

VISION & MISSION STATEMENTS FOR PLAYERS—PART 5b

'FUNCTIONAL SHOTS'-Part b

Nearly every company and organization has a vision and mission statement. In our programs at NVTC, we have harnessed the power of vision & mission statements to direct our player development. I have created a performance player vision statement and targeted mission statements to help our coaches and players get on the same page about where we are going and how to get there.

This vision statement is my version of some original work by top international coach Louis Cayer:

"A Performer who is an Athlete that Plays Smart with Functional Shots."

On our integrated player diagram to the right, we see when we use the term 'player', we are referring to both the *tactical* and *technical* factors. There is a direct connection between tactics and technique, which harmonize in a package called tactical-technical development.

This article will explore technical development, but since technique only exists to execute a tactic, we will label it 'functional shots'.

Our technical development mission is:



'FUNCTIONAL SHOTS' MISSION (Technical)

*"Help players learn technique that is **adaptable, effective, and efficient** with no 'Red flags' inhibiting future development."*

In part 1, we explored the principles used when designing technical development that creates effective, efficient technique with no 'red flags' (glitches that may cause future issues). To review that article, [click here](#).

This article will look at the specific technical principles that govern technique. As mentioned in previous articles, there is a strong connection between tactics and technique. For a detailed article exploring that connection, [click here](#).

“Technique in tennis only exists to execute a tactic.”

TWO-FOLD DEFINITION OF TECHNIQUE

When most coaches think of technique, they think only of the mechanics of the shot. However, technique has a two-fold definition:

- **What the ball does:** We call this '**Coaching the ball**' For a detailed article on Ball Control, [click here](#). The P.A.S. Principles (Path/Angle/Speed) determine the physics of how to control a ball. Technique is only effective if it makes the ball do what is necessary to execute the tactic.
- **What the player does:** This part is the mechanics. Typically, coaches view technique in tennis through the lens of *stroke models*. The model is seen as a series of movements chained together (more on that in a moment). Many coaches have what is described as a 'model-based' technical system.

Technical models can be helpful, however, for coaching the open skill of tennis ([click here for an article on tennis as an open skill](#)); in a tactics-first approach, stroke models do not convey the *priorities* of the movements. Trying to think through a series of steps is not helpful when performing. Instead, what people's brains and central nervous system are wired for is to have a clear intention and priorities for the actions they want to implement.

MOTOR LEARNING APPROACHES

In motor learning, several processes can be used to acquire skills. 'Chaining' is one of the most common and consists of performing the movements of the model in the appropriate sequence. (e.g. preparation, hitting phase, follow-through, etc.). This is a process imported from closed skill sports where it is useful because performance is all about perfection of movement).

For open-skill sports, it is more effective not to use a generic stroke model (e.g. The 'Djokovic Backhand') and use 'Shaping' rather than 'chaining'. Shaping is more in harmony with how people perform skills. In shaping, the priority of the action is identified, and everything is moulded around it. This also allows for critical adaptations to be made.

For example, '**chaining**' a groundstroke with a beginner would mean having them shadow swing through the steps and then feed the ball easily to them so they could awkwardly go through the sequence. Sometimes, the coach may even downplay them missing the ball entirely yet reward them for 'getting the stroke right'. Very useful for learning gymnastics, not so much for tennis.

In contrast, '**shaping**' would take the priority element of timing and have players tap the ball up on the strings. They would then help them to organize their bodies around that impact (for forehands, backhands, etc). Next, they would set tasks to have the players send and receive the ball to each other and gradually increase the distance between them. All the while helping them to make the necessary adjustments.

Hopefully, you can appreciate the difference. In the *chaining* example, the person is trying to re-create specific movements. In the *shaping* example, they are playing the ball to exchange it.

TECHNICAL PRINCIPLES

We can categorize the Fundamentals side of technique as follows:

- Racquetwork
- Bodywork
- Footwork

This allows us to deal with precise elements as required. However, resting above those categories are three key technical principles that preside over all fundamentals.

- **TIMING:** This is the #1 technical priority in tennis. '**Are they timing it appropriately?**' is a critical technical observation question. The 4-5 milliseconds the ball contacts the string is everything. If the impact is successful, you are playing; if not, you are a nice-looking loser! For a detailed article on timing and its importance, [click here](#).
- **RHYTHM:** Rhythm is a word used in several places in tennis (e.g. the rhythm of a rally). In technique, rhythm is defined as where the racquet moves faster or slower through the shot.

There are four stroke rhythms:

- *Fast-Fast*: The racquet prepares fast and moves through the movement fast. Maintaining the speed of movement through the entire action.
- *Slow-Slow*: The racquet prepares slow and moves slowly through the shot. Also, maintaining the same speed of movement throughout the entire action.
- *Fast-Slow*: The racquet prepares fast and decelerates through the shot.
- *Slow-Fast*: The racquet prepares slowly and accelerates through the shot.

Depending on the shot, any of these rhythms could be appropriate to optimize execution of the shot. For example, a player slicing from the baseline and wanting to disguise a slice drop shot may use a slow-fast rhythm (without the acceleration, the shot would be too easy to read). A drop shot used during an approach may have a fast-slow rhythm (The deceleration can absorb the power of the oncoming ball). A touch drop shot at the net may use a slow-slow rhythm.

Coaches often overlook stroke rhythms. However, they are a critical technical principle. If a player is utilizing all the appropriate links in a shot (in other words doing the movement correctly) but has the rhythm incorrect, the shot will be just as flawed as if the movements were incorrect.

- **MOMENTUM: 'Are they using momentum appropriately?'** is also a critical technical observation question. Tennis is an impact sport that utilizes an implement (Racquet). The way human bodies wield implements is through the use of momentum. In scientific terms, **momentum = mass x acceleration**. It is often not just a matter of racquet speed but how the body is used in the shot.

The ball has its own momentum the player must battle against. The harder the shot received, the more the player must use their momentum to 'win the collision'.

There are a number of pieces that go into correctly using momentum:

- **Balance**: The human body generates momentum from the initial 'ground force reaction'. If a player is unbalanced, energy will be poorly transferred to each link (and the racquet). Balance can be 'static' (e.g. like a ready position for a Return of serve) or dynamic (like stretching for a volley). Being well-balanced in the situation means an easier time using momentum successfully.

- **Linkage:** The segments of the body can be sequenced or combined to maximize or minimize momentum. This is often called the 'Kinetic chain' where energy from the ground is transferred through each sequential body segment (e.g. legs, hips, torso, shoulders, elbow, wrist and finally, racquet). Muscular tension also factors into the momentum equation. A tense segment can break the smooth transfer of energy through the links.

Momentum also is generated in two different ways:

Linear momentum is where it is generated along a straight line (e.g. step and lean into the ball).

Angular momentum is where it is generated in a circular path around a central axis. (E.g. turning the hips and shoulders)

The human body utilizes both types, but angular is a priority in most shots.

Please note: Maximum power generation is **not** the goal in many situations in tennis (e.g. on any touch shot or when blocking a volley). In these shots, momentum is minimized.

“Maximum power generation is not the goal in many situations in tennis.”

These principles give purpose to any element in the three fundamental categories. For example, footwork is technically functional only if it delivers a base for momentum, helps establish the appropriate rhythm, and affords good timing (or all three). Bodywork can help momentum but also impacts rhythm (*when* one turns is critical) and timing (everything must work as a coordinated whole culminating in the ball's impact).

As mentioned, it is also essential to have a useable technical observation framework to see when and how any technical flaws occur. For a more detailed article on technical observation, [click here](#).

CONCLUSION

It is critical to develop technique through the application of **principles** rather than through conforming players to the 'form' of an ideal stroke model to mimic. The technical principles of **Timing**, **Rhythm** and **Momentum** are practical and useful as priorities for all technical actions. This creates players with 'Functional shots'.

This article was inspired by the work of Louis Cayer.
If you would like to ask a question, give feedback, or want more information, contact us at:
acecoach.com