



Performance as Intervention

(Performer as Interventionist)

Fred Nickols

Introduction

Albert Einstein is often credited with saying, "We can't solve problems with the same thinking that produced them." The obvious implication is that fresh thinking is required. My aims in this paper are to present a fresh view of human performance, one that is rooted in Perceptual Control Theory (PCT), and to examine some of the implications of this view. My hope is that doing so will prove helpful in solving problems of human performance.

Performance

To perform, in the workplace, is to attain and maintain (i.e., to control) certain desired conditions commonly referred to as results. Results, however they might be defined in a particular sense (e.g., profit, productivity, quality, etc.), can be viewed in a more general sense as conditions or circumstances performers intend and attempt to control.

Performance in the workplace often takes place in dynamic, fluid and widely varying settings. Consequently, controlling the intended conditions or results must be done in the face of changing environmental influences and disturbances. Successful performance relies in large measure on the performer's ability to adapt, to vary behavior so as to hold results constant.

To achieve and maintain the results or controlled conditions in question, performers cannot leave matters to chance; they must do something to

bring about the desired results. More specifically, performers must change some aspect or element of the situation with the result or controlled condition in mind. Once achieved, performers must do something to maintain the result or controlled condition. Acquisition and maintenance, these are the two halves of performance.

In sum, performance depends on purposeful, adaptive action (i.e., action with a result or outcome in mind). Purposeful action has a name: Intervention. Action – behavior – is an intervention and the performer is an interventionist. Performance is the outcome.

The Performer

The term “black box” is used to refer to many things, usually implying that little or nothing is known or needs to be known about what goes on inside. Two “black boxes” are of interest in this presentation. The first is the performer.

The “performer” is a person, in a role, interacting with others, in an organizational setting, with responsibility for producing results, subject to expectations and direction, and subject also to rewards and penalties.

Although some will argue that much is known about what goes on inside the “black box” we call a human being, any such knowledge in its entirety is known to very few, if any, of us. Most of us simply don’t know a great deal about the “inner workings” of human beings. To one another we are very much a “black box.”

Although the performer might be a “black box,” some things are known about people. One of the more important things we know is that people set goals and objectives, they target conditions for attainment, they set out to produce certain effects. In short, they formulate intentions (i).

In addition to intentions, people are aware of themselves and their environment. This occurs through their senses, their perceptions (p). Indeed, all that we

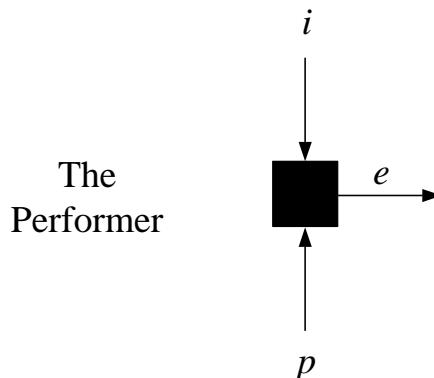


Figure 1

know of “the world out there” comes to us through our senses.

When people intend for some aspect of their world to be in a certain state and they perceive that aspect of their world to be in a different state or condition, a mismatch exists between intention and perception: p does not equal i . Any discrepancy or gap between perception (p) and intention (i) can be viewed as an error signal (e).

Error signals lead to action but not usually to random action. Instead, error signals lead to purposeful action, to action with a result or outcome in mind, to an Intervention (I). Generally speaking, Interventions are aimed at reducing error signals, at closing any gaps or discrepancies between i and p . This brings us to the other black box: the situation itself.

The Situation

Although we know a great deal about some kinds of situations, others remain a mystery to us. We know in some cases, for example, that if we change something over here, something over there will change as a consequence. In other cases, we are less confident about the effects of our actions. We often don't have a clear picture of the paths connecting the places where we intervene with the places where we hope to realize the results we're after. In such cases, we are frequently surprised by the unforeseen and often unwanted consequences of our actions; we change “this over here” and, to our dismay, “that over there” changes as well and such was not our intent.

We are, then, at some level, often ignorant of the structure of the situation and where and how to best intervene in one place at one time so as to bring about the desired effects at some other place and time. In short, the situations in which we attempt to achieve results, to control certain specified conditions, are very often just as much a “black box” as are human beings.

As pointed out earlier, the purposeful actions of people, that is, their interventions (I),

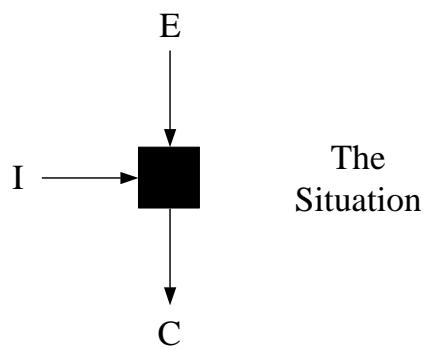


Figure 2

are efforts to change some aspect of the situation in which they find themselves, to bring their perceptions of certain aspects of the situation into alignment with the intentions they have for those aspects of the situation.

Also as noted earlier, the aspect of the situation that people are attempting to shape, influence or control can be referred to as the “controlled condition” (C). For a production worker, this might be production volume and quantity. For a salesperson, it might be sales volume or customer profitability. For an executive, it might be a financial measure such as Return on Assets Managed.

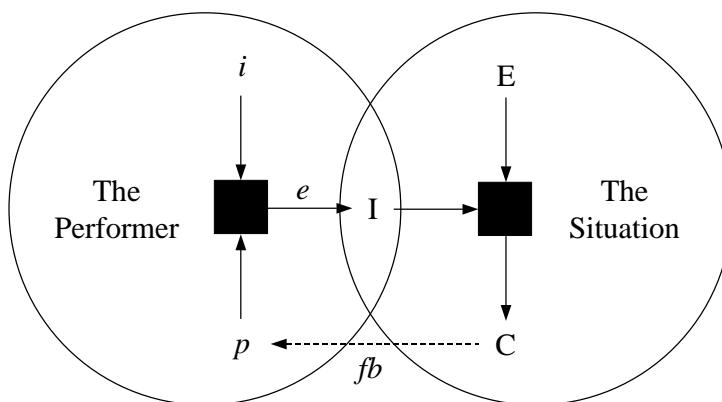


Figure 3

In most cases, people are attempting to control many conditions at the same time and not just in their role as performer.

A person's ability to control this or that condition is not purely a function of that person's own actions or interventions. There are other actors and factors at play. Our interventions are affected by environmental influences (E).

The performer and the situation are linked in two ways. First, they are linked by the performer's overt, purposeful actions or interventions. Another linkage exists in the form of feedback by way of the performer's perceptions of the conditions he or she is attempting to control.

If a discrepancy exists between p and i , an error condition (e) results. It leads to purposeful action, an intervention (I). Depending on the nature and strength of the environmental influences (E), the condition of interest (C) will change as wanted. These changes will be reflected in changed perceptions (p) and the error signal (e) will be reduced or, perhaps, increased, leading to another cycle of action, effects, perception, comparison with intention and the generation of a smaller or larger error signal. At work here is a basic closed-loop, feedback-governed system.

Of particular significance is the distinct possibility that others are interested in the same condition or aspect of the situation but attempting to control it in relation to very different intentions. Thus, the effects of one's interventions might be negated or undone by the interventions of others. Conflict is ever present in the workplace.

Implications

The model that has just been described suggests some requirements that must be met if managerial expectations about performance are to be more than mere wishful thinking:

1. Performers must hold an appropriate set of *intentions*; that is, the performers' intentions must be aligned and congruent with managerial expectations regarding the controlled conditions of interest.
2. Performers must have accurate, current *perceptions* of the desired results or controlled conditions; valid, reliable measurement and clear, honest communications are key.
3. Performers must possess a suitable repertory of skills to use in fashioning effective, efficient *interventions*. In a related vein, the performer must have an adequate grasp of the structure of the situation in which he or she will be intervening so as to properly target his or her interventions. In other words, the performer must be able to say with some justifiable confidence, "This will lead to that."
4. The *environment* itself must be manageable and it must be managed; that is, it must not consistently overwhelm the performers and thus make all interventions futile undertakings. If the environment is too disruptive, steps must be taken to make it more supportive and less of a hindrance.

To perform, in the sense we use that term in relation to the workplace, means two things. First, it means to attain the specified or controlled condition. But, because environmental influences are always at work and frequently changing, one must not only attain the controlled condi-

tion, one must also maintain it. Acquisition and maintenance are the two halves of performance and performance itself is an adaptive act.

Performers are most properly, productively and profitably viewed as interventionists, acting on behalf of management to control various conditions and not simply as instruments controlled by management.

Performers intervene in the “performance architecture” of the organization (i.e., performers make changes in one place so as to produce specified effects in other places).

Note: More can be found on the subject of “performance architecture” in another paper on my web site. The URL is
http://www.nickols.us/understanding_architecture.pdf

Finally, as has been made clear previously, performance is an adaptive act, a matter of configuring one's response to changing circumstances and not merely a matter of executing some prefigured routine. If worthy performance is to be engineered the ones who must engineer it are the performers.

Acknowledgements

Perceptual Control Theory

The model presented in this paper owes its theoretical roots to the pioneering work of William T. Powers. Three of his books are especially relevant to anyone interested in human behavior and performance.

1. Powers, W. (1973). *Behavior: The control of perception*. New York: Aldine de Gruyter.
2. _____ (1989). *Living control systems*. Gravel Switch, KY: The Control Systems Group.
3. _____ (1998). *Making sense of behavior*. New Caanan, CT: Benchmark Publications, Inc.

Acquisition and Maintenance

The concepts of acquisition and maintenance are borrowed from a seminal paper by Karen Brethower, one that laid the foundation for much of what is now known as Human Performance Technology. She applied the concepts to changing behavior; I've applied them to performance.

1. Brethower, K. (1967) Maintenance systems: The neglected half of behavior change,” in *Managing the instructional programming effort* (1967). G. Rummler, J. Yaney and A. Schrader (eds). Ann Arbor, MI: University of Michigan.

Human Performance

The basic concept of human performance has a history longer than many people realize. This history is partially reflected on page 4 of Chapter 1 of the *Handbook of Human Performance Technology* (2nd Edition), where the authors, Harold Stolovitch and Erica Keeps, write:

"Nickols (1977, p. 14) defines performance as 'the outcomes of behavior. Behavior is individual activity whereas the outcomes of behavior are the ways in which the behaving individual's environment is somehow different as a result of his or her behavior.' Gilbert (1974), in the same vein, equates performance with 'accomplishments' that we value. We may even link the term to Ryle's (1949) use of the term *achievements*, which he employs to describe the effects of behavior related to the term *performance*."

The references cited by Stolovitch and Keeps follow:

1. Gilbert, T. F. (1974). *Levels and structure of performance analysis*. Morristown, NJ: Praxis Corporation.
2. Nickols, F. W. (1977). Concerning performance and performance standards: An opinion. *NSPI Journal* 16:1, 14-17.
3. Ryle, G. (1949). *The concept of mind*. London: Hutchinson.

About the Author

Fred Nickols writes about his experiences as a consultant and executive as well as the ideas and insights he gained from 40 years spent improving performance and productivity in military, for-profit and non-profit organizations. He maintains a web site at www.nickols.us and may be reached via email at fred@nickols.us.