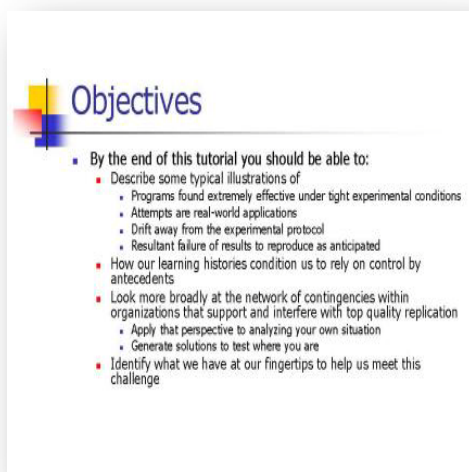


Assuring the Quality of Your ABA Interventions via Organizational Behavior Management: A Tutorial

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The Browns Group

How many of us have read about or even tested a method of behavior change and been unpleasantly surprised to find it didn't turn out as expected? Either progress was slow or seemed headed in the wrong direction. I know that has happened to me. In numerous workshops and training programs I told and showed the audience how to get remarkable results with their students or clients. Yet, on returning to the site, found little changed. Why this is so and what OBM can help us do about it is the theme of this talk. So, the objectives of this talk are that by the end of this tutorial you should be able to:



Objectives

- By the end of this tutorial you should be able to:
 - Describe some typical illustrations of
 - Programs found extremely effective under tight experimental conditions
 - Attempts are real-world applications
 - Drift away from the experimental protocol
 - Resultant failure of results to reproduce as anticipated
 - How our learning histories condition us to rely on control by antecedents
 - Look more broadly at the network of contingencies within organizations that support and interfere with top quality replication
 - Apply that perspective to analyzing your own situation
 - Generate solutions to test where you are
 - Identify what we have at our fingertips to help us meet this challenge

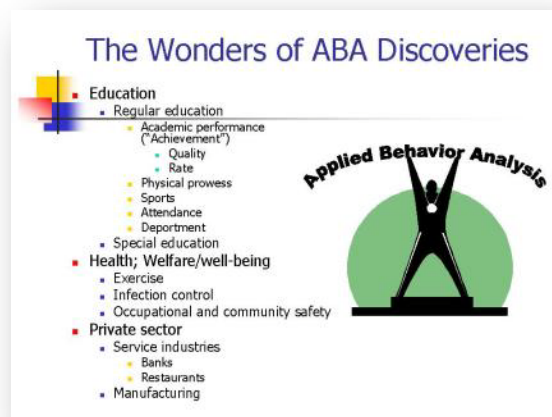
- Describe some typical illustrations of Programs found extremely effective when applied under tight experimental conditions
 - Attempts at real-world applications of those methods
 - Drift away from the experimental protocol
 - Resultant failure to reproduce results as anticipated
 - Say how our learning histories condition us to rely on control by antecedents
 - Look more broadly at the network of contingencies within organizations that support and interfere with precise, high quality replication Apply that perspective to analyzing your own situation
 - Generate ways to test how closely your

organization adheres to specified practices

- Discover some tools we have almost at our fingertips to help us meet this challenge

Anyone familiar with the field of Behavior Analysis knows what a revolution it has fomented as it slowly and steadily has continued to unravel the mysteries of what controls the behavior of organisms. First, under tightly controlled laboratory conditions and later, within the more complex realm of the real world, behavior analysts have been discovering crucial functional relations and applying them to solve socially important problems.

Probably, due to such extensive involvement by behavior analysts, and recent heavy press coverage, best known to most is the area of autism education. Competing instructional



The Wonders of ABA Discoveries

- Education
 - Regular education
 - Academic performance ("Achievement")
 - Quality
 - Rate
 - Physical prowess
 - Sports
 - Attendance
 - Deportment
 - Special education
- Health; Welfare/well-being
 - Exercise
 - Infection control
 - Occupational and community safety
- Private sector
 - Service industries
 - Banks
 - Restaurants
 - Manufacturing

Applied Behavior Analysis

methods simply have not been able to document their ability to produce the results ABA has with this challenging population. Beyond the autism spectrum, though, behavior analysts have studied and refined methods for presenting instruction and providing supportive consequences of extraordinary note. Results often defy conventional wisdom about how rapidly people can learn, apply, integrate and retain concepts and skills. For instance, Kent Johnson's students at the Morningside Learning Center, typically accelerate their progress many times over their prior rates. (Johnson & Layng, 1994.)

A host of ABA studies has reported methods for promoting high quality learning and performance rates among students of every age; across a range of settings, skills, cultural backgrounds, job classifications and so on. Participants have become stronger and more athletically skilled. They have increased their time and engagement in school and the amount of time they exercised; have adhered better to infection control procedures, become safer at work and in the community; provided better service in banks and restaurants and have increased their production of high quality manufactured goods.

By skimming the convention program, you will see many other socially important areas of application:

- Autism
- Behavioral Pharmacology
- Clinical; Family; Behavioral Medicine
- Community Interventions; Social and Ethical Issues
- Developmental Disabilities
- Human Development; Gerontology
- Experimental Analysis of Behavior
- Education
- Organizational Behavior Management
- Teaching Behavior Analysis
- Theoretical, Philosophical, and Conceptual Issues
- Verbal Behavior
- Other

Not listed separately, but of equal importance, are creativity, various vocational skills, safety on the job and in the community, drug abuse treatment, animal teaching and training, crime prevention and reduction and many, many others.

When a promising new product has been tested and made it "to market," it doesn't take too long before the word begins to get around. Then many, with similar wants and needs, jump on the bandwagon. We see this with diets, exercise, clothing and cosmetics fads. In ABA there are many examples too: token systems, self-management, "awards and rewards," weight-loss methods, animal training techniques and many others.

What Often Happens When we Attempt to Reproduce Results?

- Often it works like a charm
- Frequently it doesn't



And, the faster the results, the better. How many of the 316 "One Minute whatever" books listed by *Amazon.com* have made it to the top of the best-seller list? (If this sounds like rank jealousy, be assured, it is!) So when parents, teachers, managers, coaches, counselors, therapists and others devoted to altering behavior get wind of a powerful change method, many go after and attempt to apply it, precisely or not; and some without adequate information or skill. Others, in their haste toward realizing the "quick fix," fail to follow the published

protocol precisely or otherwise cut corners. (This is not to deny that sometimes procedural descriptions in journals, like many sets of "how to instructions," can be confusing or incomplete.)

Consider use of an ordinarily powerful classroom management method: contingent praise or attention. If the student misunderstands a teacher's praise, or knows it to be undeserved, or the praise is paired with punishment, as in sarcasm or teasing by classmates, it can backfire.

Local Contingencies Residential DD Treatment Facility

A- B- C analyses are the core of OBM

(A) → B → C

Typical Behavior = Attending job site; avoiding egregious errors
 Typical short-term consequences = Left alone
 Typical long-term consequences = Pay; good job security; perhaps corrections, etc.
 Typical Antecedents = Training, instructions, admonitions, schedules, etc.

Typical Way of Attempting to Replicate in Organizations

- Staff training
 - Tell and show
 - Describe methods and results of ABA studies
 - Show data
 - Maybe demonstrate
 - Possibly role play
 - Maybe even feedback during simulation
 - Possibly follow-through by viewing results
 - Performance data; number of failures, drop-outs, merit scholarships, scores on achievement tests
 - Number of accidents, profit margins

Pay for performance is another case in point. While this contingency can promote rates and quality of production, in a new setting the amount might be too meager to have an effect; or it could cause workers to perform too hastily and become injured or behave rudely to customers. That could get them into plenty of trouble.

OBM has a better way to approach changing participant performance. At least we like to think so. Before recklessly plunging in, we begin with our A-B-Cs, by

examining the performances of concern - the Behaviors or Bs; the ongoing consequences, or Cs of those behaviors; and the important antecedent conditions or events, the As in operation at present.

In many residential treatment settings, such as group homes, long-term care facilities for the disabled, infirm or elderly, the minimal requirements for care-givers are attending the job site without committing any egregious errors. In return, the worker receives pay and reasonable job security; minor errors, may

lead to a correction or reprimand. From my experience, immediate positive consequences are rare, other than being left alone. Preparation usually is in the form of formal or informal training, instructions, admonitions, schedules and so on.

**Local Contingencies
Public School Classroom**

(A) → B → C

Typical Student Behavior = Completing tasks
 Typical short-term consequences = Praise or avoidance of reprimands
 Typical long-term consequences = grades, parental approval or disapproval, promotion, and so on
 Typical Antecedents = Written or oral instructions, admonitions, schedules, etc.

The contingencies affecting employee performance in manufacturing is similar in some ways, different in others. Again, the behaviors of concern are meeting minimal standards; that is, not messing up too badly. Different is that rates matter and are reinforced on a "pay for performance" basis. Antecedents generally are quite simple: on-the-job showing and telling the worker what and what not to do.

In schools, when students do their assignments (the antecedents), they might earn a grade and generally avoid reprimands; or if they're lucky,

they just might earn some praise. Recognized longer-term consequences are report cards, parental approval or disapproval, promotion and so on.

Hundreds of published reports have shown that when managers recognize and improve the relations between the As, Bs and Cs, amazing successes can result. Small wonder, then, that organizational managers hope to capitalize of that good news by approaching consultants to help them out.

**Local Contingencies
Sporting Goods Manufacturing Plant**

(A) → B → C

Typical behavior = Attending job site; avoiding egregious errors
 Typical immediate consequences = Pay for performance; corrections for errors or termination
 Possible long-term consequences = Promotion, piece rate increase
 Typical antecedents = On the Job Training, instructions, admonitions, schedules, etc.

Change Process in a Nutshell

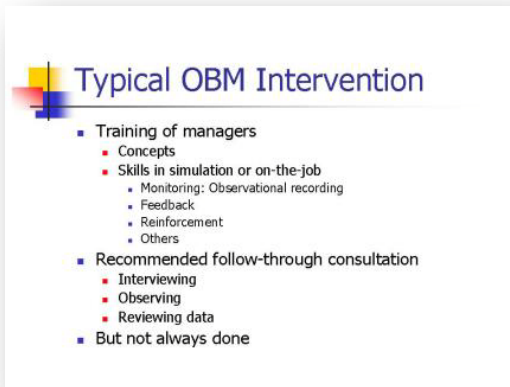
Intervention	Examples
<ul style="list-style-type: none"> ■ Up the reinforcers by <ul style="list-style-type: none"> ■ Choosing effective ones ■ Distributing them <ul style="list-style-type: none"> • Soon • Often ■ Clarify the Antecedents <ul style="list-style-type: none"> • Goals that are specific, challenging, achievable 	<ul style="list-style-type: none"> ■ Care workers <ul style="list-style-type: none"> ■ Praise ■ Deliver tangible rewards ■ Deliver clear instructions ■ Supervisors <ul style="list-style-type: none"> ■ Give feedback; numbers ■ Praise ■ Show or demonstrate clearly ■ Teachers <ul style="list-style-type: none"> ■ Praise ■ Provide rewarding activities ■ Give clear instructions ■ Match student skill level with tasks ■ And others

When we consultants come on the scene, typically we schedule one or more "in-service" workshops or training sessions. During these meetings, we introduce ourselves, and one another, and highlight the reasons why we are there. We may supply objectives so the audience knows what it is supposed to accomplish. We will discuss the challenges said to be facing the customer group and describe a related case or two. We emphasize ways of "upping" reinforcer effectiveness: by selecting them to match employee's wants and

needs, distributing them soon and often after the behavior and being very clear about what is expected, when and where. Examples include care-workers praising, delivering tangible rewards, and giving clear instructions; supervisors doing something similar, perhaps reporting numbers, as in items produced to specification; teachers praising, providing reinforcing activities, giving clear instructions; matching tasks to student skill levels and others.

We may, in addition, present data on related case examples or demonstrate change methods, such as discussing and role-playing how to deliver feedback. Show and tell methods like these are fairly standard. The gutsier among us might design a role-playing exercise for participants and tour the room, supplying our own information on the player's performance

At the conclusion of the meeting, or series of workshops, frequently that is that! Consultants collect their fees and move on to another gig. Really skilled, charismatic performers can maintain this pattern for a long time, providing their companies with a healthy income.



The savvier among us, though, recognize that they need to do more, if they are to have an actual impact on the host organization. They see that if their customers fail to observe any improvement, news of the consultants' ineffectiveness might get out and sully their reputation. So they follow up by inquiring about actual improvement on performance and results. When Dwight Harshbarger and I (Sulzer-Azaroff & Harshbarger, 1995) consulted with a Thai sporting good manufacturer about production quality, we requested weekly observational records and number of goods meeting quality standards. When

we collaborated with Marty Pollack, Charles Hamad,

and Tom Howley (Sulzer-Azaroff, Pollack, Hamad, & Howley, 1998) and with others who were seeking to promote service quality at a treatment center for the developmentally disabled, we followed through by interviewing managers, observing on site and asking for regular reports of performance data and other information related to longer term results. For over twenty years I also regularly received safety observational reports from the Institute of Materials Science, University of Connecticut, where we implemented our very first safety study among about 100 personnel (Sulzer-Azaroff, 1978). (Reports of the two injuries within that twenty-plus-year period reached me by word of mouth.) You might do something similar, such as reviewing data on rates of task completion or other performance measures or checking on success and failures or drop-out rates in a school program.

Much as I would like to report that everything we have tried has been an unequivocal success, that would be an exaggeration. Like most consultants, we have experienced a certain amount of inconsistency in the results of our OBM efforts. In our safety work, some units improved more than others. Despite sterling results with three Thai factories, a fourth elected not to pursue our QA system. Nor were all clients and staff, in every residential hall of the facility we served, optimally engaged in their assigned activities.

We have tried to understand and explain the reasons for these inconsistencies in results. One thing we know is that change costs, in terms of time, effort or material resources. We also have posited such factors as differences in participants' learning histories, skill repertoires and contingencies of reinforcement. Maybe



they lacked or exceeded our expectations of their entering capabilities, failing, thereby to perform as anticipated. Were contingencies of reinforcement faulty? Maybe other obscure reinforcement contingencies were interfering or perhaps well established conditions blocked access to or delivery of reinforcement. In terms of the designated managers of contingencies, possibly some lacked skills we assumed them to have and so were unable to promote the objectives. Perhaps their additional responsibilities interfered with or detracted from their own pool of reinforcers.

How Successful are These Approaches?

- Often they are; at least temporarily
 - And there are data to support it
 - Success happens when everyone wins
- Often they are not
 - Behavior of personnel, students, return to baseline patterns
- Why?
 - Change costs ("punishes")
 - Time
 - Effort
 - Material resources

At this point in the organizational change process, one needs to ask an important question: "How important, how much value would be added, by bringing those outliers up to the level of exemplary performers? This is a question of costs and benefits. A good place to turn is to Pareto's Law: A "law" described by Vilfredo Pareto, commonly called in the business world the 80:20 law. It refers to fact that, in life, 80 per cent (results) often is achieved by a 20 per cent investment of resources. The rest would take a far greater outlay. In other words, we need to ask if it would be worth investing an inordinate amount of time, money or effort, to achieve minimally additional gain.

In much of our work, as I suspect in yours, other matters outweigh profit as our main concern. US laws and the ethics of helping professions require and support free, appropriate educations for all children, humane treatment of disabled adults, and a safe, healthy workplace for employees, so we are responsible for going those extra miles. Nor can one just "blow off" the last 20% in other important areas. If you are operating a nuclear power plant or designing a space station, the allowable margin for error narrows considerably more. In cases of that sort, one can move on to the next level of sophistication, which in OBM is to examine the various meta- and other subtle contingencies operating within and without the organization. The University of South Florida Web site informs us simply that metacontingencies are "Contingent relations between cultural practices and the effects of those practices for the group."

Analyzing the Circumstances in Cases of Failure to Reproduce Results

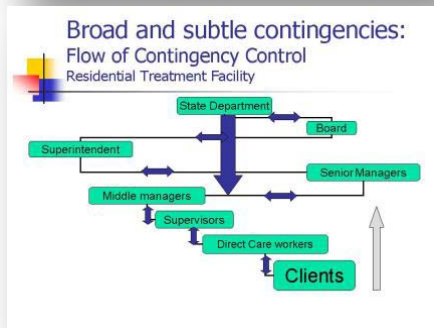
- Different learning histories, skill repertoires and contingencies of reinforcement
 - Participants
 - Mismatch between participant skill repertoires and intended objectives
 - Insufficient "motivation"
 - Faulty contingencies of reinforcement
 - Interfering contingencies of reinforcement
 - Mismatch between established conditions and available contingencies of reinforcement
 - Contingency managers
 - Mismatch between participant skill repertoires and intended objectives
 - Insufficient "motivation"
 - Faulty contingencies of reinforcement
 - Interfering contingencies of reinforcement
 - Mismatch between established conditions and available contingencies of reinforcement

Who Has the Most Contingency Control?



- Usually the "top dog."
- But not always....
- And not solely.

See, for instance, when we depict the explicit and subtle reinforcers and punishers operating in a residential treatment center: although the top down movement probably is the most powerful, in the sense that the bosses have control over hiring, firing, assignments and schedules, the flow of contingency control moves in more than one direction. The way that clients respond, affects care workers and so on up the line, in subtle or obvious ways.



If you know someone who has been injured by an angry client or employee, you know what I'm talking about. This can be worsened if the cultural practices include statements that the higher ups don't care. By contrast, positive breakthroughs also can be mightily reinforcing for staff, especially in a culture that values client progress.

When we used an analysis of this kind, we began to recognize why training of direct-care supervisors at a residential treatment center was insufficient to promote facility-wide quality client services. Formal reinforcers, wages and benefits, were delayed and non-contingent on client progress. Rarely were there instances of powerful, immediate reinforcement, in the form of praise or approval or evidence of client progress. Those would have to be constructed. That necessitated training of senior and middle managers, and of professionals too; and instituting a system of accountability within the entire organization. Results were exciting. Client engagement rose, presumably along with staff morale. Now, a number of years later,

the program continues, albeit in altered form (Sulzer-Azaroff et al., 1998).

When, years ago, we first began to intervene in the occupational safety area, we developed an observational recording and feedback system. Safe performance improved quite rapidly. Yet practices remained less than perfect and safety levels varied from one work area to another. So we began to ask ourselves who gained reinforcement of what sort for continuing to work unsafely; and we began to uncover numerous sources: faster, easier completion of jobs, pressure to meet delivery schedules, avoidance of subtle peer pressure, discomfort or routine change and many others. We realized that reinforcement would have to be increased for safe behavior to overcome those inherent impediments to safe practices. And, indeed, after supervisors, and later, peers assumed the responsibility for setting goals and for observing and supplying feedback, (Fellner & Sulzer-Azaroff, 1984, 1985) safety scores rose, and as we learned later, injuries fell.

For our last main example today, let us take a look at a contemporary challenge — accountability and improvement in higher education. Some of you, especially those in higher education administration, may be familiar with the "assessment process." This is a laudable effort to try to promote accountability within departments of general and higher education programs. This process involves stating their goals, designing ways to measure student progress toward those goals, and assessing how effectively those goals are being met. Take a look at the formal definition and you will note its uncanny resemblance to the model of change generally promoted in organizational behavior management.



What is *Assessment* in Higher Education

- An ongoing process aimed at understanding and improving student learning
 - making our expectations explicit and public
 - setting appropriate criteria and high standards for learning quality
 - systematically gathering, analyzing, and interpreting evidence to determine how well performance matches those expectations and standards
 - using the resulting information to document, explain, and improve performance
- When embedded effectively within larger institutional systems, assessment can help us
 - focus our collective attention,
 - examine our assumptions,
 - create a shared academic culture dedicated to assuring and improving the quality of higher education

—(Thomas A. Angelo, *AAHE Bulletin*, November 1995, p.7).

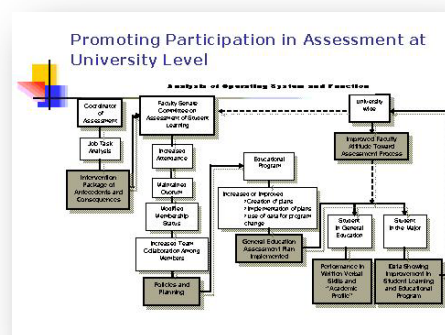
"Assessment is an ongoing process aimed at understanding and improving student learning. It involves making our expectations explicit and public; setting appropriate criteria and high standards for learning quality; systematically gathering, analyzing, and interpreting evidence to determine how well performance matches those expectations and standards; and using the resulting information to document, explain, and improve performance. When it is embedded effectively within larger institutional systems, assessment can help us focus our collective attention, examine our assumptions, and create a

shared academic culture dedicated to assuring and improving the quality of higher education (Thomas A. Angelo, *AAHE Bulletin*, November 1995, p.7)."

Sounds noble and worthy! One would anticipate departmental leaders and academic deans jumping on the bandwagon rapidly in a grand collaboration designed to improve their educational offerings. Do you think that's what happens? Well, my single experience with this took place recently, when Dr. Corrine Donley, a behavior analyst employed at a Midwestern state university, contacted me to do discuss steps she, as Coordinator of Assessment, might take to promote participation in their assessment process; and you guessed it. Enthusiasm had been tepid, to say the least. Departments were supposed to designate members to the assessment process and each college was to send representatives to the faculty senate assessment committee. They, in turn, would spearhead drafting a plan to suit the programs, and see to its implementation and evaluation. But when assessment committee meetings were scheduled, often insufficient numbers of representatives came to permit a quorum. Beyond that, few assessment plans were designed, and fewer yet implemented and evaluated. (Donnelly & Sulzer-Azaroff, 2003).

In analyzing the reinforcement contingencies in place at the university, (shown below) we recognized that the process could be seen as exacting a considerable cost from faculty and departmental administrators. They would need to spend time and effort on the project and also would be exposing themselves to scrutiny. Unlike business organizations, most had pay and job security and they recognized they had little to gain by participating. Small wonder, then, that few rushed to join in the effort.

After considering the convoluted series of steps and the number of cultural, local and distal factors influencing participation, we understood better the glacial pace at which the program had been moving. The only way to overcome such barriers would be to introduce as many powerful reinforcing contingencies as we could think of to "motivate" participation and progress. Dr. Donley was inventive. She enticed with notes and notices; thanked with written and phone messages; rewarded attendance with snacks at meetings and a variety of other creative interventions and much more.



I hope all this doesn't give you a headache. Remember the 80:20 rule? You can get 80% output with a 20% investment. Consequently a little effort may go a long way. So, if you find

Harnessing Meta- and other broad contingencies

Short Term Effects	Long Term Effects
<ul style="list-style-type: none"> Monitoring <ul style="list-style-type: none"> Teacher delivery of praise <ul style="list-style-type: none"> Providing verbal feedback Staff use of gloves <ul style="list-style-type: none"> Providing verbal feedback Number of goods meeting quality standards <ul style="list-style-type: none"> Providing graphic feedback Number of safe and unsafe performances 	<ul style="list-style-type: none"> Involving <ul style="list-style-type: none"> Principals <ul style="list-style-type: none"> Monitoring and feedback Managers <ul style="list-style-type: none"> Monitoring and feedback Middle and senior managers plus external QA managers <ul style="list-style-type: none"> Feedback and recognition Family members

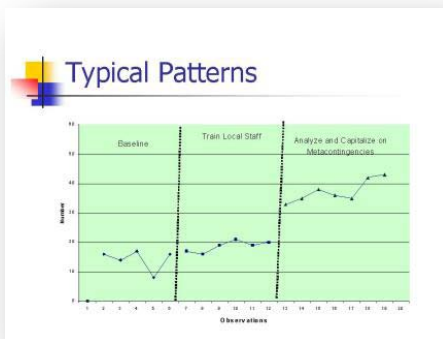
yourself up against a seemingly intractable organizational behavioral challenge, think about the present and potentially manageable broad meta- and informal contingencies on which you might capitalize. Just to supply a taste of what I'm suggesting:

To encourage teachers to give more contingent praise, we have observed and given feedback on their delivery of praise and the improvement in their students' performance (Whitley & Sulzer, 1970). To keep it going, building principals or other supervisory staff undertook to monitor and supply feedback a few minutes a week as part of their regular job responsibilities (Gillat, & Sulzer-Azaroff, 1994).

To encourage health care workers to use gloves when handling patients and wash their hands afterward, we provided them with verbal feedback on the number and percentage of staff complying with the routine. Maintenance was supported by involving managers in the feedback process (Babcock, Sulzer-Azaroff, Sanderson, & Scibak, 1992)

To reduce product defects, we taught and instituted a system of operation in which quality assurance personnel periodically observed and gave positive, verbal and graphic feedback to workers for meeting quality standards. Middle and senior managers incorporated viewing progress charts in their regular management meeting, and planned periodic celebrations which maintained the system (Sulzer-Azaroff & Harshbarger, 1995)

In some behavioral safety systems, as I tried to depict in the book, *Who Killed My Daddy? A Behavioral Safety Fable* (Sulzer-Azaroff, 1998), long-term support can come from outside of the organization, say, from the family. In the story, plant-wide improvement in safety was celebrated with a company-sponsored family picnic.



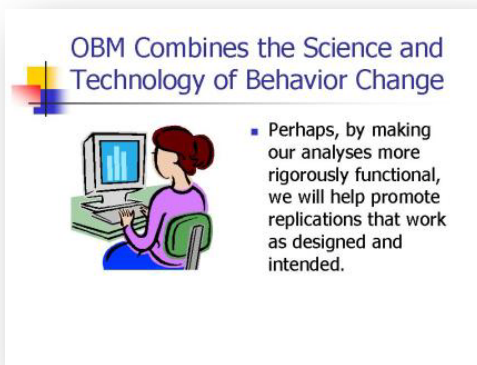
The main point I have been trying to convey today is that organizational behavior change depends on management of contingencies both local and wide-ranging, because doing the first without the second often shortens the life of the program. For a powerful and long lasting impact, we generally need to identify and analyze the functions of reinforcers currently in play and those that can be harnessed or exchanged to be more supportive of long-term organizational goals.

This concept can be

institutionalized within OBM, just as it has been in behavior analysis in developmental disabilities. In the latter area, when behaviors are seriously out of control, the analyst invests the time to stop and informally or formally assesses the function of maladaptive behaviors. OBM can do something similar, by developing, testing and using standard systems of organizational analyses; generic observational checklists, formal interview protocols, scatter plots to identify where and when inappropriate practices occur, and simplified functional analytic systems. These, then, can be tested for utility, feasibility and, above all, validity. Sufficient science and technology is available to permit more rigorous

A Suggestion for Our Field

- As in areas such as developmental disabilities, beyond intuitive A-B-C analyses, we need to consider composing and testing simple, valid functional assessment methods and instruments
 - Systems of organizational analysis
 - Generic observational checklists
 - Formal interview protocols
 - Functional analytic methods
- Test these out for
 - Utility
 - Feasibility
 - And above all, for validity



functional analyses. Investing in efforts like these can lead to more successful replications, that work as designed and intended. We should never forget that functional analysis is the hallmark of the science of human behavior.

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