TRANSLATING THE SCIENCE OF BEHAVIOR ANALYSIS TO THE WORKPLACE: ONE COMPANY’S 30 YEAR EFFORT

TRADUCCIÓN DE LA CIENCIA DEL ANÁLISIS DE LA CONDUCTA AL LUGAR DE TRABAJO: LOS ESFUERZOS DE UNA COMPAÑÍA DURANTE 30 AÑOS

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Abstract: This article uses a case study to follow the effective translation of the experimental analysis of behavior, an established multifaceted area of psychology that originated in the psychology of learning, to the extensive use of derivative tools and methods of applied behavior analysis in the workplace. It provides an historical review of how one clinical psychologist, Aubrey C. Daniels began, in 1966, as chief of psychology in a psychiatric hospital, to implement applied behavior analysis with the total hospitalized population, producing results that still stand today. It traces how Daniels was subsequently drawn through a series of related events to the creation of the longest standing organizational behavior management firm in the world. A sample of tools and methods, as well as a few brief case studies and results metrics across a diverse clientele are highlighted to illustrate the application of this science of learning to the workplace. This case study ends with an invitation to increase the measurable impact of psychology, specifically applied behavior analysis, on the important activities that occur in the workplace.

Keywords: applied behavior analysis, behavior analysis, workplace, workplace psychology, organizational behavior management

In the United States, psychology in the workplace is understood as having something important to offer about the behavior of those who work, from the shop floor to the executive office suite. Psychology crosses multiple areas of workplace life, such as aptitude and personality testing, organizational motivational strategies, group dynamics, selection, individual career planning, instructional design, human factors and ergonomics, as well as one-on-one coaching at all levels of corporate America. Employee Assistance Programs offer a built-in and insurance subsidized way to access the benefits of clinical psychology. In the United States, there is one area of psychology that has made significant inroads into business settings, but its work is too often little known in the larger arena

1 Our thanks to Aubrey C. Daniels for allowing the authors to tell his story and to use the copyrighted tools and materials of Aubrey Daniels International in this work. Our appreciation to Kennon A. Lattal who read the manuscript and offered us sound guidance. Finally, a word of appreciation to all the clients working with organizational behavior managers everywhere who have used the methods of applied behavior analysis. These clients have given generously of their talent to help improve the work.

Resumen: En este artículo se presenta un estudio de caso que sirve para mostrar la forma en la que se hizo una traducción efectiva del análisis experimental de la conducta, un área multifacética de la psicología que se originó en la psicología del aprendizaje, al uso extensivo de las herramientas y los métodos derivados del análisis conductual aplicado en el lugar de trabajo. Provee una revisión histórica de cómo un psicólogo clínico, Aubrey C. Daniels en 1966, como jefe de psicología de un hospital psiquiátrico, implementó la aplicación del análisis conductual con todos los pacientes del hospital, produciendo resultados que son válidos hasta hoy en día. El artículo muestra cómo Daniels, mediante una serie de eventos relacionados, posteriormente creó la organización de administración conductual más antigua del mundo, la cual sigue vigente. Se ejemplifica el uso de técnicas y métodos y se presentan estudios de caso y resultados con una diversidad de clientes para ilustrar la aplicación de esta ciencia del aprendizaje al lugar de trabajo. El artículo finaliza con una invitación a incrementar el impacto cuantitativo de la psicología, especialmente del análisis conductual aplicado, en las importantes actividades que ocurren en el ámbito de trabajo.

Palabras clave: análisis conductual aplicado, análisis experimental de la conducta, lugar de trabajo, psicología industrial, administración conductual
of psychology and may be all but invisible in many other countries. That area is applied behavior analysis (ABA) and its specific application to the workplace is known as organizational behavior management (OBM). The purpose of this paper is to highlight this area as a psychology-based approach to the workplace.

The work of translating applied and experimental behavioral research to work is challenging. Specifically because the translation of the science of behavior analysis must cross societal as well as cultural barriers regarding the meaning of the word “behavior.” Most people do not think they have a lot to learn about behavior; due, in part, to how “behavior” is used in common, everyday language. Behavior (of self and others) is either a private matter, not appropriate to change unless out of control in some manner, or assumed to be well understood by almost everyone, and particularly by the corporate executives or workplace managers who are the points of entry for this translation. The idea that human behavior is governed by scientific principles allowing for the prediction and influence of workplace performance often is met with skepticism by non-psychologists and many psychologists alike. Often, people are labeled as a personality type because of a pattern of displayed behaviors. This is unfortunate as personality (nee behavior) is often viewed by these same individuals as static, certain, not subject to change without enormous effort. The decades of scientific work by psychology and specifically, behavior analysts, stands to contradict this notion. Once a trait is broken down into the discrete behaviors associated with that trait, or the behaviors are pinpointed themselves clearly in the conditions in which they occur, most workplace behaviors under review are readily subject to change.

The final issue is that of top-down manipulation as behavior analysis is often described popularly, rather than the “informed influence” that is ideally practiced. Since change is happening continually in behavior and the environment that surrounds it, often without care and without knowing, Aubrey Daniels International (ADI) has set out to demonstrate the reciprocal nature of behavior—a stream of deliberate and accidental influence that is happening all the time. This technology is not applied to others as in ‘doing to them’—it is applied first to ‘me’ and then I learn how my behavior influences others. “As I interact with you, I am changed; as you interact with me, you are changed. How can we, together, be alert to the power of consequences and use them for our mutual good?”

Wherever work occurs, from the mundane to the innovative, in universities or in drilling operations, in white collar or blue collar settings, from selling ideas to selling coffee, applied behavior analysis (ABA) has something very immediate to offer for improving performance. ABA is the applied use of the science embedded in behavior analysis, the body of work that is known as operant conditioning or learning theory, originally generated from the research of B. F. Skinner and his intellectual heirs. The applications of ABA in the United States began with schools and institutionalized populations in hospital settings, particularly mental health settings (see the Journal of Applied Behavior Analysis for a sample). Those areas continue to thrive and dominate the practice. How the practice of organizational behavior management (OBM) evolved, the distinct application of ABA in workplace settings, is an important and growing part of the story of learning theory impact. These practice methods offer much to psychologists who wish to demonstrate such impact in behavioral systems of any sort (schools, hospitals, manufacturing, retail, governmental or other organizational group settings), and the individuals within those systems.

Translation of applied and experimental behavior analysis research involves the use of principles and techniques derived from and informed by basic laboratory and applied research. Behavior analysis practitioners maintain a rigorously scientific and parsimonious approach to analysis and description. This rigor has allowed applied behavior analysis research and application to produce replicable successes across multiple settings, populations, and time periods.

The standards for qualifying psychological research as ABA research were initially put forth by Bear, Wolf, and Risley in 1968 in the inaugural edition of the Journal of Applied Behavior Analysis

…an applied behavior analysis will make obvious the importance of the behavior changed, its quantitative characteristics, the experimental manipulations which analyze with clarity what was responsible for the change, the technologically exact description of all procedures contributing to that change, the effectiveness of those procedures in making sufficient change for value, and the generality of that change. (p. 97)
Also included in their standards was the requirement for the research to be socially relevant.

OBM practitioners are often keenly aware of the requirements and standards associated with ABA research and strive to achieve these standards in their methodologies and practice. Thus it is against each of these standards that an OBM application must strive to achieve the highest probability of replicable success. However, it has been a challenge for OBM practitioners to balance the demands of their specific applications with the demands of the scientific community.

The process of moving from traditional psychology practice to using this technology in commerce will be described through the work of one of the longest standing OBM companies in the United States, Aubrey Daniels International (ADI). This article focuses on ADI because it is well known to the authors, and because it and its founder have been formally recognized for professional and lifetime contributions to the field of behavior analysis by the International Association of Behavior Analysis. Its impact is well documented through mainstream books, published research, and applied case studies. Its impact has been told through formal writings by its clients across those years. There is evidence that what it does works. Finally, ADI is a company, as with a handful of dedicated OBM companies, that has never wavered from its core mission to disseminate, as it sees it, the science of behavior analysis in the world of work.

THE EARLY DAYS: DAYS OF DISCOVERY

In the late 1950s and then more explosively in the 1960s, the beginnings of applied behavior analysis research occurred across institutions and individuals that still stand as some of the field of psychology’s most monumental work and upon which the clear connection and ease of entry to special needs populations was built. While there are many classic examples, for purposes of this paper, Teodoro Ayllon and Nathan Azrin’s research at Anna State Hospital in Anna, Illinois, had a profound influence on the genesis for what has become ADI. They demonstrated in a compelling way the use of the token economy to change psychotic patterns of behavior and set the standard for moving beyond the pacifying effects of medication alone and/or traditional therapies (e.g., Ayllon, 1963; Ayllon & Azrin, 1964). Their work had well-documented effect at the hospital and had immediate impact on the funding of such work across other institutions. At this same time, Aubrey Daniels was beginning a large-scale token economy at a state psychiatric hospital in Georgia.

While well understood for its impact on the behavior of institutionalized individuals, Ayllon and Azrin’s work was also a field study in early OBM influence. Originally demonstrated in his early work with Saskatchewan Hospital along with Jack Michael, Ayllon was first to publish a description of an OBM consulting relationship between behavior analysts and work environment supervisors (nurses) (Ayllon & Michael, 1959).

FROM CLINICAL PRACTICE TO ORGANIZATIONAL PRACTICE

Aubrey C. Daniels was a clinical psychologist who decided that traditional clinical psychology had little to offer in his work as head of psychology at Georgia Regional Hospital. Previously, in his work at the Georgia Mental Health Institute he had successfully applied behavioral treatment to individual patients. In his work at Georgia Regional, he was asked to apply these treatment methods to all 500 patients in the hospital. This led to the first system-wide token economy within a state hospital. It was modeled on the work of Ayllon, but was applied to all diagnostic groups from children to geriatrics and alcohol and drug addiction. He and his team were extremely successful with their work, reducing recidivism from 76% to 11% and shortening the average length of stay by several months.

The program that had the most direct influence on the application of behavioral principles to the workplace, however, came from a Vocational Rehabilitation grant aimed at reducing truancy in high school in the late 1960’s. The program involved 30 juvenile delinquents who were released from a county detention center to attend an inner city high school. Students were on a token system where they earned tokens for completing school assignments and maintaining good class conduct. In seeking way to measure student progress in reading and mathematics, they were sent to Learning Foundations, a remedial learning center in Atlanta.

Learning Foundations was one of the first centers to use teaching machines and this allowed progress mea-
sures to be reviewed daily. Progress was so dramatic that the center director asked if this could be done with all their students. Learning Foundations was one of several companies owned by Fran Tarkenton, then the quarterback for the New York Giants football team. One of the companies he owned was Industrial Educational Development Corporation (IED). Their business was underwritten by grants from the Federal Government that subsidized businesses for hiring the “hardcore unemployed” by paying for training, medical treatment, transportation, etcetera.

The problem IED had was that they were able to recruit and train these employees but most of the newly placed employees were fired by supervisors within days or weeks of being sent to the manufacturing floor. It was clear the work environments were not set up to guide the recruits to develop the skills required for long-term employment. The president of IED asked if Daniels could teach supervisors to help their recruits to be successful at work. IED had a large contract with Springs Mills, a South Carolina textile firm; it was there that Daniels first brought his skills to a work environment. Supervisors were taught in a four-hour training program to use graphic feedback and social reinforcement for improvement in job performance. The program had impressive results and soon after, Daniels and Tarkenton founded Behavioral Systems Consultants. Their first private customer was Cannon Mills, a North Carolina textile manufacturer that was experiencing severe absenteeism and turnover problems. Annual company turnover rates were above 150% and most of the turnover occurred in the first ninety days of employment.

The results of Daniels’ OBM training and interventions were impressive as ninety day turnover rates were cut in half in ninety days. Word of this success spread fast within the textile industry as business was so good in the early 1970’s that employee retention was a top priority. Behavioral Systems Consultants became Behavioral Systems Inc. (BSI) and eventually worked with every major textile firm in the country, growing to over 100 employees.

In the mid-1970’s, the textile industry in the United States went into a major recession with many small companies going out of business. BSI’s business suffered significantly as 100% of the company’s business was in textiles. It was only at that time that the company began to seek business outside of the textile industry. The company, although smaller, worked with a wide variety of businesses throughout the country from steel manufacturing to healthcare while it continued to prove its methods through evidence based data collection and dissemination.

In 1977, while still at BSI, Daniels founded the Journal of Organizational Behavior Management (JOBM) with three objectives. The Journal would:

1. stimulate good research on organizational problems and the technology resulting from that research would be useful in solving problems in organizations,
2. help to spread knowledge about using behavioral methods to solve organizational problems and thus lead to a better world, and
3. provide clients of behavioral consulting companies a place to read the papers published in the Journal to teach them the principles of behavior and how to apply the technology to common problems.

BSI consultants published heavily in the first volume of JOB (1977-1978) (e.g. Chandler, 1977; McCarty, 1978) but soon found that reporting results and methods in a research journal did not meet the stated objective of enticing clients to read the papers published to enhance learning and application of behavioral technologies. In a review of the Journal in 1989 Daniels and others stated,

The Journal has arguably served the first two objectives. However, the Journal has not had any known important impact on clients who are interested in behavioral technology since its founding. Clients have not understood the research. The reporting format popular among researchers is not easily understood by people who are not trained in research. The technology involved in the research reported in JOB may have value for clients of behavioral methods. However, that technology will usually have to be translated from the language of researchers to the language of business people before that value is apparent.

In addition to finding that business clients did not understand the papers being published in JOB, a succession of editors who were BSI employees found what hundreds of academics must have already known: editing research journals was terribly time consuming (Balcazar, Shupert, Daniels, Mawhinney, & Hopkins, 1989, p. 8).

In 1978 Daniels left BSI where he had served as president since 1972 to start Aubrey Daniels and Associates.
(ADA). Shortly thereafter, *JOBM* was sold to Pergamon Press by BSI. In 1980 editorship *JOBM* was passed from BSI consultants to Phil Duncan, the first in a line of Academic editors that continues to the present day.

In 1982 ADA began publishing *Performance Management Magazine* (*PMM*). This time around, ADA wanted to present material in a format that was interesting and that had relevance to day to day management allowing the sharing of best practices in applying behavior analytic principles to workplace issues. While the OBM community would find much to replicate in designing their own tools and interventions, this was not a scientifically rigorous undertaking. The result was a magazine format filled with case studies, editorials, and interesting tidbits, with much less emphasis on scientific method and analysis. Reports in *PMM* tended to be from ADA clients guided by ADA consultants with the article produced very much a collaboration between the two. Although reports in *PMM* received less scientific scrutiny than those in *JOBM*, the collaborative nature of the articles provided the distinct advantage of an inherent social validity not typically seen in *JOBM* articles.

ADA soon began accumulating clients, starting with Broyhill Furniture (furniture manufacturing and distribution), then 3M (diversified technology company), Blue Cross Blue Shield (insurance company), and Preston Trucking (cross country transportation). ADA’s early client list demonstrated diverse application of behavioral management principles beyond manufacturing productivity in textile mills. That list has grown to multiple industries across hundreds of client companies and many thousands of employees.

In 2001, ADA became Aubrey Daniels International (ADI) with activities in 22 countries and with formal alliance partnerships in Great Britain, Canada, Costa Rica, Spain, Iceland, Australia, Japan, Russian, South Africa, and Brazil. Its current headquarters is in the Buckhead Business District in the city of Atlanta.

**GUIDING PHILOSOPHY: THE R+ COMPANY**

One area of controversy that surrounds Daniels’ philosophical approach is his, and in turn, the company’s, emphasis on positive reinforcement—a values-based focus above a science-based focus, some would say. While Daniels is a scientist and understands that the scientific discipline of behavior analysis is not about making value statements about the consequences that change behavior, as in one is good and another bad. He fully understands that terms associated with the science, like positive, negative, or punishment are about trends, increasing, decreasing or stopping behavior, not about the social value of such terms, he set a stake in the ground. He saw the tendency of those in control of others: 1. to judge patterns of behavior as the absence of or presence of the individual performer’s internal fortitude, not a product of environmental conditions and effects of consequences; 2. to ignore good performers except when they deviated from that standard; and 3. to use threat or fear to get what they wanted when not readily produced by the employees. The ‘Do it or else’ school of thought, that is, unfortunately, found everywhere work occurs.

These coercive patterns are highly reinforced in the formal and informal chains of management command, whether in school settings, hospitals, or organizational work settings. Daniels, perhaps influenced by strong success with the use of positive shaping strategies imbedded in his own early work, deliberately chose to make a professional lifetime statement about coercion. This science promotes a better way for those in control to set the moral high road in using the power they have to change behavior. While there are specific situations where managers must punish or threaten or create fear of failure for the immediate and longer-term good, managers are not held accountable, in general, for each of their supervisee’s improvement. If results are met, no matter if achieved by one member or ten members of his or her team, the manager is judged to have done a good job. It is a careless analysis of workplace potential.

“Business is behavior” Daniels would say, and understanding how to change behavior from current state to high and steady rates of successful performance lies in the sophisticated use of positive reinforcement. Workers understand that positive, negative and punishing consequences occur all the time, with varying degrees of success. Benign neglect or deliberate extinction also occurs. When the person who is in control uses predominately aversive control, that person and the related culture can do better through the strategic and predominant use of positive reinforcement as the approach to worker and ultimately business improvement.

Almost no business schools teach their graduates about the science of behavior analysis, even in their management courses. They may get some cognitive psychology,
organizational development theory, and human factors training. Managers have few tools to objectively evaluate behavior patterns and they are almost never trained in human performance when promoted on the job. Most managers come up the ranks. Many are ‘naturally good’ behavior analysts, without necessarily knowing a word of the science. But that leaves a vast group who do not know how to and do not think it is their job to manage behavior.

METHODS AND TOOLS

ADI consultants use a generally standard method of intervention. They analyze the business case for the work, observe and gather data on current culture and performance metrics, plan and design the implementation, work with senior teams or direct site champions to roll out the plans, take individual and group baseline measures on a variety of conditions, train at each level of employee involvement, and work with senior leadership and stakeholders to set up strong accountability models. They coach and perform systems and process redesigns around a behavioral roadmap and align consequences for the longer term. They evaluate that impact and continuously work to improve the model.

ADI consultants also have a variety of tools to help the client connect to what behavior analysis has to offer. Many of the tools are described in books Daniels has written, with multiple updated editions being published over the years of his work, beginning in 1982 with the publication of Performance Management. The latest editions of Daniels’ books are listed in the references (Daniels, 2000, 2005, 2007; Daniels & Daniels, 2006). In addition, these tools are mentioned in magazine and professional articles written by ADI’s clients and consultants. They are simple, not simplistic, and they have opened up the most complex of business issues to behavior analysis, cascaded across large corporate rollouts. They are replicated in almost the exact form across many OBM consulting companies today. ADI continues to develop these tools to find new ways of translating this science of psychology to the workplace in ways clients can apply. A few of these tools are described below: The Five-Step Process, Behavior Action Plans, The ABC PIC/NIC Analysis, and Discretionary Effort (Shaping).

The Five-Step Process

The Five-Step Process is a method, heavily based on and containing the elements of the scientific method, for analyzing and changing the work environment and thus behavior. The five steps are:

1. Pinpoint: Specify both the results and behavior that are required to achieve needed outcomes (process and results), to drive business objectives and individual performance.
2. Measure: Take data on the performer and have the performer(s) track data as well. From improving supply chain management to the individual efforts to improve error reduction in report writing —whatever it might be— always set up a clear measurement system tied to key results.
3. Feedback: Display progress and discuss measures in visible ways so that individuals learn that behavior patterns are predictive and trends are indicative of what is happening at a behavioral level.
4. Reinforce: Celebrate by discussing progress and focusing on the steps toward the goal. Differentiate corrective statements from a true shaping strategy, defined from both the experimental analysis of behavior to the words used to recognize and support progress. Make it visible and frequent. Use good knowledge about schedules of reinforcement as fluency and generalization is being acquired. Whenever possible, build in reinforcement to the natural working environment. Know that this is a major challenge of managers when working with their employees —when to recognize progress.
5. Evaluate: keep an eye on performance at the individual and collective levels when looking at the effectiveness of your work. Always be evidence based. Seek out how to make visible trends, speed, direction, and alignment with other stated objectives, changes in the workplace conditions. Ask, “How can this be better for the worker, the manager, the leader and the overall culture?”

This method in its simplicity has transformed how business leaders, managers, supervisors, and frontline employees look at behavior. It is a method of analysis that allows for precision and objectivity to guide interventions and it is easy for individuals to understand. It is
not as easy for them to implement so, in addition, ADI offers a Behavior Action Plan (Figure 1) (originally called a Performance Improvement Plan) or a Coaching Action Plan (Figure 2) and other project planning tools to help the client capture the important elements of achieving behavior and results targets.

**The ABC PIC/NIC analysis**

The ABC PIC/NIC analysis, shown in Figure 3, is a decision tool for evaluating what is occurring in the work environment and deciding how to intervene. Using this tool allows the client to examine and categorize the known environmental variables that act on the behavior of interest. The ABC portion of the tool requires the client to categorize environmental stimuli and events as either happening before and triggering or prompting the behavior (antecedents) or during or after the behavior increasing or decreasing its frequency in the future (consequences).

The PIC/NIC portion of the analysis allows the client to categorize the consequences by two dimensions (immediate or future, certain or uncertain) that impact the
**Behavior Action Plan Continued**

**Feedback**

<table>
<thead>
<tr>
<th>Result:</th>
<th>Behavior:</th>
</tr>
</thead>
<tbody>
<tr>
<td>How will you communicate results performance to the performer(s)?</td>
<td>How will you communicate behavioral performance to the performer(s) (i.e., how will they know if the behavior is happening as planned)?</td>
</tr>
<tr>
<td>I will post a graph of average parts per hour on the break room wall weekly.</td>
<td>I will post a graph of percent parts assembled with presorted components on the break room wall weekly.</td>
</tr>
</tbody>
</table>

Use this area to sketch graphical RESULTS feedback (if known, include baseline and goal levels)

Use this area to sketch graphical BEHAVIOR feedback (if known, include baseline and goal levels)

**Average Parts per Hour**

![Average Parts per Hour Graph](image)

**Percent Parts Assembled with Presorted Components**

![Percent Parts Assembled Graph](image)

**Feedback owner** | **Update Frequency** | **Location/Event** | **Feedback owner** | **Update Frequency** | **Location/Event**
<table>
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<tbody>
<tr>
<td>Me</td>
<td>Weekly</td>
<td>Post on break room wall</td>
<td>Me</td>
<td>Weekly</td>
<td>Post on break room wall</td>
</tr>
</tbody>
</table>

**Reinforce**

**Results Reward/Celebration Plan**

Baseline performance: About 100 Parts per Hour
Final goal: 150 Parts per Hour

<table>
<thead>
<tr>
<th>Results Subgoal</th>
<th>How we will celebrate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subgoal 1</td>
<td>125 «Productivity Party»</td>
</tr>
<tr>
<td>Subgoal 2</td>
<td></td>
</tr>
<tr>
<td>Subgoal 3</td>
<td></td>
</tr>
<tr>
<td>Subgoal 4</td>
<td></td>
</tr>
<tr>
<td>Final Goal</td>
<td>150 «Productivity Party»</td>
</tr>
</tbody>
</table>

**Reinforcement Plan for Key Behaviors**

Baseline performance: Unknown
Final goal: 100%

<table>
<thead>
<tr>
<th>Behavior Subgoal</th>
<th>How we will reinforce:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subgoal 1</td>
<td>80% Pass out free soda</td>
</tr>
<tr>
<td>Subgoal 2</td>
<td>90% Pass out free soda</td>
</tr>
<tr>
<td>Subgoal 3</td>
<td></td>
</tr>
<tr>
<td>Subgoal 4</td>
<td></td>
</tr>
<tr>
<td>Final Goal</td>
<td>100% Pass out free soda and doughnuts</td>
</tr>
</tbody>
</table>

Figure 1. A sample Behavior Action Plan
Figure 2. A sample coaching action plan.

Effectiveness of the consequence, and by a third dimension which determines whether the consequence is likely to increase or decrease the desired patterns of behavior. This allows the client to objectively look at how the environment and the conditions that control patterns of behavior are arranged to increase or decrease the likelihood of performer success. It provides in shorthand a method for predicting future patterns of behavior based on motivational structures operating on current performance. It is a tool for planning and for stepping back and doing a pinpointed analysis of the current vs. future state using guidelines translated from the science of learning. It is one of many ADI tools directed at objectivity when looking at performance trends and how to manage those trends.
Figure 3. An example of an ABC PIC/NIC analysis. The three classification dimensions are: 1) positive/negative as experienced by the performer, 2) immediate/future, and 3) certain/uncertain.
**Discretionary effort**

While discretionary effort (Figure 4) is not a formal tool in the form reported here, it is a compelling graphic of what shaping does to accelerate high and steady rates of fluency in performance and how that impacts the achievement of the goal. It helps clients translate mastery and fluency of learning to high states of profitable habits (worthy work and sustained performance). Discretionary performance is motivated by ‘want to do’ versus minimal compliance, motivated by either ‘cannot do’ (needing more training or experience) or a ‘won’t do,’ meaning the absence of well-targeted motivational systems across elements of culture and management practice. The compliance performance visible in many companies leads to just enough behavior to get by – just over the baseline, as the graph displays.

The client learns to arrange the conditions for desired behavior and to examine progress against baseline. They have objective measures of what the worker does, and a way of looking at behavior objectively as well. Teaching managers to look at behavior objectively is the biggest hurdle in this work. The use of positive behavior change strategies allows for greater gains through effort by the same employees who were, prior to training in OBM, labeled as lazy or resistant or dumb by their managers and leaders. If the worker –or the manager– is subjectively labeled in this process, then all too quickly, the problem lies with them, not in the motivational factors of the workplace environment or the control that consequences have in maintaining what is judged to be good or bad patterns. Most of ADI’s interventions have demonstrated that the same workers who are labeled ineffective become ‘effective’ with small changes in the amount of solid antecedent and consequence management that direct positive performance. Most managers become very effective shapers of future positive behavior from their workers in such a system. Most business realize large financial and cultural gains, as evidenced by the years of data ADI has collected, a small sample of which is displayed in the next section.

**A SAMPLE OF PAST AND RECENT WORK**

Throughout its three decades, through training clients in OBM technologies and applying OBM to the workplace...
through direct intervention, ADI consistently demonstrates the impact of OBM. Interventions have been specifically targeted to narrow problems or broadly targeted to large scale organizational change across many elements of culture and performance. The goal is technology transfer and independence by clients. They come back for a variety of reasons and become lasting colleagues in most cases. Some interventions last a few months and many last years. The longest running client engagement by ADI is currently ongoing over the last 27 years, with the client as masterful at this science as their ADI consultants. A brief sample from *Performance Management Magazine* ([PMM]) and recent unpublished work with a few current clients are described below to provide an introduction to the types of problems clients ask to have addressed. The 17 volumes of *PMM* and additional articles are available online at www.aubreydaniels.com. All clients have granted ADI permission to report these results, sometimes anonymously for a variety of market or competitive reasons.

**Ford Motor Company**

Within a Ford Motor Company transmission assembly plant in the State of Michigan, a plant manager used ADI’s technology to improve the current employee improvement suggestion program. Before the intervention, the suggestion program rewarded employees for submitting suggestions, but the manager determined that the reward came too far away from the behavior of making a suggestion to effectively reinforce the behavior. An analysis of the behavior of interest revealed that suggestions were usually written in private and required the employee to stop working or stay late to write.

The manager started holding weekly suggestion meetings allowing employees to write suggestions on company time rather than taking away from the employee’s free time. Additionally, suggestion meetings allowed employees to talk about suggestions and socially reinforce each other for making suggestions. The manager also expedited the delivery of rewards after a suggestion was made and accepted and posted graphs displaying feedback about suggestions made and how much the plant had saved by implementing suggestions (Figure 5). The program saved the Ford plant over five million dollars in the first five months it was implemented (Snyder, 1996).

**Blue Cross Blue Shield of Alabama (BCBSAL)**

BCBSAL, a medical insurance company, has been a customer of ADI for over 27 years, using the principles of applied behavior analysis to run their business in all aspects and continues to win recognition for their customer service, quality and profitability from their colleagues across the USA and throughout the industry.

One specific sample of what one unit did was described in *Performance Management Magazine* (Dowis, 1983). A manager in the Medicare Claims Division began recording how many Medicare claims employees adjudicated each day. Initially, little was done to improve these numbers, but after a few months the manager began to use ADI technology to provide daily feedback to employees on their performance. With the addition of feedback the number of claims adjudicated per employee per day began to increase at a fast pace. When the manager then added contingent reinforcement, the number of claims adjudicated increased to three times that of the baseline performance (Figure 6).

**3M Distribution Warehouse**

Comprehensive performance measurement systems already in place at a 3M distribution warehouse allowed ADI’s tools and techniques to easily modify the current work environment to maximize targeted behaviors. The warehouse in this example used OBM throughout the warehouse to achieve performance enhancement on a number of targets. The results are clearly seen in a graph of overall productivity from the warehouse (Figure 7) (3M, 1987).

**Rochester Gas and Electric**

When ADI is employed to produce results in the area of organizational safety, typically interventions involve the targeting of specific skills or behaviors which if consistently practiced would reduce the occurrence of work-related injury. The intervention is then designed to allow workers to practice these behaviors on the job and receive feedback and reinforcement on their performance until the behavior or skill is performed correctly every time usually for six consecutive weeks, at which time the
behavior is considered “at habit strength” and a new behavior is targeted for improvement.

Rochester Gas and Electric, over the course of one year, brought thirteen behavior targets to habit strength across five departments within the company. Lost-time accidents significantly dropped in all of the five departments, while accidents in the rest of the company increased slightly. The overall incident rate for the company decreased due to the safety intervention (Figure 8) (Snyder, 1996).

A United States Financial Institution

This organization had a goal of increasing deposits on certain identified client accounts. Using the Five Step Process as outlined above, they were able to pinpoint five key sales behaviors as targets for a behavior action plan-based intervention. “Daily customer contacts” was identified from these five pinpoints as a key independent variable. Team leaders tallied customer contacts and number of closed sales each day for involved sales personnel. The team lead-
Figure 6. Claims adjudicated per employee per day for the Medicare Claims department of Blue Cross Blue Shield Alabama.

Figure 7. Monthly overall productivity score for a 3M distribution warehouse.
ers arranged reinforcement for these behaviors daily. Additionally, weekly meetings with sales people and team leaders were held at the beginning of each week to review the prior week and prepare for the new week. All sales people used a checklist of behaviors they needed to complete for their sales contacts. The implementation not only produced increased deposits (Figure 9), but also the client reported a large positive shift in corporate culture and employee recognition and satisfaction.

A Retail Banking Institution

This organization has been engaged in training many of its management and supervisory staff in ADI’s tools and techniques for the past seven years. They have seen strong growth in metrics related to managerial and personnel relationship skills. In addition, they have experienced stunning increases in productivity and revenue measures with a less than 1% increase in overall direct expenses (Figure 10).

Cascading Scorecards and Performance Indexed Incentive Pay

Clients that elect to develop cascading scorecard measurement systems place themselves in the position of having a built-in system for aligning and measuring the impact of their OBM efforts. It is with these clients that ADI confi-
dently obtains aggregate measurement of improvement scores. The data in Figure 11 represent improvement in 2,195 scorecard measures across eighteen organizations. The average performance gain with such a cascaded scorecard system is 33% of one standard score for each scorecard measure or 2.76% each month with the scorecard system implemented (Abernathy, 2000).

CONCLUSIONS

The world of work has by no means fully grasped the science of behavior analysis as one of the tenets of well run companies; however, companies like ADI are working to make the case. Behavior analysts at ADI invite others to work with us to extend this reach. We have tools and methods that are packaged to help transfer the technology through a cascading through others, making clients fluent in the elements of managing behavior successfully. Well trained individuals in the science of behavior are a great source for making this technology well understood and driving past those translation points of language and assumptions about the human condition to data-driven and more humane workplaces. The issue has always been, from the start, how much positive good can come from a workplace built on the principles of behavior analysis. That good needs dissemination and effective work from 1,000s of other practitioners if we are to really, as Daniels said early on and continues to say today, “Change the way the world works.”
Figure 10. Organizational measures from an undisclosed financial institution.

Figure 11. Summary graph of scorecard interventions.
REFERENCES


Trabajo invitado