

Parallel MODE[©]



© SCOTT A. FORD
ARETE SPORTS

BY: SCOTT FORD
KURT DESAUTELS

Foreward

As an athlete myself, I have been “in the zone” on numerous occasions. But like everyone else, I thought the zone was an experience that could not be reproduced through self-will alone. Indeed, that playing in the zone only happened when certain psychological and emotional components came together simultaneously.

I knew what I had read about this mystery of the zone, and everything I read said the same thing: you can’t make the zone happen. You can only bring together the key conditions associated with “flow” and in so doing set the stage for the zone to occur. Everybody seems to know about the zone, but nobody tells you exactly how to do it.

When Scott Ford asked if I would review an article about playing tennis in the zone for Sports Vision Magazine, I was too busy to even listen very much about the topic. My Office Manager (also my wife) knew I would be interested in this topic since I was seriously interested in vision and sports performance. When Scott offered to show me how to play tennis in the zone firsthand, I was intrigued, so I agreed, feeling that playing any sport in the zone was the ultimate goal.

We met at my club and within five minutes, I was not only “in the zone,” I was also playing the best tennis of my life. “This is it!” I said. “This is what we’ve been looking for.”

Sports vision researchers have known that the visual input system plays an important role in high-level sports performance, but not until Scott came along with his revolutionary approach to playing tennis in the zone did we find out just how important the visual

system really is.

For the last two years, Dr. Darlene Kluka, a sports vision researcher from Grambling State University, myself, and sports scientists from three continents have been working closely with Scott to develop the technical and scientific aspects of his Parallel Mode theory.

This manual is designed to give tennis teachers a short course in learning how to play tennis in the zone. I don’t believe anyone can completely learn Parallel Mode theory in a short, introductory course. Indeed, it requires more in-depth study and evolving comprehension. But it is a first step in understanding the phenomenon of the zone.

This new theory involves a strategy which is applicable to all sports, especially those involving Movement, Countermovement and accurate points of contact or release, be it tennis, baseball, basketball, martial arts, volleyball, etc.

Parallel Mode theory is destined to revolutionize sports training and improve the level of sport to a new order of magnitude.



- William L. Hines, M.D.
- *Team Ophthalmologist:*
- *Denver Broncos*
 - *Denver Nuggets*
 - *Colorado Avalanche*
- *Editor, Sports Vision Magazine*
- *International Academy of Sports Vision*
- *Board Member*
 - *Committee for Sports Vision Research*

Preface / Acknowledgements

It all began innocently enough, when I got a call from USPTA Pro Scott Ford inviting me to drop by the Heather Ridge Racquet Club in Aurora, Colorado. His message was simple. “If you have some time,” Scott’s message said, “I want to show you how to play tennis in the zone.”

The Zone. It may be the greatest marvels in all of sport, and certainly it is the most sought after psychological mystery in tennis. But that mystical, ethereal state known as “flow” or playing “in the zone” is also one of the most frustrating phenomena because of its unpredictability. Like a match being struck in a dark room, the “zone” opens our eyes and reveals to us what is possible at the height of human performance, yet just as quickly fades and we are again left in blackness, struggling to get out of the same rut that we fall into each and every match.

Long the territory of elite athletes whose exemplary training and mental toughness were thought to be prerequisites for attaining a “flow state,” cutting edge sports vision research in Colorado has recently unlocked the mystery of the “zone” and now every one from top pros to recreational players can experience the pinnacle of human sporting wonders.

Just what kind of magical prescription can transform a normal tennis performance into a spiritual and harmonious blend of strings and fuzz, where time slows and you are not a player of the game, but an integral part of the sport itself?

I felt compelled to give it a try.. It wasn’t that I expected to learn the mystery of the zone. I went because I needed to hit a few balls, and this was the only justification I had to play hooky from work and go play tennis.

Something happened that afternoon that I had never felt on the tennis court. Suddenly, rather than struggling to keep up with the ball, it seemed to start coming at me. Shots that used to fly off in strange directions now flew with a purpose, straight and fast. I collected dainty little touch shots and moved as deftly as a seasoned pro. The ball never fooled me, and before I knew it, an hour had shot by

although I was scarcely out of breath.

Now, I’ve spent my fair share of time “in the zone.” As a former collegiate soccer player, I had stumbled upon that ethereal and mystical sensation dozens of times in my career. And prior to my relocation to Denver, I spent nearly a decade teaching and coaching skiing in Vail. My most recent experiences “in the zone” came during my years as a competitive mountain bike racer where I notched several wins and a dozen top ten finishes in local and regional races.

But for all my encounters with “the zone,” I had never been “put” there. When “the zone” came, it was almost like a meteor that you catch out of the corner of your eye. You know that something has happened, but you can’t really identify what it was. That’s what my relationship was with “the zone.” That’s what most people identify with, a fleeting experience that superseded their normal performance. It was as if their plane of existence momentarily crossed a superior plane of being, and for the briefest of moments everything seemed easy.

Mankind has known about the zone, or “flow” as it’s known in many circles, for thousands of years. But for thousands of years we have been on the outside looking in at the zone, describing and observing it, but rarely dissecting it and never reproducing it in dynamic fashion. Sure, Tibetan monks and Zen masters live most of their lives in the zone, but who has the time and dedication to spend the next ten years in seclusion. If you want to play tennis in the zone, Scott can show you how to do it in ten minutes.

When Scott showed me how to play tennis in the zone, it opened my eyes to the world of peak performance that I have been able to glimpse only rarely at during my athletic career. I have thoroughly enjoyed my time there, and look forward to many years of *flowing* in the future. Good luck on your journey into the zone. It is one I am sure you will treasure.



Kurt Desautels, February 2001

Preface / Acknowledgements

This is a manual for playing tennis in the zone, written for tennis players and teaching professionals. As you have undoubtedly discovered, there are numerous books and articles dedicated to teaching tennis players and athletes how to get in the zone. Each of these articles is based on how to replicate the many “zone components” that are inherent to being in the zone. But rather than show you how to replicate the components of being in the zone, this manual will illustrate the fundamental trigger to manufacture the zone on command.

My own experience with playing tennis in the zone started somewhat accidentally in 1978. While playing with a friend of mine, I did something very childlike that immediately put me in the zone. At first I didn’t believe it, but as I continued to play this child-like game, I also continued to go deeper and deeper into the zone. Not only did I notice a difference in the level of my performance, my friend wondered what I had done that caused such a dramatic improvement in my game.

At first, I was embarrassed to admit what I was doing because it seemed so silly. How could something so simple cause me to go into the zone? Over the years, I have come to realize that sometimes we overcomplicate the problem and miss the solution even when it is right in front of our eyes.

For most of my teaching career, my methodology was based on correcting a player’s technique, paying little attention to that player’s timing. My problem on that day in 1978 was bad timing and what I did to solve the problem is the subject of this manual.

In addition to solving my timing problem, it also served as the basis for a completely new approach to using your eyes in a fast-moving ball sport such as tennis.

In 1984, I wrote a book called *Design B: How to Play Tennis in the Zone*, a layman’s attempt at explaining the visual/cognitive/motor dynamics of playing tennis in the zone.

It wasn’t until 1999 that I met Dr. Bill Hines and he helped me solidify the theory and put it into a scientific framework. Dr. Hines then introduced me to Darlene Kluka, Ph.D., from Grambling State University, who further developed the theory in an academic framework.

In September 2000, we were privileged to present Parallel Mode Theory to the world leaders in sports science research and development at the *2000 Pre-Olympic Sport Science Congress* in Brisbane, Australia.

As a result of our presentation, Parallel Mode Theory is now being studied by sports science researchers in Europe, Australia, South Africa and the United States.

I hope this manual will start you on the road to playing tennis in the zone. It has changed both my approach to teaching the game as well as my approach to playing the game and I will never forget that day in 1978 when the child in me first visualized that imaginary window.

Scott Ford
February 2001



This manual is a team effort, I could not have done it alone. I wish to thank Kurt Desautels, for his invaluable assistance in co-authoring and producing this manual.

A special thanks to Dave Krucoff, Director of Tennis at Heather Ridge Racquet Club, for providing me with a place to continue the research and development of Parallel Mode Theory.

And to Bill Hines and Darlene Kluka, for giving this theory a language before words existed to describe it.

Finally, thanks to my wife Jane, and my kids, Tyler and Sara, for putting up with me and the zone for all these years.

PARALLEL MODE

(TENNIS IN THE ZONE)

Playing tennis “in the zone” is considered the ultimate experience in tennis: an experience that not only includes a significant increase in performance, but also a higher level of concentration and awareness on the tennis court. If you have played the game of tennis for any length of time, you have probably experienced the zone. And if you have been in the zone, you will remember the experience. You will also remember how difficult it was to reproduce the experience the next time you played.

The zone is indeed a rare and special performance state, but it is also a performance state that can be reproduced by reproducing the systems dynamics of the human operating system in its highest level operating state; its Peak Performance State.

This manual outlines a course designed to teach you how to reproduce the systems

dynamics of your Peak Performance State, and, in so doing, reproduce the zone. It is based on the human Visual/Cognitive/Motor (VCM) Operating System functioning in its most efficient and accurate operating mode, which is called a Parallel VCM Operating Mode, or, *Parallel Mode*, for short.

Parallel Mode is the human operating mode whose VCM dynamics are causal to the Peak Performance State known as “Flow” or the zone. It is significantly different from your normal operating mode, which is called a Serial VCM Operating Mode, or, *Serial Mode*.

The VCM dynamics of your Serial Mode are causal to your Normal Performance State, while the VCM dynamics of your *Parallel Mode* are causal to your Peak Performance State. In other words, in order to play tennis in the zone, you have to switch from playing in a *Serial Mode* to playing in a *Parallel Mode*.

CAUSE: SERIAL MODE

EFFECT: Normal Performance State, Normal Conscious State

CAUSE: PARALLEL MODE

EFFECT: Peak Performance State, Flow, The Zone

THE VISUAL/COGNITIVE/MOTOR OPERATING SYSTEM

The human VCM operating system is an *Input/Processing/Output (IPO)* interface.

The eyes input visual information to the brain about the direction and speed of the ball's movement. The brain receives that information, processes it, and outputs meaningful motor information, which, in turn, is translated into a physical counter-movement that relates in direction and speed to the movement of the ball.

(See Figure 1, *The Contact Sequence*)

This basic sequence of *Movement (MVT)*, *Countermovement (CMVT)*, *Contact (CT)* is called a *CONTACT SEQUENCE*...

MVT → CMVT → CT

It is the fundamental sequence in tennis. In every *Contact Sequence*, the athlete plays the role of *Countermovement*, which is to say, your VCM operating system must perform a series of *Countermovements*, one after another, that relate in direction and speed to the constantly changing direction and speed of the *Movement* of the ball.

The more accurately and efficiently your eyes input visual information to your brain about the direction and speed the ball's movement, the greater the accuracy and efficiency of your body's *Countermovement*.

Think of it this way:

Accuracy in → Accuracy out

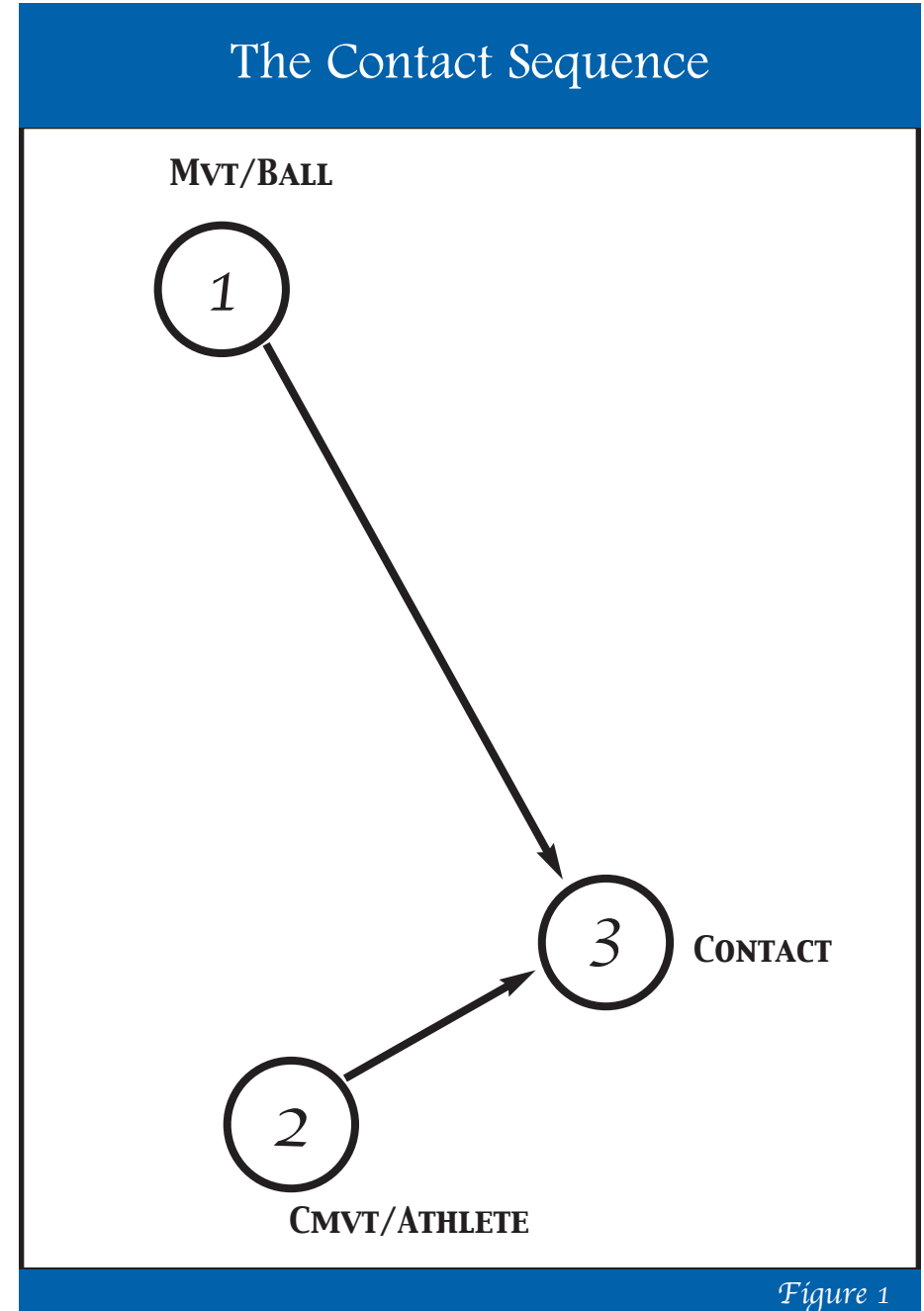


Figure 1

PARALLEL MODE: PEAK PERFORMANCE STATE / FLOW / THE ZONE

The human operating system in a *Parallel Mode* is more accurate and more efficient in its IPO process than the human operating system in a *Serial Mode*. This higher level of operational efficiency and accuracy produces the higher performance level experienced when you are in the zone. But there is also a difference in the psychological, emotional and perceptual behaviors experienced when the human operating system is in a Peak Performance State, or *Parallel Mode*.

The Peak Performance State we tennis players call the *ZONE* is also known as a “Flow State.” One of the unique aspects of playing tennis in a Flow State is the change from the normal psychological, emotional and perceptual behaviors experienced in a *Serial Mode* to the higher-order psychological, emotional and perceptual behaviors experienced in a *Parallel Mode*.

Here is a list of some of the known flow components that you will experience when you switch from operating in a *Serial Mode* to operating in a *Parallel Mode*:

SERIAL MODE / NORMAL VCM CHARACTERISTICS

Confusion:

Unclear goals cloud your decision-making process.

Uncertainty and Doubt:

Ambiguous feedback about your performance.

Lack of Concentration/Distraction:

Easily distracted by events around your performance.

“Paralysis by Analysis”:

Overanalyzing keeps player from acting instinctively.

Loss of Confidence:

Decreased sense of control and increased feelings of powerlessness.

Self-consciousness:

Increased awareness of self-image, concern for how others view your performance.

Linear Time:

Time as a fundamental, measurable quantity.

Limited visual awareness:

Awareness of one fixation point after another.

Normal reaction time:

Reactions are based on visual fixation points.

Heterotelic experience:

Playing to win or lose.

Playing “in the past”:

Normal human tennis experience.

PARALLEL MODE / FLOW CHARACTERISTICS

Clear goals:

Clearly set goals provide you with advance knowledge of what to do.

Unambiguous feedback:

Clear and immediate feedback about your performance.

Total concentration on the task at hand:

Experience detachment from all distracting events around your performance.

Action/Awareness merging:

Experience the sensation of going on “automatic pilot.”

Sense of control:

Experience an increased sense of control over what you have to do.

Loss of self-consciousness:

A loss of self-concern, worries and negativity.

Transformation of time:

Experience a transformation of your perception of time.

Heightened visual awareness:

“See everything” in your visual field without focusing on anything.

Quicker reaction time:

Reaction time will be more efficient and faster than normal.

Autotelic experience:

Experience the intrinsic reward of playing tennis for the sake of the sport.

Playing “in the present”:

Experience being in the “absolute present” when playing tennis.

To illustrate the difference between Serial and Parallel cognitive processing, let's take a look at how the brain behaves in both modes (the diagrams are meant only to demonstrate hemispheric dominance and subordination – the brain doesn't get any bigger...sorry).

In Serial Mode, the brain operates with one hemisphere dominating the cognitive process, while the other hemi-

Serial Mode/
Half-brain state

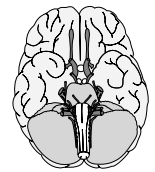


Brain,
bottom view

sphere acts in a subordinate role. In most people, this means that the left brain is dominant while the right brain is subordinate. Serial Mode is a state of Cognitive Asymmetry, a half-brain dominant cognitive mode.

Parallel Mode is a state of Cognitive Symmetry, with each hemisphere of the brain equally engaged in the cognitive process, i.e. a whole brain state.

Parallel Mode/
Whole-brain state

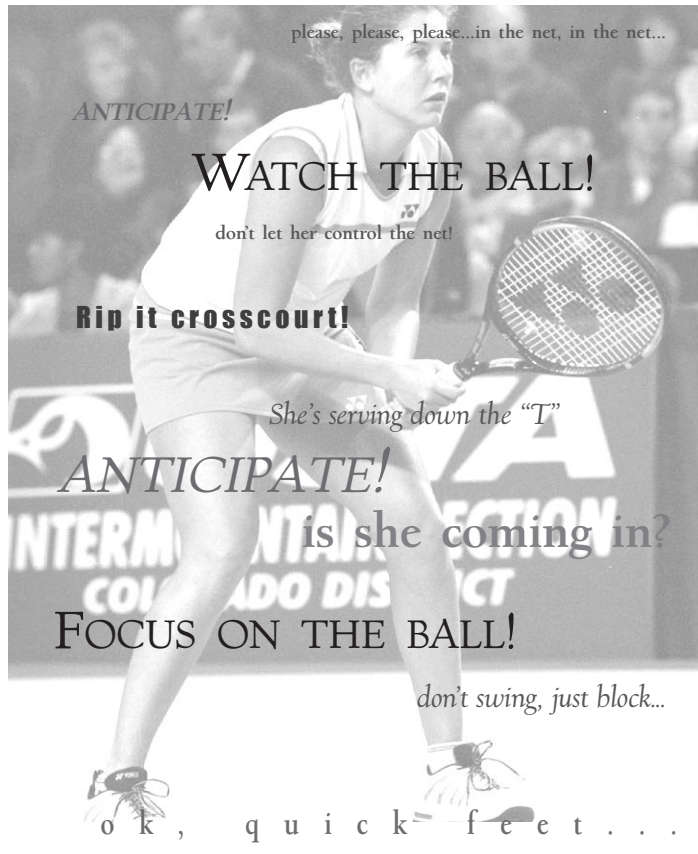


Brain,
bottom view

SERIAL MODE IS YOUR NORMAL PERFORMANCE STATE

**PARALLEL MODE IS YOUR PEAK PERFORMANCE STATE...
THE ZONE**

Are you in the past, or in the present?



Complication... Concentration.

PHASE 1: GETTING INTO THE ZONE

(Making the switch to *Parallel Mode*)

Learning to play tennis *in the zone* is a process that takes training, a journey that begins with learning how to make the switch from *Serial Mode* to *Parallel Mode*.

It is important to understand that making this switch requires being able to “think outside your box” and allow yourself to try something new and different.

When you are in the zone you will not feel the same as you normally feel, and your perception of the game will be different. Expect this difference; learn to accept it and you will find *Parallel Mode* both accessible and exciting. Fight this difference and you will find *Parallel Mode* both difficult to access and frustrating.

Willingness and open-mindedness are the keys to learning how to play tennis in the zone.

The two drills in Phase I are designed to familiarize you with getting into the zone. These drills are experiential in nature. In other words, you can't simply read about them and expect to do them without practice.

Like anything else, playing in a *Parallel Mode* takes practice, and since playing tennis in the zone is a different experience from your normal tennis playing experience, these drills will be different from your normal tennis drills.

Drill #1: Defending Your Imaginary Window

There are three parts to this drill. The first part is to visualize an imaginary window in front of you at a comfortable arm's length. This imaginary window reaches as high as you can reach your racquet down to the surface of the court and, to start with, spans the width of half the court.

(See Figure 2)

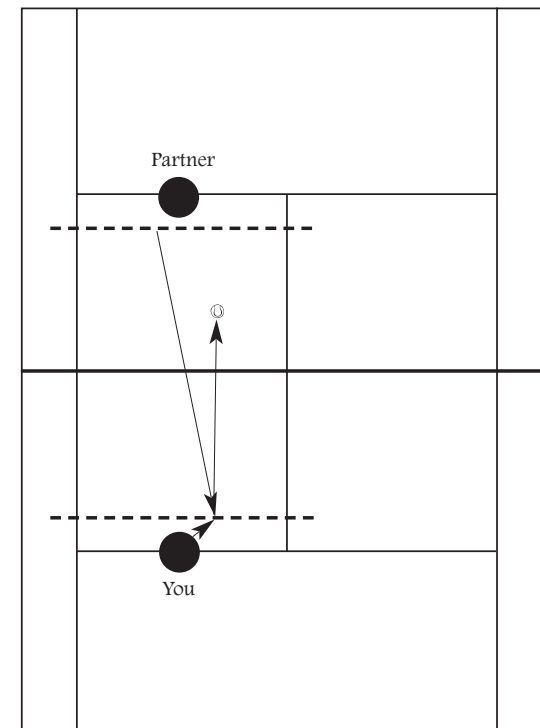


Figure 2

“Yes” / “No” Feedback

The second part requires a short explanation. If you actually had a large window pane spanning the court in front of you, then oncoming balls would never get past your window. That is what you are trying to do in this first drill.

Use whatever strokes necessary to prevent oncoming balls from getting past your imaginary window.

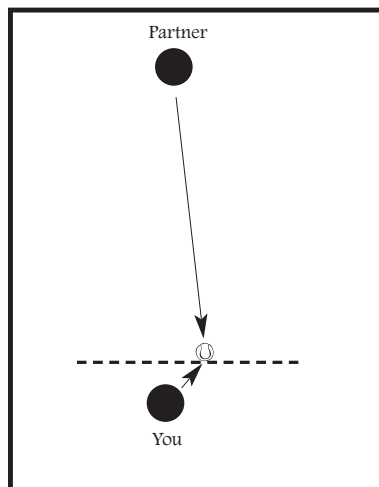
That’s it.

Defend your imaginary window. The ball does not have to go back over the net. That’s not the objective. The objective is to prevent oncoming balls from getting past your imaginary window – any way you can.

The third part of this drill involves immediate feedback about how you are succeeding at your objective.

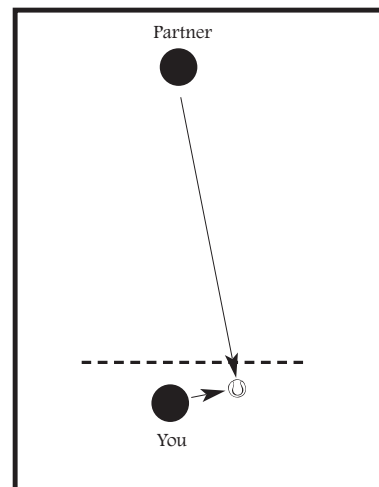
Audibly say “yes” if you succeed in preventing the ball from getting past your imaginary window and “no” if you do not.

(See Figures 3 & 4)



“YES”

Figure 3



“NO”

Figure 4

F A Qs

Q: Where should I start?

A: Start from midcourt to midcourt (see Figure 2). Baseline to baseline is too great a depth of field to begin with. Both you and your practice partner should be at the service line or closer, and start on only one half of the court. The idea is to get comfortable with visualizing an imaginary window in front of you. Midcourt to midcourt is a comfortable distance away from your practice partner to begin.

Q: Why do I have to visualize a window in front of me?

A: The act of visualizing an imaginary window in front of you accomplishes two things: first, the process of on-court visualization engages the subordinate hemisphere of your brain while quieting the dominant hemisphere, putting you in a “whole-brain” state. Second, visualizing a window in front of you causes you to fix the focus of your eyes on your contact zone and switch into a Fixed-Depth of Focus Input Pattern, (FDF), which is the Parallel Input Pattern used when you perform in a *PARALLEL MODE*.

Q: Why am I not supposed to try to hit the ball over the net?

A: This drill is about concentrating on one specific task, and that task does not include hitting the ball over the net. The objective is not to use your strokes to hit the ball over the net, but rather to use them to keep the ball from getting past your imaginary window. Although this sounds counterintuitive, it allows complete freedom of action without the necessity of landing the ball in the court. You don’t have to hit the ball over the net, you simply have to keep it from getting past your window. You will soon find that when you keep the ball from getting past your imaginary window, it almost always goes back over the net.

Q: Why do I have to say yes or no each time I hit the ball?

A: Immediate feedback about your success at defending your imaginary window will help you keep your eyes focused on your contact zone, which, in turn, will keep you in a FDF input pattern. And a FDF input pattern is the first link in the Parallel VCM Operating Mode.

Q: How will I know when I am in the zone?

A: One indication is the sensation of being totally concentrated on the task of defending your imaginary window. Another indicator is the combination of clear goals and immediate unambiguous feedback (“YES” / “NO”) that you will experience in this drill. And if you continue to use any countermovements necessary to keep the ball from getting past your imaginary window, you will also experience the flow component of Action/Awareness Merging. In other words, you will experience what it feels like to go on “automatic pilot.”

Drill #2: Call Your Depth of Contact

This drill is designed to build a greater familiarization with your contact zone. It requires a short description of the *Contact Zone's* dimensions. Below is a graphic representation of the *Contact Zone*.

Along with imagining a window at a comfortable arm's length in front of you, also imagine a second window located directly in front of your body, as if you were standing with your nose against this second window. These two windows, a front window and a back window, represent the full depth of your *Contact Zone* from front to back.

The front window is designated as a 3-depth.

The middle of your *Contact Zone* is a 2-depth.

The back window is designated as a 1-depth.

(See Figure 5)

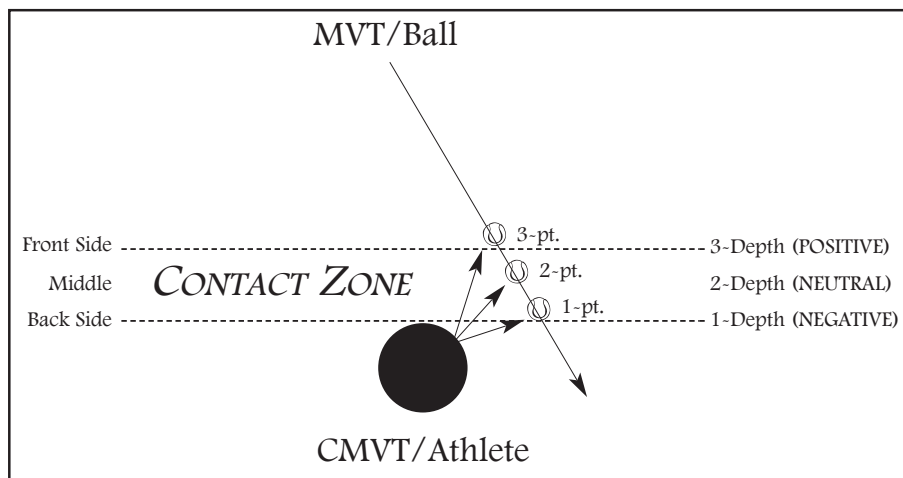


Figure 5

Every ball that enters your contact zone will be contacted at one of these three depths.

If you contact the ball at a 3-Depth, then your *Countermovement* was in full control of your *Contact Zone* and the movement of the ball never penetrated your *Contact Zone*. **This is positive timing.**

If contact occurs at a 2-Depth, then the movement of the ball controlled the positive depth of your *Contact Zone* while your *Countermovement* controlled the negative depth of your *Contact Zone*. **This is neutral timing.**

Finally, if contact occurs at a 1-Depth, then the movement of the ball controlled the full depth of your *Contact Zone* and your *Countermovement* never even entered your *Contact Zone*. **This is negative timing.**

The objective of this drill is to become more familiar with your own *Contact Zone* by simply calling your depth of contact every time you make contact with the ball.

In order to be successful at this drill, you must again focus your eyes on your Contact Zone instead of on the ball.

As in Drill #1, start at the service line with your practice partner also at his/her service line. As you become more familiar with calling your depth of contact, you will also start to see which quadrants of your *Contact Zone* your *Countermovements* control and which quadrants of your *Contact Zone* are controlled by the movement of the ball.

Figure 6, below, gives a simple graphic illustration of your *Contact Quadrants*.

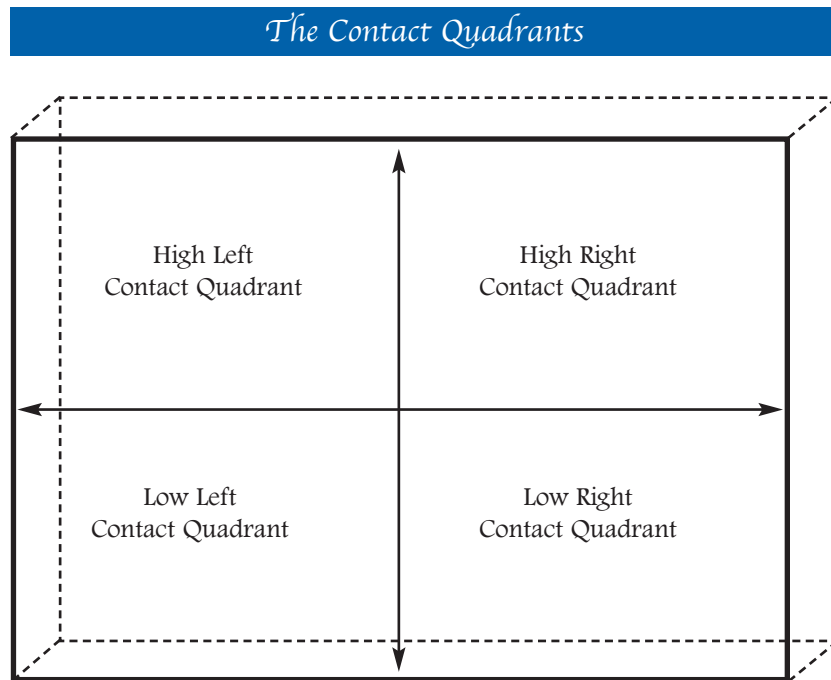


Figure 6

By thus dividing the *Contact Zone* into height, width and depth, you can begin to look at your *Countermovements* as they relate to your *Contact Zone*.

Total control of the Contact Zone means that contact always occur at a 3-Depth, regardless of the Contact Quadrant and regardless of your location on the court.

FAQs

Q: What if I can't call my *Contact Depth* every time?

A: Like anything else, this drill takes practice. But being aware of the location of every *Contact Event* exactly when and where it occurs in your *Contact Zone* is what this drill is all about.

Q: What good is this drill for my strokes?

A: If you are having trouble with your strokes, the problem might not be in how your strokes are technically performed, but rather how long it takes you to perform them. This drill will let you know about the timing of your strokes. And if you correct your timing problems, more often than not, your technique problems will be much easier to correct.

Q: What does calling my *Contact Depth* have to do with being "in the zone?"

A: In order to call your *Contact Depth* consistently and accurately, it is necessary to have your eyes focused on your *Contact Zone* and not on the ball. This means you will be using a *Fixed-Depth of Focus* input pattern, which is the input pattern used in a *Parallel Mode*.

Q: Should I try to contact the ball at a 3-Depth every time?

A: If you make contact at a 3-Depth every time you hit the ball, then your *Countermovements* are in total control of your *Contact Zone* at all times.

Q: How long do I stay at midcourt?

A: Once you feel comfortable with calling your *Contact Depth* from midcourt, then it is time for you and your practice partner to progress to different positions on the court.

The following court progressions should all be covered:

- Backcourt to Backcourt
- Backcourt to Midcourt
- Backcourt to Forecourt
- Full Court Coverage

The objective of this drill is to be able to call your *Contact Depth* from every position on the court, in any *Contact Quadrant*. When you are able to visually observe your *Contact Depth* with consistency and accuracy, you are ready for the next phase of *Parallel Mode*.

PHASE 2: STAYING IN THE ZONE

(Maintaining *Parallel Mode*)

As you get more comfortable with the switch from playing in your normal state to playing in the zone, the next order of business is learning to stay in the zone for longer periods of time.

In other words, once you have learned to switch from operating in a Serial Mode to operating in a Parallel Mode, the next phase is learning how to maintain a Parallel Operating Mode. And in order to maintain a Parallel Mode, you must maintain a FDF Input Pattern.

If you switch back to a VDF Input Pattern, you will immediately switch back to a Serial Mode of operation and find yourself once again playing in your normal performance state and your normal state of consciousness.

A Serial Mode is the default operating mode of the human VCM operating system, and the *first link* of this Serial Operating Mode is the serial visual input pattern that is best defined as “focusing on the ball.” Switching to a Parallel Mode involves the switch to a parallel visual input pattern, which is best defined as “focusing on your *Contact Zone*.”

VISUAL SYSTEM INPUT

Higher-order performance begins with higher-order visual system input. The following analogy demonstrates the difference between the serial visual input pattern of the normal performance state and the parallel visual input pattern of the peak performance state.

Imagine looking through a large picture window as a person throws a snowball at the window (Figure 7). The snowball will “SPLAT” against the window exactly when and where it contacts the window. Now imagine that your visual objective is to have the SPLAT in focus exactly when and where it happens.

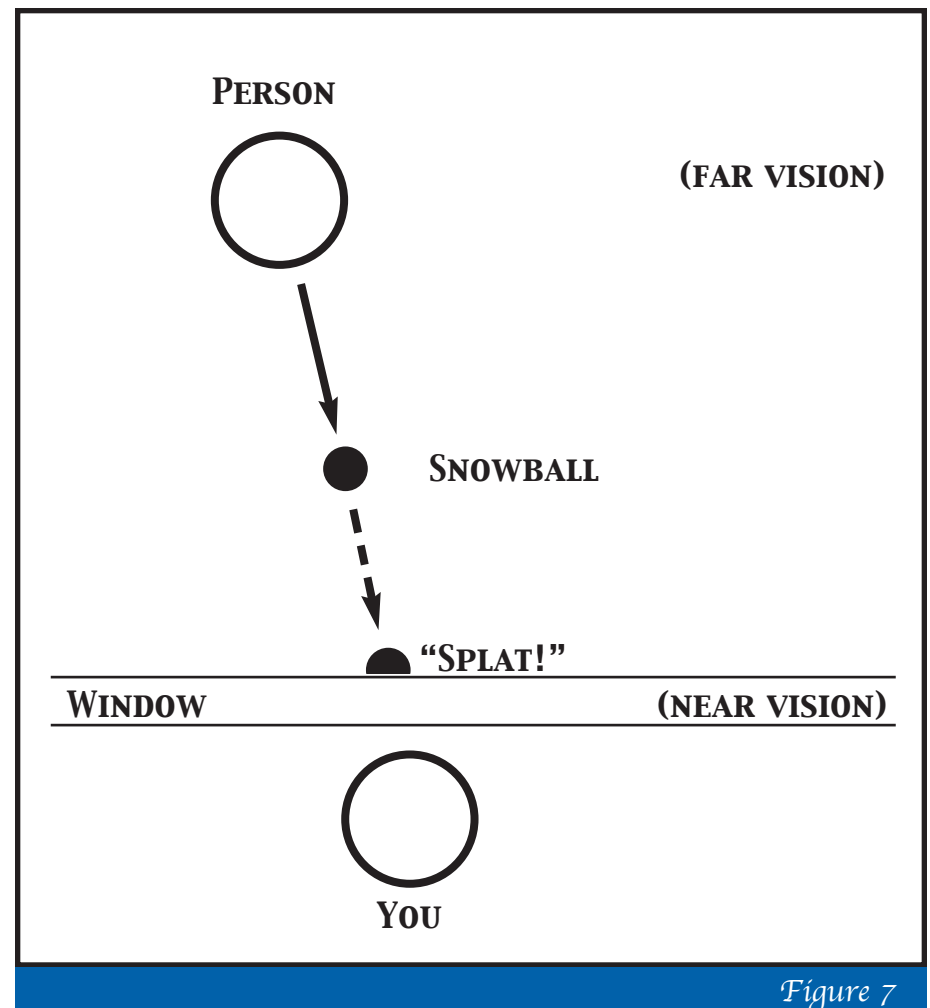


Figure 7

The traditional method of locating the contact event in this situation is to “watch the ball” or, in this case, “watch the snowball” as it travels along its flight path from start to finish.

If the snowball is in focus along its entire flight path, the snowball will be “in focus” when and where it SPLATS against the window. Thus the contact event, the SPLAT, is located by focusing on the snowball along its flight line.

Watching the snowball in this situation is a *Variable-Depth of Focus* (VDF) Input Pattern. This requires refocusing the eyes from far vision to near vision in order to keep the ball in focus from start to finish.

Alternatively, a *Fixed-Depth of Focus* (FDF) Input Pattern accomplishes the same visual objective of locating the contact event by using a completely different visual strategy.

Rather than focusing on the snowball and consistently tracking it to the window, the eyes are instead focused on the window, consistently locating the *Contact Point* along the window’s surface.

Instead of locating the contact event by focusing on the ball, the contact event is located by focusing on the Contact Zone...

SPLAT!

FDF input differs from VDF input in several ways. It requires a change in the object of focus, which, in VDF input is the snowball. With FDF input, the object of focus changes to the window/contact zone. This change in object of focus brings about a corresponding change in your visual perception.

With your eyes focused on the window/contact zone, the person throwing the snowball will be out of focus when the snowball is thrown. The snowball itself will be out of focus when it is released. But as it moves along its flight path toward the window/contact zone, the snowball moves into focus.

What is seen is an object that begins its flight path as a visual blur, but as it approaches the window/contact zone, it increases in visual clarity. When it arrives at the window/contact zone, the contact event (SPLAT) is in focus exactly when and where it occurs.

VISUAL SYSTEM EFFICIENCY

The major systems difference between VDF and FDF input lies in the efficiency of each input pattern.

VDF input (focusing on the ball) requires numerous fixations as the ball traverses along its flight path. This visual pattern of continuous refocusing requires both the rotational and refocus-

The rotational countermovements of the eyes remain a variable as they locate the contact point along your fixed-depth focus.

By prefocusing on the contact zone, the refocusing variable is effectively eliminated by making it a constant.

Prefocusing eliminates refocusing, and when the refocusing variable is eliminated, a major source of input error is also eliminated.

ing countermovements of the eyes to be in a continuous state of flux. This dynamic state of flux converts to two visual variables: *variable rotation* and *variable depth of focus*.

With FDF input (focusing on the contact depth and locating the contact point), the refocusing countermovement is no longer a variable. By fixing your focus on the contact zone, the refocusing variable is now a constant.

In short,
FDF input is a more
efficient way to use your
eyes in a fast-moving ball
sport than VDF
input.

When viewed from the perspective of systems efficiency, the difference between VDF and FDF input is the difference between an input pattern with two variables versus an input pattern with one variable and one constant.

Basic systems analysis states that any system accomplishing the same objective as another system, but with fewer variables, is a **more efficient system**.

VISUAL SYSTEMS EFFICIENCY FACTORS

VDF EFFICIENCY

Eye Rotation:
1 variable

Eye Focus:
1 variable

Visual Efficiency Factor:
2 variables

FDF EFFICIENCY

Eye Rotation:
1 variable

Eye Focus:
1 CONSTANT

Visual Efficiency Factor:
1 variable, 1 CONSTANT

Drill #3: Locating the 3-Point

This is a visual concentration drill designed to train your eyes in a Fixed-Depth of Focus or Parallel Input Pattern.

It starts again at the “T” and the objective is to visually locate the 3-point along the surface of your imaginary front window.

Remember, your objective is not to watch the ball, but rather to keep your eyes focused on your contact zone and look for the point at which the ball first enters your contact zone. That point is the 3-point.

This visual drill will train your eyes in a FDF input pattern (Parallel) rather than using a VDF input pattern (Serial).

In this drill, contact between racquet and ball should occur at the 3-point, and in order to make contact at the 3-point, you must first locate the 3-point.

Learning an FDF input pattern takes practice. Concentrating on what you are doing with your eyes is not the same as concentrating on what you are doing with your body.

This is a visual drill. It is designed to train your eyes to locate the 3-point. It is not about the results of your contact. In other words, think about your eyes, not your body or your racquet. If you can locate the 3-point with your eyes, you will definitely be able to hit it with your racquet.

*Don't focus on **results**.*

*Focus on your **focus**.*

This drill is a natural progression from Drill #2 where your objective was to call your depth of contact.

The difference lies in the visual objective. Instead of calling the depth at which contact occurs, you are actively seeking out with your eyes the exact point at which the ball first enters your contact zone – the 3-point.

Your immediate feedback is a verbal “YES/NO” on whether or not you successfully located the 3-point with your eyes.

Once you are comfortable with this visual drill from midcourt to midcourt, start to increase your visual depth of field by moving to the backcourt while your partner moves to the forecourt.

Eventually, you should both be able to use an FDF input pattern from backcourt to backcourt as well as moving throughout the depths of the court.

FAQs

Q: What should I expect in this drill?

A: Visual concentration means concentrating on what you are doing with your eyes not what you are doing with your body or your racquet.

Think of this drill as an exercise in visual signal sending. You are learning to send visual information to your brain about the location of the optimum contact point. Do not expect it to feel like “watching the ball.” It won't. Locating the contact point along a pre-determined depth of focus is a completely different method of inputting the same visual information. Expect it to feel different. If it does not feel different, you are not doing it.

Q: What flow components should I expect to experience in this drill?

A: All of the flow components are always present when you are in a flow state, but some are more apparent than others. In this drill, action/awareness merging or the sensation of going on automatic pilot is an indicator that you are successfully doing the drill.

Q: How can I tell what's going on if I don't focus on my opponent or the ball?

A: Parallel visual input is different from serial visual input. Your perception of what's going on in front of you will also be different. When you are focused on your imaginary window, you will still “see everything” that is going on in front of you, but you will be “focused on nothing.” You will still be able to see what your opponent is doing, but it will always be out of focus, peripheral. The ball, however, will continue to come into focus as it comes closer to your contact zone.

Drill #4: Flash-outs

It is possible to play tennis with your eyes focused only on your contact zone, while you continuously scan the 3-depth for one contact point after another. In other words, you can play tennis without ever focusing on the ball, your opponent, or where you are going to place the ball.

As crazy as that statement sounds, it's true. Parallel visual input involves focusing on your contact zone at all times, which means that you never have to focus your eyes on anything else, including the ball, your opponent or the open court where you want to direct your shot.

Any change of visual focus that takes the focus of your eyes away from your contact zone is called a "flash-out." And learning how to identify and eliminate *flash-outs* is essential to maintaining a parallel mode of operation.

Flash-outs come in three general categories:

Flashing-out on the ball.

Flashing-out on your opponent.

Flashing-out on placement.

Flashing-out on the ball occurs when you lose focus on the contact zone and go back to watching the ball, either as it comes toward you or as it goes away from you after you hit it.

You might *flash-out* on the ball as your opponent is hitting it, or as it bounces on your side of the court, or just before you hit it with your racquet. You might also *flash-out* on the ball to see whether your shot was successful or not.

Flashing-out on the ball causes you to return to serial input, which is less efficient and less accurate than parallel input.

When you switch back to a serial input pattern, you take yourself immediately out of the zone and put yourself back into your normal performance state.

Flashing-out on your opponent occurs when you stop focusing your eyes on your contact zone and start focusing your eyes on your opponent.

Traditional visual strategy suggests that you focus on your opponent in order to pick up visual cues that might assist you in anticipating where your opponent might hit the ball. While it is true that you have to see your opponent in order to pick up visual cues, it is not necessary to focus on your opponent in order to pick up these same visual cues in your peripheral vision.

In fact, you don't have to focus on *anything* on the far side of your contact zone in order to see it happening. You will still see everything exactly as it happens, but it will be out of focus, visible peripherally.

Flashing-out on placement is the last category of *flash-outs*. How many times have you seen the open court clearly only to mishit the ball because you quit watching it in order to see the open court?

This problem *flash-out* occurs whether you use VDF input or FDF input, and it is the cause of many contact errors in tennis.

There is no logical reason for flashing out on placement. You can see the open court without focusing on it, yet, all too often, you focus on the open court only to find that you cannot refocus fast enough to successfully track the oncoming ball. The end-result is usually negative contact. Not only do you mishit the ball, but the ball doesn't land where you intended it to land. The usual comment heard after this placement *flash-out* is, "keep your eyes on the ball!" In parallel mode, the same comment would be, "keep your eyes on the contact zone."

Flashing-out on the ball, flashing out on your opponent, and flashing out on placement; these are the most common *flash-outs* you will experience in Parallel Mode. This next drill is designed to help you maintain a Parallel Mode by learning to identify and eliminate *flash-outs* from your game.

Drills #4 and #3 go together because they are both visual concentration drills. In each you are asked to concentrate on what you are doing with your eyes rather than what you are doing with your body or your racquet.

Once again, the objective is to locate the 3-point with your eyes by focusing on your imaginary window and looking for the point the ball contacts the window's surface. If you are successful in locating the 3-point, say "YES" at the exact moment the ball touches your imaginary window, which will also be the exact moment that your racquet makes contact with the ball.

There is a certainty to parallel input that occurs at the precise moment of contact. At that moment, you will know if you have located the 3-point or if you have flashed-out.

If you say "YES" at that exact moment, then you did not *flash-out*. But if you say "NO" or are uncertain, then you *flashed-out* on something, and your objective is to identify your *flash-out*.

Did you *flash-out* on your opponent as s/he hit the ball? Did you *flash-out* on the ball as it was coming in your direction? Did you *flash-out* on where you were trying to place the ball? Or did you *flash-out* on something else?

The objective of this *flash-out* drill is to precisely identify what is causing you to lose focus on your contact zone. By identifying your *flash-outs* you are well on the way to removing them from your input pattern. Once the *flashout-out* is identified, repeat the situation until you can maintain your focus without *flashing-out*.

Remember, it is possible to play tennis without ever changing the focal depth of your eyes. Identifying and removing *flash-outs* will help maintain parallel mode throughout any visual situation.

The longer you can maintain your parallel mode, the longer you will perform in your peak performance state.

FAQs

Q: If I flash-out, but I don't know what I'm flashing-out on, how do I learn to identify my flash-outs?

A: A flash-out takes 200 milliseconds, so don't expect to identify all your flash-outs at first. With practice, you become more aware of these instantaneous mental images and will be able to not only identify them but to remove them from your game.

Q: If I *flash-out*, will it hurt my game?

A: No. If you *flash-out*, you will simply go back to using your eyes the way you normally use your eyes.

In other words, you will go back to a serial input pattern, and a serial input pattern will never be as efficient or accurate as a parallel input pattern. So the worst thing that will happen to you when you *flash-out* is that you will play the way you normally play in your normal performance state.

Q: How long before I will be able to maintain a Parallel Mode for an entire match?

A: Possibly never. But you will be able to maintain a Parallel Mode for longer than you can now. Any time spent performing in a Parallel Mode will be time spent in your most efficient and accurate operating mode. The idea is to learn how to switch from playing in a Serial Mode to playing in a Parallel Mode, and then to maintain a Parallel Mode in the different situations that arise in a tennis match, be it singles or doubles.

The longer you maintain a Parallel Mode, the longer you will play tennis "in the zone." Don't expect at first to maintain a Parallel Mode 100% of the time. That won't happen unless you have perfect control of your mental and visual focus. Expect instead to progress at your own speed. Parallel Mode is about the human operating system in its highest-order performance state, but this performance state carries with it unusual psychological, emotional and perceptual characteristics that take time to learn.

Give yourself the time it takes to learn and you will find that Parallel Mode is well worth the effort.

Q: What flow components will I recognize in this drill?

A: Once again, if you are concentrating on your visual input, you will experience the merging of action and awareness, the feeling of going on automatic pilot.

Along with action/awareness merging comes the loss of self-consciousness. You will not feel self-conscious about the way you are making contact at the 3-point.

There's also the possibility that you will experience slow-motion seeing which is a characteristic of parallel processing. In Flow theory, this is known as "time expansion."

You will find that your reaction time is quicker than normal. This is due to both the efficiency and the accuracy of your parallel visual input as compared to your normal serial visual input.

Drill #5:

Object of Contact (3-Point, NOT Ball)

In tennis, we have been told that our Object of Contact should be the ball; a perfectly logical assumption.

The next drill is about a slightly different Object of Contact, which at first it might seem illogical, but with practice will start to make very good sense.

When you play tennis in your normal conscious state, the Object of Contact is the ball. When you play tennis in the zone, the Object of Contact is the Contact Point itself.

In other words, when you are playing in a Serial Mode, the Object of Contact is the Object of Movement – the ball. But when you are playing in a Parallel Mode, the Object of Contact is the exact point in space and time where the Object of Movement first enters your Contact Zone – the 3-Point itself.

In the window/snowball analogy, the Object of Contact is the “SPLAT” of the snowball against your window.

PERFORMANCE MODE	OBJECT OF CONTACT
Serial Mode	Object of Movement/Ball
Parallel Mode	The Contact Point/3-Point

Here's why this works.

The 3-Point is a combination of the Object of Movement (ball) and the exact point in space and time where the ball first enters your Contact Zone (the Optimum Contact Point).

If your Object of Contact is the ball, contact can occur anywhere in your contact zone, not necessarily at the Optimum Contact Point.

When your Object of Contact is the ball, these three elements are present at the Contact Event:

Object of Movement/Ball

Object of Countermovement/Racquet

A Contact Point *somewhere* in your Contact Zone

When your Object of Contact is the 3-Point, these three elements are present at the Contact Event:

Object of Movement/Ball

Object of Countermovement/Racquet

The **Optimum Contact Point**/3-Point

In other words, when your Object of Contact is the ball, you might make contact anywhere in your contact zone, which means that your timing might be Positive, Negative, or Neutral.

Your timing is a variable.

When your Object of Contact is the 3-Point, then you can be certain of one thing: the timing of your Countermovement was Positive – every time.

Your timing is then a constant.

Consistent, positive timing is the backbone of consistent, positive technique.

Combine the two and you have all the elements necessary to create consistent, positive contact, which speaks for itself on the tennis court.

Once again, start in a controlled situation with both you and your partner at midcourt. This time, your feedback is not on your visual input pattern (locating the 3-Point), but *rather on making the distinction between hitting the ball and hitting the contact point itself – the 3-Point.*

Your feedback is “YES” if you hit the 3-Point and “NO” if you hit the ball.

Remember, when you hit the 3-Point you will also be hitting the ball.

But when you hit the ball, you might not be hitting it at the 3-Point.

As you become more familiar with this “3-Point Feedback,” start to extend your depth of field and continue to do your YES/NO feedback on distinguishing between the ball and the 3-Point as your Object of Contact.

When you can make this distinction on a wide variety of shots from different positions on the court, you will begin to see a difference in the level of your performance created by consistent, positive timing.

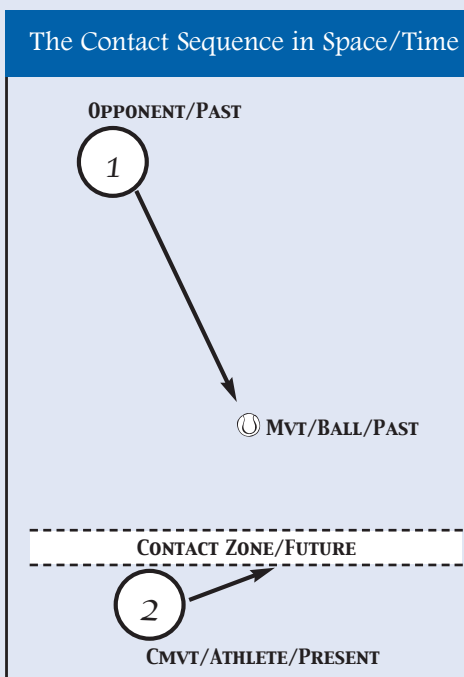
Grab your mask, we're goin' deep!

It is not necessary to understand the theoretical and scientific side of Parallel Mode in order to play tennis in the zone.

However, as players, it helps to know that there are psychological, philosophical and physiological underpinnings to your Peak Performance State.

The “GOIN’ DEEP” pages present a more scientific and technical discussion of Parallel Mode.

FOUR-DIMENSIONAL SPACE/TIME THEORY & THE ZONE



In Four-Dimensional Space/Time Theory, the movement (Mvt) of the ball represents Past Space. Your Countermovement (CMvt) represents Present Space. And the Contact Zone (CZ) represents Future Space.

The Future Space of Contact contains all potential Contact Points, including the Optimum Contact Point (3-Point) for every ball entering the CZ.

By focusing on the ball, you are focusing on the Past Space of the Contact Sequence.

By focusing on the CZ, you are focusing on the Future Space of Contact, i.e. *focusing on the future.*

Drill #6: Object of Contact (Window, NOT Ball)

In the prior drill, your Object of Contact was the 3-Point and not the ball. In this drill, your object of contact becomes the imaginary window itself and not the ball.

Your objective is to make contact with the flat surface of your imaginary window (at the 3-Point) at the precise moment the ball makes contact with your imaginary window.

The sensation is that you are *hitting the window, not the ball.*

Your YES/NO feedback is on making that distinction. YES, if you hit the window. NO, if you hit the ball (see Figure 8).

In addition to solidifying your timing, this drill will help to solidify your technique by creating a flat racquet face at the *Contact Event*. (See figure 8).

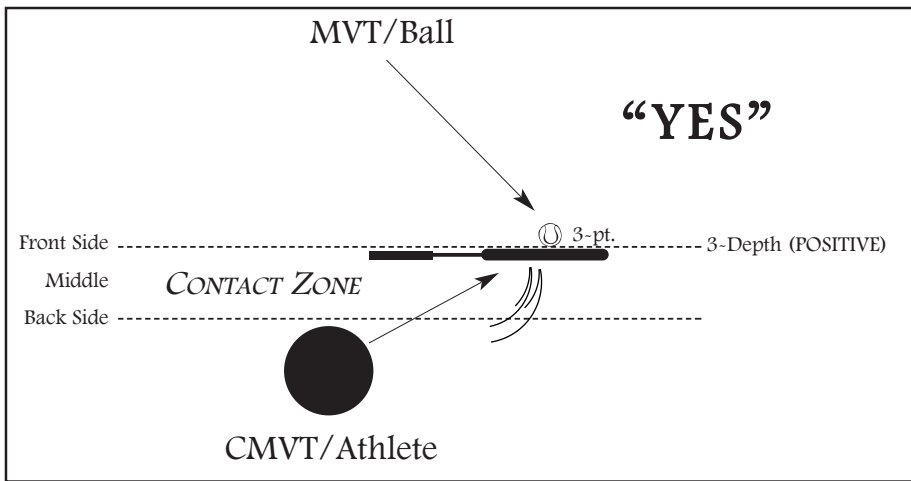


Figure 8

Divide the court into thirds lengthwise, giving you a center section, outside right and outside left (see Figure 9).

To place your shots while in a Parallel Mode, it is necessary to stay focused on your Contact Zone. You cannot *flash-out* on the area of the court where you want to place your shot.

If you look into the open court, even momentarily to see where you want to hit the ball, you have switched from a FDF input pattern to a VDF input pattern.

This causes your entire VCM operating system to switch from a Parallel Mode back to a Serial Mode.

Placement can be achieved in Parallel Mode by simply “turning your window” toward the area of the court where you want to place your shot, and then hitting your window not the ball. (See figure 9).

When you *flash-out* on placement you come out of *the zone*.

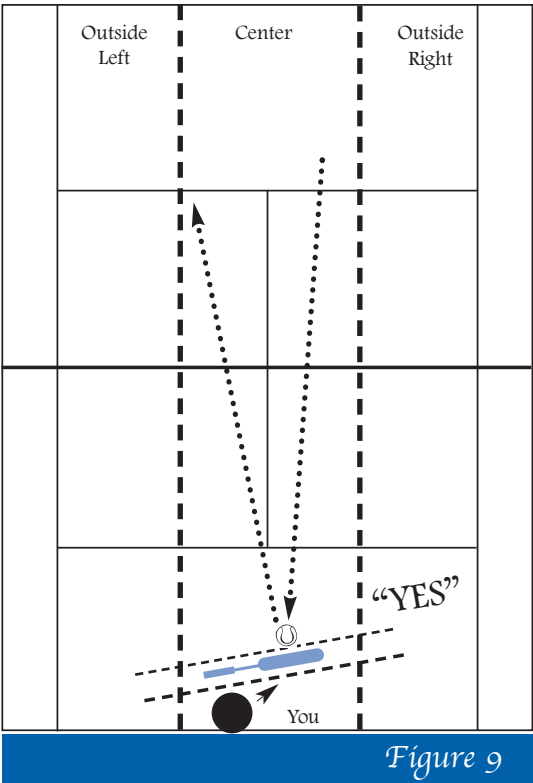


Figure 9

Learning Placement in a Parallel Mode

To begin learning placement in a Parallel Mode, it is suggested that you start by turning your window toward the intersection of your imaginary lines and your opponent's service line. This allows for a large margin of error and, with practice, you can pinpoint the angle of your window to land the ball closer to the lines.

As always, YES/NO feedback helps to keep you in a Parallel Mode as you learn to turn your window in the direction you want to hit the ball, as well as giving you immediate feedback on whether or not you have successfully achieved your objective.

A note of caution.... When you first start learning placement in a Parallel Mode, you will quite naturally start looking to see if your shots are going where you want them to go. While this is a natural visual response, the purpose of this drill is to practice making contact with your window at different angles. By following the ball after contact, you are *flashing-out* on placement, which causes you to switch out of an FDF input pattern and back into a VDF input pattern.

You can still “see” where your shots go without focusing on the ball.

As you get more comfortable with holding your focus on your contact zone, you will start seeing what placement looks like in a Parallel Mode. You will also notice an emotional detachment from your shots as a result of your focal detachment from your shots. To maintain a flow state, it is imperative to disassociate yourself from the results of your shots.

F A Qs

Q: What should I do if I flash-out on placement?

A: Assuming the ball stays in play, return your focus to your contact zone immediately and look for the 3-Point on the next shot. The sooner you return your focus to your contact zone, the sooner you return to Parallel Mode.

Q: What flow components will I recognize when I hit the 3-Point or Window, not the ball?

A: While you will experience all of the flow components at one time or another, certain drills elicit certain flow components. These drills target clear goals, sense of control and total concentration of the task at hand.

Hitting your window is a very uncomplicated goal. Rather than focusing on the techniques of the stroke, or the myriad of other things that happen during a contact sequence, the goal of hitting your window is clear and unambiguous amidst the clutter of the point.

As you get better at hitting your window, you are in fact learning to control your contact zone. You will begin to feel a sense of control unlike any you've experienced before.

Hitting your window instead of the ball is a deeply concentrative task. By repeating this drill, you will develop a sense of total concentration on the task at hand.

Q: How do I know if I'm successful if I am not looking at my own shot?

A: Your success in these drills is measured by your verbal feedback – YES/NO. Parallel Processing engages your peripheral vision system so you will still “see” the results of your shot, even though you are not focusing on it. As you become more adept at hitting your window and letting go of the results, you will discover that it's not important to focus on the ball in order to play your best tennis.

Q: You mentioned detachment. Are you saying that I shouldn't care if the ball goes in the court or not?

A: What I'm saying is that you shouldn't focus on whether the ball goes into the court or not, you should keep your focus on your contact zone. The success or failure of your shot depends on what happens at contact. In these drills, the primary goal is to focus on contacting the 3-Point or the Window. This will produce a consistent, positive contact event, which in turn produces the desired results.

Once contact has been made, the result of your shot is beyond your ability to control. Rather than becoming focally and emotionally attached to something beyond your control, it is far better to attach your focus to something you can control, specifically your contact zone.

Drill #7: Serving in the zone (Parallel Mode & the Serving Sequence)

Like playing in the zone, serving in the zone is accomplished by going through the exact same routine you normally use when you serve, except for the way you use your eyes.

In terms of visual awareness, don't be fooled by the relative simplicity of the service motion. The service motion, like every other shot in tennis, contains the same elements of Movement, Countermovement and Contact. How you use your eyes can make a big difference in the quality of the contact event in the serving sequence.

In each Serving Sequence, there is Mvt (the toss), Cmv (the swing) and Contact (the event that occurs when the toss and the swing come together at a single point in space and time). When you are hitting a groundstroke, a volley, or even a serve, how you focus your eyes determines whether or not you are in a Parallel or Serial Mode.

There is only one difference between a Contact Sequence and a Serving Sequence: in the latter, you have control of the Mvt Event.

In a typical Contact Sequence, you do not have control of the ball. This fact alone should make the Serving Sequence more controllable, but in truth, serving is one of the most difficult strokes to learn. The biggest problem is generally not with the swing portion of the sequence (the Cmv portion), but rather with the toss portion of the Serving Sequence (the Mvt portion).

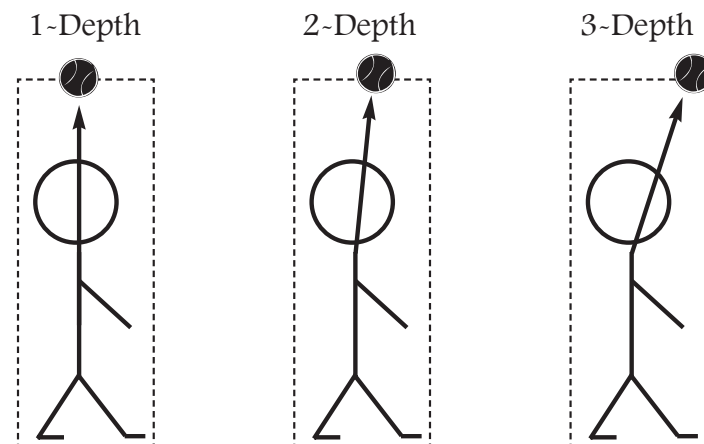
Most players can generally perform the Cmv necessary to serve the ball, but they have trouble putting the Serving Sequence together successfully because their toss is often in the wrong contact location.

It is the mis-location of the toss that causes the swing to go awry, and the reason the toss misses its location is really very simple when you consider what you are doing with your eyes when you toss the ball.

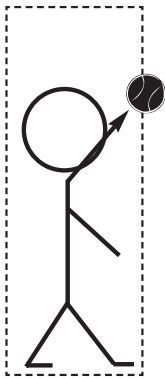
Think about it. What do you do with your eyes when you toss the ball up for your serve? You probably "Watch the ball," which means you are using a Variable-Depth of Focus (VDF) input pattern.

As you know by now, this visual strategy is the least efficient and least accurate way to use your eyes in a sequential visual environment such as the Serving Sequence. Watching the ball is also counterproductive when it comes to locating the Optimum Contact Point for the serve. Why watch the ball when you could be using your eyes to prefocus on the area of the serving zone where optimum contact should occur?

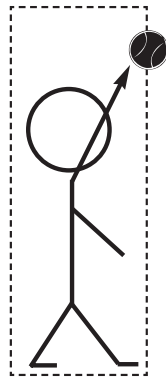
The following diagrams give a visual representation of the height and depth dimensions of the Serving Zone.



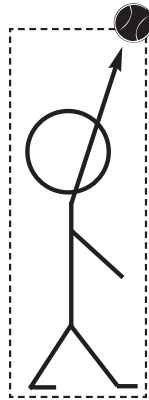
1-Height



2-Height



3-Height



The Optimum Contact Point is located at a 3H/3D (“3-Point”) in each player’s serving zone, and in order to make contact at the 3-Point the player must first toss the ball to the 3-Point. You can’t make contact with the ball at the 3-Point if you toss the ball to a “1” or “2”.

By visualizing a target at the 3-Point, you fix your focus on the optimum contact location. What this means is that you are not focusing your eyes on the ball during your toss.

And why should you?

Traditional methodology teaches us to always focus on the ball, but is there really any logical reason to use our eyes this way, especially when the objective of the toss is to deliver the ball into the optimum contact location in the serving zone?

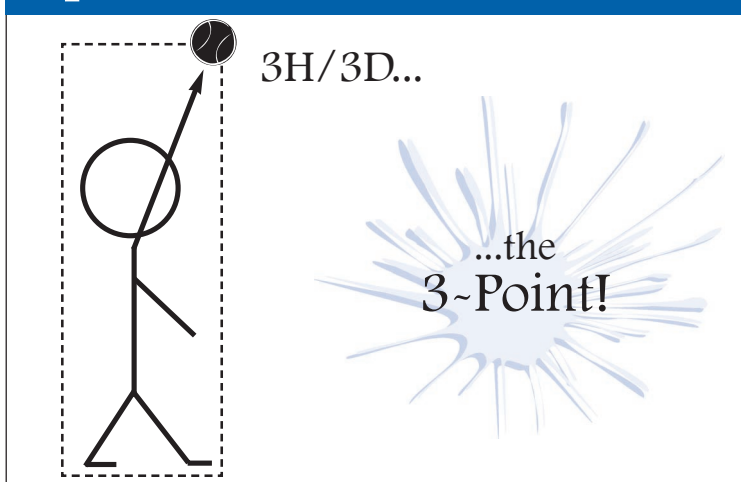
What good does it do to watch the ball if you don’t know where you are tossing it? Doesn’t it make more sense to focus your eyes on the target location where you are tossing the ball?

When you first fix your focus on the optimum contact location in your serving zone (3-Point), don’t be alarmed when you discover that there is nothing there. Initially, you may find this change in your visual strategy is difficult, but with practice you get used to looking up to and visually targeting the imaginary 3-Point prior to tossing the ball.

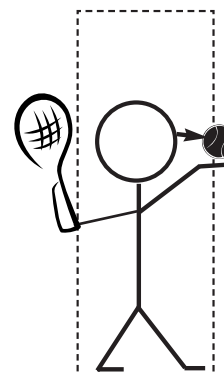
Once you get used to using this FDF visual strategy on your serve, you will find that your timing improves simply because your toss (Mvt) starts arriving at the optimum contact location at approximately the same time every time you toss the ball. The swing (Cmvt) of your racquet will take the same amount of time to arrive at the optimum contact location, giving you the ingredients of Positive Timing on your serve.

The difference is in the focus of your eyes.

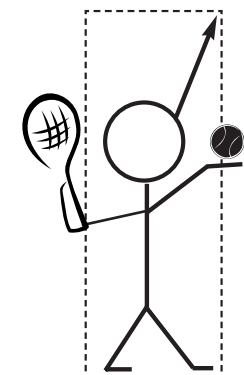
Optimum Contact Location



Focus on the ball



Focus on the 3-Point



Focusing on the ball when you serve is a Variable-Depth of Focus input pattern and leads to the same inefficiencies and inaccuracies you find when you use a VDF input pattern in hitting groundstrokes and volleys. It makes better sense to target your optimum contact location with your eyes prior to tossing the ball to that location. Fixing your focus on the 3-Point puts you in a Fixed-Depth of Focus input pattern, which is the visual input pattern causal to playing tennis in the zone. Parallel Mode, remember, requires parallel visual input, and parallel visual input is achieved through a FDF input pattern, not a VDF input pattern.

Maintaining FDF After the Serve

The first thing a player usually does after striking the ball on his/her serve is to look over the net to see whether or not the serve landed inside the service box. Think about it! Every time a player looks across the net to watch the ball land, they are utilizing a VDF input pattern. Even if they were in a FDF input pattern on their serve, the moment they focus across the net to see if their serve went in, they immediately came out of their FDF input pattern and reverted back to a VDF input pattern.

In other words, when you watch to see if your serve goes in, you come out of the zone and return to your normal performance state.

The trick to maintaining your FDF input pattern and thus your Peak Performance State is to move your focus from your Serving Zone to your Contact Zone and let the ball go out of focus after you serve it. The yellow object coming back into focus after you opponent makes contact is the return of serve, and you will be visually and mentally ready for anything your opponent returns. As is true of anything new, learning to maintain a FDF input pattern on your serve takes practice, and you will find it frustrating at first. But the maintenance of a FDF and the resulting Parallel Mode is well worth the learning curve.

FAQs

Q: Don't you have to focus on the court in order to know where you are serving the ball?

A: No, it is possible to "see" where you are serving the ball without "focusing" on the service box.

Q: How will I know if my serve goes in if I don't watch the ball?

A: Guess what? The person receiving your serve will tell you if your serve goes in or not. You don't need to get focally involved with that process in order to play the game of tennis.

If, however, you choose to focus on that process, just remember that all the while you are focused on what your opponent is doing and what the ball is doing, you are not focused on your own contact zone, which is where everything of importance will be taking place in the very near future.

Besides, when you focus on the results of your own serve, you immediately revert to a VDF input mode and take yourself out of the zone.

Q: How do I maintain my FDF input pattern after my serve?

A: By immediately bringing your focus down from the 3-Point on your serve to straight ahead at the 3-Depth of your Contact Zone, you will maintain your FDF input pattern and in so doing, maintain your parallel visual input mode, which, in turn will keep you in the zone.

PHASE 3: COMPETING IN THE ZONE

(Maintaining *Parallel Mode* in Competition)

The final phase in learning how to play tennis in the zone is learning how to maintain your Parallel Mode in the competitive arena of match play. To accomplish this, it is helpful to understand the human potential for performance in a Parallel Mode.

It is theoretically possible to maintain a Parallel Mode throughout every contact sequence of every match. In other words, it is possible to be “in the zone” 100% of the time you are competing in a match.

Possible, but not probable.

Parallel Mode takes time to learn; just as playing in your Serial Mode took time to learn. No matter how good you are at playing in a Serial Mode, you are probably a newcomer to playing in a Parallel Mode.

Just as you faced challenges learning how to compete in a Serial Mode, you will inevitably face some of the same challenges when learning how to compete in a Parallel Mode. The most difficult of these challenges is maintaining an FDF input pattern throughout the course of a match.

Your ability to control your visual focus is fundamental to playing tennis in a Parallel Mode.

The accuracy and efficiency of your physical Countermovements are directly related to the accuracy and efficiency of your visual input pattern. You don't perform better simply because you are “in the zone” or in a flow state. You perform better because your VCM operating system is in a more efficient and accurate Input/Processing/Output interface.

This higher-order IPO interface creates the higher level of performance you experience in your peak performance state.

The real challenge you face in learning how to compete in the zone is the difficulty in maintaining your Parallel Mode during the emotional and physical struggle of competition.

Stay in a Parallel Mode and “the Zone” happens automatically. Slip out of Parallel Mode and you go back to your normal performance state, your Serial Mode of operation.

Competition adds another variable to a game already filled with more than enough variables. Your opponent is a variable; the speed and direction of the ball's movement are huge variables. Your position on the court is a variable; your Countermovements are variables.

The only part of the game that remotely resembles a constant is your contact zone.

If you can maintain a Fixed-Depth of Focus on your contact zone, you will be able to “see” all the other variables in your visual field simultaneously, in real time, exactly as they happen.

But here's the difference: you will “see” all those variables in your periphery vision, not your central vision.

Getting used to seeing *everything* but focusing on *nothing* takes practice, and it takes practice during competition. Keeping score adds to the variables and can easily rule the way you concentrate during a match.

The following competitive drills involve scoring, but the thrust of the drills is to learn to maintain your Parallel Mode during competition.

Drill #7: Feedback Percentage

Every drill you have experienced thus far has involved immediate verbal feedback at the precise moment of contact. This immediate “YES/NO” feedback tells you whether or not you are successful at the stated objective. It also tells you whether or not you are maintaining a fixed-focus on your Contact Zone.

In order to give immediate feedback in these drills, you must be focused on your contact zone at the precise moment of contact. Loss of feedback means a loss of focus not only on your objective, but also on your contact zone.

Any time you do not feedback on your objective, you have *flashed-out* on something, either visually or mentally, and consequently lost your visual and mental focus on your contact zone.

The end result of a *flash-out* is that you return to a serial input pattern, which puts you back in your normal performance state.

There is nothing wrong with that, mind you. It’s just that your normal performance state is not your peak performance state.

An easy way to tell if you are maintaining your Parallel Mode during competition is to observe what percentage of the time you are giving immediate verbal feedback on your objective. One hundred percent feedback on your objective means that you are maintaining a Parallel Mode 100 percent of the time. Thirty percent feedback and you are in a Parallel Mode 30 percent of the time and a Serial Mode the other 70 percent.

Learning how to measure your feedback is the first drill in the competitive phase of playing tennis in the zone.

To begin competing, play only tiebreaks with your practice partner. You should review your feedback percentage at the end of each tiebreak.

Your objective in this drill is to try for 100 percent verbal feedback on contacting the ball at the 3-Point in your contact zone. *Nothing else.*

Your objective is not to try to win the tiebreak, but rather to play the entire tiebreak with your focus fixed on your contact

zone, i.e. no *flash-outs* for the whole tiebreak.

At the end of the tiebreak, take an objective and honest measurement of your feedback percentage. If you were only able to feedback 25 percent of the time, then 25 percent is your baseline measurement, your competitive starting point.

Remember, being in the zone 25 percent of the time is a good start, but your long term goal should be to reach at least the 90th percentile.

For three successive tiebreaks, try only to raise your feedback percentage from your initial measurement.

Once you have raised your feedback percentage to 75 percent, it’s time to raise your feedback percentage in complete sets and match play.

Tracking your feedback percentage allows you not only to maintain your visual focus on your contact zone, but it also gives you a quick snapshot of your progress toward playing tennis in the zone.

THE THREE POSITIVES:

*Positive Timing,
Positive Technique,
Positive Contact*

The simple YES/NO cues help you to maintain control over your contact zone, which in turn facilitates positive timing, positive technique and positive contact. These three *positives* are essential to the propagation of the contact sequence, i.e. “keeping the rally going.” The longer you can maintain the three *positives*, the longer you will keep the rally going, and in Parallel Mode this is achieved through controlling your contact zone which in turn creates the three *positives* required for peak performance: timing, technique and contact.

Error Detection & Correction Between Points

One of the most difficult challenges you and your students will face when playing competitively in the zone is how to maintain your Parallel Mode between points. How well you concentrate between points plays a large part in the maintenance of your Parallel Mode. The longer you can maintain your Parallel Mode during competition, the longer you will be performing in your most effective VCM operating mode.

While it is essential to review the previous point and determine where, if any, flash-outs occurred, you must learn to do so objectively, without self-criticism and self-judgement. By injecting emotional elements into the mix, we revert back to a Serial Input process, thus knocking us out of Parallel Mode and right out of the zone.

How many times have you criticized yourself for making an error while forgetting to look into the cause of the error? The same thing happens to your students, and unless they are shown some different strategies for what to concentrate on in between points, then they are likely to be just as self-critical.

In maintaining your Parallel Mode it is imperative that you stay objective in your error detection and correction. Between points, the first thing you should do is to measure your feedback percentage on the point just played. If your feedback was 100%, then you were in the zone for the entire point. Congratulations! Now prepare for the next point.

If, however, you were not at 100% feedback, then you *flashed-out* on something. Your job between points is to identify your *flash-out* and visualize in your mind's eye performing that same situation without the *flash-out*, including visualizing the stroke without the *flash-out*, including the stroke controlling the 3-Depth of your Contact Zone.

1. Measure your feed back percentage.
2. Identify your *flash-out* (if any).
3. Visualize the same situation without the *flash-out*.

That's all you do with regard to the past point. It should take no more than ten seconds. Then you are finished making corrections to the past point and you let go of it by moving ahead to visualizing in your mind's eye your strategy for the next point. And because you are in a whole-brain state, you can not only think about your strategy, you can also visualize it.

The fact that your right brain is already engaged through the "overt visualization" process you used during the past point (locating the 3-point on your imaginary window) allows you to maintain its engagement during the "covert visualization" process of strategizing the next point. In other words, after you have spent the first 10 seconds between points visualizing the correction of your flash-out situation (if you had one), and visualizing controlling your Contact Zone with the corrected stroke, you spend the rest of your time between points visualizing your strategy for the next point.

In short, by visualizing your flash-out corrections, stroke corrections relative to your Contact Zone, and strategy for the next point, you are maintaining a state of cognitive symmetry between points. And that is also how you maintain your Parallel Mode between points.

Competing By Not Competing

Perhaps the most confusing aspect of competing in the zone is this: when you are in the zone, you don't feel like you are competing. Instead you feel totally free from the anxieties and fears of competition. You are totally absorbed in the game itself, not in winning or losing. Points are played, but the outcome is not what matters. What matters is the playing of the game, the *oneness* you experience with each and every contact sequence, each and every contact event.

In sports psychology this is called an *autotelic experience*, meaning an experience that has within itself the purpose for its existence. An autotelic experience is the opposite of a *heterotelic experience*, which is an experience that has the purpose of its existence outside or apart from itself.

In other words, when you are competing for the purpose of winning the match, you are playing the game for an outside purpose, a purpose other than the game itself. You are essentially competing for all the wrong reasons. Not that winning is a bad thing, just that winning is the wrong reason to play tennis if what you want to do is play tennis in the zone.

When you are in the zone, you are playing the game for the sheer joy of playing the game.

There are no outside factors involved. Winning and losing are meaningless. They carry no power when you are in the zone. The outcome carries no power. The only thing that matters is the process and the joy you get out of being one with the process, being in the absolute present as you play the game.

There is a paradox involved in competing in the zone. When you give up competing to win, you create the competitive dimension necessary to compete in the zone. Competition without competing. Paradox.

But paradox is an integral part of this phenomenon we call playing tennis in the zone.

FAQs

Q: How do I correct my stroking errors if I don't think about my stroking errors?

A: Thinking about your stroking errors takes you immediately out of a Parallel Mode and puts you back into a Serial Mode. The cognitive process of stroke analysis might allow you to think about your stroking error the way you normally think about your errors, but it also takes you out of your most effective operating mode. You can't stay in the zone if you are critiquing your stroking errors between points.

In order to make stroking corrections and stay in the zone at the same time, you have to start thinking about your errors in a different way, a whole-brain way. You don't analyze them in the same way you are used to. Instead, visualize the stroking error relative to your Contact Zone. In your mind's eye, see what the stroke looked like in relation to the 3-Depth of your Contact Zone.

That's why you have learned to objectively measure your depth of contact in the past drills. If you are making contact at a 2-Depth or a 1-Depth in certain match play situations, then the first thing you want to correct is your Depth of contact. And you can visualize making contact at a 3-Depth in the same situation while you are between points.

What sense does it make to correct a technical stroking error when the real problem is an error in your timing? By visualizing the same stroke making contact at a 3-Depth, you will inpattern the correct timing in your brain and the next time the same situation comes up, you will make contact at the 3-Depth, thus insuring that your technique was perfectly timed.

You will be surprised at how a simple correction in your timing will make your technique work like you want it to work.

Q: What if I visualize my strategy and it doesn't work?

A: If your strategy doesn't work because you miss the shot, then there is nothing wrong with your strategy. The problem was with your contact. Negative contact makes the best strategy in the world worthless, so your primary strategy should always be the consistent production of Positive Contact. All other strategies are secondary to Positive Contact.

If you are making consistent Positive Contact and your strategy still doesn't work, then the most logical answer is to change your strategy. Try visualizing another strategy altogether.

Conclusion

Over the last two decades, there have been several books written on the subject of peak performance athletics. They all give excellent descriptions of the zone and help to identify the tell-tale characteristics of our peak performance state.

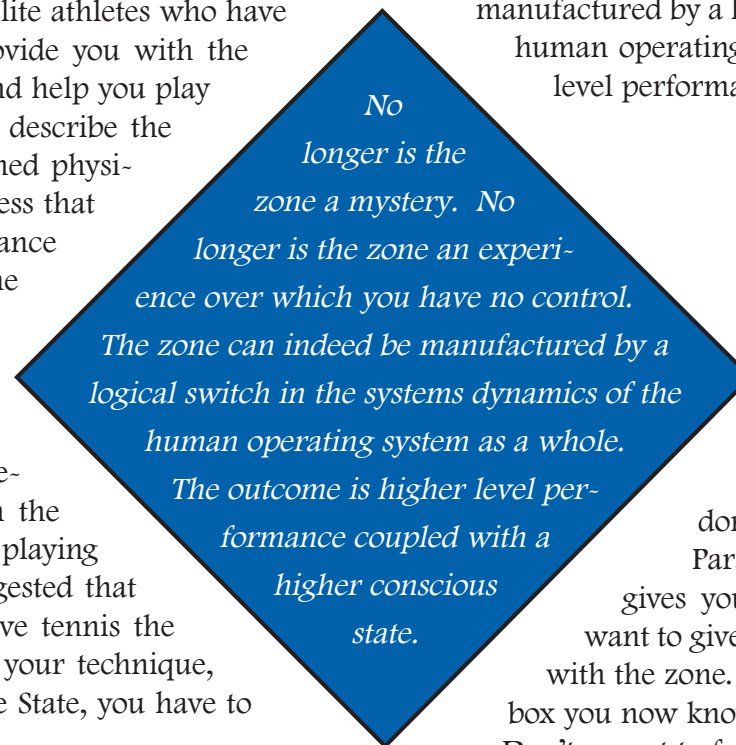
But reading about the experiences of elite athletes who have spent time in the zone doesn't help provide you with the appropriate tools to elevate your game and help you play tennis in the zone. While these authors describe the flow state phenomenon and the heightened physical, emotional and psychological awareness that we feel when we play at a peak performance state, none of these books identify the underlying trigger that engages your peak performance state.

But that is precisely what Parallel Mode Theory is all about. It is our hope that this manual will give you some guidelines for learning how to play tennis in the zone. Remember, in order to experience playing competitive tennis in the zone, it is suggested that you first practice playing non-competitive tennis the zone. You can spend a lifetime training your technique, but to experience your Peak Performance State, you have to train your brain.

Although there is much more that can be said about this Peak Performance phenomenon, the most important news is that there is a process by which you can learn to reproduce the Flow State. It involves switching from your Serial Operating Mode to your Parallel Operating Mode, and when you make the switch, you start playing tennis in your most efficient and accurate operating mode. In addition, along with this higher level operating mode

comes the higher-order psychological, emotional and spiritual characteristics of the Flow State.

No longer is the zone a mystery. No longer is the zone an experience over which you have no control. The zone can indeed be manufactured by a logical switch in the systems dynamics of the human operating system as a whole. The outcome is higher level performance coupled with a higher conscious state.



Parallel Mode = The Zone

Flow Theory, Alpha/Parallel Processing Theory and Attentional Theory all point to the existence of a peak performance state that can be accessed by athletes in every sport. Unfortunately, none of these theories tells you exactly how to access it. They tell you what it is, but they don't tell you how to do it.

Parallel Mode Theory tells you how to do it, and gives you some information about why you might want to give it a try. We hope you enjoy your experience with the zone. It is an extraordinary adventure outside the box you now know as the game of tennis. Don't expect to feel normal when you play tennis in the zone. You won't. Expect something different, and you will not be disappointed.

Good luck and welcome to the zone.

Scott Ford
Kurt Desautels



Appendix & References

APPENDIX:

The appendix of this manual contains a brief description of the theories in sports science and sports psychology that deal directly with the phenomenon of the zone.

For more detail on these theories check the bibliography. Knowledge of this material is not necessary to teach your students how to play tennis in the zone, but it is helpful to know that the steps you are taking in this manual have a basis in science.

APPENDIX 1: Attentional Theory & the Zone

APPENDIX 2: Alpha/Parallel Processing Theory

APPENDIX 3: Four-Dimensional Symmetry Theory

CONTACT INFORMATION:

Scott Ford ph: 303.229.5217 fax: 303.751.2777
email: sford@arete-sports.com

Kurt Desautels ph: 303.514.4453
email: kurt@arete-sports.com

REFERENCES:

Adolphe R., Vickers, J., & Laplante, G. (1997). The effects of training visual attention on gaze behaviour and accuracy: A pilot study. *International Journal of Sports Vision*, 4(1), 28-33.

Cooper, A. (1998). *Playing in the Zone*. New York, NY: Shambala Publications Inc.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper & Row.

Ford, S., Hines, W., & Kluka, D. (2001). Contact Zone Focus: A New Visual Approach to Successful Hitting. *Performance Conditioning for Baseball/Softball*, Vol 2, No.4.

Ford, S., Hines, W., & Kluka, D. (2000). Unpublished manuscript. *Four-Dimensional Visual/Cognitive/Motor Symmetry: A Theoretical Model of Human Peak Performance*

Ford, S., Hines, W., & Kluka, D. (2000). Volleyball and a New Visual Paradigm. *Coaching Volleyball*, Vol.17, No.4.

Ford, Scott. (1984). *Design B: How To Play Tennis in the Zone*. South Bend, IN: Icarus Press

Jackson, S., & Csikszentmihalyi, M. (1999). *Flow in sport*. Champaign, IL: Human Kinetics.

Krug, M. (November 1999). Playing Tennis In The Zone. *Athletic Insight - The Online Journal of Sport*, 3, 25-29.

Loran, D.F.C., & MacEwen, C.J. (1997). *Sports Vision*. Oxford, England: Butterworth-Heinemann.

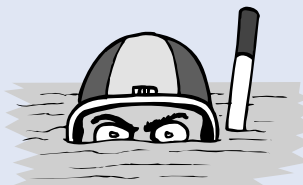
Nideffer, R. (1992). *Psyched To Win*. Champaign, IL, Leisure Press

Trachtman, J., & Kluka, D. (1993). Future trends in vision as they relate to peak sport performance. *International Journal of Sports Vision*, 1(1), 1-7.

Take another breath, we're goin' deep again!

ATTENTIONAL THEORY & THE ZONE

Based upon attentional theory (Nideffer, 1992), your attention can be illustrated using an attentional matrix (Figure ?).



This attentional matrix includes broad to narrow and external to internal foci of attention.

quadrants.

For instance flowing smoothly between the Broad/External and Narrow/External quadrants (B/Ex \leftrightarrow N/EX) and avoiding the distractions of self-consciousness and anxiety found in the Internal attentional quadrants, places you in the Zone.

1. Broad External focus (B/Ex) is experienced when your attention lies outside your body and/or when you are examining a large number of cues. This is when you are assessing the situation, searching for task-relevant cues.

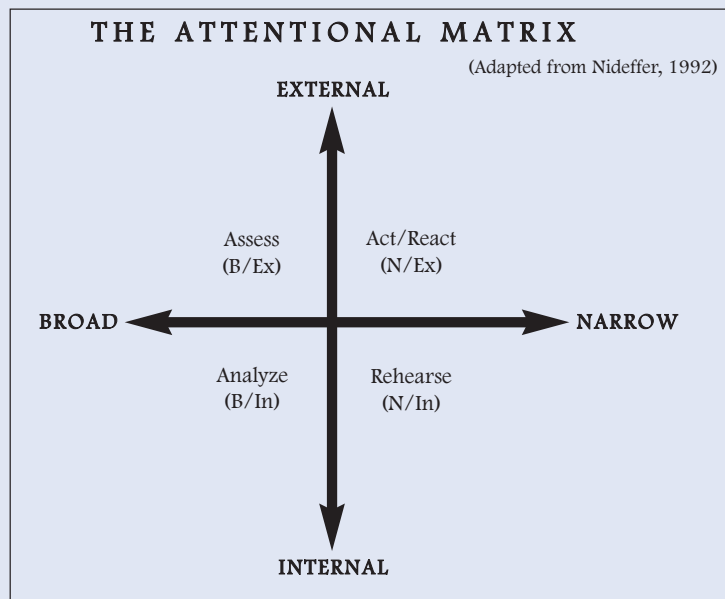
2. Narrow External focus (N/Ex) is experienced when your attention lies outside your body and /or you are examining a limited number of cues. This is when you act and react to environmental cues.

3. Broad Internal focus (B/In) is experienced when your attention lies inside your body and/or you are examining a large number of cues. You are in this attentional quadrant when you form a strategy on how to best play your opponent.

4. Narrow Internal focus (N/In) is experienced when your attention lies inside your body and/or you are examining a limited number of cues. You use this quadrant when thinking about your stroke mechanics or thinking self-consciously about your performance (Adapted from Krug, 1999).

During the course of a point or throughout the game or match, your focus exists somewhere in the Attentional Matrix.

Attentional theory suggests that the experience of the zone occurs when you become totally absorbed in your External, task-relevant



From an Attentional Theory perspective, the Zone experience is caused by the smooth flow of attention back and forth between Broad and Narrow External focus.

Cause: *Flow between Broad and Narrow External attentional focus*

Effect: *Performance in the Zone*
(B/Ex \leftrightarrow N/Ex) = the Zone

A Fixed-Depth of Focus visual input pattern is the equal distribution of attention between the Broad/External quadrant (FDF on the Contact Zone) and the Narrow/External quadrant (locating the Contact Point along the fixed-depth of the Contact Zone).

FDF = (B/Ex)

Locating the Contact Point = (N/Ex)

FDF input pattern = (B/Ex \leftrightarrow N/Ex) = the Zone

In short, FDF visual input creates the smooth flow of attention back and forth between Broad and Narrow/External focus, which creates the *Zone Experience*.

Cause: *FDF Visual Input*

Effect: *Performance in the Zone*
FDF = the Zone

Just
when you
thought it was
safe to go in the
water again...

ALPHA/PARALLEL PROCESSING THEORY



Research has shown that the most effective brainwave state for athletic competition is an Alpha brainwave state, which is the brainwave state associated with playing “in the zone.”

Our normal brainwave state when we play tennis is a Beta brainwave state, measured at 13 hertz and higher.

This coincides with our normal state of consciousness – a noisy, confusing and sometimes chaotic state of self-talk, anxiety, emotional overload and stress elevation. A state we have all experienced during competition. A state that is the antithesis of being “in the zone.”

Sports-Vision research has shown that an Alpha brainwave state is measured at 8-12 hertz and is associated with Parallel Processing. Parallel Processing is the most effective visual/cognitive interface in sports performance, responsible for faster reaction times and the phenomenon of “slow-motion seeing.”

Just as an Alpha brainwave state causes Parallel Processing, Parallel Processing causes an Alpha brainwave state.

In other words:

Alpha = Parallel Processing = The Zone

Parallel Processing = Alpha = The Zone

There is another equation that is important to this visual/cognitive interface:

FDF = Parallel Processing

In other words, an FDF input pattern is, in reality, the input pattern that creates the visual/cognitive interface known as Parallel Processing.

In a normal performance state, we use both our central and peripheral visual systems, but our peripheral system known as the *parvo-cellular system* is subordinate to our central system known as the *magno-cellular system*. A VDF input pattern creates this central-peripheral asymmetry.

By fixing your focus on your Contact Zone, you engage your peripheral visual system, which is primarily associated with the right hemisphere of your brain, in an equal distribution with your central visual system, which is predominantly associated with the left hemisphere of your brain.

Together, the simultaneous visual distribution of the parvo- and magno-cellular systems (peripheral and central vision) creates the visual/cognitive interface that is known as Parallel Processing.

As we discussed earlier, Parallel Processing creates the Alpha brainwave state associated with playing “in the Zone.”

In short form:

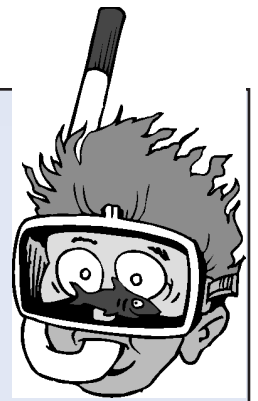
FDF = Parallel Processing = Alpha = The Zone

As complicated as Parallel Processing sounds, it’s actually very simple to do. All you have to do is stop focusing on the ball, which utilizes a dominant central input distribution, and start focusing on your CZ, which utilizes an symmetrical central/ peripheral input distribution.

That wasn’t so deep, now, was it?

Time
for
one
last plunge!

FOUR~DIMENSIONAL SYMMETRY



One of the most confusing characteristics of the flow state is the characteristic of being “in the present.”

What exactly does that mean? What does it mean to be in the present, and how do you know if you are in the present or not? And, if you are not in the present, then where/when are you?

These questions might seem a little obtuse and unnecessary for playing tennis, but they are integral to playing tennis in the zone. In fact, playing tennis in the zone is all about playing tennis in the *absolute present*.

Here’s how it works: in every Contact Sequence, there exists a temporal relationship between the movement of the ball, your countermovements to intercept the ball, and contact, the event that occurs when movement and countermovement come together at a common point in space and time.

Your countermovement is the common center of time in every Contact Sequence. Countermovement is *the present*. You, as a system of countermovement, represent the present temporal element of every Contact Sequence.

The movement of the ball in every Contact Sequence occurs before your countermovement (the present). Movement is therefore *the past* relative to you. The ball represents the past temporal element of every Contact Sequence.

Contact, in every Contact Sequence, occurs after your countermovement. So relative to you, contact is *the future*. Contact is the future temporal element of every Contact Sequence.

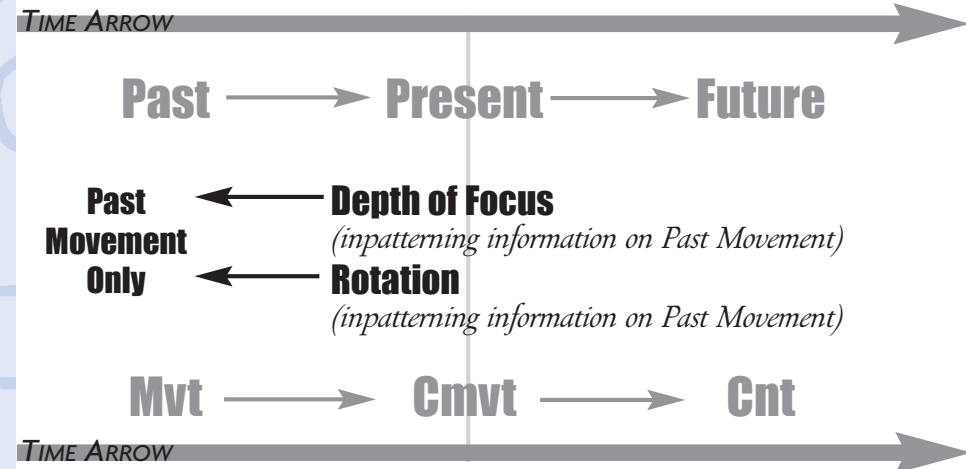
The temporal relationship of the elements of every Contact Sequence can be represented as:

Mvt → Cmnt → Cnt
 Ball → You → Contact
 Past → Present → Future

TEMPORAL ASYMMETRY

When you focus on the ball (VDF input), both visual countermovements (Rotation and VDF) are used to input temporal information about movement only. This means that both visual countermovements are used to input temporal information to the brain about the past only.

The temporal distribution of a VDF input pattern can be represented as:



In a VDF input pattern, the total number of visual countermovements dedicated to Past Movement is two. The number of visual countermovements dedicated to Future Contact is zero. So, the temporal distribution pattern looks like this: Past 2, Future 0.

This unequal distribution of the temporal elements of the Contact Sequence around the common temporal axis of the countermovement is called *Temporal Asymmetry*. In other words, when you are focused on the ball, you are playing tennis *in the past*.

FOUR~DIMENSIONAL SYMMETRY, CONTINUED

TEMPORAL SYMMETRY

By contrast, an FDF input pattern sets up a completely different distribution of the temporal information in every Contact Sequence. When you fix your focus on your Contact Zone and locate the Contact Point along this predefined depth of focus, the temporal information is distributed equally on both sides of the temporal axis of countermovement.

By simultaneously inputting equal temporal information about the past movement of the ball (Rotation) and the future Depth of Contact (Fixed-Depth of Focus), you effectively inpattern equal amounts of information about the past and future simultaneously. .

In FDF input, your brain receives equal distributions of the past and the future simultaneously, creating a third dimension, the dimension of *THE PRESENT*.

In an FDF input pattern, the number of visual countermovements dedicated to Past Movement is one. The number of visual countermovements dedicated to Future Contact is also one. So, the temporal distribution pattern looks like this: Past 1, Future 1.

This equal distribution of the temporal elements of the Contact Sequence around the common temporal axis of countermovement is called *Temporal Symmetry*. In other words, when you are locating the contact point on your imaginary window, you are playing tennis *IN THE PRESENT*.

Playing
tennis *IN*
THE PRESENT

is not just a myth,
nor is it something
that cannot be explained.

It is the temporal dimension
you create when you input equal
distributions of the past and the
future to your brain simultaneously.

Parallel Mode is how you play tennis in the present. It is how you play tennis in the zone. It is how you play tennis in a flow state. Parallel Mode is the underlying VCM operating mode of the human operating system performing in its highest order state. It is the human operating system performing in the *absolute present*.

