
DICHOTOMOUS KEYS TO FUNDAMENTAL ATTACKS AND DEFENSES IN AIKIDO

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INTRODUCTION

Novice practitioners in aikido arts are confronted with numerous challenges during training, including the difficulties of understanding the subtle aspects of mind and body coordination inherent to aikido and remembering basic strategies designed to evade or neutralize an attacker. A common problem for new aikido practitioners is the discovery of aikido “logic.” Perhaps the first revelation after a few lessons is that “aikido looks easy until you try it; then, it turns into a humbling experience.” Comprehending a simple attack or defense is not always intuitive for beginners who soon realize it may take years to master.

After exploring different methods aimed at teaching aikido to college students, who are usually eager to learn fast, efficiently, and with tangible outcomes (“good grades”), we decided to develop a simple tool to improve the communication of aikido principles in our *dojo* (school, training hall). Our previous experience as science educators facilitated the idea that a “dichotomous key,” an organizational device commonly used by biologists to categorize species into groups according to similarities and differences, would assist aikido practitioners in learning and understanding the specific characteristics of the most frequent attacks and defenses.

Below we present two keys. One shows the most common attacks and another the defensive techniques used in aikido. Both keys are dichotomous and based on division of the attacks and/or defenses into distinct groups. Attacks for example, include grabs (i.e., to the wrist, elbow, shoulder) and strikes (i.e., open hand attacks, blows with the fist, kicks). Defensive techniques include evasive motions in which the defender moves out of the attacker’s way or reach, as well as neutralizations of the attack by manipulation of the attacker’s arm or wrist, or by manipulation of the attacker’s torso or hips.

These keys may appear to contradict long-established organizational systems that have been preserved by instructors of numerous aikido styles, who remain loyal to historical nomenclature and the teaching legacies of their masters. However, our goal was to contribute to a deeper understanding of aikido by applying a method of identification designed to group the techniques according to resemblance and uniqueness. Attacks and defenses are divided into groups that share structural and functional affinity (i.e., the overall appearance of a technique looks similar to other techniques) and relatedness (i.e., a group of techniques may have been derived from another technique), according to the effect that the techniques cause on the human anatomy. It is true that a dichotomous key is to some extent arbitrary and artificial. Nevertheless, this method encourages the student to focus on the similarities between the items so organized, in this case, the attacks and defenses of aikido.

After using the keys in our own aikido classes, we found that they allow practitioners to:

- ❶ Discover and quickly understand the logic of some attacks and defenses without the constant supervision of an instructor; a mentor of course is always needed.
- ❷ Improve the attacker's and the defender's efficiency in class and speed up the teaching process by enabling students to respond promptly to instructions.
- ❸ Learn a few technical terms, including some Japanese names.

We hope that this material will be as useful for others as it has been for us. The keys are by no means complete. No armed attacks, neutralization techniques against weapons, techniques from the kneeling position, or various types of pins are included. However, these techniques can be deduced from the information presented below. Terminology follows Ki-Society-Shin Shin Toitsu Aikido or Ki-Aikido (aikido with mind and body coordination), which differs from other aikido styles. However, not all the attacks or defenses are officially recognized or regularly taught by Ki-Society. For example, some of the kicks and hip/shoulder projections are rarely discussed in Ki-Aikido classes. A glossary for the most important terminology is provided at the end of this article.

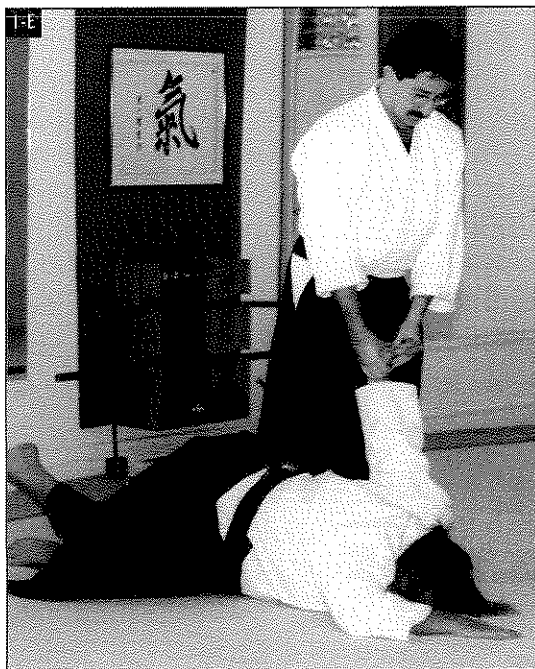
DIFFICULTIES IN CONSTRUCTING A KEY

It is evident that the defender (*nage*) and the attacker (*uke*) have different perspectives while an aikido technique is in progress. Designing a key to the most frequent attacks used in aikido training is not particularly difficult, because the movements involved in aikido grabs or strikes are relatively simple and easy to define and/or describe. The attacker's perspective is clearly illustrated in the key itself. However, structuring a key in order to reflect the defender's point of view when executing a technique is not that obvious.

A general principle in aikido is that any defensive technique can be used against virtually all attacks, although attacks with weapons are an exception to this rule. This plasticity characteristic of aikido makes it difficult to consistently group the defenses into natural units based on a common functional design as is possible with the attacks. Here we discuss two examples regarding the difference in perspective between defender and attacker when interacting in aikido.

First, when a defender executes *kote oroshi*, a technique which bends the attacker's wrist and fingers in toward the attacker's center of balance while projecting the attacker back down onto the mat (Figure 1-A), the defender moves in a very different way than when he performs *shihonage* (Figures 1-B, C, and D). Here the defender turns completely around his own axis while twisting the attacker's wrist toward the attacker's shoulder, then projects the attacker backwards and down onto the mat (Figure 1-D). In each case, the defender feels his body moving in a very distinct manner. From the attacker's perspective, however, there is little difference besides a few adjustments concerning the position of the attacker's wrist at the moment of falling when *kote oroshi* or *shihonage* are applied to him (compare Figure 1-A with 1-B, C, and D).

Second, it is also possible for the defender to have a completely different effect on the attacker when the defender performs almost exactly the same physical motion. If the defender moves in a sort of "kote oroshi" fashion to counter a punch to the face, the defender can grab the attacker's wrist (same-side grab) and bend it in, toward the attacker's center of balance (same as in above), projecting the attacker back down onto the mat in a typical *kote oroshi* (Figure 1-A). However, if the defender grabs the attacker's wrist with the opposite-side hand and bends it out, toward the attacker's center of balance (this time mirroring the motion described in the previous sentence), then the defender will lead the attacker into a *nikkyo* neutralization, that is forward, face down onto the mat (compare Figures 1-A with 1-E). The outcome for the attacker in both cases is obviously different.



1-E Defender (standing) neutralizes the attacker by bending the wrist out and leading the attacker face down onto the mat (*nikkyo*).

FIGURE 1

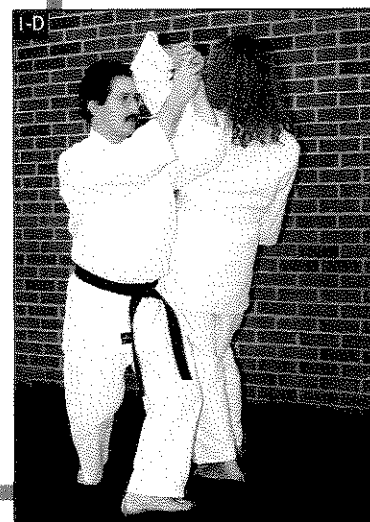
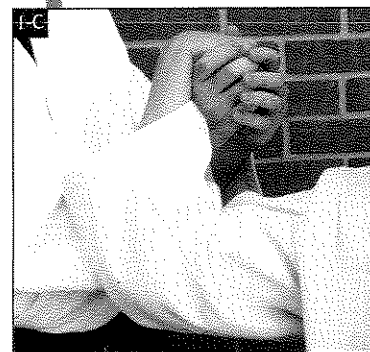
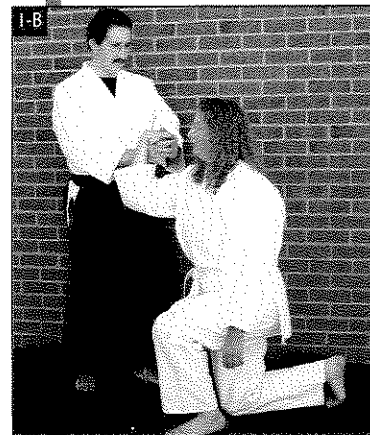
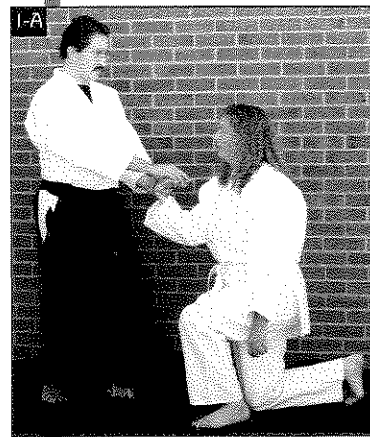
The Defender's and Attacker's Different Perspectives.

1-A Defender (left) performs *kote oroshi* by bending the attacker's wrist and fingers in, toward the attacker's center of balance at the hips.

1-B *Shihonage*—another wrist technique where the defender (left) twists the attacker's wrist toward the attacker's shoulder.

1-C Close-up of *shihonage*. Compare wrist-hold in A with B and C.

1-D Defender (left) turns around his own axis while twisting the attacker's wrist toward the attacker's shoulder, projecting the attacker backwards and down onto the mat.



These two different perspectives in perceiving aikido complicate the design of a dichotomous key that illustrates exclusively the defender's or attacker's viewpoints. For this reason, we present a "functional" or "artificial" key to the defenses, a sort of hybrid between natural dichotomies and practical dichotomies, which combines both the defender's and the attacker's experiences while sensing aikido. We acknowledge that the defenses would preferably be categorized based on the defender's perspective alone, since it is the defender who executes the defense. However, this is not always possible.

After cautiously studying aikido techniques and examining the literature that discusses them, it is evident that we, as well as most authors, have struggled when attempting to organize the fundamental defenses into distinct groups. In our opinion, this difficulty reflects:

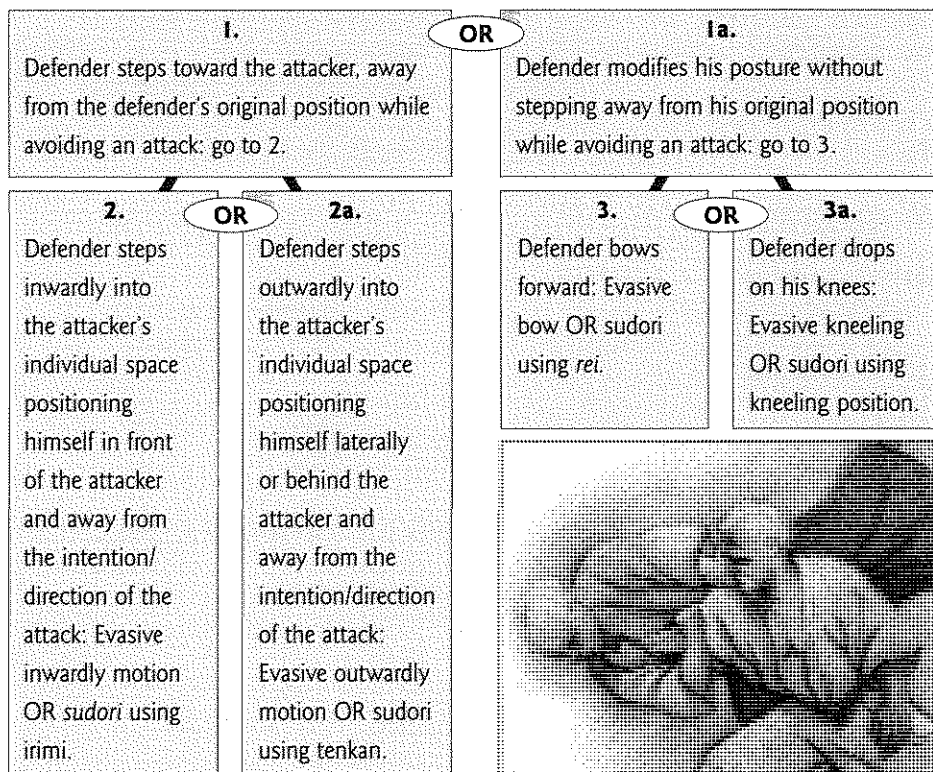
- ① The nature of aikido itself, where movement complexity builds synergistically on every previous action, generating multiple responses which are not easy to describe and/or categorize in a simple system.
- ② The legitimate desire of several authors to discuss every defensive technique in respect to a huge number of attacks. Unfortunately, this encyclopedic method is more appealing to knowledgeable than inexperienced aikido practitioners.
- ③ The historical mode in which aikido has been taught from one generation to another. Here, "inertia" has played an important role; aikido's past is a living component of its present.

We propose that aikido defensive techniques should be taught to novice practitioners by emphasizing the overall characteristic similarities, that is, the effects on the attacker caused by the defender's reaction, rather than by presenting every defense in a series of infinite scenarios. We value the teaching importance of the multiple scenario system and consider it crucial for use with advanced students who already have a basic understanding of aikido principles. However, one of the disadvantages of this method is that it is usually communicated by means of multiple repetitions of a given technique, encouraging "muscle memory" rather than critical thinking. We believe that our dichotomous keys minimize this problem by helping the student to understand aikido concepts that can be critically and logically applied in diverse circumstances. Like all dichotomous keys, ours can certainly be improved.

HOW TO USE THE KEYS

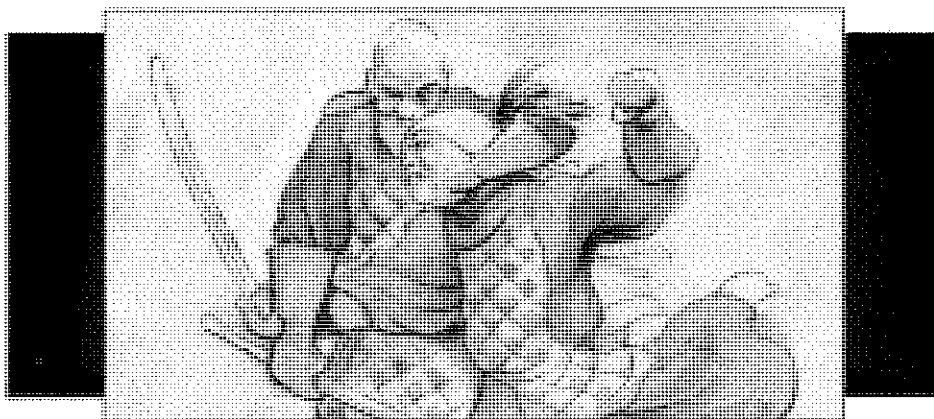
Here we show how a key should be formally structured. Concentrate your attention only on the format of this key; aikido terminology will be discussed later in this article. The keys below consist of a series of choices that lead the aikido practitioner to a definition and a name of a technique. "Dichotomous" means "divided into two parts." Therefore, in each step the keys give the user a clear choice between two alternatives. A first choice might be, for example, "key to the attacks" or "key to the defensive techniques." Another choice discussed here is "defender" or "attacker." An additional one is *irimi*, where the defender enters and positions himself in front of the attacker, or *tenkan*, where the defender turns and positions himself laterally or behind in respect to the attacker.

KEY TO AIKIDO EVASIVE TECHNIQUES



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To use the keys presented here, the aikido practitioner should start at the beginning of either key and read the first pair of statements 1 and 1a (following the numerical order). Then, the user may decide which statement best describes the attack or defense in which he is interested. This will take the user of the key to the next pair of statements (i.e., 2 or 3). The procedure can be repeated until the technique is identified. If the user reaches a point in the selection of descriptive statements at which neither of the statements apply, he can work his way back through the preceding pairs of statements and reconsider the choices. In some cases, the user will find that he is unable to identify a particular technique; in a situation like that, the technique should be recorded as "unknown." Remember that only the fundamental attacks and/or defenses are included in the keys below. Some previous experience in aikido will help the student to understand and use the keys.



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From a scene in the new book,
Tales of the Hermit Vol. 1 (2001).*

KEY TO ATTACKS — Illustrated in Figures 2-4

- | | | |
|--|---|---|
| 1. GRABS (holds): go to 2. | 8. Elbow grab: go to 9. | 16. Deceptive strikes: (<i>atemi</i> feints); numerous <i>atemi</i> exist in aikido, some of them are used as defensive techniques as well: go to 17. |
| 1a. STRIKES (blows): go to 16. | 8a. Shoulder/lapel grab: go to 10. | 16a. Deceptive/feints strikes (<i>atemi</i>). |
| 2. Grabs aimed to control the arm (wrist, elbow, or shoulder/lapel): go to 3. | 9. From the front (<i>hiji dori</i>). | 17. Hand techniques: go to 18. |
| 2a. Grabs aimed to control the torso or the neck (hugs or chokes): go to 13. | 9a. From the back (<i>ushiro hiji dori</i>). | 17a. Foot techniques: go to 20. |
| 3. Wrist grabs: go to 4. | 10. One-handed shoulder/lapel grab: go to 11. | 18. Open-hand strikes: go to 19. |
| 3a. Elbow or shoulder/lapel grabs: go to 8. | 10a. Two-handed shoulder/lapel grab: go to 12. | 18a. Closed fist strike (<i>munetsuki</i>). |
| 4. One-handed wrist grab: go to 5. | 11. Same side grab (<i>kata dori</i>). | 19. Front open-hand strike (<i>shomen uchi</i>). |
| 4a. Two-handed wrist grab: go to 6. | 11a. Cross-side grab (<i>kata kosa dori</i>). | 19a. Side/diagonal open-hand strike (<i>yokomen uchi</i>). |
| 5. Same-side grab (<i>katate dori</i>). | 12. From the front (<i>ryokata dori</i>). | 20. Strikes with the ball of the foot: go to 21. |
| 5a. Cross-side grab (<i>katate kosa dori</i>). | 12a. From the back (<i>ushiro ryokata dori</i>). | 20a. Strikes with the outside-edge of the foot or heel: go to 22. |
| 6. Two-handed grab of the same wrist (<i>katate dori ryote mochi</i>). | 13. Bear hug: go to 14. | 21. Front kick (<i>mae keru</i>). |
| 6a. Two-handed grab of both wrists: go to 7. | 13a. Choke: go to 15. | 21a. Round kick (<i>mawashi keru</i>). |
| 7. From the front (<i>ryote dori</i>). | 14. From the front (<i>mae kara daki tsuku</i>). | 22. Strike with the outside-edge of the foot (<i>yoko keru</i> , side kick). |
| 7a. From the back (<i>ushiro tekubi dori/ushiro ryokata dori</i>). | 14a. From the back (<i>ushiro dori</i>). | 22a. Strike with the heel (<i>ushiro keru</i> , back kick). |
| | 15. From the front. One arm around neck while the other holds the wrist/elbow (<i>mae kara katate dori kubi shime</i>). | |
| | 15a. From the back. One arm around neck while the other holds the wrist/elbow (<i>ushiro kara katate dori kubi shime</i>). | |

Multiple combinations of attacks are also possible. For example, wrist grab and shoulder/lapel grab, wrist grab and front/side/diagonal strike (see page 17, Figure 4-1), shoulder/lapel grab and front/side/diagonal strike, wrist/shoulder/lapel grab and closed fist thrust strike, wrist/shoulder/lapel grab and front/round kick, etc. There is no need to include a specific key for hybrid attacks since they can be deduced from the material presented above. Combinations of attacks are limited only by the attacker's imagination.

FIGURE 2 — ATTACKS: wrist and elbow grabs.

- | | |
|--|--|
| 2-A One-handed wrist-grab of the same side (<i>katate dori</i> , technique corresponds to number 5 in Key to the Attacks). | 2-D Two-handed wrist-grab of both wrists, from the front (<i>ryote dori</i> , 7). |
| 2-B One-handed wrist-grab, cross-side wrist (<i>katate kosa dori</i> , 5a). | 2-E Two-handed wrist-grab of both wrists, from the back (<i>ushiro tekubi dori / ushiro ryo katate dori</i> , 7a). |
| 2-C Two-handed wrist-grab of the same wrist (<i>katate dori ryote mochi</i> , 6). | 2-F Elbow-grab from the front (<i>hiji dori</i> , 9). |
| | 2-G Elbow-grab from the back (<i>ushiro hiji dori</i> , 9a). |

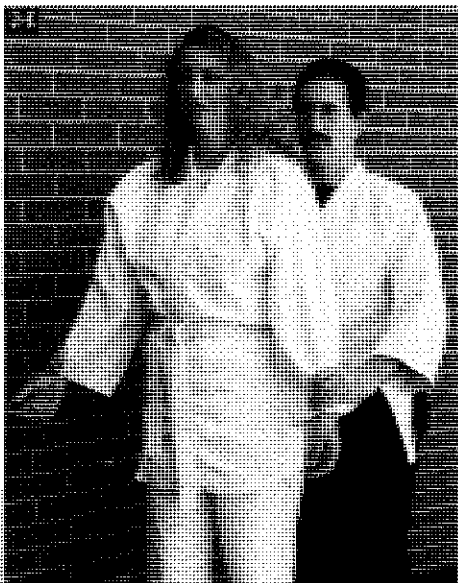
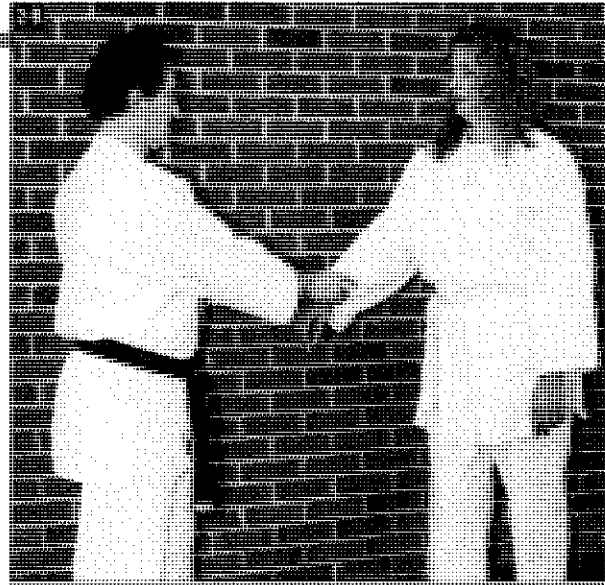


FIGURE 3 — ATTACKS:

**shoulder/lapel grabs,
bear hug, and choke.**

- 3-A** One-handed shoulder/lapel grab of the same side (kata dori, technique corresponds to number 11 in Key to the Attacks).
- 3-B** One-handed shoulder/lapel grab, cross side (kata kosa dori, 11a).
- 3-C** Two-handed shoulder/lapel grab from the front (ryokata dori, 12).
- 3-D** Two-handed shoulder/lapel grab from the back (ushiro ryokata dori, 12a).
- 3-E** Bear hug from the back (ushiro dori, 14a).
- 3-F** Choke from the back (ushiro kara katate dori kubi shime, 15a).

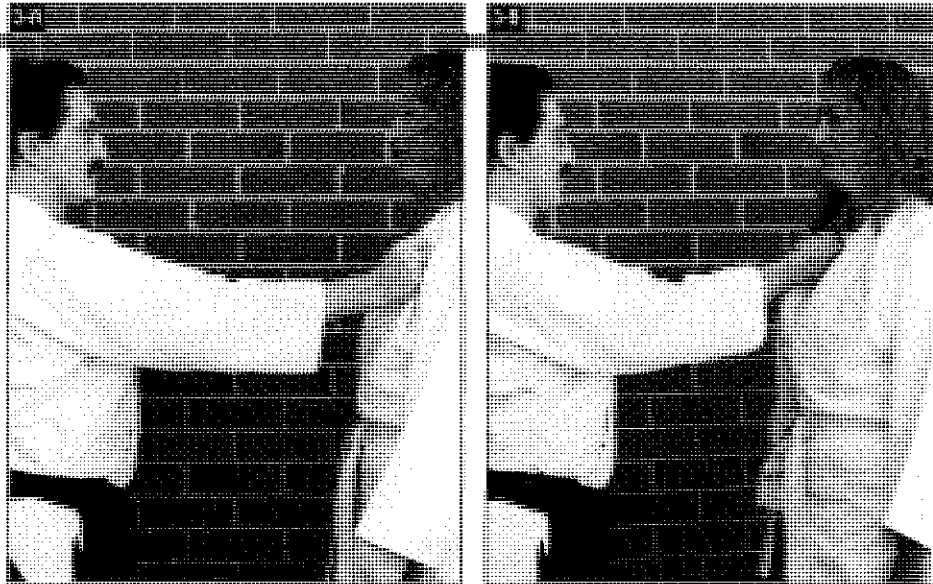
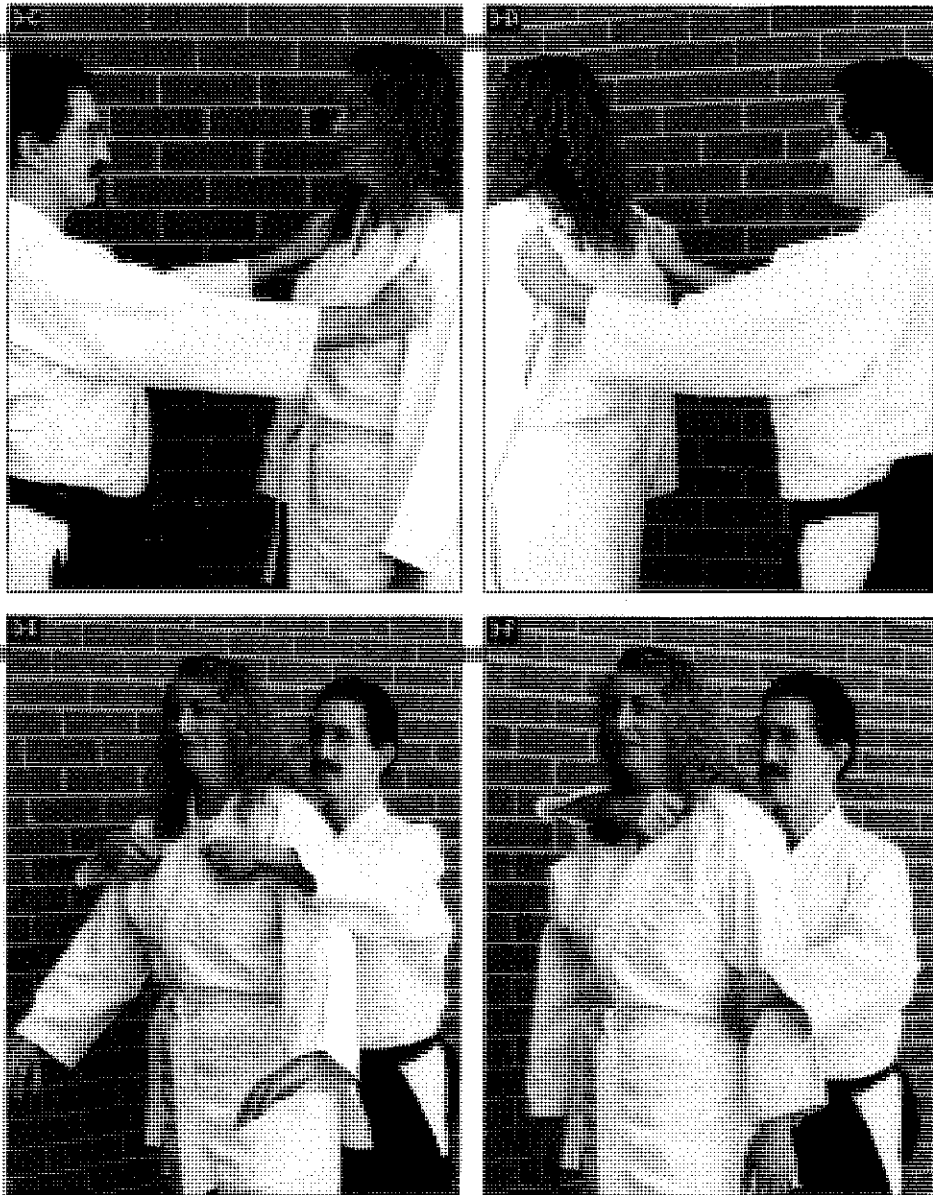
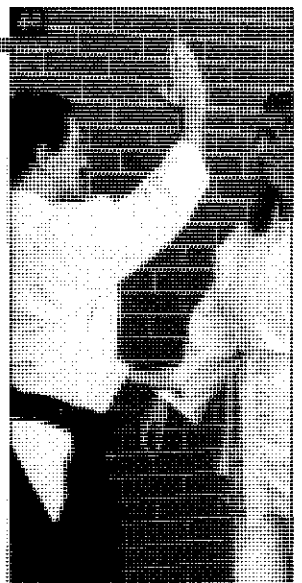
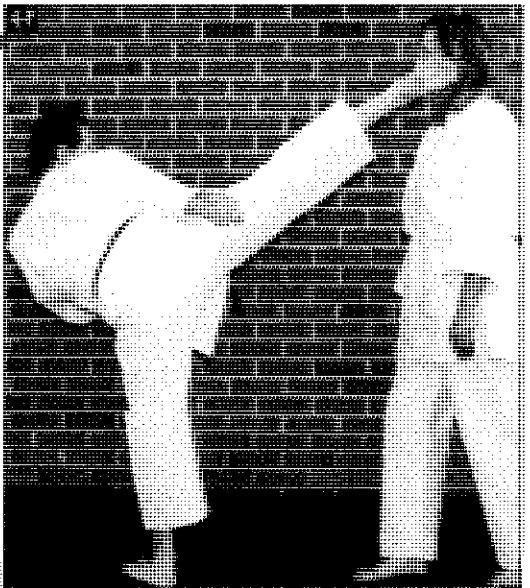
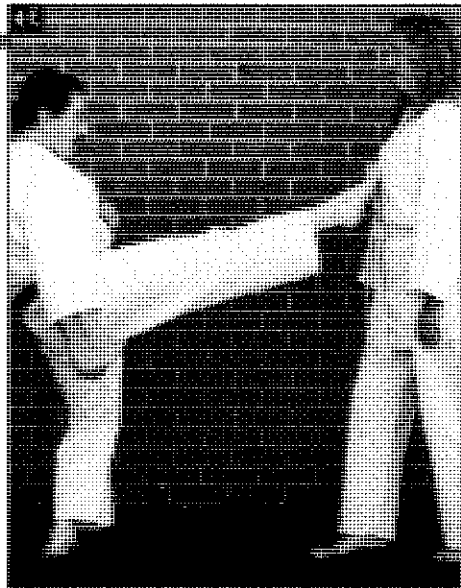
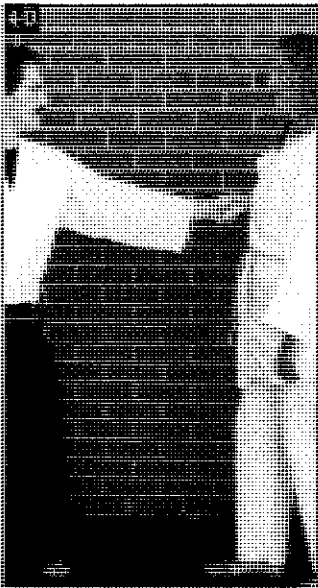
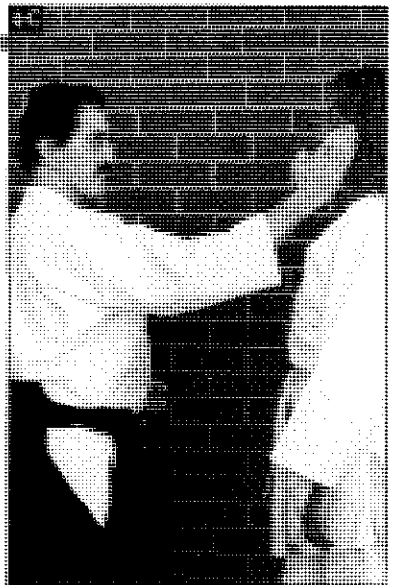


FIGURE 4 — ATTACKS:

**deceptive strike or feint, open
hand strike, punch, kicks, and
combinations.**

- 4-A** Deceptive strike (atemi feint). Defender (left) neutralizes an open hand strike with his left hand and performs a counter deceptive attack with the right hand toward the face of the attacker (right), causing a hold-back reflex reaction on her (technique corresponds to number 16 in Key to the Attacks).
- 4-B** Front open hand strike to the forehead (shomen uchi, 19).
- 4-C** Side/diagonal open hand strike to the head/neck (yokomen uchi, 19a).
- 4-D** Closed fist thrust strike to the torso (munetsuki, 18a).
- 4-E** Front kick (mae keru, 21).
- 4-F** Round kick (mawashi keru, 21a).
- 4-G** Side kick (yoko keru, 22).
- 4-H** Back thrust kick (ushiro keru, 22a).
- 4-I** Combination attack: wrist-grab and front open hand strike to the head.





KEY TO DEFENSIVE TECHNIQUES — Illustrated in Figures 5-7

- 1. EVASIVE TECHNIQUES:**
Defender avoids the attacker: go to 2.
- 1a. NON-EVASIVE TECHNIQUES:**
Defender neutralizes the attacker: go to 5.
- 2.** Defender steps toward the attacker away from the defender's original position while avoiding an attack: go to 3.
- 2a.** Defender modifies his posture without stepping away from his original position while avoiding an attack: go to 4.
- 3.** Defender steps inwardly into the attacker's individual space positioning himself in front of the attacker and away from the intention/direction of the attack: Evasive inwardly motion OR sudori using irimi.
- 3a.** Defender steps outwardly into the attacker's individual space positioning himself laterally or behind the attacker and away from the intention/direction of the attack: Evasive outwardly motion OR sudori using tenkan.
- 4.** Defender bows forward: Evasive bow OR sudori using rei.
- 4a.** Defender drops on his knees: Evasive kneeling OR sudori using kneeling position.
- 5.** Neutralization of the attack by manipulation of the attacker's arm OR wrist: go to 6.
- 5a.** Neutralization of the attack by manipulation of the attacker's torso/hips: go to 12.
- 6.** Defender manipulates the attacker's arm: go to 7 (ikkyo group, all include irimi and tenkan; some of the ikkyo group techniques can end in a forward projection).
- 6a.** Defender manipulates the attacker's wrist: go to 11.
- 7.** Defender leads the attacker's arm up, in, and down, toward the attacker's center of balance, then locks the attacker's wrist/arm against the defender's shoulder (nikkyo; variations include locks with the defender's hand alone or around the defender's wrist).
- 7a.** Defender leads the attacker's arm up, in, and down, toward the attacker's center of balance, projecting the attacker face down onto the mat. No lock is applied: go to 8.
- 8.** Defender's one hand grabs the attacker by the fingers/hand or wrist (cross-side grab) while the other hand (particularly the thumb) supports the attacker's elbow from underneath: go to 9.
- 8a.** Defender twists inwardly the attacker's fingers/hand making the attacker's arm bend at the elbow (the elbow points to the sky) while the forearm is positioned perpendicular to the mat: go to 10.
- 9.** Defender's one hand (cross-side) grabs the attacker's fingers/hand (ikkyo).
- 9a.** Defender's one hand (cross-side) grabs the attacker's wrist (gokyo).
- 10.** Defender leads the attacker down by maintaining the twist of the hand and the bent position of the elbow (sankyō).
- 10a.** Defender leads the attacker down by pressuring the radial nerve (external side of the attacker's forearm, about two inches from the wrist) with the base of the defender's index (yonkyō).
- 11.** Defender bends attacker's wrist and fingers in, toward the attacker's center of balance, while projecting the attacker back down onto the mat (kote oroshi; variations include break fall).
- 11a.** Defender turns completely around his own axis while twisting the attacker's wrist out and then bending it in, toward the attacker's shoulder, projecting the attacker backwards down onto the mat (shihonage, "four-directions throw": includes irimi and tenkan).
- 12.** Neutralization of the attack by projecting the attacker forward face down onto the mat (forward roll or break fall are possible): go to 13.
- 12a.** Neutralization of the attack by projecting the attacker backwards, down onto the mat (back roll or break fall are possible): go to 17.
- 13.** Defender leads the attacker into a standing position, just behind the defender, before projecting the attacker into a forward roll or break fall: go to 14.
- 13a.** Defender leads attacker into a stooped position, just on front of the defender, before projecting the attacker into a forward roll (kaiten nage, "harpoon throw": includes several forms of irimi and tenkan).
- 14.** Defender projects the attacker forward over the defender's body: go to 15.
- 14a.** Defender does not project the attacker over the defender's body. Instead, defender turns his hips and torso to the side (while bowing forward) OR defender bows deeply forward before projecting the attacker into a forward roll: go to 16.
- 15.** Over the defender's hips: zempo over hips (koshi nage).
- 15a.** Over the defender's shoulders: zempo over shoulders (zempo seoi nage).
- 16.** Defender leads the attacker (who usually attacks with a bear hug) by simultaneously opening the defender's arms (laterally, slightly forward, and almost parallel to the mat), stepping forward, then turning the hips and torso to the side (while bowing forward), so that the attacker is projected into a forward roll (ushiro dori zempo nage).
- 16a.** Defender leads the attacker (who usually grabs wrists or elbows) by simultaneously raising the defender's arms (perpendicular to the mat), stepping, then bowing deeply and lowering the arms (now parallel to the mat), so that the attacker is projected into a forward roll or break fall (ushiro tekubi dori zempo nage; variations include stepping forward = zenshin or backwards = koshin).

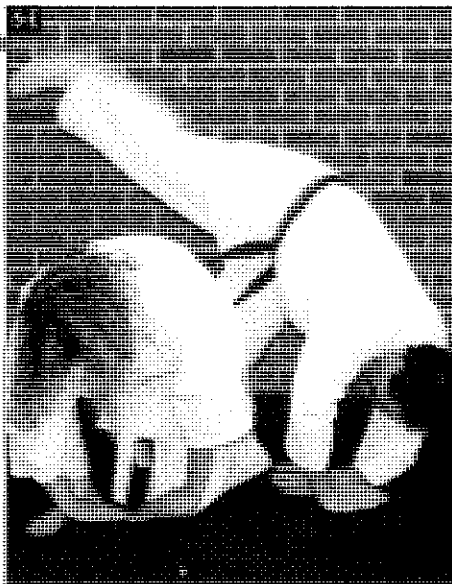
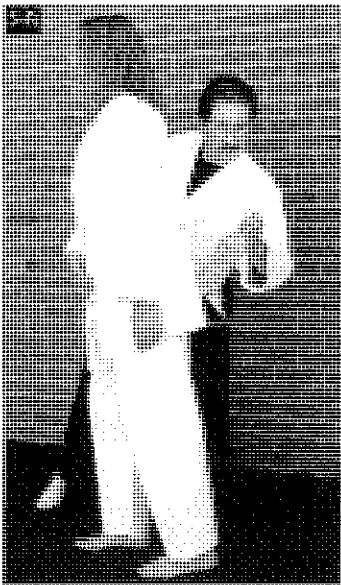
17. Defender's one hand moves upwards on front of the attacker's face while the other hand is positioned behind the attacker's neck or lower back. Defender leads attacker to pass on front of defender's chest area while projecting the attacker back down to his rear (kokyu nage, "breath" throw).

17a. Defender's one hand extends upwards (Heaven) while the other hand extends toward the mat (Earth). Defender leads attacker (who usually attacks from the front with a two-handed grab of both wrists) out and back down to his rear-diagonal side (tenchi nage, "Heaven-Earth" throw, includes irimi and tenkan).

FIGURE 5 — DEFENSIVE TECHNIQUES: Evasive techniques (sudori).

5-A Defender (left) steps inwardly and positions herself in front of the attacker who performs a side/diagonal open hand strike (sudori using irimi; technique corresponds to number 3 in Key to the Defensive Techniques).

5-B Defender (right and in the background) steps outwardly and positions herself laterally or behind the attacker who performs a side/diagonal open hand strike (sudori using tenkan, 3a).



5-C Defender bows to avoid a side/diagonal open hand strike (sudori using rei, 4).

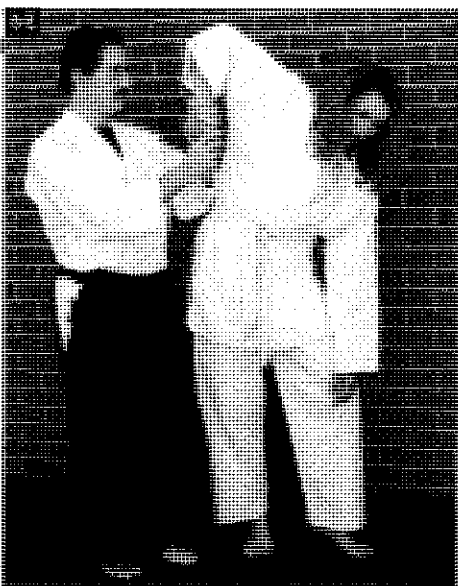
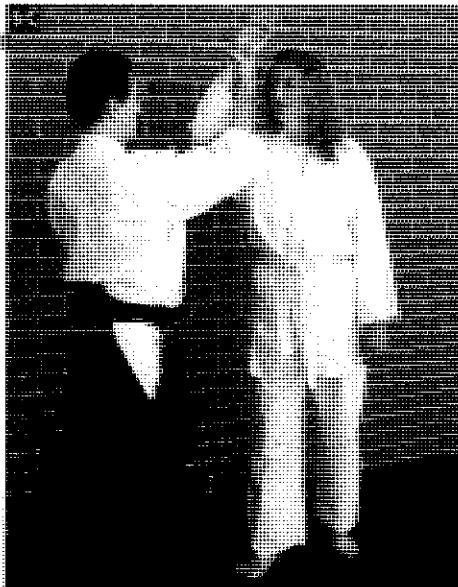
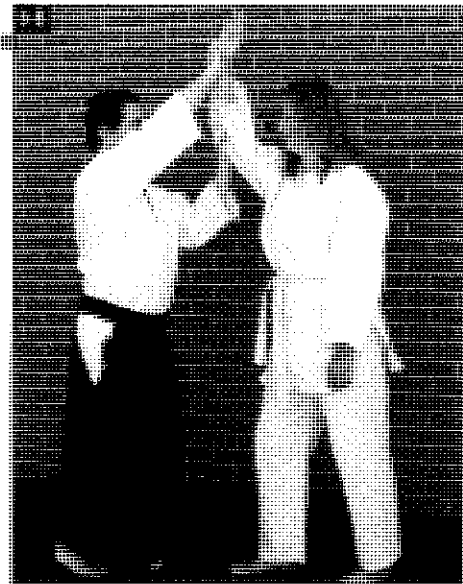
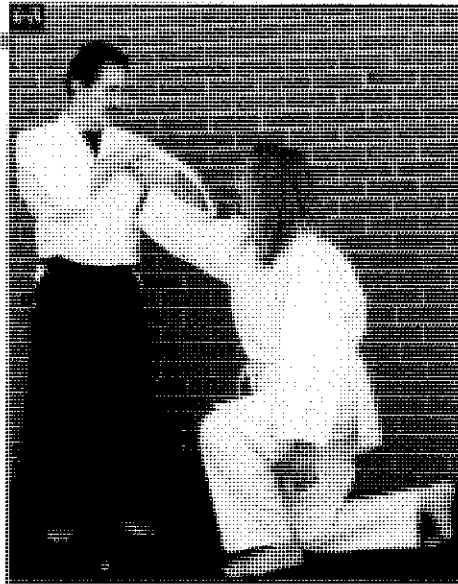
5-D Defender drops on her knees to avoid the attack (sudori using kneeling position, 4a).

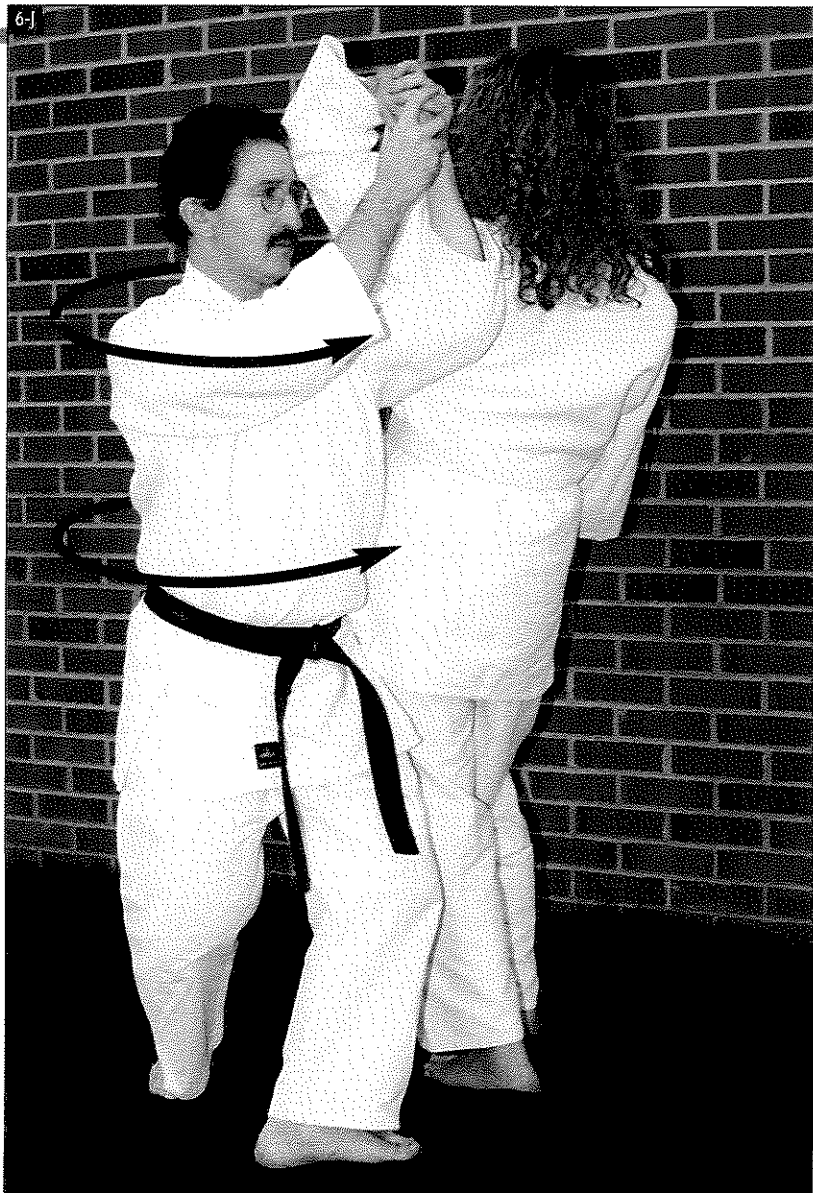
5-E Variation of D, defender drops on her knees and forces the attacker to roll over her.

**FIGURE 6 —
DEFENSIVE TECHNIQUES:**

**Non-evasive techniques;
manipulation of the
attacker's arm or wrist.**

- 6-A** Defender (left) locks the attacker's wrist/arm against the defender's shoulder (nikkyo; technique corresponds to number 7 in the Key to the Defensive Techniques).
- 6-B** Defender (left) grabs attacker's hand/fingers and supports elbow from underneath (ikkyo, 9).
- 6-C** Defender (left) grabs attacker's wrist and supports elbow from underneath (gokyo, 9a).
- 6-D** Close up of C. Compare B with C and D.
- 6-E** Defender (left) twists the attacker's fingers/wrist making the attacker bend the arm at the elbow (sankyo, 10).
- 6-F** Close up of E.





6-G Defender (left) leads the attacker down by pressing the radial nerve with the base of the defender's index finger (yonkyo, 10a).

6-H Close up of G. Arrow indicates how the base of the right index finger creates pressure on the radial nerve.

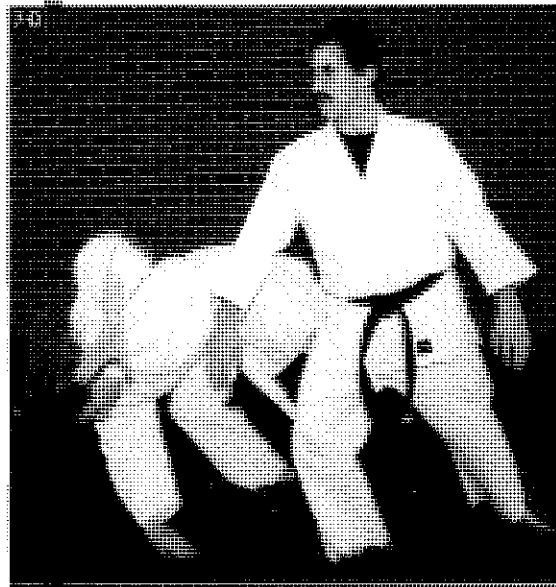
6-I Defender (left) bends the attacker's fingers and wrist in, toward her center of balance (kote oroshi, 11).

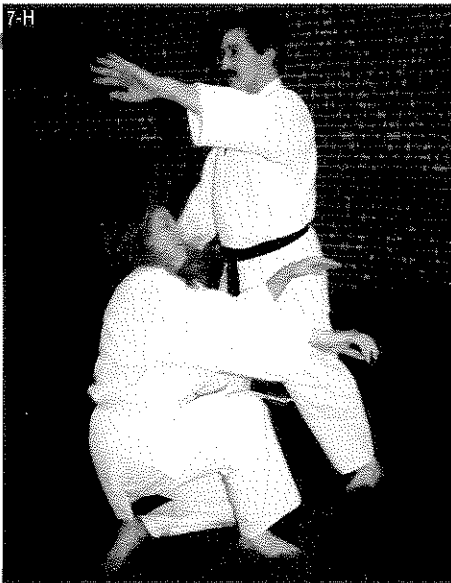
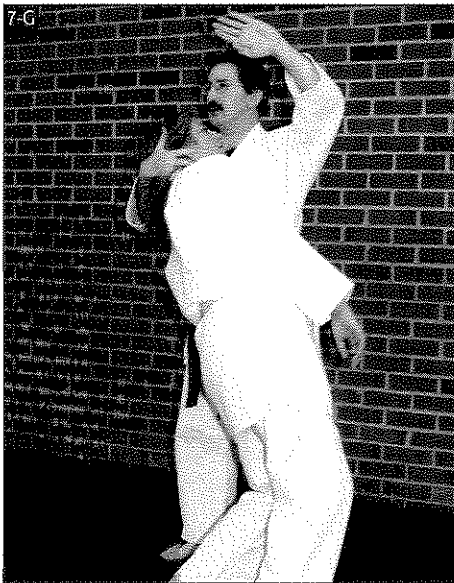
6-J Defender (left) turns around his own axis while twisting the attacker's wrist out and then bending it in, toward her shoulder (shihonage, 11a). Arrows indicate direction of defender's rotation.

**FIGURE 7 —
DEFENSIVE TECHNIQUES:**

**Non-evasive techniques;
manipulation of the
attacker's torso/hips.**

- 7-A** Hip throw (koshi nage; technique corresponds to number 15 in Key to the Defensive Techniques).
- 7-B** Shoulder throw (zempo seoi nage, 15a).
- 7-C** Lateral/side throw, usually applied against a bear-hug attack (ushiro dori zempo nage, 16).
- 7-D** Similar to C, now showing a forward roll throw (16). A break fall is also possible.
- 7-E** Defender (front) steps and bows deeply, projecting the attacker (top) forward (ushiro tekubi dori zempo nage, 16a). This throw is usually used against two-handed wrist-grabs from behind.
- 7-F** Projection into a forward roll from a stooped position (kaiten nage, 13a).
- 7-G** "Breath throw" (kokyu nage, 17).
- 7-H** Defender gently completes a "breath throw" (17).
- 7-I** "Heaven and Earth throw" (tenchi nage, 17a).





The experienced aikido practitioner might argue that aikido techniques are designed to move the attacker's body as a whole, rather than manipulating the attacker's arm or wrist alone, as we imply above. However, for teaching purposes it is important to indicate the specific area(s) of the body toward which the defender directs his neutralization technique. We acknowledge, of course, that any neutralization is intended to move the attacker's entire body. As with the attacks, multiple combinations of defenses are also possible. For example, the defender may lead the attacker, who usually grabs wrists or elbows, by simultaneously raising the defender's arms (perpendicular to the mat), stepping, then bowing deeply and lowering the arms (now parallel to the mat), so that the attacker is lead into a stooped position just "behind/on top" of the defender; then the defender turns completely around his own axis while twisting the attacker's wrist out and then bending it in, toward the attacker's shoulder, projecting the attacker back down onto the mat (*ushiro tekubi tori-shihonage*). There is no need to include a specific key for hybrid defenses since they can be deduced from the material presented above. Almost all the defensive techniques can also be performed from the kneeling position. Combinations of defensive techniques are limited only by the defender's imagination.



CONCLUDING REMARKS

Dichotomous keys are essentially designed for identification purposes. In this article, we grouped the attacks into two major categories: grabs and strikes; both categories include numerous subdivisions. Similarly, the defenses are grouped into two major categories: evasive techniques where the defender steps away from the attack or modifies his body posture to avoid the attack, and non-evasive techniques where the defender manipulates the attacker's arm/wrist or torso/hips; both defensive categories also include subdivisions.

Based on the comparative information that we gathered while constructing these keys, we propose a graphic representation of the relationships among the attacks (Figure 8) and among the defenses (Figure 9). Some similarities are obvious, like the ones detailed in the ikkyo group, i.e., neutralization of the attack by manipulation of the arm (Figure 9); see also Key to the Defensive Techniques 6, and Figures 6-A through 6-H), while others are arguable, like the comparison between kote oroshi and shihonage discussed earlier. Nonetheless, we hope that this initial attempt to illustrate the structural similarity of aikido techniques, from their simplest movement to the most complex combination of motions, might encourage martial arts' scholars to discuss our proposal, improve our methods, and hopefully even reevaluate their thinking about how aikido could be taught and, ultimately, how aikido techniques should be classified.



GLOSSARY

Atemi: Strike to the body; stun by a blow at a vital point. In Ki-Aikido atemi is not a real strike, but rather a 'touch and punch' where power is released through the fist in a spiraling motion. This action is supported by a unified connection to the body center (lower abdomen).	Rei: Bow.
Irimi: Movement in which the defender enters and positions himself in front of the attacker.	Sudori: Defender evades an attack by stepping away from it, bowing, or kneeling.
Koshin: Stepping backwards.	Tenkan: Movement in which the defender turns and positions himself laterally or behind the attacker.
Nage: Defender, person who transmits the technique.	Uke: Attacker, person who receives the neutralizing technique performed by the defender.
	Zempo nage: Throw in which the attacker is projected into a forward roll.
	Zenshin: Stepping forward.

FIGURE 8 — Attacks

Tree-shaped organizational system for the fundamental aikido attacks. Numbers correspond to the code numbers in the Key to the Attacks and in Figures 2 through 4. Only Japanese terms are provided for simplicity.

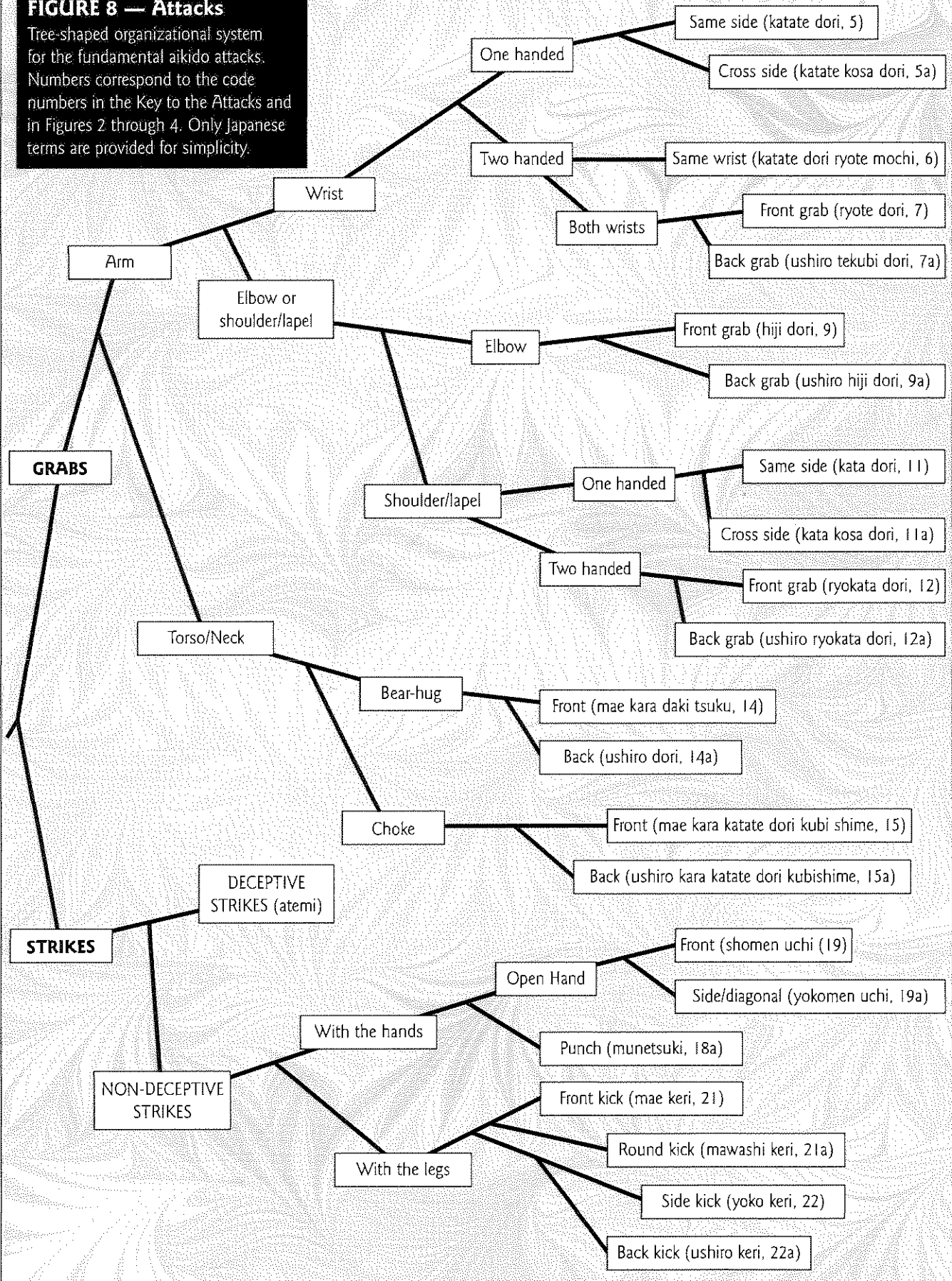
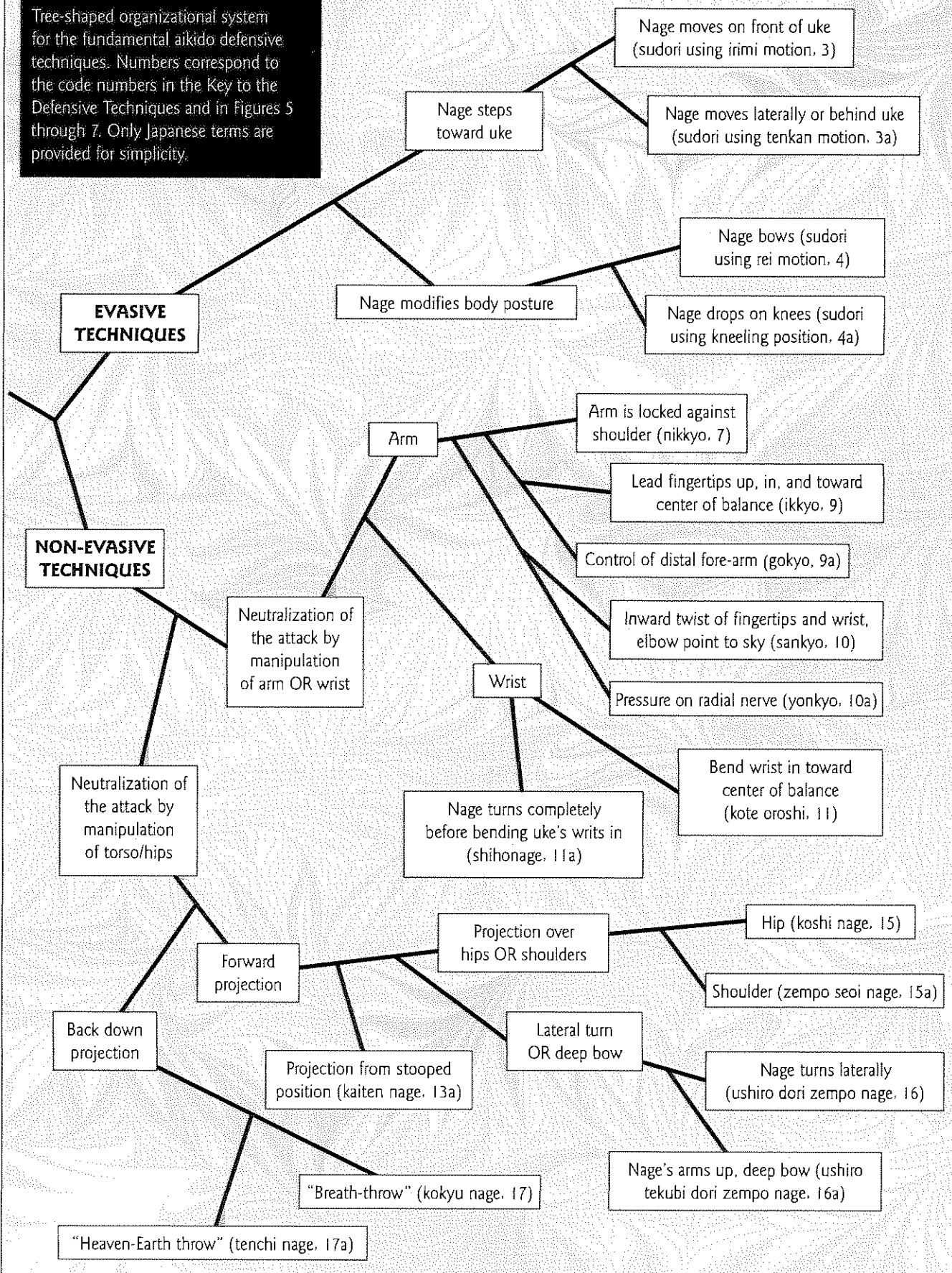


FIGURE 9 — Defenses

Tree-shaped organizational system for the fundamental aikido defensive techniques. Numbers correspond to the code numbers in the Key to the Defensive Techniques and in Figures 5 through 7. Only Japanese terms are provided for simplicity.



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