Get to the point!!!
Point footwork of Latosa Escrima
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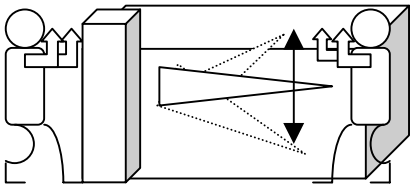
To suggest that any martial art could be a success without the use of strong footwork would be a farce. The stylist must be able to deliver the technique against a mobile opponent while maintaining balance continuity. Because the Latosa system of Escrima is an educated system, simple in concepts while at the same time sophisticated in application, it recognizes the need for a fast, effective & balanced footwork. Within the Latosa system, the concepts of: Balance, timing, speed, focus and transition are used to transcend everything from the fighters mental aspect, to the transition of the body.

So what is point footwork? And how is it used for attacking and monitoring our opponents?

We must first understand the difference between the **"Point"** and the **"Point footwork"**, as they are two distinctly different things that tie together for the desired end result.

The Point:
The **"Point"** would be defined as your targeting system to the opponent. Either for attacking the center of your opponent or open targets for disrupting the balance of your opponent once before bridging or once contact is made. As your opponent moves or shifts the point moves with them. By constantly targeting (lock and block) on the balance points and open areas of your opponent keeps them on the defense and away from regrouping and retaliating back. In other words, do not stop time while attacking.



One example of how the **point** could move with the opponent, while simultaneously utilizing the **box** concept.

The "point" goes much deeper then I have stated, but to elaborate further could be the topic of an entirely different paper all together. So for the sake of simplicity, I'll leave this point at this end.

Point footwork:
Point Footwork is another method for targeting to the opponent, but this is the vehicle that moves you from point "A" to point "B", while connecting the dots between the **point** and the **point footwork**. As you face the opponent, your body forms an imaginary semetrical **"Box"** that acts and moves as one unit. The box is the height and width of the defender, and acts as an imaginary shield or zone, but also connects the defender to the attacker. Similar to shining a flashlight on your attacker, it is not a physical connection, but is a connection none the less. This will dictate the angles of attack/defense the defender will contend with. It is preferable to have the attacker in your box, but not to be in his. The angles of **Point Footwork** provide

you with the front/back, left/right and diagonal mobility required to make it difficult for the attacker to keep you in his "**Box"**.

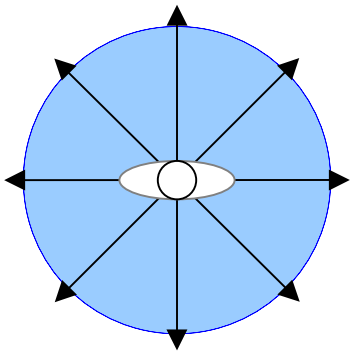


Fig 1
Angles of movement

By looking at **figure 1**, you will see 8 basic directions for movement. Don't be fooled into thinking that is a hard fast rule and are limited to just those few angles. In fact, there are infant combinations of angles that can be used. The lines drawn are only for conceptual understanding. There are many more lines in between the angles of the lines that may be utilized at any time.

Additionally, there are many concepts on how to use the lines. You can step to compress your opponent forcing them to retreat, or you can retreat your step to keep from being compressed by your opponent. Stepping is one method to keep your line to the **Point** open by realigning yourself to them. But also to keep your opponent's blocked off from locking their **Point** on you.

Whatever concept you use for the movement, through it all you must maintain your balance in doing so, otherwise your endeavor will have been in vain. The results of such a failure are usually disastrous to the defender.

Strategy of the point foot work:
First and foremost, the point footwork provides a method for moving your head and body either towards, or away from your opponent to maintain your balance while hitting. The strategy is to connect the angles between your chest, shoulders and feet into a **triangle**, with the **tip** locking onto your opponent, and the **base** locked onto you. Once the triangle is complete this gives you the stability to launch your attack at will. The **tip** or the **point** is not static, it will move as the opponent moves to track their angles of movements and the open strike points. It could be equated to "keeping them in your gun sites". If the opponent moves too far to either side, then you must adjust your feet to recreate the triangle. Active footwork ensures that you will have a consistent contact point on all your strokes. This will help groove your strokes.

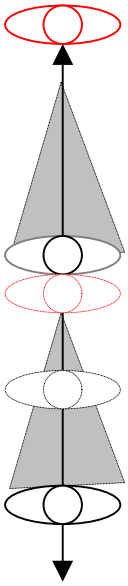
- Footwork drills are the best way to improve slow movement. Do both random and set patterns to ensure that you will have the flexibility to move to any position at any time.

Off line footwork, off line hitting:
As we have seen in **figure 1**, we have the capability to move our bodies out of harms way – counter stepping. So it would stand to reason, if we can counter step… We can counter hit simultaneously. In this example we will be demonstrating off line stepping and off line hitting as one movement.

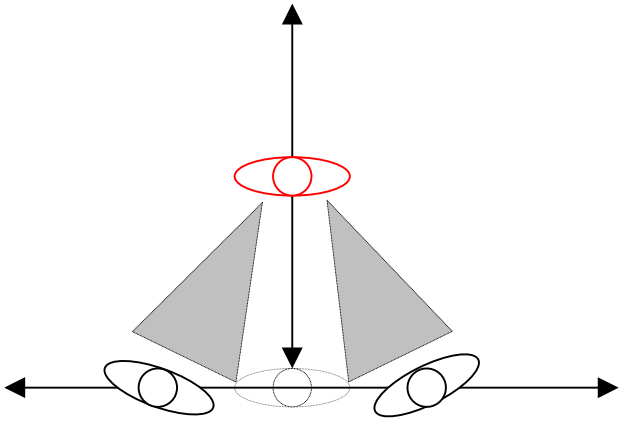
Great examples of this would be the Military maneuvers of flanking or cross firing. Both are tactically designed to relieve the attack off of the center of the field while creating superior firepower coming in from a "V" angle. Point footwork creates the same "V".

The following illustrations demonstrate how to move off the line from the opponent, and hit the **Point** from an "off line position" by connecting the triangle.

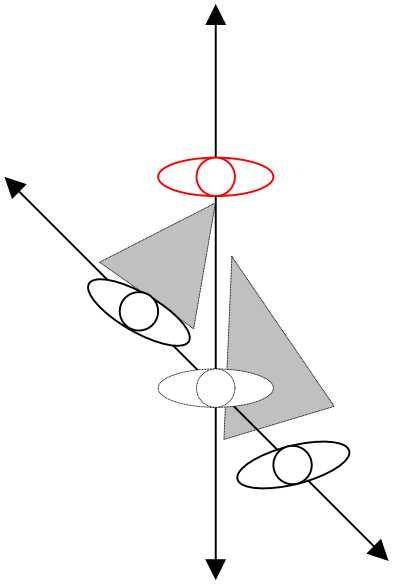
Off line point footwork angles, hitting off line.

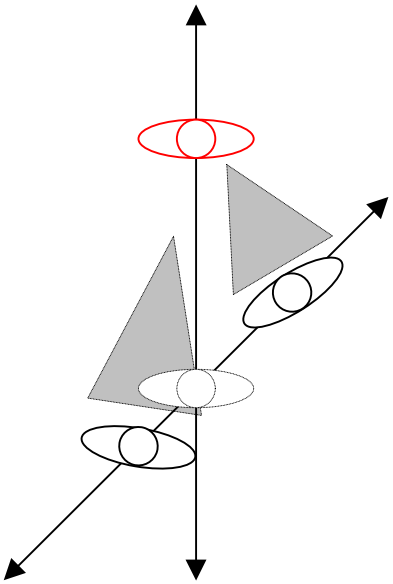


As the opponent moves in, the defender makes a parallel off line moving forward or backward. Keeping the opponent in the box, while connecting the point and the point footwork. The hit can take place on the “old line” or on the “new line”; it is dependent if, or where the point is open for contact.



As the opponent moves in, the defender makes a perpendicular off line moving to the left or the right. Keeping the opponent in the box, while connecting the point and the point footwork. The hit can take place on the “old line” or on the “new line”; it is dependent if or where the point is open for contact.





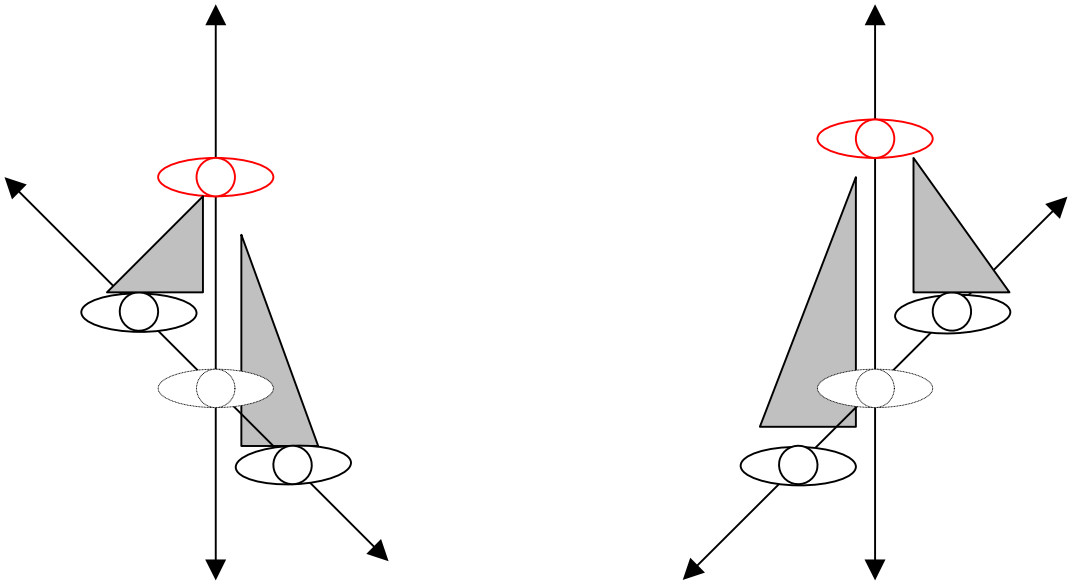
Two examples of Diagonal off line footwork and hitting the point, while maintaining the opponent in “**the box**”.

Off line point footwork angles, hitting on line.

Off line footwork, on line hitting:

With logic being our guide, using the same concepts. If we can off line and off line hit, then it stands to reason we can still move off line while hitting on line. The shape of the triangle changes a bit to hit the point, but the balance concept does not.

The following illustrations demonstrate how to move off the line from the opponent, and connect the **Point** from an on line hit by connecting the triangle.



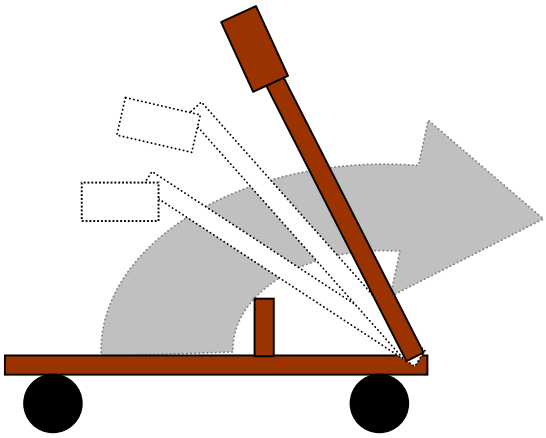
2 Example of moving off line, but keeping the **"point"** on line.

Posture:
Stand relaxed, keep both of your knees slightly bent creating **Potential energy,** waiting to be converted into **power**. Your front foot should be flat, but not static on the floor. Your rear heel should almost always be raised while standing still or in motion, projecting forward to your opponent. When your rear heel is raised, it allows you the ability to shift your weight immediately to your other foot while delivering a strike thus allowing you to release the **Potential Energy** and convert it in **Power.** Your raised back heel also allows you to react quickly and act as a spring, giving allowing you to hit from any angle or to simply just move out of the way so that you can try to hit again. There is no fast rule that says your heels should be constantly raised or when they should be flat. This depends on where the balance point of your body has shifted.

Simple Physics of Point Footwork:
Point footwork not only enables you to have the mobility to attack or evade. It also is a source of power. By performing the fast short movements, we are also suppressing power by only moving to the point, and not beyond it. Therefore we have created "stored tension", ready to be released at will. Our footwork, stick and hand techniques move only to the strike zone, never backward (cocking) or beyond (slashing).

Therefore at the end of the movement we have created short-range power by locking the breaks at the last second, or limiting the stroke of the movement. (Similar in concept to the mechanics of the Catapult)

Catapults work by **storing tension** either in twisted ropes or in a flexed piece of wood (in the same way an archery bow does, but on a larger scale). The gears are important, because they create a **winch**. The winch allows a person to put a great deal of energy into the catapult over a period of time. Then all of the energy releases at once, throwing the projectile. As opposed to **ballistas**, which are similar, but swing through vs. locking out at the end of the power stroke.



The parallels between the two are as follows:
With the legs slightly bent (acting as gears), this begins the winching of the ropes (or muscles) into stored power mode. Pushing off of the rear heal in the up position up cuts the ropes and throws the body (lever) in to explosive motion. Converting the potential energy into power. When this happens, it accelerates your mass forward, hitting the person with force of your body weight. While the body is moving, the stick is creating a circled hit, which in turn creates - tork.

So how do we relate all of these terms I've used to describe the physics of the Point Footwork?

Mass?
Mass is defined as the *measure of how much matter an object or body contains* -- the total number of subatomic particles (electrons, protons and neutrons) in the object. Mass is crucial for calculating how fast things accelerate when we apply a force to them.

One type of **force** that we are all too familiar with is our weight. This is the amount of force that the earth exerts on you. There are two interesting things about this force:

- It pulls you down, or, more exactly, towards the center of the earth.
- It is proportional to your mass. If you have more mass, the earth exerts a greater force on you.

When you swing a stick, you apply a force to the stick, which makes it speed up. When you push off of the lifter rear heal, you exert force which pushes you forward or away from your opponent.

Force causes **acceleration**. If you apply a force to your lifted rear heal, you will start to move. This may sound simple, but it is a very important fact. Isaac Newton's Second Law, forming the basis for classical mechanics binds your forward movement. Newton's Second Law states that the *acceleration (a) of an object is directly proportional to the force (F) applied, and inversely proportional to the object's mass (m)*. So, the more force you apply to an object, the greater the rate of acceleration; and the more mass the object has, the lower the rate of acceleration.

When we talk about forces, generally there is more than one force involved, and these forces are applied in different directions. So lets explore some of the ingredients used in the physics of **Latosa Point footwork**.

Torque?
Torque is a *force that tends to rotate or turn things*. You generate a torque any time you apply a force when you make a stab with your stick. Twisting your stick while stabbing is a good example. When you stab, you apply a force to the handle. This force creates a torque on the tip of the stick, which penetrates forward.

Work?
The term **Work** when it is related to **Latosa Point footwork** quite simply, is the *application of a force over distance*. In which case the distance would only be relevant if it is the same direction of the force applied. Stepping with your footwork to the opponent and walking to the opponent are both examples of work. In either case, the force of your weight would be equal, and the distance to the opponent is equal. It may have felt like you did more work, but while you were walking /stepping you moved horizontally, while the force from your weight was vertical.

An Airplane also does work. When it is moving it has to apply a force to counter the forces of friction and aerodynamic drag. When it lifts up, it does the same kind of work that you do when lifting a weight. When it lowers back down, it gets back the work it did. Gravity helps the Airplane move down.

Work is energy that has been used. When you do work, you use energy. But sometimes the energy you use can be recovered. When you lift your foot to step, the work it does to get to the top helps it get back down. Work and energy are closely related. The units of work are the same as the units of energy.

Power?
Power is the measure of how fast **work** can be completed. Using your footwork to rotate, you may be able to generate several of ft-LBS of torque. But could you step around 3,000 times per minute? That is exactly what an engine does.

Here is a simple test to figure how much power you can produce: See how fast you can sprint up 3 stories of stairs!!!

1. Measure the height of a set of stairs that takes you up about three stories.
2. Time yourself sprinting up the stairs as quickly as possible.
3. Divide the height of the stairs by the time it took you to run up them them. This will give you your speed.

Energy?
Last but not least **Energy**… Using everything we've discussed up to this point to explain energy.
If power is like the strength of a weightlifter, energy is like his endurance. Energy is a *measure of how long we can sustain the output of power*, or how much work we can do; power is the rate at which we do the work.

There are two kinds of energy: potential and kinetic.

Potential Energy
Potential energy is *waiting to be converted into power*. A compressed spring and chambering your footwork in the bent knees, "rear- heal- up" position are both examples of potential energy.

A Battery is a type of energy conversion device. It stores power, waiting to be released to do **work** into an object like a radio, flashlight, ECT… Similar to the storing tensions in your legs, waiting to explode forward, propelling you to your target.

When your stance compressed, it gains potential energy (similar to a spring). The tighter you compress it, the more tensioned it gets, and the more energy it gains. For example, if you are standing erect and push off of the lifted rear heal, you will not be able to gain the full force of your mass. There will be no real source of stored tension because your legs are too straight. But, if you compress your stance by bending your legs more, then explosively release the tension and push off of the back foot. The **force** of your **mass** will be accelerated, and would convert the **potential energy** into **power**. So, the more you store the tension in an object the more you increase it's potential energy.

In this case, the force is equal to your weight. Which is your mass, times the acceleration of gravity, and the distance is equal to your height change.

Kinetic Energy
Kinetic energy is *energy of motion* Kinetic energy is similar to potential energy. The heavier the object is, and the faster it is moving, the more kinetic energy it has.

Kinetic Energy increases with the velocity squared of the object. This means that if your footwork is twice as fast as normal, you have four times the **energy**. You may have notice that from a "static" position you accelerate much faster in the first stride or two then in the third or fourth step. That is because to get your body moving you have to expend a lot of force all at once to propel your mass. Once you are moving then the expenditure becomes much less since the force of your mass is already moving and requires less energy to speed it up. The amount of **work** would remain the same on a horizontal plane. Some of that energy could be recovered if there were a downward slope allowing gravity to accelerate you, by pulling you down vs. using the fuel in your muscles.

There are many other factors used for determining your acceleration, such as your height (drag), which also increases with velocity squared. The length of your legs (gear ratio) and the speed of how fast you can twitch you leg muscles, which would determine how much power would be available.

SO you can see the importance of understanding **potential energy** and kinetic **energy** apply to your footwork. One is the storing of power and releasing it; and the other is the increase of power with acceleration. Both are very important and relative to the application of the Point footwork against an opponent, for both mobility and power.

When all of the ingredients are put together, the practitioner will have the education to use the concepts of the **Latosa Escrima Footwork** in an infant series of combinations. The ability to track the movements of the opponent. While either attacking the center of your opponent, or open targets for disrupting the balance of your opponent. Allowing for fast, effective and powerful movements while maintaining balance and continuity at all times.