Scale, Volta, and Key

"Every art has this property of being clear to those trained in it, so that thence comes this maxim, 'Believe the man who is skilled in his art.'"
- Anonymous Parisian theologian, 1398

Scale, Volta, and Key

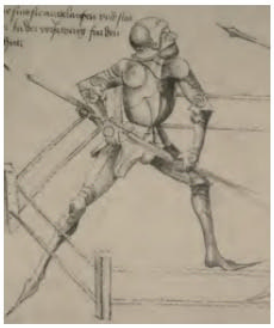
A look at some vital elements of footwork angle within Medieval and Renaissance close-combat

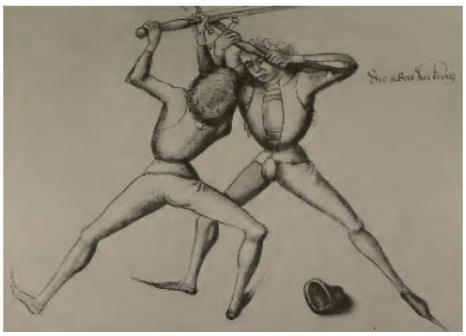
By John Clements
ARMA Director

In the recent explosion of interest in historical European martial arts something very important has been missed. The following (all too brief) article will show several vital elements crucial to understanding the historical sources of the martial arts in Renaissance Europe—elements that, as will be made clear, have for too long been missing among students and scholars of the subject. While these issues and elements are actually quite easy to demonstrate and teach, providing the evidence and explanations for them in a scholarly manner is a challenging undertaking. But in order to avoid mistakes of interpretation and application in the practice of Renaissance fighting skills we believe these critical aspects desperately need to be understood by anyone with pretensions of practicing authentic methods.

Introduction – ***the image that started it all***

As far back as 1999, I found myself using a certain stance or position of the feet during both exercise and sparring. I could not identify exactly why I was using it or why it seemed to work for me. Regardless of the fighting stance I was employing, I would widen and deepen my stance so that my rear foot was opened and turned backward. I attributed it to personal style and felt a certain reluctance at employing it because it "went against" everything I thought I knew about historical European fencing. On top of that, it smacked of something "Asian" and wanting to be a "purist" I felt some remorse at relying on it for advantage when bouting against opponents. Yet, it definitely worked and I knew I had seen "something like it" in images from the early 15th century treatise of Hans Talhoffer. The image had long bothered me. Was it literal and serious or merely representative? It was clear to me that the matter involved an extraordinary range of essential issues, from core movements to geometry and width of stances, to foot positioning and directions of stepping.



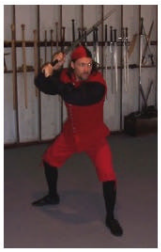


This article is not about fighting stances or postures—what fighters do above the waist—but only about the facing of the feet and the direction of the feet in stepping.

About the year 2001, I came into possession of a copy of one edition of the compendia of Paulus Hector Mair, c. 1540s. There before me with indisputable clarity was the stance I had been using. The feet were positioned identically and shown with such realistic detail that I knew it was then "okay" to use it. As the years went by and I continued all manner of practice and research into this craft, other more pressing matters of research and development took precedent. The matter faded from concern even as I continued to employ it. It was some time before I began to make a more thorough analysis of images of the stance within the historical sources or attempted to form a theoretical doctrine for the feet positioned this way. But the eventual result, the evidence and conclusions of which are now presented here, was nothing less than transformative. Following a hermeneutic approach to key images and associated text, the interpretations presented here provide answers to many kinesthetic questions.





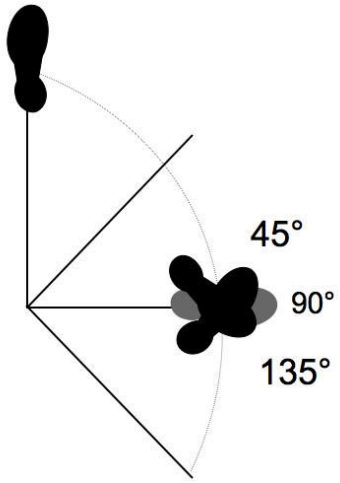






I. Noticing the Feet

After examining the accumulated iconographic evidence and giving sizeable effort to physical exercise of these actions, the validity of the manner of standing and stepping documented here will become apparent. That this matter of close combat has been overlooked in historical fencing studies will be equally obvious. "Opening" of the feet as revealed here is almost instinctive even as it is counter-intuitive. It will be no difficulty for students of the subject to discover this represents something applicable to all aspects of armed and unarmed fighting and is something common to many self-defense methods throughout history. Perceiving its subtlety and utility will quickly reveal its significance for understanding many elements within Renaissance martial arts teachings.

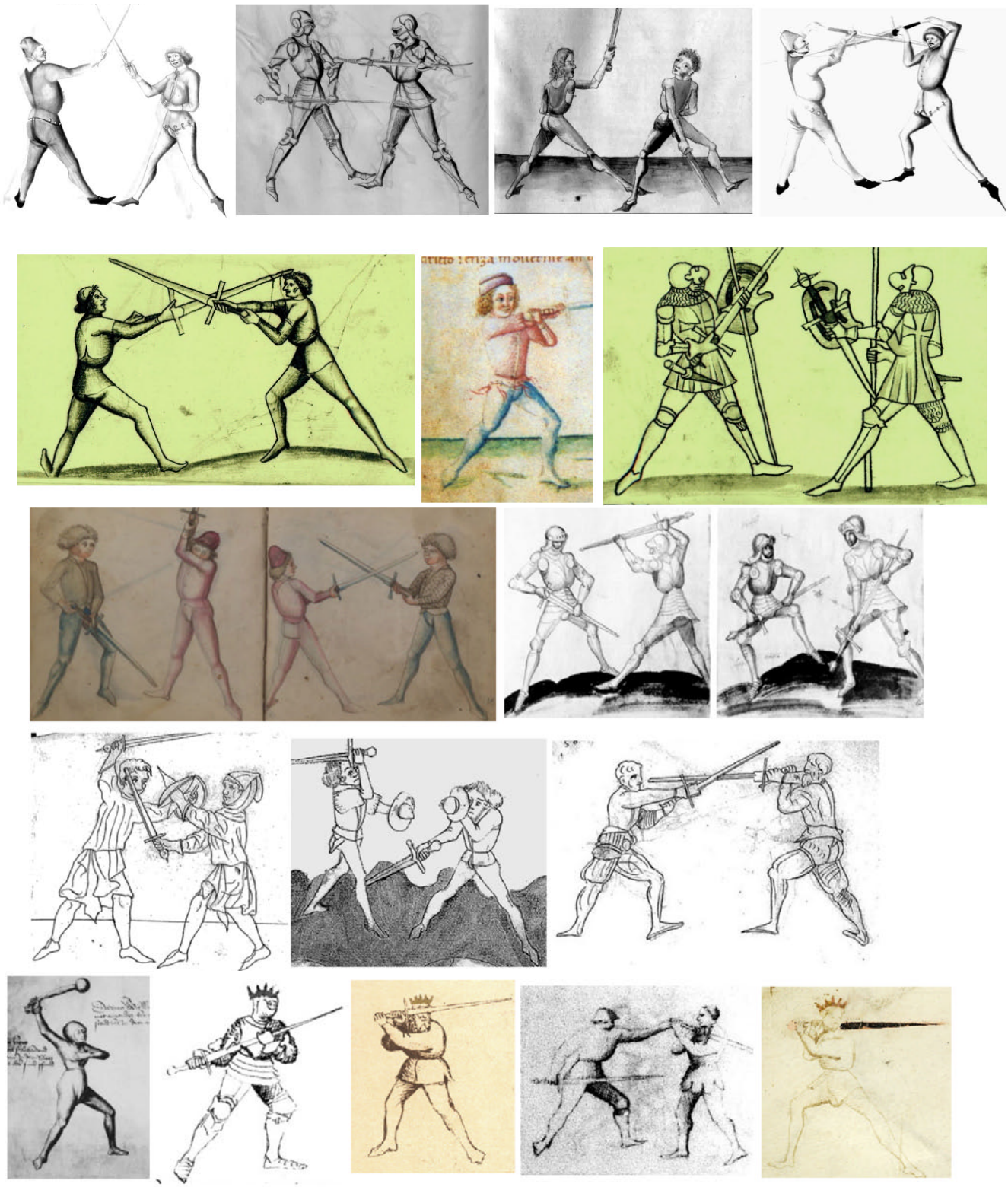


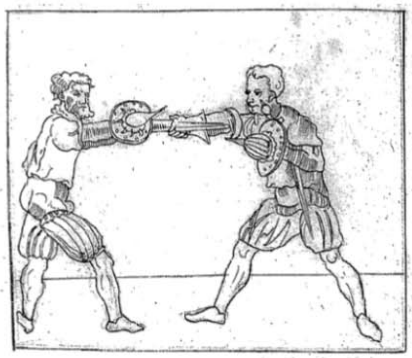
The same understanding will apply to the manifest relationship these feet positions will be shown to have with an array of stepping—to be termed here as the "turned" foot, "cross stance," "opposed feet," and "reverse stance." Each will be documented in detail in the course of this paper.

Within historical combat artwork we see both the 135-degree and the 45-degree positions represented on both the left and the right sides, from the front and the back, and with the left and right legs leading. We see a repeated theme of figures depicted with wide stances and legs braced for quick energetic movement and balanced for actions of striking, pushing, or pulling. A systematic case for what this is can be built (thematically and chronologically) and then confirmed by physical trial.

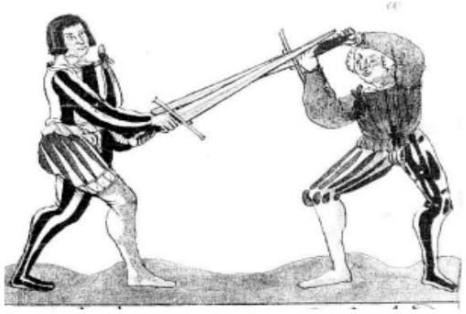
II. Fighting Postures with "Open" Foot Positions

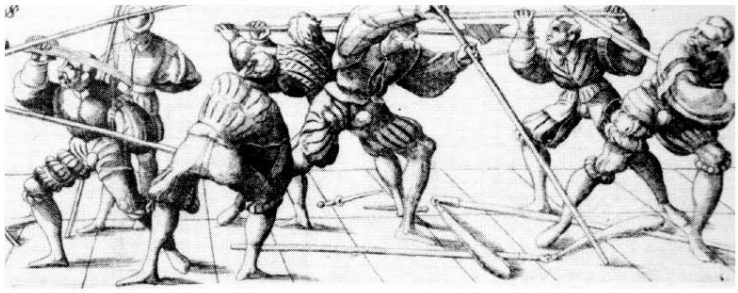
Looking at the sample images below, a pattern is clearly evident in Fechtbuch illustrations: one or more fighters are repeatedly standing in what we may term for convenience an "open" stance, that is, one with the feet essentially directed in a 135-degree position:





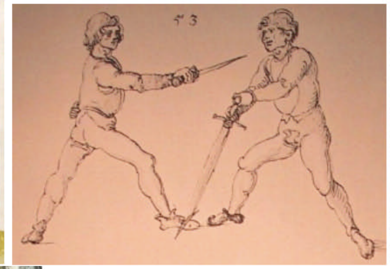


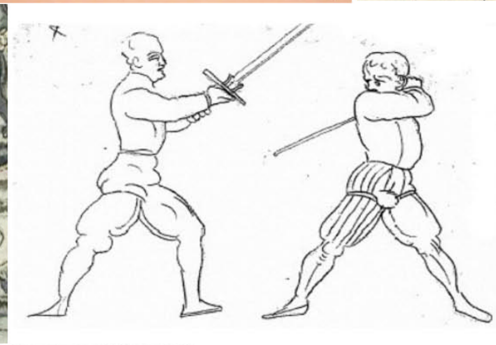
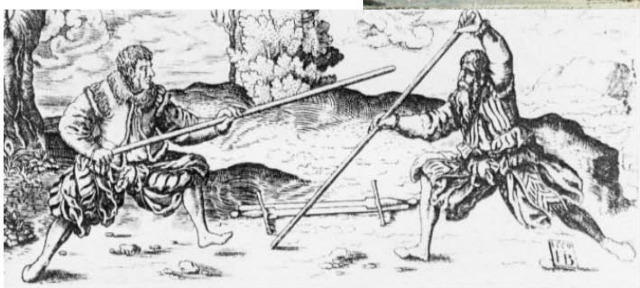
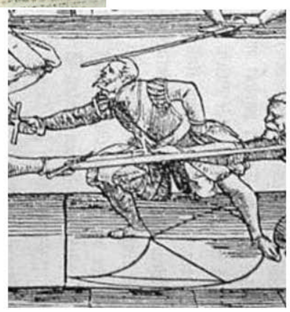
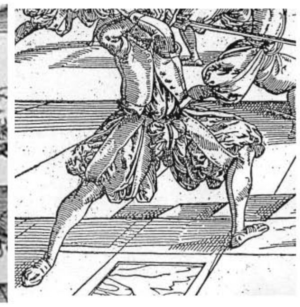
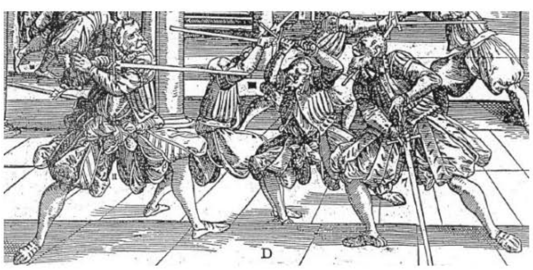


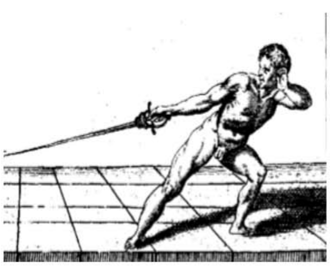

Examining the images, the question may be asked: is the rear foot really incontrovertibly turned in this direction, as it seems to appear? Is this a viable fighting motion? Or is it just a matter of the rear leg stretching out with the foot then angling this way naturally—as suggested in the images below perhaps?

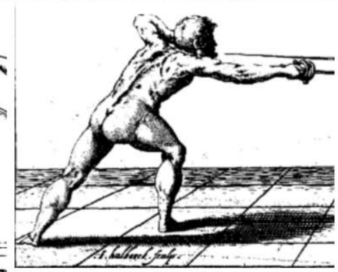
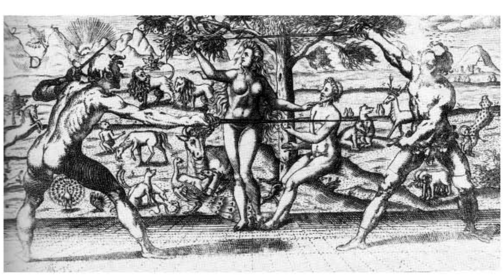


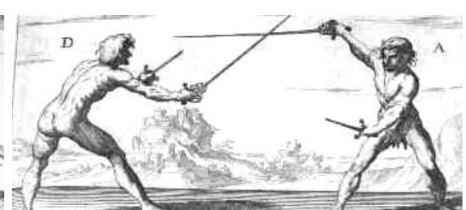


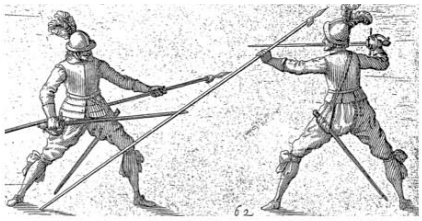


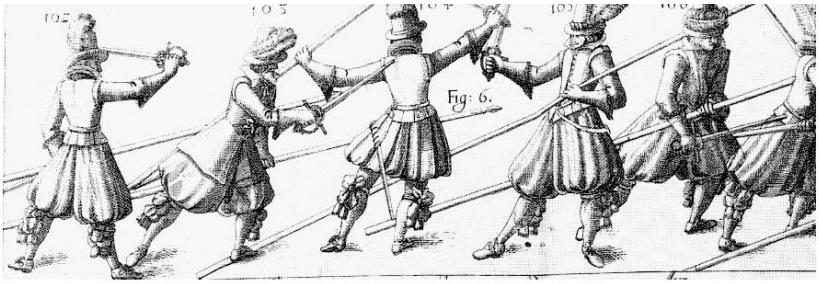








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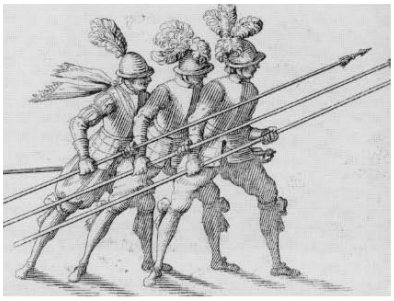

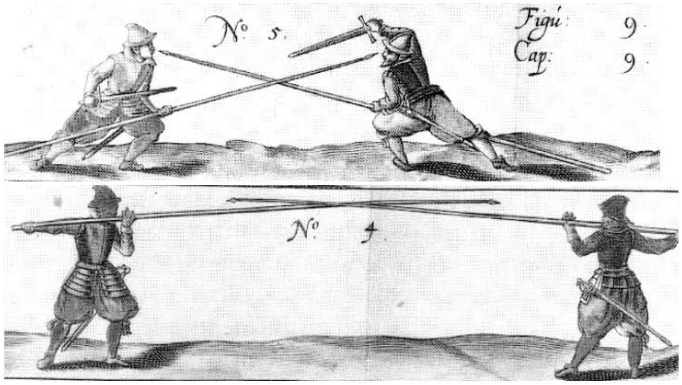
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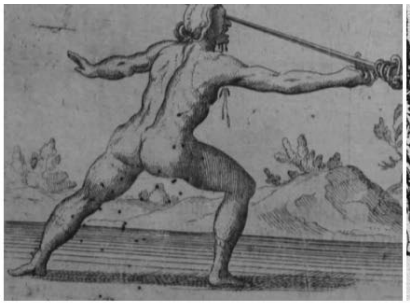

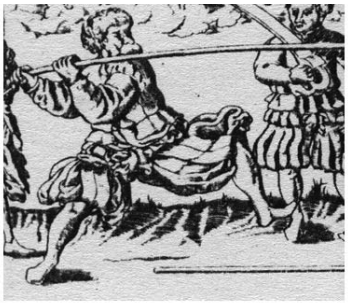

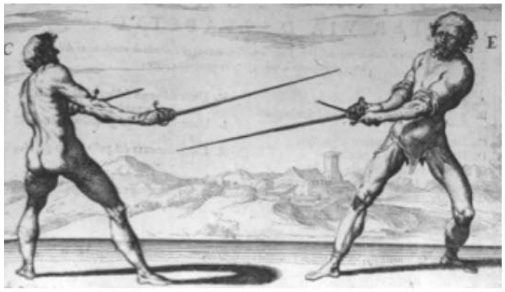

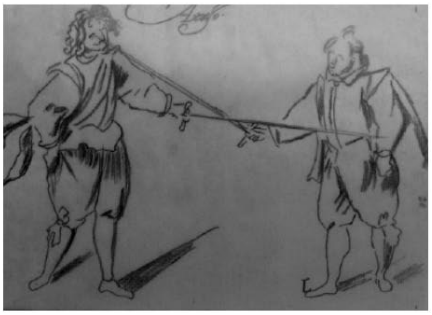

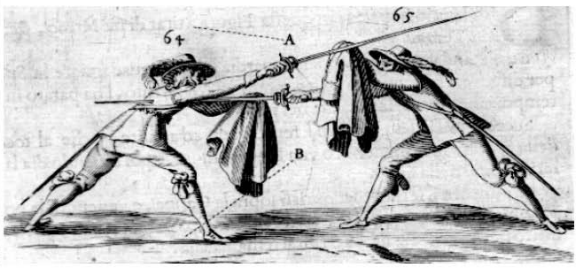
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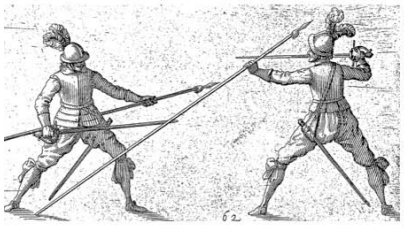

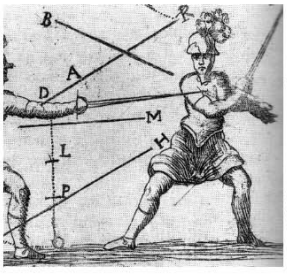
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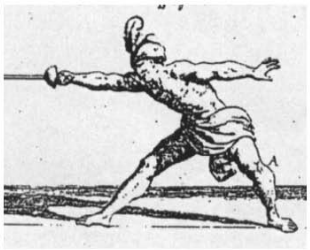
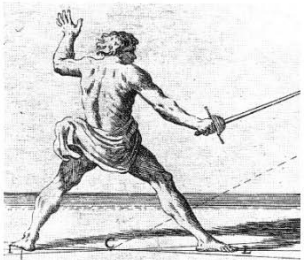
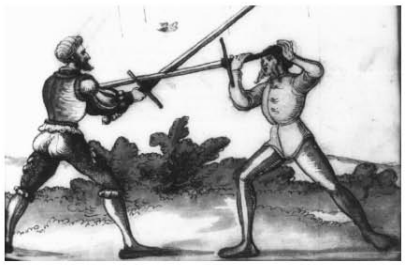
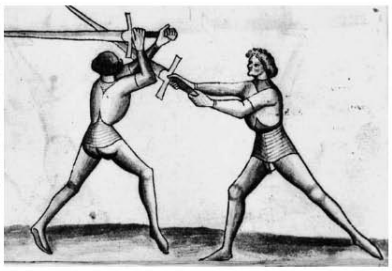
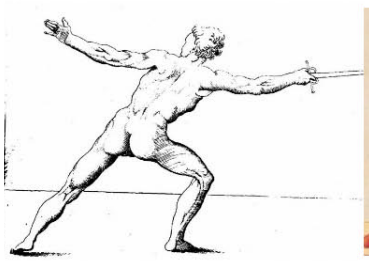


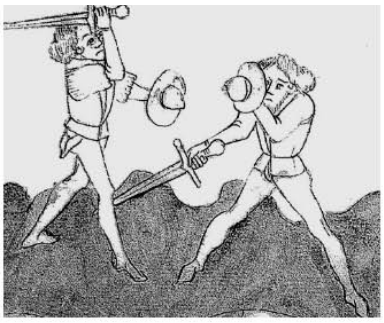


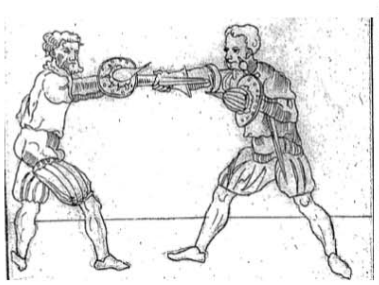


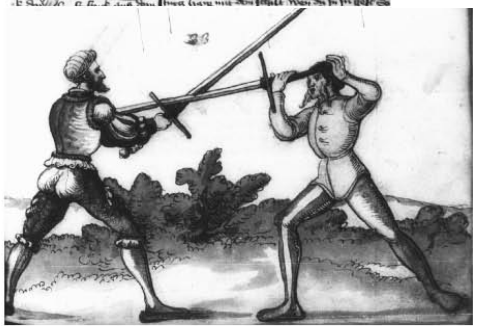
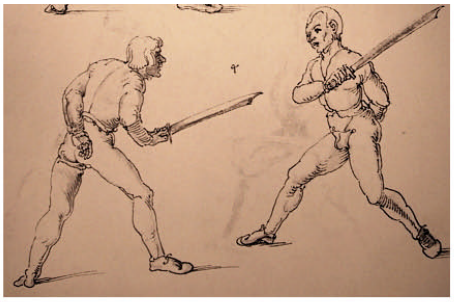





Even if it were the case, that in some instances this was only a matter of the rear leg straightening out to increase range, it would still not explain the vast number of illustrations where no stretching of the rear leg is evident.



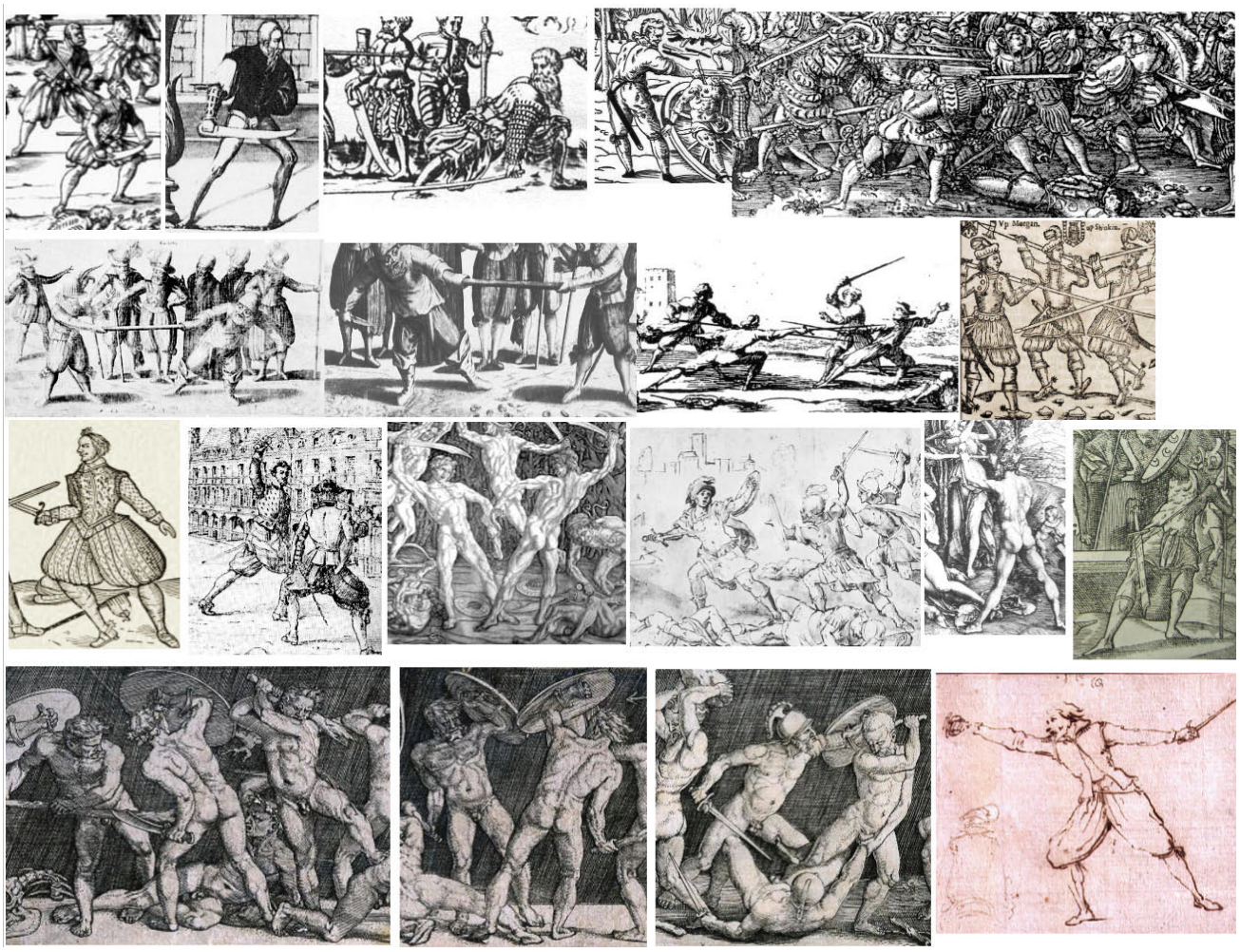




We could very well end this research right here, concluding that the placement of the feet directed at a 135-degree position occurs consistently and regularly with all manner of fighting stances in all manner of combats. But, as will be shown, there is much, much more to this than just posturing in a wide stance by putting one foot in a certain direction.

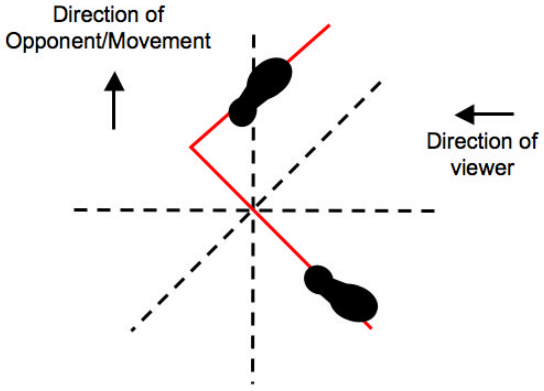
III. Corresponding Images of the Open Stance in Combative Figures Outside of the Fight Book Genre

That the appearance of fighters with their feet directed at this 135-degree angle is not something exclusive to the genre of illustrated martial literature requires, obviously, outside evidence. One way of doing this is to look for any consistency in how combative figures throughout history are displayed. When it can be found in considerable examples of artwork across centuries and regions we acquire even more confidence that it is not a matter of perspective. In doing so some remarkable observations can be made. From Byzantine to Frankish sources, and Northern European to Mediterranean examples, there is a remarkable consistency in combat art that directly corresponds to foot positions in the Fechtbuch illustrations:

If these foot positions were not of importance, why then do we repeatedly find such overwhelming consistency in the depictions of fighters with their feet clearly directed at both 45 and 135 angles across so many different images and works from so many different sources?

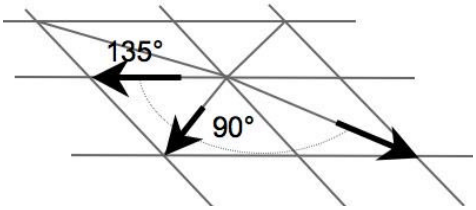


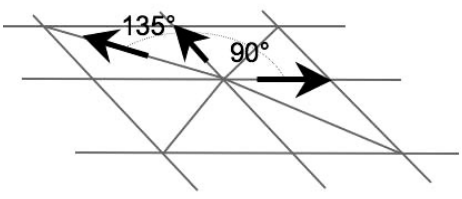
IV. A Question of Perspectives

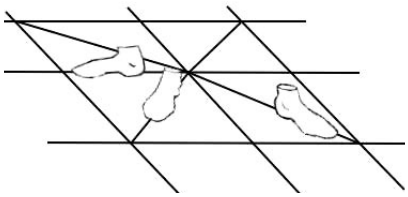


Forward foot directed away from the opponent, technically producing a 90° angle, but with both feet still placed at the "open" 135° position

Working from the view that this "open" placement of the feet is clearly not a 45-degree position, one of the questions that occurred was: were we in fact seeing a 135-degree foot position/angle, or was it a 90-degree one that only appeared with the illusion that it was 135-degrees? In other words, was it possible that because of artistic conventions of perspective it makes it seem to the viewer to be at 135 when in fact it's really at 90? I experienced this myself in photos I took of students in practice or had taken of me in motion performing techniques. Depending on from where the photo was taken, and what movement was occurring, it could end up looking like we were standing with our feet at 90-degrees even though that was something we only did occasionally when fencing with rapiers. So, I began to wonder, especially since the 90-degree position is certainly found in rapier fencing images and treatises by the mid 16th century. Resolving this matter became paramount. My conclusions are presented in this paper.







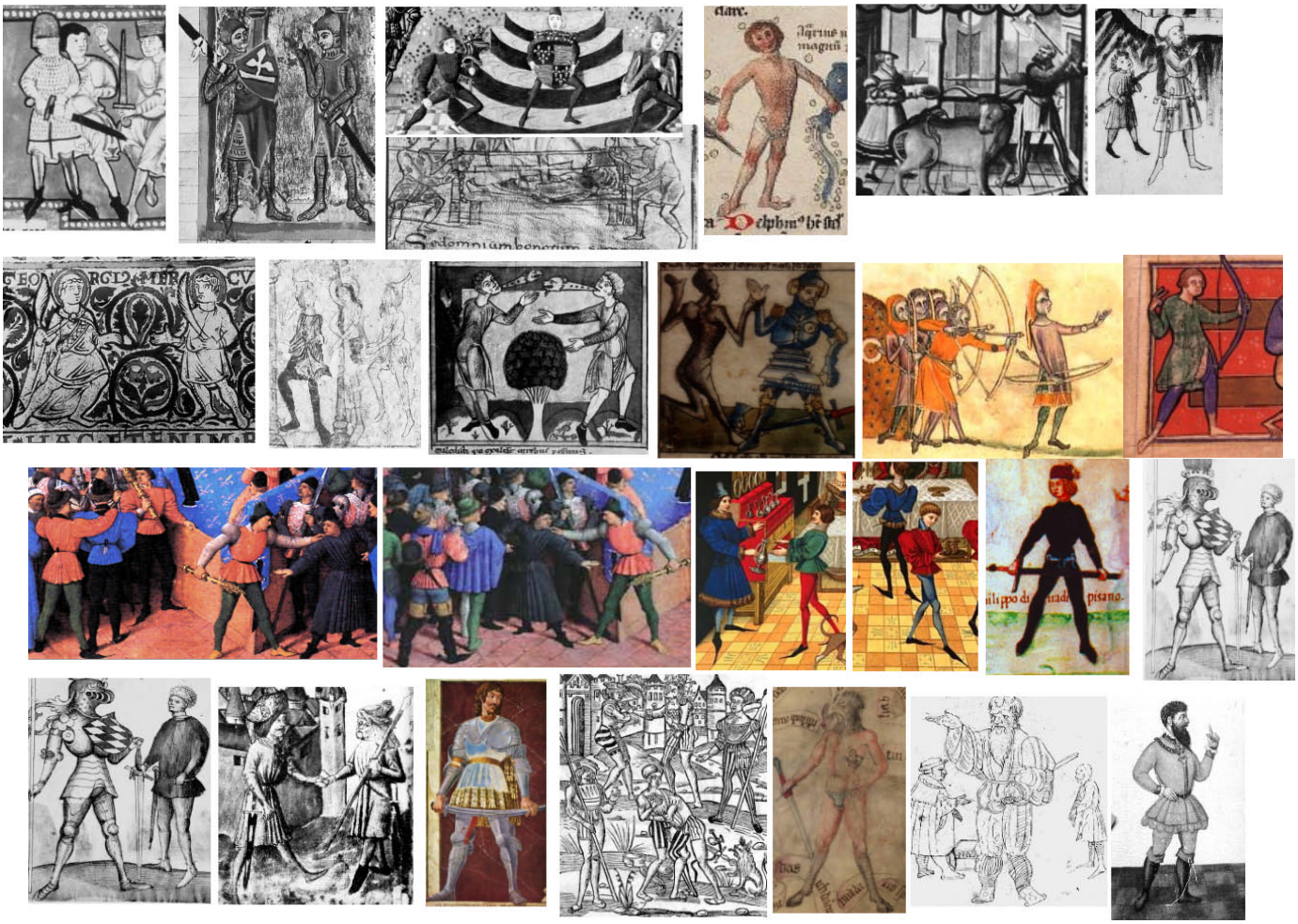
V. Artistic Conventions for Displaying Angles of Feet and Body Facing for Non-Combative Figures

To be even more confident the 135-degree position is a distinct phenomenon, and not simply an issue of how artists choose to depict certain manners of standing or moving, we need a control group to compare with. If we look at illustrations throughout Western art that do not depict combative motion the difference between the 135-degree positions from 45-degree or 90-degree ones is noticeable. When humans just move normally, we do not place our feet at 90-degrees to each other. Nor do we stand with our feet directly parallel side by side to one another. We instead relax and assume a natural stance with the feet at roughly 45-degrees to one another. How this is displayed in Medieval and Renaissance artwork featuring non-combative standing figures provides a contrast to depictions of combative figures.

This phenomenon of foot positions in fighting art goes well beyond attempts by artists to portray figures in dramatic frontal views of or dynamic posing.

Compared to Fechtbuch combat images of consistent 135-degee foot positions, in general depictions of standing figures such as those below there is an evident lack of the forward leg being bent or the rear leg being straightened out. In some of these instances the figure standing with their feet seemingly directed at 135-degrees is conveyed in an essentially motive style, from more of a frontal view, while the figure at 45-degrees is generally depicted from more of a side view. (But no figure can be said to be assuming the dominant place in illustrations or be the primary subject of the artist merely by virtue a result of their foot positions.)

It must be clearly understood that, unlike fighters in combative stances with feet angled at 135-degrees, figures standing normally yet with their feet similarly angled are not bracing themselves either for leverage or explosive movement. The noticeable difference lies in the context of the actions being depicted.

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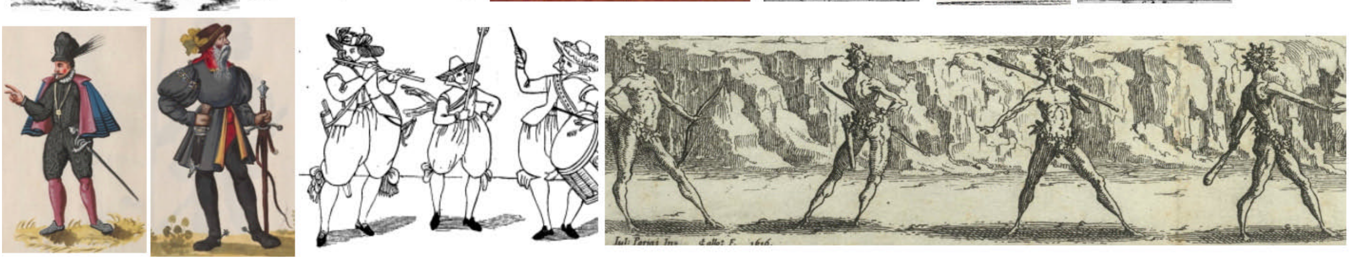
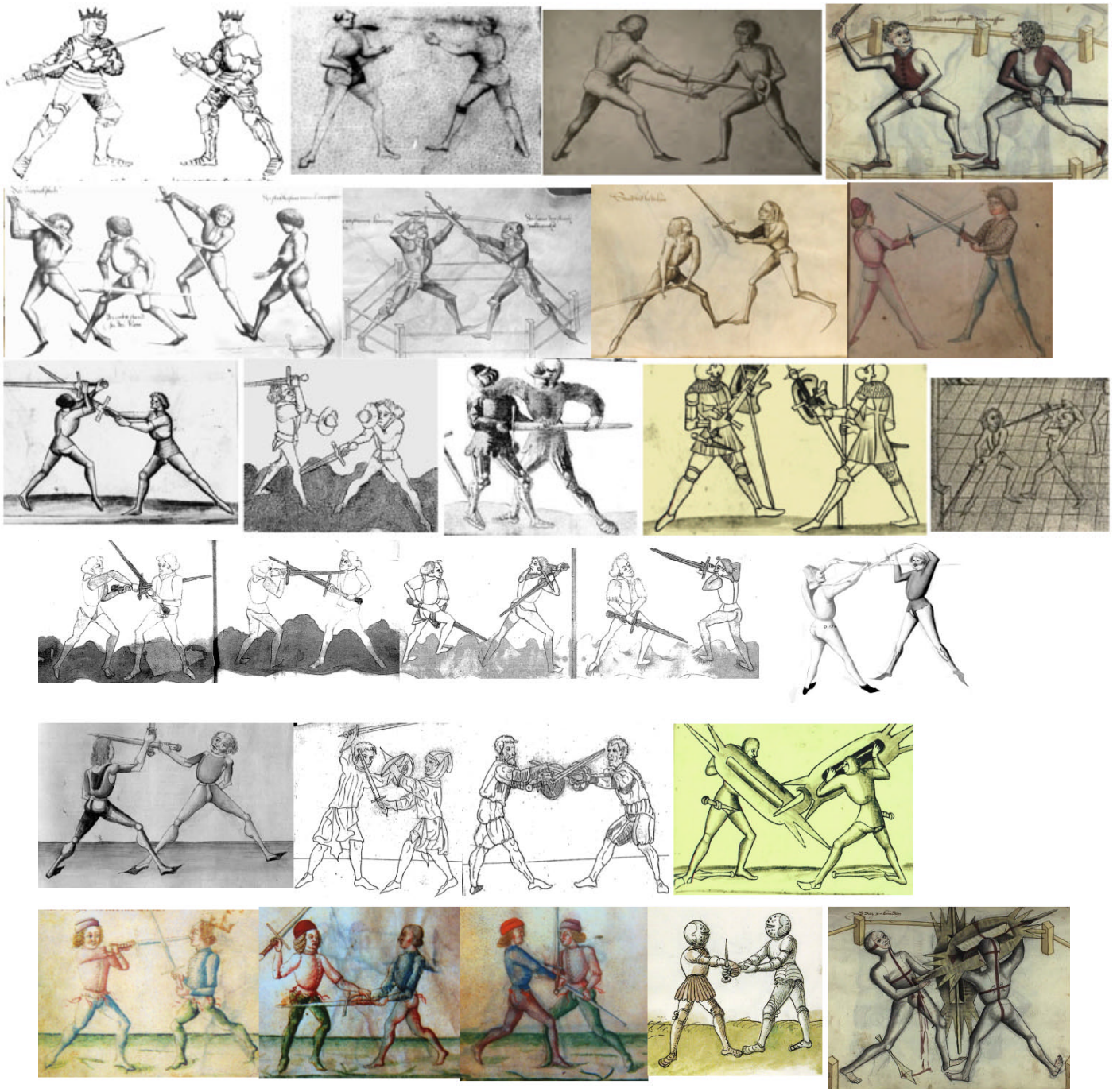


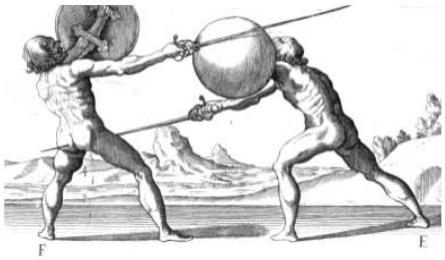
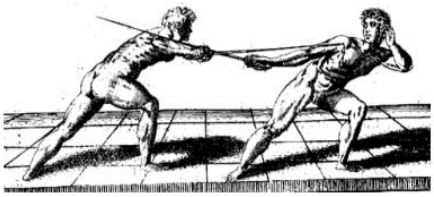
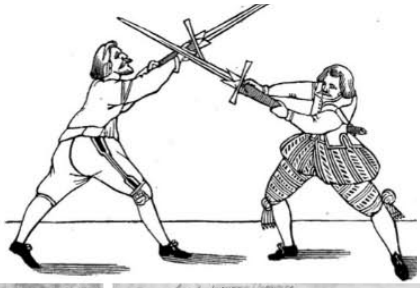
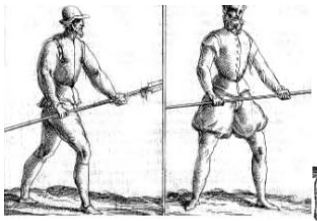
VI. Common Examples of the Frequency of Stances with the Feet at 45-Degrees within Medieval and Renaissance Close Combat Sources

It is easily recognized that the 45-degree feet position appears unequivocally throughout all the fencing literature (as well as historical artwork of figures in close combat). The position is unmistakable. *This must be clearly understood before anything more about foot placement and motion can be discussed.* There is a noticeable distinction between images featuring the feet positioned at 45-degrees and those depicting the feet at either 90-degrees or 135-degrees. Figures with the feet at 45-degree positions, or what we may term a "closed" stance (as distinguished from the "open" 135-degree) are so common in the Fechtbuchs that only a small sampling is necessary as an example:

VII. Samples of Paired Combative Figures from Historical Fencing Sources Showing Both 45 and 135-degree Foot Positions Together

Having established that the natural 45-degree and 135-degree feet positions are distinct from one another and exist in countless examples, something else becomes apparent. A repeated pattern can be found throughout the Fechtbuchs: pairs of fighters where one is in the open stance at 135-degrees and the other in the closed stance at 45-degrees. The frequency of this phenomenon is such that one is forced to consider if it was intentional on behalf of the artist or illustrators. For example:




VIII. Examples of Combative Figure Pairs at both 45 and 135-degree Feet Positions Together Within Combative Artwork of the Era

Before we assume a deeper meaning to the pairing of figures in the two positionings of the feet, we must consider something else. This apparent pattern of one fighter appearing "open" and one fighter "closed" in the same image stance is not exclusive to Fechtbuch illustrations. Intriguingly, it also exists consistently throughout historical combat art:

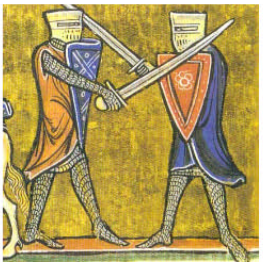


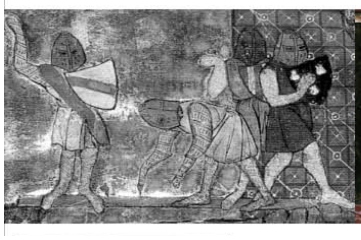


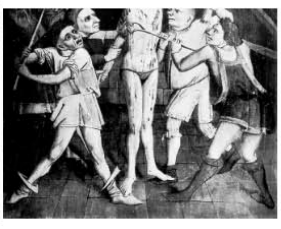








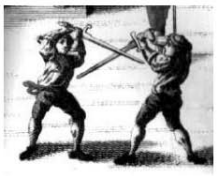

Even one of the most closely examined and thoroughly analyzed works of art featuring Medieval combat, the famous 11th century Bayeux Tapestry, contains a clear example of fighters in both positions. In the same panel sequences different combatants are shown with feet positioned in the open as well as closed stances. Even Harold himself stands at 135-degrees while next to him figures hold theirs at 45-degrees.

As art depicting personal violence became increasingly realistic in the 14th and 15th centuries, this phenomenon of fighting figures being featured in each stance together increased. Abundant examples in the source manuals and historical artwork showing the 135-degree positioning of the feet side-by-side with the 45-degree position attest to it not being a mistake of artistic license or distorted perspective. It excludes the possibility of misinterpreting this as anything other what it is.









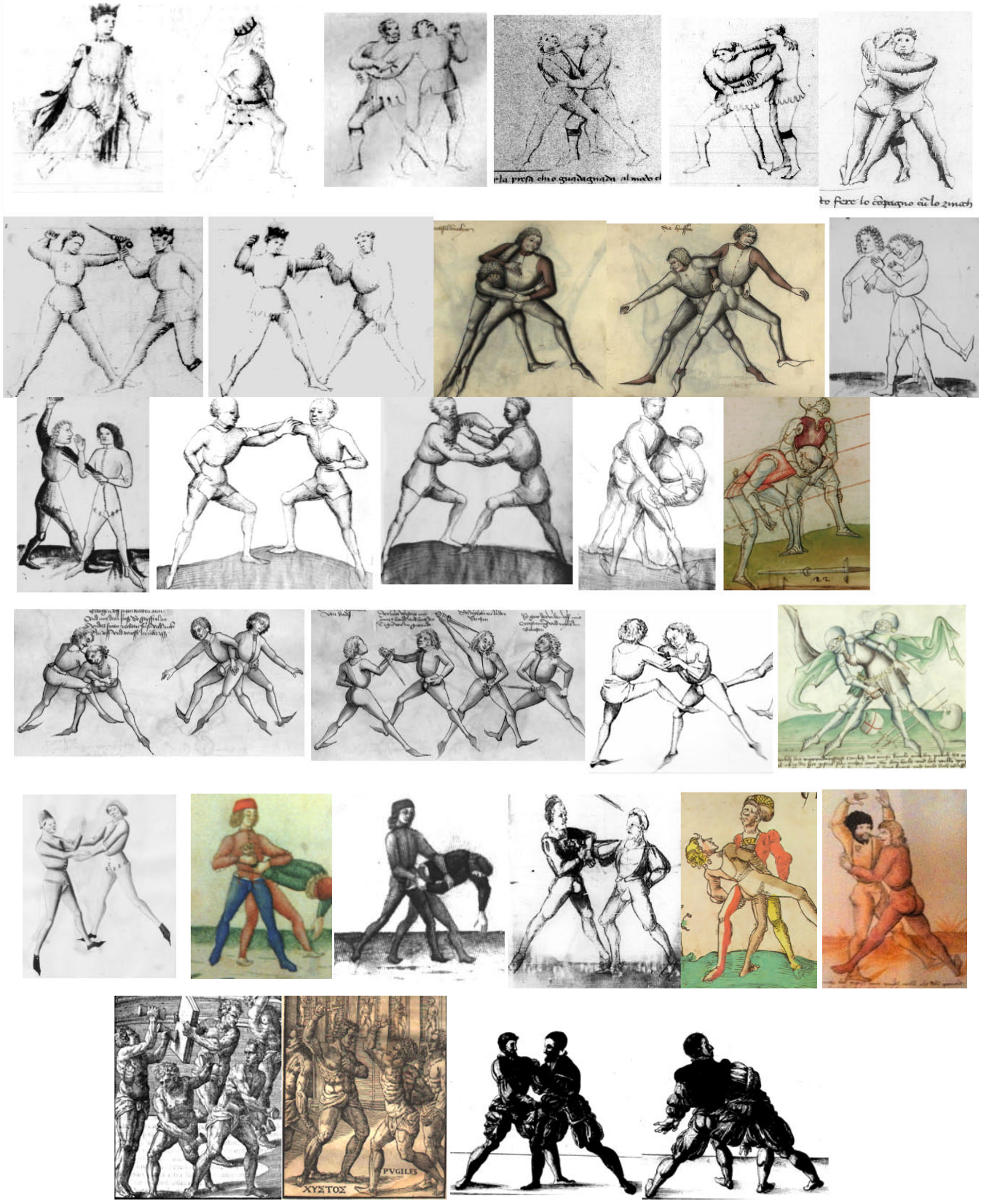

What logical explanation can be found for why something so readily apparent in historical images is not directly addressed in the source teachings? We can easily reason that just as the concept of holding the feet directed at a 45-degree angle is something instinctive and organic to close combat motions, so too is the idea of the 135-degree position.



Whether expressing contemporary martial action they had witnessed firsthand, or representing historical scenes of battles and duels from antiquity, we can be sure that Medieval and Renaissance artists drew on real life for their inspiration. We have no reason whatsoever to doubt that viewers and practitioners at the time accepted these illustrations as legitimate. It is an easy matter to demonstrate that these artists were not at all incapable of showing the feet at a 45, as distinct from a 135-degree direction, and in fact frequently did so. Even within works where depth and perspective are still relatively primitive, the natural positioning of the feet comes across. But no 2-dimensional artwork can properly communicate the simple motions of the heel and hip that move the feet from one angle to another.

IX. Use of the "Open" Stance in Grappling and Wrestling Instruction

If the "open" stance with feet directed at 135-degrees were something appearing within the Fechtbuchs only during weapon combat we might wonder. But in fact, just as with classical sources it appears equally in images showing unarmed fighting techniques of Ringen, the grappling and wrestling actions that form the basis of the Art of Defense:



X. Examples of the Open Stance from Specific Fechtbuchs

Whether viewed as technical treatises, training manuals, study guides, reference works, or memory books, European martial arts literature from the late 13th to mid 17th centuries represents an extraordinary array of artistic representations of close combat techniques. The illustrations range from the semi-cartoonish to the elegant life-like. While there is consistency in style even as there are regional and cultural differences among their methods, what has not previously been noted is how the foot placement at 135-degrees, in contrast to the 45-degrees position (or a 90-degree one), is found throughout nearly all the major works.

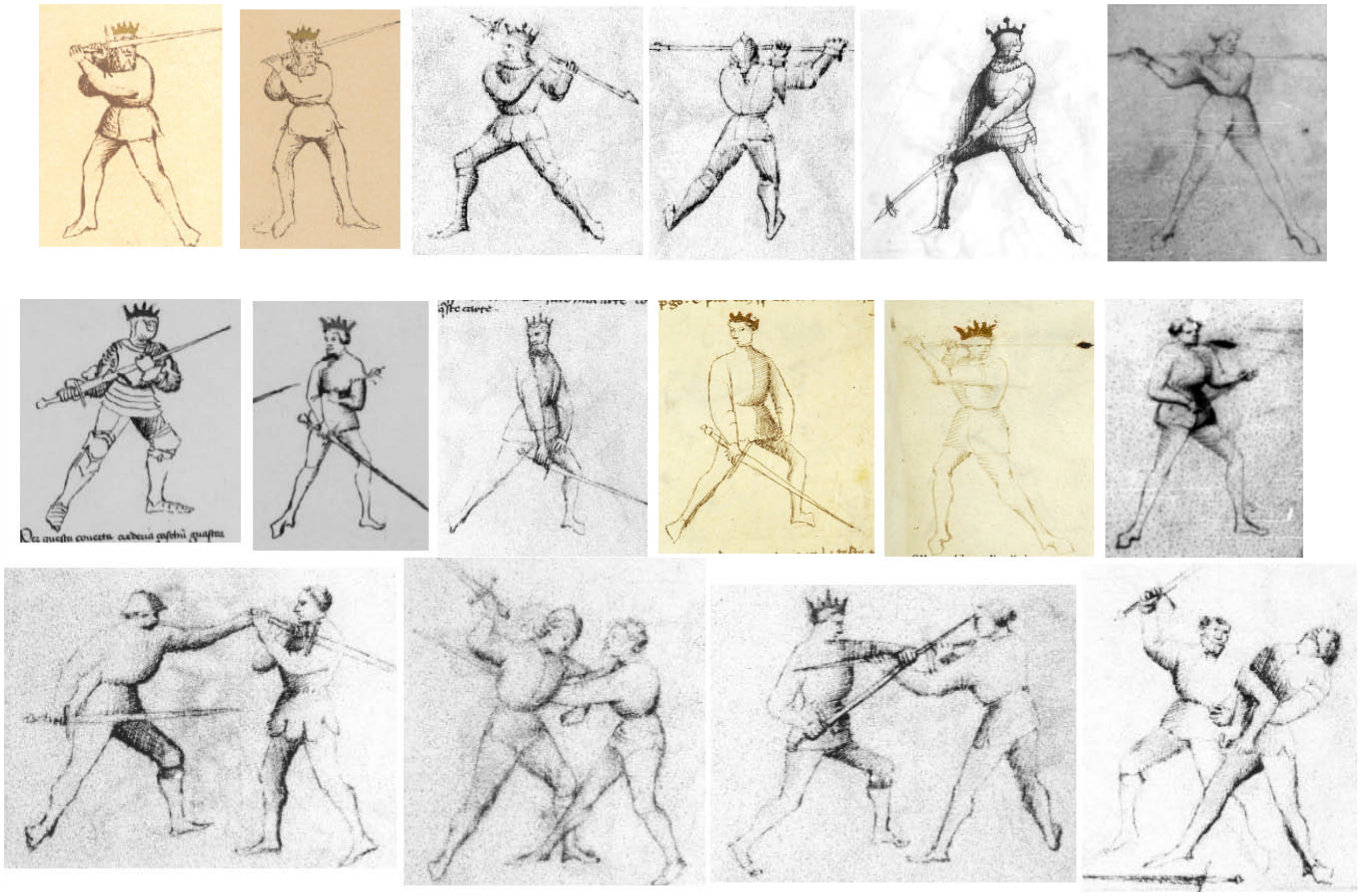
At its core, study of Renaissance martial arts source teachings is about trying to understand movement. Deciphering these forgotten motions, not merely rediscovering techniques, is what lies at the heart of study: How did they wield their weapons and move in combat? That is the ultimate question.

The "open stance" element is obligatory for correctly evaluating the movements of the oldest European fencing text, the Ms.I33 "Walpurgis" sword and buckler manuscript from c. 1285. The 135-degree positioning of the feet is an observable component of no less than five out of the six fighting stances presented in the work. Despite this fact modern students of this material have invariably interpreted it with either a 45-degree (or even a 90-degree!) positioning of the feet. But, as will be shown, the 90-degree positioning of the feet with fighting postures does not appear unequivocally in the sources *until the development of the rapier in the 16th century*.

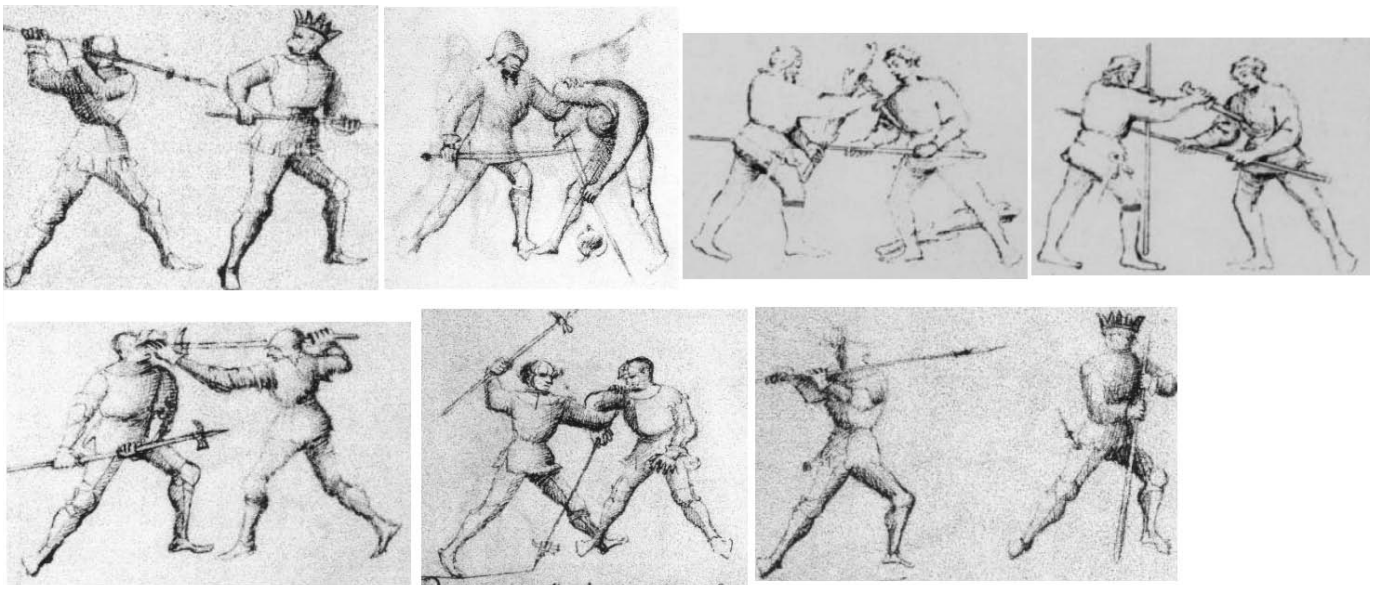
That the "open" position appears in the same plates with the "closed" (45-degree) one is consistent with earlier combat art and later Fechtbuch illustrations of fighting techniques.

The 45-degree stance is itself clearly depicted and serves as contrast. It is intuitively understood as well as self-evident from the material—and offers no iconic or textual evidence for any posture to be interpreted as being held with the feet at 90-degrees.

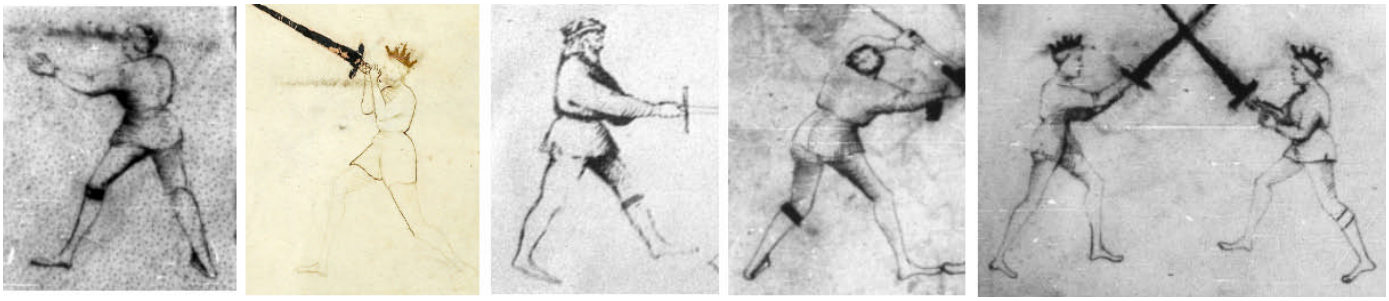
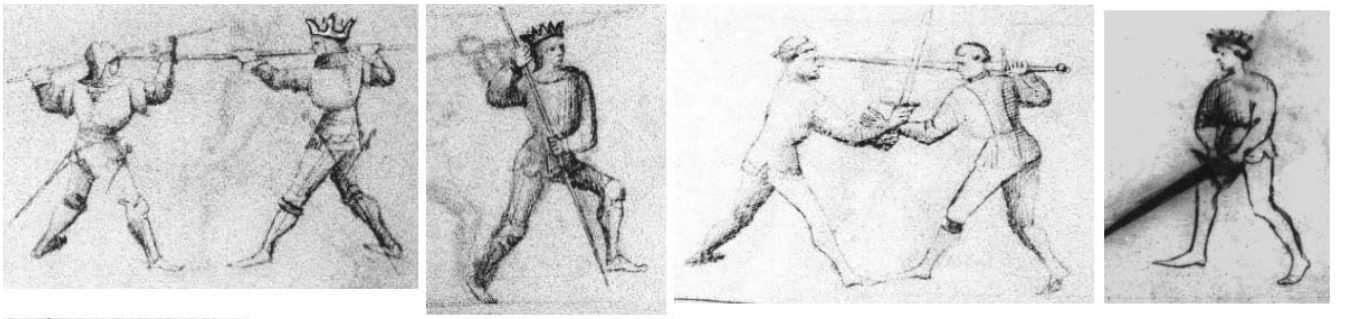
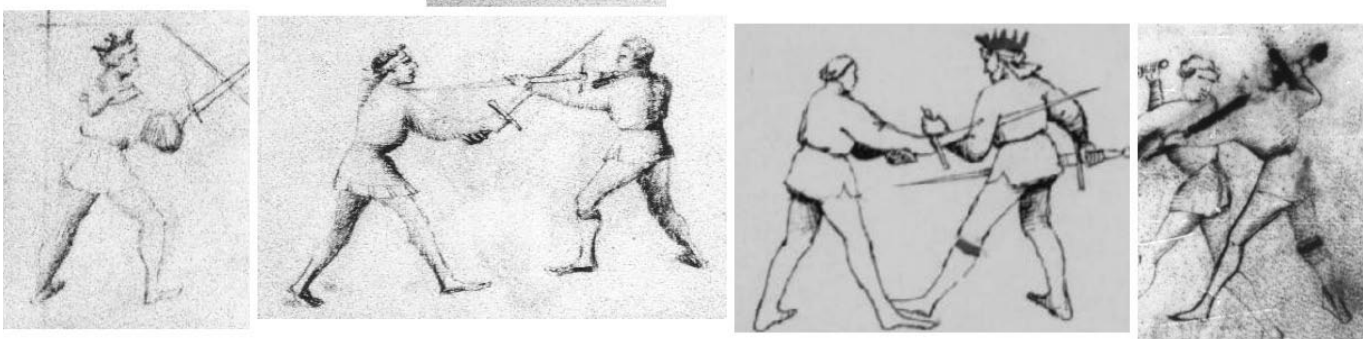
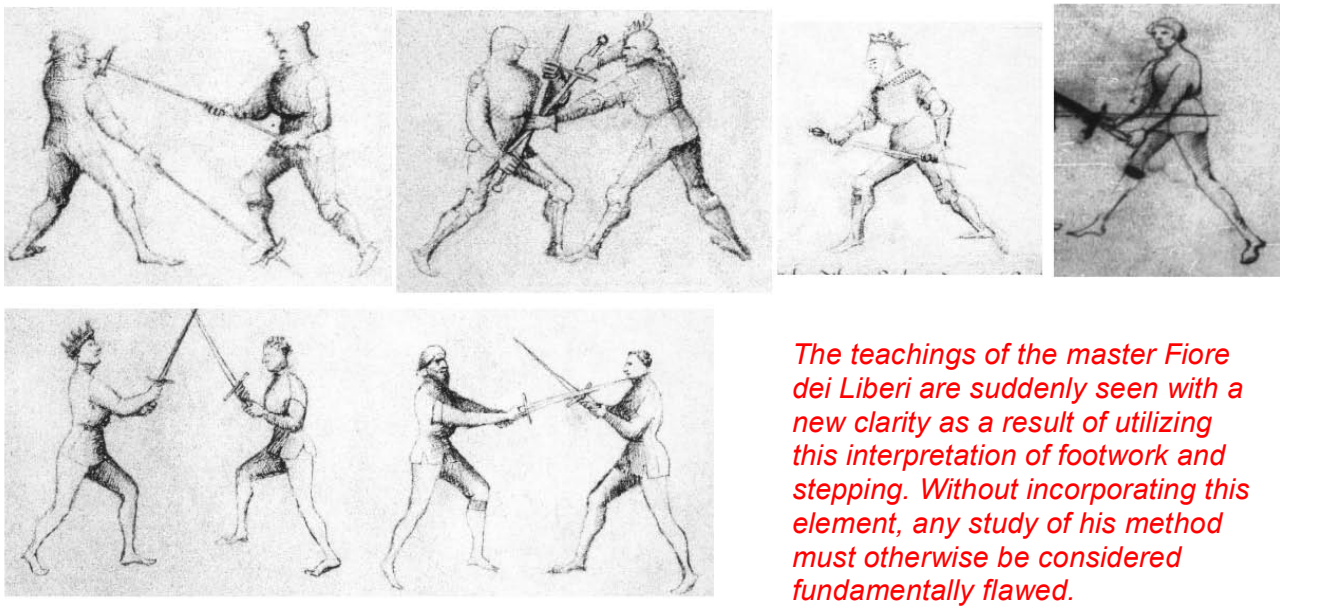
Perhaps nowhere are the feet in a 135-degree position as prominently (and as equally misunderstood) as in the work of the master Fiore dei Liberi of c.1410. In each version of his treatise we see the same particular fighting postures—several which simply cannot be achieved by forcing the feet into place at 45-degrees—and especially not by holding them at 90-degrees. This fact will become even more perceptible as we look deeper into the relationship of foot angles to fighting stances.



Just as in other Fechtbuchs, Fiore employs the open 135-degree positioning in plain sight when moving or striking, and when engaging weapon to weapon or body to body. He does not go out of his way to stress it or place it in any greater context.

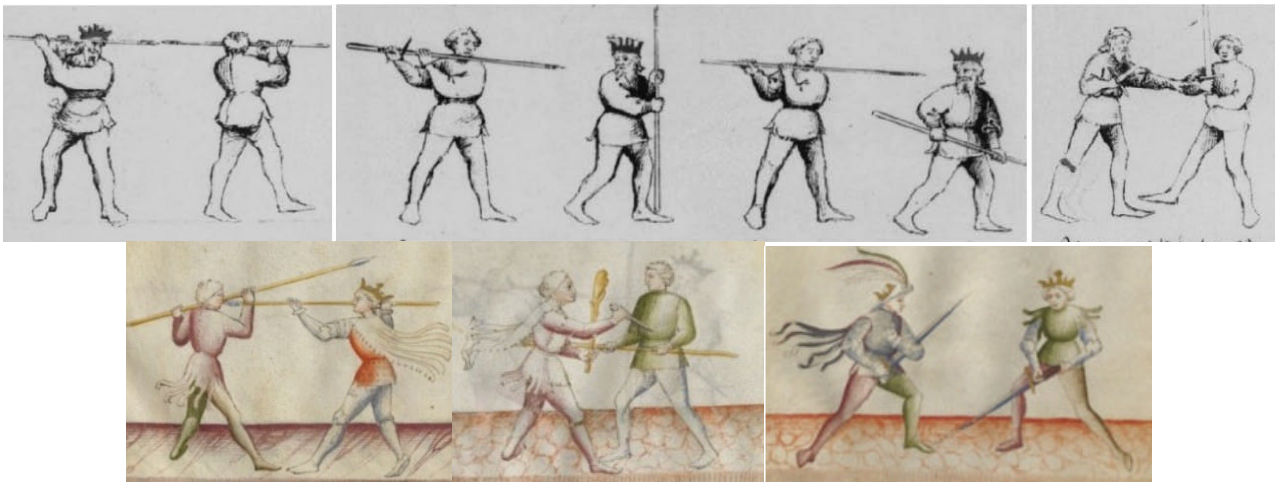


But we can also easily understand there is no question that in his *posta* and his stepping Fiore readily utilizes the feet in a natural 45-degree position, as the samples here demonstrate.

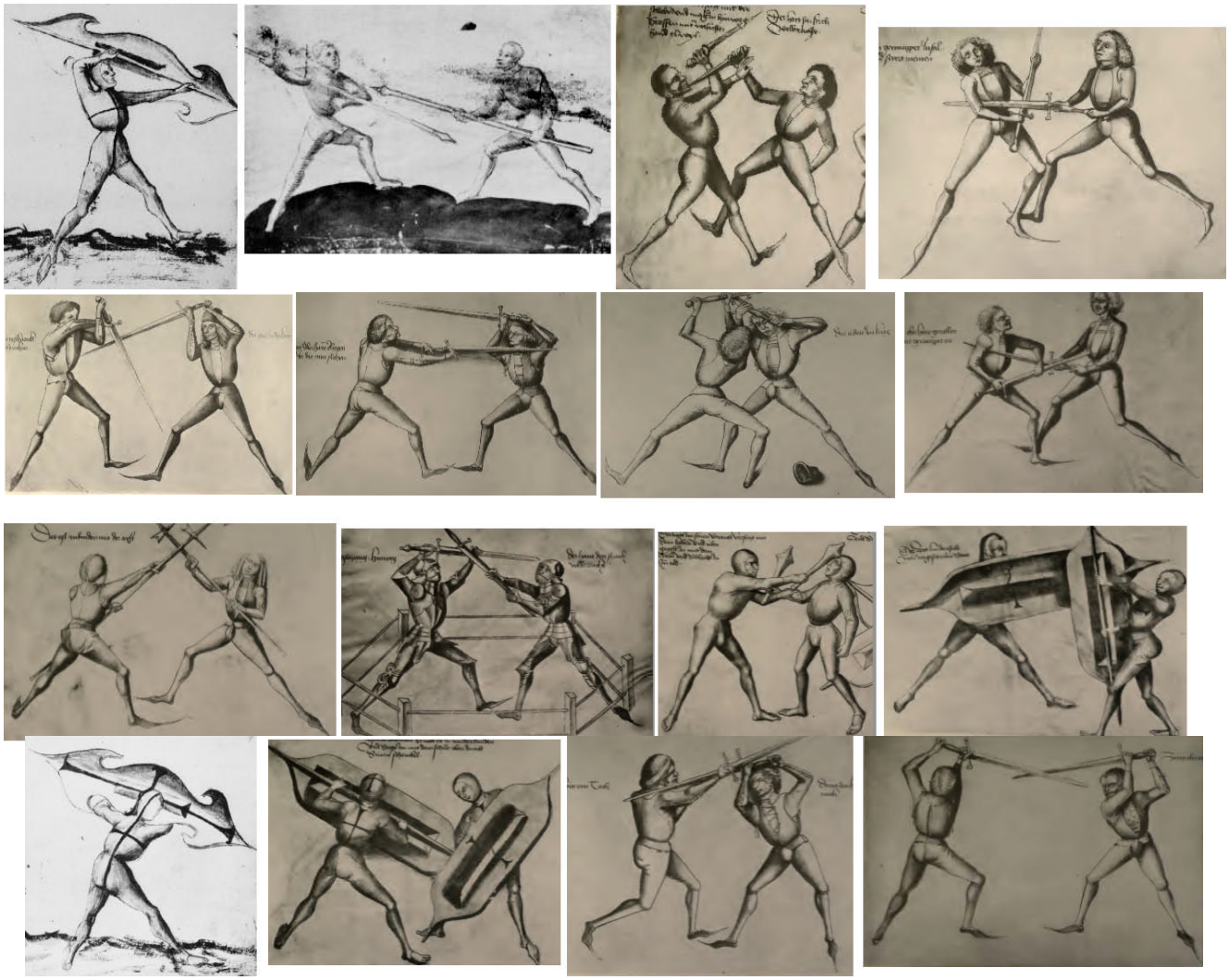





The teachings of the master Fiore dei Liberi are suddenly seen with a new clarity as a result of utilizing this interpretation of footwork and stepping. Without incorporating this element, any study of his method must otherwise be considered fundamentally flawed.

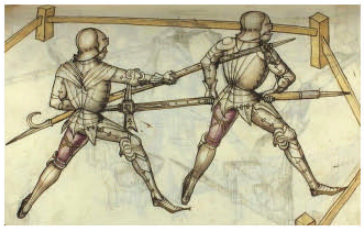
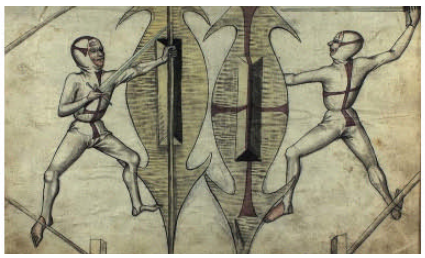
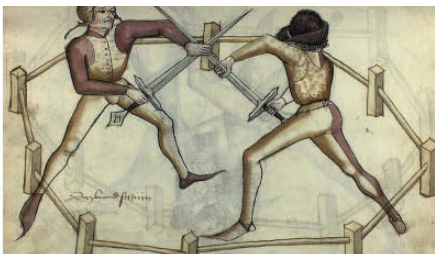
In light of this, we can then realize that nowhere do we really see the feet held in ways that could be decidedly 90-degree positions. There are no stances in any edition of his work where it can be persuasively argued the feet are directed at a 90-degree rather than either the 45 or 135-degree positions.



One of the earliest illustrated works of the German school, the various editions of Hans Talhoffer's treatise, are filled with splendid examples of the feet in the open position. Sometimes both fighters use it, sometimes just one, while at other times neither does (directing the feet in the 45-degree position instead). In either case, it helps to make a case for a consistency of style among the various 14th and 15th century European fighting methods. As with other works from the pre-rapier period, there is also no real evidence in Talhoffer's images to suggest the fighters are standing with their feet in a 90-degree position rather than angled in 135 or 45-degree directions.



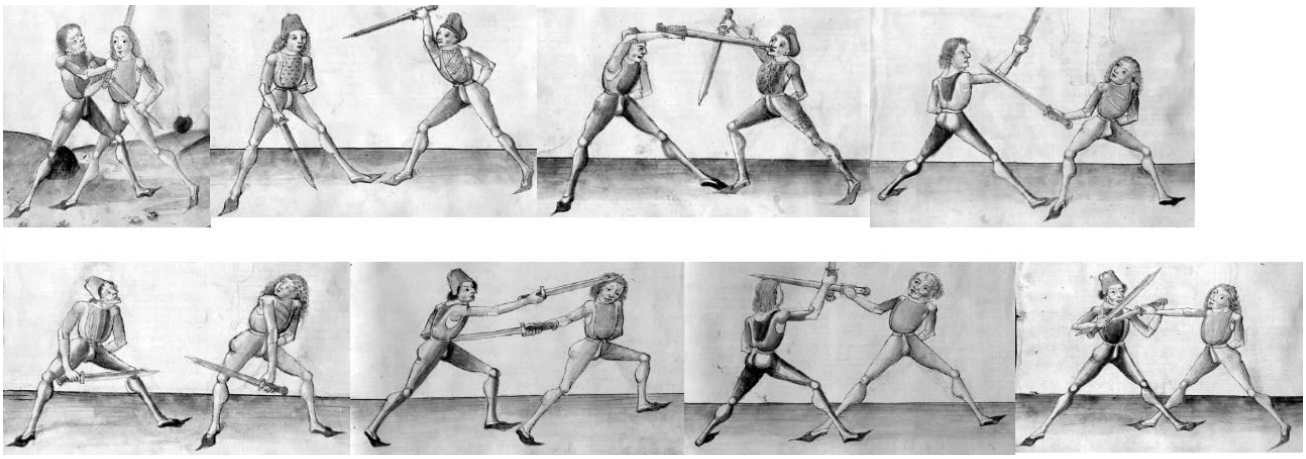
Since we clearly identify figures with the feet intentionally positioned at the 45 and 135 angles, what are we to make of the minority of images showing what appear to be 90-degree placement—where we see the heel or toe of one foot pointed directly at the viewer, and the side of the other foot directed at a right angle? Is it possible these few instances (*prior to the age of the rapier*) may themselves be a case of artistic license or distorted perspective? We will return later to the question of employing the 90-degree placement of the feet along with the 45 and 135 angles.

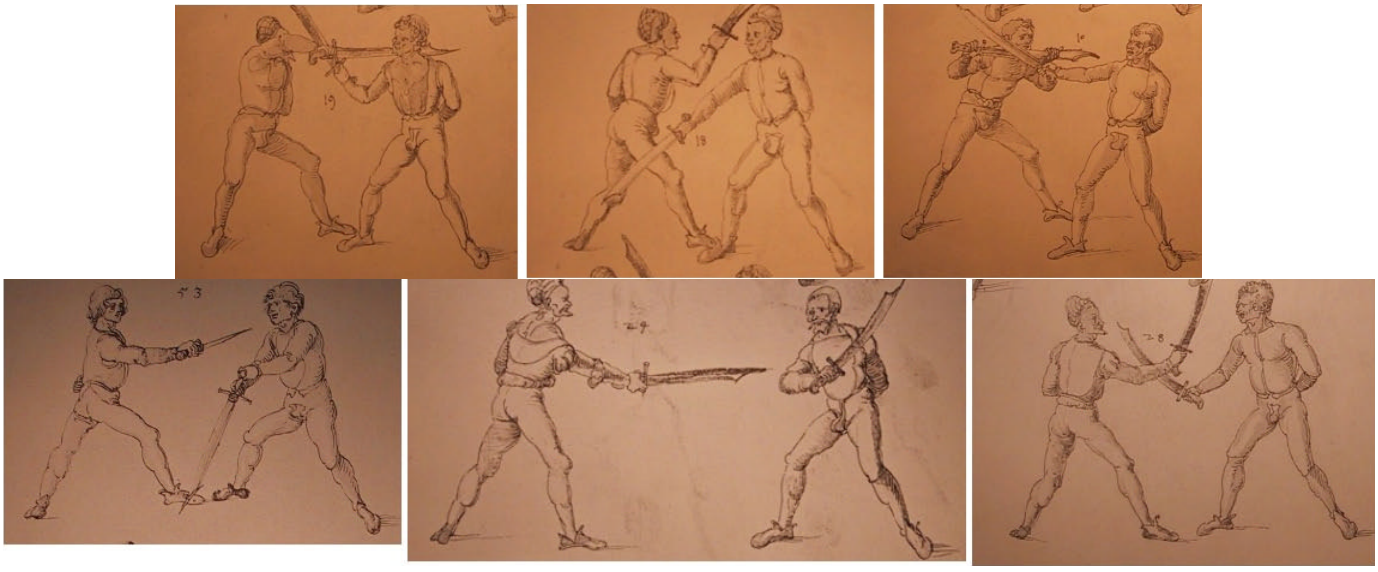
In the illustrations to Fillipo Vadi's treatise from the early 1480s, we find yet more examples of the feet angled at what can only be 135-degrees. As with so many other examples, master Vadi shows this at different times with all his weapons and unarmed techniques when standing on guard, striking or counter-striking, and when closing in to bind or leverage his opponent:

Illustrations of fighting stances and actions take on new meaning when considered in the context of foot direction. For example, we can understand more easily how the feet in this image here (the forward heel subtly raised) do not represent a static 90-degree position.

The messer techniques of Hans Leckuechner from the late 15th century are the same basic ones as those for many other swords and weapons. Again, we see continuous and obvious use of the wider feet placement of the "open" or 135-degree angle. Once more, one or both fighters will use it in moving and posturing when weapons and bodies make contact or before they make contact. The postures are not figurative exaggerations or stylized fictions. Rather, they are realistic approximations that soon become familiar to anyone vigorously practicing the teachings on these weapons in an athletic and martially sound manner.

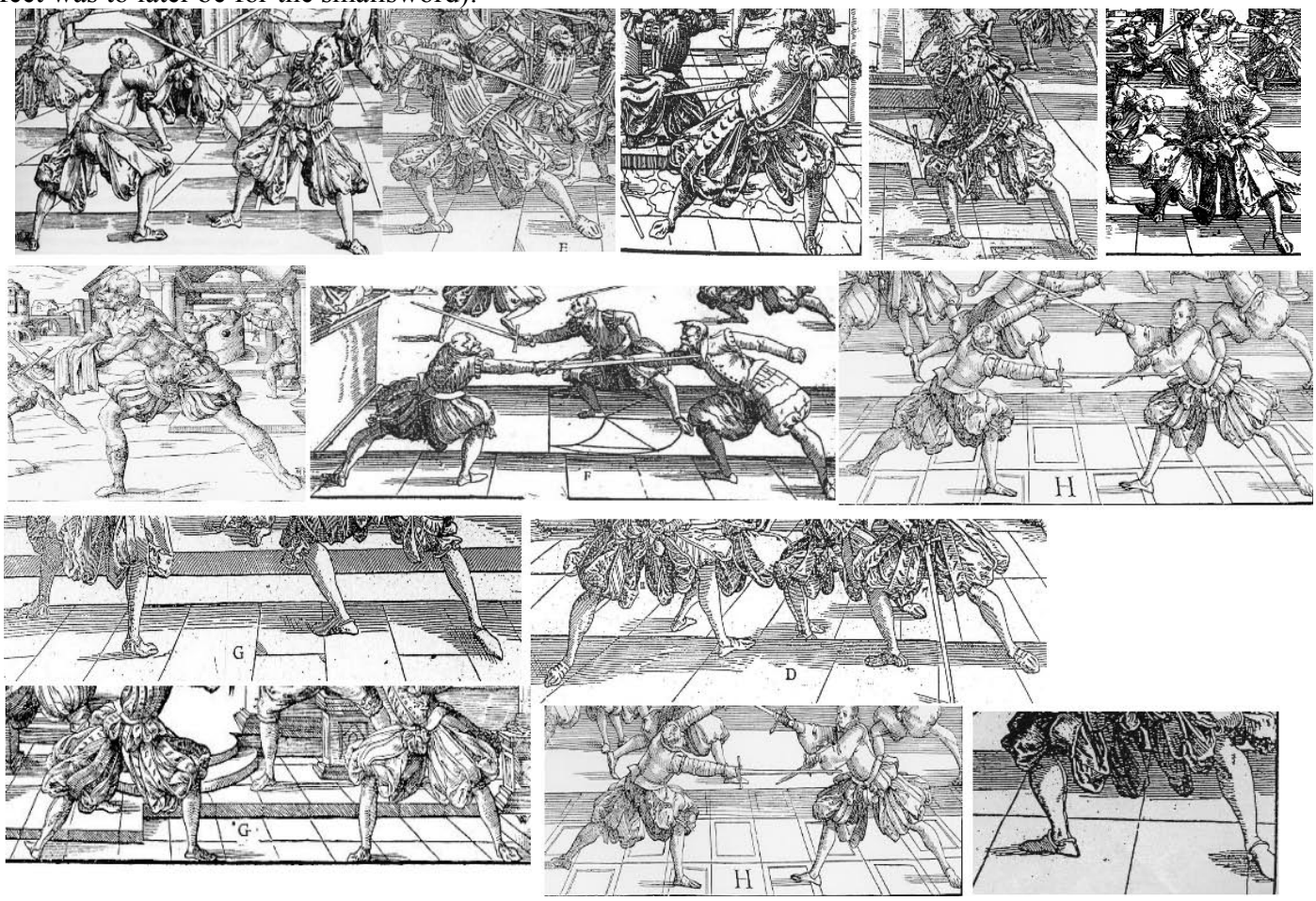


The early 16th century fencing art by the famed Renaissance artist Albrecht Duerer is among the finest ever produced. He conveys an unmatched depth of form, sense of changing motion and balance, and the flexing of muscles while capturing the tempo of actions. His illustrations of specific techniques are among the very few examples that include vantage points other than simple sideway views of combatants. Duerer repeatedly depicts the feet directed in the open and closed positions of the 135-degree and 45-degree angles.

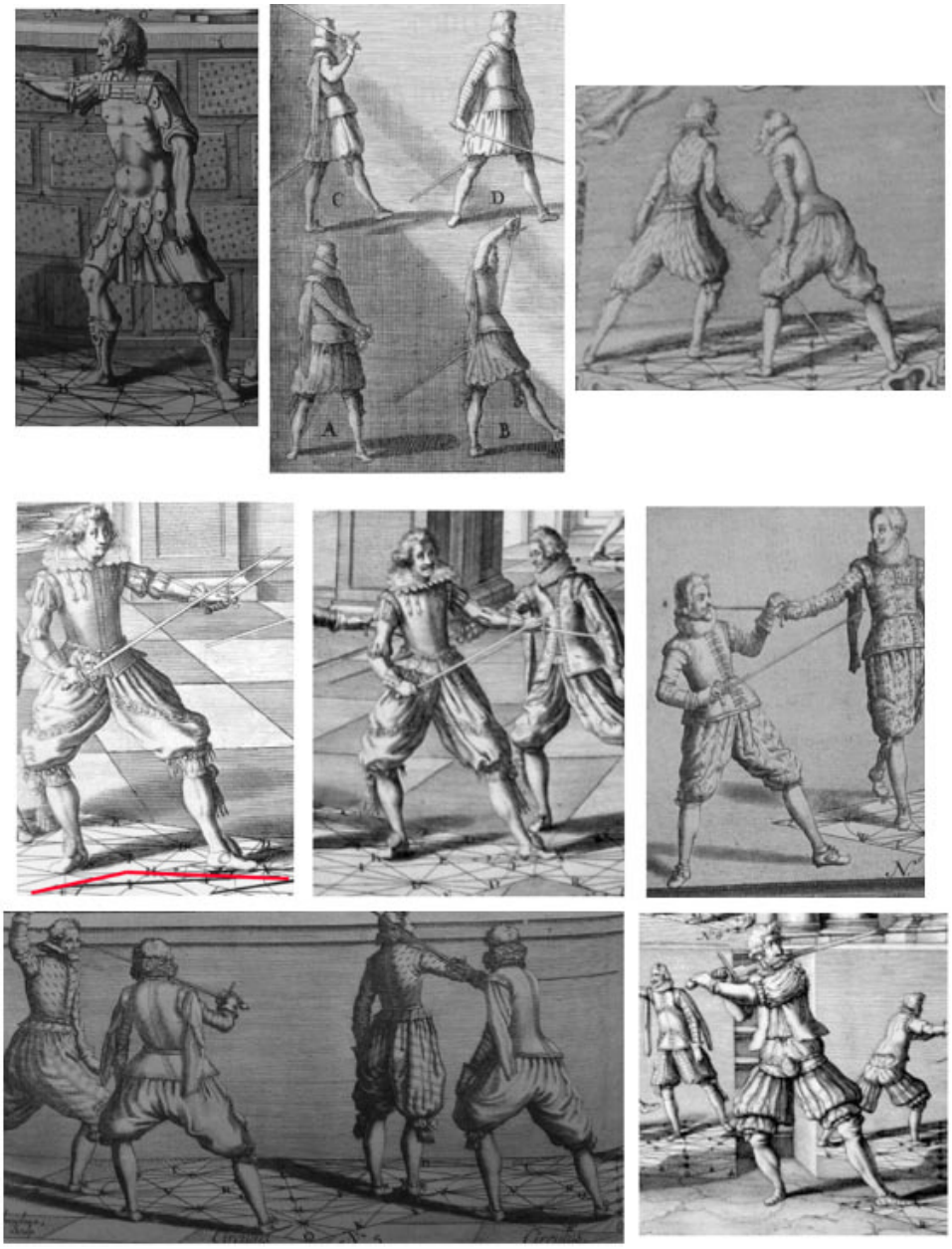


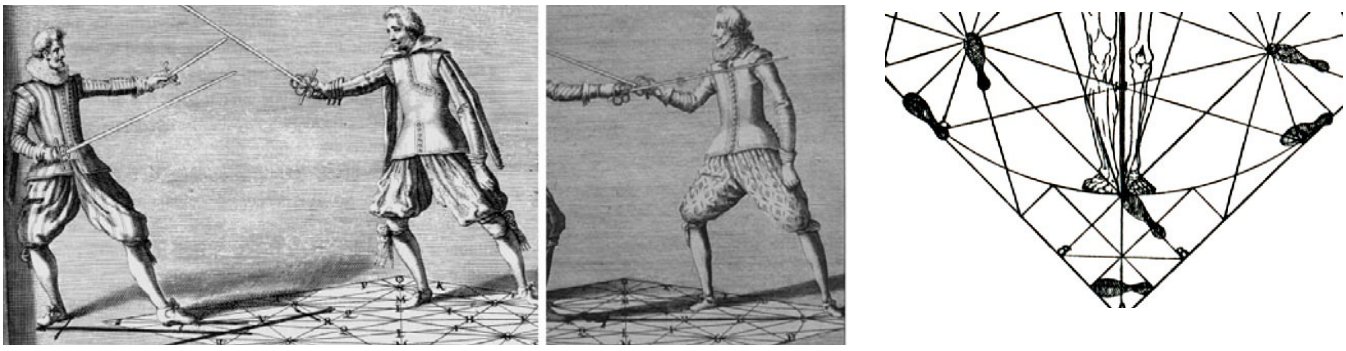
No finer examples of the assorted foot positions of these stances can be found than those appearing in editions of Paulus Hector Mair's immense compendia from the 1540s-1550s. Mair's work illustrates a wealth of unmistakable examples for armored and unarmored fighters postured at 45 and 135-degrees while employing a variety of weapons and unarmed techniques. The contrast of the different positions is exceptional. (I leave it to the reader to examine evidence for whether different editions of Mair's work depict the same techniques performed consistently with either the 45-degree or 135-degree foot position.)

The 1570 Fechtbuch of Joachim Meyer is heralded as one of the most important works of Renaissance martial arts. Meyer's footwork and fighting postures have sometimes been considered stylized in that the fighters are often in particularly wide and deep stances or lifting their legs in high stepping. However, considered in comparison with the assembled evidence on foot angles presented here, it is clear that while being particularly literal the artwork in Meyer is actually not showing anything all that different from other works of the era. This will become even clearer as we next look more deeply into how foot direction corresponds directly to body motion and striking. Additionally, in many instances Meyer's work makes such elegant use of floor lines as well as depth of field that it conveys the various angulations of feet even more strongly. In the larger view of the interpretation of compiled material presented here, it becomes difficult to argue the "open" and "closed" foot positions were not deliberately taught (as the 90-degree placement of the feet was to later be for the smallsword):



The immense tome of Girard Thibault d'Anvers published in 1626 is well known for detailed artwork on the rapier. Additionally, Thibault's treatise is famous for its use of lines on a circular ground pattern to indicate direction of steps and thrusts. But, what cannot remain overlooked is how his rapier fencing style does not employ a 90-degree position of the feet with the heels "in line," but rather displays offset 45-degree and 135-degree positions with the heels spaced apart. Whether facing the opponent forward or diagonally traversing to one side, Thibault is entirely consistent with the other examples. Despite the direction of the angles being somewhat questionable, if the geometry is followed, as the lines marked in red here show, his feet are revealed to frequently be at 135 rather than 90-degrees:

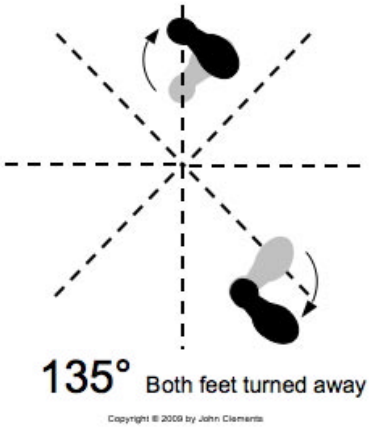




The open feet position in Thibault's stances becomes conclusively apparent in several instances. Curiously, his diagram itself does not show the feet at any direction but 45-degrees. *The lead foot is also not aimed directly facing the opponent.* The significance of this little-known but frequently appearing "crossed" placement will be addressed later.

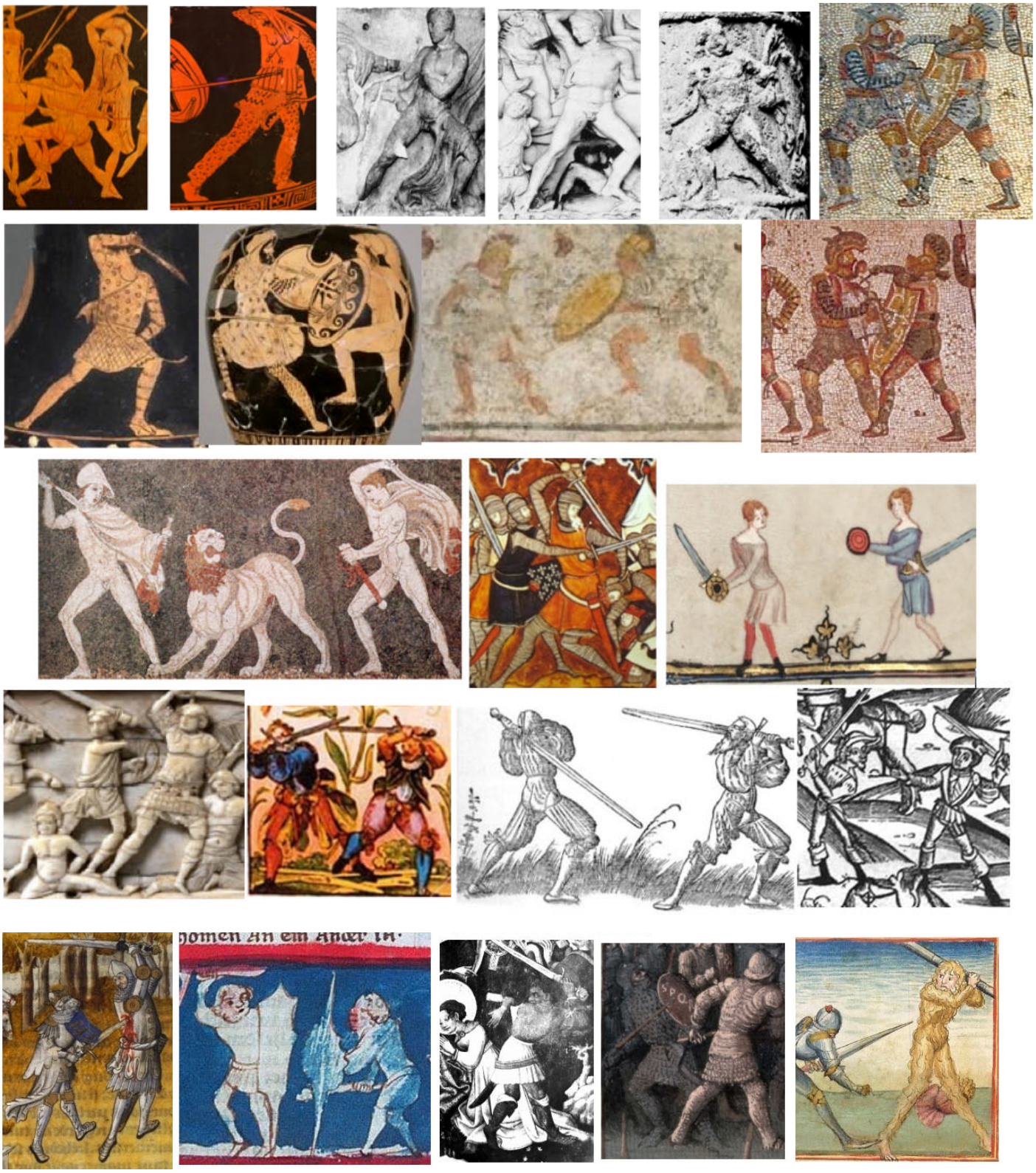
XI. Turning Both Feet – the "Reversed" Position

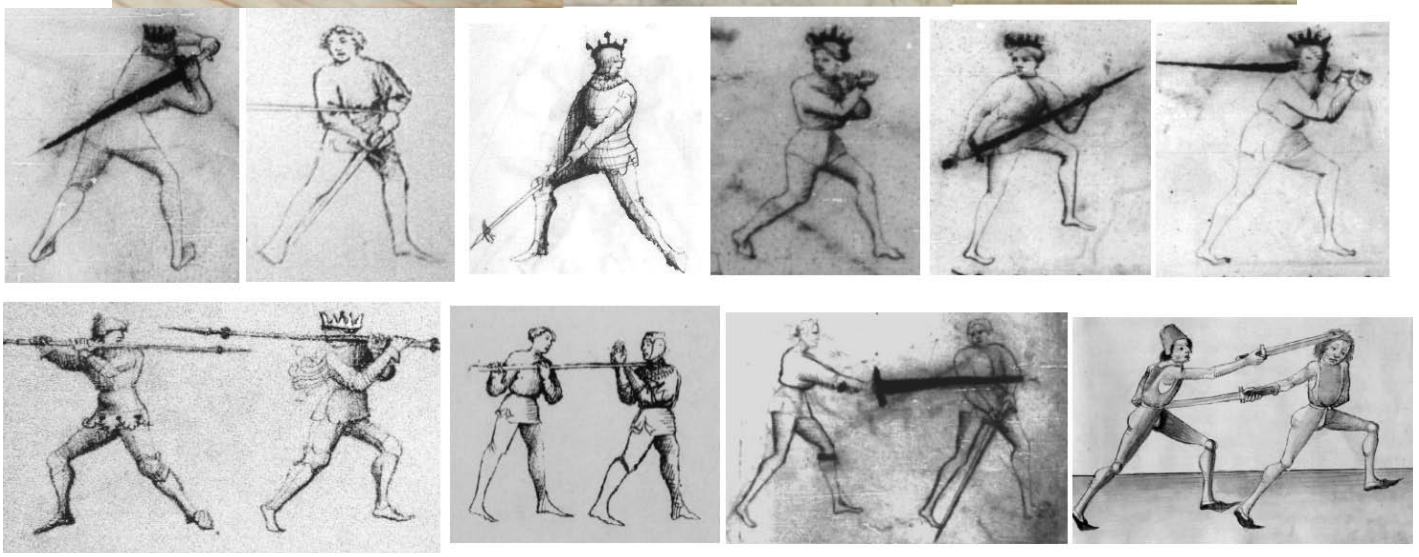
Having established the "open" 135-degree position of the feet, the first of several other key foot positions that directly accompanies it must now be addressed. The most important occurs as a corollary to the "open" position and is achieved simply by a turn of the forward foot. Doing so readily can turn the torso as well. This "reversed" feet position is not a "stance" to hold nor a posture achieved by either spinning around or stepping backward to place your back to your opponent. It is rather a simple *motion* made possible by a quick turn of the feet that simultaneously turns the hips. Again, the simplicity of this foot turning is revealed by the images themselves. It is vital to realize that performing this is not a matter of "posing" or "standing" but transitory positions of readiness and active motion.

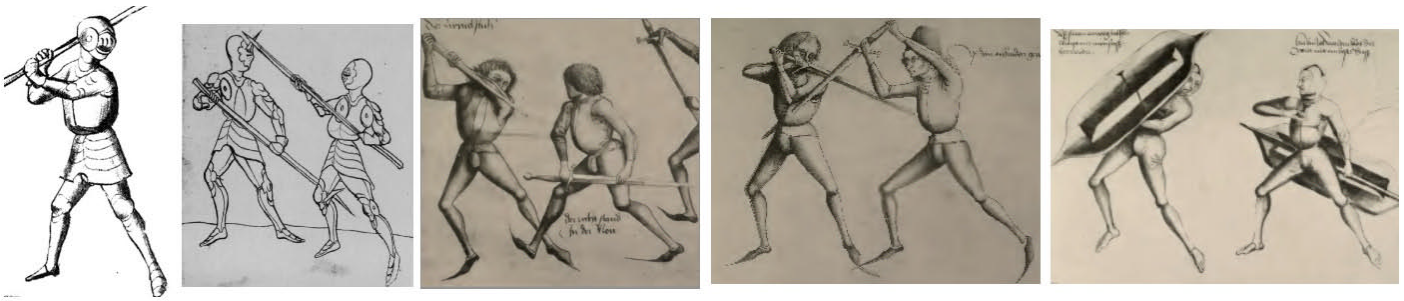


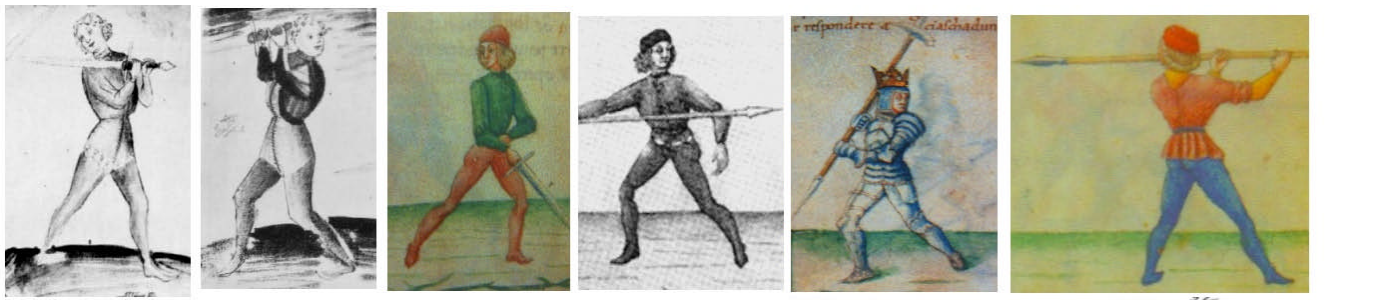
Understanding depictions of figures with the feet and body directed this way comes about through appreciation of how the feet are being turned during combative movement. The diversity and variety of image examples combined with physical demonstration corroborates that such figures are not somehow being illustrated as standing "with their backs turned" or "running away." Nor are they conveying a symbolic defensiveness or a more passive intention. It is sometimes the case, however, that the front foot does not turn more than a small amount for the body's balance to change as the rear leg bends.

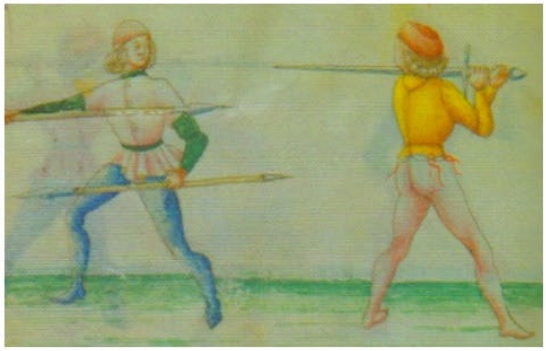
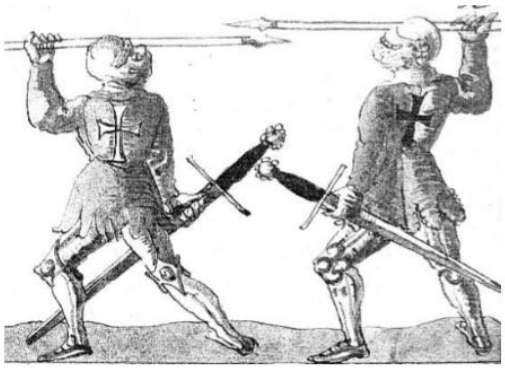
XII. Some Examples of "Reversed" Positioning of the Feet Throughout Historical Combat Art



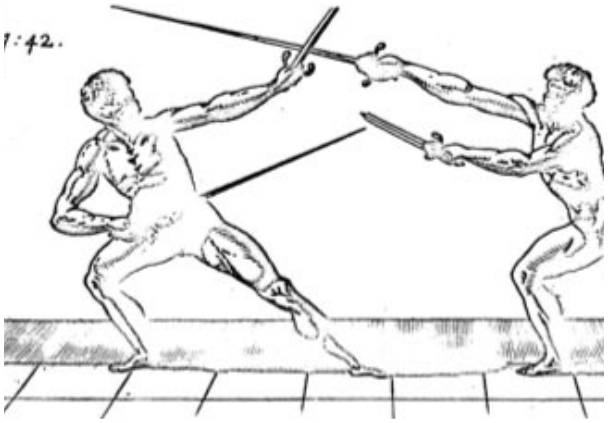






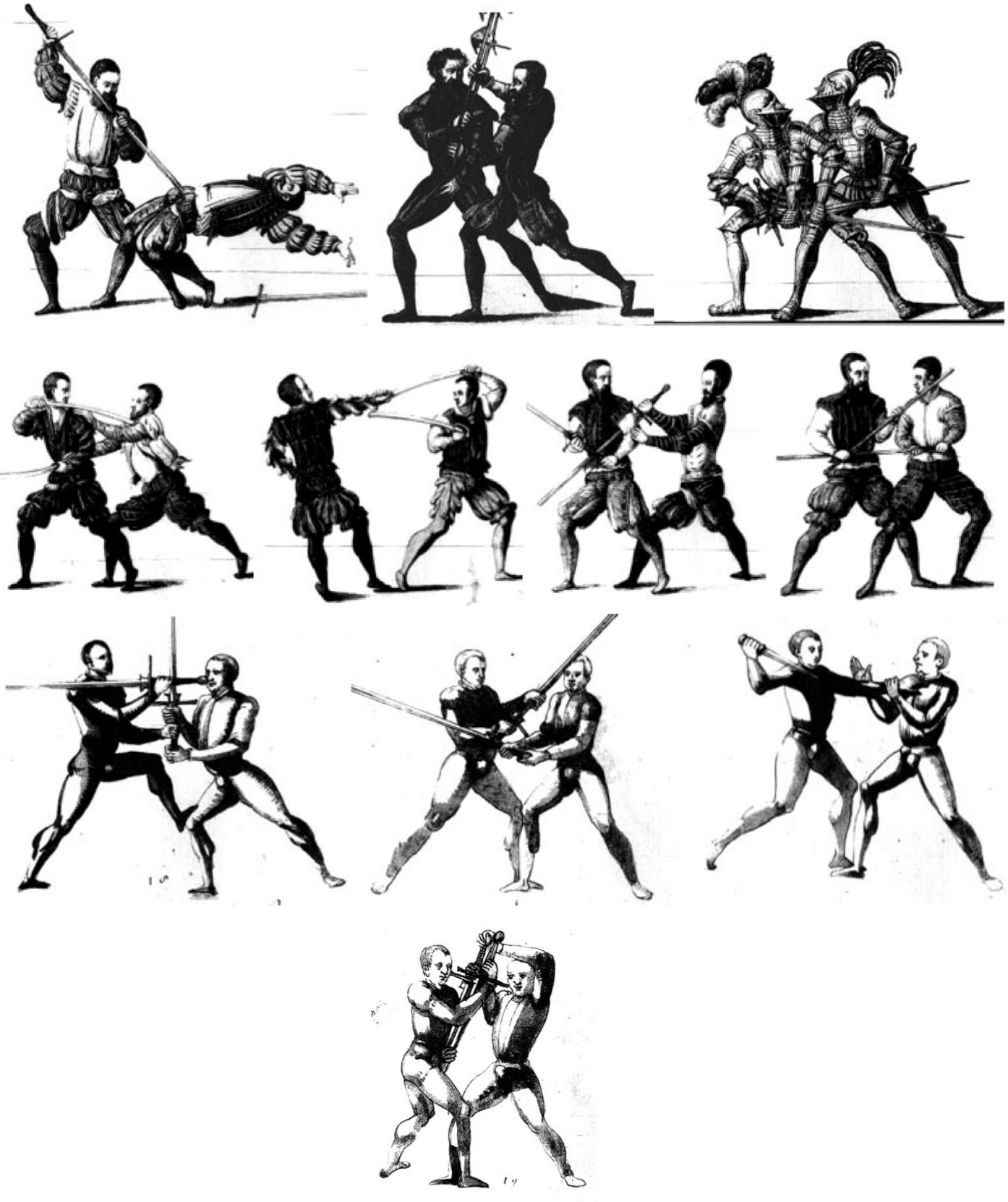


The "reversed" position, unused in modern fencing, is simply that of the forward 45-degree placement of the feet—only "turned" away. The feet are reversed by a simple "turning" motion of the feet, which turns the hips, which turns the body, which changes your center of gravity, which then changes motion, which then changes your leverage. The Master Fiore dei Liberi called it the *volta stabile* or "stable turn." But the positioning of the feet in this way occurs in nearly all the sources. In such images the rear rather than the front leg is typically (but not always) bent, so that the inner side of the knee is usually visible.

A significant reason why historical fencing enthusiasts have not previously uncovered this understanding of turning the feet is very much a factor of its central value being the leverage advantage for close contact, especially in seizing and grappling. Its other utility lies in moving in and out of this shorter range as well as in delivering more powerful blows with either one or both hands. These are all elements that have not been an active part of Western sword arts or modern fencing sports for more than two centuries. As with so many other elements, the more it was left unused the more it was forgotten and lost.

The utility of the reverse 45-degree positioning of the feet becomes even clearer when seen applied close-in. This is easily recognized in images where fighters come together with their weapons in a binding position or where their limbs and torsos encounter each other in a grapple or disarming seize. The advantage in shifting of balance and center of gravity produced by turning in this way becomes apparent.



XIII. Classical Corroboration - Corresponding Combative Figures Throughout Greek and Roman Military Artwork

If the images from Medieval and Renaissance artwork and *Fechtbuch* illustrations were not sufficient to establish the significance of fighting stances with the feet directed in these different directions, we can find further reference for it in earlier sources of Western martial traditions:

Classical vase paintings, frescoes, and mosaics may be one thing, however when we see the rear or the forward foot (or both) either turning on the heel or turned back entirely not only in relief sculpture but also in three-dimensional statues of combatants, the matter becomes irrefutable.

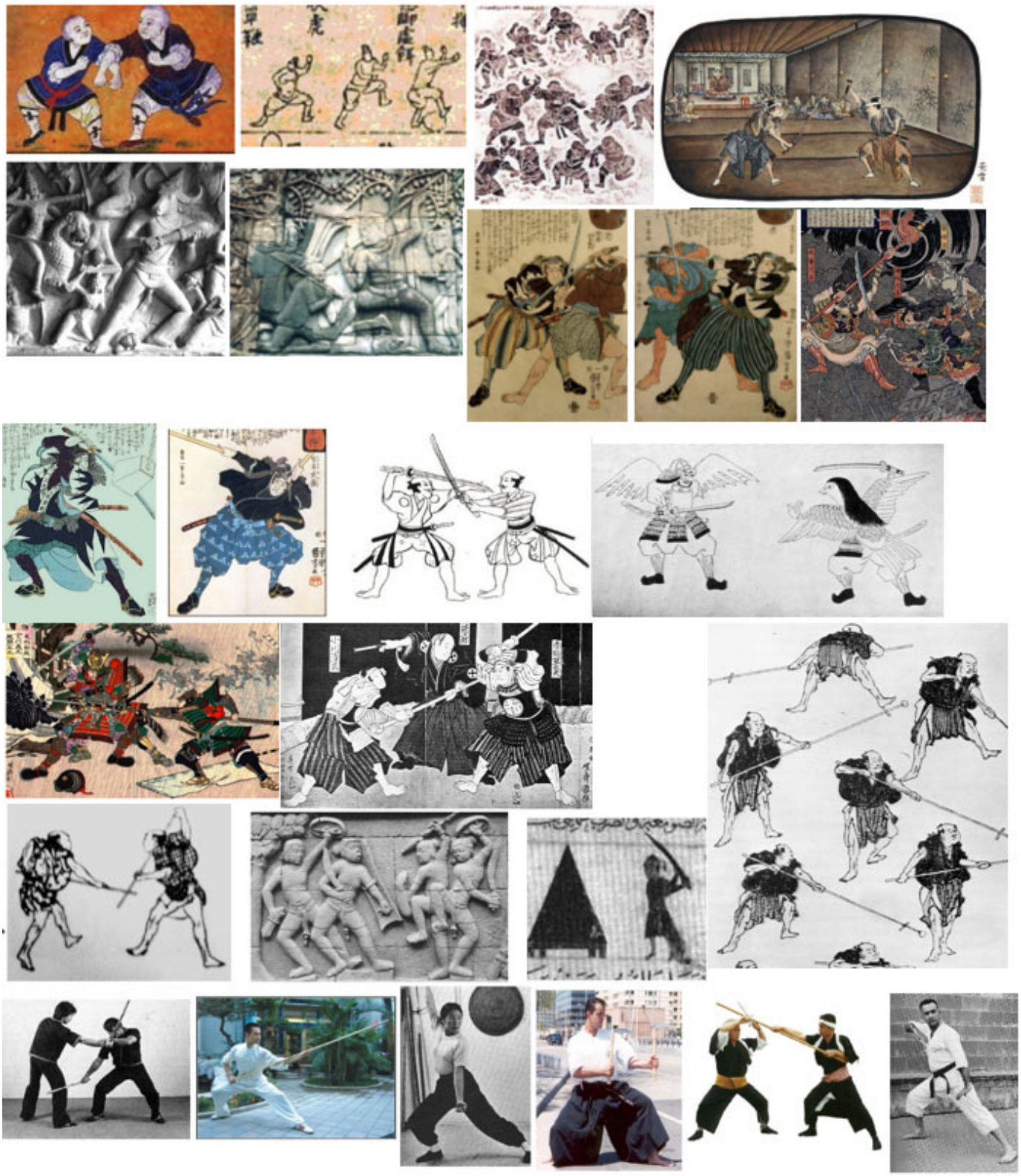
There are clearly natural biomechanics at work here in terms of body position and feet direction. But the obvious correspondence between classical Greco-Roman combat art and that of later Medieval and Renaissance lends further weight to the view that, if certainly not surviving self-defense systems or methods, there was at least continuation of elements within Western martial traditions. I submit that, given the clear similarities, the connection may be stronger than previously believed.

There is a growing effort at exploration of ancient close combat techniques and methods, particularly Greek and Roman. Despite this, the various positions shown above, with the rear knee turned back or with both feet turned in reverse, is at present virtually unknown among ancient combat enthusiasts even though it appears frequently in the historical record. (This is easily substantiated with a search of Youtube videos or cached Google sites and photos prior to the 2010 premier of this research paper.)

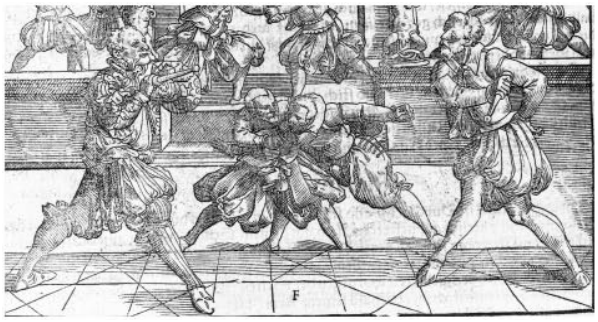
XIV. Images of Equivalent Open and Reversed Feet Within Non-European Fighting Arts

That these similarities exist across centuries and cultures is evidence of natural bio-mechanics at work, not artistic convention and certainly not coincidence. The familiar foot positions found in other cultures echo closely what we find illustrated in our own sources.

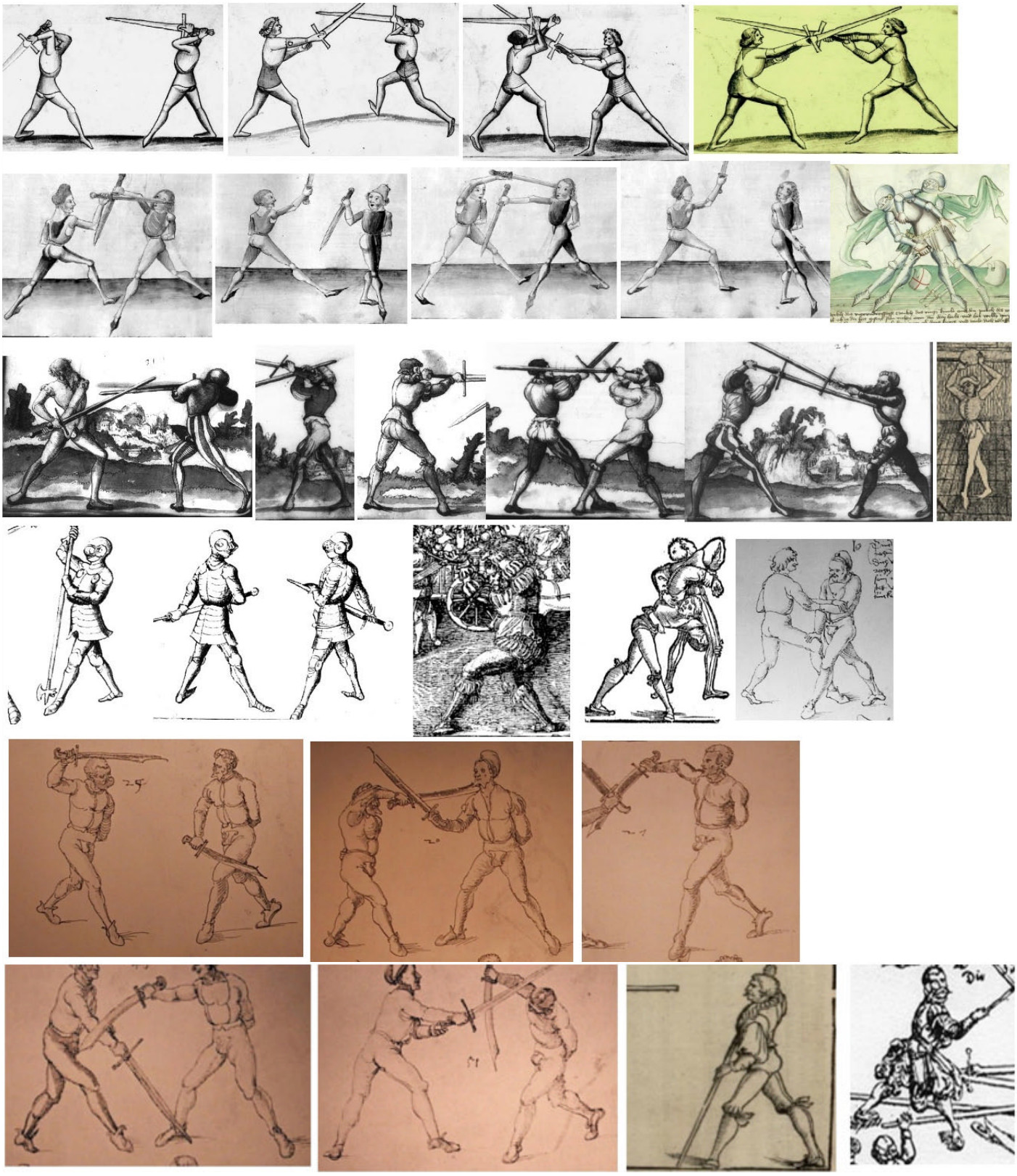
Such examples offer another useful point of reference:



XV. Examples of the "Turned Foot" as a Result of Combative Movement



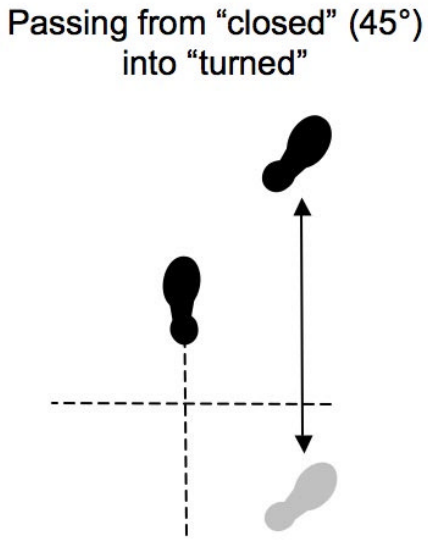
Another important but widely overlooked aspect of stepping and movement within the Fechtbuchs is that of what we may term the "turned foot." Though somewhat counter-intuitive, it can be readily proven that this is by no means any quirk of artistic license or perspective but a natural and valuable element of effective combat movement. This position of the foot occurs, as with so many others, as a natural result of rapid agile motion. *It is not a 90-degree position relative to the other foot.* As the foot passes forward or back in passing it can essentially stay angled in the same 45-degree or else the 135-degree directions.



Just as the concept of holding the feet directed at either the 45-degree or 135-degree angles are something instinctive and organic to motion in close combat, so too is the action of stepping with the foot remaining "turned." Again, understanding this provides an explanation for why something readily apparent in historical images is not directly addressed in the source teachings.

There is also the possibility of the “turned” foot itself simply being an alternative interpretation of Joachim Meyer’s “broken or stolen steps”—actions he tells us are to be performed “as if you intend to step forward with the one foot, and before you set it down, step backwards with it behind the other foot.” There is nothing inconsistent with this in the interpretation of foot placement shown here.

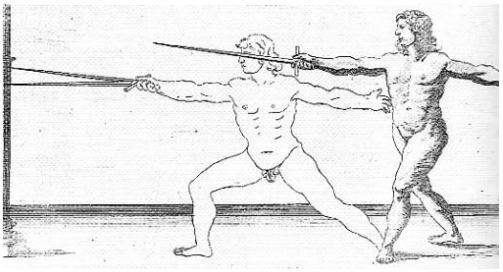
By moving in this way the foot may either recover back to its position or turn as necessary to create force and leverage through its ability to twist the hip and torso. This has significant application in unarmed techniques as well as thrusting or slashing and striking blows. Once adequately mastered, the action allows you to rapidly pass forward or backward with considerable stability and leverage over doing so with the foot pointed straight. Rigorous practice at this reveals the effect of this actually places less strain on the leg, less stress on the ankle, and allows the calf to better flex for greater balance and power.



It is important to appreciate that this action is not that of a *volta*, as seen as a sideways backstep of the rear foot turning to the opposite side. This “turn step” is instead a simple passing movement. It also does not involve twisting or turning the “ankle” in any way. Most importantly, after stepping the “turned” foot can instantly “return” back in a manner whereby the motion provides the hip with a forceful snap that gives greater impetus to actions or strikes.

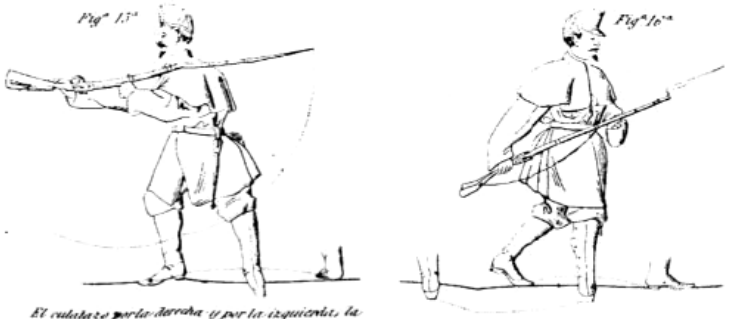
That this familiar but key concept of close-combat skill was understood by Medieval and Renaissance fighting men is clear by the graphical evidence. Yet, just as with the concept of turning the feet into open and closed positions, there again is no specific addressing of this element within the sources.

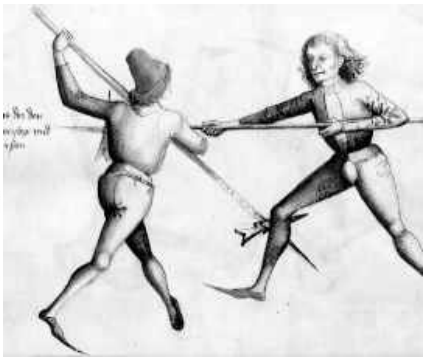
XVI. Comparative Representations of Figures Standing with a "Turned Foot" in Historical Artwork

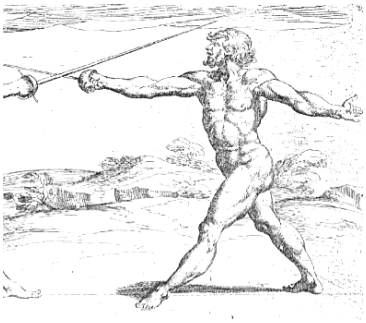


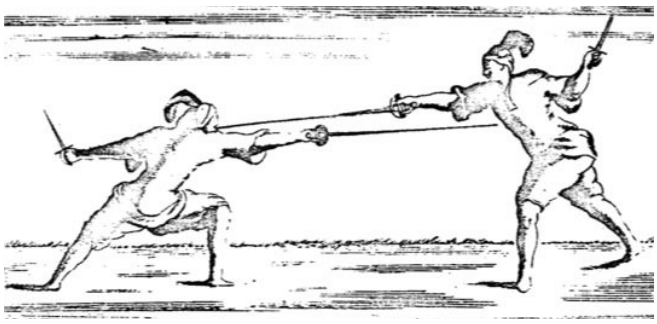
Standing with the foot "turned" in this relaxed and balanced manner is something that regularly occurs among people who are agile, nimble, athletic and youthful, rather than those who are infirm, aged, sedentary, or obese. It is arguably a position of people who are self-aware of their physique and used to frequent movement. This explains its ubiquity within Medieval and Renaissance artwork. However, as a combat motion it continued to be used in later fencing:

A 19th century Spanish military text covering the bayonet gives unmistakable instructions for the solider to step forward or back in striking by passing the left foot while the other remains facing to side. Though the general stance employed by this time was the standard 90-degree one of contemporary fencing, the motion itself is essentially identical to that used with the "turned foot" centuries earlier, which we find in so many examples.







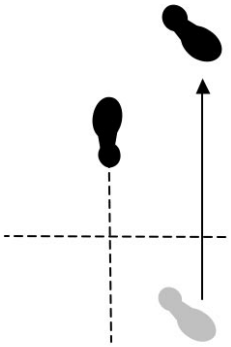


How this turned foot starts to be understood once again comes about when we put effort into vigorously making firm contact with realistic weapons in a realistic manner against all target areas of the body at all possible ranges of fighting.

Related to the "turned foot" position, there is another phenomenon of stepping involved here that deserves being addressed. Examples of the feet in what we may term an "opposed" direction are also observable in the sources. The feet seemingly appear directed at *opposite* angles. Rather than attributing such images to artistic license or anomalous errors of perspective, they are in fact consistent with and explainable by reference to the turned foot in reference to the 135-degree "open" position.

The feet in these images appear to be uncomfortably inverted? Why? How? To achieve the same foot positions as depicted in historical images requires the feet simply pass or turn into and out of the open stance. A turn of the rear foot is all that is necessary—*provided the feet are at the open 135-degree position.* This position occurs only momentarily from passing, turning, or reversing the feet as the fighter steps forward and back.

Passing the "turned" foot into the "opposed" position



As with the other positions described here, this is something natural and apparent once the physicality of the actions becomes internalized by the practitioner—with the appropriate energy, speed, and balance required by real combat techniques.

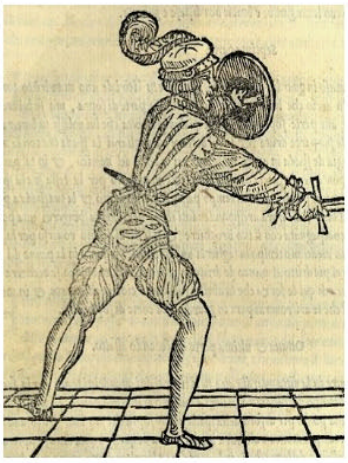
It should be noted that the position of the feet in this way is not exactly the more familiar one achieved by the simple volta, a turn or side-ways crossing of the rear foot to move the body out of the way of a thrust. Although the positions can appear identical from certain perspectives, they result from somewhat different footwork.

XVII. Perspective Lines as an Indicator of Feet Angles in Combative Stances

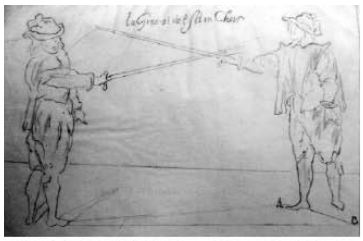
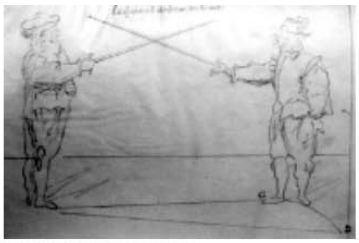
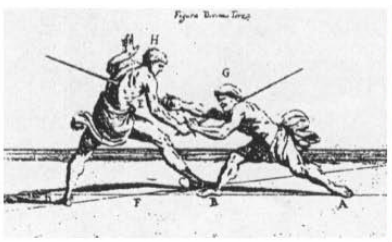
There is another element to consider on the issue of foot directions. In some cases floor lines and patterns within the Fechtbuchs and other historical combat art can be relied on as clear indictors of where the feet are directed—that is, either at 45, 90, or 135-degree positions. In other cases, these floor lines seem to contradict the direction of foot placements. Artists during the Renaissance were far from being uniformly good in drawing with perspective. They were instead experimenting with perspective at the time. Not every artist understood the rules of perspective or got them right when they tried—as evidenced by the inconsistency in dimensions of floor patterns and horizon line distances. The preponderance of examples however support the thesis that fighters were standing with at a distinct 135-degree "open" position at a natural width:

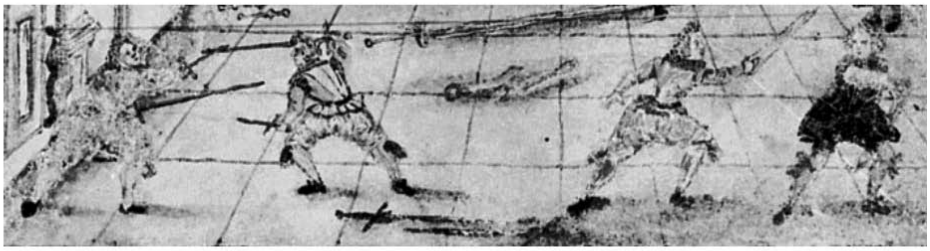
Examining the positions of feet in works that illustrate floor patterns or tile lines (from Marozzo in 1536, to Giganti in 1606, to Alfieri in 1640), it becomes impossible to then argue that this open position is an illusion of perspective—particularly when two figures both appear in the same image with their feet presented at decidedly different angles.


In Achille Marozzo's influential treatise of 1536, for example, we see floor lines used by the artist to provide depth to the viewer, but not necessarily to directly convey foot directions. Nonetheless, the effect is there. Marozzo's figure faces the viewer sideways, his feet consistent in their angles (at 135-degrees), in some cases not precisely fitting the literal geometry of the floor tiles. Feet are not always placed in correct relation to horizontal tile lines nor always scaled in proper size toward the horizon line itself.

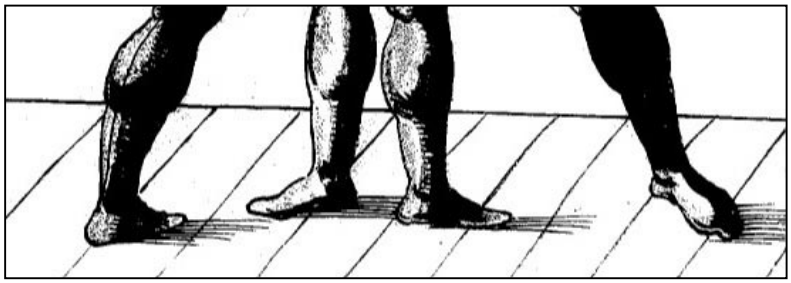
Most often the images in the historical sources represent neither step-by-step movements nor instructions to remain fixed and motionless, rather they show "snapshots"—points in time that fighters will find themselves in as a result of executing actions. The stationing of the feet may be steady in some cases for deeper leverage or in others to move the body to the side for a technique. But the actual movement of transitioning between different directions is itself a quick dynamic motion.

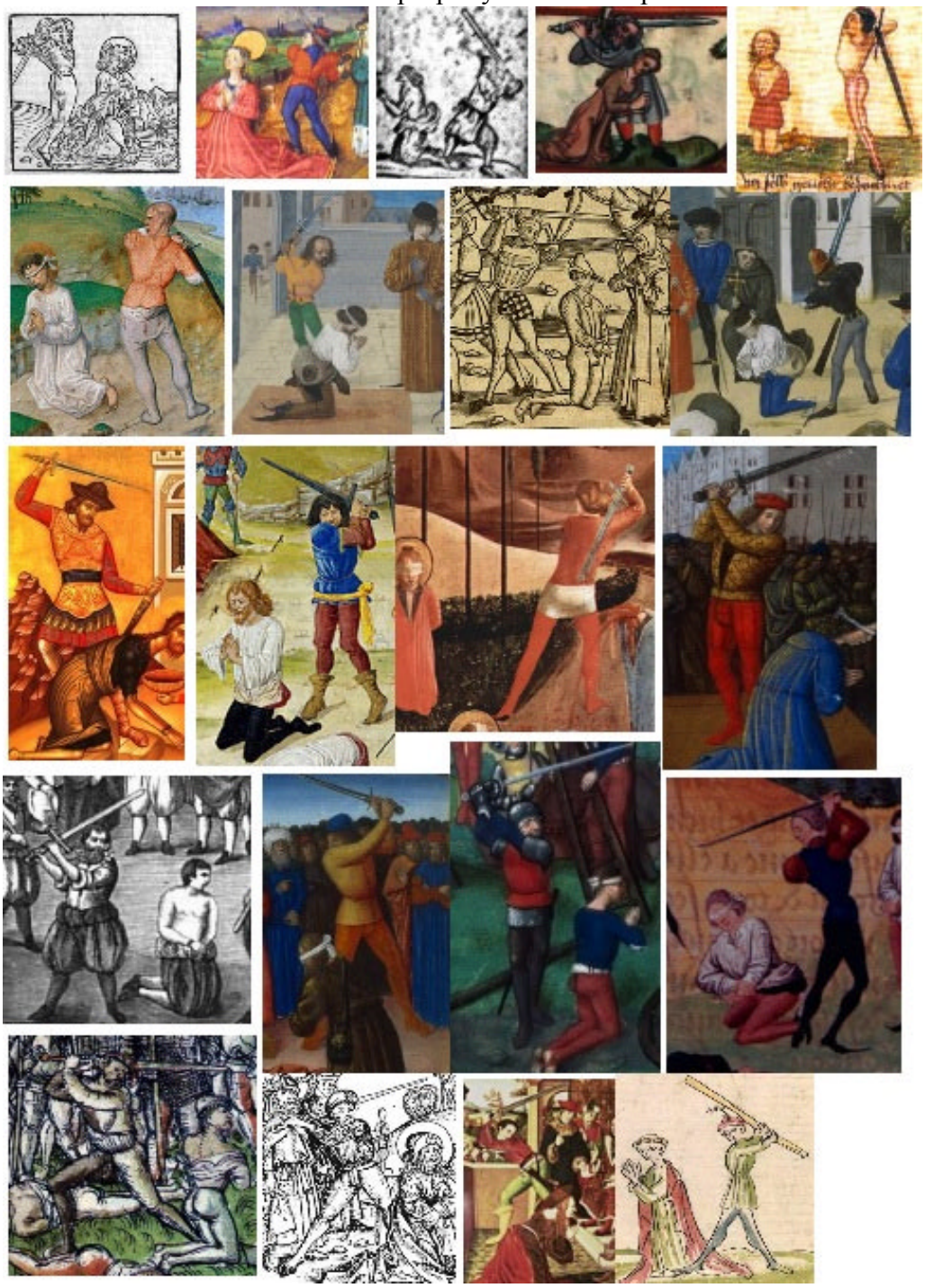
Examples that conveniently provide isosceles triangles or other intersecting lines on the floor add weight to our understanding of foot placement. It becomes exceedingly difficult to consider that figures are in anything other than 135-degree positions. Other examples are curious in that different figures within the same image will have their feet at 90-degrees then at 135-degrees, yet in each case following the geometry of floor tiles and matching lines. (We can say there is definitely no 180-degree linear heel placement of the feet or else the combatants would be so off-balanced that they would fall over as they tried to more.)

Again, from Mair's compendium we can find several telling examples. Even accounting for the fighters having traversed, or stepped diagonally as they execute a technique, the geometry of the feet is obvious:



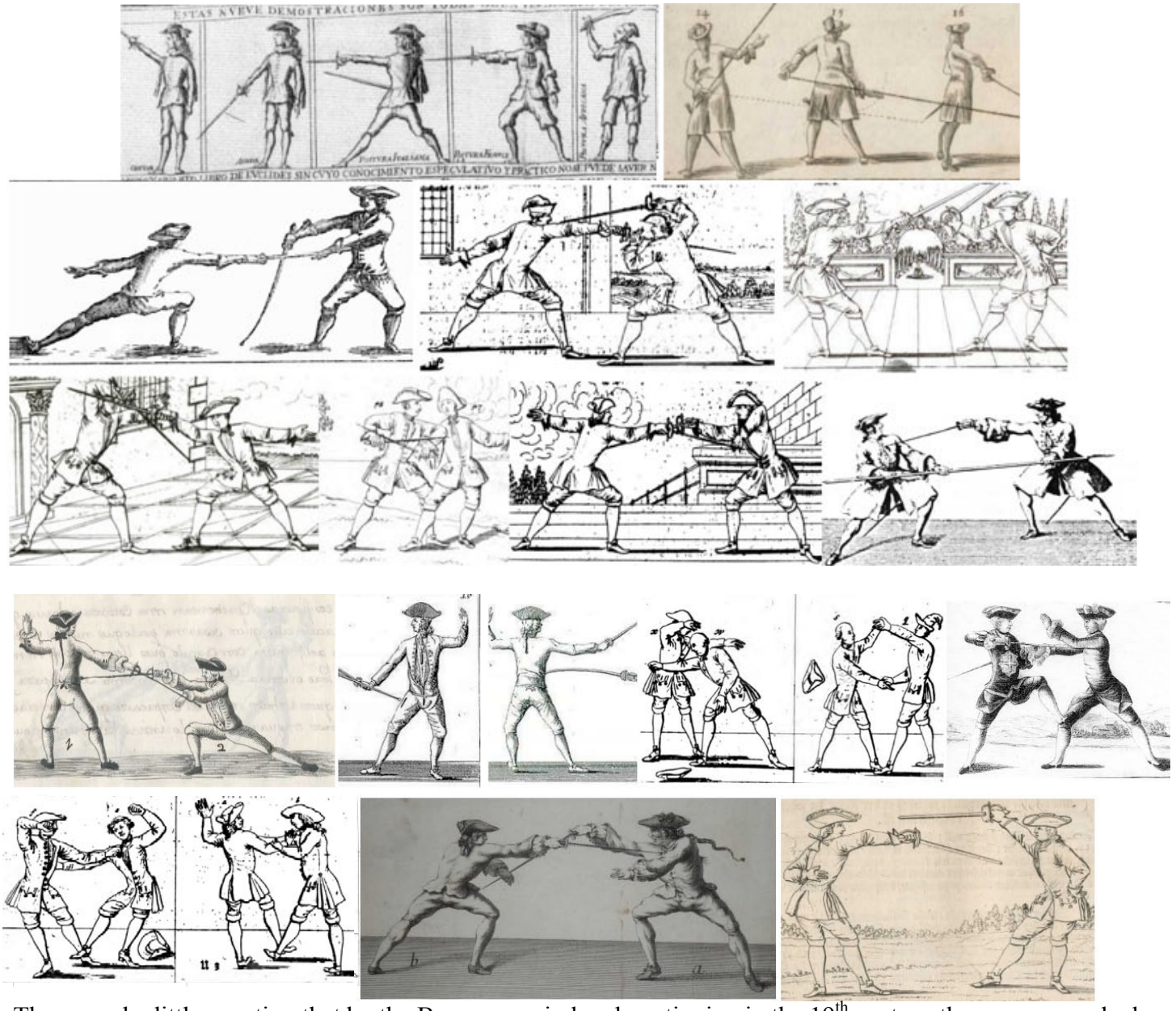
XVIII. Scrutinizing Natural Motion in Historical Images of Violent Action

A good example of how positioning of the feet is not a matter of the viewing angle can be found in images of executions wherein a standing figure prepares a blow at a stationary target. Unlike pairs of fighters facing one another, we have a different arrangement that offers still another level for understanding combative postures in relation to "open" and "closed" foot angles. As they try to convey the scene's impending violence the artist leaves no real ambiguity as to any question of what blow the figure expects to execute and where they are intending to impact. Whatever the viewpoint of the artist, figures are routinely shown holding weapons over their shoulder, and pulling the stroke behind their head or back as their feet and hips prepare to turn for delivery of a powerful cut. Yet, as would be expected, we repeatedly find in such images the directions of the executioner's knees and feet are consistent with those of fighters in combat in the open and reverse stances. Sometime a heel is even raised to properly rotate the hip and foot with the blow:



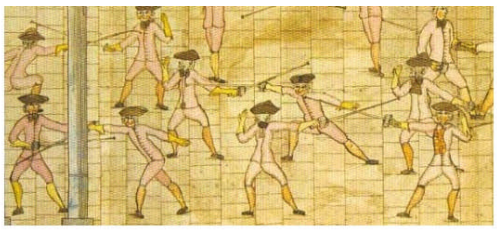
XIX. Persistence of the 135-degree Stance within Fencing of the 18th and 19th centuries

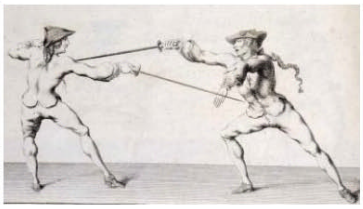
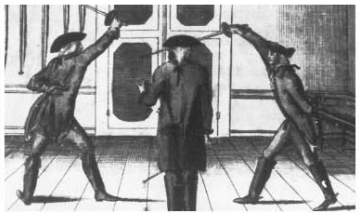
Though I can find no evidence of it recognized as an element of fencing teaching within 18th and 19th century instructional literature, the evidence for the continued existence of the 135-degree positioning of the feet is significant. While this phenomenon has gone unmentioned within any fencing histories, as the images prove there can be no doubt fencers were still employing the placement of the feet in this position:



There can be little question that by the Baroque period and continuing in the 19th century there was a gradual decline among swordsmen of a need for the intrinsic leverage advantage this positioning of the feet provides. Without the necessity to strike below the waist, use the free hand to grab weapons or seize the opponent, and employ throws or takedowns, its value surely evaporated within fencing teachings. Without the need to close in to wrestle, grab blades and disarm opponents, or prevent such body-to-body actions, no skill develops in application of leverage for armed combat. It is not at all difficult to speculate that once such innate understanding, whether instinctive or doctrinaire, gives way and is no longer practiced within a fighting art, its associated foot positions and stepping for leverage goes away entirely. We can surmise this is very likely why the 135-degree open positioning of the feet, present within so many close combat methods the world over, is entirely absent from the linear style of modern fencing—*and a further reason why for so long this important element of Renaissance martial arts has gone overlooked until now.*

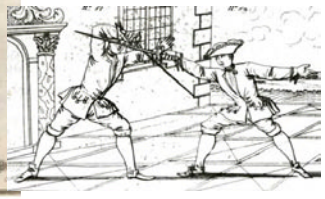
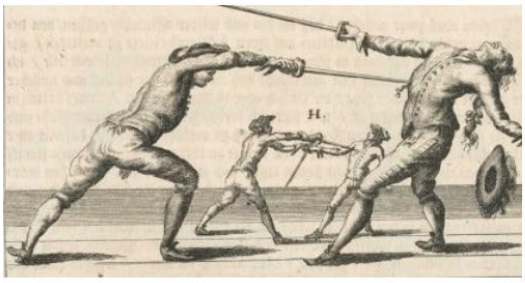




Tab XIII.
Fig.1.
cavirt und parirt
inwendig.

Fig.2.
auswendig cavirt
und parirt.

Fig.3.
quarte inwendig
Schlecht hach parirt.


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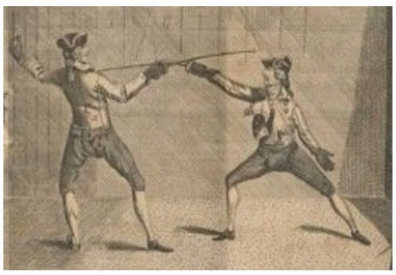

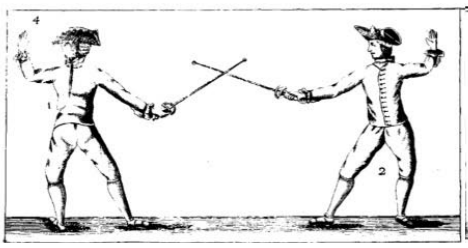
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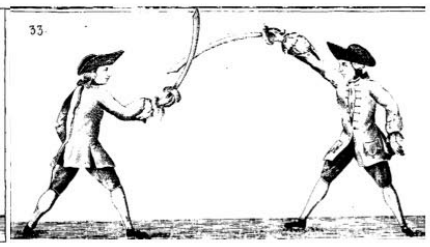
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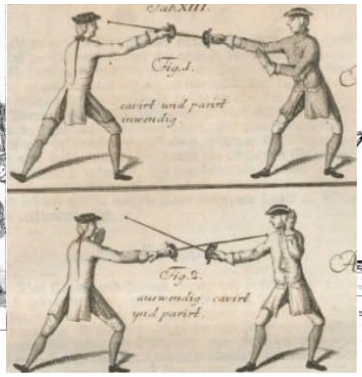
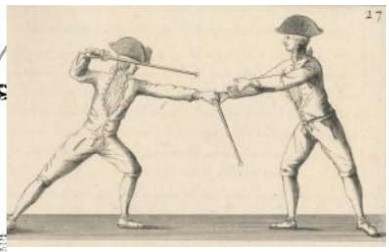

Tab XIII.
Fig.1.
cavirt und parirt
inwendig.
Fig.2.
auswendig cavirt
und parirt.

1
2

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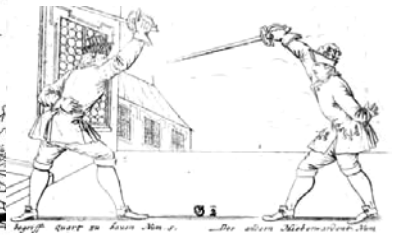

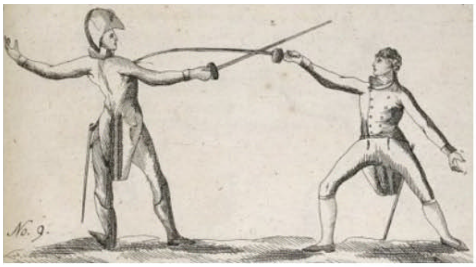
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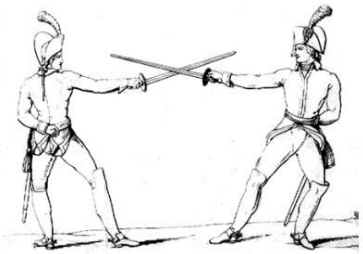
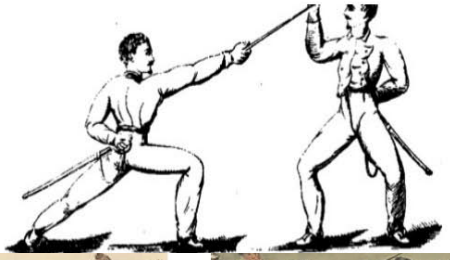
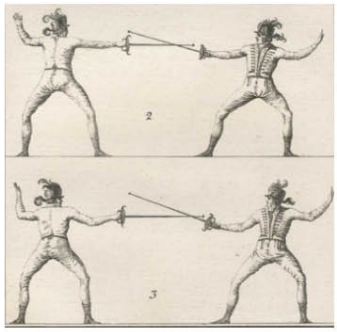
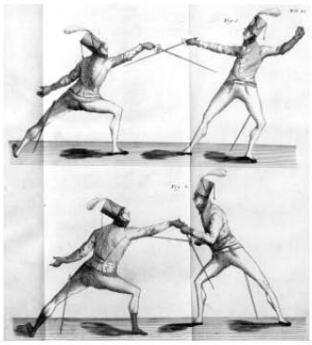
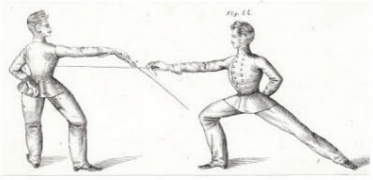
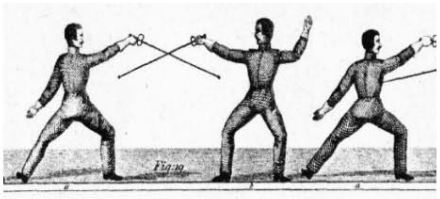


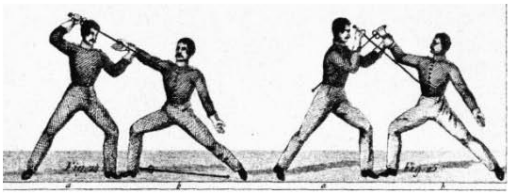


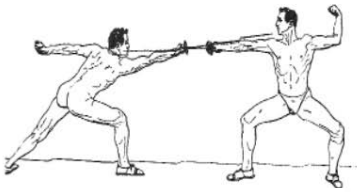


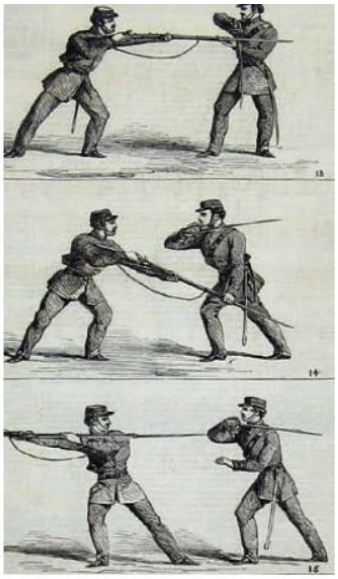


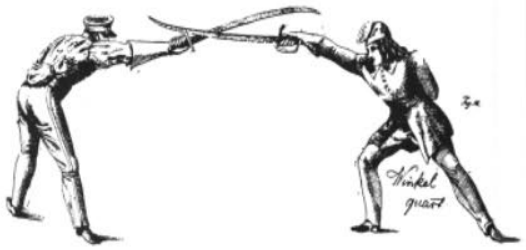


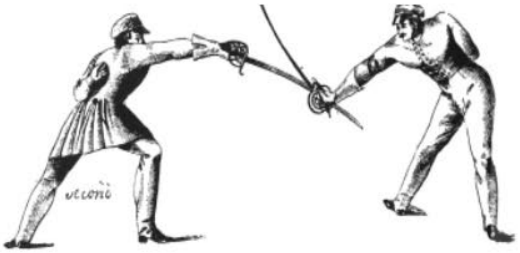









Winkel guard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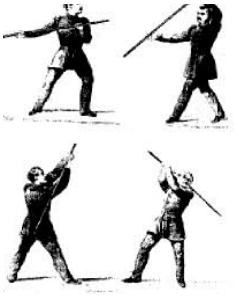
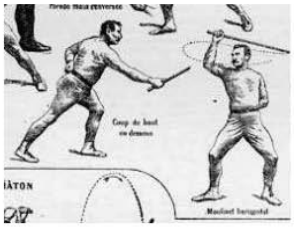
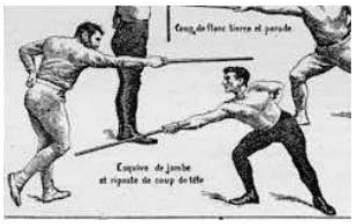
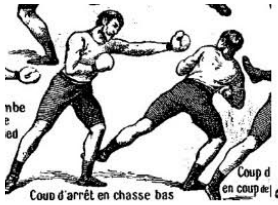
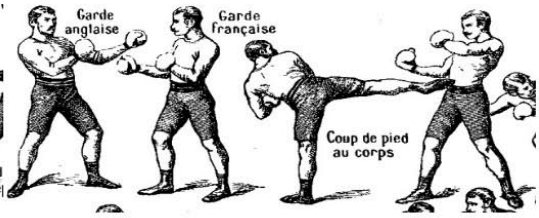
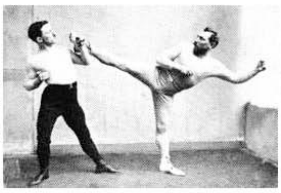
Given how absolutely clear countless images of fencers standing in a familiar 90-degree position with the heels "in line" are within 19th century fencing instructional sources, unambiguous examples of swordsmen with the feet wider apart in the 135-degree position are all the more significant:



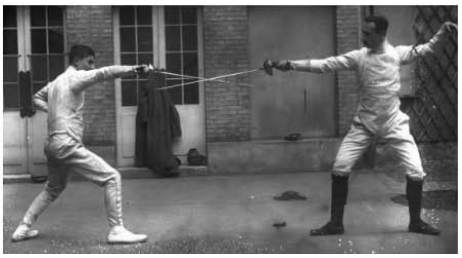
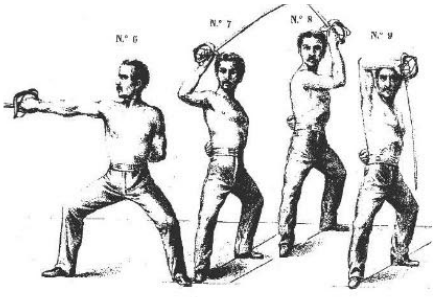



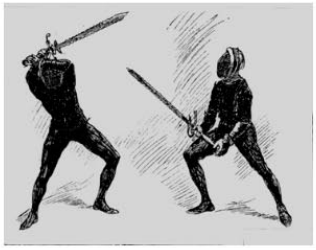
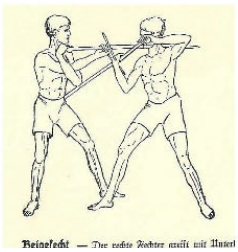






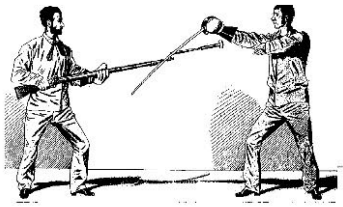
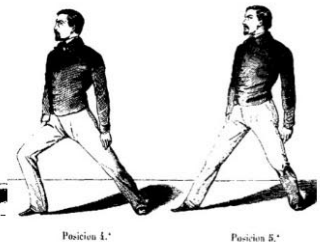


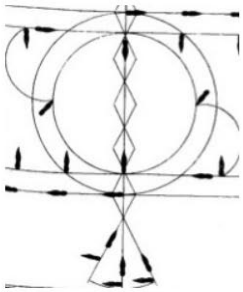
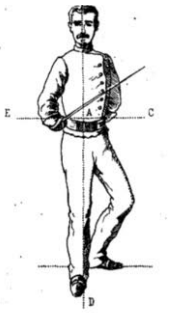



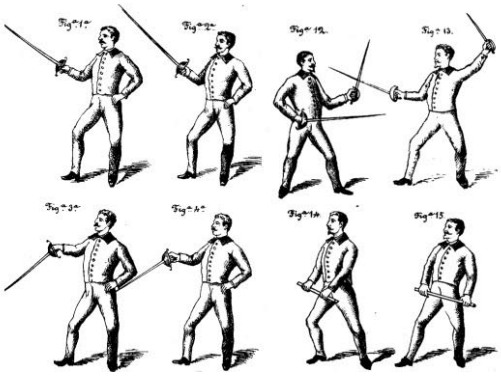
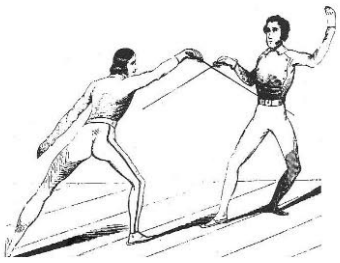
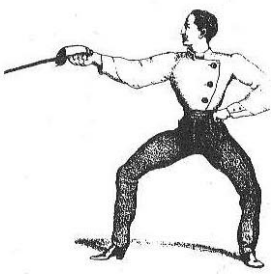
It is possible to examine images of modern era fencers (that is, from the 18th century onward) and ask whether or not their feet are in a 90-degree "L" stance or scaled in a more open 135-degree one, as some illustrations imply. But, it is of course a well-known tried-and-true a rule of modern fencing that the correct conventional stance is in fact a 90-degree position with the heels aligned behind one another.

The familiar 90-degree position of the feet is entirely orthodox in modern fencing stances. But while it is important to recognize that the 90-degree position is unquestionably present within Renaissance fencing methods starting in the early 16th century, by contrast, the 45 and 135-degree positions are *not* doctrine within modern fencing styles. Over time the "closed" 45 and "open" 135 angles came to be superfluous. They largely disappeared from instructional illustrations of fencing methods without comment. Their unfamiliarity within modern era fencing styles is surely a significant part of why this obvious element has so far gone overlooked in the present revival of Renaissance fighting arts.

Illustrations of the well-known position with the feet at the standardized 90-degree position are included unequivocally in hundreds of 18th and 19th century fencing works. But the bend of the knees becomes noticeably different than that used in the Renaissance. A comparison of these distinctions among fencing images provides some insight into whether or not Renaissance illustrations *before the age of the rapier* actually reflect a true 90-degree position—or something else:

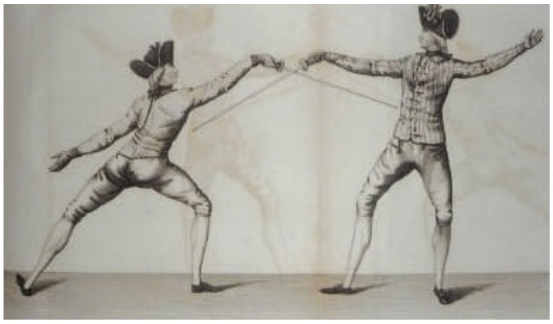
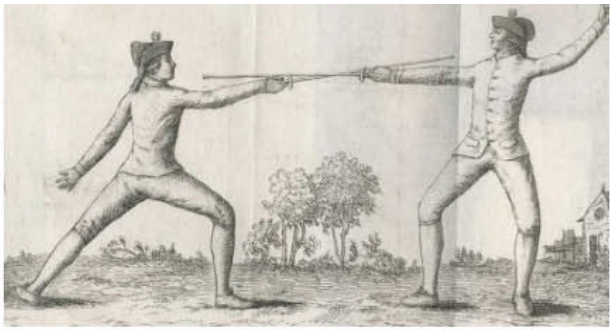
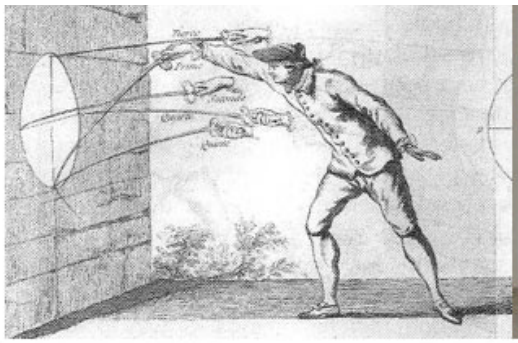
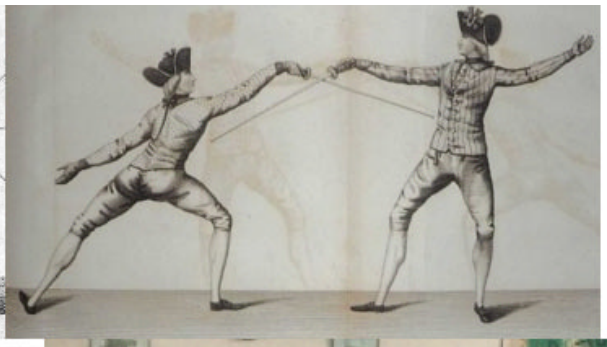
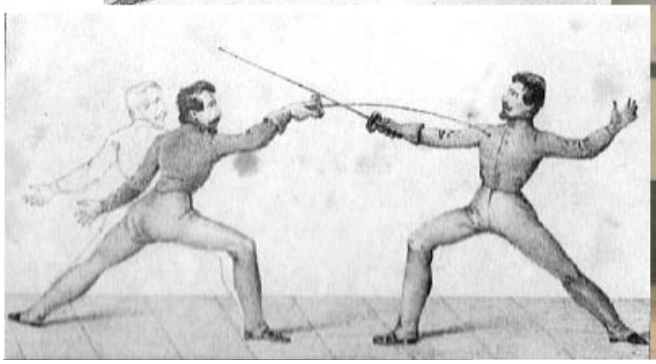


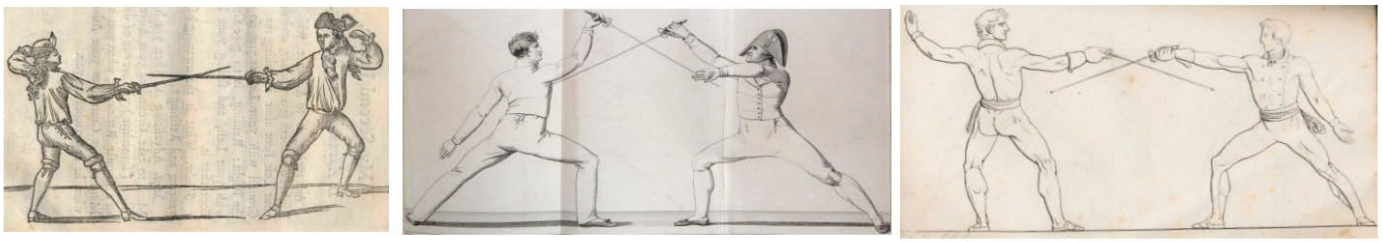



As a side comparison, we can consider these images next to a few examples of 18th and 19th century figures stretching the rear leg when performing certain techniques or executing full lunges from the familiar 90-degree positioning of the feet. In some cases, the rear foot turns rearward, but not to the degree seen in figures decisively holding their feet directed at the 135-degree position. That this might also be occurring in 17th century rapier illustrations is not beyond reasonable possibility.

Given that the 135-degree foot position appears unequivocally next to examples of 45 and 90-degree examples, it would be highly unlikely that its appearance in some 19th century fencing artwork is just a mistake. If we assume that what we are seeing in 19th century examples are not any illusion of perspective or artistic rendering, then we must ask what happened to the later use of the open position of the feet such that modern fencing practitioners are so unaware of it? On the other hand, if it is in fact not really there in examples from 19th century fighting arts, but only an illusion, then we must again ask if that might also be the case with earlier centuries?

But we know this cannot be so, since we have shown by the geometry, the perspective, and the collected imagery that it was most definitely used. The logical answer then to why it later vanished must lie in the differences between earlier close-combat skills and methods and that of later fencing styles. One difference we can immediately acknowledge is that, unlike their later 19th century counterparts, earlier fighting styles relied on a wider fighting stance without the heels lined up. This was a necessity given the proximity they engaged at, the body contact they regularly employed, the unarmed techniques they readily incorporated, and the diversity of arms and armor they employed. As previously noted, once these factors disappear from self-defense needs their associated ways of standing and stepping went with them.

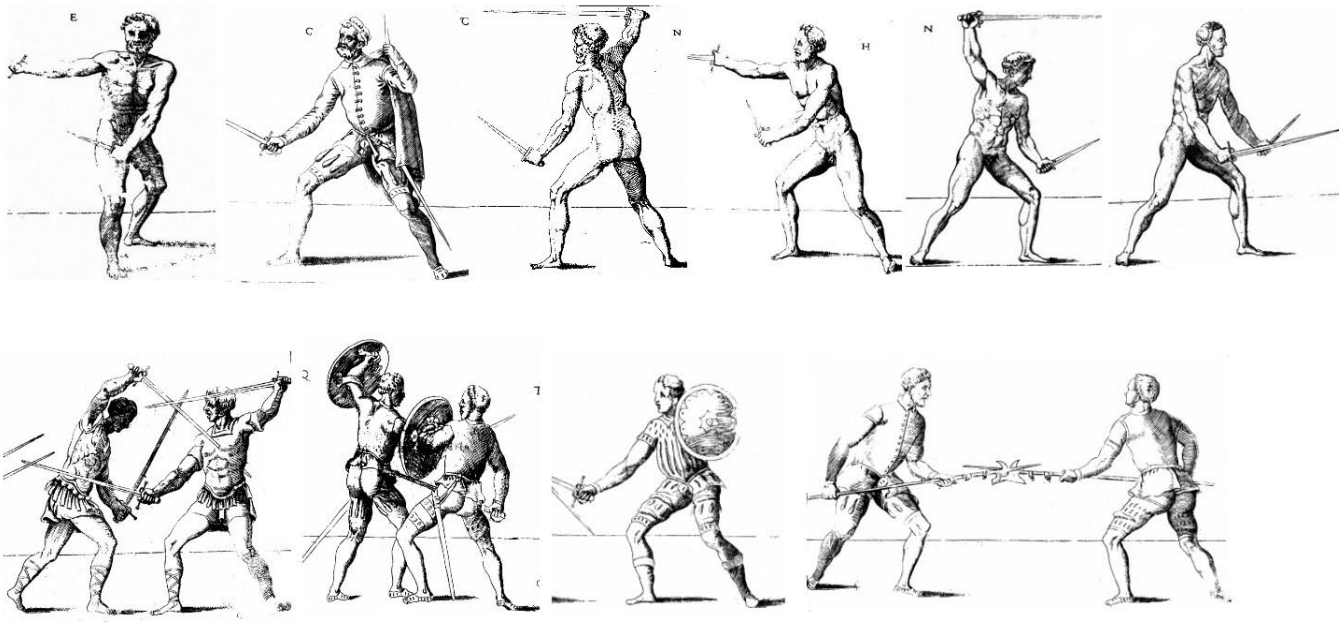



Even if we were to err on the side of viewing all images of a seemingly turned rear foot in later fencing as originating only as a stylistic expression of perspective or some anachronistic aspect of maintaining balance, this still does not explain its appearance in images of fisticuffs and other pugilistic activities. We can however note that in boxing turning the foot and hip to add power to punches is an integral component.

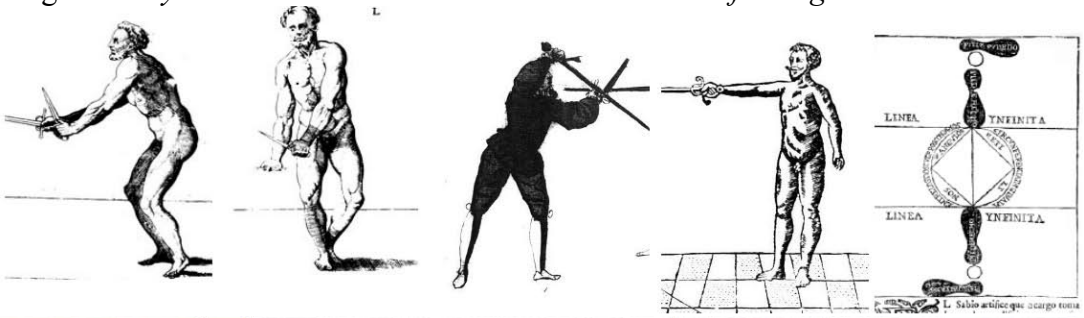
Medieval images of manual labor and sporting recreation are also revealing in that the feet are frequently illustrated in the same 135-degree position compelled by the need to balance the body and turn the hips for leverage or force. Such images offer yet another reference point for how artists were very often aware of the sense of movement and leverage suggested by the foot positions and body postures they portrayed.

XX. The Distinctive 90-degree Fighting Stance in the Era of the Rapier

At this point, we must digress some to examine the relationship between the familiar 90-degree "L" positioning of the feet, so standard within modern fencing, and whether it existed as doctrine in fighting methods prior to the early 16th century. There can be no question that it appears with the emergence of the rapier for unarmored civilian defense. The first work where this is clearly presented as a primary position of the feet is not until that of Camillo Agrippa's treatise on the slender single-hand sword for civilian use in the early 1550s:

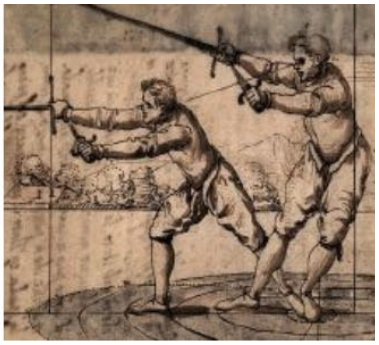


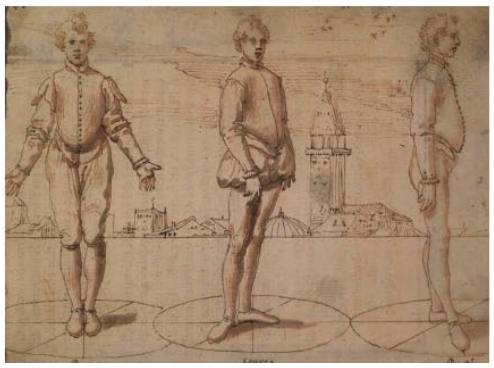
Surprisingly, when individual images from the genre of 16th century instructional works on the rapier are closely examined *they do not support the rapier being used with a primarily 90-degree position of the feet.* The overwhelming majority of examples reveal rapier stances employed with feet held at either the 45 or 135-degree position. Despite this fact, many modern rapier depictions and interpretive instructions have long relied on the familiar 90-degree version as their primary stance (ala later Baroque fencing). And yet, this is something that *only becomes standardized in later smallsword fencing*.



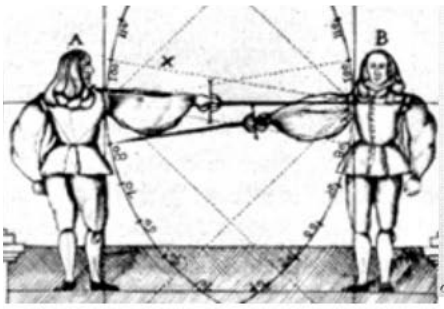
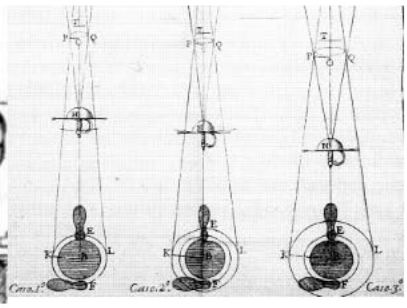
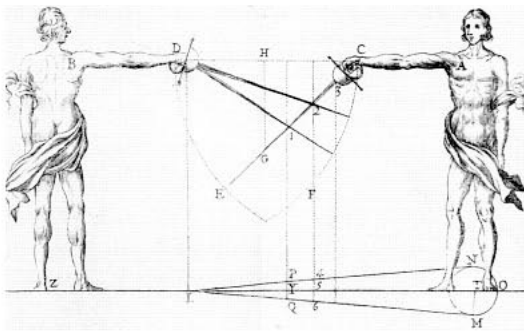


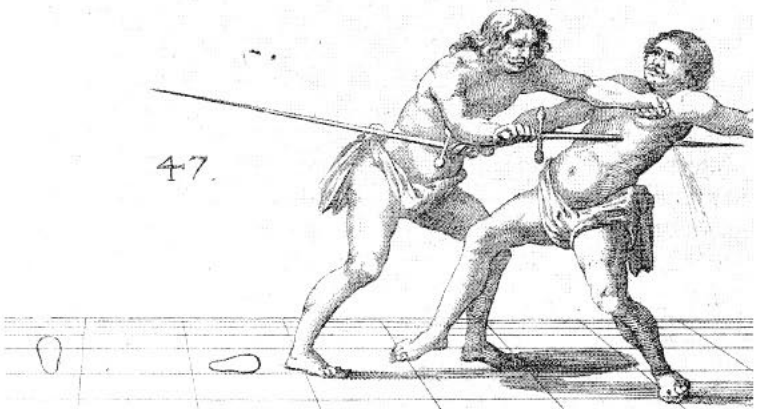






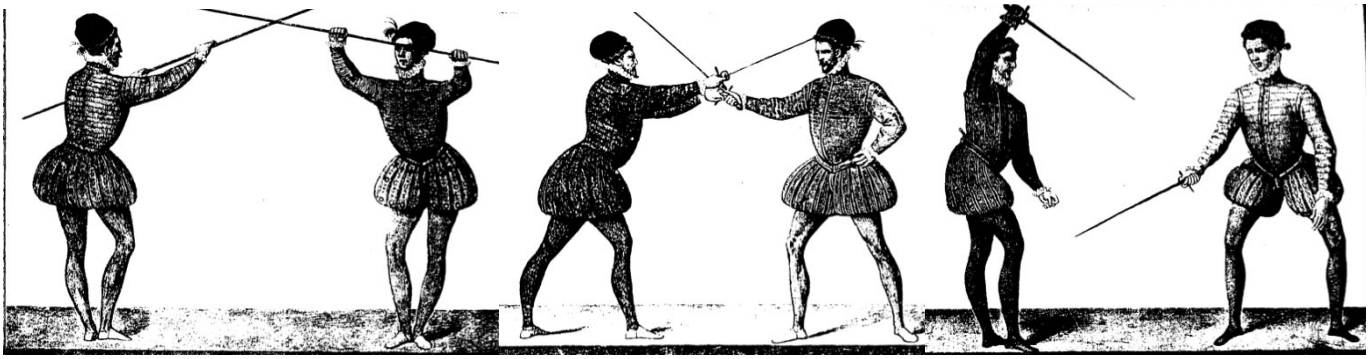

Of particular value is the lesser-known work on the rapier by Frederico Ghisliero from the 1580s. There is no question Ghisliero holds his heels aligned behind one another to allow for a narrow far-reaching body posture suited to the rapier as a one-handed foyning weapon. Yet, using geometric lines his feet are unequivocally depicted positioned at 45, 90, and 135-degree directions. As with other works of the time, all three are utilized as needed.

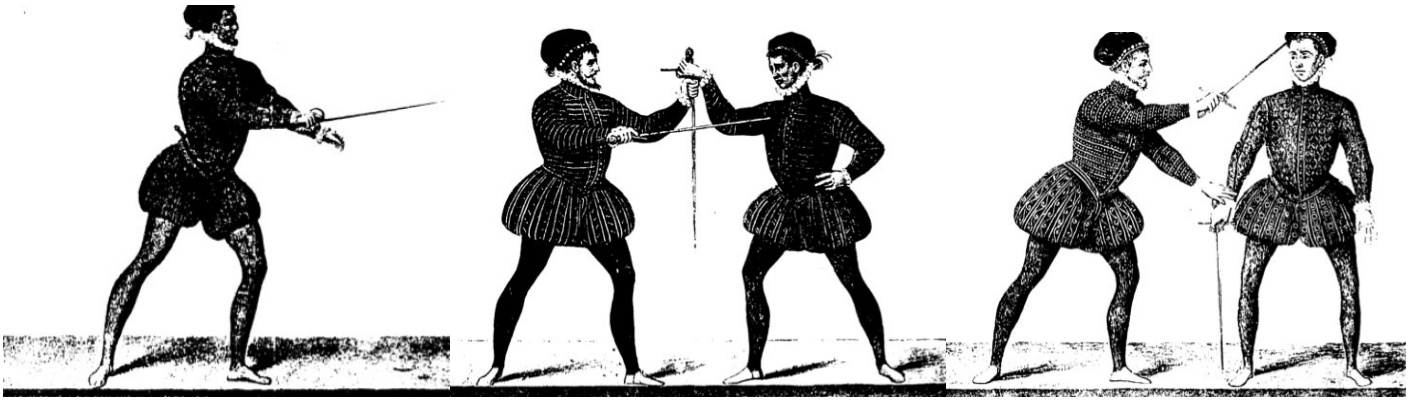




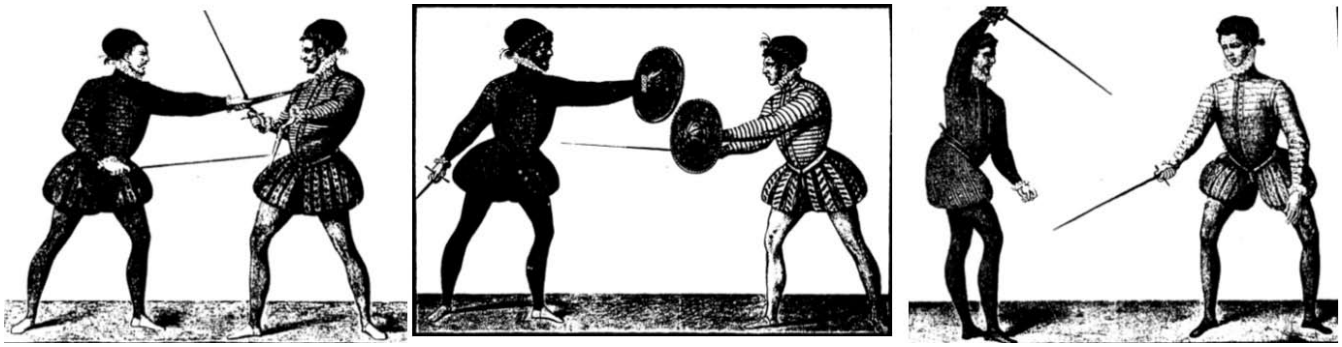


By the late 16th and early 17th century rapier treatises, particularly of the Spanish school, without question emphasized the feet placed at 90-degrees. Yet, even then, it is recognizable that they understood the feet were to naturally step to other directions as needed. In this regard, they are distinct when compared to earlier works of Renaissance martial arts that, in contrast to the 45 and 135 positions, make no such efforts to display 90-degree placement of the feet.

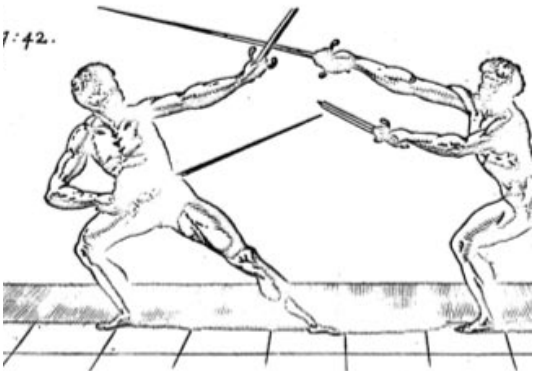
The master G. A. Lovino in his treatise from the 1570s depicts his (oddly proportioned) feet positioned at nearly all the angles described when using all weapons. Lovino holds the lead foot both offset and pointed forward, places the rear foot at both 45 and 135 degree positions, as well as directed at less than and greater than 90-degrees.



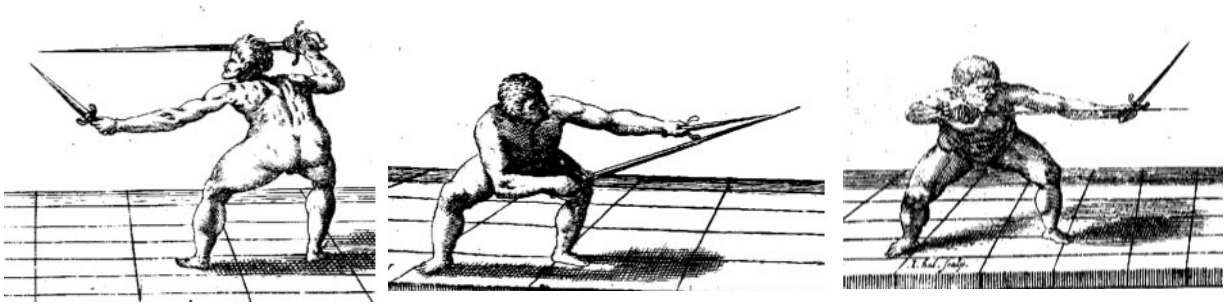




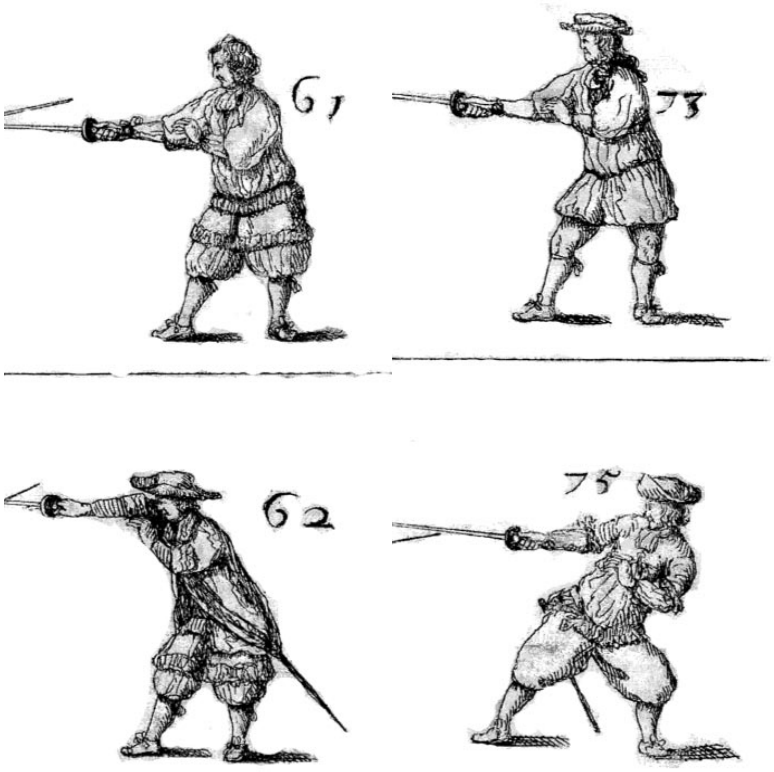
None of this is to argue that at times the feet do not end up in a relatively 90-degree direction as just a matter of recourse during almost any form of armed close combat. And it has been shown conclusively that in the age of the rapier the feet were not placed exclusively at a 90-degree position or with the heels always in-line. The question is: was either done as principle prior to the emergence of rapier fencing?



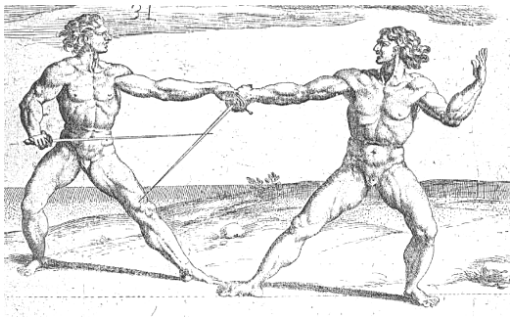
The “hunched over” postures of Salvatore Fabris’s rapier method only become sensible and possible to perform effectively when the feet are properly turned into the open 135-degree direction. Trying with feet placed at either 45 or 90-degrees leads to laughably unbalanced postures with substantially inferior mobility. And with these postures it can be seen how the heels are not lined up behind one another.

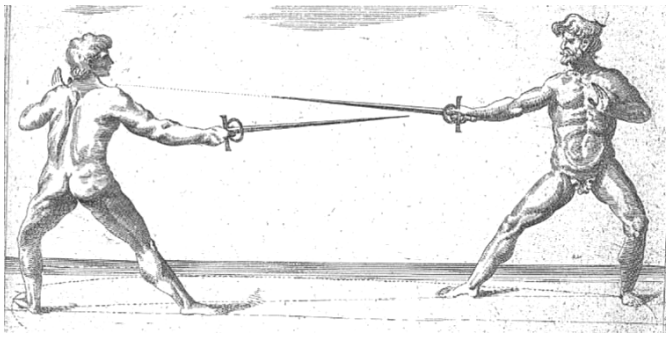


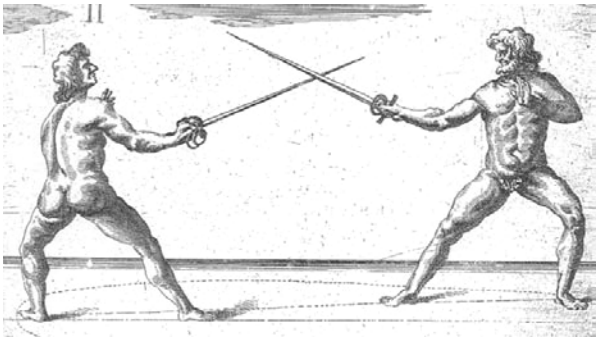
One of the clearest descriptions of the familiar heel-in-line stance so associated with thrusting swordplay comes to us via the fencing master at Lieden, Johannes Georgius Bruchius’ 1671 work on the rapier, *Thorough Description of the Noble and Knightly Fencing*. Bruchius states: “know first that your feet will stand, heel against heel, in a straight line.” He instructs in this stance specifically so that the fencer can “advance lightly in stepping or thrusting.” This stands (literally) in contrast to the foot placement necessary for the movement style of earlier methods of close combat. And yet, as with other rapier and smallsword treatises, the illustrations in Bruchius’ work plainly show figures with feet positioned at 45, 90, and 135-degrees.



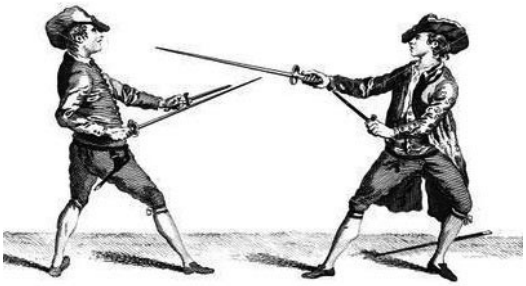
It is pretty clear that 18th and 19th century sources, just as with their 16th century counterparts, understood when they were and were not displaying a stance with a 90-degree foot position. This gives us reason to not mistake images of a 90-degree stance, where the rear foot is slightly turned as the leg stretches in a lunge, as being a 135-degree positioning of the feet (such as with the infamous extended “heel lunge” of Francesco Antonio Marcelli in the 1600s).





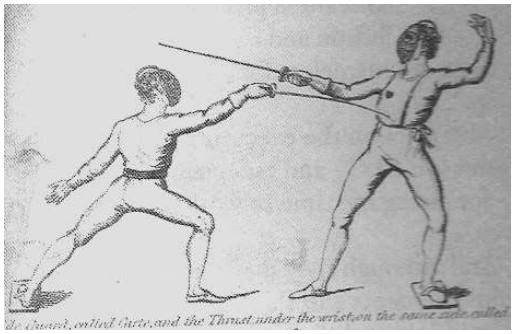


It is no secret that there is a complete and total lack of body-to-body contact in modern fencing. For more than 150 years its style has not been at all concerned with attaining any leverage advantage over an opponent so as to throw them, take them down, or disarm them, let alone prevent them from doing the same to you. With its shorter, faster, much lighter weapons (i.e., epee, saber, foil) used within a far more limited martial context, generating greater body-power is simply not a concern in modern styles. Such an element is not a necessity for either striking strong blows or delivering close-in techniques. It should be no surprise, then, that the 135-degree open stance position with its commensurate turning of the foot for leverage simply does not exist within either classical or modern fencing methods. There the 90-degree stance has long been unchallenged as proscribed doctrine. In contrast, Renaissance martial arts was immediately concerned with the vital importance of the element of leverage in close combat.



If not for the cumulative material presented here, it would be very easy to look at an image of early 18th century smallsword and conclusively assume that each fencer is in a familiar 90-degree position, only shown at a slightly different perspective. But the evidence suggests that we take a broader view of how movement in Western fencing styles changed over time to meet different contextual needs.

This 19th century foil fencing image displays a means of learning to keep distance by holding proper form with the rear foot stationary and un-turned, enforcing the orthodox 90-degree feet placement with heels in line. Without the need to close in to grab the opponent's weapon or limbs, apply leverage to throw or push them or otherwise take them to the ground, there is also no need to step off line and turn the feet and hips for the necessary leverage involved in executing (or preventing) such actions.



XXI. Images With Indeterminate Foot Angles Suggestive of Transitional Movement

Serious rapier practitioners today understand that while a 90-degree position of the feet has undeniable utility with a thrusting weapon (since it permits a longer thrust while narrowing the body's target), *it was not the primary stance used with the rapier*. The 90-degree position is actually *less common* in the historical sources than either the 45 or 135-degree positions. Again, the reasons for this are surely the different martial requirements placed on rapier combatants, in contrast to that required of the fencing style employed by their Baroque-era descendants and beyond.

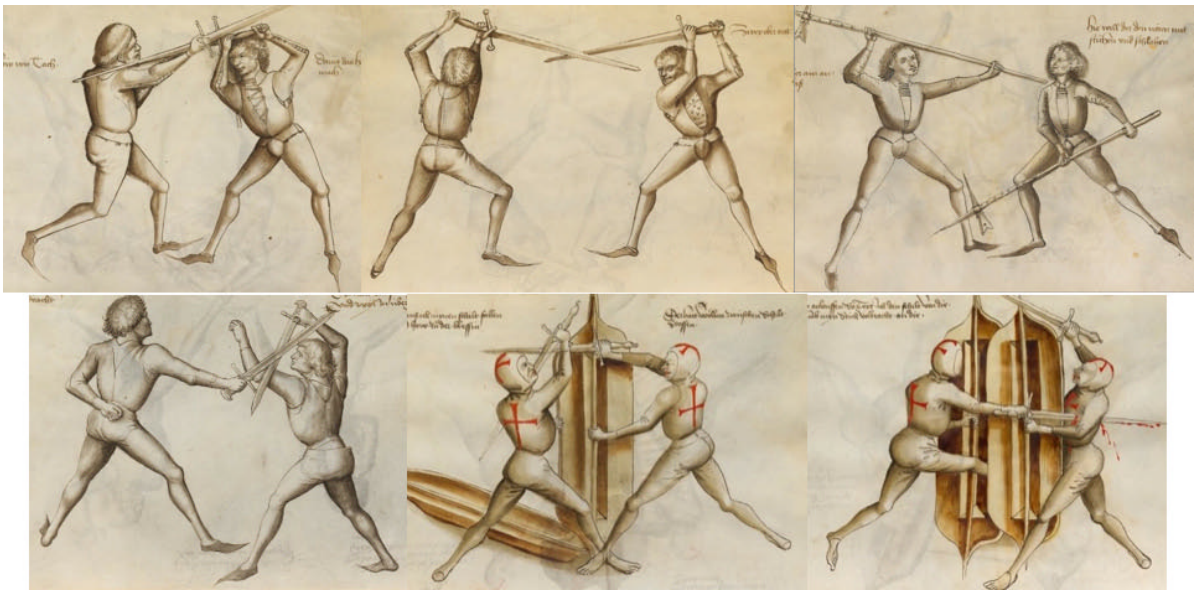
Images suggestive of a 90-degree placement of the feet from outside of rapier teachings are instructive in evaluating what may or may not be a true 90-degree stance in sources before emergence of the rapier. The evidence in favor of a distinct 90-degree positioning of the feet is all but absent in close combat artwork prior to the age of the rapier—sometime after the 1540s or 1550s. However, several examples within the sources appear to be actions delivered with, or at least ending with, the feet placed at 90-degrees. What is not clear, however, is whether this is literal or very possibly the result of *transitional motions of the feet shifting between the 45 and 135 positions*:

There is only one way in fighting to change from a 45-degree direction of the feet to a 135-degree placement of the feet. This manner of stepping can be easily explained and described without regard to fighting stances with the feet at 90-degrees.

Given the evidence for foot direction, rather than asking if the 135-degree placement is the result of some false impression, perhaps we should consider instead if appearances of an apparent 90-degree positioning of the feet in combat images before the age of the rapier might *itself* be something of an artistic illusion?

Examples of figures standing with the feet close together offer another insight to foot direction. This posture is consistent with that assumed by the simple action of pulling the front foot back (or bringing the rear forward) from either the 45-degree or 135-degree degree positions. Not surprisingly, whether angled toward or away from the opponent, we do not find the feet displayed in a 90-degree direction:

Aside from the rapier's more linear method in the 16th century, where an unmistakable 90-degree foot position came into use alongside those already described, we must examine whether or not it was used earlier. We must consider if the assumption of a 90-degree position of the feet within pre-Rapier fencing methods is *not* the result of some natural imperative to employ such a stance, but rather something else—a modern prejudice ensuing from over-exposure to post-Renaissance fencing styles amid the widespread influence of pop-culture's misrepresentations of historical swordplay. One thing is certainly clear: a 90-degree foot position does *not* provide more leverage when close in nor when seizing hold of an opponent's weapon, and a 90-degree angle of the feet is *not* employed in unarmed fighting or wrestling. Taken in totality with the voluminous examples of 45 and 135 stances, both forward and reverse then, it is hard to then argue that the minority of images appearing to show a more 90-degree foot direction are portraying the feet positioned literally, rather than merely in transition.

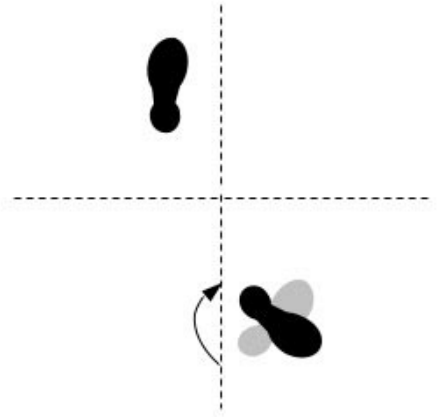


XXII. What Are These Motions for Changing Foot Direction?

Given the fact of fighters shown in various fighting stances holding their feet at angles of 45-degrees, 90-degrees, and 135-degree, the question arises of how they performed this changing from one to the other. How is the transition physically executed in the course of combative movement and action?

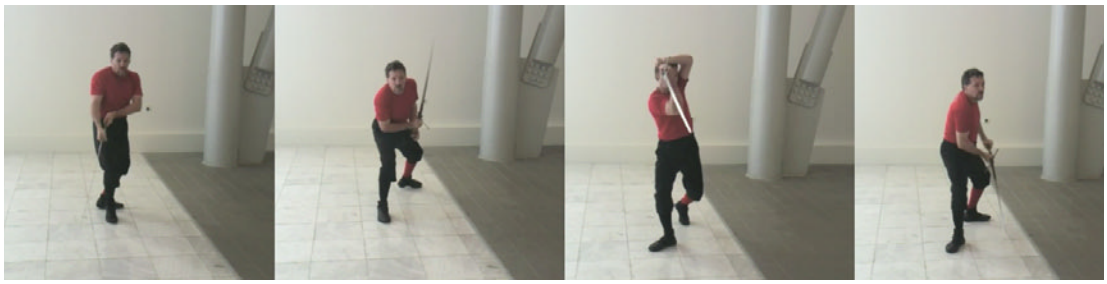
If we were to interpret images presumably showing the 135-degree "open" foot position within 19th century fencing sources as really just being 90-degree positions seen from a different perspective, then it begs a question: Why would other images in the same (or comparable) works show distinct and unambiguous 90-degree foot positions right along with explicitly 45-degree ones, yet make no mention of shifting from 45 to 90 or from 90 to 45? In other words, even as they employed placing the feet in different directions they gave no explicit instruction in movements for transitioning between them. At the very least, fencing writers obviously felt no great compulsion to spell the matter out as doctrine. If changing from 90 to 45 and back was not a significant matter to describe in later methods, it stands to reason that changing from the 135-degree foot placement and back would not be so either.

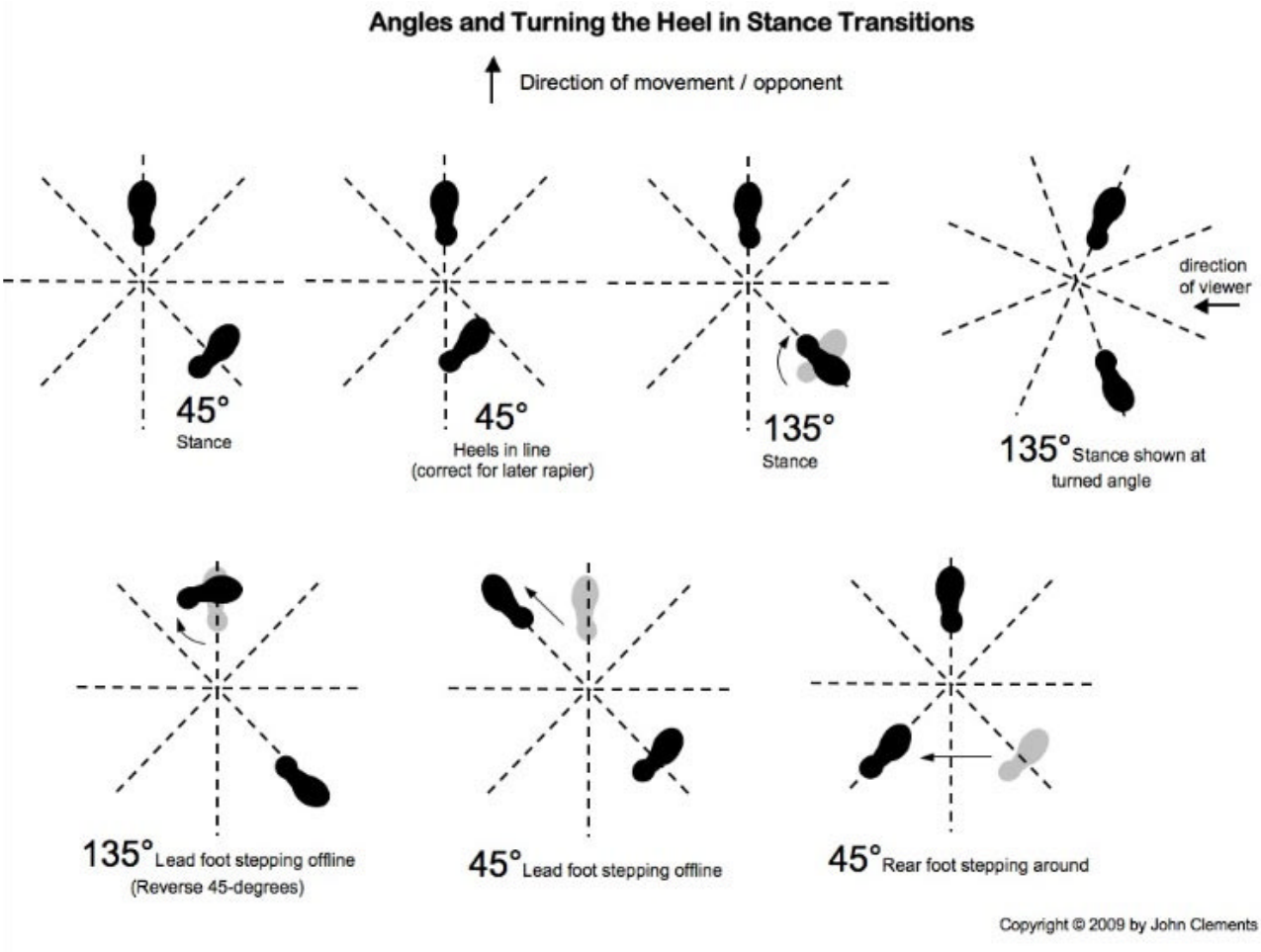
If we acknowledge that one stance is clearly 45-degree ("turned" or "closed") and the others definitely 135-degree ("open"), then it demands knowing how to move / transition from one to the other in the context of striking a blow or executing a fighting action. The answer is clear: volting.



Turning from 45 to 135

Following this logic, in either case it might have simply been considered a fairly obvious matter with no compelling need to explain it. This may have very well been why Renaissance martial arts literature makes no great issue over various foot positions. There presumably was no compelling reason to address something so innately self-evident to fighting men. However, as we have already established that positions with a distinct 135-degree direction of the feet existed and was as widely used as the 45-degree one, then we must consider the means for shifting between the two. Uncovering just what this manner of stepping is then becomes our key issue. The instinctive answer is that the motion is primarily one of simply turning the ball of the foot by raising the heel (though, in certain instances, it may be achieved instead by the opposite).

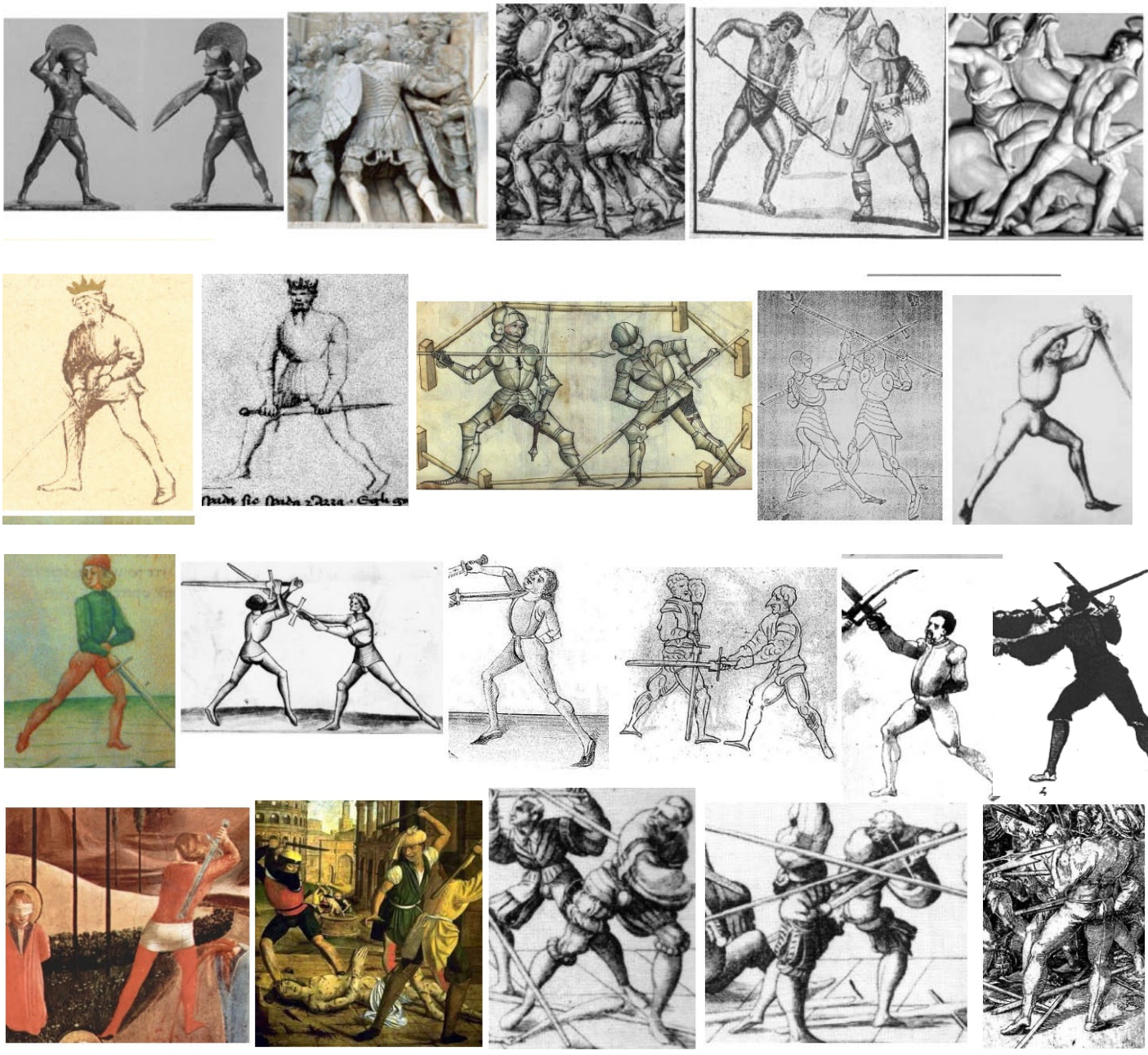




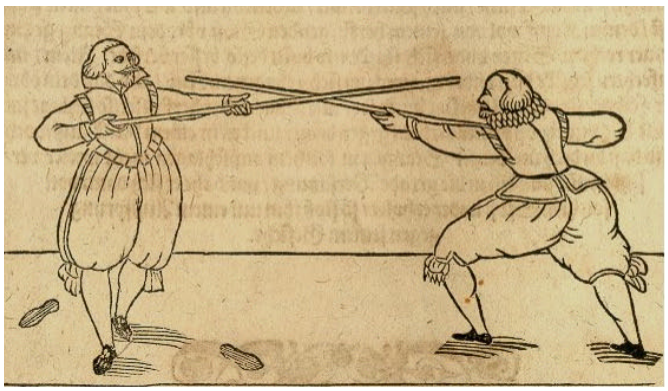
As will be shown, shifting quickly back and forth in this way by merely turning on the balls of the feet may very well be the entire idea behind the concept of both the volta (turn), and *der Waage*, or standing in balance as if on a "scale." The torso may remain facing forward even as the knees bend with the back and forth turning of one or both feet, which by result also turns the hips. Only in the reversed position does the torso actually turn to the side rather than facing backward.

XXIII. Examples of Raised Heels as Reflecting Stepping Motion Rather than Ready Positions

Given the biomechanics involved, there is only one way during fighting to quickly and smoothly shift the directions of the feet from the 45 to 135 positions. Being aware of this transition, we can take a second look at combative images that ostensibly depict figures simply stepping forward or back and consider whether (in some cases at least) they may in fact represent the motion of turning the foot. It is very easy to simply assume that any historical image of a raised heel reflects the artist capturing the action of the combatant about to step forward or else moving in the act of completing a step back. However, in light of the fact that the feet are invariably depicted placed in either a 45 or 135 direction, we now can consider a different possibility altogether:



We cannot discount the possibility here that images of the heel of the rear foot being raised are evidence of the necessary "turning" inherent in stepping between the "open" and "closed" stances. How else to go from the footprints to stance if not by turning while lifting the foot? This idea opens up the possibility that images of a lifted heel are not just passing steps, but turning foot direction as well.



Despite the impression they may leave on some modern students attempting to perform them, *the fighting stances in the source teachings are not static. They are examples of postures in motion.* A stance is the end or beginning of a combat action. In many images of postures the heels are raised because that's what happens when you are moving. You cannot step without raising either the heel or the toe, after all. Movements will frequently begin and end with the feet flat on the ground, having just completed one action and preparing to execute another. The images are not literally implying fighters stand still or pose with a foot half raised, any more than they intend for a fighter to have one foot off the ground or the toes of both feet lifted at the same time. This is common sense. One need only examine freeze frame photos of modern boxers, MMA fighters, or sport fencers to see the same phenomena in action.

Paulus Hector Mair's early 16th century compilation of teachings contains numerous examples of the heel being raised. They can be best explained not as stepping motions or legs stretching, but in the context of the feet turning to perform an action or execute a movement.

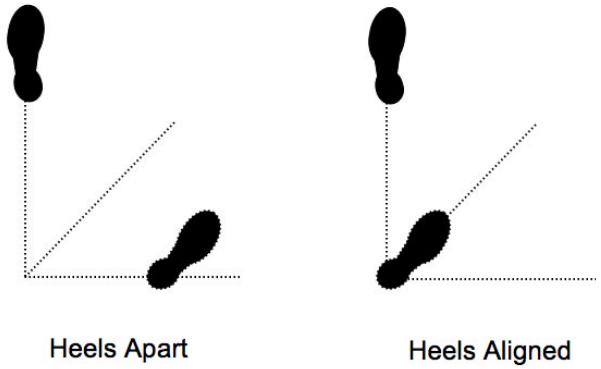





XXIV. Heel-Alignment and Stance-Width as an Issue of Foot Direction and Placement

The issue of heel alignment and the width of stances now become crucial here. *The distance of the feet apart and their heel orientation directly relates to one another, and by function, to how and why you can step and turn to achieve the placements depicted in the historical source teachings.*

As already established, combat postures with the feet at roughly 45-degree positions to one another are nearly universal in historical images. Additionally, in countless close combat images of battlefield encounters, judicial duels, and other armed engagements, warriors and knights are routinely depicted with their feet spaced apart, *not lined up at 90-degrees.* Such self-evident illustrations are so commonplace it is not necessary to even collect together supporting examples here as evidence.



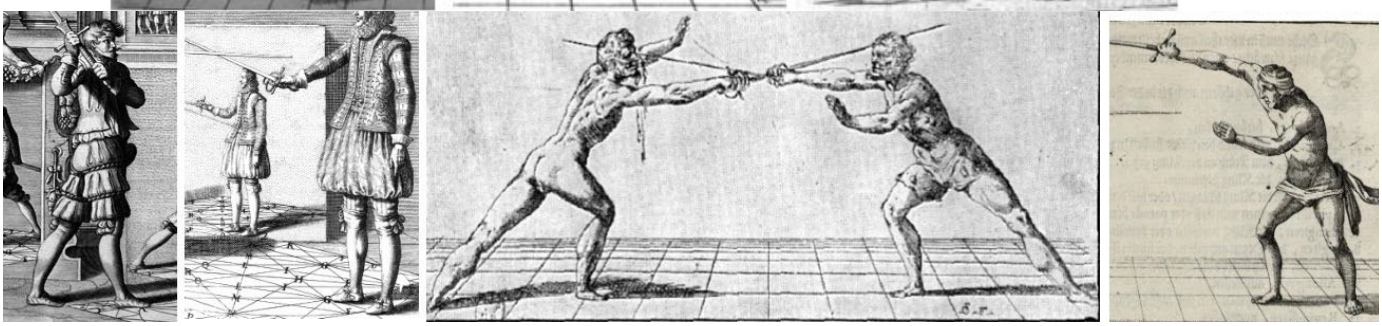
But what is not always clear is *the width of stances*. That is, whether or not the feet are at a natural distance apart (more or less shoulder-width) or the heels are sometimes "lined up"—as was to become common by the end of the 16th century with the method for the rapier, and later for Baroque fencing styles. For the linear movements of foyning swordplay having the heels one behind the other—that is, on the same "line"—is certainly an ideal position. However, the imagery for most all Renaissance combat disciplines provides clear evidence for *the feet being spaced apart rather than with the heels "lined up."* This makes sense, since the various foot positions documented here, especially the "open" stance, cannot be effectively achieved by keeping the heels in a row one behind another

Once either foot starts to turn the body equilibrium is lost if the feet are not first spaced wide enough apart (approximately shoulder width). In practicing this with various weapons and fighting actions a student can experience how failing to do so leaves the combatant less balanced and less able to change positions when executing techniques other than thrusts. It will also become clear how other fighting stances, specifically where the rear heel is placed to the outside or the forward foot is not pointed straight ahead, cannot be achieved by keeping the heels in line. It is not hard to feel the difference between shifting the foot's direction from a forward 45-degree position or backward to a 135-degree one, and vice versa. The resultant turn of the hip and body is crucial to superior striking and leveraging. Yet, in contrast, it is quite easy to detect how less of an effect is produced in shifting from a 90-degree placement of the feet to either the 45 or 135 directions and back again. This self-evident fact explains the rarity of the 90-degree stance in combat images prior to the development of the rapier's thrusting method—a style which, famously, does not utilize either leverage or force in fighting close-in.

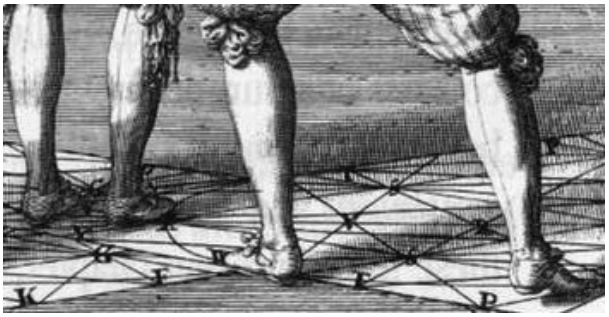
Prior to the ascent of the narrow thrusting rapier, however, there is little evidence to prove the heels were placed along the same "line" in various fighting stances. The very same can be said for fighting stances with the feet readily placed at a 90-degree position relative to one another. This is again something the evidence suggests was another development of foyning fence, not occurring prior to the early 16th century. Significantly, when a 90-degree feet position does appear in images of rapier fencing (post circa-1540) it is always with the feet "in line"—that is, *not* with the heels placed shoulder-width apart. Further, the forward foot is often "crossed over" (so that the heel aligns with the toe of the rear foot). However, there are unmistakable examples throughout 15th and 16th century Fechtbuch images that appear to show the feet in-line while in a 135-degree position. In some cases, the art even includes a horizontal floor line that amplifies the effect. Though literally standing this way produces poor balance, I believe these images can be fully explained as a side effect of turning the foot into the "open" position.

XXV. Examples of Natural-Width Spacing Between the Feet

The spacing of the feet in fighting stances is an important matter for modern practitioners. There are many clear examples in the historical sources for the feet being naturally spaced at roughly shoulder-width apart (give or take one shoe width) thereby lowering the center of gravity for improved stability (that is, balanced movement). Stances are not typically shown with one heel placed in a line behind the other nor with the torso facing sideways. As will be shown, there is no way to place the feet to step and turn, traversing forward, back, and diagonally, without the fighter allowing sufficient space between their feet.

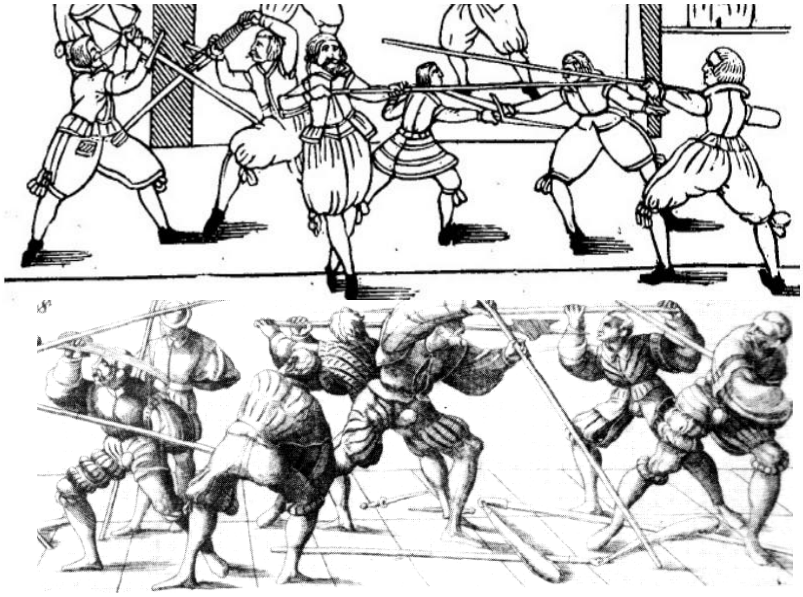


The question may be asked if transitioning from the 45 to the 135 position by raising the heel can be performed with the heels already aligned? The simple answer is, yes. But, we must consider if this is in fact what is generally being displayed in the source images or whether there is another possibility.

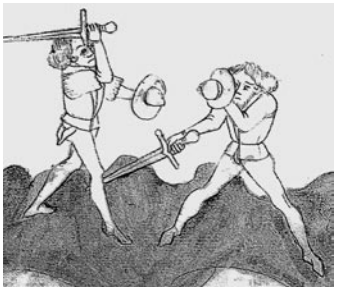


A simple demonstration is sufficient to reveal how perspective plays a part in evaluating stance width and heel alignment in historical images. Stand in the "closed" 45-degree stance with the feet shoulder-width apart, and each foot placed upon a separate parallel line of tape on the floor. By then turning the feet through the directions of the closed, open, and reversed positions an interesting effect is revealed. When the rear foot turns on its ball (moving the heel and thereby turning the hip itself) the foot's position shifts so that it appears from the viewer's perspective to be aligned with the forward foot. Yet, the spacing between the feet essentially remains as it was. And it can be noticed that no position requires the feet be directed at 90-degrees.

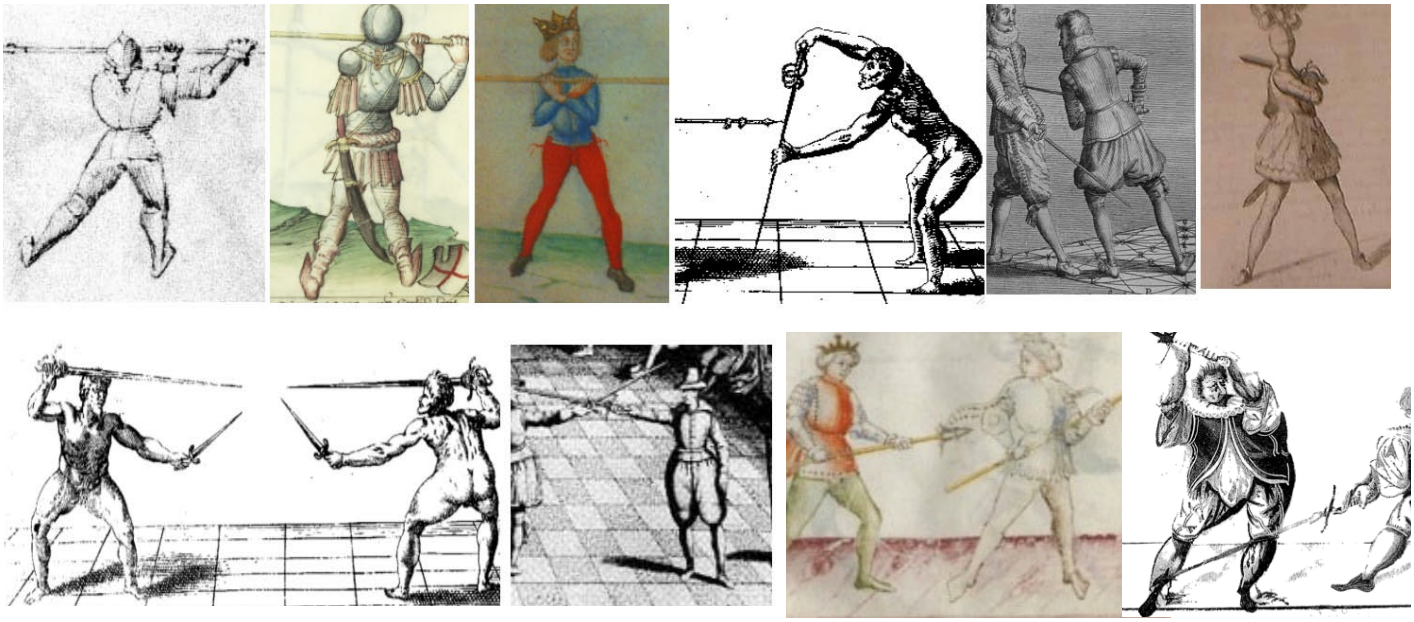
We should keep in mind that fighters were not trying to "fight on a line." In real life there are no lines on the floor to follow when in combat. So, of course feet will move around all over the place, forward and back and diagonally. But a general rule of thumb is that you stand in innate positions so the feet move naturally, stepping as necessary without regard to imaginary patterns. Illustrations of fighters moving in various ways reflect this.



XXVI. Are Fighters Ever Standing Sideways?

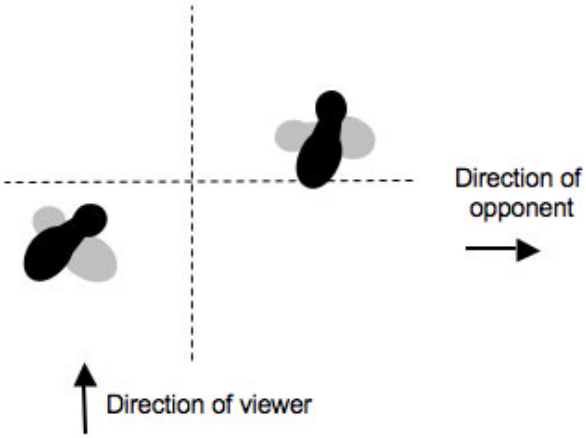


A small fraction of 15th and 16th century images show fighters in what appear to be sideways stances. Are they to be taken literally as anomalies? Though few in number, their diversity of origin would suggest it unlikely they are merely examples of poor artistic expression. Do these few samples give students *cart blanche* to stand like this at any given opportunity? Or, is there another interpretation that fits a larger methodology at work?

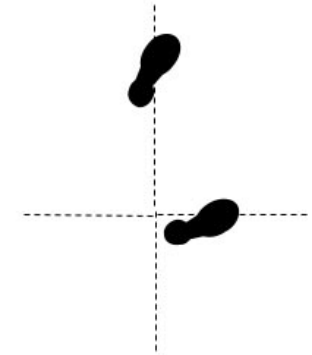


It is important to understand this is not about standing "sideways." It must be understood clearly that you do not stand sideways to face your opponent face on. Rather, the feet are directed in a 135° position. Yet, the body is not facing perpendicular to the opponent. The torso still faces forward. With few exceptions, the front foot, leg, thigh, and hip in the historical images is consistently shown pointed towards the opponent. This would not occur if the figure were regularly facing their opponents sideways. But as the images convey, at times there is something else about foot direction involved here.

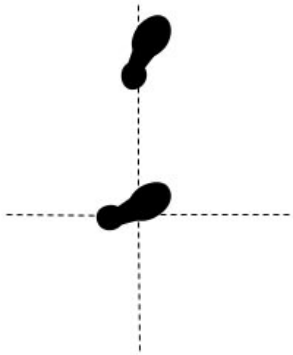
We may offer speculation here that images of seemingly sideways stances may perhaps be nothing more than attempts to display the reverse 45-degree placement of the feet from a different perspective. It is self evident that if the forward foot turns back while the rear foot remains in placed directed at 45-degrees, the stance then appears "sideways." The effect becomes more pronounced if the rear foot also turns back (producing a reverse stance).



XXVII. Noting the Offline Placement of the Forward Foot



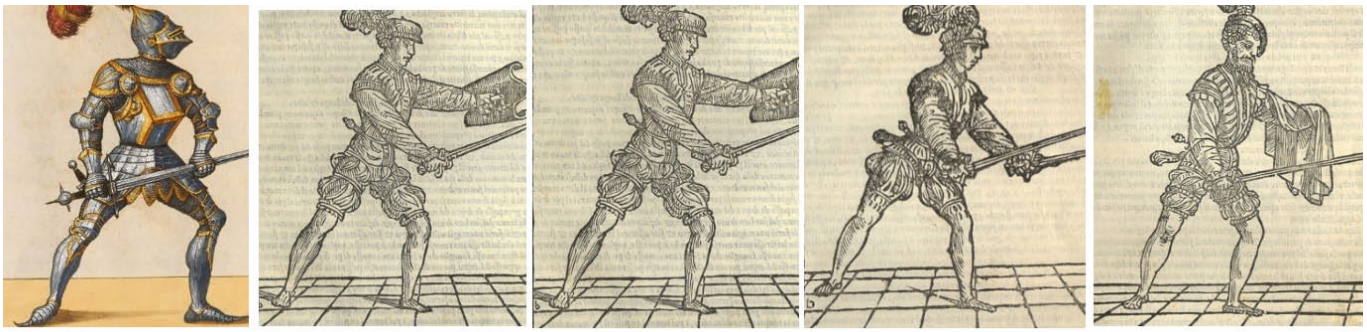
45-degree stance with front foot not aimed forward

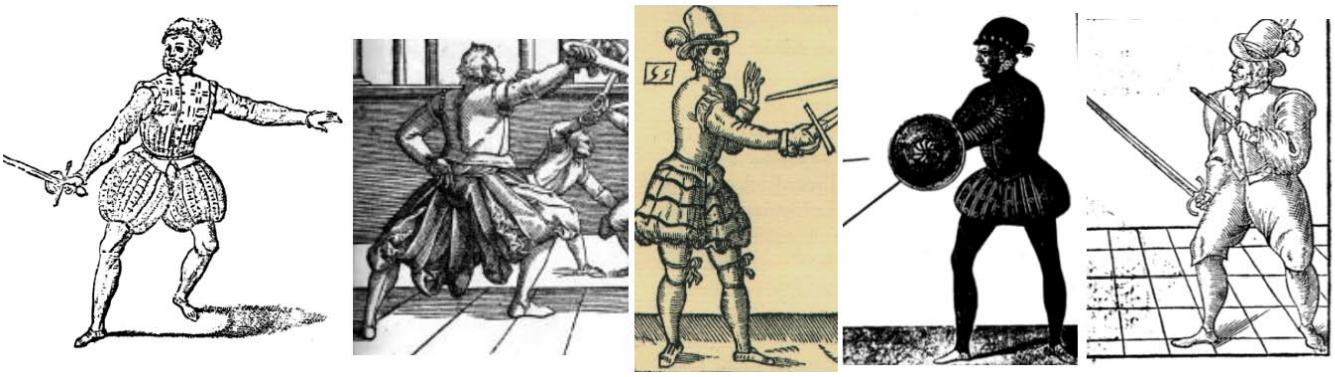


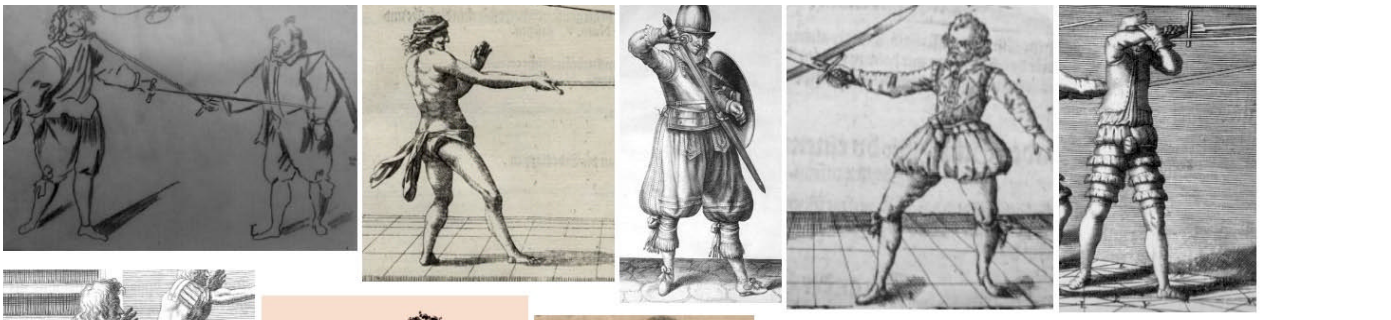
45-degree stance with rear heel to outside

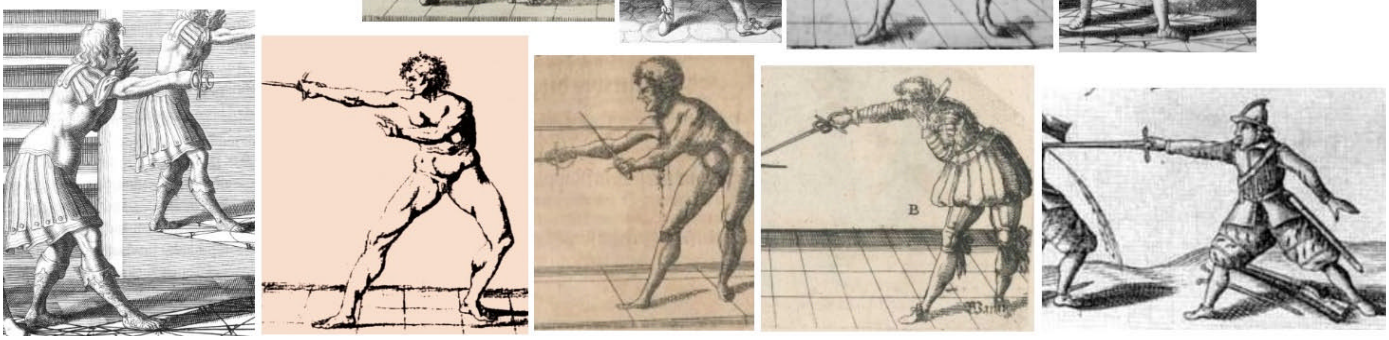
As an adjunct to understanding foot placement, we must acknowledge there are numerous examples of fighters postured in a 45-degree direction but with the forward foot *not pointed forward* but angled away from the opponent. That is, not pointed at the opponent, but diagonal (or "off" of what we might call a center line aiming toward an opponent in front). Similarly, there are numerous examples of fighters placing the forward foot offset to one side. The feet are directed as if the fighter has already stepped the lead foot off to the side a little, or else *volted* the rear foot. That is, the heel of the rear foot is placed to the outside not in line with the forward foot. In either case, the heels are not in line. Significantly, this occurs not just in images of figures in some instance of motion but in general fighting stances out of immediate striking range.

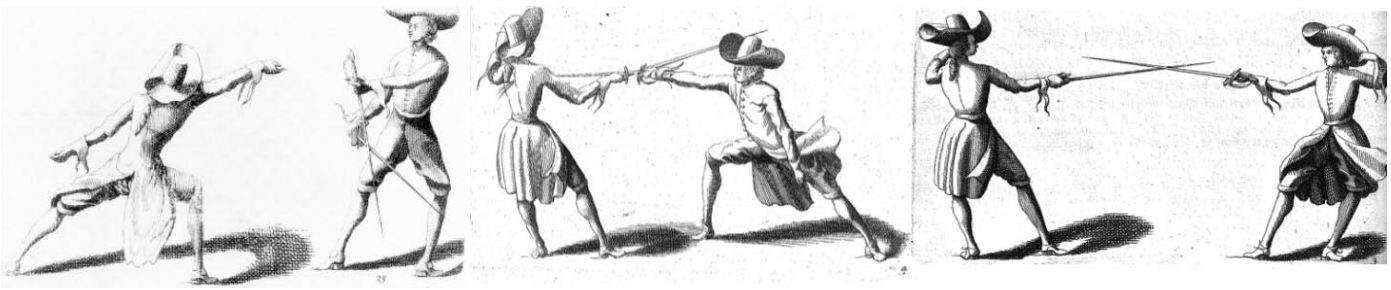
We might assume that examples of this are merely the result of volting (turning) the rear foot to the outside or else of the fighter having just traversed (stepped forward diagonally). However, they occur in some variety among such a range of sources, among fighters at all combat distances, that in looking closely at foot shadows, floor lines, and the perspective of figures, it becomes evident the front foot is being placed offset to the rear. But, as further evidence of consistency in foot placement, this "crossed foot" position occurs whether the feet are at directed 45, 90, or 135 degrees.









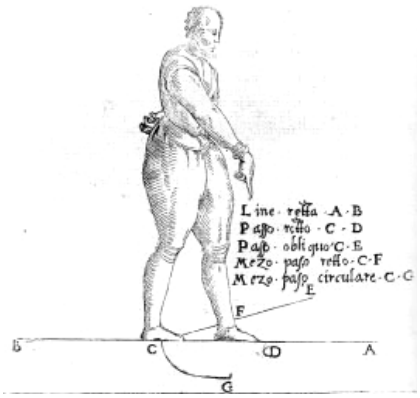


XXVII. A Diversity of Position and Motions - Noting the Perspective and Reading the Geometry

Given the evident consistency among so many images across such a range and diversity of historical sources, we cannot account for it by arguing some quirk of artistic convention. These positions cannot be accounted for in terms of the fighters having made simple diagonal traversing movements nor basic forward and backward passing steps. *There is something else in all this.* We come to understand what this is through physical exercise in the techniques of the historical methods. It then becomes easier to appreciate how these subtle elements of foot placement would have naturally been included in illustrations and sculpture of combat figures.

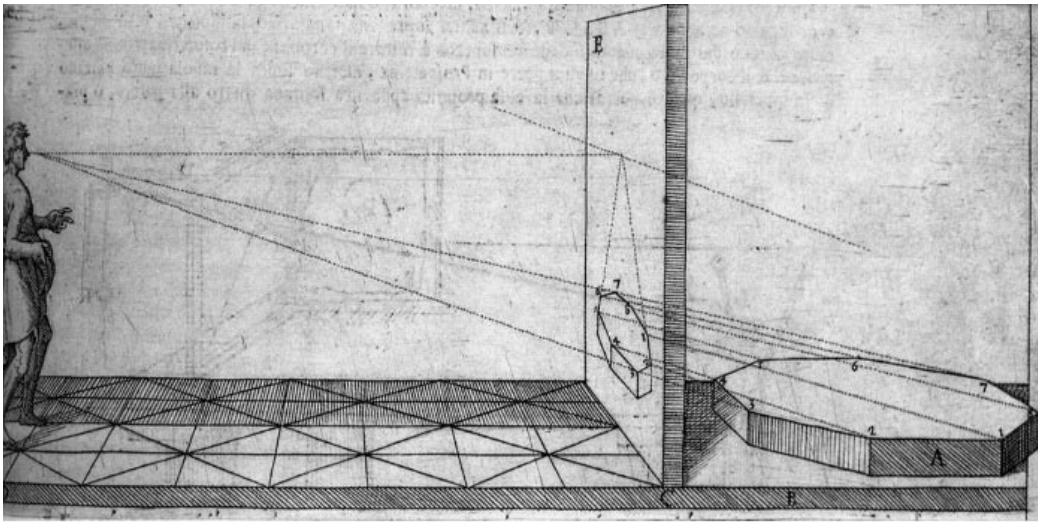
In so many combat images where the feet are positioned at 135-degrees the heel of the rear foot, rather than the toe, can be consistently seen to be closer to the heel of the front foot. This is a clear indicator that the feet are not simply at 90-degrees and being viewed from a different angle. Additionally, in countless images of the open stance the front of the knee, as well as the inside of the foot on the rear leg, are both visible. If the angle of the viewer/artist were merely that of looking at a 90-degree position from a different perspective, we would not expect this to be so. And indeed, this is the case on numerous images that do depict a clear 90-degree positioning of the feet. (The perpendicular foot is almost in every instance shown from the front toe or the back of the heel.) Similarly, when the feet of combatants are depicted in 45-degree positions, the side of the knee and outside of the rear foot are consistently visible.

These positions are not achieved as the result of large jumping steps or hopping motions, but by tighter, closer, smoother turnings of the feet.



In Giacomo di Grassi's fencing treatise of 1570, he presented a line geometry of basic footwork as if seen from above. But oddly enough, his figure stands without perspective; his feet seemingly lined up unnaturally heel to toe.

In 1583, the noted Italian architect, Giacomo da Vignola, published a book in Bologna on the rules of practical perspective. In it he presented an illustration of a man standing naturally at 45 degrees (his feet unfortunately not fully visible). The perspective displayed conforms to geometry no different than that found in many fencing works of the time.



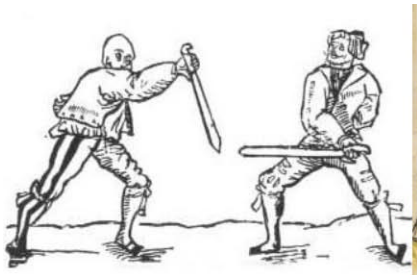
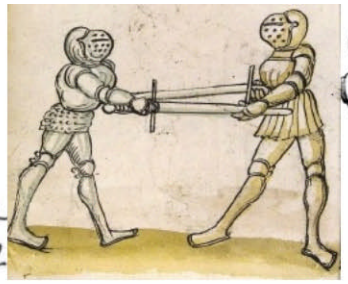
This manner of combative motion is really so simple and interrelated that it becomes easy to now understand how the historical sources would not make a big deal about it. We come to see perhaps why they would not go out of their way to stress it, but instead simply advise more or less to "stand this way and move." The assortment of foot positions recognizable in the source images are not accomplished by "assuming a fixed stance" or "holding a stationary position" but achieved in only one way: by the feet being at the 45-degree position then turning to the 135-degree position, and then from there turning again into the back 45-degree position. This is how a posture becomes "reversed", or the feet suddenly face rearward. These positions of the feet occur naturally and organically through being in a fighting posture and energetically stepping or passing while turning. They do not occur however when holding the feet at 90-degrees (or with the heels in line).

Why did such an important element not get directly addressed within the historical sources? Perhaps because the biomechanics involved are self-evident—once they have been explained and demonstrated, that is.

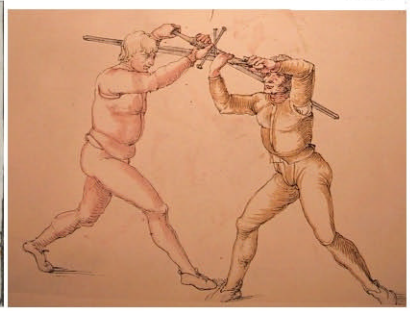
In our modern interpretive reconstructions, however, we would imagine this matter of foot direction would be one of such importance that in their teachings or dialogues they would take time to explain for students to stand with their feet placed at one angle or another. But this is surely a prejudice of our modern mindset; our post-Enlightenment predilection for analysis, of looking for things to be structured with a particular configuration, instead of the more holistic formulation of how it was represented. The facts are that the source teachings *do show* us how to stand and move and the evidence for their doing so is overwhelmingly obvious. They represent it in countless images and also provide us telling instructions on the significance of footwork and active movement. They tell us to remain in motion, to stand as if on a "scale" (*der vaage*), while explaining the legs as being "keys" that open and close things, and that the feet move in "diverse ways," etc. But we expect and want (and even need) them to say it in a way we would recognize as important (ala' the manner modern fencing's footwork is typically presented). Yet, the information is there if we look at it with the right eyes. It is arguably at once both subtle yet astoundingly apparent.

Footwork in Renaissance martial arts is not about just standing at 90-degrees and moving around or stepping back and forth. It is about constant motion in relation to an opponent you are striking or counter-striking, binding or crossing, and avoiding contact with or closing to make contact against. It is really that simple. It is no wonder then these positions are not dwelled upon in the writings of historical teachers, even as images representing them appear throughout their instructional literature.

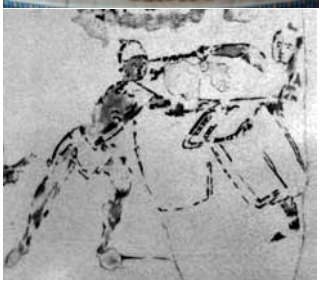
The motions and footwork of these positions occur organically when actions are performed with the requisite intensity, martial spirit, and fighting mindset. This may explain why the observations and interpretations presented here, even as they are readily apparent in the historical teachings, were not overtly expressed or dwelled on at the time.





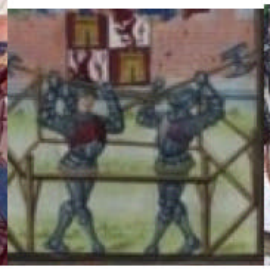

It is clear that in many different fighting postures Medieval and Renaissance fighting men were using both a 135-degree positioning along with both a forward and reverse 45-degree placement of the feet. It is clear that either has uses, but fighters did not exclude one or the other. Both were employed through turning motions (and must again be utilized by practitioners today—as is my thesis). All these foot positions are shown being used in basic fundamental stances throughout the images of our martial literature—before and after weapons are crossed, with killing blows and thrusts, as well as in unarmed fighting. We see these positions utilized with sword and buckler, longswords, dagger, polearms, falchion/messer, side-sword, dussack, and rapier. As has been shown, we also find analogous matching images in Greco-Roman military artwork, Asian combat artwork, and 18th and 19th century fencing.

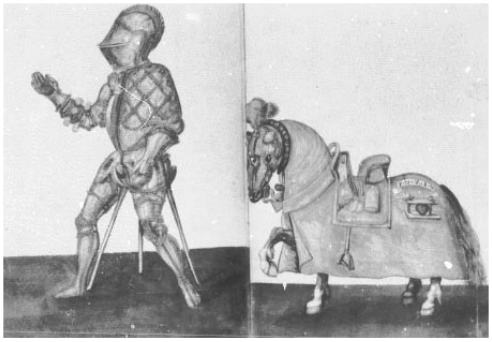







The feet do not "slide" at all in stepping during real combat. They quickly lift to move naturally—as is necessary on diverse surfaces and different types of ground. Real fighting did not take place on smooth classroom floors.



From a 16th century tournament book, an image of a knight seemingly standing with his feet at 90-degrees, but upon closer inspection it can be seen that he is sitting on a three-legged chair awaiting the mounting of his jousting steed. We then note he is actually sitting in a manner consistent with the position of mounted rider's feet in the stirrups, which is certainly not at 90-degrees.

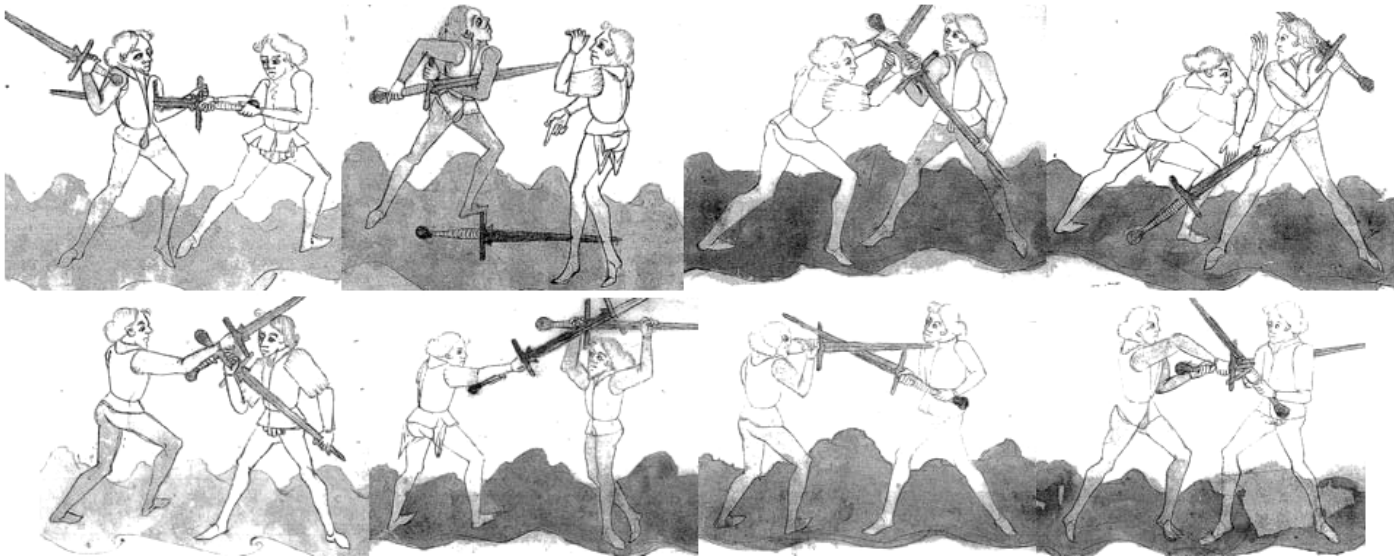
Similarly, a 15th century statue of St. George and the Dragon appears to depict him standing at 45-degrees, if we were to go by the position of his kneecaps and the visible left foot. When the dragon portion is removed, however, both feet are shown to be in what can only be the familiar 135-degree position.

A pair of 17th century statues, ostensibly portraying 16th century Landsknechts, expresses each combatant in the act of executing familiar fighting motions. Placed next to one another their feet positions now take on a different but altogether recognizable meaning.

At the end of his immense tome published in the mid-1620s, the Flemish master, Girard Thibault d'Anvers, gives us what is perhaps the most solid iconographic evidence for the simple action of stepping while turning the feet from a "closed" to an "open" position. As he completes his rush to thrust at a musketeer on the battlefield, his right foot is directed in a natural running position quite distinct from that of the footprints he intentionally provides to indicate how he rapidly closed upon his adversary. There is only one way for the rear foot to physically change from where it was on the footprint to where it ends. One foot turns as the other passes forward. Knowing this, when we compare his final foot positions in this image to those shown earlier for a similar closing action, it becomes impossible to imagine Thibault intends for a swordsman to close via the familiar 90-degree Baroque method of linear stepping with the heels aligned one behind the other.

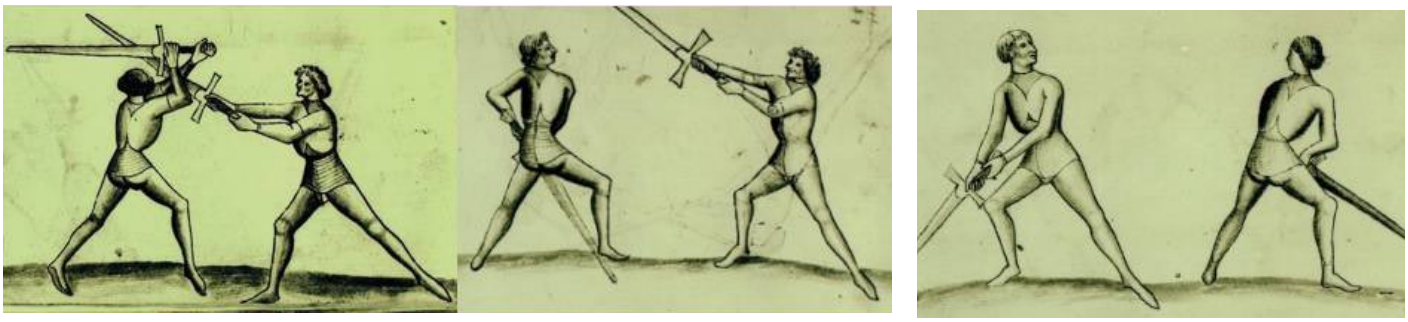
XXIX. Looking At Their Feet

In some cases the examples the source images provide for a given principle of fighting are wholly obvious. The action or technique is directly related as much to where the feet are as to what the arms and torso are doing. We can readily notice that with many paired figures one combatant has stepped naturally with their feet in a forward 45-degree position. Meanwhile, to achieve greater leverage the other fighter has moved to an open 135-degree position or has even turned his feet completely to a back-facing reverse 45-degree direction. The dynamic conveyed by the images is one easily recognized as occurring by the simple method of the turning and stepping motions of the feet as described here.



The remarkable leverage power and stability advantage achieved in employing this manner of stepping and moving is so tangible one has to express amusement over how much it has been overlooked in the modern exploration of historical fencing. It is about so much more than just a weapon being moved around.

Just as in their general depiction of the arrangement of weapons and bodies, I believe the attempt by artists of Renaissance martial treatises to illustrate the orientation of the feet is simply a reflection of their effort to express the reality of what happens in close combat. I do not believe there was a conscious purposeful attempt by artists to bring specific attention to foot placement for instructional purposes anymore than they were giving extra attention to limbs or weapons. Rather, for whatever movements and actions they produced illustrations for they took more of a holistic view of what they were portraying.



If we look at the illustrations as being representations of captured moments then nothing reflects "holding" a static stance or fighting by "remaining still" in a position. Whether showing an action just before it completes, at some point during its execution, or just after it finishes, everything is about the motion. The technique or fighting position illustrated is less important than the principle behind it.

XXX. Clues from the Fechtbuch Teachings: the *Waage*, the *Volta*, and the "Keys"

As with most any aspect of self-defense, I believe that what I have noted here as the closed, open, reversed, and turned positions of the feet occur intrinsically during the process of skillfully acting with violent intent. Even if historical fighters were using these things innately, rather than methodologically, the evidence is unmistakable that they were *doing them consistently*.

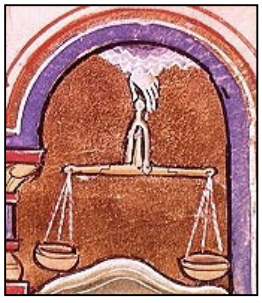
Thus, a final question occurs: Were combatants in the sources instinctively performing actions involving foot turning or was there some higher recognition of intentional foot placement at work? In other words, is there direct evidence they considered it systematically?

"…nothing is built on so much as footwork…"
- Joachim Meyer, 1570

To answer this we must accept that the function of footwork in any martial art is to produce movement to propel the body in one direction or another in a manner that maintains stability with the center of gravity. More than one source tells us to be "always in the movement." Master Johannes Liechtenauer's 1389 teachings state: "*Motus* [motion], this beautiful word, is the heart of swordsmanship and the crown of the whole matter..." as well that, "*Frequens Motus* [constant motion] holds the beginning, middle and the end of all fencing according to this art and teaching." The master Joachim Meyer in his treatise of 1570 provided considerable advice on the value of good footwork as a crucial component of skill in the *Art.* Meyer declared: "Much depends on stepping, therefore see that you give every stroke its step." (See the valuable Forgeng translation from Palgrave, 2006). About stepping, Meyer wrote: "all combat happens vainly, no matter how artful it is, if the steps for it are not executed correctly." He added, "For so much depends on this that everyone who has learned and practiced combat must acknowledge it."

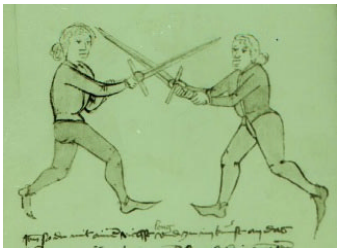



If we start with recognition of "Rule #1 for the Beginner Fencer" from the teachings found in the anonymous late 15th century *Der Alten Fechter*, then we accept that: "The leg in front is bent; the other one going towards the back is stretched." It is significant that regardless of fighting stance all the material on footwork presented here, as well as the collected historical images themselves, are consistent with this instruction.



The element of the "scale," known variously as *Wagge* or *Waage* ("Va-gey"), meaning "balance" was repeatedly expressed in the German Art of Fighting to refer to the posture of stable equilibrium necessary to employ motion and leverage. On footwork, master Liechtenauer is recorded as having taught to "step with caution and be sure in [your movements]" as if "standing on a scale [*Waage*] and adapt accordingly if you go forward or backward..." This statement is so simple yet so profound. Is this adapting accordingly really implying we do anything other than stepping by dynamically turning the feet direction so that we move as the images show? The legs do indeed move as if they were a scale, shifting balance from front to rear foot and back again as necessary when moving.

Paulus Hector Mair in his compendium of teachings collected during the 1540s described several times, *die wag* or *wagge* ("the scales"), which he called in Latin, *status liborum* ("balanced stance"). This idea of holding one's weight equally centered on the legs must be more than simply standing on guard in a fighting stance, since balance occurs naturally enough on its own. To specifically mention it then, arguably, implies there must be some larger significance to the concept.



In the opening of the mid-15th century fencing work known as the *Codex Wallerstein* (see the 2002 Zabinski translation) plate 5 instructs that to achieve superior leverage from a close bind we must put ourselves: "into the *Waage* so that you have a good reach and expulsion with your sword and so that you may attack and defend yourself against all that is necessary." In what is an apt description of the power of turning the direction of the feet to lower our center of gravity we are told "to stay low" and apply "good reach" behind our weapon, thus "making yourself small in your body so that you are great in your sword." We can understand that the idea of keeping good balance in fighting is intended as general good advice. It is instinct to brace yourself in close combat by staying low so that you cannot be easily pushed and pulled by the opponent or fall from the momentum of your own action. But the reference here to the scale directly in the context of two figures closing in with violent contact is, I believe, an unmistakable acknowledgment of its value in effecting leverage.

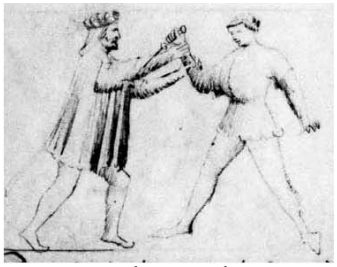
A fighter always wants to keep his balance and use leverage to his advantage. How else to do this without widening and deepening his stance by turning the feet to achieve the very positions the images show?

Similarly, on plate 29 in the *Codex Wallerstein* we are advised on effective close in fighting by being told that: "close-quarters fighting should have three elements: strength, reach, and agility. Strength is needed to go low in the balanced position and stand firmly on the ground. Reach is so that you can place your hands and feet correctly in all stances that you will assume afterward. Agility is your being good in all [reverse leverage] movements (pulling, punching, and arm breaking) and remembering them well so that you can use all these things quickly, make them hard [for your opponent], and assume the balance [*Waage*] position." Several examples are later given for the need to use the scale in unarmed techniques. Plate 67 tells us that in applying unarmed techniques with sufficient power the fighter must "assume the balance [*Waage*] position" while plate 102 again advises "assume the balance [*Waage*] stance firmly."

We can also consider that master Liechtenauer (who defined the Art itself as being "one of length and reach") recognized that to extend the sword in "striking, thrusting or cutting, with stepping out or in…passing around or leaping" were necessary. He next instructs to "step backwards or forwards, as it occurs, firmly and skillfully, rapidly and quickly…" He cautioned to "not step too wide, so that you can pull back and be ready for another step backwards or forwards."

There is no question that shifting between the closed and the open or the reversed placement of the feet is entirely consistent with this. Master Liechtenauer summed up the components of his method of sword combat with the statement that cutting, thrusting, or slicing by "stepping in or out [*Abe und czutreten*], stepping around [*Umbeschreiten*] or leaping [*Springen*], you will hit the other" (See Lindholm's 2005 Ringeck translation). Similarly, in his fighting treatise of 1410 the Italian master, Fiore dei Liberi declared, "there are four things in the Art, which are passing, turning, advancing and retreating." Further, Fiore described that when in a fighting posture it is possible to move forward or backwards without moving the feet. Again, while also matching his images, these elements are entirely accounted for with an interpretation that accounts for turning foot direction.

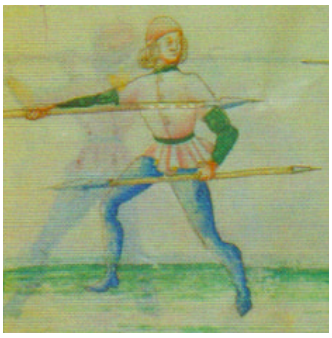
From the version of Fiore's work now in the Getty Museum we read how, "guards can perform a *volta stabile* [stable turn]." (Fol. 22r) A *volta stabile* he informs us allows the fighter to act forward and backward on one side without moving the feet. This does not mean the feet remain stationary or immobile, but that the "volta" is itself simply the turning motion shown here, wherein the feet do not actually have to lift or step to move. Thus the body's posture (and therefore its leverage!) indeed remains quite "stable." What kind of *volting* or "turning" is this? We can now say it is the turning of the feet back and forth "front to rear" in a forward and reverse action. I contend this volting is not merely a stepping around of the rear foot nor a twisting of the torso, but actually involves turning the direction of the foot (and hip) in place as described here. Fiore is showing us nothing distinct in his fighting postures that are *not visible in contemporary German sources as well as several later Italian works*.



But Fiore used the term *mezza volta* to refer to a simple passing step, and *tutta volta* to refer to turning motion in general. In the same way, Italian fencing sources of the 15th to 16th centuries make reference to the *volta*, and even the *demi-volta*, as being turning motions. Later use of the term *volta* in fencing seems to have narrowed to refer to a specific action of pivoting around the body by moving back the rear foot without regard to earlier changing of foot directions.

One of the most intriguing statements comes to us via the teachings of the master Filippo Vadi in his treatise from circa 1482. Vadi described the legs themselves as being like "keys," in that they "open" and "close." (See Fol.15r of the 2002 Chivalry Bookshelf edition). What is this opening and closing; this unlocking by keys? This is not accomplished merely by passing the legs forward and back. It must then surely mean the fighter's stance and motion changing by the turning of the feet allowing stable, rapid, and balanced movement. We may even view the foot itself as being shaped like the end of a key that turns in a lock. Elsewhere in Vadi's treatise he gives an insightful explanation of the simplicity and subtlety of this method of standing and shifting the feet: "I advise you, when you've closed in, set your legs paired, you will surely be lord, able to close and strike valiantly." (Fol.11v) How are the legs "paired" in doing this if not by simply being balanced in the open 135-degree position, as if they were a pair of matching keys (or the plates of a scale)?

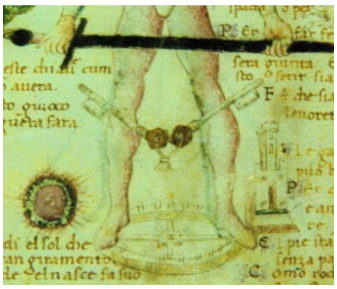
In describing fighting at crossed swords (i.e., a bind), master Vadi further tells us to strike left or right with one edge or the other again and again as we need, "provided that knees bend on each side." He adds the instruction to "bend the right knee and well extend the left one." As witnessed in my online video demonstrations, this knee bending occurs inherently as the feet turn and is an action that results in nothing other than transition between what we have here called the closed, open, and reversed directions of the feet. This action not only improves leverage when weapons cross but adds power to blows. Again, the motions as I perform them match the images and the text.



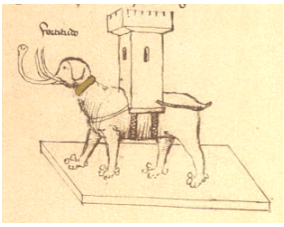
To end his instructions on the matter, master Vadi then declared that no one should contrast or disagree with this teaching because "you are stronger and more confident, hard while defending, and quicker to fight [make war], nor can they bring you to the ground." (Vadi, Fol.13r, p. 78) Once again, the only way to understand how all these things can be possible from such a simple action as bending the knee (thereby turning the feet directions without changing body facing), is to perform it as described. The result, just as Vadi states, is substantially improved leverage for binding and striking while maintaining firm balance. As with German descriptions of the "scale" everything about the simplicity of the open and closed angles of feet is right there, from the quick turning that produces power in cutting, to the leverage advantage in binding and grappling, to the difference in doing this compared to simple passing steps.

Finally, Vadi states that "this is a better footwork than the stepping of our elders" we can understand that by this he must mean moving by the passing step of one leg behind the other, which is certainly slower than a simple turning of the feet. The statement is unusual in that some three generations earlier Fiore dei Liberi shows the same foot positions. Was the erudite Vadi who taught at the court of Urbino equally unaware this was known to the Greeks and Romans? Or was Vadi possibly referring to something about the nature of earlier combat during the Medieval era, in the age of maile? Warriors in maile byrnies using short slashing swords and carrying large shields would have arguably had far less practical utility for turning footwork and "open" positions over simple passing steps. And yet, as we have shown, there are many illustrations of them doing this.

If this all were not enough, let us ponder the significance of the additional symbolism master Vadi supplies for the legs and feet. If the sun symbol indicates, as he tells us, the right leg's passing motion like that of the sun going forth and returning, while the left leg's is represented by a castle, stationary as a fortress base to rely on, what then must we make of the compass wheel? Vadi places this below his figure indicating the turning of the feet. All of this meshes well with what has been presented here.



We may note how in Fiore dei Liberi's treatise his four symbolic animals include three that are famously quick and agile, while his fourth is the elephant representing strength. This hardly symbolizes that the fighter should rely on physical might or be slow and sluggish—something that elephants in historical combat certainly were not. Rather, the elephant is renowned for being hard to stop once in motion, yet notoriously difficult to move when it doesn't wish to be moved. These qualities aptly describe the very advantage of leverage achieved when employing the nimble footwork of turning motion as interpreted here.



Tellingly, Paulus Kal's 15th century combat treatise includes a symbolic figure with stag feet as a metaphor for being able to quickly move to get in and out of his opponent's blows. We may note that male deer do not do this by tip toeing, stretching their rear leg, or shuffling their feet. Rather, they leap with strength and speed, changing direction with ease and closing to use their antlers with forceful impact. We can now view this symbolism as an apt description of the very working of the *Waage* with its advantage of motion and leverage as presented here.

From all this we logically form the hypothesis that rather than any particular guard or fighting stance, it is in fact the turning of the feet from closed to open or reversed directions that is itself the *Waage* (the movement of the "scale"). It is all a matter of motion. Perhaps the *Waage* and *volta* each should be looked on as a verb as well as a noun? Whether a half turn of one foot, a full turn of both, or a step around that turns the body this is a "turning of the key" to move as if on a "scale."

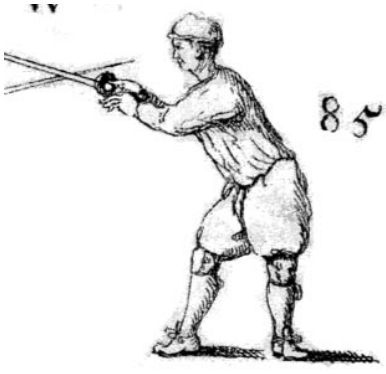
We may take the view that the changing placement of the feet in open, closed, and reversed positions is a natural intrinsic aspect of close combat, such that this explains why the sources do not unequivocally address it. We are still left with the matter of how to explain the many example images they provide so clearly showing feet directions. And we must account for the frequent references they make to motion, balance, and turning, *all in the context of their advice on the importance of footwork.*

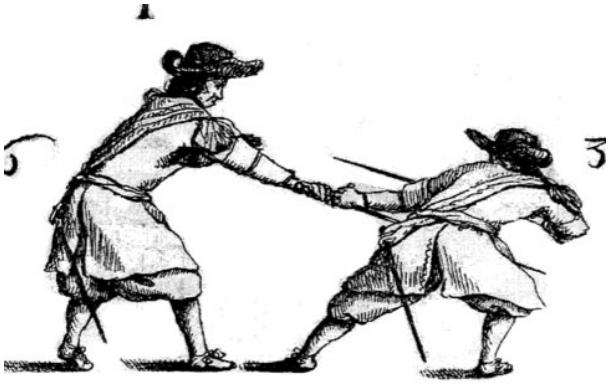
Once understood, many illustrations in the source works take on entirely different meaning after considering the evidence for angles of foot placement. For example, this figure from Joachim's 1570 treatise, also used in Jacob Sutor's book in 1612, can be interpreted not as a static posture with a raised rear leg but simply the open position – perhaps even as a passing "turned foot."

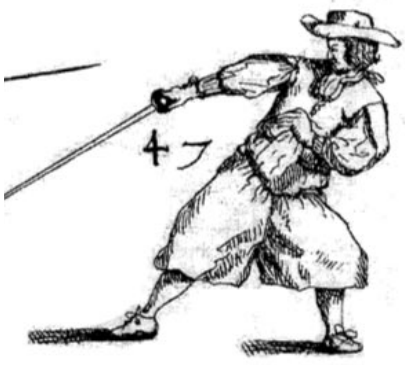
Here, Meyer's staff fighter stepped from the clearly indicated footprint to his current position facing an opponent directly to his left side (the viewer's right). This simple diagonal voiding movement with his left foot leaves both his feet essentially still angled as they were. Neither position is one where the feet are at 90 degrees or where the heels are in line.

The method of Joachim Meyer's fighting teachings, in particular—whether for dussack, dagger, halberd, rapier, or two-handed sword—cannot be properly practiced, or even correctly understood, without constant use of foot placement as has been described here.

A recent translation of Johannes Georgius Bruchius' 1671 rapier work (by Reiner van Noort) gives us yet another clue to the feet turning for leverage. Echoing master Vadi some 200 years earlier, we read: "This quick and beneficial movement of the body and of the rapier are the keys to this fencing-art, by which one opens and at the same time again closes his Body. Yes, it is just as equal to us as a strong and solid bulwark, by which our body is kept, and our opponent is prevented in his intention."



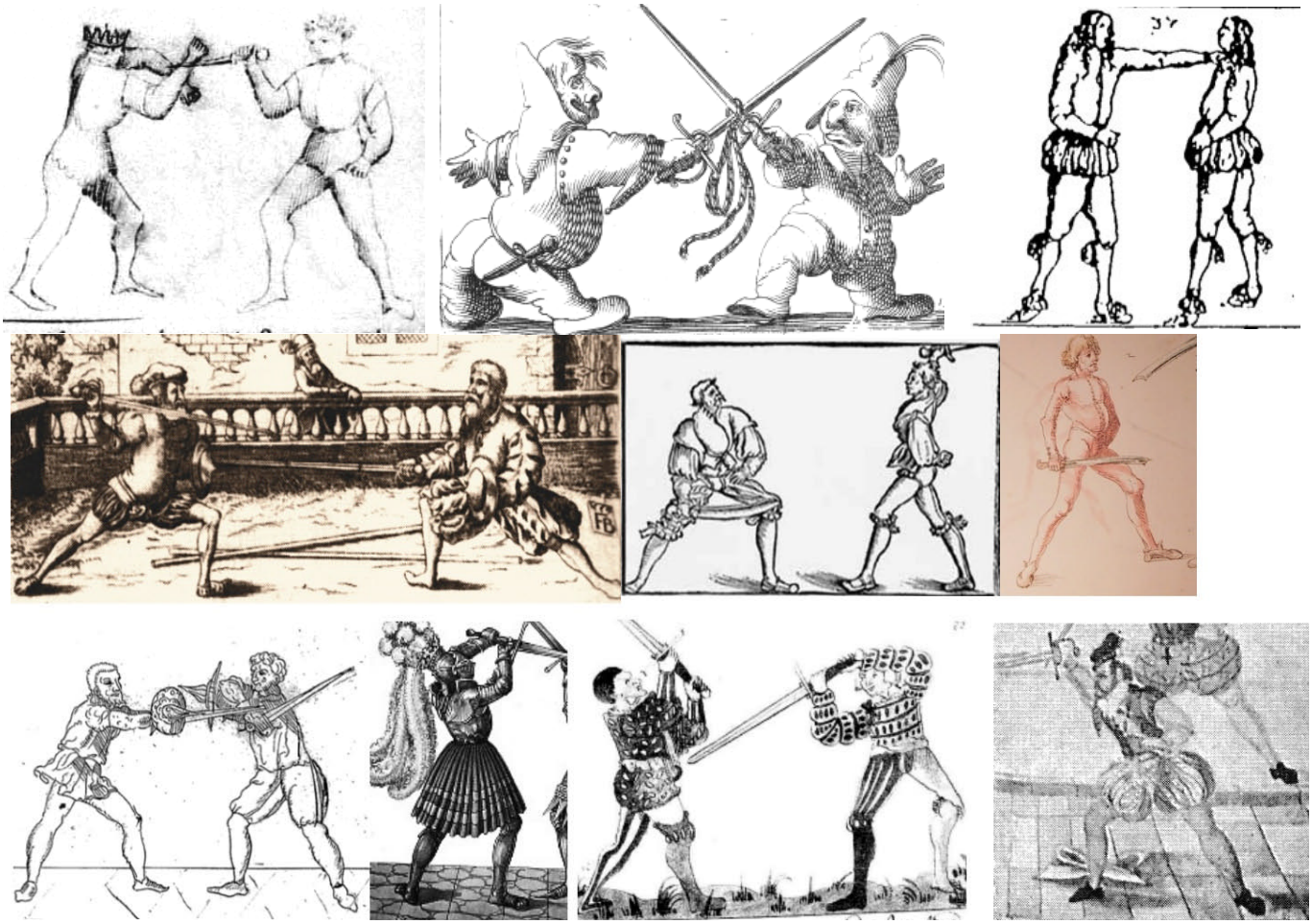




As described earlier, the appearance of side by side examples of both open and closed position within historical combat art may be a way of expressing the inherent motion of turning between them that occurs in combat (—motion that is not the familiar 90-degree linear back and forth stepping which is the foundation of modern fencing).

These motions, natural as they may be, are not inborn and cannot be applied successfully without first exercising in them. We may note how in his treatise from 1570 the master Giacomo Di Grassi, who included examples of the foot angles examined here, wrote: "the feet in this exercise do move in diverse manners" and from them more than anything "springs all offence and defence." Di Grassi went on to advise, "For the obtaining of this strength and activity, three things ought to be considered, to wit, the arms, the feet and the legs, in each of which it is requisite that every one be greatly exercised." To this we may add the wisdom of Sir George Hale, who in his 1614 rapier instruction declared, "all cunning in this Art consisting more in feet than hands." And let us not forget the words of master Joseph Swetnam from his 1617 treatise, wherein he wrote that "the use of the foot commeth not by nature, but by practice."

Textual research of the historical sources remains incomplete at the present. But what is known strongly supports the case I have made here. As established, treatises from the early 15th century to the late 16th century all depict fighters using the same large steps, the same wide stances, directing their feet in the same ways, and at times even holding their feet placed close together. We have now shown that on these matters there is nothing inconsistent or contradictory within the text of their teachings. It is by looking closely at the many examples in the source literature of historical European martial arts, as well as associated artwork from the Medieval and Renaissance eras, that a comprehensive holistic impression develops as to how fighting men really moved in close combat. *When we reduce the subject to its most essential element, discovering how they moved lies at the very heart of historical fencing studies today.*



Depictions of the feet in these positions are ubiquitous throughout historical combat artwork. They are neither distortions of perspective nor artistic license. And they are not explainable by figures simply rotating the body or traversing (stepping diagonally). There is only one reason for moving with the feet placed this way and only one way of moving to step between those positions during violent action.

XXXI. Virtues and Advantages: Why Do This?

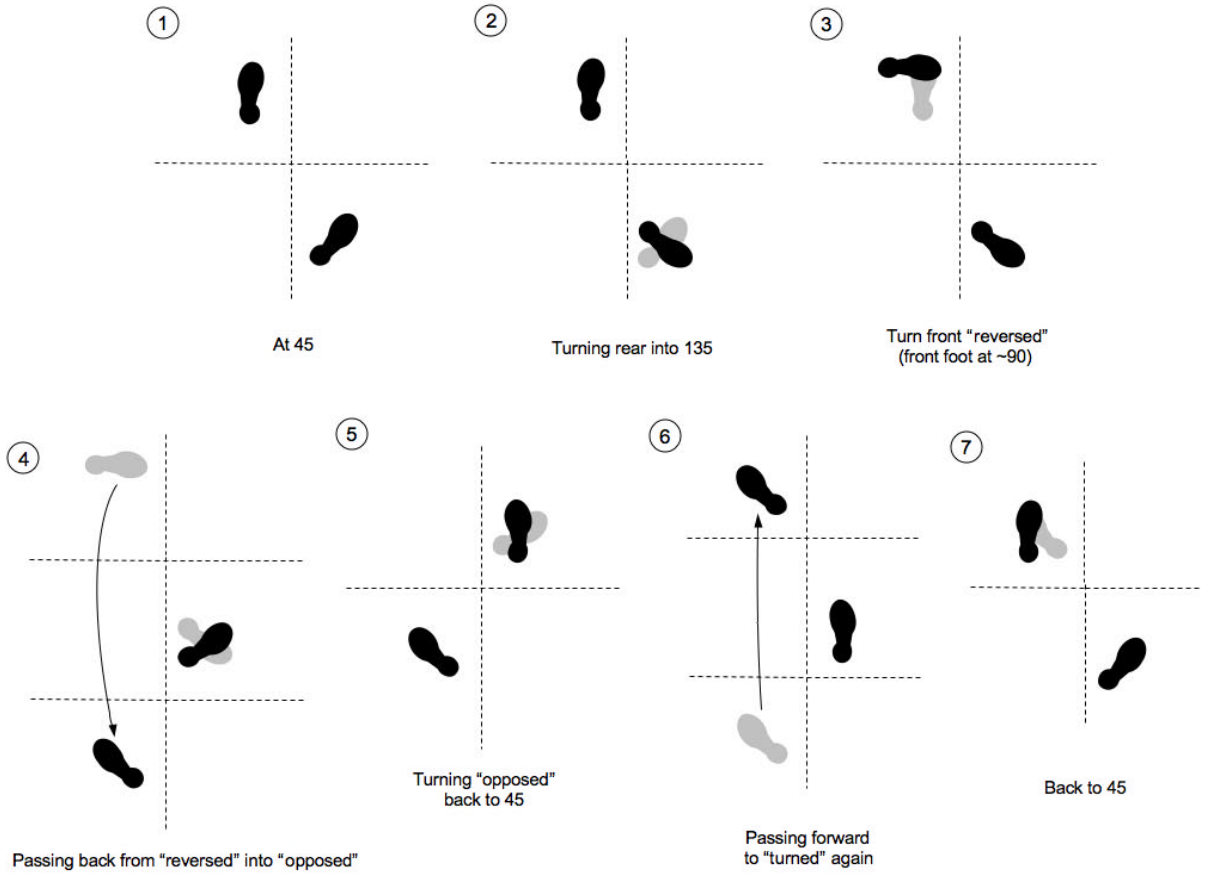
So far, I have documented the historical fact of fighters postured with their feet at a 135-degree "open" position as distinct from a "closed" 45-degree one; connected it directly to the "reverse" as well as "turned" foot positions; explained the bio-mechanics of how this transition is performed by a simple turning of the feet; and established textual evidence for understanding how this subtle motion may have been conveyed in Renaissance martial arts teachings. The remaining issue to include is: "Why did they do it?"

We have already stated the leverage advantage achieved by the open stance, and how the transition—from "closed" to "open" (or to "reversed") and back again—provides additional impetus to many close-in actions. We have further already addressed how understanding and employing these elements was forgotten as later fencing styles slowly excluded close-in body contact, discarded use of the free hand and grappling techniques, as well as lost the necessity to deliver the most powerful blows possible with assorted weaponry.

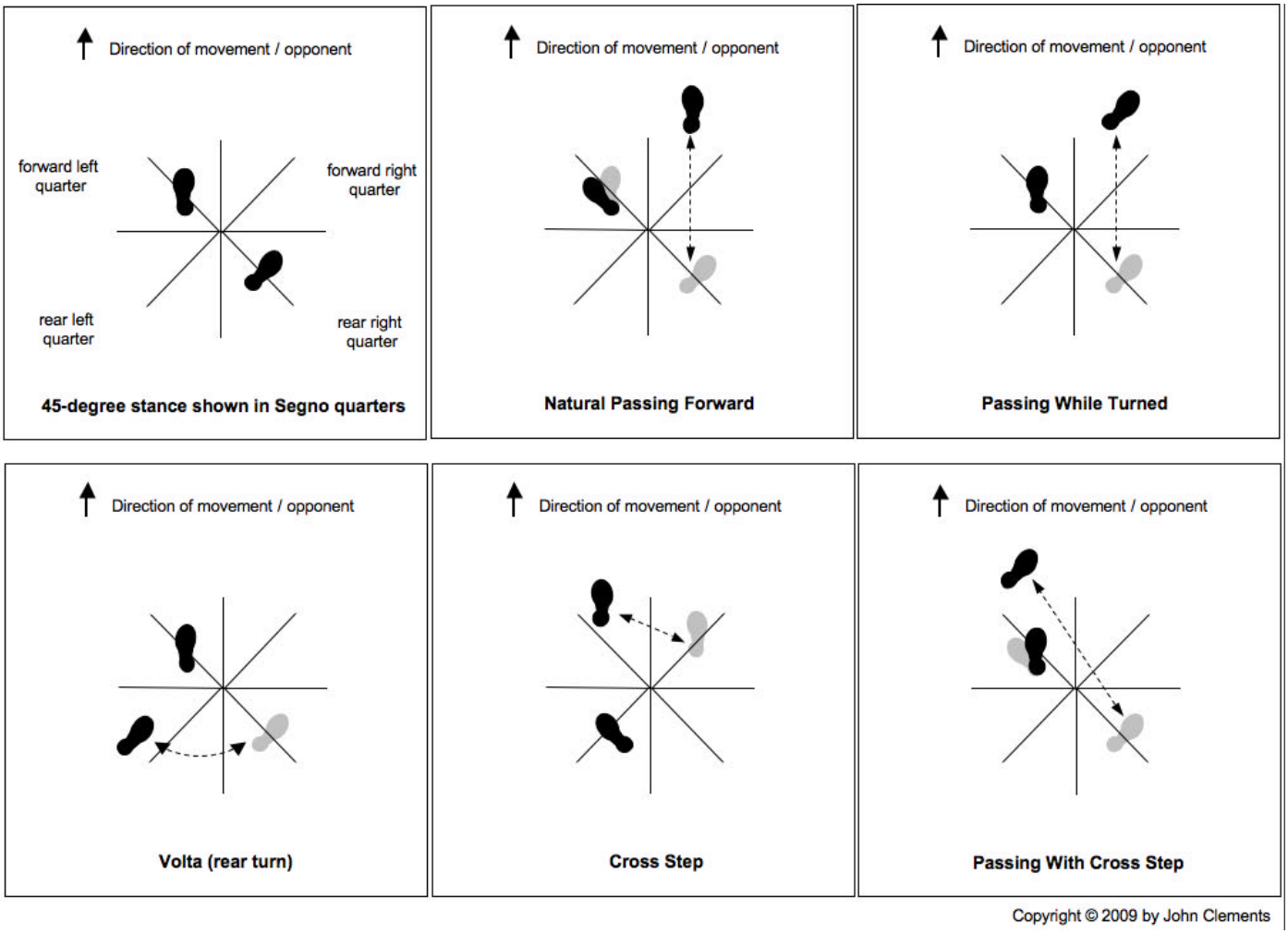
This provides for understanding why and how this manner of placing the feet and stepping was historically employed. For the modern practitioner of Renaissance martial arts, the virtue of developing proficiency in it is its own reward. The student of the craft will achieve a smoother, more powerful and balanced footwork. Gaining adeptness in turning the feet to these positions while executing techniques provides the fighter superior leverage and stability that then adds power and speed to actions. The student will come to readily achieve stances that otherwise seem awkward and even nonsensical by any other means. A keener appreciation will then develop for how fighting postures are transitory positions accomplished by transitional motions that just make greater physiological sense out of the source teachings.

Performing it cannot but help encourage energetic motion of the very kind self-evident in the historical combat artwork itself. And the advantage in reach and speed it provides during free-play or sparring is something easily discovered. *Finally, this interpretation simply explains things better*. It explains more of the historical methods than is otherwise possible by other interpretations. We have worked out a theory of foot placement and stepping motion as depicted in a multitude of artwork, integration and analysis of the images and text with experience in physical exercise, and found support for it in nearly identical actions throughout the world's combatives going back thousands of years.

Example of Foot Placement in Stepping and Passing



The simplicity of the motions and movement that can be achieved is nothing less than phenomenal, as the fullest range and force of actions simply cannot be ideally performed without regard to including this. Doing otherwise can end up with a kind of unauthentic fighting style that is part modern fencing, part Japanese kenjutsu, and part ad-hoc fantasy play.



While the historical source texts are not explicit in teaching to move the feet in as structured a manner as we would prefer from our modern vantage point, they nonetheless did teach it. They did not express it by writing something like, "Okay, make sure in this technique here you go from an open to closed foot placement" or "From here you would reverse feet directions." Instead, the action is implicit in the images themselves while reasoning that in the act of fighting the reader will themselves know to naturally employ leverage and balance as needed.

Online Video Demos

Because so much more can be shown in film than in words and pictures alone, I have provided some short video clips to help explain my interpretations. These show the simplicity of how placing the feet at the different positions is an integral component of the martial arts of Renaissance Europe.

On the Vaage and the "Turning the Keys"

Demonstration of Foot Turns

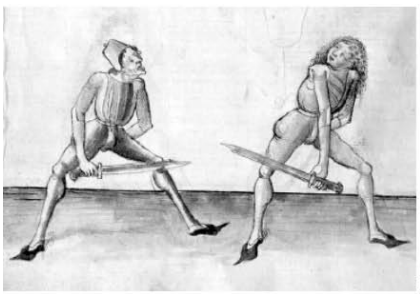
Keys to the Scale

XXXII. Concluding Thoughts - "Keeping Scale" and "Turning the Key"

Without reference to the 135-degree "open" stance interpretation, explanations for the "reversed" stance, the "turned" foot, the "opposed" and "crossed" stances, and other significant foot positions in the Fechtbuchs remain unexplained and continue to be ignored.

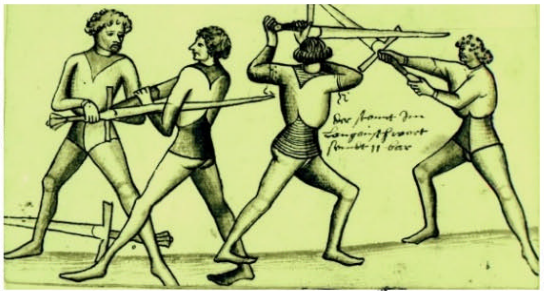
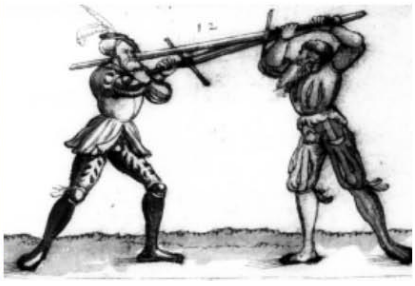
As I described in my opening, standing and moving in this way was something that I came to naturally as a result of vigorous long-term practice at the techniques and methods of the source teachings. I found myself first doing it, then realizing I was doing it, followed by analysis of why I was doing it, showing it to others next, and then much later examining it as a doctrine or theory. It may very well be that something similar explains the presence of these positions within some 18th and 19th century fencing styles where no formal teaching on it is found. Just as with my own experience, it may have very well been something that developed intrinsically among Classical, Medieval and Renaissance sources—something organic, holistic, and without need for special instruction or elaboration. Perhaps this reflects the reasons for their not expounding on it as anything requiring some thorough expression. Whatever the case may be, it does not mitigate the fact that in the source teachings they did widely employ it.

The evidence for these fighting positions and associated manner of stepping is obvious when proper attention is paid. It appears throughout the source literature, from the earliest known work in the late 13th century to rapier treatises of the late-1600s. It appears in German and Italian sources as well as works from other regions. It is discernable with all weapons, at close and far ranges, and for both armed and unarmed fighting. It is reflected throughout combat artwork of the Medieval and Renaissance eras and can be found in classical Greek and Roman examples as well as appearing in fighting images and self-defense styles from around the world. As obvious as it is, modern practitioners and scholars of this subject have overlooked its importance. Its significance in the martial arts of Renaissance Europe has been entirely ignored in formal research until now.







What this method of stepping involves, and what it provides, is the ability to move explosively with force against an opponent acting similarly, and thereby turn the body to apply necessary counter-leverage. To close against force with sufficient energy and momentum allows the opponent to then be thrown, tripped up, taken down, his weapon impeded or taken, or a more powerful counter-strike delivered—all while gauging the pressure and motion of his body and weapon. Yet, this critical element is something simply not overtly present within 18th and 19th century fencing theory, nor addressed within their classical and modern versions wherein opponents are not earnestly trying to close and make violent body contact, grapple, or seize weapons. It is no wonder then that this component, which the sources so frequently represent and which has been in front of everyone's eyes for so long, has gone almost entirely overlooked among historical fencing enthusiasts for more than a century.



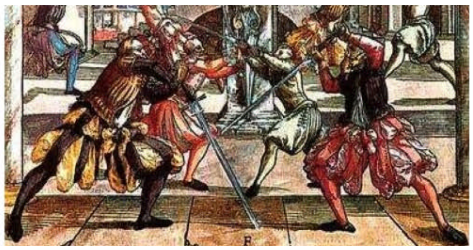
We may ask: What is more likely here: that this is all just coincidence of artistic expression, or that today's practitioners reconstructing lost and forgotten fighting disciplines have missed out on something because we have largely based our assumptions about footwork and motion on post Baroque-era fencing sports while being unduly influenced by modern theatrical incarnations and the imaginings of living-history play-actors?

I was asked by a student: why is it this foot placement and its associated manner of stepping is so clear in the source teachings and so obvious now once it's pointed out, yet has been so universally missed by enthusiasts of historical fencing? In other words, why hasn't it been figured out and explained before? My reply to him was, when is the last time you had to fight for your life with these skills or weapons? He understood the meaning of my reply. If you don't use these skills in earnest, then you don't train in earnest. So then why expect things to be recognized easily or understood accurately? Whereas, the more you practice vigorously, with genuine martial spirit, and with the proper physicality, the more things become intuitive. It's not about mimicking the illustrations, but coming to approximate them through the effort of exercising the fighting techniques in the same way.

Once you gain the necessary physicality to perform an action earnestly you may identify it more readily in the sources. And this physicality itself will come from rigorous long-term practice of the history teachings. But without it how are you going to develop ability to recognize things for what they are? This is all the more so if you aren't doing realistic exercises using accurate training weapons or even the proper footwear. Another factor in this, I think, is that we have been "brainwashed" by the near constant misrepresentations of Medieval and Renaissance combat in pop culture. An assumed modern 90-degree stance often gets projected onto any historical image with feet at all close to 90-degree position whether it's really there or not. Combine this with from influence stylistic manners of Asian martial arts and you end up with something that is not the way Renaissance fighting men moved.

I have presented here the proposition that this idea is indispensable to correctly understanding both Medieval and Renaissance fighting skills—even as it is alien to most people's conception today of swordplay and personal armed combat. There is little doubt modern ideas of both are based upon activities and practices that do not involve, require, or even permit closing in to grapple, striking energetically 360-degrees around to full-body targets, or fighting with either hand, against opponents doing the same. Without these things no real concern develops for how to step and move as presented in the historical source teachings addressed here (e.g., as witnessed with modern forms of swordplay such as such as sport fencing, stage combat, kendo, LARP, historical-role playing, video game combat, etc.).

This presentation has not attempted an analytical review of the fighting stances within each historical source work, but only to establish that the 135-degree foot position and its associated ways of stepping cannot be ignored as integral elements of Renaissance martial arts.



Perhaps part of the very nature of studying fighting arts is that there is an ever-present subtext of conflict, challenge, and disputation between practitioners. *But, with research into historical European martial arts, if you have a theory that does not fit the evidence then you have to amend your conclusions.* Stepping in this way, opening and closing and reversing, volting fluidly to traverse or cross, is the missing link of continuous movement in historical fencing. It is the scale that "balances" your actions…the "key" that "unlocks" the Art. The serious modern student of this craft can no longer afford to overlook it.

I have long expressed that much of this subject is tentative. Many times over the last three decades I have repeatedly revised and amended my own opinions and understanding. I will no doubt continue to do so. Practitioners may elect to dismiss the interpretations here and continue ignoring the evidence for how Renaissance fighting-men moved. But be assured, other students of the subject will not discount the matter—and they will be the more skillful and authentic fighters for it.

The value of applying the foot positions and stepping movements presented here are self-evident. Practitioners are advised to disregard them at their own peril.

John Clements
February 2010

Addendum: Some Background

"Read then, but with judgment;
learn, but with profit;
correct, but with reason;
discourse, but with foundation…"
– Maestro Francesco Marcelli, 1686

During the period of roughly 2001 to 2003, I had continued to accumulate considerable evidence to support a hypothesis that this stance was not a matter of artistic expression in historical sources. I had further acquired significant skill myself in subtly employing it during my own free-play (sparring), such that it became a source of no small advantage. By 2004, other students of mine also began to notice how particular leg positions in certain manuals related to intensity of movement and striking within certain historical sources. But the matter went no further than suggesting the necessity for modern enthusiasts to exercise similarly in order to emulate and approximate basic stances and strikes. The actual biomechanics and kinesiology involved in the existence of key footwork found throughout the entirety of Renaissance martial arts teachings was not suspected.

By 2005, while recovering from a serious arm injury that for some 6 months prevented my training my upper body, I instead re-focused myself on footwork. This coincided with the establishment of my Iron Door Studio facility outside of Atlanta, Georgia. With the advantage of having a facility I turned my attention to the earlier matter of foot positions in stances. I began systematically working out the hunches I had for sometime been forming about the relationship of fighting stances to foot positions and movement within Medieval and Renaissance combat.

At first, I worked on physical execution of this new understanding to my own satisfaction of competency. I became convinced of the martial validity of my discovery and the supporting historical evidence for its use. The outcome of this was nothing short of a revelation. A "eureka" moment occurred that produced for me what I felt was a profound and new understanding. But still it was imperfect and incomplete. Over the next year or so I continued developing it in conjunction with several other insights that had occurred as a result of virtually "secluding" myself within the "laboratory" of my training studio.

"Does understanding all this invalidate previous interpretations of basic fighting stances and combat motions? Only if a student has completely ignored these elements or chooses to continue ignoring them."

To complete this major new view of footwork and stepping, however, more work was necessary. The next logical stage was to then introduce aspects of it into teaching a new novice student and observe the affect (whether it made a difference or improvement in progress). I was soon satisfied that this was the case. Tutoring of a select student produced excellent results that were consistent with my own experiences. But questions and doubts remained. The ideas needed greater exposure. At the 2007 ARMA International Gathering I delivered a formal presentation on the subject revealing some of my findings and my theory of open and closed positions. But, because I could still not yet explain with sufficient legitimacy the relationship involved of stances to footwork (nor fit everything together into the developing new curricula) I concluded with the matter as still pending.

Several more incidents of insight transpired over the course of 2006-2007. Many key aspects of the source materials suddenly fitted together and the cumulative effect snowballed on top of one another to bring to light an entire new perspective thereby advancing *a radical new ARMA curriculum*. I became satisfied that it provided for application of core principles in a manner superior to the existing theory and method we had been following. I had so far shared only small portions of this, including my ideas on foot positioning, with just a few students. I then introduced to ARMA members a new curriculum that included these elements (along with four other

major new components of a revised core curricula). Teaching this material further refined it and led to several more major discoveries and insights. [See the recent piece here on our "Rosetta Stone."]

By early 2008, the new curriculum had been established within ARMA as the foundation for our club's Member Training Program (MTP), as well as for my private classes. This curriculum features a holistic integration of the historical source teachings that approaches their methods as consisting of natural, universal elements of close-combat. The impact of this and the resulting exposure of its central ideas further refined our knowledge of the craft. As a result, the final element in this puzzle of footwork and stances was resolved in yet another episode of sudden intuitive insight.

"Continuing with the usual status quo of current orthodox interpretations without inclusion of or regard to these elements is foolish. It is akin to struggling to fit new astronomical observations into older models of celestial spheres. There comes a time to drop the older models and use the ones that explain more observations and answer more questions."

Continued practice of this footwork, combined with additional research, produced a definitive interpretation and demonstrably effective application. Not only does the evidence support this element as fundamental to Renaissance martial arts, it is now integral to the ARMA's effort for its modern revival. In January of 2009, I began work on this paper. I also soon began limited discussion of it on the ARMA member's private Internet board. In May of that same year, I gave the first public presentation on this topic to an audience of scholars outside of the ARMA when during delivery of a paper at the Scientific Conference on Martial Arts and Combat Sports at the Polytechnic Institute of Viseu, Portugal, I performed a brief demonstration of some of the material presented here. The center issue of that presentation focused on "Form from Function – motionality within Renaissance martial arts" (a version of this was made available to ARMA members in April 2009). My topic centered on the question of what movements are actually being performed in our instructional source literature—movement being action within space and time that shifts balance and leverage in relation to an opponent or weapon. I stressed that this issue of motion was at the *very center* of our exploration and practice.

In July of 2009, at the 3rd ARMA International Gathering, in Houston, Texas, I presented to our membership a course that featured a concise description of my Vaage and "Key" interpretation. The material expanded on previous versions while being presented as one of several fundamental components of our present curriculum. Few elements were excluded. To raise the credibility and improve the legitimacy of Renaissance martial arts practice, I have long attempted to give students and practitioners the tools to teach themselves. I have always aimed a large part of my efforts toward assisting people to study the sources with confidence and to avoid bad form and poor biomechanics. But, as I come more and more to see what I consider enthusiasts misreading the sources because they lack the basic tools by which to properly move and act, I feel I have to take action. That is why with my apprentice, Aaron Pynenberg, we have chosen to share here some of what we have achieved working at Iron Door Studio.

There is no question the 45 and 135-degree positions of the feet are meant to be used in conjunction with one another using natural, coordinated stepping. You cannot fully employ one without the other. I attribute a good portion of my own substantial skill in Renaissance fencing to mastery of this combined element. While I believe that the conception of the *Vaage* and "Key" as I have discerned is extremely crucial to the proper understanding of this subject, and am confident it is something original and unique to my work, I do believe it is an element so significant that it simply cannot any longer be kept from the greater historical fencing community. Without incorporating it into working theories all interpretations of Renaissance martial arts in my opinion are flawed and incomplete. If we are to raise the standards of credibility and legitimacy, others must adopt this understanding or continue to follow imperfect and inferior interpretations of the historical sources.

"Long-time students of this subject will surely experience a certain cognitive dissonance at this material. But don't blame the messenger. The sources themselves are clear enough."

I have little doubt that this important insight will, for a while at least, be met with resistance (or denial) among some enthusiasts. But its truth will filter down and eventually sink in for the better of the subject's credibility. It will have influence and it will change minds. I have little doubt that despite the evidence this conception of the scale will be unacceptable to some practitioners. For a few enthusiasts, acknowledging its role would certainly tend to invalidate their past experiences and interpretations, and thereby contradict their current understanding. For others, specifically those with habitually inferior footwork or physical conditioning that will prevent their performing the action, it will simply be unacceptable no matter what. On a personal note: I certainly fully expect that, as in the past with other original discoveries and insights I have made in this field, my teachings on this concept will be borrowed, copied, taken, and otherwise appropriated by others without due recognition or proper credit given to my substantial work whether or not I make it public. I am fully aware, though, that every time I raise the bar and push the enveloped in this craft, there will be haters who will feel left further behind and so start lashing out at me personally for their own shortcomings. That Is not my concern and to such persons I feel nothing but pity. My advice is: don't personalize it on me for your having missed it merely because I'm the one now pointing out how obvious it is.

Professionally, I think it's no secret with a lot of practitioners and enthusiasts today they have abominable footwork. It's often sloppy, lazy, and unrefined. Without having good footwork your understanding of the motions and techniques are not going to work right. And this is not about just holding stances and exercising the legs, but of applying good core movements. To interpret the sources competently you have to have a grasp of their biomechanical application and this cannot be sound without good footwork. It all begins with footwork. And this does not mean adapting the stylized stepping of some Asian system or Baroque fencing style, but employing the footwork that comes from the martial arts of Renaissance Europe. But, look around the Net and you will not find this understanding of stance and footwork described in video demonstrations or online materials outside of the ARMA—prior to 2009. Nor has an interpretation of the important elements of foot placement and stepping as described here been previously included, addressed, or hinted at within any published books or articles on this subject before its presentation here.

"No martial artist, or dancer for that matter, can maintain ownership of patterns and styles of physical movement even if they originated them. One cannot copyright or put a patent on body motion. Only words and images can be owned and legally protected by their creators. I make no such assertion here with regard to how I have been employing and teaching this interpretation of the Waage, volta, and key. However, I do declare as proprietary the original method and system I developed for teaching my interpretation."

It is not the purpose of this paper to try to explain or understand why modern students and historians have missed this important element of foot placement and stepping. Enthusiasts have nothing to blame for their ignorance other than acknowledging how awareness of matters is often a result of assumptions made. Serious exploration of this craft's genuine historical teachings is a recent phenomenon. But the sources influencing understanding of it, the sources affecting appreciation of its true nature, and the ideas influencing habits of practice, have all been at work far longer. It's past time that new perspectives take hold that further raise the credibility and legitimacy of the modern practice of this craft.

It has been said before: “What can be learned can also be taught.” But it is important to understand that, as with many areas of combative action, by its nature there are several important subtleties of performing fighting motions that must go unaddressed in an academic article. These elements, right before everyone’s eyes for so long, have been routinely missed by modern practitioners and researchers. (I have myself repeatedly critiqued both current and former students and members on their failure to include this important element in their ideas on specific source works or the teachings of certain masters—Fiore dei Liberi and Joachim Meyer, especially.) This discovery is, I believe, yet further reason for following a holistic cross-source study of all the historical works rather than a narrow focus in one particular text or author. Things take on larger meaning when viewed in a larger context that recognizes common elements. These movements should not really be anything unfamiliar to anyone who understands anything about modern dance, let alone any number of Asian fighting art styles. But admitting they are there may mean for some people an unpalatable acceptance that what they have been assuming and practicing for many years has been considerably flawed and incomplete.

Though I previously kept my theories on the matter restricted, the ARMA website has long hosted numerous photos from the years 2000 to 2004 showing my employing the 135-degree position when teaching in Texas, Sweden, the UK, Hungary, Greece, Mexico, and across the USA. In 2002, a video was uploaded for ARMA members of my performing longsword stance transition specifically using the deep wider 135-degree open stances (sans turning foot motions). This video has continuously remained online for viewing.

After three decades now of pursuing Medieval and Renaissance swordplay, I have no doubt that I came to employing these elements by a natural means in the course of years of intense physical practice. Others have probably done the same for some elements to one degree or another without yet realizing it (I have been witnessing this very thing among practitioners within the ARMA and elsewhere for some time.) But, as I described in the opening of this paper, while moving and acting in this way may seem counter-intuitive to some practitioners, for myself it was something that I came to as a result of vigorous long-term practice at the techniques and methods of the source teachings.

It may very well be that just as with my own experience, among Classical, Medieval, and Renaissance sources, placing the feet and stepping in this way may have very well been something developed as something innate, organic, holistic, and without need for special instruction or elaboration. Perhaps this reflects the reasons for their not expounding on it as anything requiring some thorough expression of doctrine. Whatever the case may be, it does not mitigate the fact that in the source teachings they did indeed constantly employ it.

“It makes sense that the more clarity and simplicity we bring to examination of the historical teachings with our curriculum’s holistic approach, then the more students see things and are better able to teach themselves by gaining greater insight into the underlying biomechanics. Practicing more skillfully is then about more effectively applying key principles in core movements. All it takes is to just look with new eyes.”
– John C.