FINDING 'THE ZONE'

By Lawrence Shainberg; Lawrence Shainberg is the author of three books, most recently the novel "Memories of Amnesia."
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NO ONE KNOWS WHEN IT FIRST CAME TO BE called "the zone," but if you want an example of the lofty, almost mystical state to which sport, at times, can grant one entry, you couldn't do better than this one, recalled by the great Brazilian genius of soccer, Pele, in his book, written with Robert L. Fish, "My Life and the Beautiful Game."

One day, Pele said, he felt "a strange calmness" he hadn't experienced before. "It was a type of euphoria; I felt I could run all day without tiring, that I could dribble through any of their team or all of them, that I could almost pass through them physically. I felt I could not be hurt. It was a very strange feeling and one I had not felt before. Perhaps it was merely confidence, but I have felt confident many times without that strange feeling of invincibility."

Much as he excelled at his game, Pele's experience was anything but unique. Athletes' reports of such phenomena are common. Basketball players say that when they play in the zone the basket seems bigger, and they feel an almost mystical connection to it. Ted Williams, the legendary hitter for the Boston Red Sox, has said that sometimes at bat he could see the seams on a pitched ball. And the former collegiate gymnast Carol Johnson remembers that on good days the balance beam was actually wider for her, so that "any worry of falling off disappeared."

Many athletes have echoed John Brodie, the former quarterback of the San Francisco 49ers, who once told Michael Murphy,

author of "The Psychic Side of Sports," that there are moments in every game when "time seems to slow way down, in an uncanny way, as if everyone were moving in slow motion. It seems as if I had all the time in the world to watch the receivers run their patterns, and yet I know the defensive line is coming at me just as fast as ever."

One mystery of the zone is that entry to it is not restricted to the elite. My own interest in the phenomenon - which has led me recently to speak with dozens of athletes, psychologists and scientists - began on the basketball court years ago, on a day when my ordinary game suddenly (and alas, temporarily) escalated so that it seemed I could not miss a shot.

Few among those I sought out were unfamiliar with the subject. Investigated psychologically, neurologically and anthropologically, the zone has been related to hypnosis, spiritual or martial arts practice and parapsychology; and ascribed to genetics, environment and motivation, not to mention skill. On the negative side, statisticians have offered studies which demonstrate, they say, that many "streaks" in sport are no more unusual than streaks in gambling or a long run of coin-tossing, and some neuro-scientists have called the heightened perception reported by players like Ted Williams a sort of illusion or even an hallucination.

FOR KEITH HENSCHEN, AN APPLIED SPORTS PSYCHOLOGIST, the zone is a practical matter. From his office at the University of Utah, in Salt Lake City, Henschen conducts a sort of therapy, with a number of Olympic and college athletes, that aims to produce precisely the kind of concentration and energy that players like Pele and Williams describe. With strategies gleaned from meditation practices and the martial arts, as well as psychological counseling and conventional athletic coaching, Henschen seeks to liberate athletes - the best of whom he calls "super-normals" - from their mental or emotional obstacles, give them an edge on the competition, and he hopes, point them toward the state of grace that resides at the

center of their games.

"No one can reach such levels by snapping his fingers," he says, "but the ultimate purpose of the exercises I use is to help an athlete get to the zone more frequently."

In 1985, Henschen set to work with one such super-normal as the first step on what he hoped would be the road to the 1992 Olympics, but led instead to the 1988 Olympics in Seoul. She was Denise Parker, then a diminutive 12-year-old from South Jordan, Utah, and her sport was archery.

Two years earlier, her father, Earl, had introduced her to the bow and arrow with the idea that she and her mother, Valerie, might join him in his passion for deer hunting. In fact, Denise did kill a deer last year, less than 30 minutes after obtaining her hunting license. But by then, Valerie and Earl (who had hunted for five years before getting his deer) already knew they had a prodigy on their hands.

In 1983, Denise won the junior division at the Utah State Archery Championships, and a few months before her introduction to Henschen, she placed second in the juniors at the national indoor competition of the National Archery Association. Standing 4 feet 10 inches tall and weighing a little over 90 pounds, she had trouble stringing her bow as tightly as the longer target distances required; at 70 meters, the longest Olympic distance, she had to arc her arrows very high to reach the target at all. But no one who knew the sport could deny she had taken to it with an uncanny authority.

Henschen began by giving Denise a battery of psychological tests. Their results revealed a fairly typical American teen-ager, with an attention span that didn't go much beyond five seconds and little of what psychologists call self-concept. What set her apart, in addition to her skill, was motivation - a determination to excel that was grounded in, among other things, a desire to please her parents and, more important perhaps, a tremendous competitive urgency. "She was always the sort of kid," says Valerie, "who

could not stand to lose at anything. The sort of person who, if you were walking down the hall with her, would walk in the middle and not let you get by. In my opinion, it wasn't until she lost in a tournament - to a boy whom she beat the following week -that her interest in archery really took off."

With the burgeoning of sports psychology, the exercises that Henschen suggested have become extremely popular in recent years at every level of competitive sports. In preparation for tournament pressure, he taught Denise to tense, then relax, each muscle in her body, and he directed her to wear earphones and listen to the radio while shooting. To strengthen her concentration, he assigned her seven different exercises, among them listening to her own heartbeat; reading a book while watching television and listening to the radio, and "blanking" the mind.

"I have found," says Henschen, "that athletes who are best at this are the ones who go into the zone most easily."

Finally, he asked her to create for herself what he called a "happiness room," a place to which she could withdraw in her imagination in order to visualize an upcoming meet. Of all the exercises, this was the one to which Denise brought the most enthusiasm. The room she created was primarily a replica of her bedroom, but it had its magical dimension, and it was anything but austere. "There's stairs leading up to it and these big doors you go through," she explains. "It has brown wall-to-wall carpet, a king-sized waterbed, stack stereo, a big-screen TV and a VCR, posters of Tom Cruise and Kirk Cameron on the wall, and a fireplace that's always blazing. That's where I go when a meet's coming up. I drive up to it in a Porsche, go inside, lie down on the waterbed and watch a tape of myself shooting perfect arrows. Later, when I get to the tournament, everything seems familiar. Even at the Olympics, I was calm as soon as I began to shoot."

LIKE ARCHERY ITSELF, which the Parkers practiced together in a cornfield behind their house, Henschen's exercises quickly

became a family affair. Since Denise found it difficult to do them unless her mother and father joined in, all three repaired to the couch after dinner in the evening for visualization and relaxation exercises. Even today, at the age of 15, she cannot imagine doing such things alone.

In addition to Henschen, Earl Parker hired a new coach for Denise, Tim Strickland, a professional archer from Pine Bluff, Ark. Like Henschen, Strickland found her to be a remarkably willing student. "Her mind was open, that's what was unusual about her. She had a cleaner attitude than most anyone I'd worked with, an ability to take instruction and put it at once into practical application."

Strickland stiffened her practice routine. On a typical day, she ran three or four miles or did aerobics before school in the morning, shot for two to three hours, lifted weights to strengthen her shoulder and, of course, practiced her mental exercises. Like any coach, he was a fanatic about technique as well as the state of mind his sport required, but he may have been a little more precise about the connection between the two. "The better your technique," he says, "the more you can anchor your mind in it. And the more you anchor your mind, the better your technique will be."

IN ARCHERY, AS IN ANY sport where aiming is involved, an athlete deals with the subtlest kind of interaction between active and passive instincts. Among other things, one has to face the terrible fact that one's sight is never still. "If you don't believe that," Strickland says, "try pointing your finger at an object and see how much it moves."

One of the most difficult skills to acquire is the ability to acquiesce to such movement. Because the eyes dilate when adrenaline is high, an archer's sight always seems to be moving more in pressure situations, when one wants it most to be still. Great archers, says Strickland, have the paradoxical ability to welcome such pressure and draw strength from a drifting sight.

"If you let your sight move," he says, "you'll shoot within the arc of its movement. But if you try to hold it, say, within a one-inch arc, you'll be lucky to hit within six or eight inches of where you're aiming."

Then too, there is the matter of releasing the arrow, which, Strickland says, must not be an act of decision or will. The great enemy for an archer, as perhaps for any athlete, is conscious intervention. "Your conscious mind always wants to help you, but usually it messes you up. But you can't just set it aside. You've got to get it involved. The thing you have to do is anchor it in technique. Then your unconscious mind, working with your motor memory, will take over the shooting for you."

Another thing Strickland rails against is also a function of consciousness: concern with the target or the score. Nothing, he declares, interferes with performance like concentrating on the goal, rather than on the process of one's game. "An archer who worries about his score will try to make his arrows go in instead of letting them go in," Strickland says. "If your technique is correct, the target never enters your mind. It's just there to catch your arrows. Asian archers" - the Korean women are the best in the world -"learn this way, but Americans are not trained with the same thought pattern. They're always thinking about the score."

IF THERE'S ANY THEME that dominates the reports of zone experience it is this subtle freedom from intervention - from volition and thought and finally consciousness itself.

"The mind's a great thing as long as you don't have to use it," says Tim McCarver, currently a broadcaster for the New York Mets and ABC Sports, who not only knew the zone himself as a catcher for the St. Louis Cardinals and the Philadelphia Phillies, but also had the privilege, when he caught Bob Gibson in 1968, of participating in what many believe to be the greatest year a pitcher ever had: Gibson's earned run average that season - 1.12 earned runs allowed per game -was the best in the history of

modern baseball.

To hear McCarver talk about Gibson is to hear of a zone that endured for an entire season. "Gibson was on a mission. You could see it in his eyes. He had tremendous energy and animation, a confidence that he could do anything . . . and I mean anything . . . put the ball anywhere he wanted. I'd just put my mitt out, and he'd put the ball in it. Look, people still talk about Gooden in his great year," says McCarver, referring to New York Mets pitcher Dwight Gooden, in 1985. "He was good all right - 24-4 with a 1.53 E.R.A. But here's a guy that gave up half a run less per game!"

Even statisticians acknowledge that such performances as Gibson's - or Joe DiMaggio's 56-game hitting streak in 1941, or Orel Hershiser's string, last season, of 59 scoreless innings - rise so far above the norm that there is no room for them on probability curves. So much do they exceed common levels of mastery that they seem, like a mutation in evolution, to define a new order of existence.

Says McCarver, "Many ballplayers think too much. Players like Gibson and Hershiser seem to have a sort of paradoxical intelligence -one that allows them not to do anything to hinder themselves. It's a sort of intelligence you use almost paranormally. It allows people to do phenomenal things. People who really use their mind - they free it from impeding their activity."

The great Japanese hitter Sadaharu Oh describes a similar intelligence when he says that, of all the qualities he had to master, none was more important than the ability to wait - learned from Ueshiba Morihei Sensei, the master of the quintessentially fluid martial art known as aikido.

Waiting, says Oh, in his autobiographical book, "A Zen Way of Baseball," co-written with David Falkner, "was the most active state of all. In its secret heart lay the beginning of all action . . .

the exact moment to strike. . . . With the ability I had acquired to wait, I now could move my contact point somewhat farther back. This in turn gave me slightly more time before I had to commit myself."

MOST BALLPLAYERS - out of confusion, or perhaps superstition - maintain silence on the subject of the zone. Neuroscientists are no less baffled, but new research may shed some light on the brain's participation in the zone. At the University of California at Irvine, Dr. Monte S. Buchsbaum, a professor of psychiatry, uses new computer and brain-scanning technology (known as PET scan, for positron emission tomography) to image the brain's metabolism during performance. His particular interest is in the so-called "arousal state," an escalated level of energy and concentration, which is an obvious component of the zone.

Buchsbaum has yet to study an athlete, but working with subjects involved in problem-solving, he's found that during periods of intense concentration, there is a marked decrease in the overall metabolic rate of the brain. The research indicates that the more skill one brings to a task, the more efficient the brain becomes.

"If I were pitching a baseball, my whole brain would be active," Buchsbaum says, "but if we could see Hershiser's brain while he's pitching, my guess is that he'd be using only particular areas. In all likelihood, his skill results, not from an overdevelopment of different areas, but from the ability to use certain areas more efficiently. We have found that higher levels of metabolism correlate with worse performance."

In work recently begun with a colleague, Dr. Richard Haier, Buchsbaum has studied the brain of a subject learning a video game. Predictably, they have found that the metabolic rate decreases as the game is mastered, but there is one interesting exception. In the visual cortex, the part of the brain that processes visual imagery, the metabolic rate increases. Buchsbaum suggests that this is because the subject is able to

process more visual information as his skill increases.

It is interesting to correlate this observation with that of researchers in the area of time-perception, who have often posited an inverse relationship between information-processing and the speed with which time seems to pass. As the psychologist Robert E. Ornstein writes in "On the Experience of Time": "When an attempt is made to increase the amount of information processing in a given interval, the experience of that interval lengthens."

Consider the amount of information processed by a quarterback like John Brodie as he dropped back to pass. If his overall brain metabolism were lowered and his visual cortex highly activated by the level of skill, concentration and excitement he brought to his game, would this account for the degree to which time slowed for him when he was in the zone?

The same sort of process may make it more credible than many neuro-scientists believe that Ted Williams could see the seams on a pitched ball or, for that matter, that for Williams a 95-mile-an-hour fast ball actually took longer to reach home plate than it did for lesser hitters. This idea may seem far out, or even occult, but it is a truism in modern physics - a direct inference from the theory of relativity - that speed and time are relative phenomena, functions of the point-of-view through which they are perceived.

Accurate though they may be, however, such explanations are slightly misleading, because they portray the zone as a linear phenomenon, issuing directly from the brain. In fact, the zone experience represents an interaction of brain, body and environment. While it is certainly true, for example, that Denise Parker's brain affects her perception and therefore her shooting, it is no less true that archery itself transforms her brain fundamentally from moment to moment.

For Denise, as for any archer, tournament pressure increases

adrenaline, which makes her process more visual information; slows time for her; increases metabolism in her visual cortex and decreases it elsewhere, and finally - if she's fortunate - decreases the activity of her consciousness and permits the more intuitive, primitive, sensorimotor systems to hold her bow and release her arrows. As Strickland said to her, "If you can set aside your consciousness, your motor-memory will take care of your shots."

Buchsbaum's speculations certainly do not contradict the coach's intuition. "When one experiences the mind turning off," he says, "it may be that those primitive regions of the brain we call the basal ganglia take over."

Certainly, the basal ganglia, a cluster of nerve cells concerned with modulating motor behavior, would seem to be a crucial component in any zone experience. Situated beneath the outer layer of the brain, the source of many of the symptoms found in diseases such as Parkinsonism, they are believed to have evolved millions of years before the so-called "cortical brain," which is considered the source of "higher" consciousness. Biologists tells us that because of their very primitivism, the basal ganglia contain enormous quantities of preconscious experience about the nature of the world and how to survive in it.

If skill can be correlated with efficient metabolism -and thus less activity - in the conscious brain, it cannot be accidental that many players, remembering their zones, become inarticulate or mystical, frequently using words like "automatic" or "unconscious" or, as football players like to say, "playing out of my mind." They are describing a process that offers them access to an ancient wiring system. The euphoric state that Pele reported is a moment in which usual conscious authority is effectively silenced.

Our fascination with the zone, and indeed with sport in general, may be due, in part at least, to the possibilities it reveals, the energy and strength and flexibility of the organism when liberated from its ordinary neurological and psychological

constraints. Nor does one have to be an athlete to experience such phenomena. Learn to type and you know what it means to acquire complex knowledge and then "forget" it. For all the skill and cerebration that may be involved in such tasks, the sense when they go well is that the body is doing them on its own.

What deepens the plot - or, more precisely, makes it circular - is the fact that such tasks as typing and baseball are not themselves wired into the sensorimotor system. Complex and sophisticated, they are products of the very reasoning process that is turned off when the primitive wiring system takes over. In fact, as anthropologists point out, the complexity of the games we play has increased with the complexity of our brains. The paradox is that the higher - which is to say most recently evolved -cerebral regions that create games are precisely those circumvented when the game is played at its highest level. When you wait, as Sadaharu Oh learned to wait, you may be exploiting a talent shared with cats and frogs, but cats and frogs do not set themselves the task of hitting a small white sphere with a wooden stick.

It cannot be incidental that Oh not only set himself this task but also mastered it absolutely. Wasn't it skill, in Buchsbaum's experiments, that lowered brain metabolism? Time and again we see that the athletes for whom the zone is most accessible are those who are simply best at what they do. The operative - and merciless - fact is familiar to us all: the better you are at what you do, the more you can forget it; the more you forget it, the better you do it.

As Oh says, "All this training, all this minute attention to detail, rather than complicating hitting, seemed to make it simpler." Or, as Buchsbaum and his colleagues might put it, when you're hitting well, credit your basal ganglia; when you're in a slump, credit those "higher" regions of your brain that offer you thought and reason. Better yet, listen to that great neuro-scientist, Yogi Berra, who once, when offered pointers about his hitting, responded: "How can I hit and think at the same time?"

We cannot doubt that Berra spoke from zone-experience, but let us not forget that he was a very good hitter indeed. Had this not been the case, he might have found himself hitting and thinking a good deal of the time and doing neither very well.

WHEN ATTACKED by his master for being too willful, Eugen Herrigel, author of "Zen in the Art of Archery," said: "How can the shot be loosed if 'I' do not do it?" " 'It' shoots." "And who or what is this 'it'?"

"Once you have understood that you will have no further need of me."

We expect such conundrums from books on Zen, but not from a 15-year-old whose idea of meditation is to lie on a waterbed and watch herself shoot arrows on a VCR.

By the time I met Denise a few weeks ago in Utah, it was four years since she had begun work with Strickland and Henschen, and she was pointing toward her second Olympics. Like the best of archers, she did not have to use the telescope that stood beside her when she was shooting at 70 meters and could not see where her arrows landed; she had a pretty good sense of where an arrow was going the instant it left her bow. The talent that had surprised her father and mother had so taken off that she was now the leading female archer in the country. In 1987, she had become the youngest gold-medal winner in the history of the Pan American Games. Though she'd done poorly in the individual competition at the 1988 Olympics (which was won by a 17-year-old Korean girl whose training, according to Henschen, included two hours of meditation every day), she had taken a bronze medal in team-shooting. And along the way she had become the first female archer in the country to break the 1,300-point barrier in the sport's standard international scoring system.

She is still just a teen-ager, and her mind is not inclined toward the paradoxes that interest the likes of McCarver and Buchsbaum, but when she speaks of her record-breaking

tournament, she is no different from any other athlete talking about the zone.

"I don't know what happened that day," she says. "I wasn't concentrating on anything. I didn't feel like I was shooting my shots, but like they were shooting themselves. I try to remember what happened so I could get back to that place, but when I try to understand it, I only get confused. It's like thinking how the world began."