

# *The Experimental Method is Crippling Psychology*

By Dag Forssell

When I was new to Perceptual Control Theory, PCT, I had a discussion with a psychologist (a dear friend) about the scientific nature of psychology. “Of course it is a science—that’s why we have the scientific method,” my friend said.

However, the scientific method, and the experimental method that goes with it, borrowed from physical and engineering sciences, has been used the same way it is used in these sciences—as if people and animals are inanimate objects. You do something to the object and see what happens. This approach is appropriate in physics and engineering, where objects and processes are inanimate. But people and animals are not inanimate. The difference requires a significant change to the experimental method.<sup>1</sup>

The failure to recognize that living organisms control what they experience, not merely respond to stimuli in the environment, and the failure to understand how control works, has been keeping scientific psychology trapped in erroneous concepts and methods.

Seems to me there are two basic reasons for the use of erroneous methods in scientific psychology:

1) The current experimental method is intuitively obvious. As you look at other people and animals, what you see is what goes on in their environment and how they respond to it. From this, you draw conclusions about how they function.

2) When in 1927 H.S. Black described how control works, this intuitive approach had already become an established scientific and experimental method in psychology, where changes in the environment are the Independent Variable, IV, and action/behavior the Dependent Variable, DV. A high correlation between these two in an experiment is taken to mean that there is a relationship and you have learned something about the organism.

If you pay attention when new scientific findings are reported on the evening news, you will notice that something in the environment of people or animals (in experiments, that is the Independent Variable, IV), is contrasted, compared or correlated with actions/behaviors by the organisms, usually averaged over a group of individuals, each of whom may behave quite differently (that is the Dependent Variable, DV). Both variables—as we shall see when we examine a control system on the following page—are located in the environment of the organism and this approach cannot possibly shed light on the internal workings of any organism.<sup>2</sup>

On Nov 20, 2012, Bill Powers wrote in an email:

There is one clear message that we have to send to the life sciences concerned with behavior, which in one way or another means all of them. It is that all the behavioral sciences have been pursuing an illusion during their whole history, the behavioral illusion. They have been misled by the actions that organisms use for generating effects that are of importance to them into thinking that those actions are the effects of importance.

In the Editor’s preface to *Dialogue Concerning the Two Chief Approaches to a Science of Life*, I claimed among other things:

The Scientific Method has been employed for the study of living organisms without regard to the fact that they control their environment, not the other way around. As a result, psychologists have studied *the wrong thing, the wrong way*.

To follow the illustration and reasoning on the next page, it is essential that you recognize that people are indeed control systems.

For a compelling demonstration, review *The Rubber Band Experiment*, featured in several books on PCT and in the script and video by the same name.

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1 For the methodology required, see Marken, Richard S. *You say you had a revolution: Methodological foundations of closed-loop psychology*. Review of General Psychology. Vol 13(2), June 2009, 137-145.

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2 For a review of what kinds of information current research methods do and do not provide, see Runkel, Philip J. (1990, 2007). *Castling Nets and Testing Specimens*. Hayward CA: Living Control Systems Publishing

Illustration from *Once Around the Loop*.  
For a discussion of each signal/function, please see the paper.

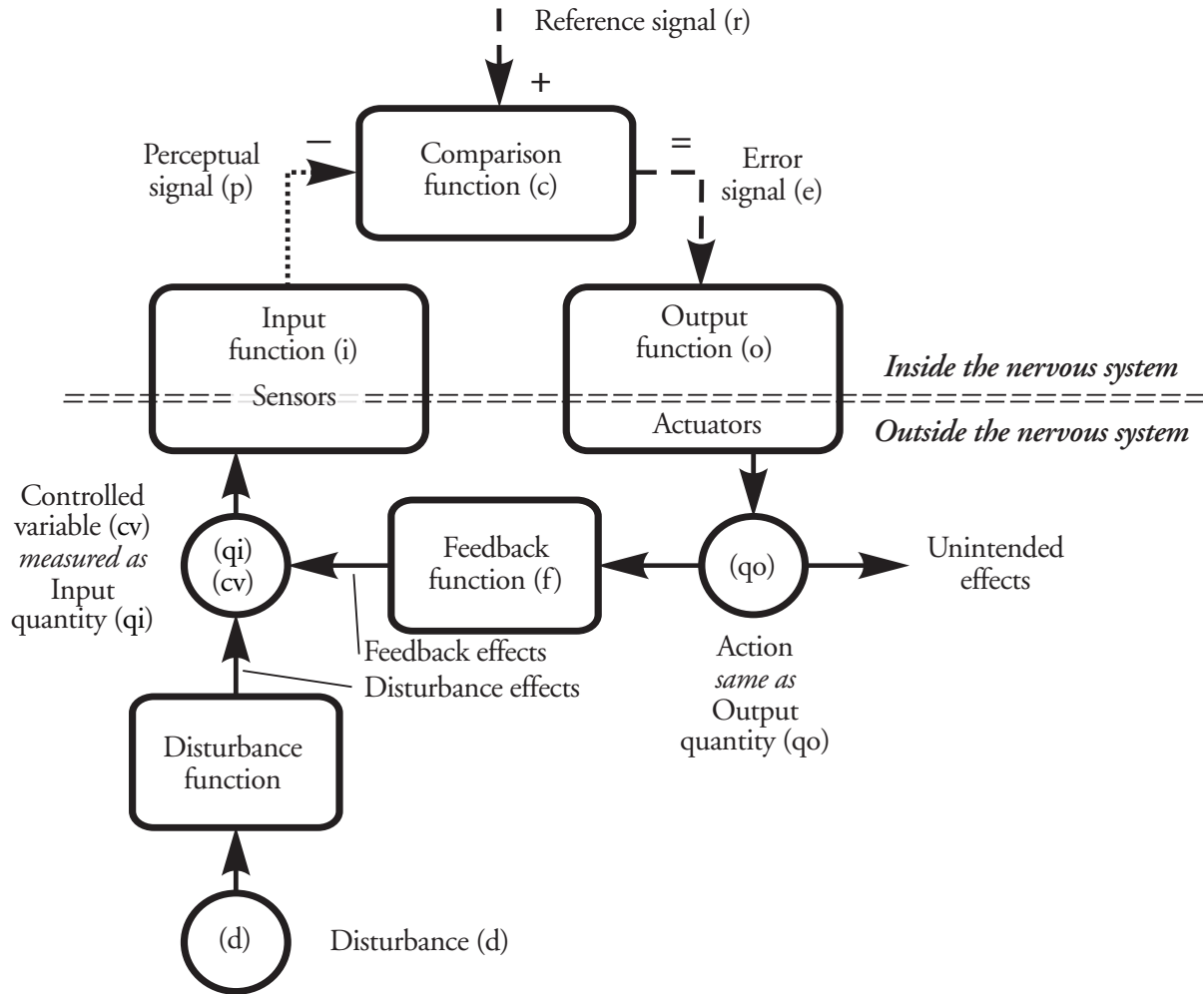


Figure One A closed causal loop: A basic control system acting on the environment.

With reference to *Once Around the Loop*, there are 11 signals/functions at play in this summary illustration of a living control system.

- 1 Reference signal (want, intent, will)
- 2 Perceptual signal (interpretation of 8)
- 3 Comparison function (subtract 2 from 1)
- 4 Error signal (the difference, 2 – 1)
- 5 Output function (neural processing)
- 6 Action output (by muscles, physiology)
- 7 Feedback function (action effect on 8)
- 8 Controlled variable (the thing that matters)
- 9 Disturbance (environment acting on 8)
- 10 Disturbance function (action effect on 8)
- 11 Input function (neural processing)

Psychologists have been studying the two that happen to be visible (and least interesting), 9 Disturbance, and 6 Action output, and determining a correlation between the two.

Of significance to any living organism are the Reference signal (what you want) and the Perceptual signal (what you experience). Action is automatic; what it has to be under the circumstances.

For more than a century, scientific psychologists have used a mistaken experimental method, studying the wrong things the wrong way, learning essentially nothing about how people and organisms function.

Dag Forssell, May 2013.