THE SCIENCE OF

ADVANCED

BEHAVIORAL MODELING

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ADVANCED BEHAVIORAL MODELING

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CHAPTER 1

THE SCIENCE OF
ADVANCED BEHAVIORAL MODELING^{SM}

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Advanced Behavioral Modeling^{SM} integrates sophisticated behavioral technologies based on neuro-linguistic programming, accelerated learning methodology, human typological analysis and value theory. As a result, extensive data on these highly technical and theoretical areas are provided as essential background information.

This document aims to describe in brief and in plain language:

- What Advanced Behavioral Modeling^{SM} is
- What it does
- How it works

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OVERVIEW

WHAT IT IS

ADVANCED BEHAVIORAL MODELING[SM] IS A REVOLUTIONARY, MODEL-BASED TRAINING PROCESS FOR CAPTURING, REPLICATING AND TRANSFERRING ANY EXPERTISE, ABILITY OR SKILL - RAPIDLY AND COST-EFFECTIVELY.

It is a powerful behavioral technology recently pioneered, tested and used with outstanding results in both the corporate sector and in the U.S. strategic military and intelligence environment by the principals of Advanced Behavioral Modeling Inc. who are the exclusive providers and licensors of all Advanced Behavioral Modeling[SM], Psychoergonomics[SM], and Profiling Plus[SM] programs and services.

Through Advanced Behavioral Modeling[SM] training processes any individual or organization can now replicate the skills and expertise of the world's best models of performance and install that top performance behavior in themselves or throughout an entire organization. It is now possible to rapidly replicate and, where desirable, universalize any expertise: to identify high performance models, both within and without an organization, and replicate and transfer the key factors of their high performance.

HOW IT WORKS

As every telephone has a specific code number, so every person has a unique behavioral code. Through a straightforward, though highly sophisticated technical process of profiling, observing and interacting with high performers, Advanced Behavioral Modeling[SM] identifies and "de-codes" the high performer's often unconscious patterns and behaviors.

These "modeled" patterns of inner behavior are then replicated systematically and can be transferred to others through a unique and powerfully reinforcing process of short-term training called Advanced Learning Technology.

Advanced Behavioral Modeling[SM] focuses on process as well as content; it is equally concerned with how one does or thinks as with what one does or thinks. It considers four key aspects - each of which is directly correlated with high performance - and all of which have been largely unrecognized and ignored by most trainers and educators.

These are the:
1. Enabling beliefs
2. Values
3. Internal mental approach, or cognitive strategy
4. Physiology of the expert or high performer

Let us consider each in turn:

1. **Enabling Beliefs** - People perform well only when they have a set of beliefs that support high performance. Both the beliefs that support superior performance and those that disenable can be elicited and, where desired, changed. Advanced Behavioral Modeling[SM] has exclusive, sophisticated techniques to effect this belief change process.

2. **Values** - Values are the keys to motivation. Advanced Behavioral Modeling[SM] techniques elicit the values that motivate the expert to superior performance and install similar values in trainees.

3. **Internal Mental Approach (Cognitive Strategy)** - The door to expertise is not through blind repetition of random activities. Instead, it is through rehearsal and mastery of the specific mental syntax and sequence of the expert. Advanced Behavioral Modeling[SM] elicits the unique cognitive strategy of the expert and uses Advanced Learning Technology to install this in the trainee.

4. **Physiology** - Experts are able to place themselves in mental and physical "postures" that lead to increased performance. Advanced Behavioral Modeling[SM] recognizes this and ensures that trainees adopt high performance "postures" that support the expert performance of the activity involved.

The heart of Advanced Behavioral Modeling[SM] is the successful synthesis of the techniques and principals of neuro-linguistic programming, accelerated learning methodology, human typological analysis and value theory. How they are combined and implemented is proprietary to Advanced Behavioral Modeling Inc.

BOTTOM-LINE

Advanced Behavioral Modeling[SM] is by design strictly practical. It works! It was developed, tested and is being used with outstanding success within both the corporate sector and the U.S. strategic military and intelligence environments. It is considered by training authorities both in the public and private sector to be the latest and the most powerful training tool available.

The bottom-line result: a revolutionary training technology that guarantees substantial increases in individual performance -- rapidly and cost-effectively -- as well as increases in the quality, productivity and profitability of any organization that uses this tool to model the best.

The motto of Advanced Behavioral Modeling Inc. sums up what is now available and achievable for everyone:

"EXCELLENCE...THE ONLY STANDARD!"

INTRODUCTION

Advanced Behavioral Modeling[SM] is a process for replicating human excellence. Embodying the innovative combination of many disciplines in a creative new relationship, it has produced an entirely new way to train people to higher levels of expertise faster. It identifies patterns of excellence and projects those patterns for others to emulate and replicate through a structured and cost-effective training process. The patterns identified by Advanced Behavioral Modeling[SM] techniques are the sets of beliefs, values, attitudes, heuristics, internal mental processes and physical activities that characterize certain skills. These patterns are shaped into a model that is used to transfer to students those behavioral differences that make certain people more effective than others with similar training and backgrounds.

As the United States becomes a high technology society, there is a growing awareness that the enhancement of human and organizational productivity within the new context is imperative. This awareness is predicated on the fact that high technology has been greatly improved without a concurrent improvement of human technologies. A balance must be restored between the material innovations of high technology and the increasing demands upon the human element to keep pace.

Studies conducted by organizations in both the public and private sectors have examined the underlying forces that have been transforming our society and shaping our future.

These studies have revealed that:

- The interactions among high technology systems, human productivity, and human potential are some of the greatest challenges that face the nation today.

- A significant need exists to match each new technology with human capabilities to operate that system.

Institutions and individuals within the academic community are engaged in researching the concepts of high performance, human potential and organizational transformation. They recognize that the major contributor to high-performing systems within organizations is the human element. The corporate world, too, has begun to emphasize the importance of the human element and has discovered the benefits of changing personnel policies, administrative structures and training programs accordingly. Advanced Behavioral Modeling[SM] has evolved from this recognition by academia, industry and government that enhancing human performance within organizations shifting to higher material technologies offers the greatest opportunity to meet the challenges of a rapidly changing environment.

Advanced Behavioral Modeling[SM] is a unique model-based program for training that is a combination of proven behavior management techniques from neuro-linguistics, value theory, human typological analysis, advanced learning theory, artificial intelligence, psychoanalysis, behavioral psychology, management science and cybernetics. These various disciplines have been synthesized into a technology that offers organizations state-of-the-art training programs that will enhance human and organizational productivity. What makes Advanced Behavioral Modeling[SM] different from other models of individual and organizational behavior is that it extracts critical components of the thinking processes, beliefs, values, attitudes and overt behaviors of carefully chosen experts and presents these refined components to students systematically, expertly and throughout a carefully designed program. Additionally, Advanced Behavioral Modeling[SM] trainers recognize and change patterns of beliefs and thought processes in trainee behaviors that disenable or limit students.

Human thinking processes are complex and highly individualistic. All human beings absorb information and experience through their five senses (visual, auditory, kinesthetic, olfactory and gustatory), but every individual absorbs information and experience through these senses differently. This leads to a unique, individual perception of the world and a particular subjective reality. Advanced Behavioral Modeling^{SM} studies the subjective realities of experts, i.e. how their visual images, auditory processes, tactile sensations and internal feelings, beliefs, values and attitudes are sequenced together as specific internal representations that enable a person to make decisions, be motivated, learn, perform a skill and create.

Advanced Behavioral Modeling^{SM} is a process for profiling, capturing and transferring expertise and high performance behavior rapidly and cost-effectively. There are people in any field who are recognized as being superior. They may be labeled experts or champions or masters or geniuses. In any case they are able to perform far beyond the norm set by their peers. There is a perennial argument as to whether such people are born or made. Probably both are partially correct.

Undoubtedly such people start with talent or innate ability that predisposes them to greatness. This greatness is further developed by a combination of education or training and experience. These people often think that they know what sets them apart as uniquely accomplished. They often seek to transfer their talents and abilities to others through training, books, and audio and videotapes. However, the only realistic measure of the success of this transfer process is whether the people to whom the information is transferred can perform as well as the expert can. Sadly, this is seldom the case. One is forced to draw the conclusion that the expert either is not aware of critical aspects of what they do or is unable to make the transference of their ability to others.

Now for the first time it is possible to profile, capture and transfer expertise and high performance behavior. It is possible to give a far better account of what an expert does than they are able to give themselves. If experts knew what they did and were able to transfer their abilities their students would be as good as they are. This is seldom the case. The reason for this is because a lot of what an expert does goes on outside of their conscious awareness. In fact unconscious competence is the hallmark of expertise. Advanced Behavioral Modeling^{SM} is a revolutionary way to decipher unconscious processes and make them explicit. Most importantly, it is also a way of transferring this information and behavior to others in a highly efficient fashion.

Advanced Behavioral ModelingSM works because it deals with several critical variables not dealt with in the normal education or training world.

First, Advanced Behavioral ModelingSM focuses on process as well as content. It is equally concerned with how one does or thinks as with what one does or thinks.

Second, in the process of eliciting this information Advanced Behavioral Modeling^{SM} considers four key aspects each of which is directly correlated with high performance.

These are:

1. **The enabling beliefs;**
2. **Values;**
3. **Internal mental approach, or strategy; and**
4. **Physiology**

Of the expert or high performer.

1. **Enabling Beliefs**
   Beliefs either support or hinder excellent performance. This is a fundamental tenet emerging from research into accelerated learning in the last several decades. People perform well only when they have a set of beliefs that support high performance. Whether you think you can or think you cannot, you are right. The beliefs that support superior performance may be elicited through a sophisticated process. Before they can be installed in others, however, it is first necessary to identify and remove disenabling beliefs that are already present in those others. These disenabling beliefs can be elicited from trainees by the same process in which enabling beliefs are elicited from subject experts. The key process involves the removal of the disenabling beliefs in trainees and the installation of supporting or enabling beliefs in their place. Advanced Behavioral Modeling^{SM} has techniques to effect this belief change process.

2. **Values**
   Values are things that people move toward or away from. They are what people spend time and resources to achieve or avoid. Values are thus the keys to motivation. High performers are highly motivated to respond as they do. Advanced Behavioral Modeling^{SM} techniques are used to elicit the values that motivate the expert to superior performance and to install similar values in trainees.

3. **Internal Mental Approach, or Strategy**
   A strategy or internal mental approach is the sequence of representational system changes that result in the generation of superior performance. It is often fallaciously assumed that rote and repetition are the keys to increased performance. Actually repetition or practice may be counterproductive because one is practicing error or inferior performance. The door to expertise is not through blind repetition of random activities. Instead it is through rehearsal and mastery of the specific mental syntax and sequence of the expert. Advanced Behavioral Modeling^{SM} elicits the strategy of the expert and installs this in the trainee. This is the most effective and efficient way to develop expertise. Without it no amount of practice and effort can ever produce peak performance.

4. **Physiology**
   It has long been understood that there is a direct connection between the mind and the body. Research in the last decade has led to a scientific understanding of the mechanisms of the relation between the mind and the autonomic nervous system, endocrine system, immune system and neuropeptide system. Experts are able to place themselves in mental and physical postures that lead to increased performance. These postures may be elicited and others trained to adopt them. One of the key elements of any posture is the rate, depth, rhythm and location of breathing. The mind cannot function without a proper oxygen supply. Stress and poor posture lead to fatigue both mentally and physically. Advanced Behavioral ModelingSM recognizes this and ensures that trainees adopt postures that support the expert performance of the activity involved.

As a result of dealing with these and other critical variables, Advanced Behavioral Modeling^{SM} can decrease training time and dramatically increase performance for any random group of trainees. It is often assumed that anyone may be trained to do anything to a superior level. This may be true, but the expenditure of time and resources to do so may be exorbitant. Common sense and empirical evidence suggest that people differ in their degrees of talent or innate ability to perform different functions. This is another way of saying that certain people begin with sets of enabling beliefs, motivating values, and physiologies and strategies that are closer to those of experts in a given area than other peoples are. Obviously these people will develop expertise more rapidly, achieve higher levels of expertise, and retain that expertise longer than others who are not similarly endowed.

Advanced Behavioral Modeling^SM elicits and transfers expertise and high performance behavior. Importantly, as a key component of that system, a unique profiling process of unprecedented precision and thoroughness - i.e. Profiling Plus^SM - has been developed that identifies candidates who are already predisposed to high performance. These candidates already possess some of the beliefs, values, physiologies and strategies of the subject experts. Preselection of appropriate training candidates always results in increased levels of performance. Advanced Behavioral Modeling^SM both makes this preselection possible and provides an optimum training method addressing all aspects that lead to subject mastery -i.e. Advanced Learning Technology. These two aspects of Advanced Behavioral Modeling^SM synergistically combine to produce a quantum leap over any other method currently in existence to capture and transfer expertise.

Although the primary goal of Advanced Behavioral Modeling^SM is to elicit and install excellent performance, there are several other byproducts of this process that lead also to dramatically increased productivity in an organization.

Enhanced Management Effectiveness

Individual performance is directly affected by organizational structures and the nature of the human interactions that occur. Management is the science of utilizing the resources available most effectively and efficiently to produce maximum productivity, profitability and quality.

Many managers adopt one management style and treat all employees the same. This has spawned the debates of the last several decades as to the relative efficacy of theories X, Y and Z. The simple truth, which has only been partially captured by situational leadership, is that different people achieve their optimum productivity when they are managed in different ways. A task of management is to discover and provide those kinds of interactions that lead each individual and the collection of individuals to produce in an optimal fashion.

In other words management s most effective when it is able to provide the unique set of keys to communicate with, direct, train, motivate and incentivize each particular employee. Advanced Behavioral Modeling^SM has already successfully modeled effective communications, training and motivation strategies of effective managers. Advanced Behavioral Modeling^SM makes it possible to train managers to identify and respond appropriately to the communication and motivational patterns of each employee. Thus Advanced Behavioral Modeling^SM provides any organization a dramatically increased capacity to detect, attract, select, hire, train, direct, motivate, and communicate with employees in such a way as to result in optimum quality, productivity and profitability for the organization and in optimum success, accomplishment, opportunity and well being for the employee.

STEPS OF THE MODELING PROCESS

With this general overview of the Advanced Behavioral Modeling^SM Process and its products in mind, let us now turn to a more detailed analysis of the specific steps of the process.

Advanced Behavioral Modeling^SM extracts critical expert patterns, verifies that they are necessary and sufficient to replicate expert behavior, and using Advanced Learning Technology develops a training program to transfer these patterns to others expeditiously and efficaciously.

The primary methods of modeling are the elicitation of the strategies, beliefs, values and overt behaviors that are critical to the task as opposed to those, which are purely idiosyncratic to the expert.

The following definitions apply:

- Strategies or mental syntax or thought processes are the specific sequence of mental processes involved in performing the behavior.
- Beliefs or presuppositions are the philosophy, attitudes, and beliefs that cause one to perform a particular task in a competent fashion.
- Values are the determinants of behavior that motivate an individual to expend energy and resources to achieve or avoid a particular outcome. They are tied to emotional aspects of an individual.
- Overt behaviors are the physical processes involved in carrying out a behavior.

There are eight basic steps in the modeling process. They are represented pictorially in the accompanying flow chart:

1. Identify and Select Experts Who Consistently Exhibit the Behaviors of Excellence to be Modeled:

The first step in the Advanced Behavioral Modeling[SM] chain is the identification and selection of the model (or models) of excellence. There is a direct correlation between the excellence of the original model and the amount of expertise that can be captured and transferred. Unfortunately models of excellence may be difficult to find and to make available. In some cases it is even difficult to determine who the experts in a given field are or what standards one would use to identify and rate them.

Advanced Behavioral Modeling[SM] allows one to replicate expertise. One can use it to boot strap an organization to near the level of the best in the organization. In modeling experts it is valuable to have several experts to work with. This allows the use of the contrast frame to aid in separating what is essential to expertise from what is merely idiosyncratic to the individual expert. Also it is useful to model a few mediocre performers to see by contrast what it is that the expert does that the mediocre performer does not or what the mediocre performer does that the expert does not that makes the critical difference in performance. The goal is to assure that the components extracted from the expert are all and only those critical to expert performance.

2. Elicit or Extract Components of Expert Behavior:

Once a model, or models, is identified the next step in the Advanced Behavioral Modeling[SM] process is elicitation. This is the most critical step in the entire modeling process. It involves the determination of the physiology, beliefs, values, attitudes, heuristics and strategies of the model that enable them to perform in an outstanding fashion. The key is to separate the essential from the merely idiosyncratic and to find the difference that makes a difference.

The first step in this process is task decomposition that is the critical process of breaking down the skill to be modeled into specific components that can be elicited and sequenced to produce the expert result. To do this it is necessary to observe the expert in their work environment performing the actual skill to be modeled. The boundaries of the skill, i.e. beginning and end point, are determined and the scope, direction and sub skill partitioning are defined. The modeler transforms a large abstract skill into smaller manageable chunks that can be modeled efficiently.

The second step in the elicitation process is to observe and interview (both analytically and diagnostically) the expert. Using certain keys to internal process - eye movement patterns, gestures, body postures, breathing patterns, voice shifts, and other

physiological cues - as well as external behaviors and the content of utterances, the modeler extracts and records beliefs, values, and thought and behavioral patterns. In short, the modeler extracts the components of expert behavior, explicates them further, identifies the critical ones, creates a knowledge base and develops a hierarchy or syntax of the critical behavioral components.

The modeler checks his initial observations and interview records through simulations and through returning to the behavioral milieu of the expert. Each expert and contrast subject is in turn subjected to this cycle of observation - interview - observation. Additional analytic and diagnostic interviews occur in subsequent steps of the Advanced Behavioral Modeling^{SM} process.

3. Synthesize:

Once one or more experts and contrast subjects have been elicited the next step is to synthesize the data gained from the elicitation process into a provisional model. This involves three tasks.

The first is to explicate the components, which comprise the behaviors to be modeled. Using a variety of techniques, diagnoses and analyses of the skills to be performed the modeler creates a first approximation of the model. This involves dividing the skills of the expert into sub skills or collections of specialized behaviors and mental processes necessary to perform the expert behavior. This database reflects the modeler's best approximation of all relevant strategies, values, attitudes, beliefs, heuristics and behavioral components involved in the expert behavior.

The second task in the synthesis process is the identification of the critical components of the behavior to be modeled and the creation of a knowledge base. The modeler iteratively tests and interprets the database to identify the critical components of the behavior. The modeler uses behavioral inference techniques, draws analogies, poses counterexamples, and utilizes other conceptual tools to identify the rules governing the behavior. The modeler searches for and discovers the deep structural patterns underlying the behavior and prunes the data to reduce the model components. during this process the model's constraints are identified, the edges of the phenomenon are mapped, and the boundaries are identified that partition the sub skills. The result of this synthetic process is a critical knowledge base comprised of the beliefs, values, attitudes, heuristics, strategies and physiologies necessary to actuate the skill.

The third and final task of the synthesis process is the development of a hierarchy or syntax of the critical behavioral components. Once the modeler has identified the critical elements of the behavior they next have to determine the order or the system of the components and how they interlock to form the behavioral pattern. To do this it is necessary to identify the important components, their hierarchy and their web of interconnections. The modeler interprets and integrates the critical components and networks of the model and devises methods to organize and control the steps to perform the skill. The interaction between the components is identified and codified. The model is then ready for testing to exploit redundancies and to increase its reliability. The modeler continues to test and elicit behavioral components from the expert. As more and more knowledge is added to the design the model incrementally approaches the competence of the expert. The modeler knows that efficient student performance of the skill to be trained depends on the quantity and quality of critical knowledge incorporated into the model.

4. Test and Refine the Model:

This model is then installed in the modeler or in one or more trainees. The test for the success of the model is the ability of the modeler or trainee to produce equal or near equal results to the expert. In other words to be able to perform either as or nearly as effectively and efficiently as the expert. When this happens the model is complete. If pieces are missing it will be necessary to go back to the expert to elicit further information. (It should be noted that sometimes it is possible at this stage to improve or streamline what the expert does to make them even more effective. This is called generative modeling as opposed to isomorphic modeling.)

It is also possible to create a composite model, which combines elements of several experts to produce an overall model that goes beyond the capabilities of any of the individual experts modeled.

5. Universalize the Model:

As the model is tested and revised a final model emerges that passes the tests of efficiency and effectiveness. This model is in a pure form and produces the best results. For practical purposes if this model is going to be passed on to a random set of trainees it will be necessary to generalize or universalize it. The unfortunate consequence of this process is usually some dilution of the power of the model. The result is still increased performance from trainees in far less time than conventional training could produce. As mentioned previously, if training candidates are properly screened, then the final model may be passed to them producing an even higher level of expertise.

6. Design Training:

Once a universal model is formalized the next step is to design a training to transfer the expertise captured in the model. This is another major step in the Advanced Behavioral Modeling^{SM} process and incorporates Advanced Learning Technology. It involves placing and maintaining trainees in an optimum physiology, removing disenabling beliefs, installing enabling beliefs, installing motivating values, rehearsing the proper physio-mental syntax and sequence and transferring content knowledge. The specifics of this powerful performance transfer technology are proprietary to Advanced Behavioral Modeling^{SM} Inc. Prior to the training itself, the modeler and in-house trainers and managers look closely at the content of existing courses and together identify and isolate course modules that are essential to learn the skill. The critical course content and the behavioral, belief, value, and thinking components represented in the expert model are integrated, ordered and networked to design a training system that will transfer the modeled skill to others.

7. Conduct Training:

Once a training design is formalized, the next step is to conduct an initial training. This is done by Advanced Behavioral Modeling^{SM} trainers who are highly skilled in advanced behavioral techniques to transfer values, beliefs and physiologies as well as to install strategies.

The result is trainees who are able to perform at a much higher level of expertise than achieved by conventional training methods and in usually half the time of conventional methods. During this initial training Advanced Behavioral Modeling^{SM} trainers debug any quirks in the initial training design. This leads to a final training design.

8. Train the Trainers:

It is not the goal of Advanced Behavioral Modeling^{SM} modelers and trainers to spend their lives teaching any one model. Thus the next step is to train in house trainers to conduct the course. Since training utilizing Advanced Learning Technology differ dramatically in methods and results from conventional training, it will be necessary to train in house trainers in the use of these methods as well as in the conduct of the actual course. In house trainers usually teach their initial course under the supervision of Advanced Behavioral Modeling^{SM} trainers and are placed on their own when ready. Advanced Behavioral Modeling^{SM} monitors the results of the training to ensure quality control.

HIGH PERFORMANCE PERSONNEL SELECTION AND HIRING: PROFILING PLUS^SM

In addition to capturing and transferring expertise, Advanced Behavioral Modeling^SM is also able to dramatically improve personnel recruitment, selection and hiring procedures. In a time when professional development is such a costly and time consuming activity it becomes even more critical to initially select candidates with talent and ability as well as enabling beliefs and attitudes. The results of failing to do so are high turnover, poor work attitudes and inferior performance. Traditional personnel selection techniques focus on education, experience, background, appearance and personality. Unfortunately none of these criteria identify innate ability, motivating values or enabling beliefs. This is where Advanced Behavioral Modeling^SM technology comes to the rescue of the beleaguered manager and personnel administrator.

The critical step in hiring is the formulation of precise selection criteria. This may be done in two ways. First is by Advanced Behavioral Modelers eliciting experts in the field in question. Second, and more practical, is by Advanced Behavioral Modelers profiling the top performers in the company whom management would like to replicate. Advanced Behavioral Modelers meet with the personnel selected to be replicated and elicit their values, beliefs, and critical personality characteristics. This highly sophisticated process called Profiling Plus^SM is proprietary to Advanced Behavioral Modeling Inc.

Once Advanced Behavioral Modelers have completed the Profiling Plus^SM process on top performers in an organization they formulate selection criteria to identify candidates with similar personality characteristics. They next prepare written and oral questions to be used in a personnel interview to identify appropriate candidates for hiring.

A byproduct of the Profiling Plus^SM process at this point is the provision of additional information as to how to best advertise for, attract, interest and hire these candidates. This information includes both how to write job descriptions to attract these people and where to place advertisements to reach them. It also includes how to get rapport with them during the interview, interest them in the position and persuade them to accept employment.

Advanced Behavioral Modeling Inc. provides its clients with a complete, customized "turn-key" program. We profile employees to be replicated, licence our selection process and train in-house personnel in how to use it.

Profile Plus^SM also offers several other unique advantages. Advanced Behavioral Modeling^SM is able to substantially decrease turnover rates by identifying candidates who are likely to stay with the organization for many years as well as those who are likely to leave in the first eighteen months. Further, Advanced Behavioral Modeling^SM can also identify candidates who are most and least likely to respond positively to supervision and can separate candidates who will be service oriented "people" people from those who will only provide service reluctantly, if at all. These are only three of the unique features of Profiling Plus^SM. There are many others that can be described by Advanced Behavioral Modeling^SM representatives.

Once candidates are hired it is suggested that the Advanced Behavioral Modeling^SM process as described previously, train them. The Profiling Plus^SM High Performance Personnel Selection and Hiring Procedure also provide information that will be invaluable to management throughout the employee's entire career with the company. Advanced Behavioral Modeling^SM can provide management with detailed information as to how to best establish rapport with, communicate with, supervise, direct, motivate, incentivize, train and discipline each new employee. This same information can also be provided about any and all company employees that management requests Advanced Behavioral Modeling^SM to profile.

In addition to providing this information Advanced Behavioral Modeling[SM] will train management in how to utilize it.

This is an overview of the Advanced Behavioral Modeling[SM] profiling, modeling and training process.

The bottom line result of the Advanced Behavioral Modeling[SM] process is a substantial increase in individual performance as well as in the quality, productivity and profitability of an organization.

With Advanced Behavioral Modeling[SM] technology it is possible for the first time to capture and transfer expertise and high performance behavior.

CONCLUSION

This has been a list of some of the key components and training principles incorporated into Advanced Behavioral Modeling[SM] profiling and training. How they are combined and implemented is exclusive and proprietary to Advanced Behavioral Modeling Inc.

The bottom-line result of Advanced Behavioral Modeling[SM] is a substantial increase in individual performance, as well as in the quality, productivity and profitability of an organization.

With Advanced Behavioral Modeling[SM] it is possible for the first time to profile, capture and transfer expertise and high performance behavior rapidly and cost-effectively. It enables an organization to replicate its best employees and pre-select and hire only the best.

In a highly competitive business world, no organization can afford to be without Advanced Behavioral Modeling[SM], or even worse, to allow its competitors to have it first.

Join a select group of international corporations, sports teams and athletes, and educational organizations who are making the motto of Advanced Behavioral Modeling Inc. their reality:

"EXCELLENCE...THE ONLY STANDARD."

CHAPTER 2

RESULTS OF ADVANCED BEHAVIORAL MODELING^{SM} IN THE FEDERAL GOVERNMENT

Advanced Behavioral Modeling^{SM} has already established a documented track record of decreasing training time and dramatically increasing performance.

Some of the results of Advanced Behavioral Modeling^{SM} technology are summarized below. These cover a wide range of applications. These examples of completed and in progress programs and projects show the practicality, scope and versatility that the technology has demonstrated successfully and merely hint at the vast range of practical applications. This section will focus on modeling projects in the federal government. Modeling projects in the private sector are discussed in a separate section.

Army Pistol Project:

Modelers: Dr. Wyatt Woodsmall, Richard Graves, Robert Klaus, Dr. Paul Tyler, John Alexander, Dave Wilson and Anthony Robbins

The two best 45 caliber pistol shooters in the world were modeled. Both were Sergeants in the United States Army Marksmanship Training Unit. One was the National Champion and the other was the Interservice Champion. Their beliefs, values, strategies and physiologies were elicited. Suggestions were made to them as to how they could further improve. In the next match after applying these suggestions one shot the most bull's eyes in his marksmanship career and the other was able to break out of a six-month slump and regain his previous form.

With the information obtained from the two experts the Army's Standard Combat Pistol Training was modified. The time of the training was cut from four days to two days, and changes were made in the curriculum to include the installation of proper physiology, the removal of disenabling beliefs and installation of supporting ones, and the installation and rehearsal of the mental syntax and sequence of the experts.

A test was conducted with a test group taught by Advanced Behavioral Modelers and a control group taught by the Army Marksmanship Training Unit. The test group was able to qualify 100% of the trainees while the control group was only able to qualify 80% Further, the test group did this in half the time of the control group, used one third as much ammunition per trainee and produced three times as many experts. The officer in charge of the Army Pistol Team described this program as **"the first significant advance in pistol training since World War I."**

Artificial Intelligence:

Modelers: Dr. Wyatt Woodsmall, Richard Harmon and Robert Klaus

The Special Artificial Intelligence Center that reports directly to the Chief of Staff of the Army was given a special training in knowledge elicitation and acquisition techniques. They immediately began to apply this technology, and obtained significant results with it even while the class was in session. They stated that this was probably the most valuable training which they had received in their military careers and requested further advanced training. Also through interviews and elicitation of class members a determination was made as to attributes and characteristics of advanced knowledge engineers and the training required to produce such people. This information will be used in further selection and screening procedures.

Stinger Gunner Training:

Modelers: Dr. Wyatt Woodsmall and Robert Klaus

The Vice Chief of Staff of the Army has stated that the Stinger, which is a shoulder-fired surface to air missile system, is the toughest training problem in the Army and an outstanding example of a design failure. Top Stinger gunners were elicited at the Army Air Defense School at Fort Bliss in Texas, at air defense units in Germany and at the NATO Armed Forces Firing Range at Suda Bay Crete. During the elicitation process certain incompatibilities were discovered between the Stinger optical sighting system and left eye dominant gunners. Also other poor design choices in the Stinger man machine interface were brought to light.

Based on the information elicited from Stinger gunners a retrofit training was developed for previously trained Stinger gunners. This training was conducted at air defense units in Europe, and gunners who went through the training showed a 20% increase in hits at the yearly European reliability assessment firings.

Suggestions were also made to the Project Manager for Stinger and to the contractor as to how to redesign the Stinger man machine interface so as to make it more user friendly. The Deputy Chief of Staff of the Army for Personnel was also briefed on selection criteria for Stinger gunners. This information was also briefed to the Vice Chief of Staff of the Army. He was very enthusiastic about the results and tasked four more problem areas for application of this technology.

Army Code Training:

Modelers: Dr. Wyatt Woodsmall, Richard Graves, Robert Klaus, Dr. Paul Tyler, John Alexander, Anthony Robbins and Dr. John Grinder

The Army Intelligence School at Ft. Deavens Massachusetts takes twelve weeks to train students to receive Morris code. Some of the best code receivers in the military were modeled at Ft. Meade and at Ft. Deavens. Their beliefs, values, strategies and physiology were elicited. It was discovered that all the good code receivers had a musical background. Also the modelers were able to walk into any classroom at random and immediately tell the instructor who the best and worst students were merely by observing their physiology.

Based on the information elicited suggestions were made for changing selection criteria for code operators and for redesigning the code training course. Suggestions were also made for modifying the training equipment. Implementation of these suggestions has been delayed due to equipment incompatibility. It is estimated that by adopting these suggestions and by changing selection criteria it would be possible to reduce training time by at least half and to reduce the number of failures to 10% of what they currently are.

Army Recruiting Agency:

Modelers: Dr. Steve Frieman, Dr. Sid Jacobson and Dr. Wyatt Woodsmall

The Army Recruiting Agency is charged with filling the Army's recruiting quotas. They instituted a program to model the top recruiters in the Army with the aim of incorporating this information into their training program. The two top recruiters in each region of the country were interviewed and elicited. Recordings were made of the interviews and of them doing actual recruiting. Their beliefs, values, strategies, physiologies and linguistic patterns were elicited. These tapes were transcribed, and a detailed analysis of behavioral and linguistic patterns was conducted. This information was used to redesign the standard recruiter-training program and to prepare a manual of effective linguistic patterns used by recruiters.

Hovercraft Operators:

Modelers: Dr. Wyatt Woodsmall and Robert Klaus

The Army has experienced difficulty in training Hovercraft operators. Hovercrafts are amphibious propeller driven boats that can operate both in the water and on land. The most difficult part of operating them is land transit on sloping terrain. Hovercraft operators were elicited, and it was determined that a special strategy is required to operate them. In order to steer them successfully the operator must anticipate the affects of the terrain ahead on the craft and make the necessary adjustments in advance in order to keep the craft on the desired course. Suggestions were made as to how to select operators with this ability and as how to train new operators

Information Management Systems Administrators:

Modelers: Dr. Wyatt Woodsmall and Robert Klaus

The Army is in the midst of the process of office automation. Systems Administrators are required to oversee the new office automation and information processing, storage and transfer systems. These people must be both technically competent and customer and service oriented. They need to customize basically user hostile or even user belligerent systems so that they are user friendly or preferably user seductive. To do this effectively they need the ability to put themselves in the shoes of a non-technical user and to anticipate and respond to potential difficulties before they arise. Top Systems Administrators were identified and modeled. As a result of the modeling process recommendations have been made as to how to select and train these much needed personnel.

Intelligence Agents Training:

Modelers: Dr. Wyatt Woodsmall, Richard Graves and Robert Klaus

Top intelligence agents have been modeled. Agents of the United States Army Intelligence and Security Command, the Central Intelligence Agency and the Special Forces have been trained in interrogation, calibration, persuasion, pain control, agent handling and other special skills and techniques. Using these techniques they have achieved immediate and dramatic results. They have requested further training in depth and scope. Further information on these projects is unavailable due to classification restrictions and the need to protect intelligence methods and results.

Army Rifle Marksmanship Training Program:

Modelers: Dr. Wyatt Woodsmall, Robert Klaus and Mike Mireau

The best combat rifle marksmen in the Army including the National and Interservice champions and three members of the U.S. Olympic team were modeled. Their beliefs, values, strategies and physiologies were elicited. This information was used to redesign the Army Basic Rifle Marksmanship Training Course of the U.S. Army Infantry School. A test of the new training design was conducted at Ft. Benning, Georgia in the fall of 1987. The test produced incredible increases in performance. The company average for the course was 31.3 and the previous high company score was 32.9. The new training design produced a score of 34.5, which is 3.2 above average and 1.6 above the previous high. This amounted to a 4 standard deviations increase in experts and a 3.5 standard deviations increase in overall performance. Once this design is fine-tuned it should become standardized throughout the Army.

Courage, Bravery and Fearlessness:

Modelers: Dr. Wyatt Woodsmall and Robert Klaus

This is an ongoing project. Research has been conducted on British Army bomb demolition experts in Northern Ireland and on select personnel of the United States Army to determine what enables them to maintain a calm and competent demeanor in the face of extreme danger. A preliminary hypothesis has been formed which is being further tested.

Ability to Do Synthetic Thinking:

Modelers: Dr. Wyatt Woodsmall and Robert Klaus

This is an ongoing project. There are a lot of people who do analysis really well and few people who can do synthesis equally well. To do synthesis it is necessary to chunk up to the larger whole and to determine the function of the activity in question in that larger whole. Some world-class synthesizers have been modeled, and a preliminary hypothesis has been formed as to how these unique people are able to think in this way. This hypothesis is currently being tested.

New Patterns of Influence:

Modelers: Robert Klaus, Frank Burns and Robert Klaus

For the past several years a three day basic and three day advanced course on New Patterns of Influence has been offered to General Officers in the United States Army and to select Special Executive Service Civilians. This course has focused on rapport, calibration, anchoring, decision-making, influence, persuasion and leadership. The course has universally received rave reviews, and many Generals have said that it is the most valuable training they have received in their military careers.

This is a summary of some of the results of Advanced Behavioral Modeling[SM]. Other projects are just starting, and research is currently underway in such diverse areas as athletic performance, employee motivation, employee attitudes towards service, substance abuse and sales and marketing.

CHAPTER 3

RESULTS OF ADVANCED BEHAVIORAL MODELING[SM] IN THE PRIVATE SECTOR

Advanced Behavioral Modeling[SM] has already established a documented track record of decreasing training time and dramatically increasing performance.

Some of the results of Advanced Behavioral Modeling[SM] are summarized below. These cover a wide range of applications. These examples of completed or in-progress programs and projects show the practicality, scope and versatility that the technology has demonstrated successfully and merely hint at the vast range of practical applications.

This section will focus on non-therapeutic modeling projects in the private sector. These are some of the projects the author is aware of, and there may be other projects.

COMPUTER AIDED DESIGN FOR POLAROID CORPORATION

Modelers: Dr. Wyatt Woodsmall and Dr. Ronald Cruickshank

Polaroid has decided that in order to compete successfully in world markets in the next decade they need to go to total CAD-CAM (computer aided design - computer aided manufacturing) capability in the next several years. It normally takes nine months to train a designer to use a CAD system and two to three years for that designer to reach the same level of efficiency they previously experienced on a drawing board. Top CAD operators were modeled and a training design created to train CAD operators in three months and to enable them to achieve comparable efficiency in nine months. Polaroid is very excited about this project. For information contact Advanced Behavioral Modeling at 801 S. 20th. St., Arlington, Virginia 22202 or call (703) 979-3835.

PHOTOGRAPHY FOR POLAROID CORPORATION

Modelers: Dr. Wyatt Woodsmall and Dr. Ronald Cruickshank

Woodsmall and Cruickshank modeled top instant photographers for the Polaroid Corporation to determine what they actually do in taking excellent photographs. This information will be incorporated into future camera design and into a course on instant photography. For information contact Advanced Behavioral Modeling[SM] at (703) 979-3835.

POWER WRITING

Modelers: Dr. Sid Jacobson and Dixie Hickman

Jacobson and Hickman have modeled the process of writing quickly, easily and with enthusiasm. If you follow their model it is impossible for writing blocks to occur. They have developed a one-day Power Writing workshop, videotape and are completing a book on this subject. Contact Dr.Sid Jacobson at the South Central Institute of NLP, PO Box 15757, New Orleans, Louisiana, 70175 or call 504-895-3665.

DENTAL PRACTICE

Modelers: Dr. Sid Jacobson, Dr. Sheard Berdds, and Dr. James Robert

Drs. Jacobson, Berdds, and Robert are modeling what it takes to have a successful dental practice. They are focusing on patient interaction strategies and on decision-making strategies. The principle subject of their study is L.D. Pankey, DDS who is considered to be the Milton Erickson of modern dentistry. They may write a book on the subject. Call 504-895-3665.

LANGUAGE LEARNING STRATEGIES

Modelers: Charles Faulkner

Faulkner has modeled the strategies, internal states and beliefs of excellent language learners as well as the processes of leading "new" language learning methods. This has resulted in a two-day course called "Learning How To Learn Languages" which was first offered in 1985. Faulkner will have video and audio tapes available in the fall of 1988 and is tentatively scheduling a one week Japanese Immersion Training in August 1988. For further information contact Learning How To Learn, 1340 W. Irving Park Road, Suite 200, Chicago, Illinois, 60613 or call 312-784-2248.

PHYSICIAN DECISION STRATEGIES

Modeler: Charles Faulkner

Faulkner did a qualitative study of three groups of physicians to determine the decision strategies they used to purchase and use prescription medications. He elicited information on meta programs, strategies, time frames, and criteria. He analyzed the results and used this information to design a 3M campaign to neurologists. Contact him at 312-784-2248.

COMMODITY TRADERS

Modelers: Charles Faulkner and James Weston

Faulkner and Weston covertly modeled the internal state control, perceptual filters and strategies of major players in the Treasure Bond market both on and off the trading floor. They are working to extend the model to commodity traders. They offered training for three months, but it is presently not available. They also coach traders and/or trade independently. Contact them at 312-784-2248.

INFORMATION MAPPING

Modeler: Robert Horn

Horn is one of the pioneers in modeling. horn was struck by the incomprehensibility of much written material. He modeled how to best express ideas, concepts, and data in both written and graphic form. The result is "Information Mapping." A part of the Information Mapping technology with which the reader may be familiar is the way of formatting written material with summary phrases in the left margin. Horn's company offers courses on Information Mapping and creates reports, and training and instructional manuals for large cooperations. Contact Information Mapping Inc., 275 Wyman Street, Waltham, MA 02154 or call 617-890-7003.

LAW PARTNERSHIPS

Modeler: Lerry Richards J.D., Ph.D. Cand

Richards is using meta programs, values and strategies of senior partners in law firms to predict the probability that new lawyers will be retained or promoted by the firm. Contact him at Lawgistics, 419 S. Perth St., Philadelphia, PA 19147 or call 215-923-3737.

ARTIFICIAL INTELLIGENCE

Modelers: Ed and Mary Ann Reese

The Reeses have been modeling knowledge engineers to determine how they create artificial intelligence expert systems. They have published several articles on this subject. Contact them at Southern Institute of NLP, Box 529, Indian Rocks Beach, Florida 34635 or call 813-596-4891.

LEARNING DISABILITIES: NEUROLOGICAL AND PERCEPTUAL IMPAIRMENTS, ATTENTION DEFICIT DISORDER (WITH OR WITHOUT HYPERACTIVITY) AND DYSLEXIA

Modeler: Roger Lees

Lees has successfully modeled new approaches to treating many of the causes of school failure. His strategies reduce or eliminate these classified disorders within six to nine hours of work. Integrating this original work in the field, his center currently treats children as well as formulates and conducts trainings for classroom and specialist teachers. He may be contacted at the Ocean NLP Center, 1845 Old Freehold Road, Toms River, New Jersey 08753 or at 201-244-6116.

ADVANCED CALIBRATION - READING INTERNAL SUB MODALITIES AND META PROGRAMS FROM EXTERNAL PHYSIOLOGY

Modeler: Eric Robbie

Robbie, who is an NLP Trainer in London, England found that he was able to read seven to nine visual submodalities from watching a person's face. He also has discovered how to read at least five meta programs from external physiology. Robbie has modeled his own ability and designed a workshop to transfer these skills. For information contact Eric Robbie at the NLP Training Program, 22 Upper Tooting Park, London SW17 7SR, England or call 011 441 682 0733.

HOCKEY
Modeler: Dave Watts
Watts, who is the premiere athletic modeler in the country, is the only modeler to work with a professional athletic team. He is also working with several college athletic programs. Using modeling Watts has been able to increase the performance of individual athletes dramatically. Contact him at 1326 Madison Ave., Suite 61A, New York, New York, 10128 or call 212-410-0720.

MEDITATION
Modeler: Dr. Wyatt Woodsmall
Dr. Woodsmall has been modeling mystic experience for many years. He has modeled the submodalities and supporting beliefs of deep meditation states. Woodsmall has a tape available on meditation enhancement and a workshop called "Beyond Self Awareness" which is designed to rapidly raise one's level of consciousness. He is also writing a book on this subject. Contact Woodsmall at (703) 979-3835.

NEGOTIATIONS

Modelers: Dr. Ed Morler and Dr. Wyatt Woodsmall

Woodsmall is working with Morler who is one of the top negotiators and negotiation trainers in the country. They are modeling negotiation procedures, tactics, and strategies. They will be incorporating this into further workshops on negotiations and are coauthoring a book on the subject. Contact Dr. Morler at Morler International, 1207 W. Magnolia Blvd, Suite D, Burbank, CA 91056 or call 818-843-2388 and contact Dr. Woodsmall at 703-979-3835

CORPORATE CONVERSION

Modelers: Paul Donner, Dr. Wyatt Woodsmall and Dr. Ed Morler

Donner and Woodsmall/Morler have been independently modeling how to change a company from a selling culture to a buying culture and how to create a customer service orientation. Both have developed trainings in this conversion process. Contact Woodsmall/Morler at Advanced Behavioral Modeling^{SM} at 703-979-3835 and Donner at MMPAI INC., 255 N. El Cielo, Suite 480, Palm Springs, Ca 92262 or call 619-325-2940.

CHIEF EXECUTIVE OFFICERS

Modeler: Dr. Ronald Cruickshank

Dr. Cruickshank is interviewing one hundred top CEO's for a book called "Driven." He is modeling the values, metaprograms, and key strategies of top CEO's around the country. Cruickshank was himself the CEO of a Fortune 500 Company and also draws on his own experience in the book. Contact him at OPTIMAX at 919-688-5712.

SALES

Modeler: Dr. Wyatt Woodsmall

Woodsmall modeled top salesmen and the top sales trainers in the country including Zigler and Hopkins to determine what they actually do as opposed to what they say they do or think they do. He has synthesized this information into a powerful and practical sales training. Contact him at Advanced Behavioral Modeling^{SM} at 703-979-3835.

This is a representative sample of modeling projects completed or in progress around the country.

CHAPTER 4

PROJECT JEDI
THE APPLICATION OF MODELING TECHNOLOGY
TO
.45 CALIBER PISTOL SHOOTING

BACKGROUND

Project Jedi was conducted from November 1983 through May 1984 by the United States Army Intelligence and Security Command (INSCOM) to evaluate the effectiveness of Neuro-Linguistic Programming modeling technology for teaching .45 caliber pistol firing. The INSCOM Commander Major General Albert Stubblebine commissioned the project. A Human Technology task Force under the direction of LTC John Alexander was formed to design and implement the project. Members of this task force included Dr. Wyatt Woodsmall, Richard Graves, Robert Klaus, Dr. Paul Tyler, Dave Wilson, John Nolan, a member of the intelligence community who will remain nameless, and contractor Anthony Robbins. Members of the Army Marksmanship Unit (AMU) at Ft. Benning, Georgia were selected as models. They included LTC Ralph Talbot, Chief of the AMU Pistol Team, MSG Roger Willis, National Champion, and MSG Max Barrington, Interservice Champion.

The modeling team elicited the model during the week of 8-11 February 1984. The modeling team spent part of the period from February to May developing the model boundaries and designing and preparing to conduct two-day pistol training. The modeling team set as its goal reducing the training time and ammunition required by half with equal or better results. A Control and Test Group were selected from soldiers stationed at Ft. Meade, Maryland and Arlington Hall Station, Virginia. The Control Group was given the Army Standard Pistol Training by instructors of the Army Marksmanship Training Unit at Ft. Meade, Maryland from 20 to 23 March 1984. The Test Group was given the Expert Pistol Training designed and developed by the modeling group on 2 and 3 May 1984. Anthony Robbins and Wyatt Woodsmall gave the actual instruction.

RESULTS

A comparison of the control and test group is given below:

	CONTROL GROUP	TEST GROUP	RATIO T/C
Training Length	27 hours	12 hours	.44
Percentage of personnel qualified	8 of 11 for 73%	12 of 12 for 100%	1.25
Points per person	292.7	295.9	1.01
Hits per person	35.6	36.3	1.02
Percentage of experts qualified	10%	25%	2.5
Average rounds per person to qualify	375	176	.47

Several supplementary comments on the above numbers are in order:

1. Two people from the test group qualified as expert after only 8 hours of training. One was a female who was the smallest and youngest member of the group. She had never fired a pistol before that day. When asked how she had done so well her response was "I just did what you told me."
2. The test group allowed people to be released from training once they had qualified on the second day. If they had continued there would have undoubtedly been even more experts.
3. There was no apparent correlation between shooting scores and scores on the Army's general intelligence test.

The Army report describing the training summarized the results as follows:

- *The model works! Even though this was a prototype and many refinements became evident as we progressed, it was possible with the use of the model to qualify more people in less time with less ammunition. The average points per person and hits per person were approximately the same for the two groups. This decrease of learning time by half with equal to better results is what can be expected when NLP modeling technology is applied in other areas.*

Some critics claimed that the Hawthorne Effect was partly responsible for the success of the training. The Hawthorne Effect is the positive change in the performance of a group of people taking part in an experiment or study due to their perception of being singled out for special consideration. The Hawthorne Effect applied equally to both the test group and the control group, since both were told that they were participating in a special program. When critics bring up the Hawthorne Effect a question immediately comes to mind. If the Hawthorne Effect works all the time then why wouldn't one always use it in all training. If it works it would be stupid not to use it. If it doesn't work all the time, then how does one get it to work? If there is a secret to making it work, then that is a valuable part of training design.

TASK DECOMPOSITION

The Army Pistol Qualification Course consists of forty-five rounds fired at seventy- five feet at a human silhouette target mounted on a rotating frame. The course is shot in three "tables" of fifteen rounds each. The first table consists of five rounds fired from a prone position in sixty seconds, five rounds shot from a kneeling position in twenty seconds, and five rounds shot from a crouching position in twenty seconds. The second table consists of three standing duel strings of five rounds each. In duel the target is faced for five seconds during which time it may be engaged and then it is edged for five seconds. The third table consists of three standing rapid-fire strings of five rounds each. The first string is five rounds in twenty seconds. The second string is five rounds in fifteen seconds, and the third is five rounds in ten seconds. To qualify as a marksman it is necessary to have thirty hits on the target. To qualify as a sharpshooter one must score three hundred out of a possible four hundred and fifty, and to qualify as an expert one must score three hundred and fifty.

To qualify on the Pistol Qualification Course requires one to be able to perform easily, effortlessly, and efficiently the following tasks in each of the four positions:

- Detect when the target faces.
- Move from the ready position into one of the four positions.
- Assume a stable and comfortable position.
- Assume a natural point of aim.

- Get on target.
- Align the sights on the target.
- Control the breath.
- Squeeze the trigger and break the shot.
- Call the shot.
- Recover.
- Develop an appropriate rhythm.
- Repeat the process.

The expert is not only able to perform these tasks but is able to integrate them together in an appropriate sequence that has a synergistic effect on performance. Each of these tasks has a strategy associated with it and a feedback mechanism that causes a modification of behavior.

ELICITATION

The three experts were elicited to determine their physiologies, beliefs, values, strategies, and heuristics. The key to the elicitation process is to separate out through contrastive and sensitivity analysis the essential from the merely idiosyncratic and to find the difference that makes a difference.

PHYSIOLOGY

Physiology is a major component in a predominantly fine motor skill like marksmanship. There is a different physiology that is optimal to perform each of the 12 tasks identified above. The optimal physiology for each task was determined by observing and videotaping the three experts and by the modelers both using themselves as contrast subjects and doing sensitivity analysis on the experts. Contrastive analysis involves determining what the expert does that the contrast subject does not and also what the contrast subject does that the expert does not. Sensitivity analysis involves having the expert hold their behavior constant while varying one thing at a time. If the expert can produce the same result with either variation then the factor is idiosyncratic and not critical. If, however, the expert can only produce the result in one way then the factor is critical.

The physiology of accurate pistol shooting can be described in one sentence. This is: *Align the sights properly on that part of the target required for your group to center in the target area and cause the hammer to fall without disturbing that alignment.* In other words aim at the bull's eye and squeeze the trigger so as not to disturb the aim. In shooting the .45 there are, thus, two main things to focus on. These are sight alignment and trigger squeeze. There is a evidence from psychology that a person has seven plus or minus two chunks of attention. The two chunks required for expert pistol shooting is well within this range. An interesting thing about chunks of attention, however, was discovered from eliciting the experts. The best pistol shots in the world felt that two points of attention was too much. To be the best they focused on only one thing. To do this they automated the other. In the choice between sight alignment and trigger squeeze they chose to automate trigger squeeze. They did this through repeated practice. In competition they focused all of their attention on only one thing - sight alignment.

The following components of physiology were identified as important:

- Foot position.
- Balance and weight distribution.
- Posture.
- Muscle tone.

- Grip.
- Arm position.
- Breathing.
- Sight alignment.
- Point of visual focus.
- Arc of movement.
- Trigger finger isolation.
- Trigger pressure.

Some of these factors bear further comment by way of illustration. The foot position and posture should lead to the natural point of aim being aligned with the center of the target. Closing one's eyes and raising the weapon into firing position determine the natural point of aim. When one opens one's eyes the weapon should be pointed at the target. If it is not, then one moves one's feet and repeats the process until correct alignment occurs. The stance should be stable, balanced and uniform with no unnecessary muscular tension. The grip must be firm and unchanging yet not so tight as to cause muscle fatigue or restriction of blood flow. Also the grip must allow movements of the trigger finger to be isolated from movements of the rest of the hand and arm. Trigger squeeze must be smooth, positive, and uninterrupted pressure straight to the rear. In a well-fired shot the gun should go off as a complete surprise. If one tries to control the break of the shot, then flinching is a likely by product.

Breathing is a critical fact about which most marksman are not particularly well informed. It is important to hold one's breath during aiming and shooting in order to reduce body movement. If one holds one's breath too long, however, discomfort occurs and vision starts to blur. Shooters are taught to hold their breath at the "natural respiratory pause" between inhalation and exhalation. There is no "natural respiratory pause" and any pause between inhalation and exhalation or exhalation and inhalation is unhealthy and causes a stress on the body. Nevertheless, the marksman must hold his breath and the advantage of doing it after inhalation is that the lungs are full. One should always breath through the nose and practice breathing evenly and smoothly with no jerks, pauses, or sounds.

Vision is another critical physiological parameter. The eyes must be kept focused on the front sight so that both the target and rear sight are out of focus. If one can not focus sharply at arms length corrective glasses are essential. The marksman must resist the temptation to focus down range. It takes the eyes several tenths of a second to change focus from two feet to seventy-five feet and the same amount of time to bring them back. In rapid-fire competition this time is not available. The experts keep their eyes focused at the same distance as the front sight even when they are "resting" between shots. It is also critical to identify the dominant eye and to adjust to aim with that eye. It is best to shoot with both eyes open. Squinting with one eye leads to eye strain and sympathetic twitches in the other eye.

As a result of modeling the physiology of the expert pistol shooters an interesting discovery occurred. They all unconsciously shot between heartbeats or, more accurately, between pulse waves in the arm. This is ,of course, the time the arm is most stable. They also had low blood pressure or took blood pressure medication. Marksmanship differs from almost all other sports in that one wants to be "detuned" and to avoid being "psyched up." In marksmanship the best results occur when one can slow down their breathing and pulse rate and decrease their blood pressure. This is the opposite of most sports.

BELIEFS

Whether you believe you can or believe you cannot you are right. Beliefs can be either supportive or disenabling. They are a critical factor in marksmanship as in any other discipline. Beliefs about shooting, the equipment used, and one's own abilities can either support superior performance or sabotage it by providing excuses for failure.

The following beliefs about marksmanship are examples of supporting beliefs elicited from the expert pistol shooters:

- The .45 is accurate and will hit what it is aimed at.
- The .45 is reliable and will not jam in competition.
- The .45 is easy to control and shoot.
- It is natural and good to shoot or learn to do so.
- If one is willing to apply oneself anyone can become an expert with the .45.
- Learning to shoot well may be critical to ones future survival.
- Shooting is an important Army skill.
- Shooting is fun and can carry with it prestige.
- Accurate shooting is useful in hunting and can put meat on your table.
- Shooting is a gentleman's sport which "good old boys" should be proficient at.
- It is easy to shoot 10's and X's.
- The gun will fire without one's conscious effort when one achieves the smallest ark of movement and the sights are aligned.
- The marksman becomes one with the weapon so that they and the weapon are one.
- Guns are safe. However, they should be respected.
- The belief in rituals and systems is important.
- One needs to be willing to try new approaches.
- One needs to believe that muscle memory may compensate for miscalculation or mistakes.
- One must be willing to devote time to practice and dry firing.
- Shooting is mental and one should allow their biocomputer to do its thing.

In addition to the supporting or enabling beliefs several disenabling or nonsupportive beliefs emerged. These included: "It is not necessary to shoot X's - 10's are good enough." "It is not possible to shoot a perfect score."

It is also important to elicit limiting or disenabling beliefs from trainees. These fall into several categories. The most important ones are beliefs about the equipment, about ones ability to learn, about ones ability to shoot, and about the effectiveness of the instructors and the training.

The beliefs of the trainees were elicited and the following are representative of some of their disenabling beliefs:

- Firearms are bad and used to kill innocent people.
- The .45 is an inaccurate and undesirable weapon.
- The .45 is unreliable and will jam on you when you need it most.
- The .45 cannot be controlled because of its kick.
- One must be able to hold the gun totally still in order to shoot 10's.
- The .45 will deafen you when it goes off.
- I am a slow learner, and I will not be able to learn to shoot the .45 at an expert level in two days.

For marksmanship training to be effective it is necessary to remove the disenabling or limiting beliefs of the trainees and to replace them with a set of enabling or empowering beliefs. How this was done will be explained in the training design section.

STRATEGIES

There is a different strategy to perform each of the tasks mentioned under task decomposition. The elicitation of these strategies was one of the cores of the .45 caliber pistol-modeling project. We will discuss several of these strategies to illustrate the process. Strategies were elicited in real time through observation of eye movements, breathing shift, and gestures as well as by listening to tonal shifts and predicates. Once strategies were elicited they were further confirmed by sensitivity analysis, which involves having the subject vary one parameter while holding others constant. The process of elicitation may be described as "bludgeoning the subject on tiptoes."

The expert does not know what they do, because it is largely out of their conscious awareness. They frequently think that they know what they do, however, and the modeler must often listen respectively to their explanations. Maintaining rapport with the expert during the elicitation process is often a real challenge. If the expert really believed that their ability could be cloned they would probably not let you elicit them, since they would not want everyone else to be as good as they are. It is important to provide some compensation to the expert in terms of enabling them to further enhance their performance.

As has been emphasized, in eliciting strategies various components are often outside of the experts conscious awareness. In the case of pistol shooting, for example, two subjects were not aware that they were seeing a picture although there eyes moved rapidly to visual recall at a specific point. When asked what they had seen they denied seeing anything. It was necessary to run through the strategy some ten times (asking them at the critical point what they were seeing), before it was possible to bring the picture into their conscious awareness. One must be particularly careful here, since it is easy to install a strategy in the process of presumably eliciting one.

Let us discuss several of the strategies. We will use the Test-Operate-Test-Exit (TOTE) model to represent the strategy. A strategy is a sequence of representational accesses used to achieve a certain outcome. Strategies are arbitrarily chunked in terms of outcomes. The outcome of one strategy is often the trigger for the next strategy.

The first test, which I prefer to call the trigger, starts the strategy in motion and feeds forward a representation of the outcome, which will be, used as the bottom half of the comparison in the second test.

The second part of the strategy is an operation or a series of operations that lead to the second test, which is always a comparison in the same representational system between some real time representation and a stored representation of the correct performance required to satisfy the test. This bottom part of the comparison that is fed forward at the beginning is the key to expert performance. It represents the pre-stored performance evaluation criteria of the expert. The final part of the strategy, the exit or decision point, determines whether there is a match or mismatch in the second test. If there is a match the shooter performs the task and moves on to the next test. If there is a mismatch, then the shooter recycles. This final exit point is usually a kinesthetic feeling (K).

Shooting is a complex activity involving the interaction of external and internal feedback mechanisms and stored representations of correct performance. Usually the second test and the decision point are the most critical factors in athletic performance and in fine motor skills

such as shooting. The decision points that determine when to recycle are particularly important in shooting.

The expert will often recycle when the amateur will force the shot. The expert knows when things feel right. If they don't he is confident that he has the time and ability to recycle and shoot a better shot. The non-expert is often willing to compromise and force a shot or will do so for fear that they do not have time to recycle. The ability to maintain state is critical to expert performance.

Let us consider the strategies associated with some of the decomposed tasks. Detect when the target faces. The trigger is the auditory external command "commence firing." The operation is to visually externally defocus the eyes so as to detect movement. Keeping the target in sharp focus is not as effective in detecting movement as is looking at it out of the periphery of the eyes. The best place to have the eyes focused is at the distance of the front sight. The test is when the visual external picture matches a visual remembered picture of target movement.

The decision point is a feeling and the result is moving into the ready position. Some experts have developed an internal clock that allows them to know the exact moment the targets will face. This internal feeling of timing enables a degree of psychological readiness not present in the visual detection strategy. In the visual mode the turning may come as a sudden surprise for which one has been waiting. The psychological reaction is then to hurry into the shooting sequence. For the expert with an internal clock the sequence has already begin and he is moving to the next step and not starting from scratch. The development of a sense of timing and rhythm is one of the factors that separate the expert from the near expert.

Move from the ready position into one of the four positions. The trigger is the visual detection of the facing target or the internal clock. The operation is the set of previously rehearsed muscle movements necessary to bring one into the correct position. The test is a comparison of the external kinesthetics with a stored feeling of the movement. The decision point is a feeling.

Assume a stable and comfortable position. The trigger is the feeling of arriving in the approximate position. The operation is the set of pre-rehearsed motor movements to get into position. The test is when the position feels right, i.e. when the external feeling matches a stored feeling of a stable and comfortable position. The decision point is a feeling. Another way that one could check the position would be to go through an auditory digital checklist. This would be far too slow.

Control the breath. In order to shoot an accurate shot it is necessary to hold the breath. Timing is critical. If the breath is held too long trembling and eye blurring can occur. If it is released too soon the shot may be inaccurate. Practice in holding the breath is critical. It is possible to hold the breath in several ways. One is by spontaneously stopping the movement of the diaphragm. Another is by using muscles to stop the diaphragm. The former method is preferable but requires considerable practice. The expert pistol shot must be aware of his breathing and be able to inhale or exhale rapidly and hold. A sense of timing is critical. The expert knows when the targets will face and matches his breathing accordingly. The amateur is caught off guard and must inhale or exhale rapidly and stop his breathing. Stopping breathing is done most easily if it is timed to occur at the point of exhalation or inhalation. Experts also breath through the nose and never through the mouth. They may exhale rapidly through the mouth but they always inhale through the nose. The trigger for holding the breath for the amateur is the facing of the target and the arrival of the gun on target. For the expert the trigger is an internal feeling of when the target will turn. This sense of rhythm is critical. The operation of holding the breath involves a kinesthetic check of where one is in the breathing cycle, a rapid inhalation or exhalation and a spontaneous cessation of movement of the diaphragm. The test

is when the real time feeling matches a pre-stored feeling of correct breath hold. The decision point is a feeling.

Align the sights on the target. The trigger is the visual or kinesthetic awareness of the arrival of the gun in the approximate position. The operation is the motor movement of the arms and hands in getting the gun into position. The test is when the visual external picture seen in the sights matches a stored representation of a perfect sight picture. It is impossible to hold the gun perfectly still and there will always be an arc of movement. The operation involves using visual feedback to minimize this movement. The expert keeps his eyes focused at the distance of the front sight but not directly on it. He finally focuses on the front sight when the gun is on target. Staring continually at the front sight can cause the image to burn into the retina. The shooter needs to see what is actually there at the instant and not an after image of the previous instant. As soon as the shot is fired the expert shifts his eyes off of sharp focus on the front sight. The decision point is a feeling that the sights are properly aligned.

Squeeze the trigger and break the shot. This is where everything comes together. As mentioned earlier the experts have automated trigger squeeze. They did this by repeated dry firing practice. For them the squeezing is automatic, and it is only a question of when. The trigger for trigger squeeze is arrival of the gun on the target.

As the expert moves the gun to the target he unconsciously takes up the slack. Several things are happening simultaneously. The expert is holding his breath, aligning the sights, and minimizing the arc of movement and starting to squeeze the trigger between pulse waves in his arm. Ideally the shot should come as a complete surprise. This is accomplished by a steady (but not slow) trigger squeeze. It is impossible to totally eliminate the arc of movement. The experts were able, however, to shoot when the arc of movement crossed the center of the target. The operation part of the strategy is thus the isolated movement of the trigger finger. The test is when everything feels right. The decision point is also a feeling. When everything comes together the expert is able to align the sights on the bull's eye and cause the hammer to fall without disturbing the alignment. The result is one of a series of perfect shots.

MENTAL ASPECT OF SHOOTING

Shooting is a fine motor skill that is 80% mental and only 20% physical. It requires concentration and state control. The expert is able to shoot the match one shot at a time with their total focus in the present. They have no memory for previous shots and no anticipation of future shots. They shoot the match as if it were a series of one shot matches. This requires the ability to focus awareness and maintain state. The main keys to state maintenance are the ability to control one's internal dialogue, internal pictures, and internal sensations and to resist distraction from extraneous external stimuli.

Some expert shooters (none of the three modeled) have even achieved the ability to have out of body experiences during matches where they experience that they are outside of their bodies observing themselves perform the match. These shooters report some of their highest scores in these states. Out of body dissociation is the ultimate level of relying on unconscious competence and removing the conscious mind from interference with the process.

Expert shooters were able to maintain state and focus by remaining in visual external or by visualizing themselves performing correctly. The top pistol shots used visual rehearsal as a way of preparing both before and during the match. MSG Willis reported that he rehearsed the entire four hundred and fifty shot match the night before he won the nationals. He shot four hundred and fifty shots in his head over a four-hour period. He also rehearsed just before he went on the line. On the line he would do a quick visual rehearsal in which he first saw himself shooting a perfect shot and then he stepped into his own body and saw what he would see if he

shot a perfect shot. He saw a perfect sight and then opened his eyes, raised his gun, and matched that picture.

The internal dialogue was more of a problem for the experts. In almost every area of human performance one must deal with the internal dialogue. If not controlled the unconscious may offer negative suggestions at any moment. These can cause one to loose focus and to perform poorly. In general there are only three things that you can do with your internal dialogue. These are stop it, jam it and substitute a positive supportive internal dialogue.

Most people are not able to successfully stop their internal dialogue without extensive mystic training, although a few top shooters are able to achieve this state. The second way to control the internal dialogue is to jam it with a mantra or an affirmation. The third and most productive thing to do with the internal dialogue is to repeat a memorized sit of procedures. The top pistol shooters took the third alternative. By repeating the set of procedures they were going through they always knew where they were in the firing process, and this had the added benefit of crowding out negative suggestions.

Extraneous body sensations can also be a problem. They cause fidgeting and discomfort which is distracting. Stances must be relaxed and comfortable. The amateur thinks that he can tolerate discomfort for a short time required to make the shot. He is not aware of how distracting and irritating physical discomfort can be. The expert is aware of his limits and learns to consciously relax and eliminate any unnecessary tension from his body. The top pistol shots are also able to dissociate from their feelings and emotions. In shooting where one needs to remain detuned feelings can seriously get in the way. The best pistol shots are able to totally dissociate from their feelings and remain totally in the moment. When on the firing line they function like a well-oiled machine.

Expert pistol shots were able to let go of the memory of each shot as soon as they fired it. They did not let a bad shot distract them. They knew that they could shoot a perfect shot by following the properly rehearsed procedure. They always remained in a performance and improvement mode and never went into a correction mode. When they missed it was never a case of correcting on the next shot. Instead they focused their seven plus or minus two chunks on correct performance. Amateurs often go into a correction mode where they waste valuable chunks of attention in "not doing." Experts represent shooting in terms of what to do and not in terms of what to avoid or not do. They instinctively avoid negative suggestions and negative embedded commands.

METAPROGRAMS AND VALUES

The expert pistol shots were class fours on the Graves value hierarchy. They were sameness types and procedural. The key to their success was being able to repeat the same procedure every time. They had internal frames of reference with regard to shooting. They were split with respect to moving towards and away. One responded to challenge and moved toward success. One considered defeat to be ignominious and expended great effort to avoid it.

TEST OF MODEL

At the end of the modeling period work was done with the models to further improve their performance. Several disenabling beliefs had been identified. Also several areas were discovered where the models were inconsistent in their procedures. Members of the modeling team worked with the models to overcome these deficiencies. All of the models were enthusiastic about the process and the work done with them. They reported an improved result in future matches. MSG Willis came out of a slump in the next match and improved his score by ten points.

MSG Barrington indicated he shot more X's in his next match than he had ever shot previously in his career. He retired from active duty the next year and came back out of retirement to win the nationals the following year. At their exit briefing the models said that they felt that modeling represented a "breakthrough" in pistol training and that "its potential was enormous." They also said "in four days the modelers had taken pistol training from World War One to the 1980's."

To test the adequacy of the model further one member of the modeling team (Dr. Woodsmall) installed the model in himself and then fired the pistol qualification course. He scored four hundred and three out of a possible four hundred and fifty. This is fifty-three points beyond expert.

TRAINING DESIGN

Training design revolved around three primary tasks. First was detecting and removing disenabling beliefs and installing supporting beliefs. Specific beliefs are listed in the beliefs section. Second was chunking down and rehearsing the physiological components of expert marksmanship. As indicated previously these include stance, posture, relaxation, grip, arm position, breathing, sight alignment and trigger pressure. Third was installing the appropriate strategies or mental syntax.

Key elements of strategy installation included:

- Correct position and grip.
- Relaxation.
- Correct breathing and breath retention.
- Visualization of perfect sight alignment.
- Concentration on sight alignment.
- Taking up trigger slack.
- Applying steady trigger pressure and letting the gun go off as a surprise.
- Recovery and preparation for the next shot.
- Internal auditory dialogue that supports the success sequence.

In addition to the above elements of training design several physical modifications were made. These included placing yellow lights above each shooting position to enhance front sight visibility, painting the front sights of each weapon white to assist in directing the shooters focus, placing a one inch red dot in the center of each target to help define its center of mass, and playing a metronome tape continuously in the background during the training to help install a sixty beat per minute rhythm at the unconscious level.

CONDUCT OF ACTUAL TRAINING

Two trainers conducted the actual training for both the test and control groups. Anthony Robbins and Dr. Wyatt Woodsmall trained the test group. The following outline reflects the order and some of the details of how the training was conducted.

From the beginning certain frames were placed around the course. *Preframing* up front helps to eliminate the need for *deframing* and *reframing* later on. The course was called "the expert pistol course" and not "the pistol qualification course." A frame was put around the training that it was impossible to fail. It was not a question as to whether the trainee would qualify. It would be impossible not to. The only question was how long it would take to shoot expert. Another frame around the course was that it involved a new training technology that was

fun and that led to enhanced performance. This was an accelerated training, and it was possible with new training technology to learn more quickly, easily, and effortlessly than ever before and to have fun in the process.

The training began with a film written by the modeling group and narrated by LTC Talbot on "Marksmanship in the United States Army." The script for the film consisted of embedded commands and positive suggestions designed to install the supporting beliefs and mental attitudes that would support superior performance.

By way of example a portion of the script follows:

> *This expert training program will take you to total competency in pistol shooting in two days. This training - you will learn - is based on the actual performance of the finest pistol shooters in the USA. As we examined these top pistol shooters, we found that they all possessed certain characteristics in common. First, they all had very positive beliefs about themselves and about pistol shooting. They believed that if another human being could do something well - they too could master it - if they decided to commit their personal resources to achieve it. Second, they all possessed the ability to concentrate and focus their attention completely for three to six seconds, which is all it takes to make a controlled shot. Third, they all were able to relax and eliminate tension from their body. Last, they all had a system or shot sequence to follow that was similar among them. This allowed them to concentrate on performance. Methodically, step-by-step, these excellent shooters were able to follow their system to shoot controlled shots. They know that the ability to consistently perform well is related to preparation and that a planned sequence of thinking is necessary to guide physical actions through the complete string of fire. This is the only insurance that the delivery will be consistently controlled. A good performance can be duplicated when the action follows a uniform sequence or system.*

After the film one of the trainees selected one of the course weapons at random. It was fired by a small female and shot a four-inch group at seventy-five feet. This was done to demonstrate that the guns were accurate and controllable. The trainees thought that if a small woman could control the gun, then surely they could. (It should be noted that all of the weapons had been previously tested for accuracy by the modeling group and those removed that were inaccurate.)

After the firing demonstration each student was issued a gun and weapon and range safety were covered in detail. This included handling the weapon, use of ammunition, use of double hearing protection, use of safety goggles, firing procedures, ranges commands and how to handle a weapon malfunction. The trainees were told what to do and not what not to do. The trainees were then rehearsed in the appropriate safety measures.

After the safety talk the next a session dealt with beliefs and motivation and further set appropriate frames around the training. The trainers established that shooting is eighty percent mental and that sight alignment is the most important element to being an expert pistol shot. To shoot a pistol at the expert level one needs to master the fundamentals and to integrate these into a working system. One also needs to operate out of certain frames.

First is turn failure into feedback. There is no such thing as failure. Failure is actually feedback as to what doesn't work for you. If what you are doing is not working then do something else. We will coach you as to what that something else is.

Second, if I am effective in obtaining my desired outcome it is because of my approach. If I change my approach, then I change my results. This course is designed to enable you to master the approach that will make you an expert pistol shot. It is not a question of if, but is a question of how.

Third, you are responsible for your success. We give you the tools and the system, but the rest is up to you.

Fourth, you must stretch yourself. If you can't, you must. It is up to you to respond to the challenge.

Fifth, commit yourself totally to this training. Do whatever it takes to succeed.

Next the belief system cycle was explained to form the groundwork for the process of suspending old negative limiting beliefs and installing new empowering ones. The belief cycle runs from beliefs and attitude to potential to action to results and back to beliefs. The key is altering beliefs, which enables you to tap new resources. If you believe you can or believe you can't, it will come true.

Throughout this whole process, and the entire workshop for that matter, the trainers used language that was totally positive and supportive. This "language of success patterning" avoided the use of negative suggestions and particularly of negative embedded commands. The emphasis was always on what to do to become successful and never on what not to do.

Next the trainees were facilitated through a group discussion of what is worthwhile about being an expert pistol shot and what value it will have for me personally and for my unit. This led to a discussion of "what stops you from being an expert now?" Among the limitations mentioned were limiting beliefs, poor attitude, bad habits, untrained motor reflexes and lack of experience. The next question posed was "how can you become an expert now?"

Among the answers were believe in yourself and the process, maintain a positive attitude, do exactly what you are told to do, and do what ever it takes to be successful. The information elicited in this phase and previously was incorporated into the next phase of the training, which is the "closed eye process."

The "closed eye process" was a critical phase of the training designed to remove disenabling beliefs and to install supporting ones in their place. The process was done as follows. Trainees set together in a group with space between them. They arranged themselves in comfortable positions and were led through a systematic relaxation process. They were encouraged to close their eyes, relax and just listen. For the next twenty minutes while soft music was playing in the background the two trainers walked through the group and simultaneously made similar and different suggestions as to what to believe and how to perform.

The next phase of the training installed the physiology and fundamentals required to become an expert marksman. This phase revolved around demonstrations by the trainers and rehearsal by the students. Also each trainee paired up with a buddy so that they could work with each other and check each other out. They were made responsible for each other's physiology. Resource anchors were elicited and installed and each buddy had a resourceful physiology anchor in place. For each piece the buddies were trained in what to look for and how to coach. The trainers also served as coaches.

First, the trainer demonstrated the physiological component and then assisted the students as they rehearsed. The trainer helped the trainees by repetitively molding then into the correct form. Second, the four positions (standing, prone, kneeling, and crouch) and how to get into and out of them were demonstrated. It was continually emphasized that proper physiology is connected to a congruent, resourceful state.

Once the four positions were mastered the next step was mastery of the other fundamentals. These included stances, natural point of aim, relaxation, grip, trigger squeeze, breath control, sight alignment, and trigger control.

Each of these chunks was rehearsed until mastered. Students were encouraged to practice trigger squeeze continuously when they were listening to the trainer and watching demonstrations. This was to begin to automate the trigger squeeze process. Also at this point trainees were given a picture of perfect sight alignment.

They were told to memorize this picture until they could remember it clearly. They practiced looking at it and then closing their eyes and seeing it and then opening their eyes to check it. They next practiced visualizing it with their eyes open. They were told to carry the picture with them and to look at it as often as possible during that day, that evening and the next day. They were told to look at it just before going to bed and the first thing the next morning. They also had it in front of them on the firing table when shooting the qualification course and were encouraged to look at it to refresh their memory. Once the chunks were mastered the next step was to integrate them together into the whole system for both slow fire and rapid-fire sequences.

The next step was installation of key components of the strategy and the installation and rehearsal of an overall firing sequence. Two key components of this were visual rehearsal and a supportive internal dialogue. Trainees were first taught to mentally and physically relax. They checked their stance to see that it was comfortable, balanced and aligned with the target. They next did a quick relaxation check of their body. With their weapon in the ready position they took a deep breath. They then started repeating the following procedures at first out loud in unison and after that internally. *Breath - Take up slack - Sight Alignment - Squeeze the trigger - Bang - Recover - Breath - etc.*

Next was installation of the visual rehearsal process. Visualization of perfect sight alignment was first practiced further. Then students were instructed to visualize themselves going through the complete firing sequence. Once they had completed this dissociated visualization they were next taught to run the same sequence while associated. They were told to step into their picture and to feel and sense actually doing it. Take a breath in your mind. Take up slack. Concentrate on sight alignment. Squeeze the trigger. Let the gun go off. Bang. Now recycle. Once the students had rehearsed this internally they opened their eyes and actually went through the cycle. They repeated this process several times. They were told to practice success, success, success, success, etc. Practice until they could do it totally successfully without any compromise.

With the strategy and physiology in place the next phase of the training was dry firing to further rehearse the sequence. First the entire course was choreographed with students dry firing the entire course together while following the entire strategy and repeating internally the auditory checklist. This further served to connect the mental strategy with motor skills and to reinforce the belief that proper sequencing leads to success. At this point it was further emphasized to shoot the course one shot at a time without anticipating the next shot or worrying about the last. After dry firing the course trainees did two exercises. One is the dime exercise where they dry fired with a dime or penny on the front side. The object of this exercise is to hold the .45 sufficiently steady that one can squeeze the trigger and have the hammer fall without the dime falling off. Next students were taught about "calling there shots." This involves remembering what the sight picture is at the exact instant the gunfires. This will tell you where the bullet will go. Students practiced calling shots by dry firing a sharp pencil at a wall-mounted target from several inches away. They did this until they could call the shot successfully three times in a row. Once they were successful in doing this they were ready to move on to the success cycle. Until this point none of the trainees has actually fired a live round. The old belief that practice makes perfect is incorrect.

The simple truth is that only correct practice makes perfect. Incorrect practice is practicing error. This makes on e worse and not better. Up until now and throughout the entire course trainees received continual feedback to ensure that practice was perfect.

Once dry firing was completed the live fire portion of the course began. This revolved around the success cycle. This involves chunking the training at a level that it is impossible to fail. Normally students start shooting at a target seventy-five feet down range. At this distance it is almost impossible to see where individual shots hit. After shooting they go down range to examine the target. They normally find some shots in the center, some shots scattered around the target, and some shots not even on the paper. The normal response is one of: "I failed. What am I doing wrong?" This puts students into a correction mode. They then start changing. But they don't know what to change. They do some things right that were wrong but also start doing some things wrong that were right. Using this system of trial and error it is a wonder that anyone learns to shoot al all.

The success cycle operates differently. It starts off by shooting at a target at ten feet. The student can see where they hit and have an immediate feeling of success. After each group of shots the trainer examines the target and based on where the shots hit gives the student immediate feedback and reinforcement and further coaches them on what to change. Only once the student is successful at ten feet is the target moved back. Targets were moved back to twenty-five, forty, sixty, and seventy-five feet in pace with the student's ability to continue to group well on the target. Using the success cycle by the time the target reached maximum range the student was already able to qualify or shoot expert. During the success cycle fundamentals and strategy were continually emphasized. Periodically the trainer would have the students repeat the procedures out loud. Timing and rhythm were also further emphasized.

Upon completion of the success cycle students were told that they would fire a practice course. In actuality all firings were for record. By defining it as a practice course performance and test anxiety was relieved. Those who fired expert exited the system after acknowledgement and reinforcement of success. Other trainees returned for the second day.

The second day of training resembled the first. Safety and basics were reviewed. Another closed eye process designed to emphasize success and motivation was conducted. Trainees fired an abbreviated success cycle. Another qualification course was fired. Qualifiers were acknowledged and their success reinforced. At this point in the training (noon of day two) only two people had failed to qualify. They were recycled once more and both qualified an hour later.

AFTERTHOUGHT

This description has been more detailed than previous ones to satisfy the request of readers for a more in depth treatment. It serves as a good outline and explanation of the modeling process. In looking back there are some things I would change today, but it is hard to argue with success. This project did not convince the Army to modify their pistol training menthols, but it did demonstrate the validity of modeling as a way of enhancing training and did lead to further modeling projects in the Army.

CHAPTER 5

IF SHOOTING MATTERED

In this section I will discuss a specific case study in detail in order to illustrate the modeling process which I have described elsewhere. The project I will discuss is the Expert Behavioral Modeling Project in Army Basic Rifle Marksmanship. Dr. Wyatt Woodsmall, Michael Mierau, and Robert Klaus conducted it at Ft. Benning, Georgia between March and November 1987.

Major General Edwin Burba who was Commandant of the Infantry Center and Infantry School at Ft. Benning initially requested this project. The Infantry School has proponent responsibility for developing rifle marksmanship instruction and policy for the Army. The work for this project, in response to MG Burba's request was initiated by PM TRADE, which currently has Army responsibility for determining the utility of expert behavioral modeling.

The goal of the project was to elicit expert rifle shooters and to redesign the Infantry School's Basic Rifle Marksmanship training program. This two-week course trains recruits to qualify with an M-16 service rifle on a trainfire, pop-up course.

Identification of world-class experts was initially a problem. No one in the Army shoots in major or world-class competition using the M-16 rifle on the standard trainfire qualification course. Competition is normally conducted using rifles other than the M-16 and on courses of known distance shooting at bulls-eye targets. The only Army competition using the M-16 is conducted using bulls-eye targets. Shooters who compete is this competition are not the top shooters in the Army. The Army's world caliber shooters seldom shoot the M-16 qualification course or the M-16 rifle either for that matter.

Woodsmall, Mierau and Klaus modeled M-16 shooters who competed in the All-Army Combat Championships on known distance bulls-eye targets and some of the marksmanship instructors in the Infantry School at Ft. Benning. None of these shooters were able to consistently shoot 38 out of 40 or better on the trainfire course with an M-16.

The first step in the modeling process is the identification of experts. If you model mediocrity you get mediocrity. Woodsmall, Klaus and Mierau realized that they had only been given mediocrity to model and requested access to the top world-class shooters in the Army. Finally the Army Marksmanship Training Unit at Ft. Benning agreed to make six of the top shooters in the Army (including three members of the U.S. Olympic Shooting team) available for Woodsmall and Mierau to model.

The six-shooters were Strom, Dubis, Jackson, McNally, Erickson and Schumacker. These six-shooters were asked to shoot the trainfire course regularly with M-16's for two days. They were able to develop consistently high scores. Dubis shot 38 out of 40 consistently and Strom shot either 39 or 40 out of 40 four times in a row. These two became the primary models.

The second step in the modeling process is task decomposition that is the critical process on breaking down the skill to be modeled into specific components, which can be elicited and sequenced to produce the expert result. This is one of the most critical parts of the modeling process and is why many would-be modelers in the NLP community fail to produce tangible results. In the case of basic rifle marksmanship the goal is to qualify expert (36 out of 40) on the train fire qualification course. To do this one must be able to easily, effortlessly and efficiently perform twelve major tasks in both the foxhole supported and prone positions.

These are:

- Get into a stable and comfortable position.
- Assume a natural point of aim in the center of the lane.
- Identify the target(s) as they appear.
- Get on target.
- Align the rifle sights on the target.
- Control the breath.
- Break the shot.
- Call the shot.
- If shot fails to occur take immediate action to clear the rifle.
- Shoot multiple targets (if necessary).
- Develop an appropriate rhythm.
- Return to natural point of aim.

The expert not only is able to perform these tasks but is able to integrate them together in an appropriate sequence which has a synergistic effect on performance. The third step of the modeling process is the elicitation of the physiology, beliefs, values, strategies and heuristics of the experts and contrast subjects. The key here is to separate the essential from the merely idiosyncratic and to find the difference that makes a difference.

Beliefs fall into three key areas. These are beliefs about the value of marksmanship, beliefs about the equipment and beliefs about one's own ability to shoot well. Some sample beliefs in the first category are:

Shooting is important. It could save your and your buddy's life. Your rifle is your best friend. I want to win. It is a matter of pride to shoot well. I want to be an expert rifle shot. I want to succeed at everything I do. I want to be a good soldier. I want to come home unharmed if I go to war. I want to be a good hunter. I want to know that I can hit whatever I shoot at. I want to be the best marksman in the Army. Some sample beliefs in the second category are: My gun is accurate and reliable. My sights are adjusted properly. The U.S. Army provides me with the best equipment in the world. My rifle will hit what I shoot at. If I hit the target it will go down. Some sample beliefs in the third category are: I can get into and maintain a steady position. I can achieve the same eye relief every time. I can see when the target(s) come up. I can get on target quickly. I have all the time that I need. I can correctly align the sights on the target, and if aligned the bullet will hit the target. I can achieve a correct sight picture and hold steady. Even though the target is a blur I can hit it. I can squeeze the trigger until the gun goes off without disturbing the alignment. When the rifle fires I will be unharmed. I can lock my breath and hold it comfortably. I can call the shot and adjust if necessary. If I miss or do not get the shot off I can put it together for the next shot. I shoot the course one shot at a time with no memory for past shots and no anticipation of future ones. Each shot requires my complete attention. I can get in the groove and get all shots off on time.

These are a representative sample of supporting beliefs in each of these three categories.

It is also important to elicit limiting or disenabling beliefs of trainees. These fall into several categories. These include beliefs about the weapon, beliefs about their ability to learn, beliefs about their ability to shoot and beliefs about the instructors. For marksmanship training to be effective it is necessary to remove the disenabling or limiting beliefs of the trainees and replace them with a set of enabling and empowering beliefs.

Part of the marksmanship-modeling project involved spending time with three groups of trainees to elicit their beliefs.

Obviously physiology is a major component in a predominantly physical skill like shooting. There is a different physiology that is optimal to perform each of the twelve tasks involved in shooting the train fire course. Observing and video taping the experts and contrast subjects determined the optimal physiology for each task. They were then compared to see what the experts did that the contrast subjects didn't and sometimes what the contrast subjects did that the experts didn't. This was probably the most straightforward part of the modeling process.

There is also a different strategy to perform each of the twelve tasks. The elicitation of these strategies was one of the cores of the rifle-modeling project. We will discuss several of these strategies to illustrate the process. Strategies were elicited through observation of eye movements, breathing shifts and gestures as well as by listening to predicates in real time elicitations. Once strategies were elicited they were further confirmed through sensitivity analysis, which involves having the subject vary one parameter while holding others constant.

Let us discuss strategies for three of the twelve tasks. We will use the T.O.T.E. (test - operate - test - exit) model to represent the strategies. In the T.O.T.E. model the second test and the exit point are usually the most important components for marksmanship strategies. The second test is always a comparison in the same representational system between some real time representation and a stored representation of correct performance. The bottom part of the comparison is the key to expert performance. It represents the stored performance evaluation criteria of the expert. The exit or decision point determines whether there is a match or mismatch in the second test. If there is a match the shooter performs the task and moves on to the next task. If there is a mismatch the shooter recycles.

The first task we will discuss is getting into a comfortable and steady position. The initial test or trigger (as I prefer to call it) is the command (auditory external) to get into position. The operations are kinesthetic movements of getting into the foxhole supported or prone positions. Once the rough position is achieved then fine adjustments are made. The key to these adjustments is the second test, which involves a comparison of the real time kinesthetic experience of the position, and a stored remembered kinesthetic representation of what the correct position "feels like." The expert has a highly refined internal representation of this correct feel and uses this to make external movement adjustments until a match occurs. The expert uses a kinesthetic check for the exit or decision point. He makes adjustments until the match occurs.

The above strategy analysis has major ramifications for training design. It is not enough to just install the above sequence in the trainee. It is also necessary to install in the trainee a kinesthetic representation of what the correct position feels like. This is a non-trivial task, which is absolutely critical to the development of expert performance. The expert is an expert not only because he follows a certain sequence but also because he has a highly refined standard of comparison in the critical second test. Frequently in strategy discussions in NLP this critical point is overlooked. Take the classic spelling strategy for example. The emphasis is usually placed on getting the speller to access a visual remembered picture of what the word looks like. This is critical. It is also critical to develop a kinesthetic internal representation of what a familiar word looks like. The test in spelling is a comparison between the feelings one gets from looking at the visual remembered image of the word and a stored internal feeling of familiarity. To make an expert speller it is not enough just to develop the ability to picture words. It is also necessary to develop a highly refined sense of the feeling of familiarity. It is this feeling that separates the experts from the near experts who follow the rest of the strategy. We will discuss this point in greater detail in a future column on strategies in modeling.

The second task we will consider is aligning the rifle sights on the target. The trigger for this task is a visual external image of the target in the sights. This is the end point of the previous task of getting on target. The operation is the kinesthetic movement of the rifle. The second test is between the visual external image of the in focus front sight and out of focus rear sight and target and a stored visual remembered picture of what perfect sight alignment looks right. The more accurate this remembered image is the more accurate the comparison will be. The exit or decision point is a kinesthetic internal feeling that occurs when the external and internal pictures match. The key for training design here is to install in the trainee a vivid remembered picture of what perfect sight alignment looks like.

The final illustrative strategy we will discuss is the strategy for breaking the shot. This strategy is further complicated by the fact that several strategies are running simultaneously. The trigger for breaking the shot is the alignment of the sights on the target. Operations include the kinesthetic movement of taking up trigger slack, the kinesthetic movement of holding the breath, the kinesthetic check of the final exit point of sight picture and the kinesthetic awareness of the time remaining to make the shot. The test is an integrated feeling that the hold is steady and that the sight picture is stable enough on the target to remain within the acceptable accuracy range during final trigger squeeze.

This is compared to a kinesthetic internal feeling of correct hold. The exit is a kinesthetic feeling of whether a match or mismatch occurs. If a match occurs the riflemen breaks the shot. If a match does not occur the riflemen either recycles or forces the shot if the kinesthetic awareness of time indicates that there is not time to recycle. There are many components here that must be installed in the trainee. He must have an awareness of the arc of movement and of ways to reduce it. He must have an awareness of how and when and how long to hold his breath. He must have an internal time clock, which tells him how long he has to break the shot. He must be able to isolate the movement of his trigger finger from the rest of his hand. He must have the ability to perform these and other actions simultaneously or in rapid sequence.

In addition to eliciting beliefs, strategies and physiologies information on meta programs and values may be critical. For example the best shooters on the train fire course are total differences people. They search for differences and adjust continuously. Part of training involves installing in the trainee awareness of differences and of how to compensate for them. Also the best shooters were D-Q's on the Graves Value Hierarchy. (We will discuss Graves in a future column.)

The next step in the modeling process is the formation of a provisional model. This involves the synthesis of the data gained from the elicitation process into a form that can be used to design a training to transfer these skills. We will not discuss this process here further.

The end result of the expert rifle-modeling project was a modification of the Army Infantry School's Basic Rifle Marksmanship Course. The new training design incorporating the results of the modeling process was tested at the Infantry School at FT. Benning, Georgia in November 1987. The results were a great success. The test platoon (47 soldiers in basic infantry one station unit training) shot an average of 34.48 points out of a possible 40.

This is compared to the average score of 31.31, which is the average for all other companies who have shot the record fire qualification course using the same range and the same program of instruction. The previous record high company score was 32.89. The test platoon thus shot an average score 3.17 higher than the average and 1.59 higher than the previous record. This is significant not only because of the numbers, but also because many training managers, training designers and officers at Ft. Benning commented prior to the test execution that the average score of 31.31 was already high and that any increase would be difficult to achieve.

Not only was this "hard to beat" average exceeded by 3.17 points, but there were no first time unqualified shooters (i.e., students who fail to qualify on their first attempt and who are given a second try) and only three trainees qualified at the lowest category of qualification which is that of marksman. In fact the test unit average score of 34.48 is high sharpshooter and very near to the expert cutoff of 36. This is an improvement of over 3 standard deviations overall when compared to the average and of over 4 standard deviations in experts when compared to the average.

At this time the Army leadership does not seem to be interested in marksmanship. The idea of one shot kills has given way in the minds of Army leaders to the concept of volume of fire. It is hoped that the Army will return to its roots and provide marksmanship the emphasis that it deserves. Should this shift in emphasis occur it is evident that expert behavioral modeling type training can help make the slogans "Army of Excellence" and "Be all you can be" a reality rather than just an ideal.

CHAPTER 6

THE ORIGINS OF
ADVANCED BEHAVIORAL MODELING™

Advanced Behavioral Modeling™ is a unique synthesis of insights, techniques and methods gained from a variety of disciplines. The goal of Advanced Behavioral Modeling™ is the capturing and transferring of expertise. To achieve this goal it is necessary to understand both how and why men think, act, feel, and behave the way they do. It is also necessary to understand how men learn and develop expertise and how best to teach or train others. No single discipline provides the necessary understanding to achieve the goal of Advanced Behavioral Modeling™. For Advanced Behavioral Modeling™ to come into being it was necessary to sift through a variety of disciplines and to extract and combine the necessary elements to make it possible for the first time to achieve the ultimate goal of all true education which is the formulation and transfer of excellence. Advanced Behavioral Modeling™ is possible because of the synergistic effect of combining critical elements from a variety of disciplines. These elements are powerful in isolation but together they reinforce each other so as to magnify in power with the result that Advanced Behavioral Modeling™ is far more than just the sum of its parts.

With this in mind some insight into Advanced Behavioral Modeling™ will result from a study of some of its roots. The principal sources of the insights, distinctions, techniques and methods that synergistically combine to form Advanced Behavioral Modeling™ are values theory, human typological analysis, accelerated learning and neuro-linguistic programming. Other disciplines that have also impacted on the creation of Advanced Behavioral Modeling™ are psychology, psychiatry, philosophy, education, law, organizational development, management science, neurophysiology physiology, theoretical physics, magic and mysticism. In this brief overview it will only be possible to trace the roots of Advanced Behavioral Modeling™ in the four primary disciplines. See Figure 3 on the origins of Advanced Behavioral Modeling™ for an overview.

CHAPTER 7

HUMAN TYPOLOGICAL ANALYSIS

People have some characteristics in common and differ in other characteristics. One can either emphasize the similarities or the differences. At the extremes are two opposing viewpoints. At one extreme is the view that all people are basically the same. They all go through the same phases of growth to maturity. They may be at different phases or stages of development, but the path is the same for all humans. A further corollary of this view is that "all people are like us." Thus to understand other people we only need to understand ourself. This leads to a projection of our values, beliefs, and internal processes on others.

At the other extreme is the view that all people are different. Each person is unique. Each has a different unique history and a different unique model of the world. We are all different from everyone else, and they are all different from each other. Life may be either a process of discovering and appreciating these differences or of trying to reduce these differences and change other people to be as much like ourselves as possible.

Both of these two extremes are based on a kernel of insight, and both are tragically flawed. The simple fact is that people have some characteristics in common and many characteristics in which they differ. Individual people do differ from one another in fundamental ways. They want different things and have different needs, motives, purposes, ends, aims, goals, urges, drives, impulses and values. Each person has a past history that is unique to them, and each person may believe, think, cognize, conceptualize, perceive, intuit, sense, comprehend, understand and cogitate differently. And of course they act, behave, feel and emote differently. They also differ in other ways such as appearance. They may be short or tall, fat or skinny, strong or weak, slow or fast, happy or sad, friendly or withdrawn, enthusiastic or laid back and thousands of other dichotomies. Yet we all live in the same world and need to get along with each other. To do this we need a way to understand what makes people different. We need a way to sort through the diversities so that we can deal with people better. When faced with the undeniability of human diversity several responses are possible. One common response is to view this diversity as a sign of temporary manifestations in others of madness, badness, stupidity or sickness, i.e. to account for the obvious variations in human behavior in terms of deviance, flaw and affliction. A common outgrowth of this view is for a person to view them self as the norm and to try to correct the flaws in others by sculpting or changing them into a carbon copy of them self. This view, called "the Pygmalion project" after Shaw, involves us in making all those near us as much like ourselves as possible.

The Pygmalion project has usually failed, however, because people are in fact different from each other. No matter how much or in how many different ways we try to change other people they usually cannot change to be just like us. Some human characteristics appear to be inherent, ingrained and almost indelible. Of course some change is possible, and people do change in significant ways everyday. Certain types of change, however, are more rare, and for some people they may be close to impossible.

In light of the difficulty of changing others, another response to the quandary of human diversity is to appreciate the uniqueness and diversity of everyone we meet. In this "different strokes for different folks" or "everyone marches to a different drummer" approach human difference is accepted as good and healthy, and all thought of changing others to be like ourselves is viewed as either unnecessary or misguided.

There is a third approach to the enigma of human diversity. This approach, as previously mentioned, is to search for the similarities in human behavior. This belief that people are all

"fundamentally" alike probably has its roots in the growth of democracy in the Western world. The reasoning is that if we are equal we must be alike.

The belief that "we are all fundamentally alike" has led to various forms of reductionism in modern psychology. *Freud* believed that Eros drives all human beings internally and that other so-called "higher motives" are simply disguised versions of Eros. Many of Freud's colleagues and students rejected his idea of Eros as the principal motivator of human behavior. Many, however, retained the notion of a single motivator. *Adler* argued that power was the principal motivator. *Sullivan* said that it is not Eros or power but "social solidarity" that is the prime mover of human behavior. Fromm said it was none of these but instead was "seeking after Self." All agree, however, in a reduction of human behavior to one basic instinct or purpose, which is the same for all of humanity.

Carl Jung (1875-1961), the famous Swiss psychiatrist and psychologist, disagreed with the reductionist approach to human behavior. Jung agreed that people all have similar archetypes or instincts that drive them internally. He believed, however, that people are different in another fundamental way which is in how they "function." Jung felt that each person's preference for a given "function" is characteristic of that person, and that people may be "typed" by this preference. This led Jung to the discovery of "function types" or "psychological types."

Typology is the study of human differences. It is the science of finding "similarities in the differences." There is something in the idea of typing people that makes a lot of people feel uneasy. It does not bother people to talk about types of flowers or types of cats or types of human blood for that matter. It does bother them, however, to talk about human types for fear of possible abuse. Most people feel that types threaten their individual uniqueness. Few people like to be pigeon holed or "put in a box." People object to being labeled or to being categorized. Also, many people are afraid that types are somehow undemocratic, and that they can lead to prejudice and repression.

It is true that types, like most other things, may be abused. They indeed may be used to deny either the universal or the unique in man. In fact a type is a half way house between the universal and the particular. A type, in reality, is merely a set of characteristics that a group of people have in common. Types are constellations of basic elements that may be used to describe the differences among people in such areas as body type, learning style and personality temperament.

People may be classified in many ways. The questions that are important are whether the classifications are useful or not and for what. Human typological analysis is useful to Advanced Behavioral Modeling[SM]. The goal of Advanced Behavioral Modeling is to identify, capture and transfer excellence or expertise. It is evident that some people are able to perform certain activities better than others. The question that Advanced Behavioral Modeling asks is "how is it possible for one person to perform well and for another person to perform poorly?"

What characteristics do high performers in any area have in common that enable them to be high performers, and how can other people be identified who already have similar characteristics or who can quickly develop them.

Advanced Behavioral Modeling[SM] is interested in ways of classifying people (i.e. in types) that may be useful in determining people's abilities to either perform certain activities well or to develop the ability to do so with proper instruction. The keys to this process are the determination of those characteristics associated with excellent performance in any area and the development of verbal, written and behavioral tests to identify people with those characteristics. This process is called profiling. Once potential high performers are identified by profiling Advanced Behavioral Modeling[SM] trains them to actually be high performers.

There is a debate in contemporary psychology between the "behaviorist" and "dynamic" schools as to whether behavior is to be "explained" as due to unconscious motives or to past experience. Type theorists like Jung and Sheldon add to this the view that behavior may also be equally due to in born temperament or to body build. Advanced Behavioral Modeling[SM] feels that all of these factors must be considered in any complete analysis. It considers unconscious motives (beliefs and values), experience (patterns in thought and action), body build (physiology) and temperament or type in developing its profiles.

What follows is a survey of human typological analysis and of the variety of type distinctions that have served as a basis for the development of the profiling process used in Advanced Behavioral Modeling[SM]. Typological analysis has focused on body, temperament, and psychological and learning types.

The Greek philosopher *Hippocrates* in the fifth century BC distinguished four types of temperament in an effort to account for human moods and behavior. These are choleric, phlegmatic, melancholic, and sanguine. In 1907 *Adickes* identified four worldviews. These are dogmatic, agnostic, traditional and innovative. *Kretschmer* in 1925 identified four temperaments causing abnormal behavior. These are: hyperesthetic or too sensitive, anesthetic or too insensitive, melancholic or too serious and hypomanic or too excitable. *Alfred Adler* circa 1920 spoke of four "mistaken goals" people of different make-ups pursue when upset. These are recognition, power, service and revenge. *Spranger* in 1928 described four human values. These are religious, theoretic, economic and artistic.

In the 1920's *Carl Jung* developed a theory of psychological types that expanded on the four elements described by Hippocrates, Adickes, Kretschmer, Adler and Spranger. Jung said that there were eight types generated by three sets of polarities.

The polarities that Jung identified are extroversion and introversion, thinking and feeling, and intuition and sensation. Jung's eight types are:

1. Extroverted sensation
2. Extroverted intuition
3. Extroverted feeling
4. Extroverted thinking
5. Introverted sensation
6. Introverted intuition
7. Introverted thinking
8. Introverted feeling

In the 1950's Jung's psychological types were revived and expanded by *Isabel Meyers* and *Katheryn Briggs* into sixteen types. They also developed an instrument, the Meyers-Briggs Type Indicator (MBTI), to identify the 16 types. The MBTI has been administered to millions of people worldwide.

The 16 types that the Meyers-Briggs identifies are:

ISTJ	ISFJ	INFJ	INTJ
ISTP	ISFP	INFP	INTP
ESTP	ESFP	ENFP	ENTP
ESTJ	ESFJ	ENFJ	ENTJ

Where: I = Introverted   E = Extroverted
S = Sensation   N = Intuition
T = Thinking   F = Feeling
P = Perceiving   J = Judging

It should be noted that Meyers-Briggs theorists have felt that these types are more or less immutable. Some people do change types either rapidly as a result of an intense emotional experience or gradually over time as a result of an accumulation of experiences. The dynamics of this change process, however, have not been identified or understood. Using Advanced Behavioral Modeling^{SM} technology it is possible to change Jungian and Meyers-Briggs types. The nature of this change process is understandably proprietary.

Walter Lowen has expanded on the Jungian distinctions even further. He points out that the judger-perceiver distinction in the Meyer's Briggs is not a true dichotomy. Instead he substitutes a distinction between detailed and contextual, which he says corresponds to the right brain and left-brain distinction. Lowen further presents a developmental theory saying that the mind has four levels corresponding to four different sets of skills. The first to develop are gross motor skills (SF) that develop in the first year of childhood. These involve rhythm and control. Next to develop are fine motor skills (ST) which involve positioning and dexterity and develop between the ages of one and two. Third to develop are verbal skills (NF) which involve intonation and words and which originate around the age of two. Last to develop are intellectual skills (NT) which develop sometime after the age of eight and which involve planning and conclusion.

Lowen further identifies sixteen human capacities which correspond to his sixteen types. Each of these capacities or "processors" describes, "What a person does." In addition each capacity acts on a certain kind of data. Lowen postulates that all mental activity is the result of what he calls a "transaction" between a certain kind of data and a certain kind of processor.

Lowen's sixteen transactions and their corresponding types are:

IFSC	Match or equate the signal or sensory feedback
ESFC	Signal, notice or sense the match or likeness
ISFD	Control or link the contrast or opposite
EFSD	Contrast or categorize the control or action
ITSC	Recognize or differentiate the sign or identifier
ESTC	Identify or label the feature or characteristic
ISTD	Codify or systematize the sorting or elements
ETSD	Sort or order the routine or schema
IFNC	Harmonize or balance the possibility or scenario
ENFC	Combine or imagine the balance or harmony
INFD	Associate or interpret the preference or choice
EFND	Select or evaluate the association or meaning
ITNC	Arrange or pattern the plan or strategy
ENTC	Strategize or plan the pattern or regularity
INTD	Structure or conceptualize the logic or syntax
ETND	Reason or logically order the gestalt or structure

Since the introduction of the Meyers-Briggs instrument in the 1950's there has been an avalanche of psychological instruments for determining various psychological types. Most of these upon close examination reduce to the Jungian categories. Some do make some valuable non-Jungian distinctions, and some of these distinctions have been incorporated into the Advanced Behavioral Modeling^{SM} profiling process.

One schema of personality classification, which is non-Jungian and of comparable power, predates Jung by possibly hundreds if not thousands of years. It has its origin in Sufism and has been transmitted in various forms by *George Gurdjieff, Oscar Ichazo, Claudio Nuranjo* and *Katherine Speeth*. It divides people into 9 types, and each type has three subtypes.

The nine types are:
1. Perfectionistic
2. Hysteric
3. Assertive or Cardiac
4. Depressed or Melancholic
5. Avoidant, Schizoid or Withdrawn
6. Paranoid
7. Narcissistic
8. Punitive
9. Obsessive

The three subtypes of each type are self-preservation, social and syntony. These generate 27 types.

William Sheldon (1898-1977) was an American doctor and psychologist who studied the relation between body type and temperament. He determined three fundamental components of physique which seemed to derive from the three layers of the human embryo , i.e. the endoderm, mesoderm and ectoderm.

Sheldon's three elements of body type are:

1. Endomorphy - Centered on the abdomen and digestive system.
2. Mesomorphy - Focused on the muscular and circulatory systems.
3. Ectomorphy - Related to the brain and nervous system.

All three components are present in everyone. Sheldon rated the presence of each component on a scale of 1 to 7. This leads to a large number of possible types.

One area of typological analysis of particular interest in Advanced Behavioral Modeling[SM] is learning types or styles. There appears to be surprising convergence in this area. This is probably because all of the various typologies reduce to Jung's four basic functions.

David Kolb has distinguished four learning types and has developed an instrument to determine a person's dominant style.

His four types or styles are:

1. Diverger - Concrete experience and reflective observation
2. Assimilator - Abstract conceptualization and reflective observation
3. Converger - Abstract conceptualization and active experimentation
4. Accommodator - Concrete experience and active experimentation

Bernise McCarthy has expanded on Kolb's typology. Her 4 Mat system suggests teaching to each style in a cycle.

Her four styles emphasize:

1. Personal meaning and social interaction.
2. Information, facts and intellect.
3. Sensory stimuli, the concrete and workability.
4. Intuition, experience and hidden possibilities.

Alexis Lotas proposes a four-schools-within-a-school curriculum. He also has developed an instrument to measure teaching styles congruent with his learning styles classification.

His four styles are:

Affective One Learner	Concerned with people
Cognitive Two Learner	Intellectual concerns
Cognitive One Learner	Practical concerns
Affective Two Learner	Values concerns

Louis and *Barbara Bree Fischer* have identified six learning styles.

These are:

- Emotionally Involved I - Need an emotionally colorful and vivid learning atmosphere.
- Emotionally Involved II - Need a dynamic interplay of ideas and activity.
- Incremental - Create systemic structure by a linear step by step incremental approach.
- Sensory Generalists - Gather information with all senses and test against prior knowledge and sense data.
- Sensory Specialist - Rely primarily on one dominant sense and test against experience.
- Intuitive - Make leaps from sudden insights.

Anthony Gregoric has identified four learning styles based on two sets of dualities. These are concrete and abstract perception and sequential (linear) and random (non-linear) ordering abilities.

Gregoric's four types are:

- Abstract random - Needs "people" problems and reflecting time
- Abstract sequential - Needs rational, sequential organization
- Concrete sequential - Needs step-by-step directions and direct hands-on experience
- Concrete random - Needs unstructured experimental organization

David Merrill has identified four social styles from his work in the field of management training.

These are:

- Amiable - Supportive, respectful, willing, dependable
- Analytical - Industrious, persistent, serious, exacting
- Driver - Strong willed, independent, practical, decisive
- Expressive - Ambitious, stimulating, enthusiastic, dramatic

A New York dance instructor and choreographer named Elizabeth Wetzig developed another interesting typology of learning styles. She based her styles on Hunt's identification of four "body tension" patterns.

Her styles are:

- Assister   Absorbs reality
- Posturer   Forms reality
- Resister   Edits reality
- Perceverator   Enriches reality

Advanced Behavioral Modeling[SM] has expanded on traditional type theory by discovering a variety of other distinctions that effect human performance. The Advanced Behavioral Modeling[SM] approach differs from traditional type theory by focusing on individual characteristics or components rather than on the constellations of characteristics used by the type theorists. For example, Advanced Behavioral Modeling[SM] finds the four sets of distinctions used in the Meyers-Briggs to be useful, but does not find the descriptions of the 16 different types to be particularly useful. In its profiling process - i.e. Profiling Plus[SM] - Advanced Behavioral Modeling[SM] considers the four distinctions used in the MBTI along with several hundred more. What specific subset of this master list is used in any given profile in Advanced Behavioral Modeling[SM] depends on the purpose of the profile and the nature of the activity for which information is sought.

The actual written, verbal and behavioral tests used by Advanced Behavioral Modeling[SM] to classify people with respect to these categories are of course proprietary.

Some of the characteristics and distinctions used in the Profiling Plus[SM] process are listed below:

- Primary interest - people, place, thing, activity, information, time
- Attention direction - self, balanced, others
- Direction - towards, away, against
- Process - matching, mismatching
- Frame of Reference - internal, external
- Chunk size - global. specific
- Time orientation - past, present, future, atemporal
- Time storage - in time, through time, over time, between time
- Time access - random, sequential
- Goal - perfection, optimization
- State - primary, meta aware
- Information type - descriptive, evaluative, interpretive
- Knowledge - model, concept, demonstration, experience, authority
- Information class - linear, class, cybernetic, comparison
- Comparison - categorical, qualitative, quantitative
- Action level - proactive, reactive, inactive
- Reason - options, procedures
- Modal operator - possibility, necessity
- Affiliation - independent, team player, management player
- Work preference - things, systems, people
- Relationship - sameness, sameness with exception, difference with exception, difference
- Emotional stress response - associated, dissociated, choice
- Convincer representation - sees, hear, do, read

- Convincer demonstration - examples, period, consistent, automatic
- Completion - starter, maintainer, finisher
- Closure - detailed, contextual
- Context - high, low
- Reality - idealist, pragmatist, realist
- Abstraction - concrete, abstract
- Logic direction - inductive, deductive
- Chunk size - large, small
- Ambiguity - novel, complex, insolvable
- Certainty - possibility, even, probability, necessity.

This is just a sample of some of the filters used in the Advanced Behavioral Modeling^{SM} process.

CHAPTER 8

VALUE THEORY

Values are those things that we move toward or away from.

They either attract us or repel us. They are what we willing to invest time, energy and resources to achieve or avoid. All human decisions are based on values which are usually outside of conscious awareness. Values are the basis of the criteria on which all decisions are made. Values find conscious expression in our ideas of good - bad, right - wrong, beautiful - ugly, enhancing - diminishing, and desirable - undesirable. Throughout history religious teachers, humanists, moralists, philosophers, educators and politicians have argued back and fourth as to the question of what is good, right, true, pure, holy, beautiful or enhancing as opposed to what is bad, wrong, false, evil, profane, ugly or diminishing. These questions are the province of religion and moral philosophy and not of value theory.

Value theory is concerned with what a person's values are and not what they should be. It is also concerned with how values originate and change and most of all with how values affect our decisions and actions. As our values change our decisions and actions change, and people with similar values think and behave in similar ways. Since Advanced Behavioral Modeling^{SM} is focused on capturing and transferring excellence, it is necessary to understand what the values are that shape our thoughts, feelings, and actions and how to change them. Value theory is concerned with what a person's values are in order to determine how they affect that person's thoughts and actions. Advanced Behavioral Modeling^{SM} is concerned with how to use values to shape a person's thoughts and actions.

Value theory is to be distinguished from value clarification, which is the process of helping people to become consciously aware of their own values. Value clarification may be decomposed into seven sub processes that lead to clarity with respect to a person's values.

These are:

1. Choosing from alternatives
2. Rationally considering the consequences of alternatives,
3. Choosing freely
4. Prizing and cherishing
5. Publicly affirming
6. Acting repeatedly
7. Acting with a pattern or consistently.

Advanced Behavioral Modeling^{SM} is not concerned with promoting conscious awareness of values. Instead it involves the detection of values outside of conscious awareness as well as the knowledge of how to assist an individual in creating and changing their values.

The principal questions addressed by value theory are what are human values, how are they created, what stages of development do they go through, and how do they change over time. We will now consider the ideas of some of the principal pioneers in answering these questions.

There have been various definitions posed for the concept of values. Among these are:

- Values are guides of individual behavior regarding several specific objects and situations. **(Theo Haiman)**

- A value is a basic concept that has considerable importance and meaning to the individual. **(Don Hellrigel)**

- A value is the stance that the self takes to the world through the feelings, ideas, behavior, and imagination of the individual. **(Brian Hall)**
- A value is a basic criterion or standard for selection among the many possible alternatives for action. **(Talcott Parsons)**

- A value is an enduring belief that a specific mode of conduct or end- state of existence is preferable to any other mode of conduct or end-state of existence. **(Milton Rokeach)**

- A value is a conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable, which influences the selection from available modes, means, and ends of action. **(Clyde Kluckhohn)**

All of these writers seem to agree that values consist of criteria or standards that serve as guidelines to action and further that these standards or criteria are enduring beliefs that are particularly important and meaningful for the individual in their selection of goals and actions.

Robert McMurry feels that it is clear that values perform at a minimum the following functions in an individual's day-to-day existence.

They:

- Determine what the individual regards as right, beautiful, and ethical.
- Provide norms by which day-to-day behavior is guided.
- Determine attitudes towards political, economic, and social causes and issues.
- Exert influence on the kinds and types of persons we are compatible with and the kinds of social activities we engage in.
- Determine which ideas, principles and concepts we accept, assimilate, remember, and transmit.
- Provide us with an unlimited number of moral principles that can be used to rationalize any action.

It is evident that values encompass almost every aspect of the affective and intellectual domains.

It is helpful to distinguish between moral values and non-moral values such as aesthetics or personal preferences. **Clyde Kluckhohn** proposes a series of parameters to distinguish moral values from non-moral values and values in general from non-values.

These include:

- Modality - Positive or negative.
- Content - Cognitive, aesthetic, moral.
- Intent - Differentiated according to ends and means, with the means values referred to as instrumental and the end values referred to as terminal or goal oriented.
- Generality - Specific or thematic.
- Intensity - Strength of the value as manifested by its physical, social, distance, and time elements.
- Explicitness - Running from a continuum of implicit to explicit.
- Extent - Personal or group nature of value.

With this understanding of the nature of values in place let us consider the question of the origin of values.

Dr. Morris Massey has spent more time than anybody addressing the question of the origin or genesis of values. Dr. Massey believes that young people go through three developmental periods.

These are:

- Imprint period from birth until age 7.
- Modeling period from age 8 to 14.
- Socialization period from age 15 to 21

During these periods a person's core values are formed. They are usually locked in by around the age of 21.

Massey lists the following sources of values:

- Family   Geography/Location
- Friends   Economics/Prosperity
- Religion   Major Historical Events
- School   The Media

In analyzing people's values in the 1980's Massey sees four different value groups which differ in age and whose values were shaped by the time in which they grew up.

These are:

Traditionalists	50's and up	Believe in social order
Harmonizers	40 to 50	Worry about missing it
Rejectionists	20 to 40	Reject social order
Synthesis	13 to 20	Worry over the future

Each group's values have been shaped in a different historical crucible and reflect a different outlook on life.

Whereas Massey is one of the few people to focus primarily on the origins of human values there are a great number of people who have focused on the question of the stages of the development of human values. All these views involve differing concepts of human nature. They each address the fundamental questions of how does one person differ from others and how will that person develop or change over time.

There are two camps with respect to the answers to these questions. The question of difference leads to the construction of types and the question of development leads to the concept of stages. Sometimes these two concepts are placed in opposition to each other. Types, in this view, are seen as implying a fixed, non-modifiable state while stages, by contrast, are seen as carrying the expectation of the possibility of change. A developmental perspective sees a person's present behavior in relation to past changes and to future growth.

For example interpersonal maturity may be seen in terms of three developmental stages of unsocialized, dependent and independent. This has been a debate within the developmental perspective as to the source of change. **Kurt Lewin** in 1936 stated, "Behavior is a function of the Person and the Environment." Since then some developmentalist theories have emphasized

the person as the source of change while others have emphasized the role of the environment in change. Let us now consider some of the specific proposals as to the stages or types of values.

Erik Erickson (1958) posited that man develops through 8 stages. He places the burden of development through these stages upon internal growth factors. He views failure to grow, or arrestation, as occurring because of a generally unsatisfactory environment and not because of a specifically mismatched environment.

The 8 stages of man according to Erickson are:

1	Trust verses mistrust	Infancy
2	Autonomy verses shame and guilt	Early childhood
3	Initiative verses guilt	Play age
4	Industry verses inferiority	School age
5	Identity verses identity diffusion	Adolescence
6	Intimacy verses isolation	Young adult
7	Generativity verses self-absorption	Adulthood
8	Integrity verses disgust or despair	Mature age

As man moves through each of these stages his focus of development and associated values changes.

Jean Piaget has formulated a stage description of intellectual development. Intelligence in Piaget's view is a process of adaptation and organization. Piaget postulates the following stages.

Sensory-motor stage	Birth to two
Preoperational stage	Two to seven
Preconceptual thought	Two to four
Intuitive thought	Four to seven
Operational stage	Seven to sixteen
Concrete operational thought	Seven to eleven
Formal operational thought	Eleven to sixteen

Joseph Chilton Pierce has further elaborated on and expanded Piaget's stages. Values shift at each level of intellectual development.

Abraham Maslow has had a profound impact on the contemporary understanding of values. He argues that man's values are determined by his needs, and that as man's needs change his values change. Maslow sees five levels of human needs, which are in the form of a hierarchy where each lower need must be fulfilled before one can go to the next higher level.

Maslow's five levels are:

1. Basic Needs. This includes physiological or survival needs for food, sex, clothing, shelter and physical fitness.
2. Safety Needs. These include health care, fringe benefits, routine, stability, financial reward, safety, and security.
3. Love, Affection and Belongingness Needs. This includes social needs for affection and caring relationships, trust, feedback, friendship, discussions, being informed, and helping other people.
4. Esteem or Ego Needs. These include esteem needs for accomplishment, participation, prestige, self-esteem, independent thought and action, privileges, authority, recognition, and professional group memberships.

5. Self-Actualization Needs. This includes the inherent needs for well-being, self fulfillment, personal growth, development, and the opportunity to fulfill one's basic potential and to become more like one's natural self.

Maslow believes that the need for self-actualization is healthy man's prime motivation. As a descriptive and operational definition of self actualization

Maslow lists the following characteristics:

1. Superior perception of reality.
2. Increased acceptance of self, of others and of nature.
3. Increased spontaneity.
4. Increase in problem centering.
5. Increased detachment and desire for privacy.
6. Increased autonomy and resistance to enculturation.
7. Greater freshness of appreciation and richness of emotional reaction.
8. Higher frequency of peak experiences.
9. Increased identification with the human species.
10. Improved interpersonal relations.
11. More democratic character structure.
12. Greatly increased creativeness.
13. Certain changes in the value system

Other value theorists have challenged Maslow's contention that values are based on needs and that self-actualization is the highest value.

Dr. Clare Graves was one of Maslow's contemporaries who tried to verify Maslow's thesis. His empirical research led him to conclude that Maslow's schema did not apply to a large number of individuals. This led Graves to the development of a more inclusive model. Graves believed that adult man's values develop from existential states of man. These states emerge as man solves certain hierarchically ordered existential problems crucial to him in his existence. Graves postulates a chain of eight value systems through which man may pass. Each represents an effort to cope with certain existential problems. Graves emphasizes that each system reflects how people think and not what they think. The systems consist of ways of thinking and not of types of people.

The eight systems that Graves postulates are:

1. Reactive, Automatic - Express self now for survival.
2. Tribalistic, Animistic - Sacrifice self now for the tribe.
3. Egocentric, Exploitive - Express self now and to hell with others.
4. Absolutistic, Saintly - Sacrifice self now to attain later.
5. Multiplistic, Materialistic - Express self now, but calculatedly for rewards now.
6. Personalistic, Relativistic - Express self now, but not at the expense of others.
7. Systemic, Existential - Express self now, but not at the expense of others.
8. Transpersonal, Global - Sacrifice self now for global survival.

Graves used this system to explain not only individual growth and development but cultural growth and development. Each of Graves eight systems have an associated set of values. For a person or culture to pass from one system to another they have to develop a new set of coping mechanisms and a new way of thinking to deal with a new class of problems.

Another developmental theory of moral development is that of **Lawrence Kohlberg**. His stage theory of moral development is based on an empirical study of children's answers to

certain moral questions. It distinguishes different levels of moral maturity underlying the moral decisions that a person makes.

Kohlberg's six stages are:

Level 1: **Preconventional or Premoral**
Stage 1 - Punishment and obedience orientation
Stage 2 - Instrumental relativist or naively egoistic orientation

Level 2: **Conventional Rule**
Stage 3 - Interpersonal concordance or good boy orientation
Stage 4 - Authority and social order maintenance orientation

Level 3: **Autonomous Principled Morality**
Stage 5 - Contractual legalistic orientation
Stage 6 - Conscience or principle orientation

Kohlberg believes that his stage sequence is age related and that it forms an unchanging sequence in the process of development of moral values.

James W. Fowler presents a six-stage model of religious development that has some interesting parallels to Kohlberg's theory.

Fowler's six stages are:

1. Undifferentiated sense of faith in self and others.
2. Intuitive and projective.
3. Affiliative and conventional.
4. Individuating and ideological.
5. Consolidative, relativistic and functional.
6. Universalizing.

Each of Fowler's stages represents a change in values.

Other value theorists have focused on classifying the kinds of values. It is common to distinguish between terminal or ends values that affect our beliefs about ultimate goals and instrumental or means values that refer to desirable modes of behavior necessary to attain and support the terminal values.

Milton Rokeach distinguishes between instrumental values, terminal values and organizational values.

Nickolai Hartmann distinguishes between intrinsic, consummatory or end values, extrinsic, contributory or instrumental values and systemic values. It is also common to emphasize the distinction between explicit and implicit values. Explicit values are ones where an individual can explain the values, illustrate its application in making judgements, and identify its boundaries.

Thus when they are explicit and fully conceptualized values become criteria for preference and choice. Implicit and unreflective values perform as if they constituted grounds for decisions and behavior. They are presupposed in beliefs, feelings, thoughts and actions. A major function of Advanced Behavioral Modeling[SM] is to detect implicit values and make them explicit.

The Argentine philosopher and political theorist **Alejandro Korn** proposed nine types of valuation. Each type of evaluation has associated with it a value dichotomy, a final value and a value system.

Korn's nine types are:

Valuation	Value Dichotomy	Final Value	Value System
1. Erotic	Lovable/hateful	Love	Mysticism
2. Vital	Select/vulgar	Power	Pragmatism
3. Economic	Useful/useless	Well being	Utilitarianism
4. Social	Licit/illicit	Justice	Systems
5. Logical	True/false	Truth	Rationalism
6. Aesthetic	Beautiful/ugly	Beauty	Intuitionism
7. Instinctive	Agreeable/disagreeable	Happiness	Hedonism
8. Ethical	Good/evil	Good	Stoicism
9. Religious	Holy/profane	Holiness	Scholasticism

Any discussion of values would be incomplete without a mention of Stanford Research Institute's (SRI) Values and Life Styles Profile (VALS). This is without a doubt the most ambitious and far reaching value survey ever conducted. SRI has done a tremendous amount of research of the demographics and buying patterns of the American people. VALS postulates nine American life styles. Each style has a different set of values and different buying patterns. VALS is virtually the bible of the advertising industry. When advertising agencies refer to market research they are usually referring to VALS or to their own in-house version.

The nine American life styles used in VALS are:

Need Driven
1. Survivors
2. Sustainers

Outer-Directed
3. Belongers
4. Emulators
5. Achievers

Inner Directed
6. I-Am-Me
7. Experientials
8. Societally Conscious

Integrated
9. Integrated

The above mentioned value theorist's are some of the people Advanced Behavioral Modeling[SM] has build upon in constructing its own synthesis of human values.

CHAPTER 9

NEURO-LINGUISTIC PROGRAMMING

Richard Bandler (a computer scientist and Gestalt therapist) and Dr. John Grinder (a linguist and therapist) created neuro-Linguistic Programming (NLP) in the early 1970's. They invented a process called "modeling" which enabled them to study three of the world's greatest therapists (Dr. Milton Erickson who is the father of modern hypnotherapy, Fritz Perls who is the creator of Gestalt therapy, and Virginia Satir who is the mother of modern day family therapy), to determine what it was that made them effective and to train others in their methods.

What is marketed commercially today as Neuro-Linguistic Programming is the product of this modeling process.

Neuro-Linguistic Programming is a set of powerful techniques for rapid and effective behavioral modification and an operational philosophy to guide their use. It is based on four operational principles.

These are:

1. Know what outcome you want to achieve.
2. Have sufficient sensory acuity to know if you are moving toward or away from your outcome.
3. Have sufficient flexibility of behavior so that you can vary your behavior until you get your outcome.
4. Take action now.

The importance of having specific outcomes cannot be stressed enough. Many people do not have conscious outcomes and wander randomly through life. Neuro-Linguistic Programming stresses living with conscious purpose. In order to achieve outcomes it is necessary to act and speak in certain ways.

Neuro-Linguistic Programming teaches a series of linguistic and behavioral patterns that have proved highly effective in enabling people to change the beliefs and behaviors of other people. In using any of these patterns Neuro-Linguistic Programming stresses the importance of continuous calibration of the person or persons one is interacting with in order to see if what one is doing is working. If it is not working then it is important to do something else. One varies one's behavior until one gets the results one wants.

This variation in behavior is not random, however, but involves the systematic application of the Neuro-Linguistic Programming patterns. It is also important to take action, since nothing ever happens until someone takes the initiative. In short Neuro-Linguistic Programming is about thinking, observing and doing in order to get what one wants out of life.

The importance of knowing your outcome cannot be stressed enough. Many people do not have conscious outcomes. Others have no idea what they want but know what they do not want. Their life is based on moving away from those things they do not want. Neuro-Linguistic Programming stresses the importance of moving toward those things that one does want. Without outcomes life becomes a process of wandering aimlessly. Once an outcome is determined one can begin to focus on achieving that outcome.

Neuro-Linguistic Programming lists certain "well formedness conditions" that outcomes should meet. The first of these is that the outcome should be stated in positive terms. This

means that the outcome must be what one wants and not what one does not want to happen. Outcomes must be things that are capable of being satisfied.

It is both logically and practically impossible to give someone the negation of an experience. One cannot engage in the process of "not doing." One can only engage in the process of doing.

The second well formedness condition for outcomes is that the outcome must be testable and demonstrable in sensory experience. There must be an evidence procedure. Unless this is the case there is no way to measure progress toward the achievement of the outcome. With an evidence procedure for the outcome it is possible to determine if one is making progress toward achieving the outcome or not.

Third, the desired state must be sensory specific. One must be able to say what one would look like, sound like and feel like if one achieved the outcome.

Fourth, the outcome or desired state must be initiated and maintained by the subject. This places the locus of control and responsibility for achieving the outcome with the subject and not with someone else. It is not a well-formed outcome that someone else does something or change in some way. All one can do is have as an outcome that one change them self or their behavior so as to bring about a change in someone else.

Fifth, the outcome must be appropriately and explicitly contextualized. This means that outcomes must not be stated as universals. One must never want something either "all the time" or "never," but only under specific circumstances. In Neuro-Linguistic Programming one always strives to create more choice and never to take away choice or reduce the number of possible responses. The goal instead is to make the choices or responses available in the appropriate circumstances.

Sixth, the desired outcome should preserve any positive product of the present state. If this is not the case then symptom substitution may occur.

Seventh and finally, the outcome or desired state must be ecologically sound. One should consider the consequences for oneself and for other people and not pursue outcomes that lead to harm to oneself or other people.

Once one knows their outcome they must next have sufficient sensory acuity to know if they are moving toward it or not. Neuro-Linguistic Programming teaches the ability to calibrate or "read" people. This involves the ability to interpret changes in muscle tonus, skin color, skin shininess, lower lip size and breathing rate and location. The Neuro-Linguistic Programming practitioner uses these and other indications to determine what effect they are having on other people. This information serves as feedback as to whether the other person is in the desired state. An important and often overlooked point is to know to stop when the other person is in the state that one desires.

The third and final operational principle of Neuro-Linguistic Programming is to vary ones behavior until one gets the response that they want. If what one is doing is not working, then they should do something else. One should use their sensory acuity to determine if what they are doing is leading them in the desired direction or not. If what one is doing is leading toward one's outcome, then one should continue. If, on the other hand, what one is doing is leading away from their goals, then they should do something else.

There are certain presuppositions underlying Neuro-Linguistic Programming. These are things that are presupposed in effective communication.

Some of the presuppositions of Neuro-Linguistic Programming are as follows.

1. The meaning of a communication is the response one gets. In communication it is usually assumed that one is transferring information to another person. One has information which "means" something to them and intends that the other person understand what it is that they intend to communicate. Frequently one assumes that if they "say what they mean to say," then their responsibility for the communication is over. Effective communicators realize that their responsibility does not end when they finish talking. They realize that for practical purposes what they communicate is what the other person thinks they say and not what they intend to say. Often the two are quite different. In communication it is what the other person thinks that one says and how they respond to it that is important. This requires that one pay attention to the response that they are getting. If this is not the response that they want, then they need to vary their own communication until they get the desired response.

    There are several major sources of "misunderstanding" in communication. The first arises from the fact that each person has a different life experience associated with each word in the language. Frequently what one person means by a word (their complex equivalence for that word) may be something quite different than what another person means by it. The second arises from the failure to realize that one's tone of voice and facial expression also communicates information, and that the other person may respond to this as much as they do to what is said. As the old saying goes "actions speak louder than words," and in Neuro-Linguistic Programming one is trained that when the two are in conflict that one should pay more attention to the actions.

2. The map is not the territory. Good communicators realize that the representations, which they use to organize their experience of the world, are not the world. It is important to distinguish between several semantic levels. First is the world. Second is one's experience of the world. This experience is one's "map" or "model" of the world and is different for each person. Each person creates a unique model of the world and thus lives in a somewhat different reality than anyone else. One does not operate directly on the world but on one's experience of it. This experience may or may not be correct. To the extent that one's experience has a similar structure with the world it is correct and this accounts for its usefulness. One's experience or map or model or representation of the world determines how one will perceive the world and what choices one will see as available to them. Many Neuro-Linguistic Programming techniques involve changing one's representation of the world to make it more useful and to bring it more in line with the way the world actually is.

3. Language is a secondary representation of experience. Language is a third semantic level. First is the stimulus coming from the world, second is one's representation or experience of that stimulus, and third is one's description of that experience via language. Language is not experience but a representation of experience. Words are merely arbitrary tokens used to represent things one sees, hears or feels. People who speak other languages use different words to represent the same things that English speakers see, hear or feel. Also since each person has a unique set of things that they have seen, heard and felt in their lives, their words have different meanings to each of them. To the degree that these meanings are similar people are able to communicate effectively. When they are too dissimilar then problems in communication begin to arise.

4. Mind and body are parts of the same cybernetic system and effect each other. There is no separate "mind" and no separate body." Both words refer to aspects of the same "whole" or "gestalt". They act as one and they influence each other is such a way that there is no separation. Anything that happens in one part of a cybernetic system like a human being will effect all other parts of the system. This means that one thinks effects how they feel and that the condition of their physical body effects how they think. A person's perceptual input, internal thought process, emotional process, physiological response and behavioral output

all occur both simultaneously and through time. In practical terms this means that one can change how they think by either directly changing how they think or by changing their physiology or their feelings. Likewise one can change their physiology or their emotions by changing how they think. One important corollary of this, which will be explored later, is the importance of visualization and mental rehearsal in improving the conduct of any activity.

5. The law of requisite variety, which states that in any cybernetic system including human beings, that element or person in the system with the widest range of behaviors or variability or choice will control the system. Control in human systems refers to the ability to influence the quality of one's own and other people's experience in the moment and through time. The person with the greatest flexibility of behavior, i.e. number of ways of interacting, will control that system. Choice is always preferable to no choice and more choice is always preferable to less choice. This also relates to the third general principle of Neuro-Linguistic Programming, which was mentioned previously. This principle says to vary one's behavior until one gets their desired outcome. If what one is doing is not working, then one should vary their behavior and do something else. Anything else is better than what does not work. One should keep varying their behavior until they find something that does work.

6. Behavior is geared toward adaptation. One's behavior is determined by the context in which that behavior originates. One's reality is defined by one's perceptions of the world. The behavior that one exhibits is appropriate to their reality. All of one's behavior whether good or bad is an adaptation. Everything is useful in some context. All behavior is, or was, adaptive given the context in which it was learned. In another context it may not be appropriate. People need to realize this and change their behavior when it is appropriate to do so.

7. Present behavior represents the very best choice available to that person. Under every behavior is a positive intent. Given who a person is and based on all of their life experiences and the choices that they are aware of they make the best choice available to them at any moment in time. If given a better choice they will take it. To change someone's inappropriate behavior it is necessary to give them other choices. Once this is done they will behave accordingly. Neuro-Linguistic Programming has techniques for providing these additional choices. Also, in Neuro-Linguistic Programming one never takes away choices. One only provides more choices and explicitly contextualizes the existing choices.

8. Behavior is to be evaluated and appreciated or changed as appropriate in the context presented. One needs to evaluate their behavior in terms of what they are capable of becoming. One needs to strive to be all they are capable of being.

9. People have all the resources that they need to make the changes they want. The task is to locate or access those resources and to make them available in the appropriate context. Neuro-Linguistic Programming provides techniques to accomplish this task. What this means is that in practice people do not need to spend time trying to gain insight into their problems or in developing resources to deal with their problems. They already have all the resources that they need to deal with their problems. All that is necessary is to access these resources and transfer them to the current time frame.

10. Possible in the world and possible for me is only a matter of how. If any other human being is capable of performing some behavior then it is possible for me to also perform it. The process of determining "how" they do it is called "modeling" and is the process by which Neuro-Linguistic Programming came into being in the first place.

11. The highest quality information about other people is behavioral. Listen to what people say but pay more attention to what they do. If there is any contradiction between the two, then rely on the behavior. Look for behavioral evidence of change and don't just rely on people's words.

12. It is useful to make a distinction between behavior and self. In other words just because one "screws up" on something it does not mean that they are a "screw up." Behavior is what a person says, does or feels at any moment in time. This is not one's self however. A person's self is greater than their behaviors.

13. There is no such thing as failure, but there is only feedback. It is more valuable to view one's experience in terms of a learning frame than in terms of a failure frame. If a person does not succeed in something, this does not mean that they have failed. It just means that they have discovered one way not to do that particular thing. One then needs to vary their behavior until they find a way to succeed.

Neuro-Linguistic Programming consists of a set of powerful techniques to effect change. Some of these techniques are:

- Anchoring - The process of associating an internal response with some external trigger so that the response may be quickly, and sometimes covertly, reaccessed by activating the trigger. Anchors may be naturally occurring or set up deliberately. They may be established in all representational systems and serve to control both positive and negative internal states.

- Stacking Anchors - The process of associating a series of events with one specific anchor so as to strengthen the intensity of the subjects response to a specific anchor.

- Collapsing Anchors - A process of neutralizing negative states by triggering two incompatible responses at the same time.

- Chaining Anchors - A process by which a series of anchors are created to lead from an undesired state through a series of intermediary states to a desired state.

- Associated State - Being fully present in a state so as to experience the kinesthetics of it. For past states this involves being in the experience looking from the perspective of one's own eyes.

- Dissociated State - Recreating a past experience from the perspective of an onlooker or observer. This means one does not reexperience the original emotion but instead experiences the emotion of an observer.

- Double Kinesthetic Dissociation - The process of watching oneself watching a movie of a past experience. This is used in cases of phobias and extreme psychic trauma.

- Calibration - The process of reading a subject's internal responses in an ongoing interaction by pairing them with observable behavioral cues.

- Change History - A process of guiding a subject to reexperience a series of past situations by the use of selective anchoring. Resource states are developed for each situation and installed in the subject's repertoire in order to change the significance of the past events.

- Rapport - The process of establishing a relationship with a subject that is characterized by harmony, understanding, and mutual confidence. Reducing the perceived difference at the unconscious level to a minimum does this.

- Reframing - A process used to separate a problematic behavior from the positive intention of the internal part responsible for that behavior. New choices of behavior are established which maintain the positive intent but don't, have the problematic by-products.

- Strategy - A set of explicit mental and behavioral steps used to achieve a specific outcome. This is represented by a specific sequence of representational systems used to carry out the specific steps.

- Submodalities - The sub classification of external experience. The decomposing of a picture, sound, or feeling into its components.

CHAPTER 10

ACCELERATED LEARNING

Educational methods have not changed much in the last several thousand years. Universities still rely on lectures, laboratories, papers and exams. Secondary education follows much the same pattern with an emphasis on rote and repetition. In the area of training design the situation is also similar. There has been a recent emphasis, in some circles, on experiential learning, but this is best seen as a reaction against more traditional approaches to instruction. Also the last decade has seen the advent of computer-aided instruction, and interactive video is rapidly establishing a niche in the training area.

In general, however, technology is merely being thrown at education, and the computer is merely being used as a substitute for the instructor. Its functions are to transfer information and to give feedback on knowledge and procedures. Its advantages are that learning can be self paced and available where ever there is a student and a computer. The computer is a valuable learning tool and can lead to some increase in efficiency, but so far its uses in education have simply reflected an extension of traditional methods. There has probably been less progress in educational methods in the last 2000 years than in any other area of human endeavor.

Lack of advancement in the field of education might be tolerable if education was highly successful in achieving its goal. The goal of education/training is, or should be, the transmission of excellence from one generation to another where excellence is defined as superiority in some quality, skill, behavior or attitude. The evidence that education/training is not successful is the lack of excellence in the world. In one area after another we are forced to look to the past, and sometimes the far past, for embodiments of excellence.

Excellence should be the only standard, but unfortunately mediocrity is the order of the day. Excellence may be scarce, but it is a commodity we need today more than ever. We live in an age of rapid technological breakthroughs where not only education but reeducation is the order of the day. It has been estimated that in the next several decades people in technical fields will have to be completely retrained three or more times during their working lifetime. In an age of ever increasing training needs in an effort to keep pace with rapidly developing technology we can no longer afford the luxury of slow, inefficient training methods.

One reason that today's educational system has failed to consistently transfer excellence is its preoccupation with content and its virtual disregard of process. The emphasis is on what to learn, and the more basic questions of "how to learn" and "why learn at all" are generally ignored.

There are three fundamental educational variables that create the critical difference in performance between incompetence and mastery. Unfortunately they are virtually totally ignored in modern educational practice. They are: 1) the strategy or internal mental approach used by the student, 2) the beliefs, values and motivation of the student, and 3) the physiology of the student.

Schools are so busy trying to cram as much information as possible into a student's mind in the shortest possible time that they ignore the manifest inefficiency of the process. This is a form of dialectical thinking based on the fallacious assumption that sufficient effort will overcome all obstacles. It is not what is taught in schools that is the problem but the way it is taught. The evidence is that if students are first taught how to learn, are motivated and encouraged to do so and are taught using "correct" methods, then they will master all the content that the educational system wants them to and will in addition master much more. Further, they will keep on learning on their own.

When a child is born it has an innate curiosity to learn. Unfortunately this curiosity is quickly extinguished by teachers and parents who would not take the time to answer what ever questions the child is asking or who tell the child that what the child is interested in is not important and that the child should focus only on what they want him to learn. The current system of "diseducation" may actually cripple a child for life rather than assist them in learning. If students are not taught how to learn and motivated to do so, they will always be limited in what they can know. Advanced Behavioral Modeling Technology focuses on how to learn effectively and efficiently and takes the three previously mentioned critical variables into account.

Fortunately, there has been some major breakthrough in education in the last two decades. In fact more progress has probably been made in education in the last 20 years than in the entire previous history of mankind. Unfortunately, these breakthroughs are not widely understood and have had little, if any, effect on our contemporary educational system. These breakthroughs can produce a quantum leap in the human ability to transfer skill and knowledge rapidly and effectively. Advanced Behavioral Modeling is both a contributor to and a recipient of the results of these breakthroughs.

Advanced Behavioral Modeling is in the highly enviable position of being able to model all that is of positive value in these breakthroughs. Advanced Behavioral Modeling has taken what it has modeled about excellent training and learning and synthesized this into its own knowledge/skill transfer process. This enables Advanced Behavioral Modeling to go beyond all the accelerated learning technologies available in its ability to capture and transfer excellence. At Advanced Behavioral Modeling Inc. excellence truly is the only standard.

Some of the breakthroughs in our understanding of learning have already been discussed in previous sections when we talked about Piaget's and Joseph Chilton Pierce's learning stages and when we discussed learning styles. Here we will focus on recent research on suggestology and accelerated learning, memory, understanding, reading and comprehension.

The father of accelerated learning and creator of the science of suggestology and suggestopedia is the Bulgarian doctor and psychiatrist Georgi Lozanov. He has been studying the link between perception and learning for the last 25 years. His followers have applied his methods with varying degrees of success. Part of the problem has been that Lozanov has primarily provided a set of techniques without any guidance as to how or why they work. What is lacking is the "why" that glues the system together.

Lozanov is the first to admit that his system has roots in mysticism in general and raja yoga in particular. When pushed to explain how and why various techniques work Lozanov and many of his senior students resort to metaphors and transcendental language. This is well and good but has had the unfortunate consequence of creating a mystique, which has clouded transmission of the technology. People have applied some of Lozanov's methods unsuccessfully, and the debate rages as to what, if any, of the critical elements have been left out. Some have even suggested that the Communist government of Bulgaria is preventing Lozanov from revealing certain critical elements of his method.

Because of its unique perspective gained from synthesizing elements from a variety of disciplines, Advanced Behavioral Modeling is able to provide a framework in which it is evident both how and why Lozanov's methods achieve the results that they do. Further, and of equal significance Advanced Behavioral Modeling is able to provide alternative, and in many cases more effective, methods to the ones that Lozanov has pioneered. The result is an advance over Lozanov in both speed and efficiency.

What follows is a list of some of the insights and principles, which have been incorporated into Advanced Behavioral Modeling training. These have their origin in the latest developments in suggestology, neuro-linguistics, Ericksonian hypnosis and contemporary research into short and long term memory, recognition, recall, learning, comprehension and understanding. The way that Advanced Behavioral Modeling synthesizes these insights and principles into its training is of course proprietary.

The latest research on short and long-term memory indicates variations in retention dependent on the modality of the encoding. For information to be retained it must be rehearsed and transferred from short term to long-term memory. Short-term visual memory is refreshed about every tenth of a second. Short-term auditory memory holds the content of what can be subvocalized in about 15 seconds. Transfer from perception to long term memory involves five processes. These are registration, encoding, rehearsal, retention and recall. For information to be retained it must be rehearsed. There are a variety of factors that affect a person's ability to remember a specific experience.

Some of the most important are:

rehearsal	organization
strong encodings	multiple sensory
interference	principles
primacy	context
recency	interruptions
outstanding elements	breaks
specificity	sleep
physical environment	physiology
involvement	commitment
interest	review
reinforcement	anchors

Certain guidance as to how to aid memory results from taking the above factors into account. This guidance includes the following suggestions for improving the memory of specific information.

- Repetition is useless without involvement
- Chunk the information appropriately
- Provide meaning and context
- Motivate first
- Create supportive self-image
- Encode in all representation systems
- Focused, relaxed attention for encoding
- Use interactive internal visualization
- Associate to the experience
- Use mnemonics
- Use memory pegs
- Use accessing cues
- Use submodalities

The main factors effecting learning in the educational/training context are: the classroom environment, the student, the teacher/trainer, the course material and the course design. Critical factors affecting the learning environment include: the size, shape and arrangement of the learning space, the lighting, the colors, the climate, the temperature, the humidity, the air quality, odors, peripheral stimuli, noise, acoustics, music, video and auditory equipment and the functionality and comfort of the furnishings.

Students should be motivated, awake, alert, relaxed, joyful, curious, enthusiastic and in a resourceful physiology. They should be involved and motivated and believe that learning is easy and fun and that it can occur rapidly and effortlessly. Students should be trained in learning skills. This includes knowledge of encoding and rehearsal strategies as well as training in how to construct mental maps. They should also be taught how to focus and direct awareness and attention, how to deal with interruptions and distractions and how to develop a supportive internal dialogue.

Teacher/trainers should be totally positive in their approach and should be congruent embodiments of what they teach. They should be enthusiastic, entertaining, competent, sensitive, warm and caring. Their voice, expressions and gestures must be coordinated with the content they are teaching. They should use all of the representational systems in their instruction. It is imperative that they continually embed positive suggestions into their presentation to the effect that learning is easy, fun and can occur rapidly and effortlessly. A teacher/trainer should be able to interact with all types of students, provide appropriate feedback and make timely and appropriate interventions to support each student's learning process.

The teacher/trainer must be able to detect and collapse negative anchors around learning and to install positive supportive anchors in their place. They must be masters of the art of framing and reframing. Teachers must be aware of both the perceptible and imperceptible planes of communication and be able to communicate equally effectively on both the conscious and unconscious levels. Finally, teachers/trainers must continually calibrate the students that they are instructing and be able to vary their behavior in an appropriate and timely fashion so as to achieve their educational goals. Training material must be professional in appearance, chunked at the appropriate level of difficulty and sequenced in the proper order. It must be integrated into the program in such a way that it contributes to the accomplishment of the overall education objectives.

Training design is the string that connects all of the other elements together. Critical factors that must be considered in training design are chunking, sequencing, conscious and unconscious elements, success cycles, future pacing, beliefs and values, positive suggestions, learning styles, learning strategies, balance between general and specific and concrete and abstract elements, use of breaks and interruptions, use of recency, primacy and outstanding element effects, review and reinforcement schedules, active passive balance, fun and play, feedback, response potential, use of music, use of training materials and use of peripheral stimuli. Also it is important in training design to teach to all of the different learning styles and to answer the questions "what", "why", "how", and "what if."

It is also important to incorporate the major elements of influence into the training design. These are reciprocation, consistency and commitment, social proof, likeability, authority and scarcity.

In addition to the skillful orchestration of the afore mentioned elements Advanced Behavioral Modeling incorporates certain general principles into its training.

Some of these principles and guidelines are:

Untapped Potential:

The brain has enormous potential and reserve capacities. The more it is used the more associations it makes and the easier it is for it to remember and learn. The brain learns rapidly and learns best in a sensory rich, complex and stimulating environment. Further, the two hemispheres of the brain process information in different ways. Fully involving both halves of the brain serves to increase brainpower. Also the conscious and unconscious parts of the mind learn in different ways and respond to different forms of communication. In any area a sign of

mastery is usually the development of "unconscious competence." To achieve this level of performance the unconscious mind must be trained either directly or indirectly. The unconscious mind does not compute negation, so one must be careful in training to avoid the use of negative suggestions and negative embedded commands.

Stress and Relaxation:

The greatest enemies of learning are stress and fear. They take away much needed energy and distract attention away from the task at hand. A relaxed and stress free environment and training approach is critical to create ideal conditions for receptivity. Every effort must be made to eliminate all anxiety and fear from the classroom. Testing is a particularly powerful source of anxiety, and it is necessary to reframe the testing situation to remove the anxiety.

Memory:

For information to be remembered it must be transferred from short term to long term memory through immediate rehearsal. For optimum retention an appropriate schedule of reinforcement is necessary. One suggested schedule for reinforcement, which has been shown to lead to an 88% recall rate after a year, is immediate rehearsal followed by reviews at intervals of a few minutes, an hour, after a night's sleep, a week, a month and six months.

Encoding:

Information is best encoded by forming strong, powerful and vivid associations. The most easily remembered associations are bizarre and involve interaction. Information is best encoded in all of the primary representational systems simultaneously, i.e. visual, auditory, and kinesthetic. Visual memory is essentially perfect, and the ability to create strong, vivid and interactive visual images is a key to the development of a powerful memory. Rhythm, rhyme and the creation of mnemonic devices are the key to auditory recall. Movement and sensation are the key to kinesthetic memory. The ideal is to create all of these elements simultaneously.

Practice:

It is not necessarily the case that practice makes perfect. There is a correlation between the time spent learning and the amount learned, but this is only the case if learning is actually occurring. Mindless repetition not only does not contribute to learning but also wastes valuable time and develops bad habits. The development of proper study skills is a far more important factor in learning than the amount of time spent learning.

Distributed Practice:

Distributed practice is preferable to continuous practice. The mind fatigues rapidly and needs frequent short breaks to recharge itself and to allow time for assimilation to occur. Also short breaks utilize the primacy, recency and Zeigarnick effects. The primary effect is that one tends to remember the first things one learns in a lesson. The recency effect is that one tends to remember the last thing they heard and hence the end of the lesson. The corollary is that one tends to remember the middle of the lesson less than the beginning or the end. To overcome this the teacher/trainer should incorporate something outstanding in the middle of the lesson. This tendency to remember the outstanding element in a lesson is called the Von Restorf effect. The Zeigarnick effect is that one tends to remember an interrupted task better than a completed task. Breaks at appropriate points help to build response potential.

Thus it has been found that one learns better when the lesson is distributed over time than when it is continuous.

Premature Closure:

One of the greatest enemies of learning is a closed mind. Premature closure occurs when the mind thinks that it understands something and shuts down or tunes out. In this state the mind is not open to new information or to further refinements of its models. It is important to make every effort to keep the mind open and to prevent it from jumping to premature conclusions. This can be done by the skillful use of surprise, by interruptions and by stacking open nested loops.

Organization:

The mind tries to understand by imposing organization on new material. This is what "making sense" is all about. The mind tries to understand by relating what it is learning to what it already knows. The richer the field of associations the mind has to draw on the more connections it will be able to make and the more it will remember. When the mind is presented with totally new material it will first try to organize that material in terms of what it already knows. The teacher/trainer needs to understand this, and to make learning more efficient they need to provide the required structure. The teacher needs to assist the student in constructing a mental map of the domain of enquiry. This includes an overview of the objects in the domain and of their principle interrelationships. All relevant categories and distinctions need to be made clear and all terms need to be defined in terms of things that the students already understand. Clear and distinct labels are important and are essential to a clear understanding. In short, meaning is vital to memory and understanding, and the richer the meaning maps or networks of associations that the student is able to construct the easier and quicker the learning task will be.

Analysis and Synthesis:

The teacher/trainer first needs to provide an overview or big picture and to relate everything that they teach to that overview. Once the "big chunks" are in place the teacher can begin to chunk down. When asked questions most teachers and trainers have a tendency to chunk down to give more details. This is often inappropriate, because the situation calls for them to chunk up instead. The question "why?" can have two answers. One is to chunk down to explain in more details the mechanisms by which something occurs. The other is to chunk up to explain what part the item under discussion plays in the larger whole of which it is a part. A teacher/trainer needs to be aware that a student needs to be able to chunk both up and down. These are different skills. Chunking down is the basis of analysis, and chunking up is necessary to do synthesis. A good teacher/trainer needs to be able to do both and needs to be able to recognize which response is appropriate to answer a student's question.

Concrete and Abstract:

It is important not to confuse the concrete and the abstract with the overview and details. The concrete has to do with specific tangible objects. These objects are examples however of more general categories. The abstract is intangible, but is an abstraction from something that is tangible. In teaching it is helpful to start with the concrete and then to generalize to the abstract. First provide a context and specific examples. Then discuss the abstract principles which the examples are examples of. General principles in the end are easier to remember than a list of examples, but examples are helpful initially to understand the general principles. It is better to learn by examples than by rote, but the examples should be fit, when appropriate, into general laws or rules or generalizations and these further connected into theories.

Music:

Certain types of music when played at the appropriate volume have been found to aid learning, and other types of music have been found to be detrimental to learning. Baroque music appears to assist learning in four ways. It promotes a state of relaxed alpha awareness and leads to dual hemispheric synchronization. Further, it creates an auditory and rhythmic anchor for the material being learned and through the creation of mood provides an emotional link to the material. Baroque music has a steady rhythm of about 60 beats per minute, which corresponds with the average individuals resting heart rate. Rock music has the opposite effect of Baroque music. It produces an agitated, aroused state and hemispheric desynchronization, which results in a decreased ability to focus and in inefficient learning.

Peripheral Stimuli:

Estimates as to the proportion of a communication that is non-verbal run as high as 90%. This is the same percentage as to the estimate of the proportion of a communication that takes place at the unconscious level. The greater the number of subconscious stimuli the faster and more effective the learning. The mind learns rapidly and learns best in a rich, complex and multi sensory environment. This suggests that overload at the unconscious level is desirable. The teacher/trainer should saturate the training space with visual material that is always in the student's peripheral awareness. This should not be confused with conscious overload, which leads to feelings of inadequacy and confusion. These are never appropriate states for a student to remain in. Conscious overload is an indication that the material is chunked inappropriately and should be corrected accordingly.

Suggestion:

Suggestions can increase performance by unblocking the negative and installing the positive. Self-imposed limiting beliefs are the greatest impediment to rapid and efficient learning. Most of these beliefs are installed at an early age by well meaning but tragically misguided parents and educators. Children are told that they are stupid or that they are slow learners. These disenabling beliefs must be removed in order for the student to achieve their full potential. These beliefs operate at an unconscious level and cannot be removed by logic and reasoning. Instead they must be removed by indirect suggestions, positive embedded commands and other covert forms of hypnosis.

Sometimes these beliefs are so deeply ingrained that they must be removed by collapsing anchors or by a change personal history. It is often helpful to also provide a personally compelling reference experience in which the student finds that they can learn to do something easily and rapidly that they previously considered extremely difficult if not impossible.

It takes artistry and creativity to creativity on the part of the educator to produce such experiences. In addition to removing disenabling beliefs the teacher/trainer must be constantly installing and reinforcing a set of positive supporting beliefs. Beliefs that are particularly important in creating self esteem and a positive self image are that one in intelligent and that one can learn easily and rapidly and have fun doing so. Learning should be viewed as exciting and valuable. The importance of learning should be related to the students existing values and goals in life.

Involvement:

Involvement is critical to learning. Parrot like repetition without involvement and conscious attention, as previously indicated, does not work and is a waste of valuable learning time. A relaxed involvement produced through the skillful integration of exciting, entertaining, interesting and fun activities is essential for rapid learning to occur. Using imperatives and embedded commands are an excellent way to involve the learner in committed activity. Also it is necessary

to connect the learning to the students' values and to provide appropriate rewards and sanctions. Motivation is a key component of learning. Every teacher/trainer wants to teach excited, alert, self-motivated students. Such students do not exist. They must be created. The educator must be aware of the students' values and relate all learning to those values. No one learns well without a "why?" This is a question each teacher/trainer needs to address.

People move toward things they want to have or achieve and away from things they want to avoid. It is up to the educator to find appropriate carrots for each student and where necessary to also be able to administer proper sanctions.

Active Passive Balance:

Learning occurs best when there is a rhythm of active participation and passive absorption. The teacher/trainer must create the appropriate mixture of both. Ideally there is a period of active involvement followed by a period of passive absorption. After a good nights sleep an active period of adaptation and activation is in order.

Sleep:

Sleep aids learning in several ways. First it helps to restore vital energy. Second and more important it serves to integrate material that the mind has been exposed to during the day. A final review just before sleep is very helpful to learning. It should be noted that whereas some assimilation occurs during sleep, there is no evidence that so called sleep-learning has any value. It in fact may be counter productive by interfering with the body's ability to rest.

Learning Styles:

It is important in teaching to teach to all four learning styles. It is best to start with a short overview of "what" followed by a discussion of "why" to provide relevancy and motivation. This is followed by a detailed presentation of "what" and a period of finding out "how" by actually doing. The final stage involves asking "what if" or "what can I make of this." This cycle may be repeated again at a deeper level or one may go on to other material. Teaching to all four styles gives each student a chance to learn in their dominant mode and to develop their skills further in the other three modes.

Representational Systems:

It is important to teach in all four major modalities. Thus the teacher/trainer should ensure that everything looks right, sounds right, feels right and makes sense. The teacher should use a mixture of visual, auditory, kinesthetic and auditory digital predicates and should plan the lesson to include visual aids and movement in addition to talking. The teacher should also assist each student in discovering the constellation of submodalities that constitutes their feeling of "understanding." The teacher should also assist the student in learning how to transfer information into that format.

Physiology:

Proper physiology is something that educators give lip service to but do not know how to achieve. The most important element of physiology is breathing. Students should be led through appropriate breathing exercises to increase relaxation and alertness. Students should be taught correct posture and how to use accessing cues to encode and retrieve information. Also periods of activity should be provided to tone the body and utilize excess energy. The mind and the body form a cybernetic system. It is impossible to train the mind properly unless the body is cared for properly.

Positive Language:

Students respond most favorably to positive language and a positive attitude on the part of the teacher/trainer. As previously mentioned, negative language negative language embeds limited beliefs in students. Positive language helps create both positive beliefs and a positive attitude in students. Advanced Behavioral Modeling trainers use a personal style that is positive, congruent and integrated with the purpose of the learning situation. The result is continuous positive reinforcement of learning.

Positive Teaching Techniques:

Positive teaching/training techniques must accompany the positive language. A successful educator embodies and serves as a vehicle for what he communicates. Since such a high proportion of communication is non verbal it is critical that the teacher/trainer be positive and have a positive personality. Just speaking positively will not provide the congruency necessary to impact the students. Advanced Behavioral Modeling techniques enable trainers to develop and maintain this necessary congruency.

Attention:

There is no substitute for relaxed, focused awareness. A typical human being has seven plus or minus two chunks of attention to direct to the learning process. This number decreases with fatigue and stress. It can be increased slightly with certain special training. If a person's conscious attention is overloaded in the learning space, they will fall behind and become confused. If, on the other hand, a large part of their attention is not occupied they will become bored and restless.

Chunking:

If the limits of attention are exceeded the result is overload, and training time is lengthened accordingly. A key to training effectiveness and the prevention of overload and boredom is chunking. Chunking is the decomposition of a learning task into learnable components or chunks. Rather than trying to learn a complex activity all at once it is far more efficient to master each component one at a time.

Sequencing:

The other key to training design is correct sequencing. Once components are learned they need to be sequenced together in the correct order. Advanced Behavioral Modeling training sequence the chunks in the order that an expert performs the activity.

Strategies:

Human beings are not random in their behavior. They follow set patterns called strategies. Experts perform better, because they have better strategies. The key to performance acquisition is to have the trainee perform the mental and physical activity in the same manner and sequence as the expert. Advanced Behavioral Modeling elicits the strategies of experts and then installs them in student through the use of chunking, sequencing and rehearsal.

Beliefs and Values:

A major difference that separates experts from mediocre performers lies in certain enabling beliefs and values that the experts hold. Advanced Behavioral Modeling elicits those beliefs and values that provide the experts motivation or the "why" behind expert performance. Advanced Behavioral Modeling also elicits the disenabling beliefs of students. Advanced Behavioral Modeling change techniques are utilized during training to remove limiting or

disenabling beliefs and to install enabling beliefs. The result is students who share the experts motivation and who are able to transcend their normal self-limiting beliefs.

Feedback:

Feedback is one of the most critical elements in learning. It is what tells a person how their performance compares with expert performance so that they can make the necessary corrections to bring their performance in line with model or correct performance. Without feedback regarding performance one has no objective standard by which to measure improvement or progress. Feedback should be provided in more than one representational system.

Immediate Feedback:

There are two kinds of feedback. Delayed feedback is the kind one usually gets in our contemporary educational system. This comes in the form of test results, critiques and grades. This kind of feedback provides the conscious mind with a barometer as to how it is doing. The other kind of feedback is immediate feedback. This kind of feedback can be used to immediately change performance to bring it in line with model performance. More important still, this feedback can be used both the conscious and unconscious minds. One mark of mastery in any area is the development of unconscious competence.

The only kind of feedback that the unconscious mind can utilize constructively is unconscious feedback. Biofeedback research in the last 20 years has demonstrated that a human being, if provided with an appropriate source of immediate feedback, can learn to control every aspect of the so-called autonomic nervous system. With appropriate feedback a person can control skin temperature, blood pressure, pulse rate and glandular secretions. The fastest way to produce unconscious competence is through the use of immediate feedback. This may be teacher intensive and require the creation of special feedback devices, but it is the key to rapid and effective skill acquisition.

Design for Success:

It is important in learning to build on a ladder of previous successes. It is important to chunk training tasks at a level that it is impossible to fail. This creates a success cycle and helps prevent students from practicing errors. Each time one succeeds the next task is made progressively more difficult but still at a level where success will occur.

Correction Modes:

Each time a student fails they must direct valuable attention to correcting performance. A student only has a limited amount of conscious attention. It is best to be able to direct all seven plus or minus two chunks at improving performance rather than having to direct some of those chunks at correcting what one did wrong. This is one reason why the success cycle is so important.

Practice:

There is an old adage that "practice makes perfect." Unfortunately this is not necessarily the case. The adage should be changed to read "practicing or rehearsing correct performance makes perfect." Practicing error or incorrect performance not only does not make one perfect but has the unfortunate consequence of reinforcing negative habits which will have to be overcome before correct performance can occur. Unless one has a source of feedback as to correct performance and is practicing correct performance, they would be better off not to practice at all. The best guidance is "unless one is sure that they are not practicing error they

should not practice." Also when one becomes tired or fatigued and the error rate increases one should stop practice until they have recharged.

Simulators:

Simulators can be valuable tools in learning. Unfortunately simulators are frequently misused and the wrong type of simulators developed. Two keys to training, as mentioned previously, are chunking and sequencing. Training should be broken down into appropriate chunks with partial simulators used to master each step. The steps need to be sequenced following the ideal strategy. What is needed is thus a series of partial simulators used in the appropriate order.

Total simulators, which seem to be the order of the day, are usually poor training devices. They usually produce overload as the student tries to master every thing at once. Total simulators should only be used, if at all, as final integration devices. Also, as mentioned, the simulators need to provide a source of immediate feedback, and this feedback should be provided in all representational systems simultaneously. In other words simulators should literally have bells and whistles as well as lights and vibrators.

Visual Rehearsal:

The human nervous system has difficulty telling the difference between a vivid internal constructed image and the image of the memory of an actual experience. In fact the constructed image may be stored as a memory, which makes differentiation even more difficult. In mastering a skill, one will learn much more rapidly if one visualizes oneself performing the skill correctly before one actually does it. It is best to first play a movie in which one watches oneself performing correctly, and then to step into the picture and see and feel what one would see and feel if actually performing correctly. These feelings should then be anchored to some object in the natural environment where the skill is required. Advanced Behavioral Modeling utilizes visual rehearsal as an essential feature in the design of its training.

Internal Dialogue:

One of the greatest impediments to model performance is an internal dialogue that either interrupts concentration continuously or even worse makes negative suggestions regarding difficulty and failure. There are only four things that one can do with an internal dialogue. The first is to stop it, but this is impossible for most people without years of mystic training. A second option is to jam it with some nonsense sound. This is what is done when one repeats a mantra in meditation. The third option is to go meta and simply observe or witness the internal dialogue. This also takes years of mystic training. This leaves the fourth option which is to substitute a positive internal dialogue. Such a dialogue should include positive suggestions and a list of the sequence of steps in correct performance.

This has the added advantage of immediately reorienting one to the correct sequence in the event of attention lapses. Advanced Behavioral Modeling has special techniques to help create and install a positive and supportive internal dialogue.

This is a list of some of the training principles incorporated into Advanced Behavioral Modeling training. How they are combined and implemented is proprietary to Advanced Behavioral Modeling Inc.

CHAPTER 11

APPLICATIONS OF ADVANCED BEHAVIORAL MODELING™

CAPTURING EXPERTISE

THE CHALLENGE:

Organizations invest large amounts of money in training and developing employees. Whenever an employee retires or leaves an organization for any reason their expertise is lost. The experience that employees gain on the job and the "practical" solutions that they find to solve problems are an invaluable resource to the organization. Many of these people are considered experts or geniuses. What they know and are able to do is often considered unique to them. They succeed where others don't. They and other people know that they are successful, but neither they nor anyone else knows why they are successful. When another employee is asked why they can't perform like the expert, they usually say, "he knows more than me." It is true that the expert or genius has unique information available to them, but it is what they do with this information that sets them apart. It is the way that they think and the way that they solve problems that is the source of their success. Up to now, it has been assumed that this knowledge is nontransferable, and that it is lost when the employee leaves. The challenge is to find a way to transfer this knowledge so that it stays in the organization. The benefits from this transfer are obvious and enormous.

THE SOLUTION:

Recent advances in a variety of disciplines from neurolinguistics and accelerated learning theory to artificial intelligence and expert systems now make it possible for the first time to "capture expertise" and transfer it to suitable recipients. This means that it is now possible to literally "clone" employees. Expertise in an organization no longer must be lost when an employee leaves. In a relatively short time, it is possible to extract from them their decision-making processes and the mental software that they use to find practical solutions. It is possible to give a far better account of how they operate than they are able to give themselves. This is because most of what experts do is outside of their conscious awareness but may be elicited by a trained expert.

THE PROGRAM:

The process of capturing expertise requires the willing participation of the expert for several weeks. During this time they will be observed in the normal conduct of their activity and questioned extensively. They will also be asked to take a battery of psychological tests and to solve a set of sample problems. The "expertise" that will be captured from them includes their values, attitudes, internal motivation, decision-making processes, decision heuristics, and the filters by which they delete, distort, and generalize information. These processes can then be installed in another suitably selected employee. Suitably selected means another employee who has the same talent or innate ability but lacks the expertise. In the process of studying the expert, criteria will be determined to screen for a suitable replacement.

(See *REPLICATING EXCELLENCE* and *SELECTION AND PLACEMENT*)

REPLICATING EXCELLENCE

THE CHALLENGE:

Within any job category in any organization, there are some people who perform better than others. Nobody is sure why they do better than their colleagues who are equally intelligent and equally well-trained. But they do. Other employees will say that they are more motivated or work harder or perhaps even will admit that they are more talented. But no one knows for sure why they succeed better than others at the same set of tasks. They don't even know themselves. If asked to describe how they do what they do, they will not be able to give a very good description, or they will offer theories that don't make sense to others. The plain truth is that how they do what they do is outside of their conscious awareness.

What would happen if a Performance Excellence Technician could determine what these people do that other employees don't, or don't do that other employees do? In short, what if he could distill what makes them excellent? Further, what would happen if he could transfer this "how to" ability to other employees so that they also performed almost as well as the best employees? The result would be a quantum leap in organizational performance. Most organizations spend a great deal of time and resources developing their employees.

The result of this effort, and of any training, is usually a bell shaped curve of performance. On this curve there are a few really excellent performers and a few really poor performers with most people somewhere in the middle. What would happen to an organizations overall performance if the mean of the curve could be moved significantly to the right toward far higher performance? What would happen if most of the employees performed almost as well as the best performers? Once again, the result would be a quantum leap in organizational performance.

THE SOLUTION:

A synthesis of recent advancements in disciplines ranging from neurolinguistics and accelerated learning to artificial intelligence now make it possible to "capture" the expertise of one employee and "transfer" it to another. This means that it is now possible to literally "clone" the best employees in an organization. It also means that, using this technology, training programs may be developed that will produce a level of performance several standard deviations above existing programs.

Using this technology training times may be literally cut in half with equal or better performance or they may be kept the same time length resulting in a far higher level of performance. In addition, it is possible to reach levels of performance that cannot be reached at all by conventional training programs. When this is supplemented with the selection of employees who already have the requisite talent or innate ability, the result is even more rapid training, and an even higher level of performance.

(See *SELECTION AND PLACEMENT*)

THE PROGRAM:

The process of replicating excellence requires the identification of several high level performers. This is not a theoretical discipline. It starts with someone who can do something better than others. The more outstanding they are the better. Once the person (or preferably persons) of excellence are identified they must be willing to cooperate with the Performance Excellence Technician. It is his or her job to determine how they do what they do. This involves the technician observing them in actual performance, questioning them extensively, and administering to them a battery of tests. Once the technician extracts the necessary information

he designs a way to transfer this ability to other suitable candidates by using the latest developments in accelerated learning and knowledge transfer technology. The process of training design for increased performance also requires access to top-level performers. It also requires the participation of subject experts in the area of the training. The Performance Excellence Technician works with the subject experts or current trainers to modify existing programs, or design new ones that will incorporate the knowledge obtained from modeling the proven performer. The Performance Excellence Technician will also incorporate into these training programs the information previously extracted from high performance trainers and from accelerated learning technology.

SELECTION AND PLACEMENT

THE CHALLENGE:

When an organization selects a new employee it may invest thousands of dollars in training and developing them. In return it would like to get thirty to forty years of productive labor from that employee. In the real world some employees leave and a few are let go. Of those that remain, some do a really good job, most do a mediocre job, and some do a poor job. When they are hired most employees seem to be of about equal ability and intelligence. Unless advanced techniques are used, it is difficult in the initial hiring process to predict who will be successful. If this were not the case, then organizations would never hire people who are unproductive or dishonest.

What would happen to an organization's production if it were possible to screen out in advance those undesirable individuals? What would happen to an organization's productivity if it could hire only people who would be high performers? It is sometimes said that it is not selection but training that is the key to high performance organizations. It is said that any person of average competence, intelligence and ability for a specific job can be trained to do that job.

The questions that are not asked are how long will it take to train them and what will their level of performance be after training. In the real world, some people learn a job far more quickly than others and some people end up with higher levels of performance than others. This is because some people have more talent or innate ability to start with. When properly taught these people will learn more rapidly and achieve a higher level of performance than those who do not possess their aptitude.

(See *REPLICATING EXCELLENCE*),

They will also retain the ability longer. What would happen to the productivity of an organization if it was possible to identify in advance and hire only those individuals who would learn rapidly and become high performers? It is a simple fact that within an organization an employee may do one job really well and another poorly. Also an employee may work well for one supervisor and poorly doing the same work for a different supervisor. One employee may be highly motivated by a particular incentive and another employee may be indifferent to the same incentive. What would happen to the productivity of an organization if it were possible to assign employees only to jobs that they did well and to work only for supervisors under whom they worked well? What would happen to the productivity of an organization if each employee was offered incentives that were most effective in motivating them?

THE SOLUTION:

A complex synthesis of recent advancements in a variety of fields including neurolinguistics, value theory, human typological analysis, artificial intelligence and accelerated learning now makes it possible for the first time to precisely match an individual to a specific job. This means

that it is possible to hire people that will be highly motivated and high performers in any given job. They will have low absentee rates, will be honest, and will work many years for the organization. They may be trained rapidly and will achieve a high level of mastery in their appropriate field. Also it is possible to assign these individuals to supervisors for whom they will be highly productive. Lastly it is possible to tailor an incentive program to each individual that will be optimally effective in motivating that individual.

THE PROGRAM:

The selection and placement procedure that will produce these results is based on a sophisticated position analysis and a complex matrix for assessing an individual's abilities, values, and personality traits. This requires interviewing and profiling job candidates as well as employees who are already successful at the job to be filled. On the basis of the job and applicant profiles, it is possible to identify those candidates who possess the best specific job potential. It is also possible to identify and screen out those candidates who are predisposed to high absenteeism, dishonesty, and rapid turnover.

It is possible to match employees with supervisors with whom they are compatible or, preferably, to train supervisors to be compatible with each employee. The profile also provides the supervisor invaluable information on how to motivate, communicates with, direct, and supervises each individual employee. Also it provides the organization with the necessary information to develop a variety of incentive programs that will motivate each and every employee. The end result of this process is a quantum jump in the productivity of an organization.

MOTIVATING THE WORK FORCE

THE CHALLENGE:

Many organizations have experienced deterioration in the quality of the work force over the last several decades. This problem is particularly evident in service organizations where customers often perceive employees as unfriendly, discourteous, uncaring, unhelpful, unmotivated, and unprofessional. These personnel, in addition to alienating customers and fellow employees, often have high absentee and turnover rates and may even steal from the organization. These employees are also difficult to communicate with or manage.

Every organization wants employees who are friendly, helpful, enthusiastic, courteous, responsible, and professional. These employees seem to be in short supply, and it is very difficult to know who they will be in advance of hiring. In short, the challenge facing organizations today is in hiring quality employees, in developing incentive packages that will retain and motivate them, in training them to be effective salespeople, and in identifying unsatisfactory personnel and retraining them or dismissing them.

Further, the challenge is to train managers in how to motivate, communicate with, and direct these employees. What would happen to the productivity of an organization if it was possible to hire employees who are by nature friendly, motivated, courteous, caring, responsible, and professional, and screen out those that are not?

What would happen to the productivity of an organization if it were possible to retrain existing employees to be highly motivated, friendly, courteous, responsible, and professional as well as highly effective salespeople? What would happen to the productivity of an organization if it was possible to train management in how to motivate, communicate with, train, direct and supervise these employees so as to get the optimum productivity from each and every employee? And what would happen to the productivity of an organization if it were possible to develop a variety of incentive programs that would motivate each and every employee?

THE SOLUTION:

A complex synthesis of recent advances in a variety of fields from neurolinguistics, value theory, and human typological analysis to motivation research and accelerated learning now makes it possible for the first time to literally "clone" the best employees in an organization. This means that it is possible to train employees to be self-motivated as well as to train them in how to communicate and sell more effectively. It is possible to increase their productivity and ability to communicate and influence others to the level of your best current employees or beyond. It is also possible to motivate and instruct managers in how to create, enhance and perpetuate these new levels of employee productivity and motivation. The bottom line is a quantum leap in performance at the line level. It is also possible to identify quality candidates in the potential work pool, and to attract, hire, communicate with, motivate, train, and direct them.

THE PROGRAM:

Bringing this quantum leap in performance and profitability to an organization necessitates several parallel efforts. Existing employees must be trained in self motivation, communication, wellness, and selling skills. Managers must be trained in how to motivate, train, communicate with, direct, and evaluate the personnel they supervise. Personnel people must be trained in how to attract, identify, hire and train future employees. Upper management must be assisted in establishing a variety of incentive programs that will be effective in motivating each and every employee. Instrumental to this whole process is the use of a highly sophisticated profile that gives very specific information on an individual's abilities, values, and personality traits. It is necessary to interview and profile each employee and employee candidate. The information from this profile is used to screen job candidates as well as to describe how best to attract, motivate, communicate with, train, and supervise each particular employee.

"INCENTIVISING" THE WORK FORCE

THE CHALLENGE:

Within any organization, there are some people who are highly motivated and others who are neutral or indifferent. Every organization wants motivated, enthusiastic employees. The question is how to create such employees. It is well known that some people respond to carrots and other respond to sticks while some respond to both. Thus, one approach to motivation involves the use of threats and sanctions. Another more common approach involves the use of bonuses and incentives. Some people don't seem to respond to threats and others don't seem to respond to incentives. Well meaning employers offer what to them are exciting incentive packages, and they are often surprised when employees do not seem motivated by them. The hard truth is that what is an incentive to one employee may be a disincentive to another. This is not surprising, since people have differing needs and values. Faced with this situation, what is a responsive management to do? What would happen to the productivity of an organization if management knew how to motivate every person in the organization? What would happen to the productivity of an organization if it were to offer a variety of incentive packages one of which would appeal to each and every employee?

THE SOLUTION:

Advancements in value theory, human typological analysis and neurolinguistics now make it possible to determine for any individual what their basic values are and what things will motivate them. This means it is possible to know whether they will respond to carrots or sticks. This also means that it is possible to know what kind of incentives they will respond to.

THE PROGRAM:

The process of "incentivising" the work force uses a sophisticated instrument that determines for each employee what the factors are that motivate them. All employees will fall into one or more of six different value classes. Each class will respond to a certain kind of incentive. Management will be provided with specific recommendations as to what kinds of incentive packages will motivate their work force. Management will also be provided specific information on how to motivate and direct each specific employee. The end result of this process is a motivated work force with incentives that will appeal to everyone.

HUMAN ENGINEERING

THE CHALLENGE:

This is the age of advanced technology and computer aided design. A byproduct of this age is highly sophisticated machines. These machines require highly skilled and trained operators. Such people are in short supply and are expensive to attract, train, and maintain. This poses a dilemma for an organization that is trying to cut costs and increase productivity. In many organizations the critical problem is not in trying to get people to relate to people but in trying to get people to relate to machines.

The man machine interface becomes one of the critical problems of our time. How does one build machines that people can use? Engineers whose main concerns are efficiency of design, costs, and efficiency of operation often design machines. For them use is a secondary consideration.

Often the human interface is turned over to a so-called "human factors" engineer. The human factors engineer applies knowledge from the science of "ergonometrics." Unfortunately this science is in its infancy. The hard fact of the matter is that it is difficult to identify the critical factors in man machine interaction let alone to be able to make ergonometric trade offs. What would happen to the productivity of an organization if all the machines used by it were optimized for the user? What would happen to the sales of a manufacturing organization if all of its products were designed so as to be optimally user friendly?

THE SOLUTION:

A synthesis of recent advances in neurolinguistics, learning theory, accelerated learning, and cybernetics now make it possible to optimize the man machine interface. This means it is now possible to specify the nature of the interface between the human and the machine that will be easiest for the operator to use. In order to operate a complex machine the user is often required to make refined discriminations in sight, sound, or touch as well as to carry out sophisticated calculations in his or her own head.

Obviously people vary in their ability to make refined visual, auditory, and tactile discriminations as well as in their ability to reason. It is now possible to specify what kinds of multi-sensory output will be easiest to use. It is also possible using sophisticated screening techniques to identify those individuals who are already adept at making the sensory discriminations required.

THE PROGRAM:

The process of optimizing the man machine interface is based on an analysis of the sensory discriminations and the mental calculations that a user is expected to make. Specific suggestions are provided as to what kinds of feedback from the machine would make it easiest

to use. The end result is a highly user-friendly machine. A screening procedure is also provided that will enable the using organization to identify operators who already have the required mental and sensory discriminatory abilities to operate the machine at the highest levels of efficiency.

INCREASED TRAINING EFFECTIVENESS

THE CHALLENGE:

The American Society of Training and Development estimates that thirty to forty billion dollars are currently being spent in the United States per year on employee training. This is expected to increase beyond one hundred billion dollars by 1990. In some technical fields developments are occurring so fast that it is estimated that it will be necessary to completely retrain people every three to five years. Unfortunately, training technology has not kept pace with other rapidly developing technologies.

There has been a rapid growth in computer-assisted learning, but this has not been accompanied with a change in training methodology. In fact, it has been said that training methods have not changed for several thousand years. Reinforcement and repetition are still the order of the day. Some claim further that there is no need for a revolution in education and training and there is no state of the art in training, because training works perfectly well and always has.

The question is: "Does training work perfectly well?" What if it were possible to cut training times by a forth to a half with no decline in effectiveness? What if it were possible to achieve much higher levels of performance in equal time? What if it were possible to move the median on the normal bell training curve one or more standard deviations to the right? What would the savings in time and dollars to an organization be if there were a breakthrough in training methodology that produced increased performance in decreased time?

THE SOLUTION:

A synthesis of developments in neurolinguistics, cybernetics, learning theory, value theory, and accelerated learning now make a qualitative increase in learning efficiency possible. The result of this increased efficiency is both increased performance and decreased training time. Further, it is possible using this training technology to achieve levels of performance that have not previously been possible. This means that people will be able to perform better than they presently can or will ever be able to perform no matter how much conventional training they have.

THE PROGRAM:

Increased training effectiveness is the result of the identification of those critical parameters that increase comprehension and skill and memory retention. It requires control over the training environment and the instructor. The training material is redesigned and sequenced to make it easy to learn. The trainer embodies a totally positive approach. The training environment is relaxing and comfortable. Feedback to the student is designed to be immediate and effective. The training is designed to build on a ladder of previous success and in such a way that it is impossible to fail. "Modeling" top performers and transferring their expertise to other suitably selected candidates may reach even greater levels of effectiveness. We will train your personnel in how to train using this technology. We will also "model" experts for you.

PERFORMANCE EXCELLENCE PROGRAMMING BEYOND ATHLETIC ABILITY

THE CHALLENGE:

Improving athletic performance has long been a goal of coaches and athletes. We live in a time when sports are a business and million dollar bonuses are paid to athletes. Winning and losing is not just a matter of personal accomplishment but may cost owners millions of dollars and players and coaches their careers. In amateur athletics the situation is equally serious. The practical reality of college athletics is that the alumni want victories, and coaches who do not win are not retained. College athletes who want careers in professional sports realize that superior performance will make the difference between whether they make it to the pros or not and will determine what they will be paid. In amateur sports and Olympic competition there are a limited number of medals and the competition is fierce.

Becoming a world-class athlete requires effort, talent and perhaps luck. It requires both physical and mental ability and a will to win. Physical ability comes from mastery of correct technique and it's practice until it becomes automatic. Most athletic coaching involves the study of correct technique and the design of methods for it's installation. In most sports a great deal is known about technique. The difficulty is usually in finding efficient ways to install technique that go beyond the traditional methods of repetition and practice. The most overlooked areas of athletic performance, until recently, have been the mental and emotional aspects. There is a growing awareness, on the part of athletes and coaches alike, of the importance of motivation, self-confidence, will and focus and of the need to eliminate self-sabotage and to remove mental blocks and limitations to superior performance. When the difference between victory and defeat is measured in hundredths of a second or in millimeters and athletes are of approximately the same physical ability, it becomes evident that mental focus and concentration will make the decisive difference.

In spite of all their uniqueness professional athletes are people, and they suffer the same problems of coping with life as anyone else. In addition they have the pressure of competition and of coping with victory and defeat. The sports pages are full of stories of athletes who are on drugs or alcohol and who are having family and domestic problems. For other athletes the problem may be one of motivation and of what they want out of life.

In short, how an athlete performs on any given day may be as much a function of their personal problems as of their athletic ability. When these problems extend over time it is said that the athlete is in a slump. When the slump continues too long they are benched, and their athletic career may be over. In this day and age athletes are more willing to accept counseling for so called "personal problems," but most are still reluctant to seek psychiatric or psychological help.

The challenge is to develop athletes who have the required mental and emotional abilities in addition to their athletic skills. This "mental edge" is often the difference between victory and defeat. Its development requires a different kind of technology and training than has traditionally been available. In today's highly competitive athletic arena this is no longer a luxury. It is a necessity for those who desire to win consistently.

THE SOLUTION:

Performance Excellence Programming (PEP) is a new and unique training and communication system developed by Advanced Behavioral Modeling, Inc. (ABM Inc.). It represents a major breakthrough in athletic training and makes possible a quantum leap in athletic performance. It is the first training program to deal with the total athlete and not just with athletic ability. PEP is a synthesis of recent advancements in a variety of disciplines including

neurolinguistics, cybernetics, accelerated learning, motivation theory, semantics, value theory, human typological analysis, and psychology.

PEP training incorporates a series of powerful processes that have never before been combined into an integrated system. Parts of the PEP program have already proven effective in increasing performance in industry, government, and on an individual basis. The synergistic effect that results from the way these components are precisely combined and sequenced together in PEP, however, results in a dramatic increase in athletic performance.

THE PROGRAM:

Performance Excellence Programming involves four interconnected activities. These are High Performance Modeling, Performance Excellence Profiling, High Performance Coaching, and High Performance Counseling.

"High Performance Modeling" (HPM) is a method to capture and transfer ability or expertise. It is based on the assertion that if any individual or group displays any sequence of behaviors which others find useful, it is possible using the tools and principles of HPM to chunk and punctuate that sequence into units that can be practiced and readily learned by any member of the species. The process of capturing ability is called elicitation. It involves studying and interacting with several superior athletes to determine what it is that makes them better than other athletes. The modeler determines for each athlete how they perform the complex physical activity in question, what goes on in their head that facilitates this process, and what beliefs and values motivate them to perform in this fashion.

The more superior the athletes are who are modeled, the better the model will be. What this means is that it is possible to study the best athletes on a team and to transfer much of their ability to other team members. It is now possible to bring the level of the whole team up to almost the same level as the top performers on the team. This process does not just apply to athletic ability. It is also possible using modeling to transfer skills such as the ability to focus, the ability to psych oneself up, the ability to relax, and the ability to deal with personal problems.

"Performance Excellence Profiling" is a method to determine what the major components of a person's personality are, what their learning style is, and what the values are that direct and motivate them. The profile consists of a written instrument and a brief interview. This incredibly powerful tool provides highly specific information on how best to communicate with, train, motivate, influence, inspire, and coach an athlete. It also provides information on how each athlete will interact with other members of the team, the coaching staff and the management. It further provides information on how to get an athlete out of a slump and how to prevent them from having one in the first place.

"Performance Excellence Coaching" is a method to train and inspire the total athlete. It trains the body as well as both the conscious and the unconscious minds. It combines insights gained from modeling excellent teachers and coaches with the latest advances in accelerated learning. The result is dramatically increased athletic performance in reduced time. The usual method of athletic training is reinforcement through repetitive practice. This is actually counterproductive to performance unless it is correct technique that is being practiced. A major key to athletic training is to break the skill down into components and to sequence those components in the order that the best athletes perform the activity. Another major key to superior athletic performance is feedback. Feedback enables an athlete to make the necessary corrections to bring their performance in line with model or correct performance.

For feedback to be absorbed by the unconscious mind, which is the major source of athletic ability, it must be immediate (as opposed to delayed) and in a language that the unconscious can understand. A major aspect of Performance Excellence Coaching is the design of exercises

to train the unconscious mind. A third key to athletic training is the limiting beliefs and values of the athlete. Every athlete has limiting or "disenabling" beliefs that prevent him or her from achieving their full potential. Performance Excellence Coaching removes these blocks to high performance and replaces them with a set of "enabling" beliefs shared by top performers. In summary, Performance Excellence Coaching trains the athlete's body, mind, emotions and spirit.

Performance Excellence Counseling is an ancillary to Performance Excellence Coaching. It addresses any personal problems that the athlete may be having. It helps the athlete to remove any mental blocks to peak performance and to eliminate any self-sabotage. It teaches the athlete how to focus awareness and practical techniques for eliminating stress. It also teaches ways to give oneself positive suggestions to build confidence and improve performance. Any other personal problems the athlete may have such as substance abuse or insomnia are also dealt with in an effective and non-threatening manner.

An athlete will discuss things with a Performance Excellence Counselor that he would not be willing to go to a psychiatrist or psychologist about.

THE BENEFITS:

The Performance Excellence Program provides an immediate and permanent increase in performance at all levels of an athletic organization. It provides benefits for managers, coaches and athletes alike. For management PEP's Profiling provides specific information on how to attract, establish immediate rapport with, communicate with, negotiate with, hire, inspire, motivate, train, direct and manage each individual athlete and coach. It provides guidance on how to establish incentives that are tailored to each individual athlete. It also enables management to identify potential problems in advance such as poor attitude, substance abuse, and personal problems that could adversely affect performance and cooperation. PEP Modeling provides management with a way to develop high-level athletic ability in existing team members without having to spend millions to buy super stars. PEP Coaching provides management with state-of-the-art techniques to increase athletic performance, to develop a winning attitude, and to train and direct the total athlete.

PEP Counseling provides management with an in house capability to assist athletes with personal problems that are interfering with athletic performance. It also assists the athletes in improving the quality of their lives. What this all means for management is a large increase in performance at a relatively low cost compared to athlete's salaries and bonuses. It provides management with the winning edge that it needs to build and maintain championship teams. PEP Coaching provides coaches with an effective way to rapidly increase athletic performance. It enables them to train the total athlete and to develop the athlete's mind, emotions and spirit as well as their body.

PEP Modeling provides coaches with a way to improve the performance of an athlete far beyond the level that the athlete would ever reach using normal training methods. It enables coaches to improve the performance level of the entire team to near that of the top athletes on the team. It is the only method that enables an athlete to truly achieve their full potential and beyond.

PEP Profiling provides coaches with highly specific information on how best to establish rapport with, communicate with, train, motivate and manage each individual team member. This tailored approach enables the coach to deal equally effectively with every member of the team and to assist each athlete in achieving his or her optimal performance. It also assists the coach in the critical area of building team cohesiveness, spirit and cooperation.

PEP Counseling provides coaches an in house capability to assist individual athletes in dealing with personal problems that are adversely affecting their performance. It also makes the athletes better adjusted and easier to work with. The result of the PEP program for coaches is a

new and exciting way to build a championship team and to assist each athlete in realizing their athletic dreams. Last, but not least, PEP provides the athlete a way to truly achieve their full potential and beyond. It is the key to developing technical competence matched with mental focus and an indomitable will to win.

PEP Modeling provides the individual athlete with a method to improve their technical ability to the level of the greatest champions. With PEP Coaching the athletes know that they will be assisted in developing their bodies, minds and spirits and that the result will be increased performance beyond their expectations. They know further that they will be part of a winning team where everyone contributes to produce a championship.

PEP Counseling provides the athlete with a safe and confidential way to deal with any personal problems that are affecting performance. It also provides them with powerful techniques to go beyond normal performance to peak performance. It provides them with techniques to deal with the stress of competition. Last, it provides them with guidance as to how to lead happy and fulfilling lives. In summary,the Performance Excellence Program provides athletes, coaches, and management with an integrated approach to improving individual and team performance to a level that can never be achieved by traditional methods. It is a proven ticket to championship performance.

In the highly competitive world of professional and amateur athletics no team that wants to win consistently can afford to be without it.

BACKGROUND

WYATT L. WOODSMALL, PH.D.

Dr. Woodsmall is the Chairman and co-founder of Advanced Behavioral Modeling, Inc., a consulting firm committed to dramatically increasing the performance of organizations and individuals through the use of advanced behavioral and learning technologies. Engaged in federal service and private practice for over twenty years, Dr. Woodsmall has provided training and management consulting expertise to the intelligence community, service industries, and the scientific community, with specific emphasis in predicting and modifying behavior using specialized behavioral technologies.

ADVANCED BEHAVIORAL MODELING:

Dr. Woodsmall was instrumental in pioneering the concept and applications of behavioral modeling technology while working on various projects for the U.S. Government. The theory and structure of the modeling process was a synthesis of many technologies that Dr. Woodsmall and Mr. Richard Graves explored for the defense and intelligence communities.

Dr. Woodsmall's work with the U.S. Army led to the development of behavioral models of top rifle and pistol shooters and the design of training programs that dramatically increased shooting performance, reduced training time and slashed ammunition expenditure.

He also worked with the defense and intelligence communities to increase performance in other areas such as Stinger gunnery, Morse Code reception, recruiting techniques, hovercraft operations, soldering, information management system's administration, synthesis and creativity, courage and bravery, and intelligence and security operations.

Dr. Woodsmall has developed behavioral models for the Polaroid Corporation in computer aided design and photography. He has served as an organization development consultant to its president and management council.

Dr. Woodsmall has modeled top managers and leaders in government and industry and top salesmen, negotiators and trainers. This has lead to behavioral models that dramatically increased performance in these areas.

In addition to performance enhancement through the use of behavioral modeling technology, Dr. Woodsmall has also applied the technology to the areas of personnel selection and "psycho-ergonomics." The Profiling Plus^{SM} process significantly improves personnel recruitment, selection, performance, employee-management satisfaction, and retention for organizations. "Psycho-ergonomics" is the science of designing equipment to facilitate the man-machine interface and ensure an effective and efficient transference across the human-machine boundary. Dr. Woodsmall has consulted to the U.S. Army on how to improve the man-machine interface of Stinger Missiles and of their Morse Code training equipment. He has consulted to Polaroid with specific advice on how to redesign their next camera.

ORGANIZATION DEVELOPMENT AND MANAGEMENT:

Dr. Woodsmall has served as an Organization Development and Management Consultant for the federal and private sectors. He has designed and implemented organization development operations that strengthened the productivity of technology and people. He thoroughly understands the price that technology extracts for the progress it brings. He has implemented programs of change that absorb the impact of technology through new forms of organization, new ways of supervision and new reward structures. His focus has been on

integrating socio-technical systems such as Total Quality Management (TQM) to achieve higher productivity when the complexity and interrelationships of people and technology require innovative approaches to change.

TRAINING:

Dr. Woodsmall conducts management, communications, negotiations and sales seminars as well as workshops on Neuro-Linguistic Programming, accelerated learning and Advanced Behavioral Modeling^{SM}. Highly regarded in the training community as the expert source on Neuro-Linguistic Programming and behavioral modeling, he has conducted training programs in the United States and Canada, England, France, Germany, Italy, Switzerland, Greece, Japan, Australia and Puerto Rico.

Within the defense and intelligence communities Dr. Woodsmall's work and research ranged from analyzing sensitive information to conducting customized training programs. He has provided training for the U.S. Army and the major intelligence agencies and for major corporations and banks. His training programs include leadership and management, advanced interpersonal communications, negotiations, sales, meeting management, Neuro-Linguistic Programming, modeling, interrogation, detecting deception, hostage negotiations and pain control. He conducted a highly successful leadership training seminar called New Patterns of Influence for General Officers and Special Executive Service civilians in the U.S. Army. He also provided knowledge acquisition training to knowledge engineers working on U.S. Army artificial intelligence projects.

Dr. Woodsmall has conducted training for the U.S. Army Materiel Command, U.S. Army Intelligence and Security Command, U.S. Army Training and Doctrine Command, U.S. Army in Europe, Polaroid Corporation, Connecticut National Bank, Harris Trust and Savings Bank, Valley National Bank of Arizona, First Interstate Bank of Oregon, Hibernia National Bank of New Orleans, Morler International, Robbin's Research International and the Sherlco Corporation.

EDUCATION:

Dr. Woodsmall has a Ph.D. and M.Phil. from Columbia University in Philosophy, a M.Div. from Union Theological Seminary and a B.S. in Physics from the University of Virginia. He is a certified Master Practitioner, Master Modeler and Master Trainer in Neuro-Linguistic Programming.

BIBLIOGRAPHY:

Dr. Woodsmall is the author of The Science of Advanced Behavioral Modeling^{SM}, Strategies, Metaprograms, Lifeline Therapy^{SM}, Beyond Self Awareness, and co-author of Time Line Therapy^{SM} and the Basis of Personality and People Pattern Power. He is the author of over twenty-five published articles on Advanced Behavioral Modeling^{SM}, Advanced Learning Technology^{SM}, and Neuro-Linguistic Programming. He is currently writing books on Advanced Behavioral Modeling^{SM}, human typological analysis, negotiations and training.

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