what causes behavior. The many attempted explanations offered in the past have turned into psychobabble which is now part of our language.

For example, feelings such as fear are an important consideration in TQM. But the debate among the participants on QUALITY shows clearly that people have widely divergent opinions about what fear is, what causes it and what to do about it. Contemporary psychology has no explanation for emotions! Nevertheless, people generally agree that emotions are separate from thinking. The writers of the Star Trek television show (and participants on TQM-L) have had much fun with this, first with Mr. Spock, and later as the android Commander Data has tried to get an explanation for anger and other feelings from his human companions. PCT offers an explanation for feelings.

The basic concept of PCT is

that our perceptions are the only reality we can know, and that the purpose of all our actions is to control the state of this perceived world.

PCT Resource Guide, p. 3.

From the inside perspective of a living control system, action/ behavior is an automatic result of a comparison between wants and perceptions. IT IS IN FACT INVISIBLE TO THE CONTROL SYSTEM WHICH IS ACTING AT THE MOMENT, although it can be visible to other, parallel perceptual functions. When we realize that people ARE living control systems, and that action is only a means to an end, we realize that to focus on behavior has been a fundamental mistake, and we understand why it is so hard to "learn from experience" by looking at behavior.

PCT explains how thoughts become actions, results and feelings, and its principles can be applied to leadership, coaching, team development, sales, performance reviews, TQM, BPR, vision/mission statements, strategic planning, -- any activity involving human motivation and experience. When you understand PCT, you get a whole new picture of human nature and a new perspective on how to deal with people. You understand that human behavior is the control of perception.

Feelings explained:

Even with the rudimentary summary offered in "PCT in a nutshell," above, it is possible to begin to explain feelings. When you perceive something that is very different from what you specify in that regard, a large difference signal results. This signal can give rise to physiological changes through hormonal output functions -- to release energy for action, for instance. We experience it as a surge of bodily feeling. Through neural output functions, it also creates output signals for action, which we can perceive as thought, even without actually taking action. (One reason not to take action might be conflicting output signals). We experience the combination of bodily feeling and thought as happiness, anger, nervousness etc. From this simple explanation, it follows that feelings are created by ourselves as a result of our comparison of mental specifications with current perceptions. Feelings are NOT separate from thinking. When you understand where your feelings come from, you can deal with what causes them.

Analogy:

This post has introduced a new way to conceive of behavior. I think that the situation with numerous established experts oblivious to, ignoring (and some refusing to publish articles by) the few proponents of PCT is analogous to the

situation in the 1600's with people who had thoroughly learned the idea and detailed model of how the Sun, Moon, and planets circle the Earth and decided to believe in it, ignoring (and even persecuting) people who proposed the idea and model that the Earth rotates once a day, while it and the other planets travel around the Sun.

You cannot tell the difference easily, but the second explanation has made a big difference for our understanding of the entire solar system and the development of the science of astronomy. The better explanation gave a competitive edge to the astronomers who adopted it, and science started over with the new model. Once you have been taught, you visualize it and take it for granted. But you have to be taught, because the explanation is counter-intuitive. With the new model, you can see that features of the old just are not so -- epicycles never existed. It just looked that way.

It is hard to tell the difference between the idea that action is caused by stimuli and the idea that people control what happens to them. But the second explanation does make a big difference for our understanding of all human behavior and the development of the sciences of management. The better explanation will give a competitive edge to leaders who adopt it. Once you have been taught, you visualize it and take it for granted. But you have to be taught, because the explanation is counter-intuitive. With the new model, you can see that features of the old just are not so -- stimulus-response never existed. It just looked that way. (But people discuss reward and punishment as if it is real).

The problem of clearly seeing that the Earth rotates stems in large part from your position. You are on the Earth, not looking from above. The problem of recognizing a person as a control system stems also in large part from your position. Even if you are aware of control systems, you are studying the person from the outside, not from the inside.

In each case, the first idea seems self-evident. But once you understand the second idea and its consequences, the first seems limited and wrong.

Best, Dag

Subject: Human dimension

[From Dag Forssell (940601 1400) PST]

Ralph and I had the following exchange yesterday. Ralph agreed to let me put both ends of it on BPR-L.

Date: Tue May 31, 1994 7:48 am PST  
Subject: Re: Human dimension & Feelings

I found it hard to see what was so shocking in what you wrote. Of course, I haven't been trained in psychology. I took a few psychology courses in college, and considered the teachers and the psychologists we studied to be out of touch with reality.

I agree that looking only at behavior is silly. I control my behavior. But ignoring behavior is silly, too. I don't control other people's behavior. I try to influence other people's behavior. They control theirs, I control mine, and we each try to get the other to do what we want.

> Maybe someone should forewarn those who "rush to judgment" that they don't have it until they can wake up in the morning, walk around throughout the day, and try to fall asleep in wonderstruck realization that "all I know about the world and all I can accomplish regarding what I and others do in the world reduces to my perceptions".

Sure. Lots of people say this. Some people say that all there IS in the world is their perception. That is crazy, too. It seems you are very close to that. The world is real. All we know about it is by our perceptions, however. Our perceptions are never completely accurate. But they are less accurate when we are drunk or taking LSD than usual. If we want to be successful at making the world do what we want then we need to make sure our perceptions are accurate.

- > The net result of this circular loop of interacting elements and signals is purposeful behavior. A self-directing "living control system" controls its present perception so that it agrees with the internally specified reference perception.

It TRIES to control it. Sometimes it succeeds, though usually not for long. Sometimes it gives up, though it often dies shortly thereafter. Sometimes it changes its goals so that it will have something achievable. In fact, one of the interesting things about the human control mechanism is how it often makes short-range decisions that have such poor long-term results.

- > Conventional scientific attempts to explain behavior have not recognized or clearly understood the obvious phenomenon of control discussed above, and are misleading.

It is hard to believe this. You are right that it is obvious. It is hard to believe that everyone ignores it.

- > happiness, anger, nervousness etc. From this simple explanation, it follows that feelings are created by ourselves as a result of our comparison of mental specifications with current perceptions. Feelings are NOT separate from thinking.

Behavioralist psychologists don't claim that feelings don't exist, or that they are separate from thinking, they just say that they want to ignore feelings and thinking because they can't tell what someone else is feeling and thinking. They can tell what they do and so they are going to study that. This is like the old story of the guy looking for his keys under a lamppost because that is where the light is. It is actually a reasonable strategy if you don't know where the keys are, but if you know for sure that the keys are somewhere else then it is a bad strategy.

-Ralph Johnson

[From Dag Forssell (940531 1530)]      Ralph Johnson - direct

- > I found it hard to see what was so shocking in what you wrote.

You see letters and words on the screen and give them meaning. The meaning can only come from your own experience. Your personal imagination fleshes out the picture. You have no doubt experienced KNOWING what another person means after three words. -- An example of what we call jumping to conclusions. Recent concerns about advertising [there was an objection that my post was an advertisement and not appropriate] lurk in the back of your mind. I did offer information, and expressed my professional business interest.

Now, if the (subjective) perception (advertising!!!!) you develop differs substantially from your (also subjective, of course) mental understanding and specification-want in this area, a difference signal arises. The difference signal causes output. Effective output influences that particular aspect of your world so you perceive it the way you want it (advertising verboten) and the difference signal ceases. I could go into how a difference signal might get converted into keystrokes through a hierarchy of control systems....

All these subjective understandings-->wants and perceptions are what make any collection of individuals, whether in a business or subscribed to an E-mail network, diverse and therefore challenging. The conventional answer is to specify and evaluate behavior. The PCT insight suggests that you ask each individual questions about the understandings-->wants and perceptions (the differences between which drive behavior), and offer information so the individual can reconsider them and if they change, behave differently.

- > Of course, I haven't been trained in psychology. I took a few psychology courses in college, and considered the teachers and the psychologists we studied to be out of touch with reality.

I think of psychology today as the engineer in me thinks of alchemy in the 1500's. Prescriptions based on trial and error do work and bring results, but not reliably -- because circumstances always vary. Neither science has / had explanations that hold up. The pretense of understanding where none exists is harmful. It sends people off on fruitless goose chases. The debates on TQM and BPR are as confused as most people are. That is why the problems won't go away. The next fad will promise yet another solution.

- > I agree that looking only at behavior is silly. I control my behavior.  
.....

No you don't. That was the major point of the post. But since you (I don't mean to pick on you personally, 99.99999% of our population think this) KNOW that you control your outputs, you don't read what I wrote; you fit it into what you already know. The same phenomenon explains why Japanese can't hear the difference between r and l. You put things you perceive (fragments of) in classifications you have already developed. If your classifications are broad, you don't notice the subtleties.

- > Maybe someone should forewarn those who "rush to judgment" that

So, you did not get it. Don't rush to judgement. Read the literature and carry out the demonstrations. This IS counter- intuitive.

- > ...All we know about it is by our perceptions, however.

Precisely right. It is ALL perception. REALITY exists, I have zero doubt, but all you or I can know about it is what we perceive it to be. There is no answer sheet for accuracy.

- > If we want to be successful at making the world do what we want then we need to make sure our perceptions are accurate.

If by perceptions you mean "models of the world" I agree. The models of physical science are quite accurate (give better results in tests), and let us put men on the moon.

- >> The net result of this circular loop of interacting elements and signals is purposeful behavior. A self-directing "living control system" controls its present perception so that it agrees with the internally specified reference perception.

- > It TRIES to control it. Sometimes it succeeds, though usually not for long....

Also agreed. But sometimes is 99.999% of the time in terms of "simple" perceptions like "standing up" and "walk." Less often in terms of a complex perceptions like "be appreciated."

- >> Conventional scientific attempts to explain behavior have not recognized or clearly understood the obvious phenomenon of control discussed above, and are misleading.

> It is hard to believe this. You are right that it is obvious. It is hard to believe that everyone ignores it.

1) Check the basic assumptions of contemporary psychological theory. Few psychologists can tell you about or will admit to their assumptions, so ask about the "scientific method" they use. I bet you will find that without exception, they set up an experiment, define an independent and a dependent variable, vary the independent variable and observe the dependent one. From this you deduce a causal relationship. Pure cause-effect thinking. Since the results often are inconclusive, statistics are used. With a large enough sample, significance can most often be found.

2) They have never heard of a (valid) explanation for control. Some psychologists have written falsehoods about it -- even recently. I made a point of dealing with this in my post.

- > happiness, anger, nervousness etc. From this simple explanation, it follows that feelings are created by ourselves as a result of our comparison of mental specifications with current perceptions. Feelings are NOT separate from thinking.
- > Behaviorist psychologists don't claim that feelings don't exist, or that they are separate from thinking, they just say that they want to ignore feelings and thinking because they can't tell what someone else is feeling and thinking. They can tell what they do and so they are going to study that.

Yes, and the working assumption is that the underlying functional relationships are all Cause-effect, straight from Rene Descartes in 1640's.

- > This is like the old story of the guy looking for his keys under a lamppost because that is where the light is. It is actually a reasonable strategy if you don't know where the keys are, but if you know for sure that the keys are somewhere else then it is a bad strategy.

Well said. Note that cause-effect is a valid approach for study of inanimate objects -- all of physical science. You get 99.9999999% correlation. It is NOT particularly appropriate for the study of living organisms, because they ARE control systems (says PCT) and don't work that way. As you could see from my brief summary explanation, more than two variables enter into the picture. That makes a difference. The concept of PCT shows where the keys are. It shows you what to look for and therefore how to design tests. With PCT, you can replicate experiments and get 95-98% correlation yourself.

Ralph, thanks for your comment.

Please share both our posts with the net if you don't mind.

Best, Dag

Subj: Re: Human dimension  
Date: 94-05-31 19:02:49 EDT  
To: DForssell

>> I agree that looking only at behavior is silly. I control my behavior.  
.....

> No you don't. That was the major point of the post.

Hmm. If that was the major point, why didn't you say it? The point I was trying to make was that I read what you said and it all sounded perfectly



reasonable, whereas you said that it was going to shock me. If you had said that I didn't control my behavior then I would have been shocked.

>> It TRIES to control it. Sometimes it succeeds, though usually not for long....

> Also agreed. But sometimes is 99.999% of the time in terms of "simple" perceptions like "standing up" and "walk." Less often in terms of a complex perceptions like "be appreciated."

Yeah, I didn't think about all the things that we almost always do correctly. If you count all of them then in general we do a pretty good job of making the world be how we want it to be. Those few cases where we fail sure stick in our mind, though!

-Ralph E. Johnson

Date: 94-05-31 20:12:40 EDT  
Subj: Why didn't you say so?  
From: DForssell

> Hmm. If that was the major point, why didn't you say it? The point I was trying to make was that I read what you said and it all sounded perfectly reasonable, whereas you said that it was going to shock me. If you had said that I didn't control my behavior then I would have been shocked.

I shall consider this. As you may have noted, I have tried many different ways to get the point across.

> Yeah, I didn't think about all the things that we almost always do correctly. If you count all of them then in general we do a pretty good job of making the world be how we want it to be.

Yes, behavior is regular and consistently successful. Psychologists have hardly tried to either study or explain the (very complex) things we take for granted, like standing up. A very unstable equilibrium!

> Those few cases where we fail sure stick in our mind, though!

They sure do, and we have the very same problem all over the map, with one (conceptually, at least) simple solution.

Thanks, Dag