

1.4.5: Ballistic Movement in the Bar Throw

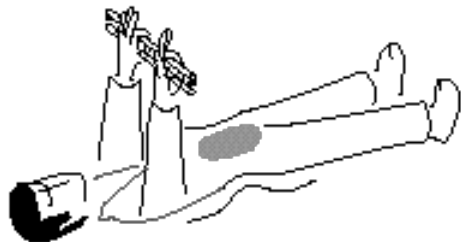
Tan-den Leads The ballistic Arm Action

Objective: you will learn how to stay relaxed until the very last second.

Understanding and using ballistic movement is vital for effective and efficient karate techniques. To understand this principle, perform the following drill. If you do not have a steel bar, you can use a similar bar of some other material.



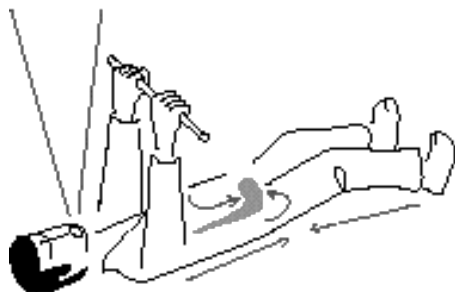
1. Lie down on your back and place a light steel bar in the two circles made by each of your thumbs and index fingers.



2. Jerk up two times consecutively and let the bar fly within the circled fingers hitting the top of the circle.



3. At the third time, jerk the thighs up a little and push the floor with the small of the back. At the same time, using the momentum made by the above action, exhale *ibuki*, jerk the triceps and throw the bar upward. As you contract your *tan-den*, grip the bar with both hands.



Remember these points:

- 1) If the biceps contract, your momentum will slow down; so do not use the biceps at all until the very end.
- 2) Do not hyperextend your arms; you may get little league elbows.
- 3) Do not forget to contract the abdominal and gluteal region at the end of the third movement.

Through this lesson, you should learn and experience that the **independent use of the triceps is essential for speed of punch.**



It is important to remember that while you perform the bar throw; do not tightly grip the bar until the end of the last action. If you maintain a tight grip throughout the exercise you will likely slow down your motion because you are using too much muscle. Instead, as demonstrated in the above illustration, ring the bar with your thumb and pointer finger as you stay relaxed and quickly move. Then, at the very last action, just as you begin to contract with *kime*, tighten your fists.

Understanding the Types of Bodily Movements

Your understanding of how the muscles move is vital if you wish to improve your speed. Muscle movements can be classified into two different kinds of action: that of co-contraction and that of ballistic movement.

Co-contraction: These movements are “moving fixations.” They involve the contraction of opposing muscle fibers, which are antagonistic to each other. These muscles contract concurrently, each “fixing” or holding the other. During the process of the movements, the action of the antagonists (opposing muscles) diminishes while that of the agonists (movers) increases. This constrained opposition is uneconomical for speed.

Ballistics Action: these movements are initiated by vigorous muscular contractions, which are unhindered by the counter-constrained of antagonists.

(Taken from *Kinesiology Scientific Basis of Human Motion*, by Wells and Luttgens.)

Rule 1.4: The Relationship of Speed to Ballistic Movement

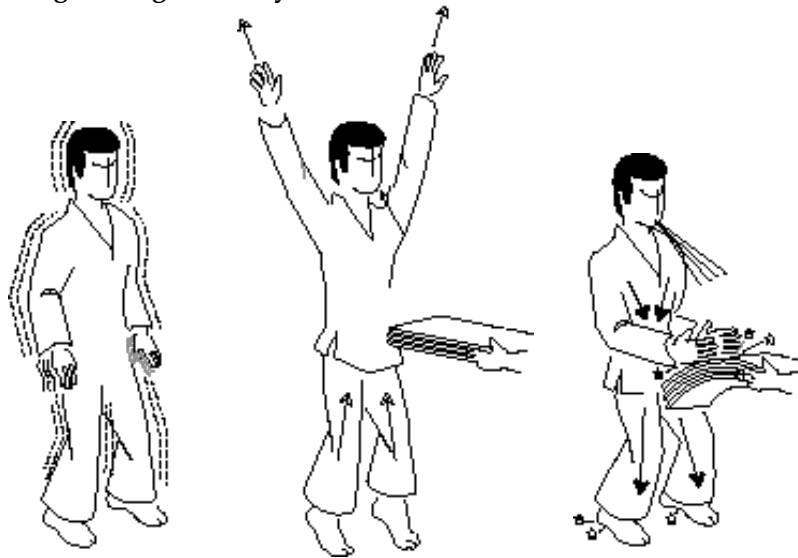
After the initiation of a bodily movement, the responsible muscles relax and permit the body or limbs' momentum to complete the movement. In fact, to employ those muscles in an attempt to add speed to the action after the initiation of a movement will only result in a slower technique. In short, once you launch a technique, maintain relaxation.

1.5: *Fumi-komi* 踏み込 to Use Rebounding Momentum

Objective: In order to create a shock, you will learn how to use rebounding momentum created by stomping the floor.

This exercise requires the use of two or three semi-soft pads. (The Prolite 6 LB #7352 sized 1x10x15 inches is the best type to use for this purpose. Kneeling pads sold for gardening are also appropriate, but may be too soft for advanced students.

1.5.1: Hand-edge Swing-Down Synchronization and *Kime*.



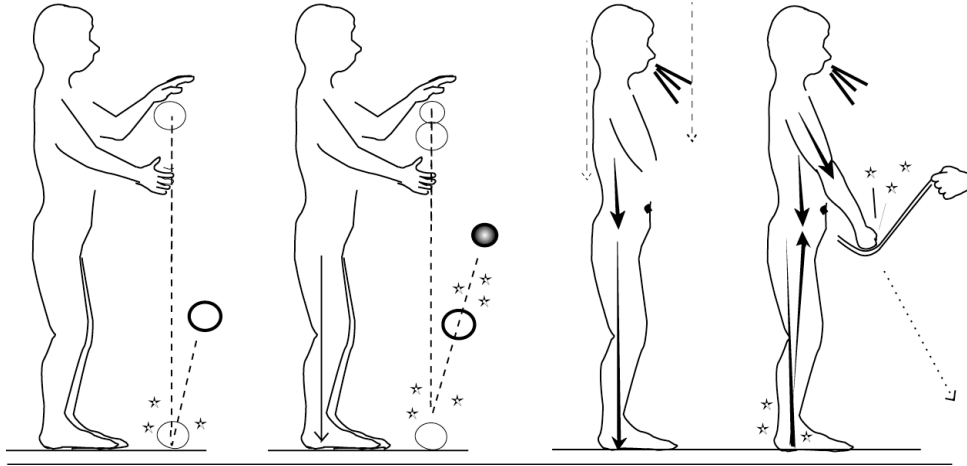
- 1/3. Shake your body, counting "one, two and three."
4. On "four" inhale through your nose. In the future you will be required to inhale through your mouth. At the same time, raise your heels and stretch your hands up, 15 degrees outwards and palms facing outwards.
5. When you have stretched toward the ceiling as far as you can,
 - a Shout "OO-OO." At the peak of the shouting,
 - b hit the floor with your heels. At the same time,
 - c tightly squeeze the thighs inward and
 - d hit the pads with hand-edges,
 - e exactly in front of your *tan-den*.
 - f Use the whip-like action made by dropping your body downward and squeezing the *tan-den*. For now, keep the sound of 5a "OO-" at least five seconds.

Rule 1.5: *Kime* 極め(Focus)

Synchronize the end of all body action at the peak of the *ibukil*; this action is called *kime* (Refer to page 15 for a more detailed explanation).

Question No. 4: Why should you shake your body at the beginning?

1.5.2: Theory of *Fumi-komi*



1. If a ball drops, it bounces.
2. If two balls are placed one on top of the other, and are dropped at the same time, the upper ball bounces much higher than does the single ball.
3. When you press the floor hard, the rebound hits the pressed down and tightened stomach; this acts like the 2 balls. And it produces a great momentum.
4. It increases the momentum of the arm.

1.5.3: How to Make a Karate Fist

Objective: students will learn how to make a proper fist, which will minimize the potential for injury and also make the fist a more effective weapon.



1. Hold the small finger inward firmly at the middle (second) joint. The tip should reach the base of the finger.



2. Then do the same thing with the ring finger, middle finger and index finger, in that order.



3. Continue bending the fingers inward until they are tightly pressed into the palm, making an angle of 90 degrees (or less) at the knuckles.



4. With the thumb, reach over the index finger and half of the middle finger. Press down firmly until the thumb comes midway between the first joint and the second joint of the index and middle finger.



Rule for Making a Karate Fist

You should align your fist and forearm as follows:
Hold the fist so that an imaginary line will pass midway between the knuckles of the index and middle fingers and straight up the lower arm and wrist. When you hit a target, you should contact it only with these two knuckles.



Question: Why should you make contact with these two knuckles only?

1. Make sure that the fist, wrist, and lower arm are in a straight line.



2. Make sure the angle of the fist at the knuckles is 90 degrees or less. (Think, "Why should I do this?") If you cannot make a 90-degree angle at first, keep trying, and you will sharpen the angle little by little.

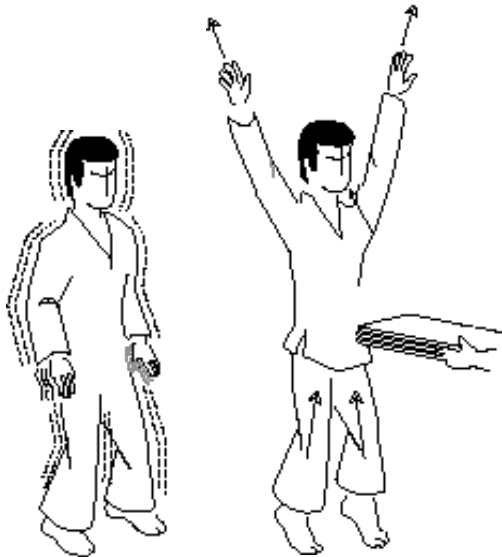


The following conditioning exercises will help you improve your fist:

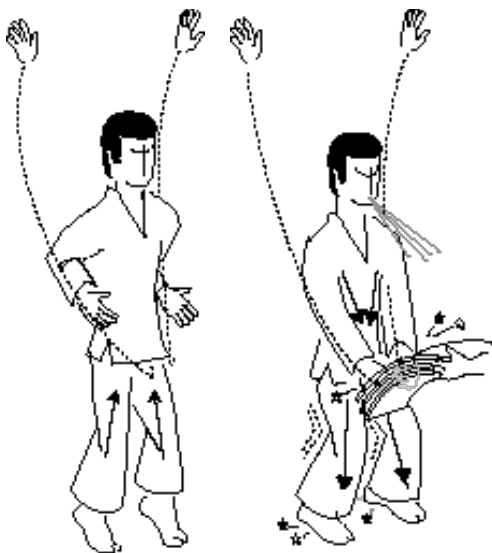
1. Doing pushups with your weight on your fingers will strengthen your grip
2. Doing pushups on your knuckles using *Karate* fists will strengthen your knuckles and wrists.
3. When you first start, you may place something soft under the fists to prevent pain.



1.5.4: Fists Swing and *Kime* (極)



- 1-3. As in the previous drill, shake your body and count "one, two, three."
4. Saying "four . . ." raise your heels and stretch your hands up 15 degrees outwards, palms facing outwards, and inhale.



5. Shouting "OO-OO" hit your heels to the floor, swing down both arms, and hit the pads with the first two knuckles of the fists.

Use a whip-like action throughout the drill.

Do not forget to use *kime* and *zan-shin* (sustain the *kime* feeling a few seconds).

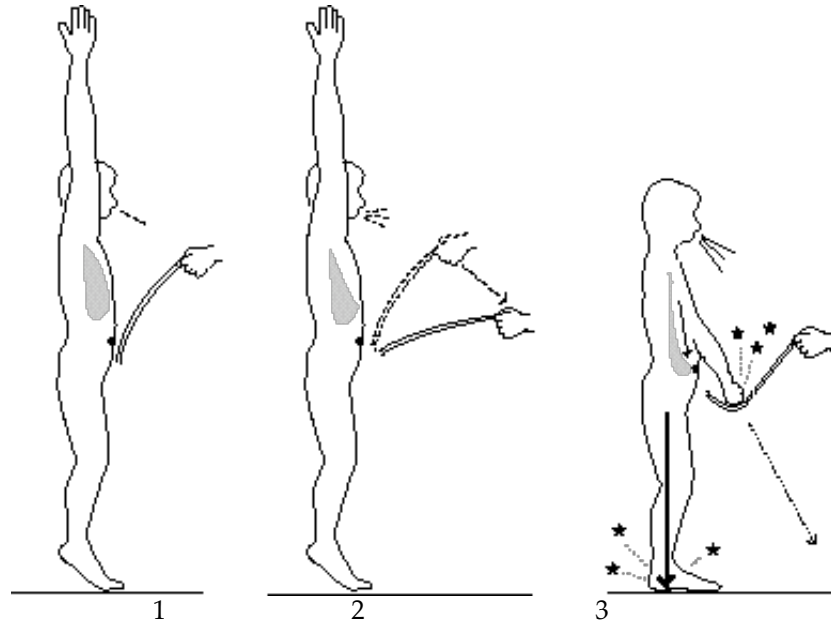
Do not forget to synchronize at the end of the body action, at the peak of the *ibuki*.

Question: Why should all of the action end at the same time, except *zan-shin*?

Lead all of your actions with your *ki*: **Believe that you have already hit the target; then, do the action.**

1.5.5: Alternative to the Pads:

If you do not have access to foam-rubber (6 LB recommended) pads, you may use a newspaper instead. Your partner will hold the paper in the following manner:



1. Your partner will hold the newspaper in front of you.
2. As you raise your arms, he will swing the end of the paper down as if he were trying to make a wave-like action.
3. Right at the moment that the paper becomes parallel to the floor, strike it.

1.6.1: *Fumi-komi* (踏込)forward

Objective: In this drill, you will learn how to stomp the floor and drop your entire body in order to increase power and speed.



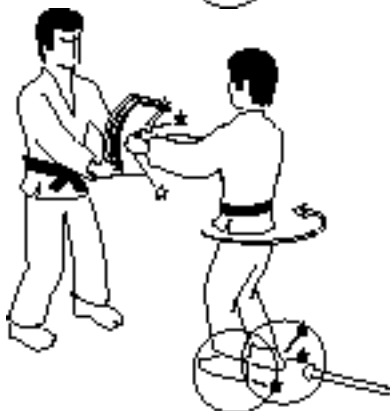
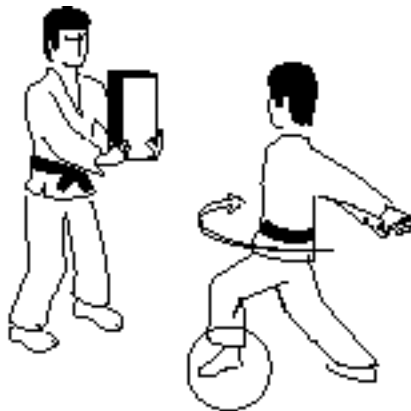
1. Stretch both arms forward and extend the elbows. Do not bend your elbows.
2. Twist your hips clockwise and swing both hands backward. At the same time, raise the leading leg's heel.

* Remember not to bend the elbows at all.

Question: Why should you not bend the elbows?

3. The following actions are synchronized to quickly follow one another.
 - a. Drop the raised heel down (do not move the toes and ball of foot position at all. If you move the leading foot forward, your squeezing power becomes weak.)
 - b. Forcefully squeezing both legs' thighs inward,
 - c. pull the rear leg to the side of the leading leg;
 - d. at the same time, twist your hip counterclockwise.
 - e. Hit the pads keeping both fists vertical, and keeping the elbows slightly bent.
 - f. Stop the punch and the hip rotation when the fists penetrate about one or two inches into the first pads.
 - g. Synchronize the three sounds of dropping and punching: 1) the leading heel, 2) the pulling foot, and 3) hitting the pads.

Question: Why should you not bend the elbows?



Rule 1.6: *Fumi-komi* (踏込)

Upon the execution of any technique, press your entire body to the floor to utilize the rebound from the floor.

*Remember in Karate, *ibuki* is the most important thing to learn and *fumi-komi* is the 2nd important things to do.

1.6.2: An alternative to the pads:

If pads are not available, you may hang a newspaper in place of the pads.



When you use newspapers as a target, make sure to focus about two inches behind it. And try to make a sharp sound upon hitting the paper.

Question: Why do we use two hands at the same time?



1.7: The Mind in *Bu-do* 武道 (Japanese Martial Arts) Extending and Sustaining *Ki*

Objective: You will learn how to extend your mind before and after an action.

In *bu-do*, one's mental preparation and follow through is vital for an effective physical action. In *bu-do*, this means that one extends one's *ki* before an action and continues to extend his or her *ki* even after the action is completed. To understand the power of mind for effective physical techniques, imagine a baseball pitcher. Sometimes, a novice pitcher only thinks of the action of throwing the ball without giving enough preparation to focusing the mind before the pitch. In other instances, when an amateur pitcher throws a ball, he turns his face and withdraws his hand after he lets go of the ball. He thinks that, after the ball has left his hand, he can do no more. But observe a professional pitcher; before he begins a pitch, his eyes are already focused. He has already imagined that he has successfully completed it before he even throws! After he throws, his eyes and hand follow through even after the ball is released. His mental preparation and follow-through makes the difference. This mental focus before and after the physical action is essential in the Martial Arts (also in basketball, golf, etc.).

The mind-before-impact: before one even begins his or her physical action, one extends one's *ki*. We refer to his mental preparation as mind-before-impact. In short, one must imagine the successful completion before the action.

Zan-shin 残心: This phenomenon occurs when sustains one's *ki* after a technique. *Zan-shin* is the mental follow-through in order to perfect the action. At the core of *Zan-shin* is feeling that one's mental intensity continues and does not stop even though the physical action is completed. Without *zan-shin*, there is no *karate*.

Extending *Ki* and Finishing with *Ki*:

Before you make your physical action, start with a mental action in which you imagine the technique successfully completed; thinking in the past tense. After the physical action is over, continue the mental action for finalizing the technique; again, try focusing the mind for 2 or 3 seconds (for the time being while you are beginner) after each technique is completed.

Rule 1.7 Rule of Finishing *Zan-shin*. Sustaining *Ki*

Even when a physical action is over, continue the mental action for finalizing the technique. Sustaining one's *ki* is the difference between *Sports Karate* and *Bu-do Karate*.