

# Beyond Performance & Instruction

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Whoa There!

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*This article appeared in the NSPI Journal in December of 1979. That issue was devoted to discussing what might lie beyond performance and instruction as we then knew them. I took the position that we ought to get our act together where we were instead of speculating about an uncertain future. I lost track of this piece for several years and only recently rediscovered it. I think its basic points are still valid after all the intervening years and so I've retyped it and added it to my web site. Its basic points are these: we regularly fail to make an important distinction between behavior and performance; we confuse observable behavior with labels for patterns in behavior; we ignore verbal behavior; we ignore the influence of language on behavior; and our models of behavior and performance are inadequate.*

## ***Beyond Performance and Instruction: Whoa There!***

“Performance” and “instruction” are concepts, not places. Consequently, their meanings are found in human experience and the language used to express it. Going “beyond” performance and instruction, then, must be done in terms of time, not space, for time is common to all human experiences. Peering into our future is an uncertain business. It sometimes is enhanced by scanning our slightly more reliable past. Somewhere in its murky depths, our past contains the origins of collective human endeavor – those very first undertakings which required the efforts of more than one person. Collective human endeavor provides the back drop against which our occasionally well-executed props of performance and instruction are arranged. Thus, we might profitably examine the history of such endeavor as a way of divining what the future holds in store for those of us who would play a role in the future of performance and instruction, especially those of us who aspire to be stars or directors, and not mere stage hands or extras.

Thousands of years ago we relied on each other’s muscles as the primary motive power behind our endeavors. Later, we substituted the muscles of other, more powerful animals. (The “humanists” were among us even then.) Much later we substituted the “muscles” of machines for those of animals. Then, about 30 years ago, we began using machines that might be said to have “minds” – computers.<sup>1</sup> Nevertheless, the muscles of human beings have played a central role in our collective endeavors all this time.

Things were relatively simple when all we worried about was the control of each others’ muscles. All we had to do was watch whomever we were employing to make certain that they engaged in the appropriate activities for a long enough period of time and the desired results would be realized. This was because the desired results, for the most part, were the direct and immediate effects of observable behavior. As C. L. Bekkedahl (1977) writes: “The equation was simple and effective: Knowledge held by a few, plus iron discipline over the many.” Our primary tool for influencing behavior and, through it, performance, was (and, to some extent, still is) the exercise of positional authority.

Each day, more and more of the “muscles” work in this country is being automated. As the “muscle” jobs are being taken over by machines (including some that can “think”), new “mind” jobs are created for people. Increased use of computers, for instances, has created thousands of new jobs for technicians, programmers, analysts and managers. These are all “mind” jobs. Technology and automation have significantly reduced the role human muscles play in human endeavor. People are increasingly being paid to use their brains, not their brawn. Today we are in what Peter Drucker (1968) called the “Age of Discontinuity.” It is the era of what he referred to as the “knowledge worker.” We can no longer afford to maintain the pretense that our primary tool for influencing behavior in a meaningful manner is the exercise of positional authority. Instead, we must acknowledge that it is what it really has been along: the control of information.

“Knowledge” or “mind” work is characterized by very little outwardly observable behavior. If we were to watch a manager “thinking,” for example, we might see him tilted back in a chair, feet propped on a desk and hands clasped behind his head. At any rate, someone who is “thinking” may present the appearance of “day dreaming.” One major problem facing us is that we seem uncertain about how to

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<sup>1</sup> The essence of this entire paragraph is unabashedly “stolen” from remarks made by Moishe Davidowitz during an invited address to the inter-service Human Resources Management Symposium (HRMS ’78) held at the Naval Postgraduate School, Monterey, California in November, 1978.

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assess and influence the contributions made by people who are using their “minds” instead of their muscles. Admonishing the worker to be worthy of his hire is one thing; measuring and controlling it is quite another.

What seems certain is that we are faced with new requirements for performance and new expectations of instruction. Soon, maybe sooner than we care to realize, those whom we have served for so many years will recognize that all we really have done for many years is clarify and then communicate their expectations of behavior to those whom we generally have failed to serve at all: the trainees. When this happens, we will be under intense pressure to demonstrate new and more effective models and approaches. Nevertheless, I do not wish to see us discard the old ones nor adopt any new ones out of hast or for the wrong reasons. This article sets forth some of my concerns related to speculation about what lies “beyond performance and instruction.”

Training technology, in particular, has been dominated by a “muscle-oriented” model of human behavior: the operant model. Paul Harmon (1979) says this model doesn’t work well “when we’re trying to teach college students to think or managers to make important planning decisions.” Of course it doesn’t! It is a paradigm of observable behavior – a model of striated muscles and joints. It never was intended as a model of cognitive behavior. To bemoan its inapplicability to cognitive behavior is akin to cursing a screwdriver because it doesn’t work well when used as a hammer. Don’t blame the tool for the workman’s mistakes!

The inapplicability of the operant model to so-called “cognitive” behavior may be a moot point for, as Thomas Gilbert (1974, 1978) points out, behavior frequently is an inconsequential aspect of performance. We often are most interested in the effects of behavior than we are in behavior itself. Gilbert has labeled these effects “accomplishments” and they are the basis of a distinction drawn between behavior and performance. Thirty years earlier, another Gilbert – Gilbert Ryle (1949) – drew the same distinction. He referred to the effects of behavior as “achievements.” The semantics of this distinction I leave to the reader. Its implications, however, merit further discussion.

We are indeed interested in the effects of behavior. This is as true for “mind” workers as it is for “muscle” workers. However, there are important differences between the effects of “muscle” or operant behavior, and those of “mental” or cognitive behavior. The effects of the behavior of a cabinet-maker, for instance, are directly and immediately visible in the wood with which he works. More often than not, the effects of “mental” behavior are indirect and delayed. A salesperson, for example, does not work directly with revenues, although that is one place where the effects of her behavior are eventually felt. Instead, a salesperson works with other people: customers. A salesperson might work with a customer for quite some time before any effects on revenue are realized. The “real” difference between “muscle” and “mind” workers, then, is not the distinction between “overt” and “covert” behavior, or between “operant” and “cognitive” behavior but, instead, is the variation in the directness and the immediacy of the effects of their behavior.

If there is a central point around which my concerns might be clustered, it is our preoccupation with the behavior of others. When the effects we sought were (and, sometimes, still are) the direct and immediate products of physical behavior, then, for all practical purposes we could (and can) treat behavior and performance (the means and the end) as one and the same. But when the effects we seek to create are indirect and delayed, then we must identify the linkages between these effects and the behaviors which lead to them before we can prescribe or proscribe activities for other. Without first knowing

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these linkages, efforts to influence the behavior of others takes on a distinctly religious character, that is, they are “acts of faith.” Ultimately, acts of faith are imposed on other via some form of spiritual or *corporal* punishment (e.g., excommunication or execution).

My first concern is that we have yet to learn the great lesson of Gilbert Ryle’s “achievements” and Thomas Gilbert’s “accomplishments;” namely that we are interested in the behavior of others because of its effects. When we “employ” another person, we are not just giving that person a job, we literally are “making use” of that person. Behavior is but a means to various ends. If we let ourselves become preoccupied with models of behavior, especially forms of it that we cannot say for sure exist, then we divert our attention away from ends and onto means. Any study of behavior, therefore, is pointless and bound to be fruitless unless it is accompanied by a corresponding study of its desired effects and the environmental conditions under which they are to be achieved. We must study the entire performance system and not just one of its elements in isolation.

Two questions are central to performance and instruction related efforts: (1) What are the desired effects? (2) How are they produced? We all to rarely ask the first question and our manner of answering the second is to assume that whatever the desired effects might be, they are being produced by that mythical entity known as the “master performer.” (As my grandmother used to say of other bogeymen when I was a small boy, “Aw, Freddie, there ain’t no such an animal.”) In determining the desired performance and the appropriate behaviors, we must be able to make the connections between the effects sought and the behaviors that lead to them. The links between the salesperson and revenues, for example, are probably to be found in the effects that the salesperson’s verbal behavior has on the customer. One method for establishing these linkages has been developed (Nickols, 1979); more are needed.

Quite aside from my belief that we are preoccupied with behavior to the extent that we ignore or neglect its effects, is my observation that many people are inept, uncaring or both when it comes to describing observable behavior. Lest you think my concern about ineptitude is misplaced, let me give you an example or two to illustrate its basis. Try your hand at the following item:

*Which of the following items would be reasonable to include in a task inventory for a baker’s job?*

(CHECK  THOSE THAT APPLY)

- a. pouring batter
- b. opening oven
- c. kneading dough
- d. baking pastries

Of the four “activities” listed, only the first three represent observable behaviors. “Baking pastries” is not an observable behavior; instead, it is a label for a set of patterned or inter-related events – a process that converts dough into pastry – and one that usually involves a piece of hardware called an oven. We consistent “manufacture” such “behaviors” for our task inventories, especially those we construct through interviews with “master performers” and “subject matter experts.” We take a verb, pair it with a noun, and *Voila!* – a behavioral statement magically appears. Consider these products of our

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ability to describe observable behavior: *motivates* employees, *analyzes* reports, *schedules* work, *trains* subordinates, and this little gem: *develops* instructional materials.

It is not uncommon to see these sorts of entries on task inventory forms. They reveal an interesting aspect of our practice of instructional technology; namely that we ourselves regularly fail to distinguish between *observable* and *inferred* behavior. Moreover, we further fail to differentiate inferred behavior from patterned events or processes. “Thinking,” “analyzing” and “deciding” are all inferred to “manufactured” behaviors. My second concern, closely related to my first, is perhaps best expressed as a question: “Why bother building new models to handle behavior which are only inferred when we have yet to develop the ability to consistently and accurately describe those that are readily observed?”<sup>2</sup>

Despite our avowed interest in observable behavior, we have steadfastly ignored one of its most obvious forms: verbal behavior. In an age of rapidly accelerating technological change, we somehow have turned our backs on the very essence of “knowledge” work: language. “Learning the language” is a requirement facing most performers, a point to which any newcomer to NSPI can painfully attest, yet, I have seen only a few deliberate attempts to make “learning the language” a legitimate objective in a training course. This sometimes sneering disregard for verbal behavior might be a relic of the days when we were determined to teach more than “talk about” behaviors. At any rate, it is a strange situation when one considers that language has such pronounced effects on our behavior.

The behavioral sciences, for example, have undoubtedly been influenced by the notion of cause-and-effect. It shows up in our models as the requirement to seek out the “cause” of a problem (the effect). Implicit in this cause-and-effect formulation is a time-based relationship; namely, that the cause precedes the effect (the problem). Problems are solved, however, by finding ways to affect the variables and/or the relationships between and among them which define the problem situation. Again, there is a time-based relationship; this time, it is that the problem precedes the solution. The search for a solution, then, ought to be future-oriented. But, influenced by three words – cause-and-effect – we are many times led to examine the *history* of a problem instead of its *structure*.

My third concern fits well with the first two. Verbal behavior is easily observed, yet we consistently fail to observe it or to recognize that many of the effects we seek come about as the result of it. “Credibility,” for example, at least initially, is granted or withheld on the basis of one’s words (or other’s words about one’s self) and not on the basis of one’s deeds. It is only later that deeds become a factor in such judgments. (And, as was remarked earlier, the effects on revenues sought from the salesperson are almost certainly traceable to the salesperson’s verbal behaviors.) The structure of language and its effects upon behavior remains an untapped tool of great potential to those concerned with performance and instruction. If we don’t explore and exploit this potential, others will; indeed, some already have (e.g., Bandler and Grinder, 1975a, 1975b).

Language, the concepts it expresses and the experiences of the people involved, frequently re displayed in the form of models or paradigms. Our models and our paradigms, like our language, significantly affect our behavior patterns. In the field of system development, for example, the basic model of a system consists of input, process and output elements. This model represents the conceptual view of

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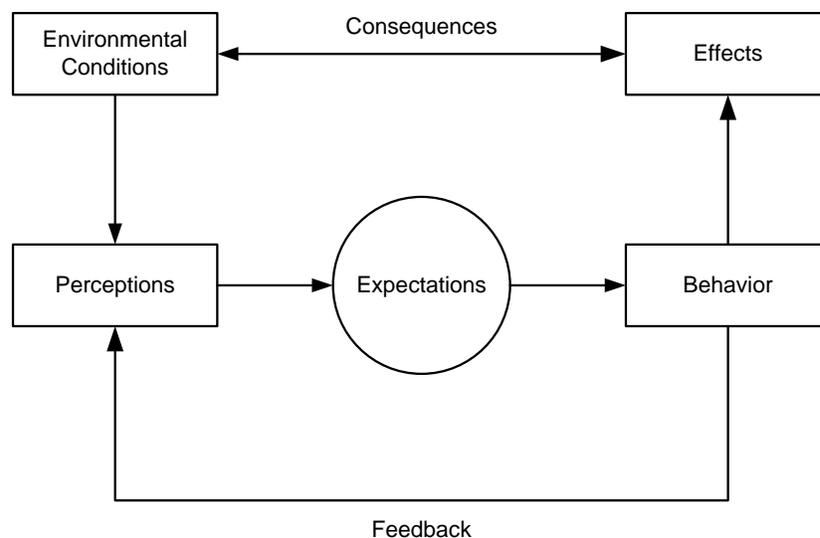
<sup>2</sup> I do believe that a perfectly adequate “information processing” model of human performance can be developed, provided it comes to grips with verbal behavior and the structure of the language as the primary variables in the interactions between an individual and his or her environment.

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a system held by many of those who design and development computer-based information systems. One of the classic, long-standing problems in such work has been the neglect of the users of such systems (Lucas, 1975). One of the reasons users have been so neglected is that they do not show up in the model of a system that the designers and developers use. In one organization, this was somewhat alleviated by constructing a different model, one that showed the user.

One of the reasons our field has been so long in recognizing the importance of environmental variables is that our models of human performance and behavior do not reflect the conditions under which behavior is expected to produce a given effect. Indeed, our models usually fail to demonstrate that we seek any effects at all – they concentrate almost entirely on behavior. These are the same models we use to show and to educate our clients and yet we continue express bewilderment (and annoyance) because they don't seem to understand the importance of environmental variables.

My fourth concern is that our models, by and large, are inadequate representations of the phenomena we claim to be able to systematically influence. (My own narrow view of human performance is illustrated in Figure 1. It is an admixture of “systems stuff” and performance technology. It, too, I find inadequate, but it's the best I have at the moment.)



*Figure 1 – Model of Human Performance*

Insofar as what lies “beyond performance and instruction” is concerned, I have reached the following conclusion: We had better get our act together where we are before we go charging off somewhere else (e.g., into models of the “mind”). There are four areas where I think we ought to “clean up our act:” (1) we should pay more attention to the distinction between behavior and performance; (2) When we do become concerned with behavior, we ought to do a better job of concentrating on its observable aspects; (3) We should devote more time and energy to exploring and exploiting the structure of language and verbal behavior; and (4) We should ensure that our models are reasonably representative of the phenomena we claim to be able to observe and manipulate. If we can do these things then maybe – just maybe – we will be workers worthy of our hire.

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If we have made any progress at all in the thousands of years since we began working together in collective human endeavor, it has been to increase our store of knowledge – that bank of ideas that has been adequately tested and thereby reduces the frequently with which we have to rely on “articles of faith,” especially as “articulated” by others. As T. H. White (1977) had Merlyn say to Arthur on the eve of the great battle, “...the only thing worth doing for the race is to increase its stock of ideas.” His comment is related to my last concern, a concern about risk. The greatest risk in any attempt to impose a behavioral definition or prescription for performance is that it might succeed. If we could impose such a prescription on verbal behavior, for example, there would be no more new ideas because our use of language would be confined to some set of “acceptable” patterns. Without new ideas, there is no future, only a continuation of the present.

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