Perspectives on Teaching Falls and Rolls Effectively and Safety

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Introduction

Proper falling techniques are acknowledged as a foundational skill in most martial arts, yet they are often relegated to second-class status in comparison to the flashier combat techniques—strikes, throws, joint locks, and kicks—for which martial arts are famous. In most martial arts manuals, falling and rolling receive just a few pages in the basic techniques section; some manuals don't even bother with so much as a footnote, choosing to skip falls and rolls altogether. As an instructor with over 25 years of teaching experience observed, although "it's a very practical set of techniques... a lot of people neglect it because they never imagine falling down." Thus, "All styles should have rolls and falls in their curriculum," argued another instructor with over 35 years of teaching experience.

But exactly what should be taught, toward what purpose, and in what ways? The emphasis and time spent on teaching falling and rolling techniques varies substantially across martial arts disciplines, clubs, and instructors. Moreover, each student will have different needs and limitations, which will also change over the course of their study and training. Although foundational, I argue there is nothing "basic" about falling and rolling. Rather, these techniques form a rich, multi-faceted corpus

of skills that deserves greater recognition among martial arts practitioners, but which also needs further instructional elaboration such that instructors have a broader and deeper toolkit from which to draw upon to teach this imperative skillset to students at all levels.

Toward this end, I designed a research project to answer the following questions, which can inform future work on developing more comprehensive curricula for falls and rolls:

1. What is the purpose of teaching students to fall and roll?
2. What is the philosophy of falling and rolling, and how do falling and rolling fit into the larger identity of the discipline?
3. How are falls and rolls classified?
4. What is the expected progression for students learning to fall and roll?
5. What safety factors must instructors take into consideration, and how?
6. What are common pitfalls, and tips to avoid or mitigate them, in teaching falling and rolling?

The paper proceeds by first describing the methods and limitations of this research. I then summarize the results of my inquiry for each question, before concluding with a discussion of the implications of my findings. To clarify, this article is intended as a review of instructional strategies for martial arts practitioners who already have significant familiarity with falling and rolling techniques. It is not intended as a reference guide or manual for falling and rolling techniques. While specific falls and rolls are mentioned throughout the text, I do not exhaustively or in detail explain or illustrate the steps to these techniques.

Methods

To better understand the range of approaches to teaching falling and rolling, I took a two-fold approach to data-gathering. First, I interviewed six senior instructors with martial arts teaching experience in Yongmudo, Judo, Jujitsu, Taekwondo, and Aikido. I followed a standardized interview guide that queried these expert respondents on the purpose, philosophy, classification, progression, safety considerations, common pitfalls, and recommendations for teaching falls and rolls effectively and safely (the questionnaire is reproduced in Appendix A). Interviews are referenced in the text using an alias, e.g. Instructor B; see Appendix B for a list of each instructor's primary disciplines and years of martial arts teaching experience.

Second, I reviewed 18 published martial arts manuals and handbooks from seven Korean and Japanese disciplines to examine the advice given on these same points regarding falling and rolling (see Appendix C for methodology). This set of published material was gathered through convenience sampling, and should thus be considered neither comprehensive nor fully representative. Many important and classic martial arts manuals are unfortunately out of print, and thus difficult to access. Moreover, there exist few if any centralized bibliographies of martial arts books, making a comprehensive survey across disciplines nearly impossible. The list gathered here represents manuals that I could access through the University of California, Berkeley Library, the Berkeley Public Library, local bookshops with martial arts collections, and freely available e-books.

Note that due to my own language limitations, this review was limited to English-language instructors and resources. Doubtless a comprehensive review would require at least a survey of Japanese and Korean language resources and instructors, but this paper at least gives a reasonable overview of approaches to falling and rolling in Western practice.

After completing data collection and analysis, I synthesized my findings to better explain the range, variation, and key differences discovered in my review of approaches to teaching falling and rolling. These are reported in the following section.

Results

This section reports the synthesized results of the above interviews and literature review for each primary question.

Purposes

While the purpose of proper falling and rolling technique may seem obvious to the point of triviality, my review revealed an unexpectedly diverse range of purposes ascribed to these techniques. I have categorized these into eight themes, which I describe in turn.

1. Avoiding injury in practice

The most obvious and frequently noted purpose of proper falling and rolling techniques is to avoid injury. In the English translation of Jigoro Kano's foundational treatise on Judo, the art's founder states plainly, "Before practicing throwing techniques or engaging in randori, it is imperative to master ukemi, the technique of falling

safely" (Kano, p. 45). Most falling techniques teach students to protect themselves, and specifically their vital organ areas (the head, spine, and chest), by essentially sacrificing other body parts. As Instructor A observed, when falling, you can and sometimes will be hurt—a hand, a wrist, and so on—but these are much better options with which to take the impact of a fall than a vital organ. He went on to lament that some disciplines have lost their emphasis on falling as a technique. For example, Taekwondo is "now heavily focused on a combative sport format... and the practicality [of falling] is neglected." Yet, "it is in our nature to fall down" when we are hit, he noted, particularly with high kicks to the head as seen in Taekwondo. Hickey echoes this sentiment in the context of karate—"while falling and rolling skills are not considered part of the karate kihon [fundamentals]... most serious injuries happen to those who are not trained to fall correctly" (Hickey, p. 70). So, from an injury avoidance perspective (and in order to keep competing for sports-oriented arts), proper falling technique is a critical safety skill even if it does not seem directly useful.

2. Self-defense

Related to safety on the mat is the idea that falling and rolling practice is useful off the mat as well. "Falls are an integral cause of injury in day-to-day life," said Instructor C, "[so] learning to avoid injuries during a fall is integral to 'self-defense.'" Expressing a similar sentiment, Instructor E said, "If you don't learn anything else from your Martial Arts Training, you should learn at least how to take a safe fall." If a student cannot fall

safely on the mat, they certainly will not be prepared for a fall outside of practice. “Despite the fact that any of us can fall at any time,” argue Park and Seabourne (p. 25), “we do very little to prepare ourselves for such an inevitable experience.” Moreover, as “most self-defense altercations occur in the street”, an unforgivingly hard surface (Shaw, p. 29–30), and as most ‘street’ fights end up on the ground, the mat represents the best possible scenario and an obvious place to practice in preparation for the real thing (e.g. concrete or asphalt).

3. Physical development and spatial awareness

Instructor D advised that “falls are a good way to strengthen the bodies of new students and help them to learn spatial awareness.” According to Saotome, a grandmaster of aikido, practicing ukemi “strengthens the body and increases its flexibility” (Saotome, p. 25). Nakabayashi et al. (p. 28) write that practicing ukemi “develops the whole body” and “teaches agility”. Taking this line of argument a step further, Westbrook and Ratti write that a successful aikido practitioner maintains at all times “freedom of action and movement”; toward this end, training in rolls and somersaults help the student develop control and practice “the fundamental principles of centralization, extension, suppleness, and… sphericity” (Westbrook and Ratti, p. 139). Many advanced falling techniques—especially those used in free sparring practice or in an unexpected self-defense situation—require specialized muscular strength and neurological control to perform properly. This basic physical fitness is best acquired through repeated practice of falling and rolling drills. Another way of expressing the same purpose is to train

"muscle memory," as Instructor A phrased it, for example to "automatically turn their head." Numerous instructors and manuals underlined the importance of students reaching the point where correct falls and rolls are 'second nature'.

4. Learning techniques

"You can't learn to do Judo throws and Joint Lock Throws," stated Instructor E, "without being Uke for the throw." Likewise, Nakabayashi et al. pithily note that, "One cannot always achieve success in one's throws; often one is thrown by one's adversary" (Nakabayashi et al., p. 28). Students have to overcome the "natural fear of falling", these authors argue, otherwise they will be stiff, have a "negative attitude" toward practice, and will be stuck on defensive such that they never progress. "The student who has achieved proficiency in ukemi…," on the other hand, "may be thrown more easily, and many more times than the defensive student, but not for long. The student who has no fear of falling or being thrown can attempt his offensive moves and skills almost at will" (Nakabayashi et al. p. 28). In a more general sense, from Saotome's aikido perspective, ukemi is a process of learning technique as well: "[the uke] will be able to absorb knowledge through their bodies of how a properly executed technique feels" (Saotome, p. 23).

5. Confidence and overcoming fear

"Many people spend their lives outside the dojo trying not to fall," pointed out Instructor F. "It's seen as a failure," she continued, "and people are routinely mocked on shows and movies for falling. So, we begin by

welcoming the ground." In a similar vein, Wally Jay, founder of small-circle jujitsu, writes that "It is natural to fear taking a fall", and thus the instructor's responsibility is to "help the new student overcome this fear from the very beginning" (Jay, p. 27). From a practical standpoint, according to Instructor D, gradual exposure to "various types of falls give students a feel for the mat and confidence in landing on it… [so they can] participate in judo without worrying about being thrown." As discussed in the section on Progression, building confidence and overcoming fear is not only important for beginning students, but also for intermediate and advanced students as they begin to apply these techniques in faster, more dynamic, and potentially more dangerous situations; lack of confidence or sudden fear can hinder a student at any level from progressing, and so an ongoing purpose of training falls and rolls is to prevent or overcome this emotional hurdle.

6. Relaxation

A relaxed body reacts more quickly and distributes the force of a fall more evenly: "Once you have learned to fall your body and mind will be more relaxed and it will be easier for you to practice" (Kobayashi and Sharp, p. 8). Even without conscious fear, falling often causes people to instinctively tense up. Though necessary, there can be a persistent aura of negative anticipation associated with falling. In part, this is because falling causes pain, which is naturally a negative feedback signal that can hold students back and prevent them from practicing. Proper falling, by its nature, is something of an art of mitigation—making the best of a bad situation—and despite the occasional statement to the contrary, it is misleading to

claim that falling should be painless.[1] To advance, students must learn to accept and overcome the temporary pain or discomfort that they initially associate with falling through training, repetition, and proper progression (see below). Repetition leads to comfort and confidence with falling, and the student's "body naturally relaxes" (Nakabayashi et al., p. 28).

7. To be a better training partner

Confidence and relaxation lead to greater control, key characteristics of a good training partner. The Judo grandmaster Mifune counsels that "the trainee, being afraid of the opponent's physique or favorite feat [technique], may be too cautious… he gets stiff, spiritual and physical" (Mifune, p. 27). Proper training in falling not only builds confidence, allowing the student to relax while working with a partner, but also is a matter of respect: if a student has not sufficiently studied ukemi, that student might "slight the opponent" by failing to "fight with his best" (ibid). Aikido texts also emphasize the importance of well-trained ukemi in facilitating the progress of the nage (the person applying force). Roedel, for example, describes martial arts training as a "reciprocal interplay" wherein each partner, uke and nage, makes progress and improves as the other does (Roedel, p. 291). Saotome stresses that the role of the uke, "the one who receives the force", is of equal importance to the role of nage, "the one who throws", in studying aikido. "Ukemi is the art of being uke, and the quality of nage's practice depends on how well uke has learned this art. Ukemi involves creating the conditions that make a given technique appropriate, responding correctly to nage's movements and taking whatever fall

concludes the technique. In short, uke is responsible for creating the conditions that allow nage to learn" (Saotome, p. 23).

8. To be ready

Some schools of thought believe that proper falling and rolling techniques should also take into consideration what happens after you have fallen. In other words, a roll or fall is not correct if the student only lands safely—in addition, the student must also be ready to respond to whatever conditions led to the fall, i.e. an attack from an assailant. At Cal Yongmudo, for instance, instructors teach students to get up after a fall without their hands, so as to be prepared to block an incoming attack. For the front roll, Shaw (p. 31–32) emphasizes the need to "reestablish your standing position," in other words to give consideration to what happens after falling in addition to what happens during the fall.

Ueshiba and Ueshiba stress that the aikido student should "be ready to initiate another movement as soon as you are on your feet" (Ueshiba and Ueshiba, p. 37). This purpose is especially prominent in aikido texts, in which falling and rolling are frequently thought to be more dynamic than simply "falling safely". Brady, for example, argues that ukemi might be better termed "the art of recovery", as "every technique applied on you in aikido requires you either to neutralize it or recover from it" (Brady, p. 56). Advanced aikido ukemi means that the student is perceptive of their partner's attack, can recognize weaknesses in that attack, and can maintain sufficient balance and control to execute a "reversal", or counter-attack, to take advantage of those openings (Saotome, p. 24).

Philosophy

I distinguish philosophy from purpose as a way to connect falling and rolling technique more directly to the overarching frame of mind and worldview that informs many martial arts. While martial arts as practiced in the West tend toward a pragmatic and utilitarian stance to their disciplines—focused on the practical values of self-defense, combat prowess, physical fitness, injury avoidance, and so on—the Eastern origins of these arts paid special attention to ways in which martial arts practice dovetails with one's way of life more generally. This is the reason that many disciplines are translated as "way" in English: judo is the "gentle way", aikido the "peaceful way", taekwondo the "way of kicking and punching", and so on. The point is that studying and training in martial arts develops the whole person, including one's character. So, it seems worthwhile to consider the role that falls and rolls, or ukemi more broadly, plays in this way of life and development of character.

Instructor A expressed his philosophy that ukemi is "defense in a sense"; referencing Taoist philosophy, falling is the yin that balances the yang of offensive techniques that are often the focus of martial arts training. In this way, there is an aesthetic and artistic balance that proper falling technique can bring to the art form. Even if the person doing the throwing is performing perfect technique, there will be no balance or grace if their partner cannot fall properly—it will not lead to a good demonstration of technique. "It's like a collaboration," he explained, such that falling is a great contribution to the overall balance, and thus rightness, of training, demonstration, and art.

This echoes a similar mindset expressed by the more philosophically-inclined instructors and masters. Kyuzo Mifune, a primary disciple of Kano, notes in his introduction that Kano "desired to make [Judo] not only a feat of arms, but also a means to help physical and spiritual training to contribute most effectively in the cause of educational and cultural requirements" (Mifune, p. 23). There is a "union of body and soul" as he later describes it (Mifune, p. 25). Moreover, "It is a superficial idea that Judo is simply an individual matter, because it is played between two people... Verily, Judo [is a path to]... developing the world as a human cooperative body, peacefully and beautifully" (Mifune, p. 25). Despite the stilted translation, the underlying philosophy of cooperation, beauty, and unity that Mifune sees in Judo practice must also apply to ukemi, the art of receiving. The implication is that ukemi is the cooperative second half to what are traditionally thought of as Judo techniques—throws, grapples, and so forth—which would be meaningless without a partner, or uke, to collaborate.

Considered more broadly, falls and rolls contribute to a wholeness not just in technique, but in mind as well. There is a humbling aspect to falls and rolls that can help students set aside ego and fear of failure, both of which can overwhelm one's practice and hinder progress. There is also a personal development of mind to be found in advanced falling and rolling, the kind found in free sparring. Ukemi trains students to respond through "observation and intuition", with benefits both on and off the mat: "Just as those who anticipate too much in their ukemi in practice often fail to see the direction of a technique, those who are too

calculating in life often fail to observe what is happening around them" (Saotome, p. 25). This mindset is similar to that trained through meditation, in which one trains one's mind to simply notice one's surroundings, rather than to always try to control and master them. A suppler, more relaxed mindset is less likely to get 'stuck' or 'fixated' unhealthily. Thus, "The gist of Judo rests on pliable action of mind and body. The word 'pliable' however, never means weakness: something like free broadmindedness or adaptability [is] more akin to the true meaning" (Mifune, p. 30). Lastly, such pliability and relaxation allows for that most sought-after goal: happiness. As Saotome sagely advises, with good ukemi a student can set aside negative feelings and simply take "joy in practice" (Saotome, p. 25).

Classification schemes

To give an initial point of reference, the online, open-source Black Belt Wiki lists eight types of falling techniques: backwards breakfall, backwards roll, forward breakfall, forward/front roll, forward dive roll, forward shoulder roll, side breakfall, and side roll.[2] While not a definitive source of information on martial arts techniques, the wiki's list does provide a useful starting point for understanding the ways in which different martial arts disciplines classify the near-endless ways of falling into discrete techniques for the purposes of teaching. From the list, we can infer three dimensions of classification. First, falls are categorized by directionality (relative to the person falling), e.g. backward, forward, and to the side. Second, by purpose, i.e. whether to break the fall by landing prone (a

breakfall) or to dissipate the fall by translating linear force into angular momentum (a roll). And third, by height and speed, which differentiate a front roll from a dive roll or a "free" or "air" fall/roll.

The interviewed instructors added some additional variety and depth to these classification schemes, especially in consideration of the practical purpose or utility of the fall. According to Instructor E, for falls and rolls, "usefulness is dependent on the situation." Since there is a nearly infinite variety of potential situations in which one might need to fall or roll—from slipping on ice while carrying a baby to being pulled to the ground by one's hair—this observation implies that there is a likewise near infinite variety of ways that falling and rolling variants could be categorized by use. Nonetheless, several more common varieties emerged in interviews, although rarely in texts. For example, according to Instructors A, B, and C, yongmudo includes several apparently unique varieties of fall or roll intended to be used specifically when one's freedom of body movement is constricted. For example, what is known as a foot-slap breakfall is a variation of the standard back fall to be used when the uke is flipped forward over his or her own head while the opponent holds the uke's arms; the only thing left to dissipate the force are the uke's feet and the arch of the back. Another example is the face fall variant known as a knee-under fall, which is used for a straight downward fall from standing, as might occur if an opponent applies a particular wrist lock and there is no chance of using one's hands or redirecting the fall into a roll. Lastly, there are a variety of "monkey foot" falls and rolls, cited by Instructor C, in which the uke's upper

body positioning is opposite the standard lower body positioning at the start of a roll or fall—these variants are of practical value for dealing with unanticipated attacks, such as might occur during free sparring or in a self-defense situation.

Referenced in several manuals and handbooks, especially for aikido, was a differentiation between "hard" and "soft"—or "feather"—falls. According to Min and Link, a "hard" fall will "redistribute the force of the fall away from the vital organs" (Min and Link, p. 46) and equally across the less critical parts of the body (e.g. hands and arms). A "soft" fall, in contrast, is "smooth" and redirects the force of the fall more so than distributes it. While to a certain extent this mirrors the distinction between a fall and a roll, there appears to be some inconsistency in the ways in which the difference between redirection and distribution are interpreted. For example, while Spear (p. 7) identifies "spinning", or redirecting force, as one of the general Hapkido principles, his theory of falling is "to distribute the impact force over a wide area simultaneously" (Spear, p. 39). The hard break falls he describes are "essentially the same as in Judo" (ibid). This is especially strange given his description of how "to land properly while taking a nosedive", which he writes is "simply a matter of learning to roll with the fall" (Spear, p. 43).

In aikido, there seems to be a greater emphasis on redirection over redistribution, even from falls. Roedel, for example, shows a "handstand fall" which amounts to a soft face (or forward) fall, and a soft side falls which he describes as "falling like a leaf" (Roedel, p. 298–299). In an extreme example, Westbrook and Ratti do not include any falls among their techniques, but only rolls:

"Your body must, when the occasion demands, become such a sphere ... These rolls and somersaults will not be 'falls"... i.e. mere methods for landing safely... and nothing more..." (Westbrook and Ratti, p. 139). Later, they continue, "Pain is the result of a shock, of a direct frontal collision between two entities separate from each other... Your body must roll along, not fall against the surface of the mat. And 'roll' implies continuous contact with that supporting surface" (Westbrook and Ratti, p. 141, emphasis in original).

It should be noted that, from a safety perspective, the distinction between 'hard' and 'soft' falls is a matter of some controversy. There are many who believe that soft falls are inherently risky. Firstly, they require far greater body control, awareness, and timing. Secondly, sometimes the uke cannot, for whatever reason, fully redirect the force of impact. As Instructor A put it, "Judo, for example, is very up and down. [A judoka can] literally pound you into the ground—there is no way to roll out." In such a situation, if the uke attempts and fails to perform a soft fall, there will be no time to switch to a basic break fall and redistribute the force. This can lead to injury. Thus, it seems prudent to recommend that a risk-averse instructor will emphasize instinctual break-falling over soft falling among his or her students.

Progressions

One of the earliest English-language Judo manuals notes that, "In Japan they say that before you have earned your First Degree Black Belt you must have taken ten thousand falls" (Kuwashima and Welch, p. 5). This basic advice remains consistent across disciplines and

time—martial arts training requires the student's body to learn proper falling technique, and the body learns through repetition. That said, there are strategies and methods for guiding students' progression in falling technique that improve development while minimizing injury and frustration. Below, I summarize four different types of progression cited by instructors during interviews and in manuals: increasing height and speed, transitioning solo to partner drills, from static to dynamic, and from controlled or fixed to free form.

Increasing height and speed

The most common progression leads the student incrementally increase height, a low to high progression, and speed, from slow to fast. Instructors and written guidance across disciplines recommend that students begin to learn basic back, side, and front falls first from sitting, then from squatting or kneeling, then from standing, and then with momentum, for example by jumping or diving (see Kobayashi et al., p. 12–13; and Yerkow, p. 45–46). Jay offers three exercises specifically designed to control the speed of side falling so that new students can more safely and confidently develop "coordination of the body, hands, feet, and legs" (Jay, p. 27). The first he describes as a solo, side-to-side exercise, in which students scissor their legs while lifting their hips off the ground so as to land in a side-fall position on the other side (Jay, p. 34–35). The other two involve partner. The first is similar to the "cactus drill" practiced at Cal Yongmudo, where an instructor or a partner supports the faller's non-slapping arm, slowing the side fall so that the student can practice from a higher starting position (Jay, p. 36–

37). The other is a technique to learn a "free fall" (i.e. an air fall in Yongmudo); basically, the instructor or an experienced partner performs a slow floating body drop, guiding the faller's head to provide reassurance that they will not head-plant or face-plant when flipping over (Jay, p. 38–39); this helps students grow accustomed to receiving a dynamic technique with confidence and relaxation—a skill they will need as they move on to practicing with a partner.

Solo to partner and static to dynamic

Students must eventually take lessons learned in solo practice—i.e. falling to the ground on one's own—and apply them with a partner, for example by throwing one another. This was noted by several instructors as a threshold between beginner and intermediate students. "It's the application of falling," said Instructor A. For an intermediate student, he expects that "you don't even have to think about how to fall down." Instructor B considers it as "the ability to safely fall/roll out of controlled techniques." This progression dovetails with the gradual advancement of students from static to dynamic falls and rolls. Thus, a generic progression along these lines might begin with a student falling on their own (i.e. solo practice), then falling from scripted techniques performed by a partner (i.e. forms), and then gradually engaging in free sparring to an increasing degree. "Once they are OK with [taking falls from] throws," said Instructor D, "they are ready to go."

From fixed to free form

A key marker distinguishing intermediate from advanced students is adaptability. Several sources also

argued that students should gradually progress beyond fixed directions and starting positions. Instructor B called this "The ability to safely fall/roll out of uncontrolled techniques or fast controlled techniques." For Instructor E, this meant that advanced students should be able to respond properly to various situations and "when they are not resisting and when they are caught off guard." "When you know the fall or roll is coming," he continued, "you prepare your body. When the roll and fall is not expected then you have to react without thinking about it." For Instructor A, the mark of an advanced student is being able to combine and transition techniques, as "there's no way we can prepare in advance [for when] an opponent is coming in very rapidly." This applies to falling and rolling as well, because in real application—to be safe and protect oneself—the student must learn to switch directions, perhaps even switch to a different fall or variant, all rapidly and "in the moment."

Kobayashi and Sharp suggest that students should eventually be able "to fall correctly in any direction" (Kobayashi and Sharp, p. 8), a necessary skill if one is to engage in "free style exercise", which Mifune believed was the only way to truly train in judo. While not explicitly addressed, it can be inferred from Mifune's general principles and philosophy that the progression of falling and rolling instruction should lead students toward intuitive adaptability, suggesting that the classification of different falls is an artificial tool to help new students, but which later will be surpassed on the path toward "pliable action of mind and body" (Mifune, p. 30). With this end in mind, perhaps, Kano advised students to practice falling and rolling in hybrid

directions, such as diagonally to the front (Kano, p. 46).

While partner forms and light sparring practice can assist intermediate students in achieving flexibility and the capacity to adapt their falls in the moment, muscle memory can also be made more pliable through solo exercise with different types of rolls. For example, in yongmudo it is common to practice front rolls from different stances, e.g. an off-foot or "monkey foot" stance, with one or no hands, and in different directions, such as diagonally or toward the side. By changing the "fixed" conditions of basic falls and rolls, such hybrid techniques can provide a stepping stone toward truly free movement. A final point on the progression from fixed toward free falling and rolling technique was made Instructor C, who believed that advanced students should further develop flexibility by learning how to teach falls and rolls to others. Specifically, he advised that advanced students spend time "Learning a number of teaching paradigms," as "There are numerous ways to teach all falls and people seem to learn from different paradigms at different rates."

Balancing Safety and Effectiveness

Balancing the safety of one's students with the need to push their boundaries presents one of the most difficult to navigate challenges in teaching falls and rolls (and, in general, all techniques). A primary purpose of teaching these skills, as explained above, is to avoid injury. If an instructor pushes a student too fast and too hard, however, then injury may, ironically, be the outcome. Most training facilities utilize stiff mats (usually 1" puzzle mats or 2" tatami mats) to provide some cushion from impact, and some instructors

advocate the use of thicker (e.g. 6" or 8") crash pads for practicing more difficult or impactful techniques. Instructor C specifically emphasized that many instructors are "not using crash pads enough. Even advanced students," he said, "should use crash pads on a regular basis, especially when working on new techniques and when working with non-compatible partners." Moreover, he pointed to nascent research into the dangers of micro-concussions, which may occur even with proper falling technique as the brain is shaken slightly within the skull on landing.

On the other hand, as Spear bluntly points out, "learning equals pain" (Spear, p. 11). While he does not advocate that students permanently damage their bodies, he clearly espouses a 'school of hard knocks' approach in which progress is made through failure, which sometimes hurts. Many instructors expressed a more tempered form of this same sentiment. When asked whether he uses special equipment such as crash pads, Instructor B responded, "Rarely… having an overly soft landing tends to obscure errors more than it helps allow more repetition for practice." Instructor C acknowledged this tradeoff as well, because one common mistake among instructors is "not listening to their [students'] rolls and falls… [which] gives info on timing of rolls, slaps, [and] quality of impacts." This is one example of feedback that is not available when using a crash pad. Likewise, as indicated in the Progression section, controlling the speed of falls can be a safety measure for inexperienced students. However, "we're working within the confines of gravity so the word 'slow' may be relative" (Instructor F). And then there are some techniques and falls where it is not possible to "increase

speed or power by 1% at a time, because the technique doesn't work that way" (Instructor B). So, at a certain point, there are few options apart from advising the student to "just do it", as Instructor B put it, and learn from any mistakes that are made.

This basic tension between safety and effectiveness is compounded by the fact that the balance point is different for each student depending on their comfort level, experience, confidence, spatial awareness, body control/coordination, and general fitness. For this reason, perhaps the most important safety advice is that instructors have to pay attention to how their students are falling and rolling. "You can't leave students to do falls or rolls by themselves," admonished Instructor E. "You have to monitor their progress to see if they can execute rolls and falls without supervision." This includes intermediate and advanced students as well, since they may "backslide" or revert to bad habits when encountering new techniques or training scenarios. As Instructor C warned, "Falling by oneself is poorly correlated with falls due to a throw… [for example,] a person who falls well practicing alone may freak out when thrown by another." Thus, especially at points of transition, such as learning a new technique, students should be monitored both when they are performing and receiving a technique; bad falling or rolling habits must immediately be pointed out and corrected.

A related consideration is to create an atmosphere that does not put a universal pressure on students such that they are anxious about failing to meet expectations. If such is the case, students will be rushed and distracted, and as Instructor F warned, "People get hurt

when they are rushing and not paying attention. This is true both inside and outside the dojo." This goes back to the earlier point related to building confidence and promoting relaxation; much of this comes from proper training in specific techniques, but the overall attitude of the instructors and the culture of the training community will greatly influence students as well. As a set of foundational techniques, it stands to reason that the instructor's attitude toward and emphasis on falls and rolls, including balancing the various purposes of these techniques, will play an outsized role in shaping the overall character of the community and the experience of students. "Part of what the new student is looking for is someone who will hold them to high standards," counseled Instructor F, "just make sure they are accessible high standards."

Toward this end, interviewed instructors indicated several strategies for better balancing safety with the effectiveness of instruction and learning. First, "you can't skip steps on the instruction and hope that students just figure it out," advised Instructor B, "because that's how they get hurt." In particular, both instructors and the authors of various manuals stressed several important points to drive home for students: protect your head and do not reach out your arms to catch yourself. The most common injuries from improper falls are to wrists, elbows, shoulders, and heads (especially hitting the back of one's head). Students should be regularly reminded to keep their head from striking, or even contacting, the mat and to keep their arms close to their bodies except to slap. Bad habits in either case should be quickly identified and the instructor should work with the student to develop proper muscle memory.

Pitfalls and Advice

The most commonly identified pitfall in teaching falls and rolls was when instructors fail to discourage and eliminate bad habits among their students. These include sticking out arms, hitting the head, looking at the ground, stiffening up, and holding one's breath. None of these are the student's fault, and as Instructor A noted, many students likely do not have conscious control over these habits, as they are simply reflexes (albeit unhelpful ones). Thus, instructors must take proactive steps to train good habits, monitor for occurrence or recurrence of bad habits, and train their students to recognize the markers of bad habits so they can self-correct. To this end, Instructor C advised that instructors should never ignore or overlook head contact, should always listen to the fall or roll and train their students to do likewise, and should expect students to perform a kihup (voluble exhalation of breath from the body) on landing. He also counseled patience with new students, to avoid "forcing people to fall before they are ready," which can exacerbate rather than correct such bad habits.

Another piece of advice given in the manuals and handbooks was to demonstrate improper techniques. Mifune, for example, shows a "bad example" photograph of a fall in which the student looks at the floor instead of his fingertips while falling (Mifune, p. 42). Likewise, Nakabayashi et al. (p. 28–45) show bad falling positions in which the uke's legs are scissored, crossing, or in which the uke has landed with the heels instead of the balls of the feet. These examples can be translated into live instruction by demonstrating an improper fall or roll and then asking students to identify what the demonstrator did incorrectly.

Rolls present distinct challenges from falls. For most untrained people, the motion of going head-over-heels is alien and disorienting. As a result, many beginners will automatically stiffen their body in a rigid, very flat way as they fall, which may suffice initially for basic back and side falls, but not for rolls. According to Instructor A, for this reason most new students have an easier time with straight falling than rolls, as many new students have never even done a basic somersault. He recommended that instructors bear in mind that beginners lack a strong mind-to-body connection—you can give them an instruction, but their bodies cannot necessarily follow it. "The biggest challenge is up here," he said, pointing to his head.

For rolls in particular, one trick to train new students to hold their bodies roundly is to have them literally hold a ball (e.g. a medicine or exercise ball) as a guiding reference point during the roll. Another trick is to use intermediate stages—such as practicing falling or rolling on a thick crash pad, as Instructor C recommends—to build confidence, overcome fear, and train muscle memory. Brady, alternatively, invites students to accept the roll by "losing your balance into the roll, rather than mechanically placing yourself in it" (Brady, p. 56). It is important, however, to remember that these are not the 'final' techniques, but a stepping stone toward proper technique.

Students may avoid practicing falls and rolls, or not put in sufficient effort, for many reasons. They may think that drilling falls and rolls is "boring" (Instructor A) or "takes time away from doing more fun stuff" (Instructor B). Possible solutions are to:

- incorporate falling and rolling practice into the

routine (e.g. as part of the warmup, per Instructors B and D)

- teach a basic fall in conjunction with a technique that causes the fall (Instructor B)
- point out the self-defense benefits of proper falling technique (Instructor A)
- lead by example, e.g. “Be calm and confident, unruffled, especially when the new student is unsure of themselves” (Instructor F)
- set an expectation that proper falls and rolls are taken seriously in the art and should be trained as a matter of self-discipline
- avoid making a big deal out of falling—“Don’t make it intimidating for the students by telling what could happen. Just say we are going to learn some falls, here you go” (Instructor D).

Students may also grow frustrated or reticent if falling or rolling hurts or causes them pain. This can especially be a problem in rolling, where weak upper body strength, inflexibility, or being overweight can cause students to collapse their arms and strike their shoulders or backs into the mat. A related pitfall for intermediate to advanced students can occur when one student does not moderate their techniques to match the skill and experience of another student with whom they are partnered. If one student attacks faster or harder than the other is prepared for, it can cause fear, defensiveness, and stiffness in the receiving partner. Thus, instructors should be conscious of which students are paired together for forms, partner drills, or sparring exercise, and should frequently remind students that they will progress only to the extent that their partners progress—training is reciprocal between

the uke and the tori, as emphasized in both judo and aikido manuals, and students develop and learn through cooperation. That said, a student should also avoid going "too easy" on their partner, lest they fail to provide sufficient challenge or resistance for the partner to develop their skills.

There are many, many more points of advice that relate to details of specific techniques and particular pedagogical situations (relating to students with different levels of ability), but these are better suited for a handbook. I have here simply outlined the advice in broad strokes.

Discussion and Conclusion

I conclude with a discussion of several takeaway insights from this review. First, it seems clear that both instructors and students should have a clear understanding of why martial artists train to fall and roll properly, and what 'properly' actually means. The many purposes ascribed to falling and rolling indicate that these techniques play a more central and pivotal role in martial arts training than is perhaps apparent at first glance. This is especially true given that falling and rolling techniques can easily be overlooked and taken for granted—eager students may consider ukemi merely a necessary stepping stone to reach "real" techniques. For new students especially, it is very important to teach them why learning to fall and roll properly, with technique, is of critical importance. New students are "eager to learn how to throw and trip" and other aggressive techniques, observed Instructor A, but not as much to learn how to fall—simply put, because

"it's boring". Part of the instructor's role, therefore, is to convince students that falling and rolling is valuable, integral to martial arts, useful, and also exciting, even fun. For that reason, it is worthwhile for instructors to consider the many reasons why we train falls and rolls, both to make clear in our own minds but also to better communicate to students who might be tempted to gloss over this important practice.

One key takeaway is that falling and rolling must be proactively monitored on a daily basis. Given the ease of developing or reverting to bad habits and the high risk of injury from such bad habits, any improper techniques should be identified and corrected as soon as possible, even if this means adjusting or interrupting the planned schedule of instruction. Instructors should also be actively monitoring their students' progress (or lack thereof) along multiple dimensions. Are students avoiding injury? The instructor or club should track not just acute injuries, but also students' self-reports of pain or discomfort related to practice. Are students comfortable and confident? Or are they held back by fear? The instructor should gauge by active observation of students, with one-on-one check-ins if signs of trouble arise. Are students relaxed? Instructors should not only monitor whether students are tensing up, but should also regularly remind them that falling is part of practice, and that they should accept this rather than fight it. Are students being good partners? Instructors should gauge whether students are cooperating with one another to facilitate mutual development of skills, and consistently remind students to "leave your ego at the door" as Instructor C

put it. An attitude of relaxed, calm, and cooperative practice should also be modeled by instructors and senior students. Lastly, are students remembering to ready themselves after a fall? Remind them to keep their hands up, to pay attention to their surroundings, to get back on their feet or whatever position is appropriate to the given situation. Like all techniques, falls and rolls are not performed in isolation except in very basic practice, but are part of a continual series of movements. This is particularly important for self-defense and competition.

Another key takeaway is that instructors should consciously and intentionally plan for a progression in falling and rolling techniques that extends from basic all the way through intermediate and advanced students. While it is tempting to relegate falls and rolls to the category of "basic" techniques, from the testimony of both instructors and authors it is clear that this really only applies to the most basic drills – falling and rolling on one's own. Training in proper falling and rolling, however, continues into partner forms and eventually free sparring. Instructors should recognize and plan for this expanded sense of the ukemi curriculum.

Lastly, each instructor should consider that there is a balance point between safety and effective learning that is different for each student. While it may be difficult in large classes to provide individual instruction to every student, there are strategies to accommodate different needs even with a high student to instructor ratio. Examples include moderating the pressure in the training community and teaching students to self-monitor and self-correct.

Overall, falls and rolls clearly represent a pillar of martial arts techniques, but like the foundation of a building, they are often out of sight and out of mind. My review revealed a surprisingly diverse and thought-provoking suite of considerations, ranging from the purpose to the progression to the safety tradeoffs, that instructors will want to take into account in teaching falls and rolls. My hope is that this work sparks further conversation, comparison of notes and experiences, and ultimately a more comprehensive and detailed corpus of advice for instructors on this integral set of techniques. I have provided the interview questionnaire (Appendix A) and my full notes from reviewing manuals (Appendix C) as an aid in this endeavor; I should note that future work on this topic would also benefit from reviewing materials that are available only online, including blog posts and discipline or club websites.

Kobayashi and Sharp (p. 8) write that proper falling technique "is the first thing to learn." We should amend this to say that a diligent martial artist never stops learning, even for a 'basic' set of techniques such as falling and rolling.

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Appendix A: Interview Questionnaire

I have here reproduced the questionnaire used to interview the senior instructors cited in this paper. It consists of nine questions, some with optional follow-up questions.

1. What discipline(s) do you instruct? How many years have you instructed martial arts?
2. What is the purpose (or purposes) of learning to roll/fall in your discipline/club?

   a. [Optional follow-up] Where do rolls and do fall fit in with the rest of your curriculum?
   b. [Optional follow-up] How important is learning to roll/fall to the discipline you teach?
   c. [Optional follow-up] Are there rolls/falls, or aspects of these techniques, that you consider unique or particular to your discipline or teaching style?
3. How would you classify the different types of rolls/falls?
   a. [Optional follow-up] For example, by difficulty? Purpose? Usefulness/practicality? Mechanics?
4. How do you generally introduce new students to rolling/falling?
   a. [Optional follow-up] Do you use special equipment, such as crash pads?
   b. [Optional follow-up] In what ways do you vary the instruction based on student skill, fitness, or experience?
5. Do you have any safety concerns regarding teaching rolling/falling? If so, how do you handle those concerns?
6. Can you describe the progression that you expect students to make in learning to roll/fall properly?
   a. [Optional follow-up] How is a student expected to demonstrate mastery of a particular roll or fall technique? (E.g. alone, in response to a technique, as a safety measure, etc.)
   b. [Optional follow-up] What rolls/falls do you expect a beginning student to learn in their first 6 months?
   c. [Optional follow-up] What do you expect an intermediate student to learn about rolling/falling?

   d. [Optional follow-up] What are the aspects of rolling/falling that you expect senior or advanced students to work on?
7. What advice would you have for other instructors regarding teaching rolling/falling?
   a. [Optional follow-up] What are some common pitfalls you encounter in teaching rolling/falling?
8. Is there a philosophy of falling and rolling? If so, could you describe it? Alternatively, how does your overall philosophy for your discipline(s) apply to falling and rolling?
9. Is there anything else you would like to say on the topic of teaching falls and/or rolls?

Appendix B: Interviewed Instructor Aliases

Interviewed instructors are referred to in the text by an alias, e.g. Instructor A, B, C, etc. The below table gives each interviewed instructor's martial arts discipline(s) and years of instruction experience.

Alias	Primary Discipline(s)	Years Instructing
Instructor A	Taekwondo, Yongmudo	26 Years
Instructor B	Yongmudo	25 Years
Instructor C	Yongmudo	37 Years
Instructor D	Judo	25 Years
Instructor E	Jujitsu, Yongmudo	30 Years
Instructor F	Aikido	15 Years

Appendix C: Handbook Analysis Methodology

I reviewed eighteen published martial arts manuals, handbooks, and guides this project (see below). I organized the review by noting how each reference addressed the following seven themes, which roughly correspond to the questionnaire posed to the senior instructors:

1. The location of coverage on falls and rolls within the text (i.e. in a separate section, as an appendix, under 'basics', etc.).
2. The purpose of falling and rolling.
3. The philosophy of falling and rolling, where distinct from purpose.
4. Classification of falls and rolls, either explicit or implicit.
5. Expected or recommended progression for students learning to fall and roll properly.
6. Recommended safety measures or warnings.
7. Advice in instructing falling and rolling technique.

Not every reference provided sufficient evidence to address all seven themes, in which case I simply noted that that theme was not addressed.

Discipline	Citation
Aikido	Brady, p. 56–57. Roedel, p. 291–299. Saotome, p. 23–25. Ueshiba and Ueshiba, p. 36–42. Westbrook and Ratti, p. 139–142.
Hapkido	Shaw, p. 29–32. Spear, p. 39–46.

Judo	Kano, p. 45–54. Kobayashi and Sharp, p. 8–13. Kuwashima and Welch, p. 5. Mifune, p. 41–42. Nakabayashi, Uchida, and Uchida, p. 28–45. Yerkow, p. 29–46.
Jujitsu	Jay, p. 27–39.
Karate	Hickey, p. 70–75.
Taekwondo	Park and Gerrard, p. 24–27. Park and Seabourne, p. 25–34.
Yongmudo	Min and Link, p. 46–48.

Endnotes

[1] Mifune states that when the techniques of falling have been "well acquired… you will feel no pain" (p. 41). However, it is unclear, given the poor overall translation of the text, if the Judo grandmaster meant this quite so literally as we interpret from the English statement.

[2] Martial Arts Falling Techniques. Available at http://www.blackbeltwiki.com/martial-arts-falling-techniques. Accessed July 30, 2018.