



Theory of Power (Him Ui Wollli)

The Theory of Power is fundamental to the performance of Taekwon-Do techniques. There are 6 main elements to the development of maximum power in any technique; Mass, Reaction Force, Breath Control, Equilibrium, Concentration and Speed. If any element is missing the power of any technique will suffer. You will notice that the elements often contain aspects in common with each other. This is because the Theory of Power is a complete package in which all the elements interrelate. Below is a brief description of each element. Your Instructor will be able to explain this to you in more practical terms when performing your techniques.

Mass (Zilyang)

In order to achieve maximum power it is necessary to use your entire body mass behind the technique and not just your arm or leg. For example, imagine a baseball player. The batter swings the bat not only with their arms but their entire body allowing the bat to follow through after the contact. Now imagine that the same batter is not using their entire body but only their arms. The resulting strike would be extremely weak.

In Taekwon-do we use three primary methods to add our mass (body weight) to our techniques

1. Hip Twist – by drawing our hip backwards before driving the technique forwards we can add all our upper body mass to the technique. Hip Twist is an essential method for obtaining extra power in static techniques such as sitting stance punching.
2. Stepping Forwards into a technique – by stepping forwards we add our body mass to the technique so rather than punching with the weight of our arm we are punching with the weight of our body. It is essential that the foot does not hit the ground before the technique is delivered. If your punch is delivered after you've stepped you will have lost the additional benefit of your body weight behind your technique.
3. Sine Wave (or Knee Spring) – Sine Wave on its own does not add to the power of the technique. What it does is allow us to move our body mass effectively. By bending the knees at the start of a technique we are able to release our body weight from the previous stance and lift it up and forwards before dropping it down in to the next technique.

One of the training secrets of Taekwon-Do states: 'co-ordinate the movement of hands, feet, eyes and breath into a single motion.'

Reaction Force (Bandong Ryok)

Isaac Newton's laws state that for every action (or force) there is an equal and opposite reaction (i.e. a force equal in magnitude in the opposite direction). This is more relevant in terms of impacts and collisions, rather than simply pulling the opposing hand back to the hip when punching, blocking etc. For example, imagine an attacker running at you. If you punch them, the power will be magnified by your own strength, speed, etc, plus the speed with which they ran onto the technique. Therefore, by timing your attack or defence correctly, and making contact with the opponent at the precise instant, his or her force will be used against them.

In Taekwon-do however, we tend to think of Reaction Force in terms of balancing a technique. The act of pulling the opposing hand back to the hip does enhance the technique by accelerating the twisting of the upper body but it also balances body movement. You will discover in Taekwon-do that the reaction arm does not always return to the hip but changes depending on the techniques being performed and will also change depending on which technique follows the one being performed. In pattern Won Hyo the first movement is a twin forearm block followed by a high section inward knifehand strike.



In the twin forearm block the right hand finishes above the head to balance the outer forearm block to the front but it also places the right hand in the perfect position for the next technique. The right knife-hand is striking inwards towards the left. If we pulled the left hand back to the hip, the body would tend to over rotate anti-clockwise, creating an imbalance. Instead, we pull the opposing hand to the right shoulder to balance the movement. The back fist strike / low block in Toi-Gye and Choong Moo, middle block / low block in Hwa-Rang are other examples of reaction force being used to balance techniques.

Breath Control (Hohup Jojul)

When performing a technique we inhale slowly and deeply, often through our nose and then exhale sharply through our mouth at the moment of impact thus tensing our muscles and creating a stronger technique. In Taekwon-do we use our breathing to time our performance of many techniques. This is especially true when performing Patterns. Our breathing helps us to co-ordinate all our techniques to a perfectly timed finish where everything comes together at the precise moment of impact. We sometimes complete a technique with a 'Kihap'. This again is making use of Breath Control and tensing the muscles at the moment of impact. When you watch someone speeding through a Pattern it will often lack power purely because they aren't breathing correctly.

Equilibrium (Kyun Hyung)

Equilibrium is how we bring all aspects of the art together. All Taekwon-do is developed around balanced natural body movement to achieve the optimum effects; all aspects of the art coming together to form the perfect technique. Many students fail to grasp the importance of details such as correct stances focusing purely on the delivery of hand or foot techniques. If these techniques are delivered from an unstable position, the overall equilibrium of movement is affected and ultimately the effectiveness of the technique. Stances are the foundation from which all our techniques are delivered. When kicking it is particularly important for obvious reasons, but other basic applications of equilibrium include stepping forward or backward or pivoting and changing direction. By moving the feet in the correct manner and keeping our limbs slightly bent, we can create a fluid motion from one posture to another, keeping perfect balance and concentrating our energy into the technique. By having a good balance of all aspects of the art we become better practitioners.

Equilibrium occurs throughout Taekwon-Do (and indeed throughout our lives) as a harmony of the equal and opposites of Um-Yang; attack with defence, hard dynamic movements with slow elegant movements and the physical Taekwon with the mental and spiritual Do.

Concentration (Jip Joong)

Concentration refers to maximizing the power of a technique into the smallest target area at the point of impact by using the correct tool for the job.

One of the best ways to imagine this is by kicking a breaker board flat footed. The power of your technique is spread over an area the size of your sole and will often result in the frame being pushed backwards rather than the board being broken. If you perform the same kick but with a footsword you are able to focus the power of the technique along the boards line of weakness giving you a far better chance of making the break.

Concentration also refers to bringing all our efforts in to one coordinated action; literally 'concentrating' on what we are doing with the eyes, mind, and body. Timing is a very important aspect of any Taekwon-Do technique and comes with practice and experience.



Speed (Sokdo)

Speed is the most important aspect of the Theory of Power. Without speed there can be no power. Imagine a bullet thrown at a target; it would merely bounce off without any damage to the target, but fire the same bullet from a gun and it will more often than not pass straight through the target. The only difference between the two bullets is the speed at which they were travelling.

To generate speed in Taekwon-do requires us to accelerate a technique as fast as possible. As in mass we achieve this by using several methods. You will notice that many of the aspects mentioned below have come up in the previous passages. The Theory of Power really is a complete package and any missing aspect spoils the finished product.

- 1 Hip Twist – in hip twist the attacking tool is drawn back before being thrown forward as fast as possible towards its target. The pull back stage is relatively slow by comparison to the acceleration forwards. Hip twist uses plyometric muscle activity – simply put the muscles are drawn back in one direction before being released to accelerate forwards in the opposite direction. This can be compared to an archers bow; the more it's stretched out the faster it will return to its original shape. The same can be said of muscles.
- 2 Relaxation – for muscles to be able to work fast they need to be relaxed. If you imagine driving a car with the brakes and accelerator pressed at the same time this would have the same effect as trying to punch with tensed muscles. The brakes would counteract the acceleration. Try punching fast with tensed muscles. Taekwon-do relies on split second timing to deliver maximum power and it is crucial that the muscles are only tense at that split second of impact. Tense too early and you will lose power and tense too late and you will injure yourself.
- 3 Correct delivery technique – all too often we see students who do not punch correctly. The simple punch is the most underestimated of techniques. Everyone thinks they can punch but the reality is if you punch using incorrect technique you will slow it down, lose power and possibly cause yourself an injury. A punch should be delivered in a straight line from the hip to target. The fist only spins over at the end of its travel. I have often seen students who turn their fist over before it leaves the hip which slows down the technique because it prevents the muscles from working efficiently. Try a simple exercise; punch straight from the hip but keep your fist upside down at the end of its travel. You should be able to feel the tension on the inside of the elbow joint trying to spin the fist over (plyometric muscle activity). This is natural body movement; the muscles and skeleton are working together to produce an optimum movement. All Taekwon-do techniques have been developed to use this natural body movement. Try the same punch again but this time start with the knuckles facing upwards. Feel the difference in how the punch is delivered. Finally try the punch starting with the fist upside down on the hip and allow it to flick over into the correct position at the last moment.
- 4 Pull back or reaction movement – the act of pulling back the reaction arm not only balances a technique but also aids in the acceleration of the attacking tool. The faster the pull back the faster the hip and shoulder rotation will be and as a consequence the faster the attacking tool will reach its target. Pull back arms are often neglected by the beginning student partly because they are too focused of the attacking tool but also because they don't understand the importance of the pull back.

If you have any questions about the Theory of Power speak to your Instructor who will be able to give you there own understanding of this important aspect of the art.