

PCT and Levels of Control

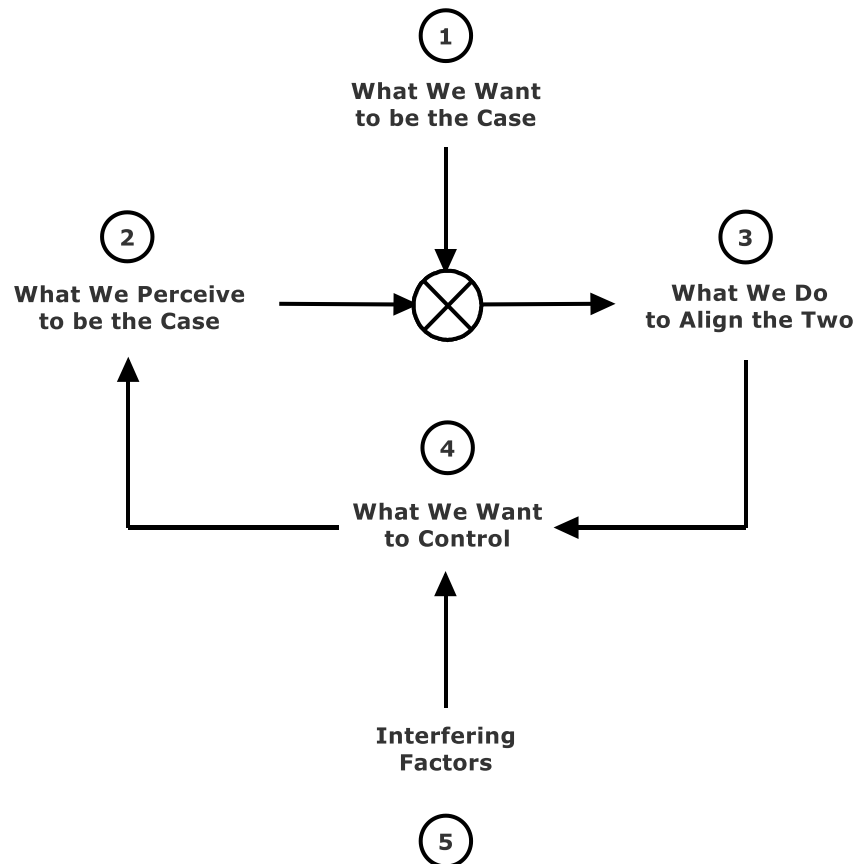
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2016

PCT and Levels of Control

Perceptual Control Theory (PCT) is a theory of human behavior developed and articulated by William T. Powers. It holds that we are “living control systems;” we behave in ways that get us what we want. All we know of our world is known to us by way of our perceptions, hence Powers’ assertion that what we really control are our perceptions. Our perceptions and our actions are parts of a closed loop, which means cause and effect exist in a circular arrangement (see the diagram below). Given the circular nature of a control loop we could begin a review of the diagram below at any point but, for convenience, let’s start at the top, with what we want to be the case (the circled number 1).



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What we want to be the case (1) specifies the desired state for some variable in the world out there (4) that we want to control. What we want to be the case with respect to that variable (1) is compared with what we perceive to be the case (2). If a discrepancy between the two exists we do things to align the two (3), to close any gap. Our actions (3) affect the variable we are trying to control (4) and these effects are reflected in a changed perception of that variable (2). It is possible there are other actors and factors (5) affecting the same variable we wish to control (4) and perhaps interfering with our control of that variable. If so, our actions (3) must compensate for them. Generally speaking, we succeed – unless we encounter overwhelming interference (5). Let’s move on to a familiar example.

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I get up in the morning and, like many other people, I want a fresh cup of coffee. Let's walk through the model using that example. The numbers below tie to the numbers in the diagram.

1. I want a cup of fresh coffee.
2. There is no freshly made coffee.
3. I make a fresh pot of coffee, get a cup and pour a cup of fresh coffee.
4. I have a cup of fresh coffee.
5. Nothing interfered with making the coffee.

Regarding number 5 above, there could have been some factors interfering with me getting a cup of coffee. Perhaps I was out of coffee or perhaps the cups were all dirty and in the dishwasher. These are easily compensated for. But perhaps the electricity was out. That would probably overwhelm my efforts to get a cup of coffee.

It should be noted that a description like the one above could be specified at finer levels of detail (e.g., add water to coffee pot, remove used grounds from basket, rinse basket, put new filter in basket, put fresh grounds in basket, turn on pot). Control is occurring at these finer levels of detail as well. There are, then, higher and lower levels of control corresponding to the kinds of variables and perceptions involved. Powers hypothesized 11 levels of control, with higher levels providing the reference or desired state for lower levels and lower levels providing feedback in the form of perceptions of the variable being controlled. There is much research to be done to substantiate Powers' hypothesis; indeed, he intended it as a framework for research and warned against taking it too seriously, but it is quite likely there is some kind of hierarchical system at work, whether or not Powers' framework proves definitive. There are, for example, dynamic models illustrating three-levels of control. For now, primarily to pique your interest, a more detailed look at the coffee example in terms of Powers' 11 levels yields the diagram shown at the end of this piece.

Whatever the situation and whatever the level, it is always the case that:

- (1) there is something we want to be the case,
- (2) we compare what we perceive to be the case with what we want to be the case,
- (3) if a gap or discrepancy exists, we act to align the two,
- (4) our actions affect whatever it is we are trying to control and
- (5) if there any other actors or factors also affecting what it is we are trying to control, our actions must compensate for their effects.

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The PCT loop is applicable to more complex behaviors. For example, an example regularly used to show PCT in action is that of driving an automobile:

- (1) we want our car to be in its proper lane, we want to avoid hitting or being hit by other cars, and we want to be moving at the proper speed;
- (2) we perceive our car's position and speed and we keep an eye on the other cars;
- (3) we steer, we brake, we speed up or slow down;
- (4) our car stays in its lane, avoids other cars and moves at the proper speed;
- (5) we compensate for crosswinds, we dodge motorists who cut us off, and we avoid potholes.

PCT applies to even more complex situations; for example, managing a project, managing the performance of other people, making investment decisions, building a house, and running an election campaign. In short, PCT applies to everything we do and it accounts for and explains why we do what we do; namely, to control certain targeted aspects of the world known to us by way of our perceptions, including our perceptions of ourselves, our own behavior and our performance.

Recommended Reading

For more about how Powers viewed the levels of control and how his hypothesis evolved and took shape, see the pages indicated in the books listed below.

1. Powers, W.T. (1973), *Behavior: The Control of Perception*. Aldine Publishing Company: Chicago, IL. (See chapters 6-13, pp. 70-176).
2. _____ (1989), *Living Control Systems: Selected Papers of William T. Powers*. Control Systems Group, Inc.: Gravel Switch, KY. (See pp. 190-208)
3. _____ (1998), *Making Sense of Behavior: The Meaning of Control*. Benchmark Publications, Inc.: New Canaan, CT. (See pp. 135-152)
4. _____ (2005), *Behavior: The Control of Perception (2nd Ed)*. Benchmark Publications, Inc.: New Canaan, CT. (See chapters 6-13, pp. 70-178).

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Levels of Control

Level	Level	Definition	Example
Level 11	System Concepts	Coherent organizations of principles	Lifestyle
	▲ Perception Reference ▼		
Level 10	Principles	Fundamental rules, laws, standards, values, truths, beliefs	Always have a fresh cup of coffee first thing in the morning
	▲ Perception Reference ▼		
Level 9	Programs	Structures of tests and choice-points regarding sequences	Brewing a fresh pot of coffee
	▲ Perception Reference ▼		
Level 8	Sequences	Perceptions that occur in a fixed order over time	Pot emptied, fresh water and grounds added, pot turned on
	▲ Perception Reference ▼		
Level 7	Categories	Classes of perceptions having shared characteristics	Coffee grounds, pot, water, basket, filter
	▲ Perception Reference ▼		
Level 6	Relationships	The ways in which two or more perceptions relate to one another	Level of water in pot in relation to line indicating desired number of cups
	▲ Perception Reference ▼		
Level 5	Events	Particular patterns of lower-level perceptions, typically short-duration	Filling coffee pot with water
	▲ Perception Reference ▼		
Level 4	Transitions	Moving, changing configurations	Moving faucet handle up (on) and then back down (off)
	▲ Perception Reference ▼		
Level 3	Configurations	Particular arrangement of sensations	Coffee pot held under faucet
	▲ Perception Reference ▼		
Level 2	Sensations	Types of sensory stimulation	Weight of coffee pot (empty, filling, full)
	▲ Perception Reference ▼		
Level 1	Intensity	Amount or quantity of sensory stimulation	Muscle tension needed to hold coffee pot under faucet

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