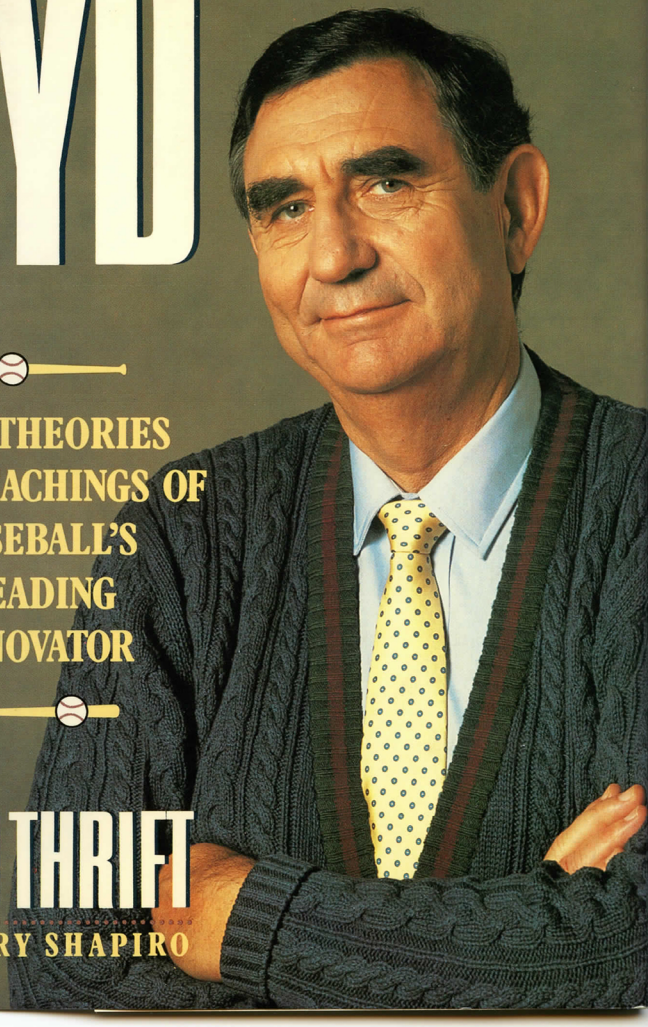
THE GAME ACCORDING TO SYD



THE THEORIES AND TEACHINGS OF BASEBALL'S LEADING INNOVATOR

SYD THRIFT

& BARRY SHAPIRO

THE GAME ACCORDING TO SYD

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SIMON AND SCHUSTER

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To Dr. Trachtman,

Your contributions to this book are substantial and deeply appreciated.

Hope you enjoy the book -

Barry Shapiro

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up and loses his focus. So he takes a moment to visualize the spin and trajectory of his pitch in its last 20 feet."

One of the most damaging emotions to the visual systems is anger. A player misleads himself by thinking anger helps him focus. You've heard the phrase, "I was so mad I couldn't see straight." That's literally true, since the eyes are an extension of the brain. Anger causes your eyes to dance and dart the way the eyes of a wild animal do. It can take as long as a third of a second for your eyes to refocus on a target.

The Pirates' Bob Walk would lose his temper after making a bad pitch, which made him lose his picture of the strike zone when pitching to the next hitters. Once he learned to let go of his anger and focus on positive visual images, he became one of the club's most consistent starters and was named to the 1988 National League All-Star team.

Advanced Technology

My association with Bill Harrison, which had begun at the Academy, continued when I went to work for the Oakland A's. Since we had a lean budget, Dr. Harrison worked with some of our minor league players for free. When I returned to the Pirates organization, I put him on the payroll and gave him a title I coined: "director of visualization."

In that capacity, Dr. Harrison not only tested and trained our players, but brought to our attention any new technologies that could improve vision and reflexive reactions. We would then buy them and have them installed in a room specifically used for vision training, next to our indoor batting cage. A bright young man named Al Kasprowicz, a psychology major from the University of Pittsburgh, was available to operate the machines and monitor each player's progress.

Let me explain the benefits of machines that can train your visual systems. When you demonstrate something to a player, he absorbs the information cognitively, involving his central nervous system. To give you an example, reading this book is cognitive learning.

When he undertakes the task and experiences all the sensations, that is noncognitive learning, which involves his autonomic nervous system. An example of noncognitive learning is riding a bicycle. You probably didn't study the biomechanics of bicycle riding before you first climbed on a bike; you simply got on, pedaled, teeter-tottered, and felt your way. You learned by doing.

The machines we have used train and teach a player to improve the control and speed of his involuntary reactions without him being cognizant of these reactions.

I am now going to share with you a secret weapon Dr. Harrison introduced to us: a $25,000 machine that taps into the autonomic nervous system by the use of sounds to improve vision, depth perception, peripheral vision, and contrast sensitivity in a matter of minutes. In fact, after six months of weekly sessions, the machine can in many cases eliminate the need for corrective glasses.

The machine is called the Accommotrac Vision Tester, and it was invented by Dr. Joseph Trachtman, a brilliant optometrist from Brooklyn Heights, New York. Among Dr. Trachtman's customers are the U.S. Olympic Shooting Team and the Israeli Air Force, the most efficient air force in the world today.

Dr. Trachtman has earned degrees in optometry, education, and experimental psychology, and has a graduate fellowship in computers and medicine. One of the subjects he studied in optometry school was myopia, or nearsightedness, one of the most common human afflictions. Myopia can be caused by an elongation of the eyeball, which can sometimes be corrected surgically or by environmental fac-

tors. When a person reads, for example, his eye muscles contract, allowing the crystalline lens to expand and focus on a close object. When a person reads for an extended period, sometimes his eye muscles are unable to relax. The muscles may even spasm, which keeps the lens in an almost constant state of elongation. This decreases his visual acuity. In an effort to compensate, he squints.

As a graduate student at Johns Hopkins University in 1970, Dr. Trachtman studied biofeedback techniques, which allow you to exert control over your involuntary, noncognitive bodily processes. Merging his background in optometry and psychology, Dr. Trachtman visualized a machine that could train a person to control his eye muscles by biofeedback of accommodation. (Accommodation is the process in which the eye adjusts to objects at different distances by changing the crystalline lens.) This way, if a doctor wanted to test a person for myopia or even hyperopia (farsightedness), he could bypass the eyes per se and go right to the nervous system.

Dr. Trachtman began his research in 1975, and his first Accommotracs were trademarked and ready for market in July 1984. Dr. Harrison ordered an Accommotrac for use with his own patients six months later. Dr. Harrison found that the Accommotrac could also help a person improve his contrast sensitivity. Some of his patients reported that objects appeared brighter after the training than before.

How does the Accommotrac eliminate the need for glasses? As the patients gradually learn to control their eye muscles and focus more easily, the doctor can weaken their prescription until they no longer need glasses. Dr. Trachtman was able to help one of his patients, a candidate for the New York City Fire Department, pass the required eye examination by improving his vision from 20/400 to 20/40 in just 20 sessions.

"When people are nearsighted," Dr. Trachtman explains,

"the brain makes the eye muscles focus too much. When people are farsighted, the brain does not make the eye muscles focus enough.

"The ciliary muscle, which is the focusing muscle, is controlled by the autonomic nervous system. The autonomic nervous system also controls all the other automatic processes: heart rate, blood pressure, body temperature and regulation of body fluids, emotions, hunger, and thirst.

"The Accommotrac uses sound to help people focus, rather than having them use their eyes. With the feedback we teach you something new, which is much easier than breaking a habit. We teach you to train your focusing muscle."

The patient sits in a darkened room, his chin and forehead resting on padded surfaces and his forearms and elbows resting along the table. When he looks into the Accommotrac, he sees a whitish circle, as if he's staring at the moon. The optical part, which can be raised or lowered or moved forward or back, is connected to a sound machine. The machine emits sounds that can be adjusted to the patient's preference. (If he desires he can listen to a sound resembling a video game.) The sound machine has two windows, one measuring the sound waves and the other giving a digital reading of the sounds. Dr. Trachtman holds a stopwatch to time your session, having you pause at certain intervals to rest your eyes. All you do is look at the circle and listen to the sounds. Your goal is not to detect anything visually, but to simply make the sound go faster.

"The instrument," says Dr. Trachtman, "measures the clarity of an infrared image on the back of the eye 40 times a second and immediately converts that into two sounds that change.

"There's a little nerve center inside the spinal column between the shoulders and the head. In order to make the sound go faster, that little nervous center has to get turned on. It has to start generating more signals to get the focusing muscle to open and relax. As the muscles relax, the signal

on the retina gets clearer, the back of the eye gets clearer, and the sound goes faster.

"The interesting thing about that particular nerve center is that it will simultaneously signal other parts of the body, from the brain to the internal organs. So what we have is a strong connection between what you're seeing, what you're thinking, and how you're feeling. In essence, we're training concentration.

"What happens with baseball players is they learn how to concentrate on the sound, and as they concentrate on the sound, parts of the brain get stimulated, so that their attention and awareness become increased.

"One part of the brain they stimulate is the reticular activating system, which is responsible for awareness and alertness. The reticular activating system is the same part of the nervous system that can be stimulated by amphetamines and cocaine and give people an altered perception. Here, we're heightening awareness and attention naturally.

"People can have control over functions pretty readily if you get into the right state. Some of the players we worked with were able to make the sound go as fast as it could. As a result, they were able to develop a visual field that's bigger, so whatever they see appears slower. A batter will be able to see the rotation of the ball as it leaves the pitcher's fingers.

"We started to learn about this when I was working with black-belt karate masters several years ago. I'd have them come into my office and do kung fu or akido, in the same state of concentration they used in competition. The lesser athletes were inconsistent, but the martial-arts masters were able to attain an altered space perception. They saw things in slow motion and their field was very wide.

"Their level and consistency of concentration is what separates these athletes from the average person. That was what led me to think this would be helpful for other athletes."

The altered state Dr. Trachtman has described is the

"groove" baseball players talk about when they're playing well.

Not long ago, Dr. Trachtman put himself into an altered state in order to complete a task he had not been prepared for. "I was about to move into a new house on a Friday," he recalls. "The ground floor was to be used as my new office. We had arranged for a cleaning service to come in at 7 P.M. the night before. A half-hour before the cleaning service was to arrive, they called my office and canceled the appointment.

"My wife went crazy. I simply went upstairs, put on my work clothes, and cleaned all night, without any sleep. I put myself into an altered state, so I was able to work at my full capacity without feeling fatigued.

"Some of the elite athletes have learned to generalize their level of concentration to other tasks. They can just turn it on. They end up being successful in business and in their personal lives."

If you've ever had the misfortune of being behind the wheel of a car that's about to crash, you may remember how the seconds before impact felt like hours. Everything appeared in slow motion. That, too, is an altered state. You had an adrenaline reaction, what doctors call the "fight-or-flight mechanism."

"What the patient is doing with the Accommotrac," says Dr. Trachtman, "is pumping adrenaline to the reticular activating system almost selectively."

Some patients make the sound go faster by simply telling themselves to do so. "All I tell my patients is, 'Here's the sound. Make it go faster.' About 95 percent of my patients devise some strategy. One of the karate masters was able to make the sounds go fast by visualizing himself facing an opponent in competition. Other patients can't verbalize that strategy until they've used the machine five or 10 times."

We invited Dr. Trachtman to bring the Accommotrac to

the Pirates' spring training camp in 1988. Before we used the Accommotrac, Dr. Harrison checked our medical charts as a routine precaution to make sure no one had any existing condition that might prohibit us from using it on him.

We then had a number of players and front office staff try a session. Most of the players showed a substantial improvement in their visual field. Even Larry Doughty and Jim Bowden, my assistant director of the minor leagues and scouting, had immediate, noticeable improvements. The only side effect a few of them experienced was an aroused, pleasurable sensation, which was probably caused by the stimulation of their reticular activating systems.

Mike Diaz, who played for the Pirates from 1986 to 1988, was so adept at the Accommotrac that he drove the sound as fast as it could go. The white circle he was initially looking at disappeared from his view, like a moon in a total eclipse. When Diaz came to the plate in a game, he was able to pick up the baseball as it was leaving the pitcher's hand and see its rotation and movement in slow motion.

With this widened visual field, a fielder can visually slow down the movement of a hard-hit ball, which gives his brain more time to digest the visual information. This helps him react more quickly. And with increased contrast sensitivity, an outfielder can look into a bright sky for a fly ball and locate it more readily.

A pitcher can visually expand his target in order to make better pitches. Jim Gott, who had already mastered the four-seam fastball, combined his visualization techniques and the widened visual field the Accommotrac helped him develop to register 34 saves for the Pirates in 1988.

Bob Walk also benefited from the Accommotrac. He improved his concentration to such a degree that he could lock in on the catcher's mitt and block out all other sights and sounds.

Bill Harrison and I believe the Accommotrac is not only a valuable tool for baseball teams. Imagine the impact the

Accommotrac would have if it was introduced to students on the elementary school level. The children could correct or prevent any environmental influences and improve their concentration skills. Needless to say, the Accommotrac also could put children's eyeglass manufacturers out of business.

Other Hand-Eye-Mind Drills

Dr. Harrison also purchased for the Pirates a machine called the Wayne Saccadic tester, a hand-eye coordination device that has become popular in recent years on the college and pro level.

Saccades are the rapid, jerky movements your eyes make as they jump from one point to another. As you read this sentence, your eyes are jumping from one word to the next. The Wayne Saccadic uses flashing lights to train your eyes to pick up a stimulus and your hands to react to it.

The Wayne Saccadic, three feet tall by three feet wide, is mounted on a wall. In a 30-second drill, a player is asked to touch each light as it flashes. Each light stays on until the player punches it out. As he becomes better at this, the machine's operator makes the lights flash faster. He also instructs the players to use one hand at a time.

The Wayne Saccadic also comes with a balance board you control with your feet. The player rocks forward or back, to the left or right, depending on where the light flashes. Again, the operator adjusts the speed and frequency of the flashing lights to test your reactions over a period of 30 seconds.

"If you're going to have quick hands," says Dr. Harrison, "you've got to have quick feet. I've done a lot of work in this area with John Scolinos, the longtime baseball coach at California State Polytechnic University in Pomona. He firmly believes a major requirement for being a good infielder is having quick feet."