



### Biomechanics in Dance (Part 2)

What is Balance? How to maintain it through linear and angular momentum? Is Distance the same as Displacement? How does speed relate to velocity and, how it can make you a better dancer?

#### Understanding Balance

Balance is the ability of a dancer to control their body equilibrium or stability and is often a by-product of good alignment in the body. There are two types of balance; Static and Dynamic, with a good understanding of both needed to perform efficiently and prevent injury.

#### Static Balance

This is the ability to control the body while the body is stationary.

It is the ability to maintain the body in some fixed posture and to maintain postural stability and orientation with the center of mass over the base of support and body at rest.

*For example; static balance is needed in the final moments of line figures like a 'Throwaway Owersway', 'Contra Check' or 'Same Foot Lunge'; when you reach the last line or a "picture moment", good static balance is needed to maintain your balance and not disturb your partner.*

#### Dynamic Balance

This is defined as the ability to control the body during motion and to transfer the vertical projection of the center of gravity around the base of support.

Dynamic balance is also the ability to maintain postural stability and orientation with the center of mass, over the base of support, while the body parts are in motion.

*For example; Imagine dancing a Natural Spin Turn...the step calls for a weightless hovering action on Step 5, right before lowering.*

*The moment is challenging since both partners are up on their toes and finishing the rotation simultaneously.*



Having a good dynamic alignment and bringing the center of weight over the base of support (in this case, the R ball of foot for Lead and L ball of foot for Follow) are crucial for succeeding in the Natural Spin turn and producing a nice balanced movement.

#### Momentum

This is directly proportional to an object's mass and its velocity therefore, the greater an object's mass or the greater its velocity, the greater its momentum.

This momentum can be transferred from one object to another with different types of momentum having a different influence on dance movement.

### Linear Momentum

Linear momentum is the momentum that a dancer creates by moving in a straight line down the dance floor.

*For example; The first step of a Feather Step for the Lead is described in a technique book as a RF Forward taken down the (Line of Dance, Diagonal to Wall or Diagonal to Centre).*

*By executing this step correctly, according to the book, we would create a linear momentum that is moving down the floor.*

### Angular Momentum

Angular momentum is the rotational equivalent of linear momentum and is created by the rotations of various body segments.

*For example; The rotation of the shoulder plane when performing a Feather Step aiding in the stepping outside partner.*



### Energy

For the dancer to be moving around and have velocity in space, they need to have energy in the body and, that energy comes from a force that is applied to the object either internal (muscle force) or external (your partner's influence).

### Acceleration

This describes the movement of the body through space and provides the connection between movement and force.

*For example; Pushing the car's accelerator makes the engine use energy and gives the car some velocity...the energy that the car is using is producing force.*

Correct biomechanics provide efficient movement and may reduce the risk of injury.

In dance and, any other sport, it is always good to consider abnormal or faulty biomechanics as a possible cause of injury and incorrect technique can cause abnormal biomechanics; which can lead to injuries.

Below are just a few examples of the relationship between faulty technique and possible associated injuries.

- Wrong fitting shoes can cause pain, inhibit development and uneven weight distribution over the foot while incorrect footwork can also cause an uneven distribution of weight.
- Allowing the weight to roll on the outside of the foot can cause injuries of the ankles and knees.
- Misalignment of the lower and upper body can affect your personal balance and your partner's posture, with the potential to cause injuries.
- Misalignment of the joints in flexion ankle, knee and hip can cause loss of balance and ligament tear.
- Not counterbalancing a body part that works in extension away from the base of support.

Biomechanics is an incredibly complex topic and the laws, concepts and principles we have briefly covered are the core basics of it.

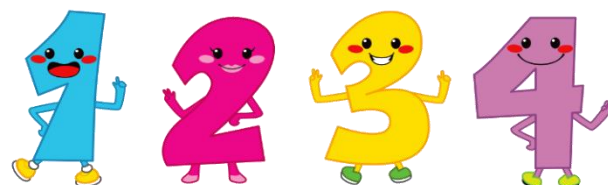
Every physical/sport discipline has a number of studies conducted on the biomechanics to perfect and tune technique for the most efficient, powerful and injury-free movement.

Understanding the basics allows you to discover for yourself how these principles may apply to a particular movement...it can be enjoyable to study and will make you a better dancer, teacher and coach.

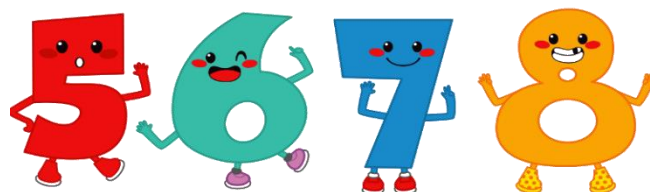
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### How do you Count when Dancing?

How do you count when dancing or, are you one of those lucky people who just feel the beat and doesn't need to count?



If you are, congratulations...however most of us aren't so, we need to count.



For example, there are many ways that music can be counted:

Salsa can be: 1,2,3-4, 5,6,7-8 or 1,2,3..., 5,6,7... or quick, quick, slow or 2,3,4-1, 2,3,4-1, etc

Cha-Cha can be: 1,2,3,4&5,6,7,8& or 1,2, Cha-Cha-Cha, 5,6, Cha-Cha-Cha, or 2,3, 4 & 1, etc

Jive can be: 1,2, 1,2,3,1,2,3 or 1,2,1&2,1&2 or 1,2,3&4,5&6, etc

Samba can be: & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 or 1 ah 2, 2 ah 2, 3 ah 2, 4 ah 2

These are only a few examples but, the point is to show that there are different ways to count.

The more interesting question is why?

We all have natural ways of learning and thinking about things.

Personally, I am more inclined to count all beats and the syncopations if they are there however, other people are more intuitive and therefore more inclined to use words or broken counting.

The point is you might find that when trying to master a new dance, changing the way you count may help you and it might be that the way your teacher counts doesn't suit you so, if you're having troubles then try to count the steps in a few different ways until you find one that works for you.

Sometimes, just looking at the dance from a few different perspectives will make it easier to learn and help you develop a natural response to the music.

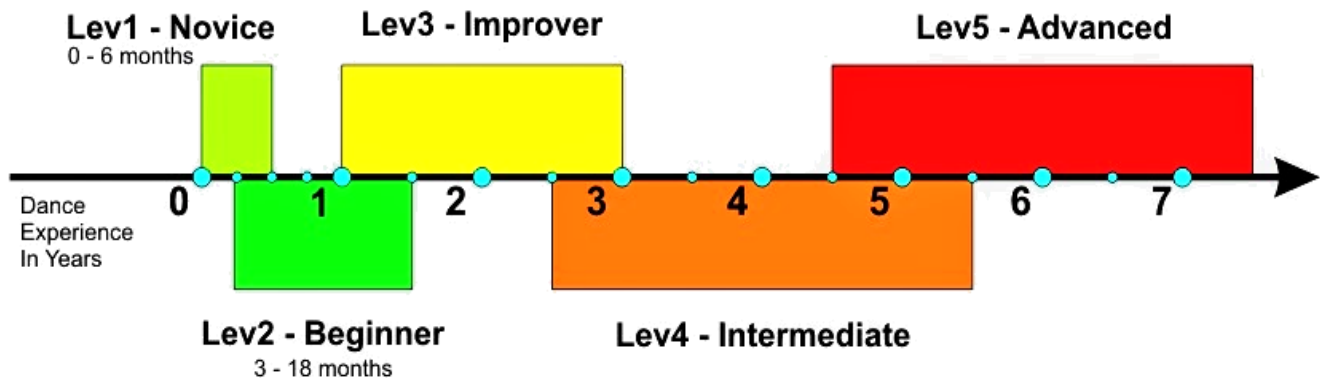
In the long run, you will want to count each beat and the syncopations, because as the dance becomes more sophisticated it relies more upon syncopation, and if you can count this, then you will be better able to dance to it.

For now, if your musical ability is less than you would like, try a few different ways of counting if you're not quite getting the rhythm of a dance but, work toward counting each beat so that you have a strong musicality to help with your dancing as you work towards those more sophisticated steps and movements.

## What may be the 'Levels' of a Dancer?

If you're like me, you love seeing those tangible indications that your dancing is noticeably better than it was before.

This concept of 'levelling up' your dance skills can be satisfying and shows how far you've come but, what criteria could we use to separate the different 'levels' of dancer?



### What makes you a dancer?

**What you do:** You enjoy music and moving to it. That's it. Don't listen to those nay-sayers that tell you need to take lessons to be a 'real' dancer.

Of course, you may want to refine your abilities if you want others to dance anywhere near you...

**How it shows in your dancing:** It might be messy on the outside but you don't care, because it just feels good to move and groove to what you hear.

You leave silly things like 'structure' and 'cohesion' to the pros on Dancing With The Stars.

### What makes you a DECENT dancer?

**What you do:** You've decided to take some group lessons from an expert; maybe you practice sometimes or social dance once in a while but, it's all pretty relaxed and just for fun.

You know you'd like to get better but so far, it's not as important as other life priorities.

**How it shows in your dancing:** You know the basics, well, enough so that people watching can actually tell what dance you're doing.

You can connect with your partner and more or less push each other across the floor.

You're still a novice in the eyes of the wider dance community, but at least you score some points for trying.

### What makes you a GOOD dancer?

**What you do:** You've recognized that you have a long way to go to really stand out and now you want it bad enough to start pulling for it.

You've moved from group classes increasingly into private lessons and pay much more attention to those boring technical tips than you did in previous levels and if you go out social dancing, you're now considered a 'regular'.

You may also have started to dabble in the competitive scene.

**How it shows in your dancing:** You've started to catch the eye of other dancers and your movements feel a lot more fluid and controlled, balance is no longer a problem and maintaining connection is second-nature.

You've probably started to play with arm styling and other embellishments, it's increasingly fun to dance with you and you start to receive smiles and compliments from your partners.

### What makes you a GREAT dancer?

**What you do:** You might not be the best but, you're good and you know it.

How many steps you know is now less important than how you dance them.

You may be deep in the competitive circuit by now - not because you can't be a better dancer without it but, simply because it's the only place you can dance full-out anymore. You are king or queen of the social dance floor but might find yourself looking around for partners talented enough to challenge you.

How it shows in your dancing: You are what lower-level dancers look at when they say to themselves, 'I want to move like that.'

Guiding/responding to different combinations is so easy now that you start to improvise some movements...like you used to, only now you know how much you can get away with.

You never lack for dance partners but, are happiest when dancing with your regular or competitive partner, because they can connect with you on a whole new level.

On every level, there are many who decided they are satisfied where they are and if you decide to move past that, remember not to look down on them.

Each level requires sacrificing time and effort to move forward and the only difference between you and them is that for you, it's worth it.

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### **(A Brief History) Vernon & Irene Castle - Part 1/4**

Most dancers have heard of Vernon and Irene Castle, but most don't know much about what made this couple so famous.

Their story is not only one of fame but the story of a great romance.

We have many famous couples in our modern world. Millions hang on the actions or words of couples like British royals Prince William and Kate Middleton.

Hollywood celebrities are in the news every day! With the power of instant communication and social media, it's easy for vast numbers to quickly know what's going on with their lives.

But, back at the turn of the century, the idea of millions of people following the behaviour of one couple like rock stars seems almost impossible to grasp.

A handsome, dynamic young couple, Vernon and Irene Castle created a frenzied following that puts modern fandom to shame.

Douglas Thompson's published book "Shall We Dance? The True Story of the Couple Who Taught the World to Dance", delves deeply into the history of the Castles and even though I knew of them and, had watched the film starring Fred Astaire and Ginger Rogers many times, I had never understood how much of a love story they represented to the world.

Born William Vernon Blyth on May 2, 1887 (Castle was actually a stage name), Vernon's specialty was playing a gentleman drunk in vaudeville acts. He met Irene Foote (1893-1969), a precocious 17-year-old, at a lakeside retreat in the summer of 1910.

Initially she had branded him as 'not my cup of tea' but only minutes later he caught her attention for a couple of reasons.

First, he was actually willing to listen to her constant gushing of excited stories and for another, he had been introduced as a comedy performer from Broadway. A manipulative young thing with a



dance background and eyes on a future in theatre, Irene saw the potential and chased after him to get an audition with the famous producer Lew Fields.

Very quickly the two fell head-over-heels in love.

Engaged on Christmas Day, they were married the following year.

They went everywhere together and loved being in each other's company but, what they did best was dance...they moved together with a natural flow that captivated anyone who saw them.

They travelled to Paris in hopes of making it big and in debt to their producer for the staggering sum of 1,000 Francs advance payment (that might be today's equivalent of a home mortgage), the Castle's vaudeville show was a flop but, audiences were enraptured when Vernon Castle danced with his wife.

The dancing was unpolished and Irene said she spent more time flying in the air around Vernon than with her feet on the ground.

Vernon let it all go and Irene, never afraid with his arms around her, flew with it.

In the spring of 1912, Vernon and Irene Castle became the sensation of Paris.

Word spread and in a short time they were renowned, a [dance couple](#) like none the world had ever seen.

Around the entire civilized world, men and women alike sought out any news of the Castles. They were the world's most famous couple and certainly the most intensely followed romance.

People wanted to be like them in every way; they copied everything from their dancing style to their hairstyles.

