Martial Studies 2

Hing Chao · Daniel Jaquet · Loretta Kim *Editors*

Martial Culture and Historical Martial Arts in Europe and Asia

A Multi-perspective View on Sword Culture

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Martial Studies

Volume 2

The proposed book series is the first of its kind to focus on the discipline of "Martial Studies", which have seen a sharp rise in interest among researchers in China (including Mainland China and Hong Kong) and internationally over the last few years. "Martial Studies" is a field of research initiated by Professor Ma Mingda, widely recognized as the foremost scholar in the research of the history and culture of Chinese martial arts. Prof. Ma is also the emeritus editor of this book series. "Martial Studies" takes as its object of study the history and culture of martial activities in society, particularly in China, and encompasses a wide range of subjects including history, archaeology, anthropology, Chinese philology, literary studies, sports education, film studies, as well as a number of emerging academic disciplines such as new media, digital humanities, and Hong Kong studies. Therefore, "Martial Studies" is truly cross-disciplinary in nature, and aims to offer a multi-perspectival analysis of society through the study of its martial (and military) culture, activities, and social structures.

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Editors

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Series Editor's Preface: Cultural Exchange in Martial Arts

Chinese civilization was born out of cultural exchange, which is a fundamental dynamic in world history. At the same time, exchange is a complex process, influenced by such diverse factors as geography, social history, natural disaster, etcetera. These multifarious factors cause exchange to manifest in unpredictable ways, with an intensity that could sometimes be higher and at other times lower. However, exchange never stopped. In Chinese history, periods of rapid growth in production, as well as economic and cultural development, are inevitably marked by intensive cultural exchange. Contrariwise, whenever there were obstacles to exchange, when the regular flow of interactions was interrupted, cultural development also suffered. Exchange could occur in a relatively stable environment, but also under more intense, conflictual circumstances. Such types of conflictual exchange—between groups, communities, and states, or conflicts within a state—are often overlooked. On the other hand, the results of such exchanges are frequently conspicuous in their impact on social, cultural, and technological development.

Conflictual Exchange and Martial Culture

When considering the role of exchange, the academia has for a long time focused on such things as long-term trade on the overland and maritime Silk Roads—conducted in a relatively stable, friendly, and peaceful manner—which brought multilateral economic and cultural benefits. In so doing, we have tended to regard exchange in a simplified manner, while failing to properly consider exchanges *in* or as a result of conflict. In fact, exchange ought to encompass all its diverse forms, including those engendered by conflict, which frequently produces exchanges of a very intense kind.

At the most fundamental level, conflictual exchange involves exchange in weaponry and military tactics. Before the Han and Tang dynasties, China exchanged with distant as well as neighboring countries through conflict. An example of this is the "*hufu qishe*" ("wearing *hu* clothing and adopting their customs in riding and archery") reform by King Wuling of Zhao during the Warring States period. As

the Zhao state learned horseback riding and archery techniques from the northern peoples, they also changed their habits to adjust to the requirements of horseback archery. This is a well-known chapter in Chinese history, which is filled with such examples.

The Chinese were peaceable and liked to live in a stable, peaceful environment, where defense was regarded as the primary concept in their military activities. As is well known, the Great Wall—the most important cultural icon of the Chinese civilization, which has often been regarded as a wonder of the world—was mainly conceived as a defensive line. Even so, conflict was a constant feature throughout Chinese history, which led to exchanges in weaponry and in the martial arts. Since the time of Confucius, the Chinese have divided their culture into two domains—*wen* (civil-literary) and *wu* (military-martial), while the latter may be further sub-divided into *qi* (arms) and *yi* (martial skills). *Qi* refers to weapons and their manufacture, including the design and making of all kinds of offensive and defensive weaponry. Arms do not exist in isolation but must be viewed in the context of their tactical use, and in relation to the overall military organization. At the same time, the use of arms is known as *yi* in Chinese, or more fully, *wuyi* (martial arts). All in all, the making, maintenance, and keeping of arms, as well as the inheritance and transmission of the methods of their use, constituted a complex martial culture in China, which continued to develop new concepts, understanding, and cultural forms.

The transmission of martial arts relied on human agency but also on written documents. Diverse records on martial arts and arms provide descriptions and annotations on this unique type of knowledge and prevent it from being lost. In time, this body of writings came to form the literary system of martial arts. In brief, the three components of arms, martial arts, and martial art literature constituted the multidimensional system of martial culture. This system is incomplete if we consider any of the components in isolation—in order to grasp the full significance of any given part, it is important to understand the system as a whole.

At the material and technological dimension, from the early dynasties to the Qin and Han periods, China never stopped importing technologies and skills for manufacturing arms. China did not make weapons behind closed doors. Rather, from an early period, it imported the materials, as well as brought in the most advanced methods to produce weapons, which became a significant part of the exchange in martial culture between China and the outside world.

International Perspectives on China's Historic Military Culture

During the Tang dynasty, the Abbasid empire rose to power. The empires of the Tang, Turfan, and Seljuk collided in military conflict, which culminated in the Battle of Talas (*Daluosi zhi zhan*). At the time, the territories of the Seljuk empire extended from Asia Minor to Central Asia and reached its height as it absorbed

the Persian empire. This war had a profound impact on Arabia and China. Unfortunately, few records have survived. However, a combination of archaeological discoveries and increasing cultural exchanges between China and the West in recent years have dramatically enhanced our knowledge and overall impression of Sino-foreign conflictual exchange.

Italy is a modern European nation that carries on the legacy of ancient Rome. It was the center of civilization in Europe and had frequent exchanges with China. As far back as the Han dynasty, China interacted with Rome through trade on the Silk Road, but undoubtedly there were also exchanges in military affairs and the martial arts. This type of exchange continued into the latter half of the Middle Ages, until the dawn of early modern social reform in China, particularly during the Ming and Qing dynasties.

When Mongolia was the greatest empire across Eurasia, many foreigners visited China, the most celebrated being the Venetian merchant Marco Polo. And when he returned to Italy he recounted everything he saw in China, which led to Jesuit missions to East Asia. This wave primarily occurred on the eve of and during the Renaissance. The missionaries played a crucial role in promoting cultural exchanges between China and the West, and none more so than Matteo Ricci, whose visit to China marked a watershed moment in Sino-Italian relations.

Ricci was a Western scholar who dedicated his life to studying the Chinese civilization. Even though he was a theologist, he regarded Chinese society with the profound yet unbiased view of a humanist scholar. In the same period, another famous scholar from Spain, Juan González de Mendoza, compiled *The History of the Great and Mighty Kingdom of China and the Situation Thereof* (*Zhonghua dadiguo shi*). This is the first and one of the most important Chinese historiographies ever written by a European. The book was published in Rome, where it had a great influence on the community of scholars there. Following the footsteps of Ricci and de Mendoza, another important missionary to visit China was Johann Adam Schall von Bell, a German Jesuit and astronomer. These missionaries visited China in large numbers. Some of them gained a profound understanding of China, and in the process developed unique and important perspectives on the country.

For instance, some of the problems lurking in the Ming army, which de Mendoza described with such clarity, entirely escaped Chinese scholars. From his perspective, the empire was vast and had abundant resources, but the threat from across the northern borders was equally daunting. In his view, besides traditional methods of border defense, the empire was over-conservative, even backward, in how it organized its military affairs such as in weapon production and military training. De Mendoza correctly predicted that the Ming would be no match for the Manchus who were rapidly emerging in the north. He also observed that Ming soldiers used make-do weapons for training and were accustomed to performing choreography of martial arts instead of proper military drills. Consequently, when it came to real combat they would be quickly defeated. De Mendoza's observations were much more perspicuous than many Chinese scholars at that time, as he identified weaknesses in the Ming military not found in Chinese records.

On the other hand, Matteo Ricci, who developed personal relationships with many high-ranking Chinese literati-bureaucrats, appreciated the Chinese proclivity for peace and order. At the same time, he also discerned China's frailties beneath its mighty façade. In his book, Ricci noted in detail the emasculated state of Chinese war horses, which were surely no rival for the virile Manchu steeds. Intriguingly, Ricci also mentioned that Chinese military horses did not have horseshoes—an important fact that has been overlooked by Chinese historians. This surprising discovery explains why the teeming troops of the Ming empire, which numbered over a million, were crushed by the relatively small Manchu contingents. Indeed, the reason the Manchu mounted troops were called the "iron cavalry" primarily owes to the fact that they were supplied with skilled craftsmen who repaired and installed horseshoes every day, which the Ming army lacked.

De Mendoza and Ricci's observations exemplify how European missionaries made unique contributions to our knowledge of China. Not only did they provide invaluable contemporary accounts of Chinese martial culture and weaponry; speaking from European cultural and military viewpoints, but their testimonies also indicate the widening developmental gap they perceived between China and the West. In fairness, a number of distinguished military leaders in China, such as Yu Dayou and Qi Jiguang did undertake to reform the Chinese military, by taking such measures as the adoption of firearms, as well as introducing new forms of military organization and tactics. Unfortunately, the new ideas engendered by Sino-Western exchanges were not embraced by the state and did not ultimately lead to significant military advancement in China.

In the past, the Chinese academia tended to regard international trade, diplomacy, the dissemination of religious ideas, and other cultural-political exchanges as the sum total of intercultural exchange between China and the outside world, while turning their back on historic records that deal with exchanges in weaponry, military thinking, and martial arts. On the occasion of the third International Martial Studies Conference, I would like to thank my peers and friends from Italy and other European countries for their contributions to the development of martial studies. In particular, I applaud their painstaking efforts to reconstruct historic martial arts. By creatively combining body practices with the theories and techniques pieced together from historical documents, our fellow scholars in Europe have breathed life into historical martial arts and revived them as a living contemporary art. As the Ming dynasty general Qi Jiguang said, "*ji deyi bi shidi*" ("martial skills must be tested"), I firmly believe that only by reforming martial arts into a proper combat sport can we truly take stock of our martial art heritage, which were practical skills honed on the testing ground of battlefields.

Guangzhou, China

Mingda Ma
Chief Editor of the Series

Foreword

The proceedings of the third International Martial Studies Conference offer a unique opportunity for broadening our historic perspective, drawing focus in particular to the role of martial activities in intercultural exchange. First of all, it analyzes a field of study that receives scant attention from both the general public and historians. It also offers the possibility of comparing scientific, historical, and cultural data belonging to two geographical areas that have played a fundamental role in developing universal civilization. Finally, it presents such knowledge and notions not as relegated to a distant past but still present and alive in contemporary Masters of martial arts.

The promoter and curator of the conference and its associated exhibition *Way of the Sword: Warrior Traditions in China and Italy*, Hing Chao, is a highly successful entrepreneur, a profound scholar of Chinese culture (and especially of traditional martial arts), and a cultural operator with a marked propensity for intercultural dialogue: he is, in fact, not only the author of numerous books on martial arts but also the founder of the International Guoshu Association—an organization dedicated to safeguarding the heritage of Chinese martial arts—and of the Hong Kong Culture Festival.

The level of specialization reached by many scientific disciplines and research sectors makes it difficult for a single scholar to make comparisons and parallels with other fields of study and with scholars who, in different latitudes, carry out similar research. Such comparisons, however, are often helpful not only to recognize the imprint of common humanity but also crucial to better understand notions that have already been acquired and to renew the perspective in which we analyze them: as Klukhohn (2018, 18), the American anthropologist, said: "The longest way round is often the shortest way home."

The papers presented at this conference are significant because they offer updated information about weaponry and martial art research in Europe and China. They also provide international scholars with knowledge that sometimes has a limited circulation outside the country of origin (in this case, Italy and China).

The articles by Ausilio Priuli; Cristiano Brandolini; Gabriele Tonelli, Michela Faccoli, and Giovanna Cornacchia; as well as Roberto Gotti; offer a synthetic picture of the culture, economic, and social development of an area of northern Italy of

great importance for the origins of sword-making techniques and martial art culture. Their analyses cover a chronological span that goes from prehistoric times to the seventeenth century. Roberto Gotti, Daniel Jaquet, Jacopo Penso, and Manuel Valle-Ortiz reflect, referring to an incredible amount of data and from different points of view, discuss the transmission of martial art knowledge from its origins to the present day, especially in Italy but also more generally in Europe. Betty Lo's article offers an interesting analysis of the evolution of Oriental sword and dagger designs across a wide geographic and temporal spectrum, spanning from the ancient Near East to China and from the early bronze age to the nineteenth century.

In the meantime, the contributions of Ma Mingda, Gong Jian, and Hu Xiaojun follow the development of the Chinese sword, including both the *jian* (double-edged sword) and the *dao* (single-edged sword), and its associated culture. These chapters focus on the ancient period, with in-depth analyses of cultural and social context; at the same time, their discussions highlight the importance of tradition for contemporary society.

As the aforementioned, what strikes me most in these papers is the spirit of researchers who, beyond the search for historical and archaeological data, are animated by the aim of reviving the soul of ancient cultures. This spirit reminds me of the words of one of the greatest Italian Orientalists, Giuseppe Tucci (2015), "Perhaps the historian is more interested in the sequence of events than in the mystery of human personality... and yet for those able to evoke it, it is more fascinating than a man's actions because it is their mainspring and a constant feature that is splendid and eternal... because between the human beings of yesterday and today there exists a solidarity which leads us to feel the burden of the glory of unity in so far as we are men equally responsible for all things."

As the director of Istituto di Cultura Italiano in Hong Kong, I am proud to have participated in the organization of this conference, which strengthens our cultural diplomacy activity. I also hope that this research and comparative work will develop more in the future and involve scholars from many other countries.

Hong Kong, China Stefano Fossati

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Acknowledgments

This book is the result of the third International Martial Studies Conference *Sword Culture Across the Eurasian Continent* and the exhibition *Way of the Sword: Warrior Traditions of China and Italy.* None of these would have been possible without the support and partnership of Roberto Gotti, the co-curator of the exhibition, who not only contributed his knowledge and unique insights but also made a significant part of his Renaissance arms and martial art books collection available. Further, Gotti was responsible for assembling a distinguished group of Italian scholars, including Ausilio Priuli, Cristiano Brandolini, Michela Faccoli, Giovanna Cornacchia, Gabriele Tonelli, and Jacopo Penso, who made vital contributions to this volume. To all of them and, in particular, to Roberto, we owe our sincerest gratitude.

We would like to thank Mr. Clemente Contestabile, the consul-general of Italy in Hong Kong, for kindly reaching out to the cultural authorities and museums in the province of Brescia, including Luigi Marzoli Museum of Weapons and Museo di Santa Giulia. In the event, even though the museums and their representatives were unable to participate due to the pandemic, exchanges with them have enriched our understanding of Italian martial culture, particularly in respect of its material dimension, which is reflected in the research presented here.

It has been an honor to have Istituto di Cultura Italiano as our conference partner, and we are particularly grateful for its director Stefano Fossati's enthusiasm and unwavering support. In the same breath, we would like to acknowledge our thanks to the City University of Hong Kong for providing funding support to the conference. In this regard, we must mention Jeffrey Shaw, former dean and chair professor at the School of Creative Media, City University of Hong Kong, and Paul Lam, then the university's Executive Director of Special Projects, for facilitating the funds.

Ma Lianzhen, a key member of the organizing committee, must be thanked for his role in reaching out to the research community in China. While other academic commitments precluded the possibility to turn his excellent conference presentation into a paper, his advice and editorial help have been indispensable to ensure an accurate reading and translation of Ma Mingda's contributions. The editors are grateful to all the contributing authors, who have shown support, patience, and understanding during the editing process.

Last but not least, thanks are due to our editorial team, in particular, Eric Suen, who shouldered much of the labor of format editing, and Angela Choi for coordinating between the editors, authors, publisher, as well as various cultural institutions.

Introduction

This volume presents original research carried out in the context of both the third International Martial Studies Conference on *Sword Culture across the Eurasian Continent* and the exhibition *Way of the Sword: Warrior Traditions in China and Italy*.[1] The chapters offer multidisciplinary views and new perspectives on the cultural history of martial arts and its material culture. This volume also provides comparative studies between the East and the West regarding the production, circulation, and reception of martial knowledge, the practice of martial arts, and the weapons featured in these studies, from prehistory up to modern days.

Martial arts are embodied practices, which left explicit traces in art, documents, and objects. Most of the martial knowledge, however, is implicit, within (and between) the bodies of the practitioners, past and present. The studies in this anthology raise several key questions to enhance both academic and general understandings of martial studies. How should the embodied practices of martial arts be defined in context, across time and space? How do they compare China and Italy? What were their social and cultural dimensions? What role(s) did it play in intercultural exchanges?

The authors include established scholars, authorities in their field, to martial art experts, private collectors, and swordsmiths. The conjunction between research about and practice of martial arts animates the authors and allows them to offer unique perspectives on the emerging field of martial studies.[2] One of the most innovative features of both the conference and the exhibition was to offer a dialogue between

[1] The conference *Sword Culture Across the Eurasian Continent* was organized by Hing Chao and Daniel Jaquet during 11–12 December 2020 in Hong Kong, and the exhibition *Way of the Sword: Warrior Traditions in China and Italy* was curated by Hing Chao and Roberto Gotti during December 11, 2020–February 21, 2021 in Hong Kong.

[2] Martial (art) studies is both "ancient and contemporary" in our series chief editor Ma Mingda's words. From a Chinese perspective, martial studies is based on written traditions surrounding the practice of martial arts, the making of arms (and the appreciation of swords), and other aspects of martial culture that arose in the ancient times, more than two thousand years ago. At the same time, more contemporary efforts to study China's martial art culture and heritage have been haphazard and stop-start in nature. During the Republic of China (1912–1949), Tang Hao pioneered the research into the history of Chinese martial arts and its literary tradition. Others like Zhou Wei were active

sword cultures from the West with a focus on Italy and from the East with a focus on China.

The premise of this volume is based on the concept of intercultural exchanges, and the role played by martial arts within it (see Ma Mingda, *Series Editor's Preface*). Rooted in cultural history, the line of thoughts spills over into the fields of arms and armor studies, military history, history of science and technology, literature, and art history. As organized by the concept of exchange, this volume is divided into three sections as arranged by topical subcategories: exchanges in weaponry, martial art exchanges, and exchanges through literature and written documents.

History, Culture, and Philosophy of the Sword in Eurasia

The sword represents a multidimensional object in most societies of the past. It is a weapon, but also a tool displaying the social status of its wielder or wearer. It has a symbolic dimension that is embedded in philosophical and religious ideas. By metonymy, it is strongly associated with what one can label as the "warrior" classes in societies of the past across Asia and Europe.

Ausilio Priuli (*Arms and the Armed: The Evocative Ritual Language of Val Camonica Rock Art*) presents the earliest traces of martial art representations in rock art. His analysis of the corpus of iconographical representations questions the status of martial arts in prehistoric (Copper Age) societies. Based on a close reading of *The Grand Historians' Records*, Ma Mingda (*Sima Qian and the Way of the Sword in Ancient China*) discusses ancient China's complex sword culture across the dimensions of sword-making and appreciation, swordsmanship, and philosophic discourse related to the sword (known as *lunjian* or sword discourse). His study shows China's sword culture had already attained a high level of sophistication by the Warring States period. At the same time, the *Way of the Sword* that emerged during the Han dynasty was the fruit of a profound cultural fusion of the Warring States, whose distinctive sword cultures converged after China's unification under the Qin.

Cristiano Brandolini (*Longobard Warriors in the Seprio Judicaria*) explores findings from graves dating from the early Middle Ages in the Italian Peninsula. His reading of objects (swords and related garments) informs us about the status of

in the study of antique arms. However, this field of studies came to a halt as a result of political factors and was not resumed until the post-reform period (after 1978), primarily as a result of Ma Mingda's work. The appearance of a series of his seminal publications after the 1990s, notably and *Wuyi zhenben congbian* (2015), *Wuxue tanzhen* (2003), *Shuojian conggao* (2000), as well as the periodical *Wuxue*, edited by Ma Lianzhen, has been instrumental in establishing martial studies within the academia. In the West, several networks of researchers in this field developed in parallel over the years, notably: France (Jorrescam, http://jorrescam.free.fr/, last accessed 01.10.2021), Germany (DVS Kommission 'Kampfkunst und Kampfsport, https://www.sportwissenschaft.de/kkk/, last accessed 01.10.2021), and a larger international network based in England (Martial Arts Studies Research Network, http://mastudiesrn.org/, last accessed 01.10.2021). For an argument about the emergence of the field of studies in the West, see Bowman (2013), followed by Bowman, ed. (2018).

warriors as noblemen and as free men in Longobard societies. Moreover, the material culture of the Longobard warriors, such as their use of the horn bow and scale armor, shows a deep cultural and technological connection with nomadic societies of the steppe. As such, it presents evidence for a connection across Eurasia in the early Medieval period.

Roberto Gotti (*The Dynamic Sphere: A Thesis on the Third State of the Vitruvian Man*) puts his discoveries in interpreting European martial arts literature in the context of the humanistic ideas on philosophy, art, and religion during the Renaissance. This chapter gives an overview of Gotti's ongoing research that spans over two decades. Drawing evidence from over fifteen Medieval and Renaissance books on swordsmanship, Gotti puts forward an argument for the theoretic unity of Italian martial arts of the late Middle Ages and Renaissance. The "humanism of the sword" that Gotti describes in this chapter invites an interesting comparison with the "Way of the Sword" discussed in Chapter Two.

The Material Dimension of the Sword

This section explores the characteristics of the swords as objects through time across Asia and Europe. Their roles in intercultural exchanges are outlined and analyzed. The weapons here are considered as tools of martial arts, but also as presentations of gifts and catalysts of technological innovations.

Gong Jian (*Evolution of the "Crescent Guard" in Chinese Swords*) traces the development of a unique type of sword guard—known as the *yueya* (Crescent Moon) guard—from Tang prototypes into its definitive form during the Song and beyond. His paper shows foreign cultural influences in its origin, and how the crescent guard, in turn, affected sword guard designs of neighboring regions, such as Mongolia and Tibet, particularly in later periods.

Gabriele Tonelli (*Archaeometallurgical Investigation on Historical Sword-making Techniques in Northern Italy Between the Sixteenth and Seventeenth Century*) dives into the material components of the weapon, sharing discoveries about the mechanical behavior and the construction of the blades in the proto-industrial center for blade production of the Northern Italy during the sixteenth and seventeenth centuries. Swordsmith Hu Xiaojun (*Rediscovering Ancient China's Sword-making Techniques: Insights from Reconstructing a Han-Dynasty Ring-pommel Dao*) discusses his findings from the experiment to reconstruct a Han-dynasty ring-pommel *dao* (single-edged sword). His account includes a detailed record of the process of building a Han-dynasty style shaft-furnace.

Betty Lo (*Decorative Techniques in Oriental Swords:* Savoir Faire *in Craftsmanship and Artistry*) discusses the various common decorative techniques in Oriental swords. Drawing from museum collections and her extensive experience as a collector, she brings attention to the importance of decorative techniques, both as an aesthetic means to embellish personal arms, whether swords or daggers and

as evidence for intercultural exchanges that connected the various Asian traditions (and indeed, with traditions further to the West).

Historical Fencing Books and the Transmission of Knowledge in Swordsmanship

Martial art literature from the past survived in Europe and in China. But martial art systems are primarily transmitted from bodies to bodies, following oral traditions. In this section, the similarities and differences of the corpuses are delineated. The (inter)relations between martial texts and living traditions dialogue with one another, as well as the past dialogues with the present in the analyses of the authors.

Daniel Jaquet (*Martial Arts Knowledge on and beyond the Page: From Visual Mantras to Hyperrealism with Words and Brushes*) compares the information found in martial arts literature with other types of sources. He also offers an overview of the late Medieval and early modern European corpus presented according to subcategories of fight books. Manuel Valle-Ortiz (*The Ferrara Manuscript: A Discussion of Destreza and Vulgar Fencing Traditions in Spain*) presents a case study of a previously unknown manuscript of Destreza (Spanish fencing), relevant in the spread of this globalized discipline in the sixteenth and seventeenth centuries.

Jacopo Penso (*Masters Through the Ages: Interpretation of a Renaissance Martial Art System and the Foundation of a Modern School*) shares insights into the methodologies which drive modern-day experts' interpretations of Italian martial arts. Hing Chao (*Dialogue with Roberto Gotti: An Initial Foray into Comparing Chinese and Italian Two-handed Sword Methods*) gives the reply to the findings of Roberto Gotti (Chapter Four) while exploring similarities and dissimilarities in martial principles according to the study of East Asian (both Chinese and Japanese) martial art systems.

These studies of past and present forms of martial culture shed new light on as-yet underexplored commonalities in societies that are separated by time, geography, and culture, and the distinct innovations of technology, philosophy, and aesthetics that have shaped our shared conceptions of physicality, social hierarchy, and personal conduct. As such, martial studies provide a unique window into society and culture for historians, anthropologists, and those interested in the process of cultural change. It is hoped that this volume, the first book dedicated to the subject of sword culture across Eurasia, tentative and incomplete as it is, will inspire others to treat martial

studies as a worthy subject of academic examination and to explore it in greater depth.

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Notes About Language, Measurements, and Time

Conventions About Transliteration and Translation

(1) The terms in the chapters that are prefaced by "It." are in Italian; those prefaced by "Lo." are in Lombard; and those prefaced by "Fr." are in French.
(2) The terms prefaced by "Lat." are in Latin.

Traditional Chinese Measurements

(1) "Chi" is a traditional Chinese unit of length and is often translated as "Chinese foot." Its value during the Qin and Han dynasties was estimated at around 23.1 centimeters, during the Ming dynasty at around 32 centimeters, and is presently standardized at around one-third meter.
(2) "Cun" is also a traditional Chinese unit of length that is smaller than *chi*. It is often translated as "Chinese inch." Ten *cun* are equal to one *chi.*
(3) "Zhang" is a traditional Chinese unit of length equal to ten *chi.*
(4) "Li" is a traditional Chinese unit of distance and is often translated as "Chinese mile." Its value during the Qin and Han dynasties was estimated at around 415.8 meters, during the Ming dynasty at around 576 meters, and is presently standardized at 500 meters (a half-kilometer).
(5) "Jin" is a traditional Chinese unit of mass and is known in English as "catty." Its values varied throughout the Chinese history. Its value during the Qin and Han dynasties was estimated at around 253 grams, during the Ming dynasty at around 590 grams, and is presently standardized at 500 grams (a half-kilogram) in mainland China, though other regions in East Asia define the value of *jin* variously.

Time Periods in Chinese Political History

All dates in this table and the volume are in CE (Common Era, or AD) unless otherwise specified as BCE (Before Common Era, or BC).

Shang dynasty	1600–1046 BCE
Spring and Autumn period	771–476 BCE
Warring States period	475–221 BCE
Qin dynasty	221–206 BCE
Western Han dynasty	202 BCE–9 CE
Eastern Han dynasty	25–220
Jin dynasty (Sima Jin)	266–420
Northern and Southern dynasties	420–589
Sui dynasty	581–618
Tang dynasty	618–907
Wu Zhou period	690–705
Liao dynasty	916–1125
Song dynasty	960–1279
Jin dynasty (Jurchen Jin)	1115–1234
Yuan dynasty	1271–1368
Ming dynasty	1368–1644
Qing dynasty	1636–1912

Time Periods in Japanese Political History

All dates in this table and the volume are in CE (Common Era, or AD) unless otherwise specified as BCE (Before Common Era, or BC).

Nanbokuchō period	1336–1392
Edo period	1603–1868

History, Culture, and Philosophy of the Sword in Eurasia

Arms and the Armed: The Evocative Ritual Language in Val Camonica Rock Art

Ausilio Priuli

Abstract Depictions of weapons and of armed human figures in Camunian and Alpine rock art are common, particularly after the advent of metalwork and especially beginning with the Copper Age. They are found on monuments and on rocks, as can be seen clearly in the megalithic sanctuaries featuring stelae, anthropomorphic stelae, and statues-menhir, as well as in the most significant Alpine spiritual centers and elsewhere, such as Val Camonica (It. *Valle Camonica*, Lo. *Al Camònega*), Mount Bego (*Mont Bégo*), Val Tellina, and Monte Baldo, on the Veronese shore of Lake Garda (*Lago di Garda*). Depictions of weapons are important for the chronological and cultural placement of the engraved complexes; the depictions of armed human figures that dominate some Alpine engraving sets are no less important. That is particularly the case in Val Camonica and Val Tellina, over a very long period of time running from the Bronze Age up to the Iron Age and even into prehistoric times. The depictions of men holding weapons—in a wide variety of stylistic, iconographic, and compositional arrangements, and belonging to many different periods and stages of engraving—represent a ritual language that was used at the very time the pictures were being created. They are an evocative language that commemorated, revived, and spoke of mythical forefathers, ancestral heroes, departed warriors, founders of communities, and indeed anyone who played an important role in the past and became an object of worship. The ritual gesture of depicting them might have served the ritual function not only of commemoration but of calling their presence back from the past into the community in times of particular need.

Keywords Val Camonica · Capo di Ponte · UNESCO (United Nations Education · Scientific · and Cultural Organization) site · Prehistory · Rock art · Prehistoric art · Rock engravings · Graffiti · Warriors · Arms · And the armed

If we want to understand the weapons designed and used by human beings since prehistory—their use, the fighting, the prestige of those who possessed and used them, and their development over time—we must not overlook archaeological findings.

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This approach entails examining material culture and, in particular, the enormous body of representations that somewhat characterize the entire Alpine world, and especially Val Camonica.

The valley of the ancient Camuni is home to almost 300,000 images engraved on rock, created over a period of more than 10,000 years, spanning from the end of the Würm glaciation to the beginning of the Roman era and beyond.

1 The Camuni's Open Culture

Camunian rock art is an immense treasure trove of information not just about Camunian culture but also about the cultures of the past from northern and central Italy, and from the Alpine world. It gives us insights into their cultural and technological evolution, the relationships they established with the world around them, their ability to absorb cultural developments from the outside and elaborate them, and their ability to preserve their own identity even under the influence of stronger, more forceful cultures, as well as their religion(s) and rituals.

Val Camonica is a long valley running from the Po valley and Lake Iseo (It. *Lago d'Iseo o Sebino*, Lo. *Lach d'Izé o Sebì*) for about a hundred kilometers into the Alps. It is a long, natural route that connected the Mediterranean to the world beyond the Alps. The first people to traverse it discovered a vast area, an immense hunting basin, a land rich in resources that were hospitable, strategically safe, and uniquely beautiful, fed by unique morphologies, perennial glaciers, roaring watercourses, and safe, sunlit locations in which to build permanent settlements.

From the Neolithic onward, the valley gradually became more populated by humans, giving birth to and evolving into what on other occasions I have referred to as the "Camunian open culture" (Priuli 2011).

Material culture and, in particular, rock art has in fact allowed us to observe how, from the Neolithic onward, "Camunian Culture" was basically a fusion of heterogeneous cultural influences: during the Neolithic era, groups from the Square-Mouthed Vases culture (*cultura dei vasi a bocca quadrata*) converged in the valley while, at the same time, typically Transalpine cultural elements may be detected, such as those of the cultures of the Rhine and the Danube. To these were added the Lagozza cultural elements typical of the Ticino area. In the Copper Age, the Camuni took a strong influence from the first metalworking semi-nomads and therefore from the Remedello culture which spread and firmed up its knowledge of copper and its uses. There was a strong influx of the Bell-Beaker Culture and, over time, from the Ligurians, the Po valley pile dwellers, the Polada peoples, and, later, the paleo-Venetians, the Golasecca peoples, the Italic peoples, the Etruscans, the Rhaetian people, and the Celts, to name just a few. Together, they forged a hospitable Alpine culture that was open to all technological or religious innovation.

2 Val Camonica: The Sanctuary of Alpine Prehistory

Other valleys could have fulfilled the same functions as Val Camonica and perhaps even better: ease of access, the amenity and economic opportunity, and the fact that it was an important transit and connection route between the Mediterranean, the plains, and central Europe. What made the Val Camonica a meeting place and a reference point for many cultures was most probably its sacredness (Figs. 1.1 and 1.2).

Two splendid mountains rise up in central area of Val Camonica: the Concarena, with its majestic and inaccessible dolomitic ridges and, before it, the Pizzo Badile Camuno, an awe-inspiring peak that stands out in the valley and that towers like an immense monolith over the center of the valley, also dominating all the plains up to the edges of Lake Iseo. It is very likely that these two mountains were considered sacred: at their feet, the largest known concentration of rock art in the world can be found.

Fig. 1.1 Mount Concarena. Photograph by E. Oescher

Fig. 1.2 Val Camonica. Pizzo Badile. The "Spirit of the Mountain"

The mountain is a ladder to be climbed to draw closer to the land of the gods. It is the element that unites the terrestrial world with the celestial one above, bursting with superhuman forces. But a sacred space is such when something sacred manifests there, that is, if the hierophany that once led to its consecration periodically repeats and re-validates that sacredness or the "sacred temple."

The Concarena and Pizzo Badile seem to have enjoyed this sacredness over time due to two spectacular phenomena that regularly occur on them. Twice a year—one evening in early spring and another in early autumn—a while after sunset, for a few minutes, a brilliant ray of light shines up into the already dark sky from a deep groove in the Concarena, breaking up the halo of shadow cloaking and dominating the outline of this imposing limestone massif. During these both astounding and terrifying few minutes, onlookers remain surprised, staring, and speechless—even today. Then, the large split in the mountain seems to close and the valley slips into the evening darkness. One must wait another six months until the phenomenon repeats itself.

Twice a year, but for a few more days, the Pizzo Badile casts an immense shadow into the calm but still chilly skies of March and into the September haze: tall, solemn, sharp, and framed by a thousand resplendent rays that crest the sky. This shadow is both enrapturing and frightening, looming over the valley like a spirit, gradually lowering until it disappears, when the sun becomes too strong over the mountain's summit.

This phenomenon still impresses anyone who sees it at its peak, due to its sheer size and seemingly inexplicable and momentary yet regular recurrence, coinciding with the equinoxes. It certainly did not pass unnoticed by the valley's ancient inhabitants who likely saw a manifestation of the supernatural in that immense and unexpected duplication of the mountain, where it opened up under the aggressive strength of light. Perhaps they considered it the supreme solar entity to which they were certainly devoted.

The area dominated by these two sacred mountains and marked by these spectacular hierophanies was chosen as a sanctuary, a spiritual center. People gathered in that immense sanctuary for millennia. The place became the destination for pilgrimages, and on the valley rocks, at the feet of those mountains, they prayed. Priest-artists created images and celebrated rites by carving on the rocks. Through these rites, they recreated the world, reviving sacred times, the mythical era of creation. And in that place, they brought their mythical forefathers, their ancestral heroes, and their achievements back to life. A spiritual center is a meeting place where people gather, a place of commercial and cultural exchange, the place where local culture opens up to other ones, evolves, and adopts external cultural aspects, continuously enriching itself.

3 Paleo-Iconographic Language

What is written, carved, scratched, or painted on the rocks tells us of human beings over time and of their spiritual and material lives: it is a paleo-iconographic language whose concrete meaning often escapes us but is without doubt loaded with content tightly connected to the culture it expresses. If the symbols had a voice, they would surprise us. They would tell us so many things we cannot even begin to imagine. They would speak to us of cultural and inter-tribal relationships, conflict, aspirations, technologies, gestures, rituals, gods and myths, heroes, demons, and countless other things.

Today we think differently from those who created these symbols, as we live in a totally different world from them. We have an exclusively materialistic, ego-centric, and selfish relationship with the environment, whereas the humans of the past who created them were essentially animists, attributing vitality to everything and often to powers higher than their own. As such, they had a creed: a spiritual charge so elevated and complex that we cannot even imagine it. So, we limit ourselves to formulating interpretative hypotheses, often at the risk of abusing that language, misunderstanding it, and distorting its meaning, under the false assumption of being able to go back in time and attend the lessons of the ancient engraving artists.

We have the presumption to believe that we know how to read those symbols and have the ability to interpret them, but in reality, we do not have the mental capacity or the culture to do this, as our culture is thousands of years distant from that which the symbols express and totally different from what became the existential and spiritual basis for it.

There is perhaps no need to conduct mental lucubrations in an attempt to understand and explain those symbols. Maybe we need only a simple-thinking approach for the simple expressions that we regard as complex, but which perhaps are not complex at all. Our commitment to trying to read the symbols of the past is, without doubt, commendable; but still, our readings remain interpretative hypotheses of what we can see of a reality whose substance escapes us.

4 Ritual Language

Among the infinite interpretations of the signs, symbols, and figures, and of all rock art, the most obvious and now widely documented, thanks to relatively recently drawn and also written evidence, such as the battle scene with a Latin inscription on Rock no. 91 of the National Park of Naquane (*Parco nazionale delle incisioni rupestri di Naquane*) in Capo di Ponte, is the one that includes religious motivations (Priuli 2015). Signs, beyond their formal appearance, become a ritual language in many cases because of the very way they were conceived and made—both technically and iconographically. Depending on the type, location, context, and era, they take on different meanings, have a permanent or transitory value, and a personal or

community function (Priuli 2013). However, beyond cultural content, many signs for us today are also iconographic documents that lead us back to the material lives of those who produced them and of the community around them, as they refer to those lives.

5 Arms and the Armed

This applies to the representations of weapons and therefore of armed human figures, so common in Alpine and Val Camonica rock art, especially from the advent of metalwork onward. The list of sites and rocks that host images of arms and the armed could be endless. Consider the Mount Bego area, where thousands of images of daggers, axes, and halberds adorn the rocks in the Valley of Marvels (Fr. *Vallée des Merveilles, Valle delle Meraviglie*) and Fontanalba, created at so many different points over several centuries (Priuli 1984).

Weapons and armed figures appear sporadically in the western Alps, but in the Aosta Valley (It. *Valle d'Aosta / Val d'Aosta*, Fr. *Valleé d'Aoste*), greater numbers are engraved into rocks, while others decorate anthropomorphic monuments (Mezzena 1981, 15–62). Depictions of daggers and axes appear in considerable numbers in Val Tellina, on monuments, and on rocks, like the one in Tresivio which were engraved in an advanced phase of the Bronze Age. Numerous late Bronze-Age swords are engraved in the Rock of the Ratlins (*Pietra delle Griselle*) in Torri del Benaco, along the Veronese shore of Lake Garda and they certainly are not lacking on the valley walls of the deep Val d'Assa canyon on the Asiago plateau (Gaggia 1983; Priuli 1983).

6 Arms and the Armed in Val Camonica

Yet it is especially in Val Camonica where there is not only a large quantity of depictions of weapons and armed figures but also an uninterrupted continuation of art that began in the Copper Age and lasted into historical times. In order to deal with the depictions of weapons and armed figures, we must first turn our gaze to human events and their development from the Upper Paleolithic onward (Figs. 1.3 and 1.4).

Representations of weapons in the Upper Paleolithic period are extremely rare. The few recorded examples are apparently in "hunting contexts": assegais and perhaps arrows toward the Mesolithic. There were no great fights for power or hegemonic ambitions; there was simply the need to procure food and perhaps impress the group and its women, take women from other groups, or to seize land or protect one's own hunting ground.

The conflicts first arose between groups, clans, and extended families of nomadic and semi-nomadic lifestyles during the Mesolithic era, with the intent of seizing hunting grounds and pastures, and to protect their herds. In the Neolithic period, the

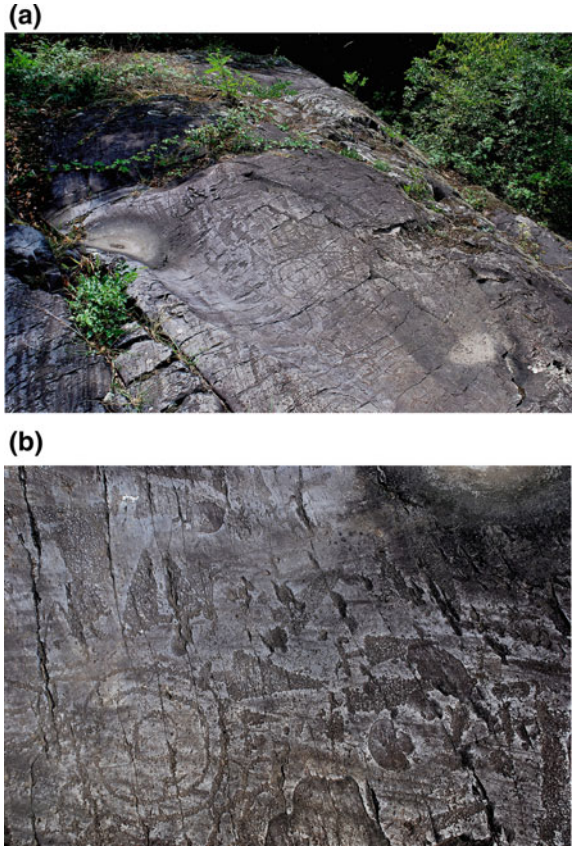

Fig. 1.3 Nadro. Rock Art Natural Reserve of Ceto, Cimbergo, and Paspardo (Riserva naturale Incisioni rupestri di Ceto, Cimbergo e Paspardo). Foppe di Nadro, r. n. 4

advent of settlements and the search for and appropriation of productive areas led to the establishment of private property, the birth of villages, and the institutionalization of clans and stratified tribal societies. These changes generated jealousy, envy, craving for land, and the consequent need to be strong, influential, and fearless, to acquire power, to be able to become the leader of the group, and ultimately, to be able to lead it to the conquest of the most productive spaces.

However, material and iconographic evidence from the Neolithic era that would allow us to deepen our knowledge of the combative actions is scarce during the Neolithic period, with the exception of two cases. The first is Talheim, Baden Württemberg, where a mass grave containing 34 skeletons—old and young—was discovered. The evidence from this site allows us to observe the effects of the slaughter of a village's people using stone axes, committed at the beginning of the fifth millennium BCE. The other was during the same period on the edges of the settlement in Schletz, Lower Austria, where numerous graves revealed many skeletons. There were no young women among them, presumably due to one tribe imposing itself on another

Fig. 1.4 Val Camonica, Malegno Rock no. 1

and kidnapping the women (Wahl 2004, 97–100). The weapons of this period were polished stone axes, flint knives, spears, bows and arrows, and rudimentary clubs.

It was with the advent of metalwork that things radically changed. From that moment, the violence of war took hold and veritable tribal conflicts began. This was a result of the need to conquer sites rich in minerals, to preserve such sites that had already been seized, to succeed, to boost one's prestige, to have power, and the consequent stratification of society with rich, fearless warriors at its apex. Material culture—stone and then metal weapons—represented strength and the power that came with it. Thus, they became a distinctive element of role and rank, to the point of elevating the warrior to the status of hero, as Maria Theresa Guaitoli has pointed out (Guaitoli 2004, 17–33).

The Neolithic ax (see the numerous stone axes featured in the grave goods of the first monumental dolmens of the Bretons, in some instances depicted in engravings on their stone orthostates) transitioned to the Aeneolithic dagger. This can be seen in the tombs of Remedello and Spilamberto, and in those of the Bronze Age (Cornaggia Castiglioni 1971; Bagolini 1981). Then, in the late Bronze Age and early Iron Age, the sword emerged and became the "semantic symbol" par excellence that accompanied a king/warrior/hero. In areas under Rhaetian influence, that symbol was the ax, which had a long, wide blade during the Celtic La Tène era, or even the spear.

Archaeological findings of grave goods have restored a rather exhaustive image of the weapons and their formal development—particularly from the Neolithic onward. But it is Alpine rock art, particularly in Val Camonica, that offers not just indications of the evolution of the weapons and their diverse types according to the period in which they appeared and the cultures who made them from the Aeneolithic onward,

but also of the use that was made of them. This can be seen in thousands of "fight" scenes and through iconographic context.

In the Copper Age and in the Bronze Age that followed in Val Camonica, vast rocky surfaces feature depictions of copper Remedellian-type daggers and daggers from the later Bell-Beaker culture, usually alongside halberds and axes (see the relevant rocks, no. 3, 4, 21, 22, 23, and 60 in Foppe and the Dos Cuì Rock in Nadro, but also in Seradina in Capo di Ponte and in the Luine Archaeological Park of Rock Engravings (*Parco Comunale delle Incisioni Rupestri di Luine*)) (Cittadini 2017). These same depictions also feature in the Aeneolithic Monumental Compositions (*Composizioni Monumentali eneolitiche*), alongside representations of axes and, in some cases, halberds, arranged in sophisticated compositions with a high level of artistic-compositional sensitivity in graphic terms. Together, they seem to echo the figurative elements characterizing the megalithic proto-statuary and statuary that line the route to the Mediterranean, toward the Italian hinterland, particularly in some of the valleys that head into the Alps toward central Europe, such as the Val d'Adige, Val Tellina, the Aosta Valley, and, of course, Val Camonica.

The anthropomorphic stelae in Val di Magra and in Lunigiana, those belonging to the Megalithic complex of St. Martin de Corleans (It. *L'Area megalitica di Saint-Martin-de-Corléans*, Fr. *Site mégalithique de Saint-Martin-de-Corléans*) in Aosta, those of Sion-Petit Chasseur in the Swiss canton of Valais, the Sardinian ones in Sarcidano (*Cavallo del Sarcidano*), those in the Sarca Valley (*Valle del Sarca*), and those in South Tyrol, represent mythical forefathers, ancestral heroes who became demi-gods, the objects of worship. They were often gathered in sanctuaries—spiritual centers that endured over time. In such environments, the male anthropomorphic monuments are characterized by representations of axes, halberds, daggers, and, in some cases—like in Aosta and Sion—also by bows and arrows. Examples include the large male statue-menhir in Lagundo (Bolzano) on which some nine Remedellian-style daggers and 12 axes are engraved, and the Arco 1 stele, with seven daggers, three axes, and as many halberds.

There is no doubt that these representations of weapons and of daggers, halberds, and axes, in particular, allow us to distinguish the rank of the figure portrayed on the monument; they are symbols of strength, of prestige, and of power acquired through heroic actions that remain in the collective memory, a permanent exaltation, and celebration of the mythical heroic forefather.

The daggers depicted are typical Remedellian daggers with triangular blades that vary in length. The grip has a half-moon end. There are archaeological findings of precisely this type of daggers in various northern Italian localities, particularly in Remedello in the Brescian plains (*Bassa Bresciana/Pianura bresciana*).

The halberds engraved—of which there are archaeological findings dating back to the Copper Age (the Remedello culture) and particularly in its final phases (the Bell-Beaker culture)—actually lasted for most of the Bronze Age. It seems that, despite appearing barely functional, above all, they were a symbol of power.

Axes are present on the Val Camonica and Val Tellina monumental compositions and also on the anthropomorphic stelae of Trentino and South Tyrol, apparently in a phase preceding the full adoption of the halberd and, in a few cases, alongside it.

This is the case on Cemmo Rock 2. They also appear alongside daggers on anthropomorphic stele Arco 1 in Trento. In some cases, even in the Aeneolithic, it seems that some depictions also present perforated stone axes, while the vast majority must have been in copper, in the Similaun and Remedello styles.

With the end of the Copper Age, the dagger changed its appearance, becoming slimmer. The end of the grip is no longer a half-moon but becomes globular. It continues to feature in some monumental compositions, such as on Cemmo Rock 3 and the Corni Freschi in Montecchio di Boario (Terme), as well as on numerous rocks, particularly in the central area of Val Camonica, and often on those that had previously been the site of Remedellian daggers.

In the Aeneolithic tombs, warriors' grave goods contained a flint or copper dagger (and in rare cases a bone one, such as at Spilamberto—this too functioned as pointed weapon), arrows, polished stone, or copper axes. Meanwhile, in the monumental compositions depicting the qualities of the mythical hero-warrior and on the proto-statues that celebrate/portray him, the high and unreal number of weapons depicted on the body is an exaltation of strength and prestige. With the end of the Aeneolithic and the beginning of the Bronze Age, the ax and dagger remained elements/weapons that distinguished warriors and their social status, as testified by material finds, but also by Val Camonica rock engravings and more.

During the Bronze Age, the sword also became a distinctive element of personal belonging and marker of social status. In central and southern Europe in the late Bronze Age, power and wealth lay in the hands of a few ruling families within their territorial and cultural spaces. The sword was their status symbol, as were the chariots with which they were buried (Sperber 2004, 174–199). Swords and precious bronze objects—items of prestige—were not only used but given and received. In other words, these objects were items exchanged between members of the ruling social classes and often offered up to supernatural entities, as shown by our findings in watercourses, lakes, or "storehouses" (*ripostigli*) on high summits (Peroni 2004, 161–173).

7 Depictions of Arms as a Replacement of Votive Offerings

It was common for objects and weapons to be placed in watercourses and especially in sacred locations, dedicating them to numina or departed heroes (Ibid., 161–173). But in Val Camonica and particularly in the Boario Terme area, it seems that they perhaps created depictions of the objects and weapons on many rocks instead of offering them up. In this way, they dedicated that rock or its site to the warrior/hero to whom the arms refer (Figs. 1.5, 1.6, 1.7 and 1.8).

The great sanctuary of Luine in Boario, a rocky promontory dominating the lower valley, was probably dedicated to the cult of heroes from the Copper Age onward, but especially up to the Middle Bronze Age, and its rocks are studded with representations of axes, daggers, and swords, as well as halberds which, in the immediate vicinity,

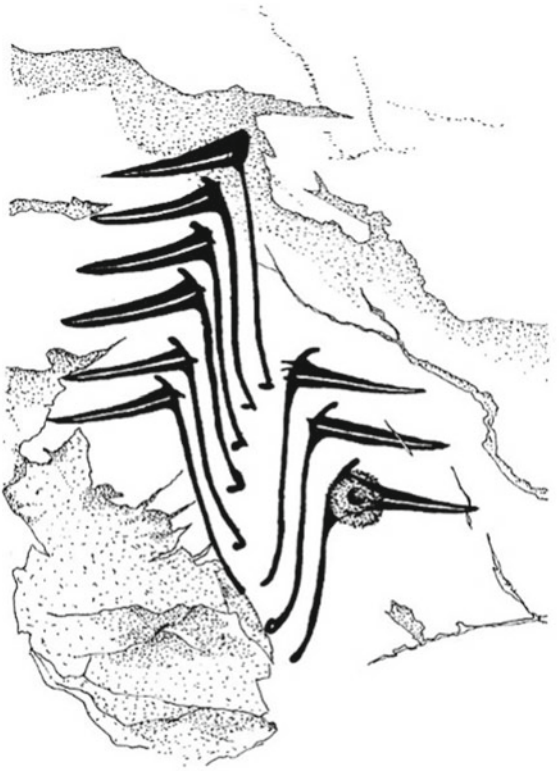

Fig. 1.5 Boario Terme, Corni Freschi

are also present along with Bell-Beaker daggers on the Corni Freschi boulder at Montecchio.

The images of weapons are very often arranged as they would have been on the bodies of the ancient anthropomorphic stelae (e.g., Rock no. 46 of Luine) or as an ax and halberd alongside each other (as in Rock no. 30), as if the rock itself were the body of the hero/warrior or the abode of his spirit. The act of engraving and depicting the weapons in a complex evocative ritual—about which we know nothing, but which we can imagine—was certainly very important for the Camunian culture. It may have replaced the material act of laying arms in watercourses, in rocky ravines, at the summit of mountains, or in devotional bundles at the foot of the rocks devoted to specific tutelary deities or heroes, ancestors, warrior princes, or mythical beings, since—as we have mentioned—the rocks could have been considered the abodes of their spirits.

The dagger had been the dominant weapon among the depictions of the Copper Age; but as testament to the birth and establishment of a warrior elite, and the consequent development of military technologies, in the Bronze Age, other weapons established themselves. Use of the ax took hold. The sword asserted itself as it evolved from a thrusting weapon with slender blade into an aggressive slashing weapon for

Fig. 1.6 Boario Terme, Luine 1

war, clearly designed and made for the purpose of killing—thus attributed to warriors. In parallel, the spear emerged.

Oddly, there are almost no depictions of weapons (swords, spears, or axes) in the hands of warriors or of fight scenes at any point in the Copper Age or in a large part of the Bronze Age. Weapons held by warriors and what seems to be fight scenes became dominant in Val Camonica during the Iron Age and last until the Roman era, although there are still depictions of weapons and groups of weapons, which in some cases seem to be isolated from a "narration" or "commemoration" of a battle. In some instances, as is clear, for example, on Rock no. 1 of Dos de l'Ora in Berzo Superiore, fight scenes and depictions of weapons are on the same rock but belong to different engraving stages, each one created in several stages, as well (Priuli 1979). A spear depicted right next to or even on top of the image of a mythical warrior

Fig. 1.7 Boario Terme, Luine 2

Fig. 1.8 Monte Baldo, Torri del Benaco

armed with a spear could have been a ritual that evoked the strength and prestige of the warrior and a means of loading his spear with "mana" and the strength of the ancestral hero to whom the rock was an offering.

There are numerous depictions of weapons, especially among the La Tène engravings from the late Iron Age and the Roman era in Val Camonica, which were found in Piancogno: bundles of spears, spear, and javelin tips, axes with wide blades, Lovere- and Giubiasco-style knives in sheaths, and swords. Instances associating axes, knives, swords, and spear tips (warriors' weapons) are not uncommon, as can be seen clearly

on the Rock of Swords (*Roccia delle spade*) of Group 13 on the Cà de Dos Boulder (*Masso di Cà de Dos*), on the Rock of Weapons (*Roccia delle armi*) of Group 6, and on the Stone of Weapons (*Sasso delle armi*) of Group 7 (Priuli 1993).

In addition to their symbolic content, the dense and extensive presence of depictions of weapons and armed figures on Camunian rocks tell us the history of their formal, technical, cultural, and chronological development.

8 Fight Scenes and Armed Figures

The anthropomorphic stelae are a material expression of the ancestral heroes and perhaps of the founding fathers of the various communities. They are the ones who introduced metalwork and most strongly characterized the Copper Age depictions (late fourth and third millennium BCE). But it was depictions of armed human figures and of scenes representing or recalling fights that characterized the long period running from the late Bronze Age to the Roman era, particularly present throughout the Iron Age (Figs. 1.9, 1.10, 1.11 and 1.12).

Armed human figures, often on horseback, and fight scenes are the most common works in Camunian rock art. They are found almost uninterrupted across the entire area of the central valley and perhaps in an even more concentrated way on its right-hand slope, in the area that ascends from Seradina to Bedolina and beyond. Their almost monotonous repetitiousness (for us) could therefore also be down to a rituality with a strong basis for worshiping ancestors, commemorating events or actions, and celebrating the person(s) depicted as the victor(s)—the warrior rising to hero status on account of his accomplishments (See Fig. 1.15).

It is understood as being unlikely—if not worth excluding entirely—that rock carvings of armed individuals could respond to a personal and/or collective need, a desire to stamp one's own presence or to demonstrate a particular social status, as

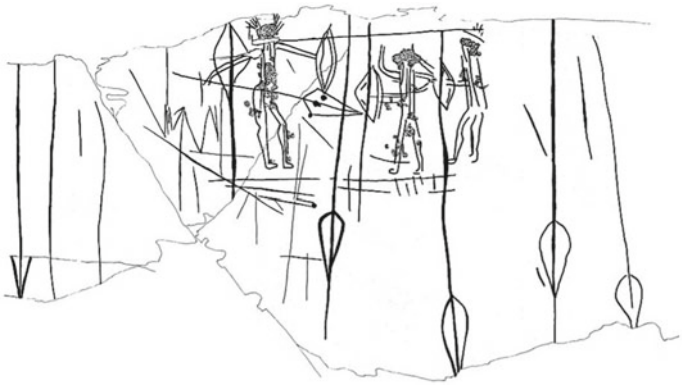

Fig. 1.9 Berzo Demo. Dos de l'ora

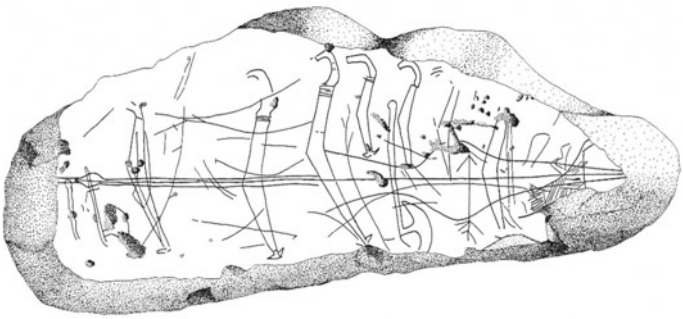

Fig. 1.10 Piancogno. Stone of Weapons

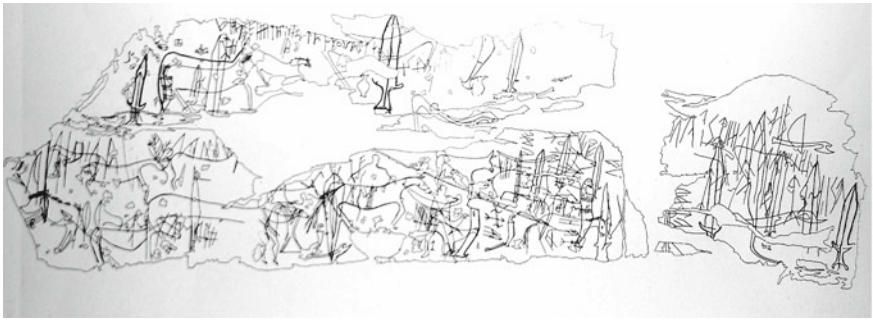

Fig. 1.11 Val Camonica, Piancogno, Rock of Swords

Fig. 1.12 Capo di Ponte. Bedolina. Armed figures depicted on a rock overlooked by the Pizzo Badile, a sacred mountain

suggested by Manuela Zanetta (Zanetta 2009, 283–290). Such intent can be inferred from the technical-executive and stylistic analyses of the Camunian depictions (and this concept can be extended to all the artwork) and that, except in extremely rare instances, these are not the personal works of anyone who felt the need to draw themselves. They are, instead, the work of the few skilled in this ritual practice: specialists in engraved art, "priest-artists" who knew the engraving techniques well and who probably worked by commission from individuals or their community for specific occasions.

As has been said, engraving is what has been left behind of a rite, conducted by specialists: ministers of worship, the intermediaries between the material, earthly world, and the supernatural land of the gods and spirits. This figure was believed capable of communicating with the dead, of invoking their memory, and of reviving them. They also acquired the technical ability to choose and prepare tools suitable for engraving, while also refining the dexterity required to create the artwork.

9 Categories of Depictions of Arms and the Armed

Depictions of armed figures are categorized as: individuals, armed figures in fight scenes, armed figures on horseback, armed figures on horseback in fight scenes, armed figures hunting, and figures armed "on parade (Figs. 1.13 and 1.14)."

Each category includes numerous types of drawings, as has been highlighted on several occasions, changing stylistically depending on the period to which they belong and on the "priest-artist" who made them (Priuli 1991). They have different weapons and panoply of varying completeness; there is sometimes an indication of clothing, other times not.

Fig. 1.13 Rock art Natural reserve of Ceto, Cimbergo and Paspardo, Foppe di Nadro, r. no. 24

Fig. 1.14 Capo di Ponte. Naquane. R. no. 35. Running character, armed with a sword

It would be impossible to conduct an exhaustive analysis of all the armed figure depiction categories here, even more so of all the types of depictions within each category. That is because it would require analyzing several thousands of depictions that dominated throughout the Iron Age. As such, this chapter is limited to bringing to light just a few examples that could inspire interpretative considerations of the typical Camunian rock art that features armed figures and fight scenes. It must also be said that not all the engraved rocks contain armed figures, while others—dozens of them—seem to be devoted to this type of representation. They are often repetitive in type and in some cases stylistically different, suggesting they come from different stages of engraving. It is not uncommon to see them laid on top of each other, such as if the rock had been chosen to host representations of that specific "hero," who is then depicted several times over a long period of time.

One example of this is that of Campanine in Cimbergo, where 580 armed figures were recorded on 56 of the 102 engraved rocks. They are concentrated in the central area of the site, suggesting that the choice of rocks was not left to chance but a response to specific requirements (Zanetta 2009).

Fig. 1.15 Capo di Ponte. Naquane. R. no. 50. Warrior with a shield, a sword with an antenna or anthropomorphic hilt, and a kilt; made using filiform engraving technique

10 Individual Armed Figures

Simple, individual armed figures make up the largest portion of the depictions of armed humans. These are isolated human figures. They are associated with others but are not poised for combat with them. Nor are they part of scenes, such as hunting scenes, or placed next to duelers. Instead, they are defined only by their panoply which, more often than not, consists of a sword and shield, spear and shield, ax and shield, and, in some cases, a helmet (Figs. 1.15, 1.16 and 1.17).

They are very often in a static stance, their weapons raised above their heads in what seems to be a sign of jubilant victory. In Campanine in Cimbergo, some 425 of the 580 depictions of armed figures are individuals.

While it is reasonably easy to recognize the type of ax held by the warriors, it is more difficult to understand the true shape of the swords, as these are represented in a much more basic way, with the exception of a few swords that are reproduced in much greater detail. An example of this is the antenna sword in the hand of the warrior on Rock no. 48 of Cimbergo's Bosc del Vicare, or the one that can be traced

Fig. 1.16 Capo di Ponte, Naquane, r. no. 50. Warrior armed with shield and sword with an antenna or anthropomorphic grip; a spear has later been placed in his hand, engraved using a metal tool

back to the Campovolano sword of the sixth century BCE, engraved in the hand of a warrior bust on Rock no. 61, also in Cimbergo (Ibid.). Others can be found on Rock no. 50 of Naquane. There is also an engraving in Piancogno on the Latin-alphabet Rock in the hand of what is probably a Roman-era warrior (Priuli 1993).

Instances of armed individuals wearing kilts, drawn using the filiform engraving technique and wearing headdresses or helmets, are not rare. The sizes of these individuals vary. Generally, little distinguishes them from other depictions of armed figures, but there are cases of large-scale representations, such as in Paspardo, where a warrior, armed with a spear, rectangular sword with central umbo, and knife sheathed in his belt, stands to about a meter tall and is engraved in a rocky ravine. Other examples are the four warriors placed almost in a line, one under the other. They can be found on Rock no. 50 in Naquane in Capo di Ponte. The most visible of the four, known as the "Etruscan warrior," is in the central section of the rock and is the result of a transformation of a previous La Tène-era depiction of a warrior, with the typical long, thin sword. In a later era—such as in Roman times—the head has been enlarged and covered with a crested helmet. The small sword has been enlarged and

Fig. 1.17 Capo di Ponte. Naquane. R. no. 50

the arm that carried the sword horizontally above his head has been transformed into a gladius. What could have been a depiction of a warrior, hero, or Celtic divinity has been transformed into one of a legionary, centurion, or Roman hero, or even into a representation of the god Mars.

Another interesting case in which a figure was changed into another is on Rock no. 9, also in Naquane: here, a square-bladed ax from the seventh–fifth centuries BCE was turned into a human figure by adding a leg, an arm, and a head, evoking a certain likeness between weapon and bearer.

Armed individuals also characterize hunting scenes. In these, they are armed predominantly with spears and bows, and arrows, but there is no small number of instances of "hunters" who attack animals with swords.

11 Armed Warriors in Combat Scenes

Depictions of armed figures in what appear to be combat scenes are numerically fewer than in the previous category. Still, they do feature in large numbers and in

Val Camonica that number is in the thousands. The desired association of two or more duelers allows us to speak not of simple depictions but of scenes loaded with narrative which, in some cases, is well expressed in their stances, their movements, and the position of the attacking and defensive weapons. For the most part, there are two armed figures, but there are instances in which there are more. Except in rare cases, they have the same formal features: they are stylistically identical, and they are more or less the same size. They almost always carry the same weapons and are arranged facing each other (Figs. 1.18, 1.19, 1.20, 1.21, 1.22, 1.23, 1.24 and 1.25).

The weapon most commonly held in fight scenes is a sword. It is not always possible to recognize the type and, in many instances, it cannot be distinguished from the arm that holds it, becoming an extension thereof. The shield, which, depending on the period to which it belongs, can be small and round, ox-hide rectangular, or oval in shape; in some cases, the metal umbo is shown at its center. There are also fight scenes with axes and spears.

However, it is important to highlight that an impressive repetition of figures and scenes of the same type has been observed over large areas and even more so on the same rocks. This can be noted, for example, on the "Astronauts Rock" in Zurla, where three pairs of duelers have been arranged in a row on the rock, perhaps created by different operators using different instruments, but still very similar to each other and depicted in the same pose.

There is a tremendous number of scenes with almost identical contents, depicting armed warriors or combat scenes, engraved on rocks, at some distance from one another. Analyses of the engraving techniques, the style, the compositions, and the figurative elements allow us to think of the work of a single hand, as if the "engraving artist" had traveled, by commission, to celebrate the same rite by recreating the same characters.

Fig. 1.18 Capo di Ponte, Seradina. Fight scene with anthropomorphic-gripped sword

Fig. 1.19 Capo di Ponte. Zurla. "Astronauts" Rock Pair of duelers armed with a small shield and short sword

Fig. 1.20 Capo di Ponte, Seradina 3

In Seradina, Iron Age fight scenes between two schematic characters are repeated to exhaustion. They are almost all the same, with the express feature of having the outline of an arm that grips a small shield or sword.

Also in Seradina—to name just one site—pairs of duelers from the end of the Iron Age are extremely common and repetitive. They have empty geometric bodies and carry large rectangular or oval-shaped shields and a sword, rendered in a very simplistic manner that makes the type unidentifiable.

Fig. 1.21 Capo di Ponte, Seradina Geometric anthropomorphic figures with shields and rough swords

Fig. 1.22 Capo di Ponte, Naquane, R. no. 1. Fight scenes whose formal, stylistic, and conceptual identity is consistent with the scenes on Rock no. 47

The same, identical depictions of fight scenes are repeated on the same rock, often overlapping one another. This common motif is enlightening for an understanding of the engraving phenomenon and of their repetitiveness. Indeed, it seems that they are the result of a need to regularly revive the historic hero (perhaps in the event of a danger to the community), who has become a myth for having performed memorable deeds, or who perhaps distinguished himself in defending against invaders or in a tribal conflict.

Perhaps the most emblematic example comes from the numerous fight scenes of the late Iron Age that characterize Rock no. 47 at Naquane. In them, a great armed

Fig. 1.23 Capo di Ponte. Naquane. R. no. 1. Armed warrior superimposed on the representation of the labyrinth associated with a ritual combat scene with swords; the duelists are tied to each other by one leg

character, muscular with understated phallus, uses his spear to pierce the adversary, who is depicted as a smaller, more schematic engraving, his stance one of surrender.

The stylistic identity of the scenes and their characters' stances lead us to believe that the scenes may have been engraved by the same operator who, at various points during his "priestly" work, has been called upon to revive the hero, on a rock that has perhaps been devoted to that hero. The same scene, almost definitely engraved by the same hand—which can be deduced from the unmistakable style—can be found in the central section of the Large Rock, or Rock no. 1, also at Naquane. In this instance, it is associated with two engravings of ritual shovels, which, as we have written elsewhere, are usually tightly associated with worshiping the dead (Priuli 2018). The same character—absolutely identical to the previous one—has arched legs and an indication of a helmet on his head. He is placed below the depiction of a labyrinth engraved on the same rock. The argument that the two figures are engraved using different pecking techniques does not exclude the possibility that they were made by the same operator: the pecking performed by striking a stone tool with direct blows is different as different stone tools were used, and stronger or weaker forces were applied when striking the tool on the rocky surface.

Also associated with the labyrinth, the dueling figures, and the character—and perhaps deliberately placed below the maze—is an engraving of a shovel. This element distinguished rank or was a symbol of passing from life to death, and therefore of rebirth in a new dimension and with new roles in life and the community, or a

Fig. 1.24 Cimbergo. Bosc del Vicare. Dressed hero with a cloak and cuirass, armed with a sword, shield, and helmet, carried by two birds (Rossi 2009, 308–312)

new social status. That was perhaps achieved by combatants who, through the ritual of duel, passed a test of initiation.

Another element in support of this hypothesis could be the engraving of a bird right next to the labyrinth and the armed figures. Birds—whether migratory or resident—are often associated with fight scenes and with depictions of armed figures, in some cases even carrying them. This is a clear allusion to the journey of departed and heroes to the "higher land," and to the return journey, they make when they are recalled through the engraving rite, as can be clearly seen on some rocks at Cimbergo (Rossi 2009, 308–312).

An interesting type of fight scene is the one in which "arbitrators" or "elders" appear beside the contenders. On Rock no. 12 at Seradina in Capo di Ponte and in a very similar scene on Rock no. 7, two duelers with a small shield and short sword—held as if to thrust—are each accompanied by a large figure armed with spear and concave shield (Marretta 2018). Are they arbiters of a dispute or elders overseeing the initiation ceremony for young people becoming warriors?

Fig. 1.25 Ceto. Zurla. Larger warrior armed with a shield, sword, and crested helmet. He seems to attend a fight between two duelers, who are characterized by their visible kilts and headdresses

12 Armed Figures on Horseback and the Armed Figures on Horseback in Combat Scenes

There are also numerous depictions of armed figures and fight scenes on horseback. These can be easily traced back to the end of the Bronze Age and to the entirety of the Iron Age, which gradually became a symbol of wealth, prestige, and power. The armed humans on horseback are more or less the same as the ones already examined. Scenes of horses and riders depicted alone or in combat, are engraved in Val Camonica in all the styles that characterize the long time period between the end of the Bronze Age and the Roman era (Figs. 1.26, 1.27, 1.28, 1.29, 1.30 and 1.31).

There are some very schematic depictions and others—particularly from the sixth century BCE—that is much more dynamic and naturalistic. There are also many depictions of horses and armed riders disconnected from any clear narrative of combat or parade. While, in some cases, the importance of the horse seems to have been exaggerated, in others the horse is very small compared to the armed rider, even grossly disproportionate to him, with the obvious aim of exalting the rider's strength

Fig. 1.26 Capo di Ponte. Naquane. R. no. 50. Large armed figure standing on a horse

Fig. 1.27 Capo di Ponte. Naquane. R. no. 50

Fig. 1.28 Capo di Ponte. Naquane. R. no. 1. Armed warriors on large horses

Fig. 1.29 Capo di Ponte. Naquane. R. no. 1. "The Procession"

and prestige. This prestige and the rider's heroic actions are emphasized by depicting him standing on the horse's back and raising his weapons above his head as a sign of victory.

This is the case, for example, of the horse that carries an enormous warrior, armed with a sword and shield, engraved on the central section of Rock no. 50 at Naquane. During the Christian era, a cross was placed in his hand, with the clear aim of

Fig. 1.30 Foppe di Nadro. Rock no. 28 Warrior armed with a sword and shield, riding a deer

Christianizing that character and his host rock, or of depriving it of its meaning and functions.

On the same rock, in the immediate vicinity of the first, we find the contrary: a large running horse, disproportionate in terms of shape and size and with a large fringed tail; on its back, a small warrior stands, armed with shield and sword. He is detailed and wears a visible kilt. Not far above him, two warriors on horseback confront each other, wielding swords and shields.

On the Large Rock, or Rock no.1, of the National Park of Rock Engravings of Naquane in Capo di Ponte, there are not so many fight scenes, but there are several characters armed with spears and swords. Here too, we find armed warriors sitting on the back of the horses. Two enormous horses are engraved in particularly deeply carved geometric shapes. One carries a warrior armed with a sword and round shield and the other a warrior armed with a spear and shield. They seem to be riding in the same direction. The figures seem to be associated with the engraving of a deer and with depictions of ritual shovels; so much so that they could be seen as representations of heroes who passed away.

A short distance away from the scene, a scene features a number of small but carefully engraved human figures, which are evidently crafted by the same hand. Attention has been paid to their arrangement and the role of the characters featured as if they had gathered for a parade or procession.

There are engravings of characters in praying positions, with their arms raised to the sky; some are armed with spears or swords and shields; others are unarmed but have a large feathered headdress that serves as indication of their rank or role, perhaps on a sacred field. A single human figure armed with a spear and shield, with a feathered headdress, and on horseback, is associated with the engraving of a shovel.

It is possible that these four types of figures represent the social stratification of the time of the warrior princes (the second half of the first millennium BCE). At

Fig. 1.31 Cimbergo. Campanine. R. no. 47. Warrior armed with a sword and scabbard, shield, and feathered helmet, carried by a wading bird (Rossi 2009)

the top of that structure was the armed character on horseback who perhaps also assumed the role of a priest, the distinctive sign of which may have been the large feathered headdress. The shovel drawn at the feet of that heroic rider is perhaps meant to indicate that he has passed away, while the scene could have been created to invoke his presence and reaffirm his power over the community.

There are also plenty of depictions of armed characters riding deer, as on Rocks no. 57 at Naquane and no. 28 of Foppe di Nadro, as well as those who seem to ride birds: these are clearly representations of mythical beings and heroes.

Fig. 1.32 Foppe di Nadro. Rock no. 28

13 Armed Figures in Hunting Scenes

Armed figures in hunting scenes are almost as numerous as the representations of animals in hunting contexts. Hunting, particularly of deer, but also of wolves, foxes, and boar, was carried out using traps, snares, nets, and especially with bows and arrows, and lances. All of this is widely documented in the many hunting scenes engraved on rocks throughout most of Val Camonica (Fig. 1.32).

Depictions of deer hunting scenes in which the hunter is on horseback are very common. In one case, the hunter is even standing on the horse, ready to launch his spear toward a deer surrounded by dogs. There is no doubt that this is a depiction/recalling of a mythical event, of a heroic hunter, exaggerated through this almost acrobatic depiction of him on his horse. In reality, it is unlikely that deer were hunted by horse, if only because, when hunted, they tend to flee into the undergrowth: it would be impossible for a hunter on horseback to follow them.

In at least two instances, at Foppe di Nadro and at Bedolina, deer hunting scenes depict the deer being struck by a spear while also being attacked by the hunter with a sword. It is very likely that, after being injured by the spear, the deer were then finished off with a sword.

14 Armed Figures on Parade

Depictions of armed figures "on parade" are perhaps more numerous than one would think. The same "procession" on the Large Rock, or Rock no. 1, of the National Park of Rock Engravings in Capo di Ponte (mentioned above), could number among this

type of armed figure depictions. On many rocks, there are lines of armed characters one next to another—all in a similar form and armed in the same way. Neither are instances of armed figures on horseback rare; they seem to parade, one in front of the other. Often the rocks are engraved with groups of characters armed in different ways. They seem to show off their weapons without any belligerence toward each other, as can be seen on many rocks in Seradina, Cimbergo, Nadro, Naquane, and Zurla (Figs. 1.33, 1.34, 1.35 and 1.36).

On Rock no. 50 at Naquane, there is a scene consisting of three armed figures. The detail to attention of this scene is particularly noteworthy. At the center is an

Fig. 1.33 Zurla. Armed figures on parade, showing off their weapons

Fig. 1.34 Capo di Ponte. Naquane. Rock no. 50 Fight or parade scene

Fig. 1.35 Nadro. Dos Cuì

anthropomorphic figure in frontal view. The bust features decorations suggesting a garment or cuirass while the right-hand grips a long sword with an antenna or anthropomorphic grip, which suggests a Celtic origin. The bent left arm seems to hold a large circular shield of which there is only an outline. On the right and left of this engraving—in perfect symmetry around it and placed sideways so as to face toward the warrior—are another two figures. They are armed with small shields and swords of the same type as the one held and extended upward by the central figure. The two armed figures' heads are in profile and feature either thick, bushy hair or

Fig. 1.36 Capo di Ponte, Naquane, Rock n. 93. Latin votive inscription next to a fight scene. The lucky one or the winner in a combat was engraved

a fringed headdress and kilts. They are not pecked but scratched into the rock. The scene can be dated to the latter half of the first millennium BCE.

A particularly interesting scene is engraved on a rock at Dos Cuì in Nadro in the Rock Art Natural Reserve of Ceto, Cimbergo, and Paspardo. There are three splendid warriors with understated phalluses, armed with large concave shields on which there is a clear indication of a central umbo. Much care has been taken over their creation, with good anatomical research and accentuation of their muscles. They are static and brandish long swords with antenna or anthropomorphic grips in their right hands. The style is not dissimilar from the one that characterizes the scene on Rock no. 50 and the engravings seem to have been created by one "artist" who was very skilled with the engraving tool and technique. However, in this scene, the deliberate stillness of the central figure contrasts markedly with the dynamism of the two armed figures facing one another. In this instance, the three figures seem to show off their strength, their prestige, and their weapons.

The almost monotonous (for us) repetitiveness of fight scenes and armed figures is possibly the result of rituals strongly linked to the cult of the ancestors, commemorating the events or actions, and celebrating the person depicted as the victor—the warrior rising to hero status on account of his accomplishments.

The association of warriors and birds is certainly no coincidence and is found often on the rocks on the left-hand side of the valley. The bird is generally a wading or a migratory aquatic bird and symbolizes the transition or journey to the afterlife or vice versa. As such, depictions of armed figures carried by one or more birds—as can be clearly seen on Rock no. 62 of Bosc del Vicare, on Rock no. 11 of Campanine Alta, and on Rock nos. 47 and 49 at Scale—are emblematic (Rossi 2009).

These are the people who had passed away and were revived, recalled, simply remembered, or perhaps heroized through the rite of engraving. For this reason, they are depicted at the point of their death or, in some cases, in victory, as can be seen in what is likely a gladiatorial combat scene with a Latin inscription, on Rock no. 93 of the Naquane National Park in Capo di Ponte (Priuli 2015).

15 Depictions of Weapons, Particularly Axes

As mentioned, depictions of halberds and axes on the rocks of Val Camonica characterize and are recurrent from the late Copper Age onward, throughout the Iron Age until the Roman period, as can be seen from the observation of the Piancogno rocks (Priuli 1993) (Figs. 1.37, 1.38 and 1.39).

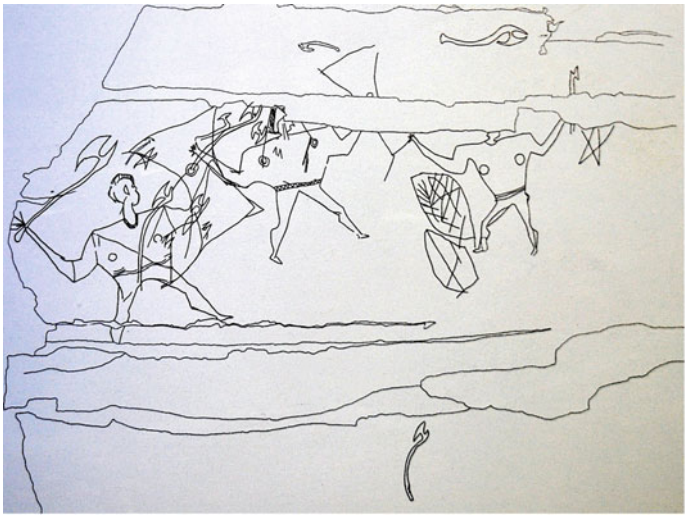

Fig. 1.37 Boario Terme, Crape, Roccia no. 8

Fig. 1.38 Foppe di Nadro. Rock no. 34

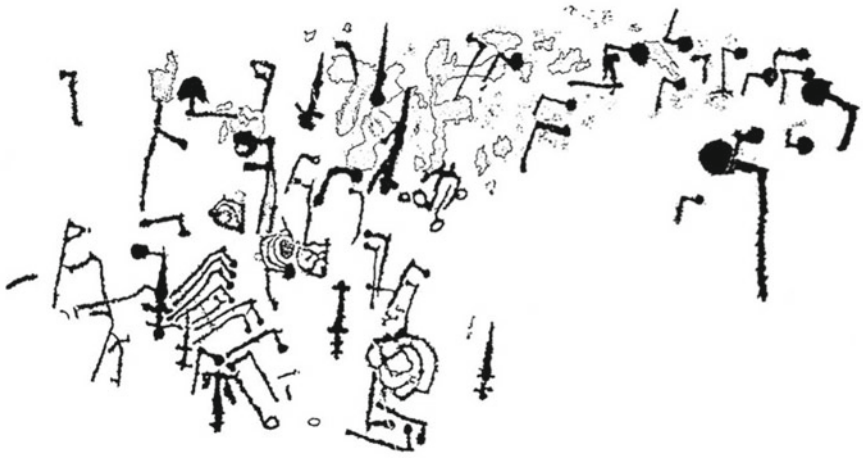

Fig. 1.39 Monte Baldo, Castelletto di Brenzone

Since the Neolithic period, the ax has always enjoyed a high symbolic value: just think of the numerous stone axes—generally made to a very high standard but almost never used, therefore decorative—planted in the earth or buried around the dead in the large megalithic tombs of the Bretons and often depicted inside them.

In Val Camonica rock art, and not only there, symbolism of the ax seems to be linked once again to the celebration of a specific person who had passed away and, as Carancini (1984) says about these artifacts, they connote a "...socially eminent deceased figure, belonging to an aristocratic hegemonic class that loved to adorn itself with what, according to its own vision of the perfect warrior, was considered lavish symbols of political power..." In Val Camonica, a large number of axes were depicted from the Copper Age onward, particularly on stelae and monumental compositions, often in association with halberds and, as already said, generally alongside Remedellian daggers and, later, Bell-Beaker ones.

The anthropomorphic stelae also often had axes and halberds as their dominant iconographic and content element. For example, on the anthropomorphic stele no. 3 of Arco, on some of those in the Aosta Valley, and on almost all the male anthropomorphic stelae in South Tyrol, to name a few. It is, however, particularly at the end of the Early Bronze Age (23rd–17th centuries BCE) and throughout the Middle Bronze Age that they became dominant on the rocks of some sites, such as Foppe di Nadro and especially Luine in Boario. Observations of the rocks at Piancogno show us that they appear throughout the Iron Age until the phases of Rhaetian and La Tène culture influence, and up to the Roman era. They are found in compositions or in compositions of figures of knives, spears, and spearheads; in so many other cases, they are held by characters, who are not necessarily in a fighting scene. They are often depicted in a large size, a clear sign of their power, as Carancini highlights.

Insofar as concerns male human tombs in the La Tène necropolis in Ornavasso in Val d'Ossola (Piedmont), the main element of the grave goods in the most prestigious

tombs was the ax with a wide blade—the same that is depicted several times on Rock nos. 44 and 62 of the National Park of Rock Engravings of Naquane in Capo di Ponte and on Rock no. 4 in the Paspardo valley, to name just a few. These figures have been recognized as axes of the Hellebardnaxt, Wessen, or Ornavasso type.

Axes too, then, are often a symbolic representation of the deceased, as they often represent the high rank of that figure when they are depicted in huge proportions in the hands of some characters. Depicting them could have been a means of celebrating the departed, considered a hero, a mythical being, or even a demi-god. On that matter, it's worth remembering what Durand underlines: heavenly summit-dwelling warrior divinities are characterized by having the ax as their emblem. This includes the Balto-Slavic god Perun, the Germanic Tyr, the Norse Thor, and even Jupiter Dolichenus (Durand 1972).

All that has been said about axes and halberds can easily be applied to the depictions of spears, spearheads, and javelins and to the depictions of daggers, swords, and knives.

16 Spears

There are numerous depictions of spears in Val Camonica in various kinds of scenes and compositions. Although seemingly almost absent during the Neolithic and Copper Age, they are present in the Bronze Age and especially throughout the Iron Age. The contexts in which they appear are hunting scenes, combat scenes, and engravings of "parades." On some particular rocks, spears are the main element depicted, seemingly isolated from any scene. They have been made by repeatedly scratching the rocky surface, often working with the glacial striations until the desired depth of groove is achieved. The tip is carved at the end of that groove using the same technique. Examples of this include a rock at Zurla, the Dos de Costa Peta Rock at Paspardo, and some rocks in the Dosso Loa in Berzo Superiore, where two life-sized tips have also been depicted. These were made by placing the real object on the rocky surface in order to trace its outline (Fig. 1.40).

Scratched depictions of groups of spears and particularly of spearheads and javelins are very common on the rocks of Piancogno. These are clearly part of the depictions in the valley from the last centuries BCE (the La Tène era in the Po valley) and the Roman period. During the Bronze Age, some instances of these are linked with axes, daggers, and swords. This can be seen clearly, for example, on Rock no. 34 of Luine in Boario.

17 Swords

It has been said that swords feature in most of the combat scenes—whether real or ritual—engraved on the rocks of Val Camonica. The engraving techniques used

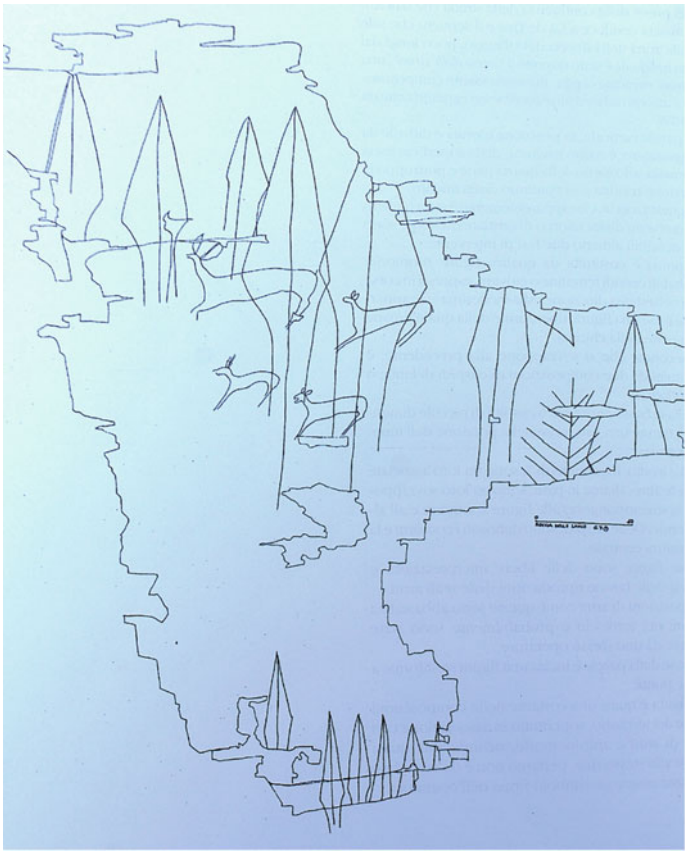

Fig. 1.40 Piancogno. Rock of the Spears

and the dimensions of them (often very small) have not allowed for much detail in their shape. For the most part, they are just a rectilinear element being held, a mere allusion to the real object.

Swords appear in figurative culture in the Middle Bronze Age, in association with other weapon figures. For example, on Rock no. 34 at Luine, a sword seems to have been possibly added to a composition of axes, spears, and daggers from the Copper Age and the Early-Middle Bronze Age. It is, however, with the Iron Age that the sword becomes the most commonly depicted fighting weapon. This can be seen as much in combat and parade scenes as in depictions of warriors who seem to be apparently isolated from any "narrative tale" of a fight.

In the late Bronze Age and early Iron Age, the images of duelers with swords are very simple and schematic. Often, they are stick figures, their linear legs apart. Insofar as it lacks detail, the sword could also be a baton or a small shield. Only later in the early Iron Age do the depictions of weapons begin to take on more realistic and dynamic shapes, with the swords' shapes and sizes better defined and

oval-shaped shields seemingly from the Villanovan culture. From the eighth to the seventh century BCE, those shields began to get progressively more round before becoming rectangular and ox-hide-shaped around the sixth century BCE. In the hands of warriors, they are depicted with a concave shape, and a highlighted central umbo.

In other instances, particularly during the period of Etruscan influence, a desire to highlight the anatomical shape of the armed figure emerges, particularly the legs and arm muscles. They have well-defined swords, where even the shape and size are detailed, meaning that, in some cases, it is possible to tell from which culture and type it is. The intention is obviously to highlight the symbolic content and so load the bearer with all the values that weapon symbolizes. Examples of this could be infinite and it is impossible to list them all here. It is sufficient to name a few: on Rock no. 6 of Foppe di Nadro, in the upper section and in the center, there are two large depictions of warriors (the largest of the entire set of engravings, in which there are 166 human figures). They are armed with rectangular shields and wield large swords with anthropomorphic or antenna grips.

The armed figure on Rock no. 48 of the Bosco del Vicare at Cimbergo holds a sword, recognizable as an antenna sword, but proportionally much larger than real. Another interesting example could be the bust of an armed figure on Rock no. 61 on the same site. It holds a large sword, very similar to that of the armed hero on Rock no. 62, being carried by two birds. Also on Rock no. 52, five figures arranged in a circle seem to dance, armed with shields and swords held upward. One carries a long spear. Very similar depictions can also be found on the upper section of the Dos Cuì di Nadro rock, the same rock that hosts a dense series of the oldest depictions of Remedellian daggers.

18 Conclusion

Insofar as the study of weapons (knives in the oldest period especially during the Copper Age, and axes, swords, and spears from Bronze Age to Iron Age) is useful for understanding cultural and technological evolution of the Camunian culture (and of any Alpine culture), we must also consider all such representations and combat scenes as powerful expressions of religious sentiments within the Camunian culture. This cultural urge to depict did not arise out of a desire to describe an episode, rather the very act of creating these rock arts evoked the spirits of those who carried a weapon, meaning all the warriors—the ancestral heroes, the mythological ancestors, and all others who had an impact on the history of Camunian culture and the cultures in relationship. Today, these representations also illuminate the “martial culture” of a people who were absorbed by the Romans two thousand years ago.

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Sima Qian and the Way of the Sword in Ancient China

Ma Mingda

Abstract The *Records of the Grand Historian* (*Shiji*) contains Sima Qian's views on the Way of the Sword (*jiandao*), the four martial virtues [faith (*xin*), integrity (*lian*), benevolence (*ren*) and courage (*yong*)], as well as sword's practical and moral functions. These are inseparable from the profound swordsmanship tradition of the Sima clan and the veneration of warrior culture in the kingdom of Zhao. The *Records of the Grand Historian* further presents the community of swordsmen in Warring States China, including such colorful personalities as Nie Zheng and Jing Ke in the *Biographies of Assassins*, whose contrasting stories Sima Qian uses both to convey their diverse character, and to illustrate *jian*'s moral ideal.

Keywords *Records of the Grand Historian* (*Shiji*) · Sima Qian · *Jiandao* (Way of the Sword) · *Jian* (double-edged sword) · *Youxia* (errant swordsman) · *Cike* (assassin) · *Jijian* (fencing/swordsmanship) · Sword culture · *Lunjian* (sword discourse) · *Changjian* (longsword) · *Duanjian* (short sword)

1 Sima Qian's Way of the Sword (*Jiandao*)

Sima Qian was one of the greatest historians in ancient China while his *magnum opus*, the *Records of the Grand Historian* (hereinafter, "*Records*"), which he completed despite bodily mutilation, was one of the most important works in the ancient world. Common impression may be that Sima Qian was a literati-bureaucrat who could not possibly have anything to do with *jian* (double-edged sword). In fact, the opposite was true as Sima Qian cared deeply for and had a profound personal relationship with the sword (Fig. 2.1).

Sima Qian did not leave behind dedicated works on the subject, nor are there records of him studying or else engaged in fencing (*jijian*), in the same way as Dongfang Shuo, Sima Xiangru, and Tian Shu. However, whether this was by his intention

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Fig. 2.1 Ancient portrait of Sima Qian, author unknown

or otherwise, the many descriptions and references to the sword scattered throughout the *Records* amply demonstrate the Grand Historian (*Taishi gong*)'s familiarity and reverence for the sword, sympathy for "errant swordsmen" (*xia*),[1] concern for sword culture, as well as his unique and profound understanding of the Way of the Sword (*jiandao*). Particularly worthy of note is a passage from scroll one hundred and thirty, *The Grand Historian's Autobiography* (*Taishi gong zixu*),

> [Those] Without faith, integrity, benevolence, and courage, cannot be instructed in military affairs and sword discourse, [for being] equal to the Eternal *Dao*, internally [it] may cultivate the body, [while] externally [it] may respond to change, [and is verily an instrument for] *junzi* (man of cultivation) [to] compare virtue (Sima 2016, 4019–4020). (Biographies of Sunzi and Wu Qi: Fifth Passage (Sunzi Wu Qi liezhuan: diwu)).

This truly unforgettable passage is found in the *Biographies of Sunzi and Wu Qi*. The text contains no more than thirty words but is richly layered with meaning. Ostensibly, it is concerned with "military affairs and sword discourse" (*chuanbing lunjian*), but in essence, it focuses on the specialist discipline of "sword discourse" (*lunjian*), giving expression to his vision of the Way of the Sword, specifically in

[1] Translator's note: throughout this paper *xia* is translated as "errant swordsman (swordsmen)". However, as the author notes, "not every *xia* could fence, nor was every skilled swordsman a *xia.*" Nonetheless, MMD also observes that "accomplished *xia* were all skilled at fencing," while most *xia* in the *Records* are swordsmen in some form.

relation of the sword's social functions and cultural values. Therefore, I take this passage to represent his "view on the Way of the Sword" (*jiandao guan*).

From my understanding, we may read this passage at three levels. At the first level, one who engages in "military affairs and sword discourse" must possess the four virtues of *xin* (faith), *lian* (integrity), *ren* (benevolence), and *yong* (courage), which are the prerequisites for these disciplines. This sets a very high standard and may be called the "four martial virtues" of ancient China. From Sima Qian's point of view, "military affairs and sword discourse" represent an important discipline "equal to the Eternal Dao" rather than ordinary skills and techniques (*shu*). By thus placing them at the elevated level of "*Dao*," Sima Qian sets a very high moral bar for those engaged in their practice, and in one stroke disqualifies the unstudied and ordinary. These four words were also selected with care, with "faith" and "courage" at the front and end, and "integrity" and "benevolence" in the middle. Why did he choose such a structure over the conventional Confucian schema of *li* (rites), *yi* (loyalty), *lian* (integrity), and *chi* (shame)? This merits an in-depth examination.

The second level is concerned with the sword's functions, namely that "internally [it] may cultivate the body, [while] externally [it] may respond to change" (*nei keyi zhishen, wai keyi yingbian*). The second part, "externally [it] may respond to change," refers to the sword's function to protect the body, which corresponds to the "extraordinary defense" in the annotation. This is easy to understand and requires no further explanation. What we need to pay more attention to is the statement "internally [it] may cultivate the body." "*Zhishen*" (Cultivating the body) is a relatively late expression and appears in scholarly annotations to the *Book of Change* (*I-Ching*) and *Book of Rites* (*Liji*) from the Han period onward, frequently in parallel and juxtaposition to "*zhixin*" (cultivate the heart), which mainly refers to internal (i.e., moral and spiritual) cultivation, whereas *zhishen* refers to external (i.e., bodily) cultivation. Toward the end of the Warring States period, *Master Lü's Spring and Autumn Annals* (*Lüshi chunqiu*) introduced the concept of *zhishen* in conjunction with "*zhiguo*" (literally, to "cultivate a state," or "governing a state"), stating that to "cultivate the body and govern a state are techniques of the same method." Writing about a generation earlier, in the *Luxuriant Dew of the Spring and Autumn Annals* (*Chunqiu fanlu*) scroll seven "Cultivating the State and Body: Twenty-second Passage" (*Tongguoshen: di ershi'er*), the famous Western Han dynasty Confucian scholar Dong Zhongshu (179–104 BCE) offers an exegesis on the *Master Lü's Spring and Autumn Annals*:

> The essence of *qi* (soul) is *jing* (pneuma) while the essence of man is *xian* (virtue). One who cultivates the body (*zhishenzhe*) accrues *jing* as his treasure, while one who cultivates a state (*zhiguozhe*) accrues virtue for his path. The body (*shen*) has intent (*xin*) as its core, as a state has its ruler as its core. When *jing* accrues in the body blood and *qi* are fused together; when virtue accrues in a ruler there is balance between the above and the below. When blood and *qi* are connected, the physical form is without pain; when there is balance between the above and the below, the hundred officials are satisfied. When the physical form is without pain, the body is content; when the hundred officials are satisfied, the state is secure. One who desires to attain *jing* must maintain stillness in form; while those who desire to attain virtue must humble their body. One with a still form and subtle mind is rewarded with *qi* of the purest essence; while one who humbles his pride and maintains humility acts benevolently

and virtuously. Therefore, one who cultivates his body is dedicated to subtlety and stillness in order to attain purity, while one who cultivates the state is dedicated to humbling himself in order to attain virtue. The ability to attain purity leads to harmony and brightness therefore longevity; as the ability to attain virtue leads to the abundance of morality thus peace (Su 1992, 182–183).

Sima Qian's use of *zhishen* may well have followed Dong Zhongshu. Thus, Dong's statements—"one who cultivates the body (*zhishenzhe*) accrues *jing* as his treasure," "when *jing* accrues in the body blood and *qi* are fused together," "one who cultivates his body is dedicated to subtlety and stillness in order to attain purity," and so on—may be used to explain the phrase "internally [it] may cultivate the body." Significantly, in Dong's passage, *zhishen* involves the strengthening of the material body (the painless physical form) *and* the elevation of the spiritual self (the subtle, still form). This notion of "body cultivation" is an early Chinese view of physical education with the body as the vehicle, and occupies an important place in the history of Chinese physical education (Fig. 2.2).

The third level—"*junzi* [to] compare virtue" (*junzi bi de yan*)—invokes a concept that is at once innovative and builds on the existing tradition. China has an ancient tradition of venerating jade, with an equally ancient analogy to compare *junzi*'s virtue to jade. One of the most influential passages is found in the *Book of Rites* scroll

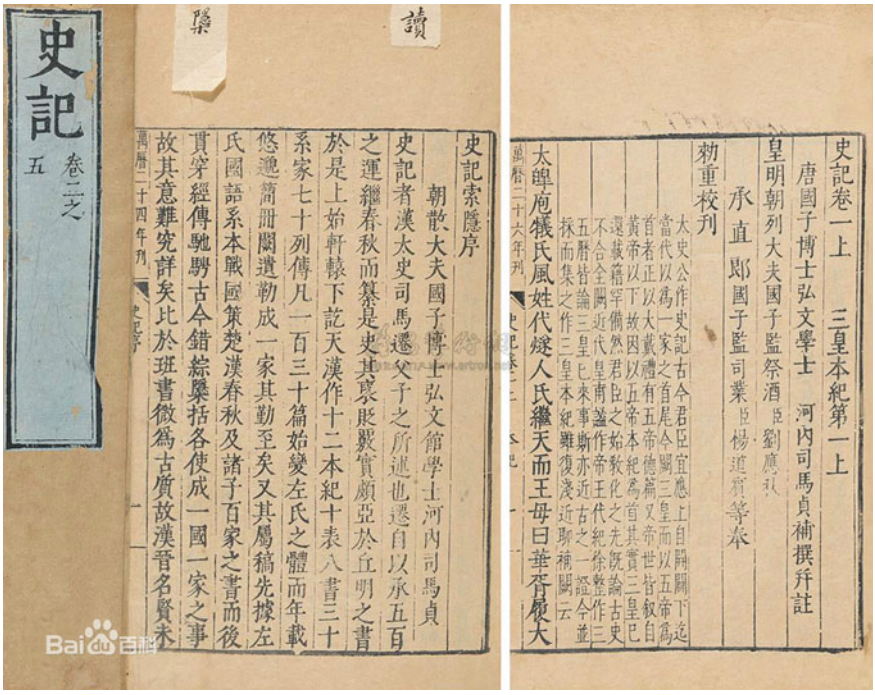

Fig. 2.2 A glimpse of the *Records of the Grand Historian*

sixty-one, "Exegesis on Diplomatic Visiting and Gifting" (*Pinyi*), which records a conversation between Confucius and his student Zigong,

> Zigong asks Confucius, "May I ask why *junzi* values jade and looks down on *min* (stones that look like jade)? Is it because of jade's rarity and *min*'s abundance?" Confucius said, "It is not *min*'s abundance that accounts for its lack of value, or jade's rarity for its value. In the past, *junzi* used jade as an analogy for virtue: [it is] warm and even colored, symbolizing benevolence; well-ordered and [saturated with] dense chestnut patterns, symbolizing knowledge; edged but not harmful, symbolizing justice; [and] hangs weightily on one's body, symbolizing the rites. If you tap on it, its sound is pure and travels far, and terminates in a lingering note, symbolizing music. Its imperfections do not cover its brilliance, nor its brilliance its imperfections, symbolizing loyalty. It has a bright sheen, symbolizing faith. Its *qi* is like the rays of the sky, symbolizing the heaven. Its spirit is seen in the mountains and valleys, symbolizing the earth. It is the substance for *gui* and *zhang* (two types of jadeite vessels), symbolizing morality. Under heaven there is none who does not value it, thus symbolizing the *Dao*. A poem reads, "when we think of a *junzi*, he is mild like jade." For these reasons, *junzi* values jade (Sun 1989, 1466).

This passage also appears elsewhere in Chinese literature, such as in the *School Sayings of Confucius* (*Kongzi jiayu*), scroll eight, "Queries on Jade: Thirty-sixth Passage" (*Wenyu: di sanshiliu*), and *Xunzi*, scroll twenty, "Application of Laws: *Thirtieth Passage*" (*Faxing pian: di sanshi*). The word *min* () was originally written, which annotators explain is a "jade-like rock," as for example stated in the *Lexicon of Discussing Writing and Explaining Characters* (*Shuowen*), "*min*, a stone [that is a grade] just below jade." Based on Confucius' critique of jade—summarized in this passage—later generations postulate that "jade has six levels of beauty," stating that "*junzi* of antiquity must wear jade," while different discursive iterations of "*junzi* comparing virtue to jade" (*junzi bi de yu yan*) continue to proliferate. Apart from using jade to compare virtue, Confucius has another saying—"*junzi* uses water to compare virtue" (*fu shuizhe junzi bi de yan*)—which is seen in such works as *Xunzi*, *Book of Rites Compiled by Dai De* (*Dadai liji*) and *Garden of Stories* (*Shuoyuan*), and is cited by writers in antiquity from time to time. Later on, someone even suggests "*junzi* uses bamboo to compare virtue" (*junzi bi de yu zhu*). All in all, in ancient China, there were three objects or substances used as analogies for virtue—jade, water, and bamboo. As to using the sword as a metaphor for virtue, Sima Qian was the only one; no one before him did so, and none after, which leads me to think this innovation is uniquely his own, and therein lies the core of his view on the Way of the Sword.

Of course, Sima Qian's analogy probably also drew references from earlier literature. One possible source is the legendary King Wu of the Zhou (dynasty)'s *jianming* (sword inscriptions), recorded in the sixth scroll, the *Enthronement of the King Wu of the Zhou: Fifty-ninth Passage* (*Wuwang jianzuo: di wushijiu*), in the *Book of Rites Compiled by Dai De*, composed by Dai De in the Western Han dynasty. It says,

> The sword's inscriptions read, "wear as attire, move to actualize virtue; prosper with virtuous conduct, collapse with immorality (Huang et al. 2005)."

Song dynasty scholar Zhen Dexiu provides an exegesis on this passage in the *Interpretation of the Great Learning* (*Daxue yanyi*) scroll thirty, the "Essence of Honesty and Sincerity: Section Two" (*Chengyi zhengxin zhi yao er*), which states,

> The sword is worn to demonstrate martial valor, yet the true foundation of valor is virtue, while valor is the support of virtue. Only when action is motivated by virtue do people obey without question. When valor takes its place this leads to revolution (Huang et al. 2005, 665).

The record in the *Book of Rites Compiled by Dai De* is unreliable, and the so-called "King Wu's inscriptions" might have been a later creation composed between the late Warring States and early Han. However, the phrase "the true foundation of valor is virtue, while valor is the support of virtue" bears an unmistakable Confucian stamp and was probably a product of the sword's golden age. We may further perceive a link between Sima Qian's analogy and the phrase "moving to actualize virtue" (*dong bi xingde*), which suggests Sima Qian's view on the Way of the Sword was not created in isolation, and that his innovations were built on existing concepts and cultural mores.

The *Book of the Former Han* (*Han shu*) contains a thirty-eight-chapter treatise known as the "Way of the Sword" (*Jiandao*) but none of it has survived (Ban 1975, 1761). No trace of it is found in the literature of the pre-Qin period or the works of the Han and Wei dynasties, nor do we find any allusion in Sui and Tang records, which suggests it was lost in an early period, possibly during the upheavals during last years of the Eastern Han. Undoubtedly, the disappearance of the "Way of the Sword" treatise is an irreparable loss to China's classical martial studies. The large number of chapters it contains suggests it was a work that came at the end of a long tradition, which distilled and integrated the writings of earlier authors. Toward the end of the Warring States period, Lü Buwei, a chief minister of the kingdom of Qin, also devoted a chapter to fencing entitled "Chapter on Swordsmanship" (*Jianji pian*) in the *Master Lü's Spring and Autumn Annals*. This was probably another important treatise. Regretfully, it was lost in the Tang dynasty. In recent years, archaeological discoveries have yielded a large number of ancient texts, and we hope treatises on the Way of the Sword may yet surface one day, even if only in fragments.

The composition of the "Way of the Sword" treatise and the "Chapter on Swordsmanship," as well as treatises devoted to sword appreciation, such as the *Appreciation of Treasure Sword* and *Blade* (*Xiang baojiandao*) and *Lost Books of Yue: Records of Treasure Swords* (*Yue jueshu: baojian ji*), testify to the sophistication of sword culture during the Han and the preceding Warring States periods. Following the loss of the treatise, however, the Way of the Sword also fell mysteriously into abeyance, only making a brief appearance in the Wei Emperor Cao Pi's *On Classics and Treatises* (*Dianlun*) before vanishing altogether. No other work on the subject appeared after that. Not only did the discipline of sword discourse and its fencing system disappear, the very term "Way of the Sword" also fell into disuse.

During the Tang and Song dynasties, swordsmen appeared from time to time, but they were few and far in between, leaving behind no real historical trace or written record. Ming dynasty general Yu Dayou (1503–1579) was a colossus in martial studies and among the very few to inherit the tradition of the long sword of the Jing and Chu regions (*Jingchu changjian*), which he learned from the civilian master swordsman Li Liangqin. He trained his troops in swordsmanship (*jijian*) and composed a treatise bearing the title of "Sword Treatise" (*Jianjing*). However, in

reality, the work is not about sword discourse (*lunjian*); he used this name primarily to express veneration for the ancient ways. Instead, the manual contains instructions in staff-fighting, which he describes as the "Four Books,"[2] adding that "once you know the Four Books, you also know the principles of the Six Treatises," thus highlighting the staff's practical value for military training. This shows that Yu Dayou, being well-versed in history, merely uses the name "*jian*" to evoke a long-gone golden age and express his nostalgia for the past (Yu D, 2007). In the late Ming dynasty, the illustrious Mao Yuanyi (1594–1640) published the *Korean Swordsmanship Methods* (*Chaoxian shifa*)[3]—"obtained by an enthusiast in Korea"—in his military tome *Records of Armaments and Military Provisions* (*Wubei zhi*), thereby giving us an extremely valuable historical fencing treatise and a chance to look at the ancient two-handed sword (*shuangshou jian*) methods. In recent times, the name and sport of *kendō* (*jiandao*, or the "Way of the Sword") returned to China from Japan and attracted many followers, perhaps drawn by a sense of *déjà-vu*. Nonetheless, there was no other way than to treat the modern *kendō* as an imported concept.

Today, classical *jiandao* is lost and it is not possible to fully recover its theory and technical system. Fortunately, Sima Qian has recorded many of its features in the *Records of the Grand Historian*, which is a veritable trove of information on *jiandao*. Most importantly, he has passed down his view on *jiandao* which, being "equal to the Eternal *Dao*," is a way for "*junzi* [to] compare virtue." With the broad and unique perspective of the Grand Historian, Sima Qian brings attention to both the great and the small, the momentous and the commonplace, and, having surveyed several centuries of historical development from the Warring States to the Qin-Han periods, he documents his all-encompassing view of sword culture in the *Records*, displaying its diverse aspects like so many antique treasures arrayed in the hall of Chinese martial studies. This allows us to inspect and appreciate China's ancient sword culture up close and, through his descriptions, experience the old treasure swords' scintillating brilliance and the ability of ancient swordsmen to "strike at will and defeat long weapons with the short," as well as admire the heroism of the assassin Jing Ke who, mortally wounded and surrounded by enemies, "laughed defiantly while leaning on the pillar, and, sitting casually on the ground, hurled curses [at the tyrant] (*yizhu er xiao, jiju yi ma*)." Out of his deep affection for sword and incomparable erudition, Sima Qian has recorded many details that historians not sharing his interest and sympathy would have overlooked. Certain details may seem trivial or insignificant, but in hindsight, everything he has written down is of immense value. Properly studied and organized, they provide a vista into China's sword culture of the pre-Qin period and reveal a little-known aspect about Sima Qian—his profound bond with the sword and his "Way of the Sword".

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[2] Translator's note: the "Four Books" refer to the four Confucian classics, i.e., *Great Leaning* (*Daxue*), *Doctrine of the Mean* (*Zhongyong*), *Analects* (*Lunyu*), and *Mencius* (*Mengzi*). The idea is that, just as the Four Classics lie at the foundation of a literato's education, so training with the staff is fundamental to the martial arts, in particular all hafted weapons which are also related to the staff.

[3] *Chaoxian shifa* is discussed in greater detail in the final chapter of this volume.

2 The Sima Clan and Sword Culture in the State of Zhao

The Sima clan had an unusual relationship with the sword. This could be an important reason behind Sima Qian's personal connection with the *jian*. In the *Grand Historian's Biography* in the *Records*, while discussing the earlier generations of his clan, he states that in the Zhou dynasty during the Kings Hui and Xiang's reigns, as the old dynasty was being replaced by the Jin state, his ancestors scattered across various kingdoms such as Wei, Zhao, and Qin. In particular,

> The one in Zhao was known for [giving] instructions in sword discourse (*jianlun*). Kuaikui was his descendant (Sima 2016, 3990).

Citing Fu Qian, Pei Yin writes in the *Collated Interpretations* (*Jijie*), "For generations [the Sima clan were] adept at teaching the sword." Also citing Fu Qian, Sima Zhen says in the *Indices and References to the Records of the Grand Historian* (*Suoyin*), "For generations [they were] adept at the sword." That is to say, the branch of Sima Qian's ancestors in the Zhao state practiced and were known for their fencing skills, with Sima Kuaikui being the outstanding representative.

Not much is known about Sima Kuaikui. In the *Exegesis on the Records of the Grand Historian* (*Shiji zhengyi*), the Tang writer Zhang Shoujie refers to the "Kuaikui in the *Biographies of the Assassins* (*Cike liezhuan*)." However, this name is not found in the *Records*, which clearly suggests that Ru Chun was referring to a different work with the same name. Unfortunately, this *Biographies* which might have been used by Sima Qian was lost long ago. Not even fragments or allusions are found in Sui and Tang dynasty literature, which suggests it was lost before the Tang dynasty. However, what is certain is that Sima Kuaikui was a skilled sword master, of which there is ample evidence in Han dynasty records. The King of Huainan, Liu An, mentions him in the *Huainanzi: On Training and Discipline* (*Huainanzi: zhushu xun*),

> If you hold the sword by its edge, even Beigong-*zi* and Sima Kuaikui could not make effective use of it; on the other hand, if you hold it by its *gu* (hilt), even an ordinary man could wield it at ease and attain victory (Liu 1989, 304).

Here, Sima Kuaikui is mentioned in the same breath as Beigong-*zi*. Both were well-known fencing masters, but who were they? Gao You further states in his annotation,

> Beigong-*zi* [was] from the kingdom of Qi, the same person that Mencius called Beigong You. Sima Kuaikui's ancestor Chengbo Xiufu swore an oath to the king and became the *sima* (master of the horse), thereby gaining the name "Sima." Kuaikui was his descendant. The Sima clan moved to other kingdoms after the Zhou state/dynasty fell into decline. Kuaikui lived in the state of Zhao and was known for [his] swordsmanship skills. He often accepted [challenges] and engaged in [fencing] bouts (Liu 1989, 304).

Gao's annotation is very clear: Beigong-*zi* was from the kingdom of Qi, the same as the Beigong You to whom Mencius referred, but we know nothing else about him. Mencius only said that he was "courageous," a warrior who considered the task of "assassinating a ruler of ten thousand chariots" as being no different from "assassinating a man of (i.e., wearing) the brown color." From this, we may infer that Beigong You was an assassin.

As to Sima Kuaikui, Gao You's annotation basically derives from the *Grand Historian's Autobiography*, only stating that "Kuaikui from [the kingdom of] Zhao was known for [his] swordsmanship skills." It is likely that Gao You chose the words "*shan jijian*" (adept at fencing) intentionally, to corroborate the statement in the original text that the Sima clan were "known for [giving] instructions in sword discourse," and thus state in the clearest possible terms that Kuaikui himself was skilled in fencing.

2.1 Sword Culture in the State of Zhao

"A country with wars on four sides, its people practice the arts of war" (*sizhan zhi guo, qi min xibing*). This is how, during the late Warring States period, Lord Changguo of Yan described the war-ravaged kingdom of Zhao after the fiasco at the Battle of Changping (*Changping zhi zhan*), as he advised the king of Yan against attacking Zhao. Regardless, the king went ahead and attacked Zhao and was duly routed (Sima 2016, 2201). The people of Zhao were warlike, and among the northern states during the Warring States, swordsmanship was the most widespread and popular in Zhao. Thus the reference to "its people practice[ing] the arts of war" probably also includes fencing. If not, how would the Sima clan be "known for instructions in sword discourse" and produce famous swordsmen like Sima Kuaikui?

During the Spring and Autumn period, Wu and Yue were the early centers of bronze sword culture. Not only did they produce swords of excellent quality, but the principles of fencing also went through significant development in these kingdoms, which led to discourses such as "Lady Yue's Sword Discourse" (*Yuenü jianlun*). Swordsmanship reached its peak around the time of King Goujian of Yue, which gave rise to a popular saying after the Warring States period that "the King of Yue was warlike and its warriors looked lightly upon death." Later, Wu and Yue were conquered, and Chu took over as the center of sword culture. The evolution from bronze sword to iron and steel sword mainly took place in Chu, which also saw a significant lengthening of the blade, which in turn led to developments and transformation in fencing, ultimately leading to a clear division in material form and technical skills between short swords (*duanjian*) and long swords (*changjian*). Significantly, the "long swords of the Jing and Chu regions" (*Jingchu changjian*) and "uncommonly skilled Jingchu swordsmen" (*Jingchu qicai jianke*) were the products of the sword's pluralistic development, and one of the most eye-catching aspects of Chu culture. The Chu-style long sword was popular not only in Chu; its influence was far-reaching and affected sword styles and development in Qin, Qi, and Lu, the Lingnan region, and extended into the Han and Wei dynasties through the Qin-Han periods (Fig. 2.3).

Compared to the south, the development of the sword in the north was more complex, with multiple and often intertangled threads. From historic records, the kingdom of Zhao was a major hub. Liu Wendian's *Causerie on the Zhuangzi, Han Feizi, and Huainanzi* (*Sanyu zhaji*), scroll one, *Annotations on Huainanzi* (*Huainanzi*

Fig. 2.3 Illustration of the sword owned by Goujian, the King of Yue

jiaobu), contains an entry on "military and war" (*Qi bingge*), which cites a sentence from the *Correcting Fallacy and Rectifying Crudity* (*Kuangmiu zhengsu*) written by the Tang dynasty scholar Yan Shigu. It says,

> Books such as the Yellow Emperor's *Basic Questions* (*Suwen*) and *Huainanzi* speak of the armies of the five directions: in the east the army [relies on] lances, in the south the army [relies on] the crossbow, in the center the army [relies on] the sword, in the west the army [relies on] the ax, in the north the army [relies on] the long spear (Liu 1990, 20).

At first, the idea of "armies of the five directions" may seem forced, but in fact there are reasons behind it. Here, "the center" includes the entire "Three Jin" (*San Jin*) region including the Zhao, Wei, and Han territories, thus effectively encompassing the Central Plains. North of the Three Jin region is the territory of Northern Di (barbarians), later that of the Xiongnu and subsequently the Xianbei, all nomadic peoples who specialized in horseback archery and the use of long-bladed spears, known historically as "*changsha*" and as "*pi*" in the Central Plains, which was not only used for thrusting and cutting but could also be thrown as a projectile.

From a martial art point of view, the Han of the Central Plains and the northern Xiongnu each held certain advantages. While Xiongnu's advantage lied in their

cavalry, the Han had a better infantry and were more adept at hand-to-hand combat, as the famous Han dynasty minister Chao Cuo, who served under the Emperor Jing, once said, "Once dismounted from the horse and [the soldiers are] fighting on the ground, when sword and halberd clash in close-quarter combat, these are China's favored techniques, unmatched by the Xiongnu (Ban 1975, 2281)."[4] Therefore, "in the center, the army [relies on] the sword" was a legacy and development inherited from the Tiger Warriors (*Huben zhi shi*)'s "martial teachings" from the Western Zhou dynasty and had factual basis in history.

The Zhao clan was originally an aristocratic family in the kingdom of Jin. After countless ups and downs over an extended period lasting several centuries, they eventually founded their own kingdom and became one of the seven major powers during the Warring States. For a period of time, it was one of the most powerful states that contested with the ambitious Qin. Zhao had a strong martial tradition, its people were warlike and proud, and produced celebrated generals such as Zhao Tu, Lian Po, and Li Mu (Sun and Hao 2003, 20). In the first place, an ancestor of the Zhao clan Fei Lian and his son E'lai were both said to be warriors and gained the trust and confidence of the King Zhou of the Shang dynasty with their ability and strength (*caili*) and political acumen (*zhizheng*). The Zhao people's warlike and martial qualities were probably inherited from these two distant ancestors. Historically, there were many legends about them while Sima Qian had ancestral ties to both Zhao and Qin (Sima 2016, 2147).[5] In addition, the people of Zhao had a tradition to select their leaders through martial bouts. The *Discourses of the States: Discourses on the State of Jin, Ninth Passage* (*Guoyu: Jinyu jiu*) records that Zhao Jianzi's military aide (*rongyou*), Shaoshi Zhou, once proposed to have a trial of strength with Niu Tan, who was reputed to be very strong. In the end,

> Defeated, he pointed to the right. Jianzi approved and appointed Shaoshi Zhou to the chief minister, saying, "Giving place to the virtuous is commendable (Xu 2002, 451)."

Mr. Yang Kuan reckons that in this instance the words being used, "*jiaoli*" (trial of strength), actually means "*shoubo*" or "empty-hand combat." This suggests empty-hand combat was also popular in the kingdom of Zhao. Fundamentally, to decide an official position through a *shoubo* contest was an illustration of the Zhao state's strong martial ethos.

The land of Zhao was connected to the Northern Di's territory and neighbored the Zhongshan kingdom later built by the Xianyu people, with whom they often clashed and interacted, and formed marriage alliances. For this reason, the people of Zhao did not see a sharp division between the Han and the Hu (non-Chinese northern peoples). Indeed, not only did they not hold prejudices against the Hu, but their temperament also became increasingly similar and became affected by their neighbors' warlike nature, which is an important reason behind the King Wuling of Zhao's policy to "adopt the Hu people's clothing, riding and archery skills" (*Hufu qishe*).

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[4] The original Chinese text reads, 「下馬地鬥, 劍戟相接, 去就相薄, 則匈奴之足弗能給也, 此中國之長技也。」

[5] The original Chinese text reads, 「趙氏之先, 與秦共祖。至中衍, 為帝大戊禦。其後世蜚廉有子二人, 而命其一子曰惡來, 事紂, 為周所殺, 其後為秦。惡來弟曰季勝, 其後為趙。」

People of Zhao's proclivity toward fencing may be seen in *Zhuangzi*, "Chapter on the Sword Discourse" (*Shuojian pian*), which provides precious information on fencing practice in the pre-Qin period, particularly in the state of Zhao. The "Chapter on the Sword Discourse" was an allegorical text, which has historically been considered an "odd chapter" in *Zhuangzi*, a later apocryphal work that belongs to the category of the "School of Diplomacy (*Zongheng jia*) with nothing to do with Zhuangzi's thinking" (Zhi An 1999, 337). Or it is said that "this passage is very similar to the *Strategies of the Warring States* (*Zhanguo ce*), and is undoubtedly a late work" (Zhong 2002, 714). However, as an ancient allegory with "sword" as the subject, it provides much valuable historic information, which may not be gleaned from other historical sources. It helps us understand the sword culture in the kingdom of Zhao, and beyond, during the Warring States period. As to whether it belongs to the purview of the "Zhuangzi Studies" (*Zhuangxue*), and whether it has anything to do with Zhuangzi, these questions do not concern us.

Firstly, using the King Wuling of Zhao's son, the King Huiwen Zhao He, as the allegorical medium, the "Chapter on the Sword Discourse" begins thus,

> The King Wen of Zhao was fond of the sword. Swordsmen filled through the door with over three thousand guests, who engaged in fencing night and day, with over a hundred casualties dead or wounded every year (Guo 2012, 1016).

Obviously, this was a constructed narrative. However, among the seven major powers during the Warring States period, why did the author choose Zhao as the background for his story? This probably reflects the fact that fencing was widespread in Zhao. The King Wen of Zhao's fondness for the sword and the expression "swordsmen filled through the door" (*jianshi jiamen*) may be compared to Han Fei's description "groups of errant swordsmen were kept as private swords" (*qunxia yi sijian yang*), which portrays a situation we know to have existed in Zhao (Chen 1962, 1057). Lord Zhao Sheng had several thousand house guests (*menke*), among whom there must have been privately hired swordsmen (*sijian*). Zhao Sheng once selected "twenty people who are filled with courage and strength, and versed in literature and martial arts" to accompany him to Chu to solicit help from the state. As the king of Chu could not make up his mind, one of Zhao Sheng's guests Mao Sui "put his hand on the hilt and pressed forward" (*anjian er qian*) and threatened the king of Chu, saying, "Within ten steps, the king may not rely on the Chu state's multitudes as his life lies in my hands." In the end, this venturesome act sealed an alliance between Zhao and Chu (Sima 2016, 2876–2877). The story of "Mao Sui's self-recommendation" (*Mao Sui zijian*) is well-known, but his behavior was that of a swordsman equally versed in literature and martial arts, and ready to throw himself into danger. Who could have done this without some martial training? People seem to have missed the point and, in imagining Mao Sui simply as a diplomat with a persuasive voice, his role as "swordsman" has been completely overlooked.

In sum, the "Chapter on the Sword Discourse" contains several notable points. First, professional swordsmen of the Warring States period not only wore distinctive clothing but also had a unique appearance and mannerisms, namely that "[their] hair [was] tied into a bun with tresses falling to the shoulders, gathered in a low crown tied

with coarse cloth; [while they were dressed in] a short, fitted robe; [and had] eyes with an angry expression and hard of words" (*pengtou tubin, chuiguan manhu zhi ying, duanhou zhi yi, chenmu er yu'nan*). Annotators have given different explanations for this description, which we need not delve into. However, in my opinion, there are a couple of points directly related to the practical aspects of fencing. First, the phrase "*chuiguan manhu zhi ying*" refers to the fact that the warrior's hair is gathered into a crown and tied with a coarse piece of cloth or rope (*ying*). When two people are engaged in a combat, an ordinary cloth band (also named as *ying*) could break loose easily, which would affect the warrior's performance, while a relatively strong, coarse band would be more secure. This type of coarse band is devoid of decoration, which is why it is described as "*manhu zhi ying*." Some scholars opine that "*manhu*" means "unspecified," which also makes sense in this context. Second, "*duanhou zhi yi*" (a short, fitted robe) is a type of clothing designed for mobility and could be a special type of clothing worn by swordsmen. Moreover, the story is based on the King Huiwen of Zhao, the son of the King Wuling, who was the one who implemented the policy of adopting the Hu people's costume, riding, and archery skills (*Hufu qishe*), so this type of clothing which is short at the back could be a type of the "Hu-style costume." Obviously, trimming at the back is for riding.

Secondly, since ancient days, many conflicting explanations have been given for the expression "*chenmu er yu'nan*" (eyes with an angry expression and hard of words). I am of the opinion that this refers to a formal facial expression or mode of expressing oneself adopted by ancient swordsmen. "*Yu'nan*" (hard of words) means "taciturn," whose purpose is to convey a sense of gravitas and seriousness. This is a professional demeanor, probably of ancient root. Today, in a boxing match or other combat sports, sportsmen still gaze into each other's eyes as a way of expressing courage and confidence. This is a professional habit and demeanor unique to "blood sports." It could sometimes be exaggerated, in order to boost one's confidence and gain a psychological edge over the opponent.

Thirdly, let us consider "*shibu yiren, qianli buliuxing*" (literally, "a man every ten steps, a thousand *li* without obstruction"). This statement has likewise elicited many explanations, mainly due to the different annotators' varying perspectives. Some take the view that it refers to a sword, with the aim to exaggerate the keenness of its edge; others think that it refers to the swordsman, hence it is a description of his skills. I support the latter interpretation. It describes insuperable fencing skills, which may be resisted only at the pain of death! "A thousand *li*" is a hyperbolic phrase to describe the swordsman's ability.

Fourthly, regarding the expression "*shizhi yi xu, kaizhi yi li; houzhi yi fa, xianzhi yi zhi*" (presenting with subtleness, initiating with sharpness; striking after your enemy's blow, but reaching your target first), these four phrases are the most imbued with the essence of the "sword discourse" (*jianlun*) in the "Chapter on the Sword Discourse." In fact, they are similar to the phrase, "*neishi jingshen, waishi anyi, jianzhi si haofu, duozhi si juhu*" (internally filled with spirit while exuding external calm, with the appearance of a comely woman, and strikes like a ferocious tiger), in the "Lady Yue's Sword Discourse." By comparison, what the former lacks in evocativeness and vivacity, it compensates with a greater realism that is entirely

typical of the pre-Qin sword discourse. According to the common explanation, "*shizhi yi xu*" (presenting with subtleness) means to be unpredictable, while "*kaizhi yi li*" (initiating with sharpness) means to surprise your opponent; only then "*houzhi yi fa, xianzhi yi zhi*" (striking after your enemy's blow, but reaching your target first) (Zhong 2002, 718). This explanation agrees with the principles of combat. I believe these phrases might have been taken from a sword treatise rather than the author's own words.

The fifth sentence in concern is "*fuzi suo yuzhang, changduan heru*?" (The short staff that you carry, what is its length?) Some versions render "*zhang*" (short staff) directly into "*jian*" (sword). This was a question the king of Zhao asked Zhuangzi. "*Zhang*" is used to denote a sword, but it could also mean a wooden sword (i.e., short staff) used for fencing practice, similar to the cane in Cao Pi and Deng Zhan's fencing match in a later period (Ma 2007, 24). The king of Zhao asked Zhuangzi whether he used a long sword or a short sword. Between the Spring and Autumn–Warring States periods and the Han dynasty, there were two main types of swords—long and short—which had different forms and techniques. This question demonstrates the author's familiarity with swords, displaying the discernment of an expert, and serves as a useful clue to determining the date of the composition of the "Chapter on the Sword Discourse."

The *Records* also contain other fragmentary pieces of information that help us understand the social status of swordsmen and martial valor in the land of Zhao. In the *Biographies of the Assassins*, Yu Rang made several unsuccessful attempts on Zhao Xiangzi's life. When he was eventually caught, he made an astonishing request to strike Zhao Xiangzi's robe, saying, "to be able to fulfill the intent of vengeance, he would die without regret." Zhao Xiangzi granted his wish and instructed his own robe to be brought forward, whereby "Yu Rang drew his sword, leaped and struck at it three times," then killed himself by plunging the sword into his body (*fujian zisha*). Sima Qian added, "on the day of his death, the people of Zhao, upon learning what came to pass, all shed tears (Sima 2016, 3060)." This is truly an incredible story; Yu Rang's stubborn obstinacy, Zhao Xiangzi's forgiveness and grace, and the fact "the people of Zhao, upon learning what came to pass, all shed tears" fully illustrate the warrior ethos and veneration for sword culture in the land of Zhao (Fig. 2.4).

Jing Ke was one of the most important personalities in the *Biographies of the Assassins*. He was a keen swordsman, and during his travels, he once visited Handan, the capital of Zhao, where he famously entered into an argument with Lu Goujian, who was a renowned swordsman and quite possibly a native of Zhao. We shall have more to say about him later.

Before Jing Ke ventured to the state of Qin, to ensure the success of his mission, the prince of the Yan kingdom sought "a dagger of incomparable sharpness under Heaven," and "obtained a dagger from Xu Furen, a native of the State of Zhao," and further "treated [it] with poison." Xu Furen was likely a master swordsmith in Zhao.

Moreover, according to the *Records of the Grand Historian* scroll a hundred-and-four, *Biography of Tian Shu* (*Tian Shu zhuan*), it is said that Tian Shu, a famous minister of the early Han dynasty, was a native of Xingcheng in the State of Zhao, and that "Tian Shu was fond of the sword, and studied the methods and philosophy

Fig. 2.4 "Jing Ke's Assassination of the King of Qin," rubbing of stone inscriptions of the Wuliang Temple, later Han dynasty

of the Yellow Emperor and Laozi (*Huanglao shu*) from Leju Gong." Tian Shu had the character of an errant swordsman (*xia*), and later received much favor from the Han Emperor Gaozu (Liu Bang).

Such details make us suspect that the author of the "Chapter on the Sword Discourse" in *Zhuangzi* was a native of Zhao, or leastways someone familiar with the martial valor and culture of the land. The "Chapter on the Sword Discourse" and other fragmentary materials complement our understanding of the claim that the Sima clan was "known for instruction in sword discourse." In the first place, they show that swordsmanship was venerated in the kingdom of Zhao and that it was indeed a state where one could gain renown through sword discourse. Second, they illustrate the fact the Sima clan's skills with the sword were truly extraordinary, as it was no easy matter to be celebrated in a country where fencing and sword culture was so strong. I believe the Sima branch in Zhao could be hereditary professional swordsmen and represented the highest level of fencing in Zhao, which is why they were able to produce Sima Kuaikui, an "unparalleled swordsman under Heaven."

In summary, the history of the Sima clan, including Sima Kuaikui's mysterious personal experience, must have had a profound influence on Sima Qian, so that when he composed such chapters as the *Biographies of the Assassins* and the *Biographies of Errant Swordsmen* (*Youxia liezhuan*), he could not repress his feelings toward the sword and sword culture.

3 Sima Qian's Swordsmen

The *Records* contain descriptions of a multitude of personalities who were either fond of or skilled at fencing, but no such words as *jianke* or *jianshi* (swordsmen) appear. The word *jianke* first appears in Ban Gu's *Book of the Former Han* scroll fifty-four, *Biography of Li Guang Appended with Biography of Li Ling* (*Li Guang zhuan fu Li Ling zhuan*), in the phrase "*qicai jianke*" (swordsmen of uncommon talent); and again in scroll sixty-five, *Biography of Dongfang Shuo* (*Dongfang Shuo zhuan*), in the phrase "*junguo gouma cuju jianke fucou*" (in the vassal states, dogs, horses, experts in the *cuju* ball game, and swordsmen all mixed together) (Ban 1975, 2451 and 2855). Later, the word appears again in a famous adage in the *Book of the Later Han* (*Hou Hanshu*), "*Wuwang hao jianke, baixing duo chuangban*" (The King Wu was fond of swordsmen, but civilians were full of scars), which shows that the kingdoms of Wu and Yue's custom to venerate sword during the Spring and Autumn period was still remembered during the Eastern Han dynasty. Here, *jianke* refers to those who were fond of or skilled at fencing, or indeed professional swordsmen. I suspect the word *jianke* also existed in the Western Han period but was not used by Sima Qian. The word *jianshi* first appears in *Zhuangzi*, the "Chapter on the Sword Discourse," but was not used during the Qin and Han periods. It could have been a term used in the kingdom of Zhao but not current elsewhere. After the Tang dynasty, the term *jianshi* appeared from time to time, mainly referring to professional swordsmen, including those from the lower social ladder such as assassins.

In the face of such diverse range of characters, Sima Qian found it hard to group them under a single term, so he chose the broad and loose-meaning term *xia* in an attempt to bring them into his fold, and further divided them into two biographical sections under *cike* (assassins) and *youxia* (errant swordsmen), according to the nature of their feats and characteristics. Beside these two biographic galleries, he also records the feats of a number of swordsmen, which are dotted in various sections of the *Records*, in an effort to preserve the names of swordsmen who did not belong to the class of *xia*, and in order to show the wider, socially complex, community of swordsmen.

Broadly speaking, accomplished *xia* were all skilled at fencing but not every *xia* could fence, nor was every skilled swordsman a *xia*. Moreover, individuals had different roles and influences in society. While some might have been highly skilled at fencing but did not accomplish significant feats, such as Sima Kuaikui, as well as such personalities as Gai Nie and Lu Goujian who are mentioned in the *Biography of Jing Ke* (*Jing Ke zhuan*), others left behind important legacies but were not skilled at fencing, with Jing Ke being an obvious example. This was probably the main reason Sima Qian did not use the word *jianke*. Ban Gu also made scant use of the term, but its meaning is clear and does not connote *xia* in any way.

If we list out all the people Sima Qian mentioned who had to do with the sword or fencing in one way or another, we find a big community indeed. Using his own phrase, "*wei xiazhe jizhong, ao er wu zushu zhe.*" (There are an extremely large number of *xia*, who were verily wanderers beyond number) (Sima 2016, 3873).

During the Warring States there was a saying, "*jianke yi duanchang zhishu youshui zhuhou*" (swordsmen used the skills of short and long swords to persuade the ruling elite). This likely had some measure of factual basis. Swordsmen had ever been a mixed bunch of characters, united only in their use of the sword, in which they had received training in the short or the long sword, or such specialized skills as *yijian yaoji* (throwing the sword to hit the target). However, most professional swordsmen came from the lower reaches of society while a significant proportion served the elite as *sijian* (privately hired swordsmen).

During the Warring States and early Western Han periods, centralized authority was limited while vestigial customs from the Spring and Autumn–Warring States periods remained, including vendetta and private feuds. The existence of *youxia* and *sijian* undoubtedly added another layer of danger to the political environment, and perhaps posed a threat to society at some level. However, their existence also kept alive the ancient martial spirit and veneration of the sword, and ensured that the culture of "*yi'nuo bicheng, bu'ai qiqu, fu shi zhi e'kun*" ([being] faithful to promise, disdainful of one's body / life, and rising to great dangers")continued (Sima 2016, 3865). This traditional spirit—simple, lofty and ancient—appealed to Sima Qian at a profound level, who believes that "*yao yi gong jian yanxin, xiake zhi yi you he ke shao zai!*" (Words and faith must be borne out by action, thus chivalrous swordsmen's virtues are much needed!) In other words, as far as "bearing out words and faith with action," such people stood on a higher moral ground than the social elite, as they were steadier in their commitment to their beliefs and moral values, and whose virtues (*xiake zhiyi*) had a role to play in a chaotic society. At the same time, many of them had humble stations in life. They gained fame *despite* coming from the grassroots. For this reason, Sima Qian was glad to compose biographies for them which, in a certain sense, was also a way to recognize the "elite" from the bottom of society. He did not hide the fact that he had a different view on *xia* from other men of letters and indeed used it to express his "uncommon" nature and cultural empathy. In the *Biographies of Errant Swordsmen*, he wrote the following passage, which conveys this very clearly. It says,

> Today's errant swordsmen, though their acts may not be considered entirely correct, yet they are faithful to their words, see through to their actions, [and are] truthful to their promises, [and, being] disdainful of their bodies, rise to great dangers, such that in the face of life and death, they would be ashamed if they did not strive to their utmost…
>
> Cloth-robed *xia* of old have vanished except for their names. In recent times, such ilk as Yanling, Mengchang, Chunshen, Pingyuan, and Xinling, inasmuch as they are related to the aristocracy, enjoy the wealth of the elites and have gathered around them men of virtue. Their fame resounds among the feudal lords (*zhuhou*) which, though not undeserving, their actions are like a man blowing with the wind, which would have been as strong without their effort. As to the *xia* from the back alleys (*lüxiang zhi xia*), whose names are forged with unremitting action, and spread their virtuous fame to all lands under the Heaven, to do so is much harder. Yet the followers of Confucius and Mozi push them to the margins. In this way, from the time before the Qin, such lone errant swordsmen (*pifu zhi xia*) had already vanished without a trace, which I deeply regret. From what I have heard, after the rise of the Han, there are Zhu Jia, Tian Zhong, Wang Gong, Ju Meng, and Guo Jie. Although they break the laws and restrictions, yet they uphold justice, and maintain humility and integrity

> in their conduct, and are worthy of praise. Their reputations are not unfounded, while those who stand with them do so with reason. As to the gangs and lineages who command the poor with their wealth, or wealthy rogues who oppress the weak and indulge in their own desires, these people the errant swordsmen despise. I lament the fact that people know not their true intent, thus [make the mistake to] vulgarize the likes of Zhu Jia and Guo Jie into the violent elite, laughing at them as if they are the ilk (Sima 2016, 3865–3868).

This text is worth reading carefully as it is a profound expression of Sima Qian's value system and broad social perspective. He believed that "*xia*" were men who were "faithful to their words, see through to their actions, [and were] truthful to their promises," and who, at times of trouble and in order to help those in need, would put themselves in harm's way, while always striving to do their best without flaunting their virtues. All in all, they were a group of men whose behavior reminds one of the *junzi* (men of cultivation) from ancient times. He believed that "cloth-robed *xia*" of old disappeared long ago, which he found deeply regretful. The Yanling, Mengchang, Chunshen, Pingyuan, and Xinling of late, even though they enjoyed a reputation for justice, yet they were "related to the aristocracy, enjoy[ed] the wealth of the elites, and have[had] gathered men of virtue around them," thus despite their great fame "their actions are like a man blowing with the wind, which would have been as strong without their effort," and in that sense, they were a far cry from the "cloth-robed" heroes who lived in the back streets. Therefore, at a fundamental level, his concern and sympathy lied with the "*xia* from the back alleys," who, coming from the lower rungs of society, "forged their names with unremitting action, and spread their virtuous fame to all lands under the Heaven." They were marginalized by the followers of Confucius and Mozi alike and were constrained by law, yet they maintained humility and integrity, and more importantly resisted the behavior of the "gangs and lineages who command[ed] the poor with their wealth" and "wealthy rogues who oppress[ed] the weak and indulge in their own desires." Unfortunately, the "people know not their true intent" and often confused them with the "violent elite," which caused Sima Qian to lament. Clearly, he felt this was an illustration of the prejudices and injustice of the world he lived in.

Han Feizi (c. 280–233 BCE), an important representative of the Legalist philosophy in the later Warring States period, held a very different view. Han Feizi was strongly of the opinion that the state should outlaw *xiake* and swordsmen, on the premise that *xia* and *wu* (the martial) had a necessary connection. He points out that people's condoning attitude toward *xia* was in essence a contradiction to the "legal path" which upholds imperial authority, thus in his opinion, the *xia* class must be abolished (Chen 1962, 1057).

However, the state of Qin, which long ago encouraged its people to "wear swords," did not follow Han Fei's recommendation on the issue of "*xia*". Veneration of swordsmanship and encouragement of popular fencing competition was a state policy set by the ancient dukes and kings. It had proven its value as a way to strengthen the state and therefore was not to be so easily jettisoned. In addition, the cruel and uncertain political environment of the Warring States also provided a fertile soil for the community of *xia.* Li Si, a fellow student with Han Feizi under Xunzi, who was the main advisor to the first emperor of Qin, and initiated the administrative

reform to devise a two-layer prefecture and county system (*junxian zhi*) and the policy of *fenshu kengru* (burning books and burying Confucian scholars alive), not only disagreed with Han Feizi's suggestion, but personally saw to Han Feizi being sentenced to death and publicly engaged "private swordsmen" to conduct assassinations. The *Records* scroll eighty-seven, the *Biography of Li Si* (*Li Si liezhuan*) states,

> The king of Qin appointed Li Si to the position of *zhangshi* (chief minister), listened to his ideas, and secretly sent the conspirator Ji to bribe the feudal lords with gold and jade. The feudal lords who could be bought were heavily bribed, while those who refused were assassinated with sharp swords. Following the implementation of this strategy devised by the king and his minister, the king of Qin had capable generals follow him wherever he went (Sima 2016, 3085).

Sima Qian's pen was as sharp as the edge of the blade, as his statement revealed Li Si's nefarious and shameless political nature. As long as someone was ready to pay, there would be swordsmen willing to vend their skills. During the Warring States, there were thousands of such nameless men.

The use of private swordsmen to remove political rivals continued for a long time until the reign of the Emperor Jing in the Western Han. A well-known example involved Empress Dou's youngest son, the King of Liangxiao, Liu Wu, who was the younger brother of the Emperor Jing. He was rewarded with the title of *Daguo* (Great statesman of the realm) for his role in suppressing the uprisings in the Wu and Chu regions and was wealthy and powerful. He bore a grudge against the important minister Yuan Ang who, together with a number of other officials, jointly attacked him in a court memorial to the emperor. "Thus, he schemed with Yang Sheng, Gongsun Gui, and others, and secretly dispatched assassins to Yuan Ang and over ten other ministers who joined his memorial (Sima 2016, 2535)." This murder case, involving the assassination of over ten court ministers, was eventually solved when court investigators discovered a trace of Yuan Ang's assassination. The *Records*, scroll fifty-eight, *The Lineage of King Liangxiao* (*Liangxiao Wang shijia*), provides the following account,

> The King of Liang heard that the memorial [against him] came from the great minister Yuan Ang's residence and, anguished, sent an assassin to kill Yuan Ang. Yuan Ang looked at him and said, "I am known as General Yuan, are you not mistaken?" The assassin said, "Yes!", and plunged his sword into [Yuan's] body. Inspecting the sword, it was newly polished. Inquiring with sword polishers in Chang'an, a craftsman said, "Someone from Liang came here to have this sword polished." This led to the discovery and a messenger was sent to apprehend the culprit (Sima 2016, 2542).

Sima Zhen writes in the *Indices and References to the Records of the Grand Historian*, "The man from the state of Liang refers to an official under the King Xiao. He was referred to as 'someone' as his name was lost." The assassin who left the sword in Yuan Ang's body was therefore an official of the state of Liang, most likely a swordsman in the employ of the bureaucracy. The act of leaving the sword in the body was clearly intended to send out a warning, but it also shows the assassin's flagrant audacity in the umbrage of authority. To ensure success, the assassin asked

a professional sword polisher in Chang'an to polish his sword, thus leaving a clue that ultimately led to the unraveling of the murder case. According to Xun Yue, this took place in the sixth year of the Han Emperor Jing's reign (151 BCE), while Sima Guang reckons it happened in the second year of the Zhongyuan period during Emperor Jing's reign (148 BCE) (Xun 2002, 141; Sima 1956, 536). The late Qing scholar Wang Guowei estimates that Sima Qian was born in 145 BCE (Wang 1997, 311). Therefore, the incident happened only three to five years before Sima Qian's birth. Sima Qian's father Sima Tan personally lived through this incident, thus we may surmise that Sima Qian must have been deeply aware of this shocking murder case.

The five protagonists in the *Records*, the *Biographies of the Assassins*, were not considered *xia* by Sima Qian, but in truth, they had *xia*'s character. Most of them were political assassins, which may explain why Sima Qian classified them as "assassins" rather than *xia*. Of the five people, the first was Cao Mo, a general from the state of Lu, whose act of kidnapping Duke Heng of Qi could hardly be said to be that of an assassin. There were also Zhuan Zhu from the state of Wu, Yu Rang of Jin, and Nie Zheng of Han. All three may aptly be called *sijian* (private swordsmen) and were heroic figures who repaid debts with their lives. The last one was Jing Ke, the pinnacle of the *Biographies of the Assassins*, a historical figure on whom Sima Qian lavished the most sentiments, who was truly a great assassin whose feat remained undiminished through the passage of time.

From my point of view, out of the five people, Nie Zheng was the best swordsman while Jing Ke's feat was the most significant. Nie Zheng was a swordsman of the first rate, and in terms of swordsmanship broaches no comparison between Zhuan Zhu and Yu Rang. Nie Zheng was a "*yonggan shi*" (brave warrior) to begin with. He eked out a living as a butcher in the state of Qi after he had "killed a man and fled from vendetta." Yan Zhongzi, an important minister in the kingdom of Han, heard about his courage and skills and traveled thousands of *li* in search of him. He once lavished a great sum on the birthday of Nie Zheng's mother, with the aim of enlisting his service to remove his political rival Xia Lei. Nie Zheng remembered Yan Zhongzi's kindness and sought out Yan Zhongzi after his mother passed away to repay his debt. In order to avoid implicating Yan, he decided to undertake Xia Lei's assassination in the kingdom of Han alone. His biography reads,

> He arrived at Han with his sword. Xia Lei, the chief minister of Han was seated in his hall, surrounded by a large number of guards armed with halberds. Nie Zheng went straight in, leaped on the pedestal and assassinated Xia Lei, which caused a great commotion. Shouting, Nie Zheng struck and killed scores of men and then, after disfiguring his face and gouging out his own eyes, he slit his belly until his intestines poured out, whereupon he died (Sima 2016, 3063–3064).

In terms of martial skills, Nie Zheng was undoubtedly the most accomplished swordsman described by Sima Qian, truly imbued with the spirit of "a man every ten steps, a thousand *li* without hindrance!" The Grand Historian stressed that he entered the hall alone, armed only with a sword, and, against a multitude of guards, "leaped on the pedestal and assassinated Xia Lei." After this, he faced a horde of assailants, fighting against polearms with a short weapon and, despite being in a completely

disadvantageous position, fought on courageously, "killing scores of men" (*suo jisha zhe shushi ren*), then calmly disfigured his face and killed himself by slitting his belly. "Scores of people" was probably an exaggeration, but this bloody encounter fully reflects Nie Zheng's singular courage and heroic resolve, demonstrating his extraordinary swordsmanship and showing us just what an uncommonly skillful and courageous *xia* he was (Ibid., 3063–3064)! It was a shame this supremely accomplished swordsman could not serve his state and, in the end, without regard to right and wrong, sacrificed his life for a nobleman who sought his service for private ends. His was indeed a lamentable story. Nie Zheng and his sister Nie Rong were the twin model *xiake* in the hearts of ordinary people. They were the epitome of the Warring States period warriors. I believe Sima Qian must have written this *Biography of Nie Zheng* (*Nie Zheng zhuan*) with a heavy heart filled at once with respect and pity.

The *Biography of Jing Ke* was one of the most celebrated passages in ancient literature and one Sima Qian lavished the most sentiments on. Sima Qian's story about Jing Ke's assassination of Yingzheng (who became the first emperor of Qin) follows a single tack from start to finish, which is that Jing Ke was a hero of great wisdom and courage, not a professional swordsman in the service of private individuals. Jing Ke "carried a single dagger to the strong and unpredictable state of Qin," relying solely on his courage and heroism, not because he had unsurpassed skills. In fact, Jing Ke's failure was due, to a large extent, to the fact that he was not a truly accomplished swordsman.

The *Biography of Jing Ke* begins with the sentence "Jing was fond of reading and swordsmanship." The juxtaposition of the sword and the book—this was the first time it occurred in ancient Chinese literature, which set the precedence for such anecdotes as Xiang Yu engaged in fencing and studies. This marked a beginning—Chinese literati's long romance with the book and the sword began here. I believe that Sima Qian's positioning of Jing Ke in the context of Chinese culture also reflects his own spiritual leaning. Even though Jing Ke courageously took up an impossible task, "his nature was profoundly attracted to books." He was in essence a literato, and there was a fundamental difference between a literato who was fond of fencing and professional swordsmen. In order to highlight this, Sima Qian purposely contrasted Jing Ke with two professional swordsmen, namely the mysterious characters of Gai Nie and Lu Goujian.

From the point of view of sword culture, there are two things of note in the *Biography of Jing Ke*. First, that Jing Ke successfully came into the proximity of the king of Qin, and was a mere step away from accomplishing his mission but ultimately stumbled; while the second concerns the two people Sima Qian inserted into the biography, Gai Nie and Lu Goujian. To assassinate someone with a dagger, the key is to get close to the target; once the opportunity is lost, the only thing to do is to throw your weapon to strike the target, which corresponds to the skill of *yijian yaoji* (striking with the sword from afar) in antiquity. The dagger was steeped in poison so any contact with the blade would have been life-threatening. However, Jing Ke lost his opportunity to assassinate up close and was not proficient at *yaoji* (striking at a distance), thus he threw his weapon and missed; at that moment, he had run out of options and could only wait for the fate of a failed assassin—to be slayed

in turn. The *Biography of Jing Ke* describes the assassination with great attention to detail, which is worth citing in full,

> The king of Qin addresses [Jing] Ke, saying, "Take the map from Wuyang." Ke took the map and showed it to the king. He began unfolding the map until a dagger appeared at the end. He grabbed the sleeve of the king of Qin with his left hand and struck with the dagger in his right. The blow fell short. Terrified, the king of Qin sprang up, tearing his sleeve. He tried to pull out his sword. However, as it was long, it remained in the scabbard. In the moment of panic, the sword was firmly placed [in the sheath] and could not be drawn. Jing Ke chased the king of Qin [around the hall], who ran around the pillars. The ministers were in shock and, caught by surprise, completely lost their minds as to what to do. According to the Qin code, none of the ministers and servants on the pedestal were permitted to carry arms, while armed court servants (*langzhong*) arrayed below could only ascend when summoned. In the emergency, he could not summon his guards, thus Jing Ke ran after the king of Qin. Caught in the moment of panic, he had nothing to strike Jing Ke except to fight with his bare hands. At that moment, the imperial healer Xia Wuju threw his medicine bag at Jing Ke. The king of Qin was running around the pillars in panic in a state of confusion when those around him said, "The king should push the sword backward (and draw it out)!" He shoved his long sword behind, then drew and struck Jing Ke, severing his left leg. Jing Ke, maimed, threw his dagger at the king of Qin and missed, hitting the bronze pillar instead. The king of Qin hit Ke again, striking him eight times. Ke knew he had failed, laughed defiantly while leaning on the pillar, and, sitting casually on the ground, hurled curses [at the tyrant], "The reason I failed is because I desired to catch you alive, to force you into an agreement to repay the Crown Prince of Yan." Then the guards came forward to slay Jing Ke. The king of Qin remained perturbed for a long time afterward (Sima 2016, 3075).

What determined the outcome of this encounter lies in the fact that Jing Ke had a small dagger while the king of Qin wielded a long sword (*changjian*). When the king eventually succeeded to draw his sword, he struck and severed Jing Ke's left leg, maiming him, who had no choice but to throw his dagger at the king of Qin. Unfortunately, he missed, and in an instant, the assassin became a helpless victim. The king of Qin renewed his attack and slayed Jing Ke after striking him eight times. It is not hard to perceive that unlike Nie Zheng, Jing Ke was not a professional assassin, and the fantasy of holding the king of Qin hostage cost him the only opportunity for success, while the king, thrown into mental chaos by the emergency, lost the chance to catch the maimed and no longer threatening Jing Ke alive, or else Jing Ke would undoubtedly have faced an even crueler fate. After the incident, the Lingling Ling of Qin memorialized the Emperor Shi Huang, saying,

> Jing Ke attempted to assassinate your majesty with a dagger, but with divine valor, your majesty brandished (*fuyu*) the long sword (*changjian*) and saved yourself (Xiao 1986, 220).

The *Discourses on Salt and Iron: On Bravery, fifty-first Passage* (*Yantie lun: Lunyong, di wushiyi*), written in the Western Han dynasty, also discusses the reason for the failure of Jing Ke's carefully planned assassination, which draws the same conclusion that he only had a dagger while the king of Qin had a seven-*chi* long sword (Wang 1992, 536).In the final analysis, Jing Ke was equipped with a plan and had courage in abundance, but was ultimately found lacking in swordsmanship. Clearly, his technical preparation was insufficient. Had he been a master at throwing the *jian* (dagger), the outcome might have been completely different. Sima Qian conveys this view and his regrets through Gai Nie and Lu Goujian.

I believe Sima Qian purposely introduces Gai Nie and Lu Goujian for this reason, as they appear only in the *Strategies of the Warring States* and nowhere else. Let us first look at Gai Nie. It is said in the *Biography of Jing Ke*,

> Jing Ke once passed through the place of Yuci where he discussed swordsmanship with Gai Nie, who regarded him with an angry expression. After Jing Ke left, someone suggested to recall Jing Ke. Gai Nie said, "I just had a disagreement with him while we were discussing swordsmanship, and I looked at him. You may try and look for him, but he should have left [by now], as he would not dare stay." He dispatched a messenger to the owner of the inn, [who said that] Jing Ke had already left Yuci. The messenger returned and reported to Gai Nie, who said, "Of course he had gone, terrified by my gaze! (Sima 2016, 3067)".

There is no other information on Gai Nie, whose name only occurs in the *Records*. We may surmise that he was a well-known swordsman in the kingdom of Zhao; his forceful and condescending attitude toward Jing Ke reinforces the view that he was a famous swordsman. Yuci is a place in Shanxi province today; it was part of the kingdom of Zhao during the Warring States period. In his phrases "*nu er mu zhi*" (regarded him with an angry expression), "*wu mu zhi*" (I looked at him), and "*mu she zhi*" (terrified by [my] gaze), Sima Qian emphasizes the word "*mu*" (eyes/gaze) by repeating it three times in quick succession, to draw attention to the swordsman's special expression, which was indeed a deft touch of his pen. Earlier in this paper, when discussing *Zhuangzi*, the "Chapter on Sword Discourse," I mentioned that contemporary swordsmen characteristically "gaze with wide-open eyes but [are] hard of speech." The expression of "eyeing" (*muzhi*) or "gazing at someone with a threatening look" (*mu shezhi*), means to stare at someone with a menacing expression. Evidently, the purpose of the passage here is that by showing this contrast, to highlight Jing Ke's timidity in front of a professional swordsman. Even though he could engage in "sword discourse" (*lunjian*), ultimately, he was not a true exponent of this art and did not belong to the class of professional swordsmen like Zhuan Zhu and Nie Zheng.

Similarly, there is no information on Lu Goujian outside the *Records of the Grand Historian*. The *Biography of Jing Ke* opens with the sentence,

> Jing Ke was passing through the city of Handan when he got into a quarrel with Lu Goujian in a game of *bo* chess. Lu Goujian got angry and shouted at him. Jing Ke replied with a whimper and fled, and did not return (Sima 2016, 3067).

Here, Sima Qian does not show his full hand as he does not disclose Lu Goujian's identity as a master swordsman. However, at the conclusion of the incident, he added a sentence,

> Lu Goujian heard about Jing Ke's [failed] assassination of the king of Qin and said in private, "What a pity he was not versed in the art of the sword! And even more that I did not know what manner of man he was! Once I shouted at him, and he must have taken me for less than a man! (Sima 2016, 3078)".

The Grand Historian's description of Lu Goujian fulfills a similar purpose, which is to show that Jing Ke was not a real swordsman, or else he would not have "replied with a whimper and fled." These two passages conclude with the remark that "what a pity he was not versed in the art of the sword." The Grand Historian used Lu Goujian

as his mouthpiece to make this comment and convey his own regret. Lu Goujian must have been a famous swordsman at the time, otherwise, Sima Qian would not have mentioned him twice in his narrative. His authority as a master swordsman uniquely qualifies him as Sima Qian's narrative vehicle to critique Jing Ke's lack of fencing skills. In addition, the sentence "*xizhe wu chi zhi, bi nai yi wo wei feiren ye*" (once I shouted at him, and he must have taken me for less than a man) is quite profound, as it conveys his respect toward Jing Ke and a sense of his own guilt for having treated him discourteously. Jing Ke was not a professional swordsman to begin with, while the expression "*hei er taoqu*" (replied with a whimper and fled) vividly conveys his cautious nature. This sentence amplifies the magnitude of his courage in attempting this assassination alone.

I am inclined to think that Lu Goujian was the same person as Lu Shigong recorded in Liu Xiang's *Garden of Stories: On Martial Arts* (*Shuoyuan: zhiwu*). Given that the two personalities shared the same surname and were both expert swordsmen, it could have been that the two were in fact the same person but known under different names. Liu Xiang says,

> Lu Shigong's sword responds when it is pressured, and moves when it senses. It perceives the infinite, changes without form; it is soft and yielding, like a shadow or an echo. It protects the gate like a guardian spirit, and whirls around like a prancing horse. [It is] echo to sound, and shadow to form. The city gate is inferior to a lamellar armor of rhinoceros hide; exhaling is inferior to inhaling; lifting one's foot is inferior to concentrating [one's energy]. Departing like the wings of a cicada, to be so minute as a point between the eyebrows. Never assume [as a rule] the great extinguishing the small, as [equally] the small could become great. Thus is the way of military tactics! In this superior way face your enemy, before your opponent strikes rush forward, before he takes form! Bowing and giving way is for the temple; dispensing alms is for the benefits of a million people. To remain still is the way of peace, while battle is waged with blood and blade, in the same way the King Tang of Shang and King Wu of Zhou clashed with their armies! (Liu 1987, 374–375).

This passage is a sword discourse of a very high level, rare in the literature of the Qin and Han periods. It is noteworthy that, in the first place, the juxtaposition of sword discourse with military tactics is consistent with Sima Qian's discourse of *chuanbing lunjian* (instructing in military affairs and sword discourse), which suggests that there might have been a link between the two theorems. Secondly, the opening phrases, "*po ze neng ying, gan ze neng dong, mei mu wuqiong, bian wu xingxiang, fu rou wei cong, ru ying yu xiang*" (responding when it is pressured, and moving when it senses. It perceives the infinite, changes without form; it is soft and yielding, like a shadow or an echo), are similar yet slightly different from a statement in the *Huainanzi: Discourse on the Original Way* (*Huainanzi: Yuandao xun*), "*po ze neng ying, gan ze neng dong, wu mu wuqiong, bian wu xingxiang. Youyou weizong, ru xiang zhi yu jing*" (responding when it is pressured, and moving when it senses. It perceives the infinite, changes without form. Meandering and yielding in movement, like an echo to a scenery) (Liu 1989, 32). Of which, the two phrases "*po ze neng ying, gan ze neng dong*" are also found in the *Zhaungzi: Chapter on Engraving Impressions* (*Zhuangzi: Keyi pian*), in a slightly different form, "*gan er hou ying*, *po er hou dong*" (first sensing then responds, pressuring when moves) (Guo 2012, 539).

The above illustrates that the theorems of these swordmasters (*jianlunjia*) might have fused with the Yellow Emperor and Laozi's philosophies and borrowed certain aspects of their thinking for the Way of the Sword (*jiandao*). This is an important point. Earlier, I cited a passage from the *Records*, scroll a hundred and four, the *Biography of Tian Shu*—"Tian Shu was fond of the sword, and studied the methods and philosophy of the Yellow Emperor and Laozi from Leju-gong"—as a supplementary piece of evidence to help us understand how *jiandao* became increasingly interwoven with Daoism after the Wei and Jin periods, and the change in nomenclature from *jiandao* to *jianshu.*

There is something mysterious about such names as Lu Shigong and Lu Goujian. The way Sima Qian introduces Lu Goujian into the *Biography of Jing Ke* without any introduction and uses this dialogue to deepen the readers' impression of Jing Ke's personality and "fencing skills," suggests that Lu Goujian was well-known and needed no introduction. The Tang scholar Sima Zhen says in the *Indices and References to the Records of the Grand Historian* (*Shiji suoyin*), "*Lu, xing; goujian, ming ye. Yu Yue Wang tong, huo you yiyi*" ("Lu," a family name; "Goujian," a given name, the same as the given name of the King of Yue; [that the two are identical is] perhaps significant). The conjecture—"perhaps significant"—is reasonable, as it is quite possible that "Lu Goujian" was not a real name at all, that his actual name was Lu Shigong, and that there was a hidden significance in the use of this name. At the same time, the name "Lu Shigong" also evokes association with the legendary Huang Shigong, who transmitted the *Old Man's Military Strategies* (*Taigong bingfa*) to Zhang Liang (Sima 2016, 2473). So, who was Lu Goujian? Was he the same person as Lu Shigong?This will remain a mystery until new materials shed light on this issue.

It is noteworthy that Jing Ke met both Gai Nie and Lu Goujian in the kingdom of Zhao. This also testifies to fencing's high level of development in Zhao, which encourages one to further ponder about Sima Kuaikui's clan in Zhao, who was "well-known for instruction in sword discourse." Were Gai Nie and Lu Goujian both inheritors and representatives of the Sima clan's school? This could be a reason why Sima Qian chose to include them in his narrative.

4 Conclusion

The Records of the Grand Historian is a majestic work of history. Motivated by the ambition to "examine the relationship between the Heaven and men, and intuit the changes that connect the past to the present," besides politics and economics, with his keen eyes and broad perspective, the Grand Historian also recorded the diverse cultural phenomena and minutiae of social affairs of his day, in order to "gather all knowledge under the Heaven that has filtered through the net, examine actions and events, and understand the reasons for rise and fall, success and failure [in all things] (Ban 1975, 2735)." By doing so, he has provided us with a series of social panoramas from the Warring States to the Qin and Han periods, including the sword culture of the pre-Han period in China.

Although the sword culture continued to exist for some centuries, it reached its peak before the Han, in the centuries between the Spring and Autumn and the end of the Han period. After that, it gradually fell into decline until it veered into the path of mysticism and fantasy. Luckily, the *Records of the Grand Historian* provide many details about the sword (*jian*) during its golden years in China. Without these records, our understanding of the sword and the culture surrounding the Way of the Sword (*jiandao*) would be necessarily fragmented and superficial.

Undoubtedly, *jian* and *jiandao* were once at the core of China's classical martial studies and had a profound influence on its construction and development. Its formation shows a fundamental tendency for diverse regional traditions to come together, but throughout this process, important differences also remained. In this regard, the division and commingling of ideas and practices along the north–south axis demonstrate at once centripetal as well as centrifugal tendencies.

The principles of *jiandao* encompassed the ideas and philosophies of Daoism, Confucianism, as well as Mozi's school of thought and the philosophy of war (*bingjia*), and, later on, the records, narratives and discourses from Sima Qian's *Records*. I am strongly of the view that the descriptions in the *Records* about the spirit of *jiandao* of the pre-Qin period and, in particular, during the Qin and the Han dynasties, had a profound impact on *jiandao*'s subsequent development in the period after the Western Han. After the Wei and Jin periods, no further literature on *jiandao* was found, while fencing techniques became increasingly removed from real practice. The *Records* is the only classical text that has preserved important information on sword culture and the Way of the Sword between the Spring and Autumn–Warring States and the end of the Han dynasty and is the only source from which we may find traces of ancient swordsmen and fencing (*jijian*) tales.

In Sima Qian's heart, *jian* was at once a weapon and a unique cultural medium. With the sword at the center, a group of highly autonomous individuals gathered and, collectively, created a series of events and phenomena that continue to fascinate and inspire imagination. During *jian*'s golden age, its cultural substance and vitality far exceeded that of a weapon—it became a magnificent spiritual vehicle. For this reason, among the diverse arms, *jian* alone was dignified with the praise, "*yudao tongfu*" (being equal with the Eternal Dao) and "*junzi bide*" (serving as a means for cultivated men to compare their virtues). And because of this, *jian* occupies an exalted position unique in China's cultural history, and even a thousand years after its eclipse as a weapon of war, its symbolic significance—embodying the classical ideal which is at once noble and mysterious—remains undiminished. This clearly also has to do with Sima Qian's critical discourse, to which no one had paid attention in the past.

Using jade as a metaphor, a *junzi*'s virtue is "warm and even colored, symbolizing benevolence," according to Confucius. What about Sima Qian's use of *jian* as an analogy for virtue? He does not say and leaves it to future generations to ponder. Many people take the view that *jian*'s metaphoric value lies in such features and functional qualities as its bright, straight, angular, cold, long, and narrow exterior, or its excellent craftsmanship and the skills in its use, which are highly demanding and difficult to grasp and, being mastered by few, assumes an air of nobility. Nonetheless,

there are differences between *peijian* (wearing sword) and *peiyu* (wearing jade): one who wears a *jian* need not be a skilled swordsman, but he needs to have the courage to unsheathe the sword if the situation demands, thus not everyone is fit to wear *jian.* It is telling that of the swordsmen recorded in the *Records* not one was an ordinary man.

Inspired by *jian*'s inherent characteristics, the ancients composed many inscriptions (*jianming*) and poems, of which, in my view, the one most favored by Sima Qian must be the King Wu of Zhou's sword inscription, which was recorded in the *Book of Rites Compiled by Dai De*. It says, "wear as attire, move to actualize virtue; prosper with virtuous conduct, collapse with immorality." At the end of the day, *jian* is a bladed weapon; its principal function lies in defending one's person and to strike at another, thus *xingde* (actualizing virtue) is the most important moral premise, while going against this principle would be *beide* (literally, "against virtue," hence immoral), which will cause harm to others and to oneself. In the final analysis, as *jian* symbolizes power and authority, to the Son of Heaven and those holding the power of life and death, it is even more important to stress the principle of "*dong bi xingde*" (actualizing the virtue at every move), while avoiding the use of arms to harm the innocent. For this reason, the ancients repeatedly stress that "*fu bing zhe xiongqi ye*" (weapons are implements of ill omen). They were against using weapons lightly, and even more so they were against military rule, which is precisely where the significance of *junzi bide* lies. The same principle may be applied to military affairs, and ultimately extended to the entire spectrum of *tanbing lunjian* (military affairs and sword discourse).

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Longobard Warriors in the Seprio Judicaria

Cristiano Brandolini

Abstract The Seprio is an ancient territory with a history of millennia in which we find five important Longobard centers: Sibrium (Castelseprio), Pagus Artiaco (Arsago Seprio), Castrum Novate (Castelnovate), and, further north, Stabulum (presently Stabio in the Swiss Canton of Ticino) and Campiliorum (now Campione d'Italia, an Italian exclave in Switzerland). The elements present in the grave goods of the Seprio have allowed us to understand that the Longobard warrior held a shield, brandished a *spatha* (sword), and carried a scramasax (short weapon to a single cut), a spear, and in some cases even an ax or bow and arrows, while the most important warriors were equipped with mail or lamellar armor and helmet. From the type of accoutrements (harnesses, belt elements, personal objects, pottery, golden crosses), it is possible to trace the owner's position in the hierarchy of nobility, in the same way, that the degree of sophistication of the weapons and the shield indicated the social position of the warrior who wore them. The *spatha* and the scramasax were status symbols of the Longobard warrior; they brought to the fore and underlined his status as a nobleman and free man. The Seprio has always played a leading role in the geopolitical events that have affected ancient Insubria in all its historical phases. In the last fifty years, many relics of the Arimannia of the Seprio have been unearthed and studied, but much still lies buried which scientific research is only slowly bringing to the surface.

Keyword Seprio · Longobard · Arimanni · Warriors · *Spathe* · Scramasax · Northern Italy

The Seprio is an ancient territory with millennia of history (See Fig. 3.1). There, we find five important Longobard centers: Sibrium (Castelseprio), Pagus Artiaco (Arsago Seprio), Castrum Novate (Castelnovate), and, further to the north, Stabulum, now Stabio (located in the Swiss Canton of Ticino), and Campiliorum (which is today's Campione d'Italia, an Italian exclave within Switzerland), home to the noble Totoni family who is descended from Longobard landowners and merchants.

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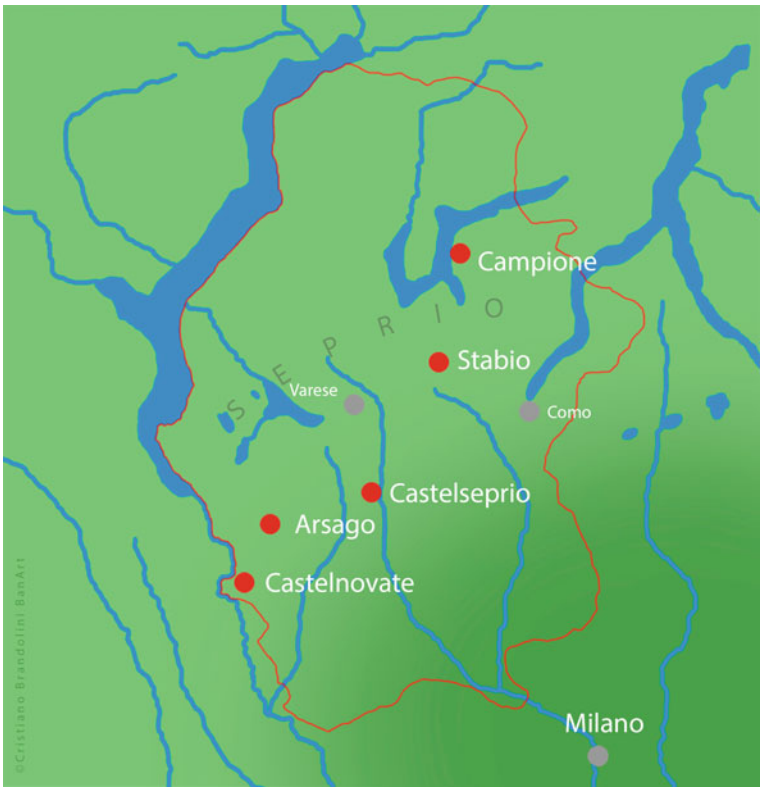

Fig. 3.1 The Seprio territory in the early Middle Ages (Drawing by the author)

In the area that is now the Province of Varese, the Longobards occupied the imposing Castelseprio military fortification, built in the late Roman times, which was established as the capital of the *judicaria* (a district of lesser importance than the duchy, referred to also as a *civitates* or *fines*), governed by a *sculdahis* magistrate or *judex*.

Partly as a result of its strategic position along the main communication routes, the fortified town or castle (*castrum*) took on crucial importance as a military, civil, and religious center and became the site of a local mint. Even the small hamlets of Castelnovate and Arsago assumed strategic significance. The former, on the eastern banks of the Ticino River, had already been a strategic hub during Roman times: its *castrum* controlled the waterway and this, too, was the site of a mint. The latter—at the center of the county and at the point where two of the most significant communication routes met—was chosen by the *Arimannia*, the nobles who governed the district, as their headquarters. As proof of this, there are numerous high-status tombs, which are absent from both Castelseprio and Castelnovate. There were surely *Arimannia* hubs at Stabio and in Campione d'Italia, too. Stabio and Campione have emerged as two strategic points on communication and crossing routes in the Seprio area.

Items present among grave goods—not just in Seprio, but in all Italian necropolizes—have allowed us to understand that a Longobard warrior carried a shield, brandished a *spatha* (sword), and carried a scramasax (short weapon with a single-edged blade), a spear, and, in some cases, an ax or bow and arrows. Those of the highest ranks wore mail or lamellar cuirass and a helmet. The type of accoutrements (belt elements, personal objects, crockery, golden crosses) signified the owner's noble rank, in the same way, that the level of refinement of their weapons and shield indicated the social standing of the warrior who carried them.

The *spatha* and scramasax were status symbols for the Longobard warrior. They were carried in plain sight to highlight their status as noblemen and free men. The *spathae* are items that appear in many warriors' tombs from the early sixth century. They are long weapons with double-edged blades, and it is supposed that they were predominantly used on horseback, for striking the enemy with a cut rather than a thrust of the point. The blade was forged using a technique widespread among Germanic peoples. It was made up of three parts: two sharp edges at the sides and the central core. The latter was damascened—a special forging technique to give the *spatha* more flexibility and resistance, as well as providing a decorative pattern on the central groove of the blade, created by the very process of forging together two metals.[1] The ornamental patterns created with the forging of Damascus steel take on various shapes such as knots or herringbones (See Fig. 3.2).

There are few preserved *spatha* grips, due to their being made of perishable organic materials such as wood or horn. Only the grips on the finest examples were coated in decorated metal leaf, as in the example uncovered in Trezzo sull'Adda (See Fig. 3.3).

Spathae have an average total length of roughly between 85 and 95 cm, while the total blade width is between 5 and 6 cm. Their weight is around 1000 g to 1200 g. The point of balance is always toward the tip of the blade, on average 20–30 cm from the guard. This makes it very difficult to handle during close combat. Many parts of the *spatha* scabbard have also been preserved. They were made of wood, lined with fur inside, and coated in leather on the outside. They were then attached to a special belt for carrying arms, with a suspension system.

There is also a considerable amount of weapon belt adornments found among the grave goods. These belts were a typical and widespread component of Longobard weaponry and clothing for both men and women. They were generally composed of a leather belt to which iron, bronze, damascened, or plated additions were attached. Various types of belts are documented, which could also be worn at the same time: one for attaching the tunic and for hanging the leather *scarsella*, another more elaborate military one for suspending the *spatha* or scramasax at the wearer's side.[2] The buckles and end tips were for a long time used not just on belts but also as a fastening for attaching cloth strips or gaiters to the calves.

The most common type of belt buckle between the fifth and sixth centuries CE were cast bronze with an oval-shaped frame (the cross-section of the metal would

[1] The Damascus forging technique is ancient and was the earliest forging technique used by man.

[2] A *scarsella* is a small bag for carrying commonly used objects such as a fire striker and flint, coins, etcetera.

Fig. 3.2 Detail of damask pattern with herringbone motif (De Marchi 2013, 529)

be round) and shield-shaped barb. It was often embellished with a fixed plaque, cast as a single item with the frame or, for a more flexible option, with a movable plaque connected to the frame with a joint. Buckles with a U-shaped plate, usually in damascened iron, were particularly widespread. They were also used on military belts and were present among most grave goods in Arsago.

In the early seventh century CE, a new type of bronze-colored buckle with an oval-shaped frame, with a convex cross-section, began to appear and was typical of the "five-piece military belt" of Roman provincial origin. This type of belt was made up of a buckle with a triangular movable plate and a triangular counter-plate. Both were decorated and attached to the leather belt with three studs. An end tip was attached to the belt's end. Over the course of the seventh century, this was embellished further,

Fig. 3.3 Trezzo sull'Adda, *spatha* handle with double interwoven silver ring (Caporusso and Provenzali 2011, 180). By permission of the Italian Ministry of Culture—Archaeological Superintendence of Fine Arts and Landscape (Soprintendenza Archeologica per le Belle Arti e il Paesaggio) for the Province of Milan. Reproduction and duplication by any means is prohibited

with other plates, ornaments, and accessories. This design is also found on belts that feature a *spatha* suspension system.

Belts with a system for hanging the scramasax were different. They were referred to as "multiple belts," (*cinture multiple*) made up of a larger number of pieces. In this case, the belt comprised a plated buckle, its main end tip attached to the end of the belt, a loop, and various reinforcing plates and ornamental pendants. "Multiple belts" originated in the East and often featured traditional Byzantine or Germanic decorative Damascus patterns; hence the technique was known as damascening. This

design also underwent a change of style during the seventh century: the adornments took on a longer and finer shape, with stylized and geometric decorative motifs. In some cases, even gemstones are set into the belt. In particular, Almandine, a dark red/purple mineral typical of Caria in Asia Minor.

The Longobards achieved a high technical level in their metalwork. Objects in silver, bronze, and iron are common. They are often embellished with silver, brass, or gold decorations through the inlay technique, damascening, and plating. In Arsago, there is a particularly large number of adornments on inlaid iron belts. Inlaying is a decorative technique where a fine thread of silver, brass, or gold is hammered into a groove cut using a burin and chisel. The most common ornamental patterns are geometric or zoomorphic.

1 Arsago Seprio's Warriors

In 1946, the Arsago Seprio municipal government decided to build an elementary school immediately outside the walls of the historic center, to the south of a flat grassland. In 1972, the school building needed to be expanded. During the excavation stages for building the two new main buildings, six Longobard tombs were discovered by chance. In 1983, a further excavation campaign on the same area uncovered another nine tombs. Most were large stone structures topped with a large, double-slope capstone. Others were bare soil graves (Passi Pitcher 1986, 1–15).

Of the fifteen tombs discovered between 1972 and 1983, only one was intact (See Fig. 3.4). The others had already been broken into and looted in antiquity. The cracks through which robbers were able to get inside the tombs, to take valuable objects from the grave goods, can still clearly be seen on the top stones today. The excavation campaigns did not make it possible to be certain of the size of the necropolis, as it remains mostly unexplored. However, geo-radar surveys performed in 1994 showed up a large number of tombs across a vast surrounding area. Such findings provided the basis for further excavations in the same year. This campaign gave the precise location of and unearthed another ten tombs, both stone structures and bare soil graves (See Fig. 3.5).

The necropolis can be dated back to between the late sixth century and the second half of the seventh century. To date, the excavations (1972, 1983, 1994) have unearthed twenty-six tombs, many of which can be attributed to prominent members of the aristocracy.

Arsago was definitely one of the main centers of power in Seprio. Unlike Castelseprio, where a good portion of the Longobard-era buildings has been preserved within the Archaeological Park of the *castrum*, in Arsago the expansion of the hamlet in later periods entirely removed the buildings. Tangible evidence was, however, left in the rich selection of grave goods found inside the necropolis tombs.

The tombs identified and excavated to date can be grouped into four main families who lived there contemporaneously. They consisted of members of the ruling class—that is to say, the head of the family surrounded by their family members and by

Fig. 3.4 Arsago Seprio, Longobard necropolis excavations, 1972–1983. By permission of the Italian Ministry of Culture—Archaeological Superintendence of Fine Arts and Landscape (Soprintendenza Archeologica per le Belle Arti e il Paesaggio) for the Provinces of Como, Lecco, Monza and Brianza, Pavia, Sondrio, Varese. Reproduction and duplication by any means is prohibited

servants (De Marchi, Mariotti, Miazzo 2004, 101–168). As mentioned, they had all been breached and looted in antiquity; still, significant grave goods have been preserved including *spathae* (swords), scramasaxes (short weapons with a single-edged blade), spears, and shields.

The Arsago Seprio necropolis is, to date, the largest Longobard burial area in Seprio and is the only one in Italy to be preserved in situ and visible to the public.

In the burials so far excavated at Arsago Seprio, the following have been found:

Two *spathae* with a simple grip made of organic material, which was not preserved.

The remains of a shield, the umbo (boss of a shield) with its enarmes (leather gripping strips) and studs.

Four punch-decorated ormolu (gold alloy applied to bronze) studs, which were part of a parade shield.

A bay leaf-shaped spearhead.

Three scramasaxes.

The tip of a standard-bearer spear.

Two arrowheads of different types: one "barbed," the other in the shape of an olive leaf with an opening along the centerline and a short tang for attaching it to the shaft.

Baldrics, matched with *spatha* scabbards, and weapon belts matched with *scramasaxes*.

With regard to the olive-leaf-shaped arrowheads found in Tomb 5 (See Fig. 3.6), the solid structure of the blade and the opening at its center could suggest two

Fig. 3.5 Arsago Seprio, Longobard necropolis excavation, 1994. By permission of the Italian Ministry of Culture—Archaeological Superintendence of Fine Arts and Landscape (Soprintendenza Archeologica per le Belle Arti e il Paesaggio) for the Provinces of Como, Lecco, Monza and Brianza, Pavia, Sondrio, Varese. Reproduction and duplication by any means is prohibited

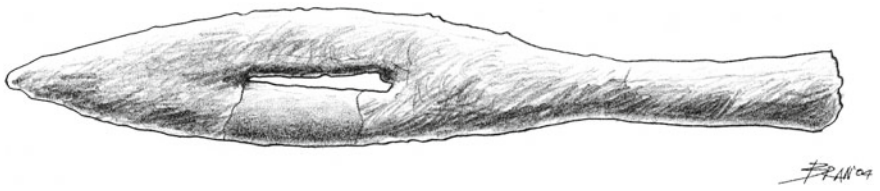

Fig. 3.6 Arsago Seprio, arrowhead from Tomb 5. Drawing by the author

hypothetical uses that are not related purely to offensive action: the first is that it was part of a standard holder shaft; the second that it was used as an incendiary arrow, placing a strip of fabric coated in pitch into the gap which was then wound around the arrow and ignited. The second theory arouses skepticism insofar as the arrowhead's tip is not sharp and its leaf shape does not contribute to the acuteness of

the tip for deeply penetrating the target, which is supposed to be ignited by the arrow. Furthermore, it is too heavy compared to the traditional incendiary arrowheads used in the era.

Bows and arrows formed part of the equipment of aristocratic warriors. The laws promulgated by King Aistulf in the eighth century relating to an obligation to bear arms in line with a subject's wealth, and therefore on the basis of the size of their estate, established that even *minores homines* (men of modest wealth) would be armed with at least a shield, quiver, bow, and arrows (Ahistolfi Leges, paragraph 2).

I have spoken at length with Gionata Brovelli, a scholar of historic archery, on this particular arrowhead from Arsago. He proposes a third theory. The bow the Longobards of Pannonia used was of Asian origin: a composite bow with recurve limbs, intended to also be used on horseback and with a much greater arrow release speed and range than that offered by wooden longbows. Furthermore, it required heavier arrows with heavier-than-standard arrowheads.

Brovelli, therefore, believes that the Arsago arrow could have been a training arrow, for long-range shots over the parabolic path required on the battlefield. When an arrowhead this heavy reaches the end of its course and hits the ground, it penetrates deeply and is difficult to recover. There is the risk of the arrowhead coming away from the shaft and getting stuck in the ground. The gap could therefore have had a specific function: to attach a thin strip of leather to the blade that could then be used to pull the arrow out of the ground, should it be too deeply buried in the earth.

Of the two *spathae* recovered, the one found in Tomb 19 (See Fig. 3.7) was placed along the left arm of the deceased and wrapped in his belts, together with the scramasax and the knife (See Fig. 3.8). The same tomb contained elements in

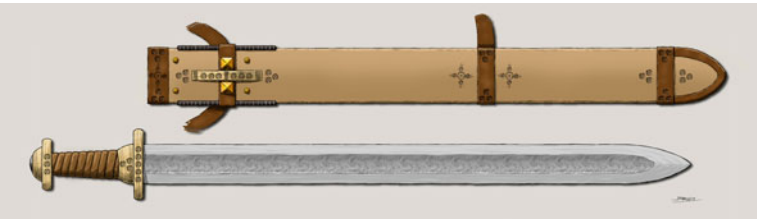

Fig. 3.7 Arsago Seprio, graphic reconstruction of spatha and scabbard. Drawing by the author

Fig. 3.8 Arsago Seprio, graphic reconstruction of scramasax, small knife and scabbard. Drawing by the author

bronze and damascened iron, arranged on the *spatha* scabbard, as well as a barbed arrowhead. The *spatha* blade was damascened.

The Damascus patterns on the *spathae* in Tombs 19 and 26 are however only partially detectable, as the wooden remains and the leather of their scabbards and their inner fur lining have mineralized, covering the blades almost entirely. There are also many metallic parts in damascened iron, iron, and bronze buttons with truncated pyramidal heads and a rear belt loop, iron bridges—all part of the complex system for sliding the *spathae* and scramasaxes—as well as their corresponding belts.

Tomb 13 contained various grave goods, including a scramasax, and the tip of a standard-bearing spear. In Tomb 26, there was a shield from which were preserved the umbo, the iron elements on the enarmes with studs for attaching them (See Fig. 3.9), a *spatha*, and a rider's spur in damascened iron (See Fig. 3.10), as well as some iron and bronze belt additions. Tomb 4 also contained three studs, remnants of a parade

Fig. 3.9 Arsago Seprio, shield of Tomb 26 (Collection of Civic Archaeological Museum of Arsago Seprio). By permission of the Italian Ministry of Culture—Archaeological Superintendence of Fine Arts and Landscape (Soprintendenza Archeologica per le Belle Arti e il Paesaggio) for the Provinces of Como, Lecco, Monza and Brianza, Pavia, Sondrio, Varese. Reproduction and duplication by any means is prohibited

Fig. 3.10 Arsago Seprio, damned iron spur of Tomb 26 (Collection of Civic Archaeological Museum of Arsago Seprio). By permission of the Italian Ministry of Culture—Archaeological Superintendence of Fine Arts and Landscape (Soprintendenza Archeologica per le Belle Arti e il Paesaggio) for the Provinces of Como, Lecco, Monza and Brianza, Pavia, Sondrio, Varese. Reproduction and duplication by any means is prohibited

shield. They were ormolu with a punched decoration of alternating and contrasting opalescent triangles (See Fig. 3.11). There was also the bay leaf-shaped tip of a spear and the buckle for multiple belts in damascened iron.

With regard to weapon belts, two "multiple belts" in damascened iron came from Tombs 5 and 13 (See Fig. 3.12) while in Tomb 15 the material is plain iron. There is a belt with a *spatha* suspension system in Tomb 19 (See Fig. 3.13). In Tombs 7, 17, and 20, there are multiple belts with wolf's head bronze elements (See Fig. 3.14). The belt in Tomb 20 is associated with a scramasax and knife (See Fig. 3.15).

2 The Warrior of Castelseprio

To date, only one Longobard tomb has been found within the *castrum* area. The tomb was discovered in 1966 by chance, during restoration works on the remains of the walls of the facade of the Basilica of San Giovanni. The tomb was unearthed within the footprint of the infill walls of what was previously an opening. The deceased was

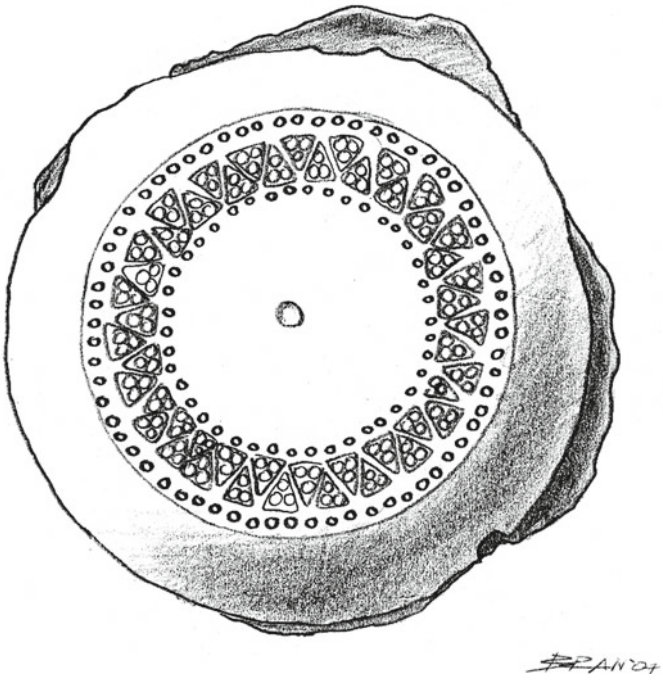

Fig. 3.11 Arsago Seprio, one of the three shield studs of Tomb 4. Drawing by the author

Fig. 3.12 Arsago Seprio, damned iron harnesses from the belt of Tomb 13. Drawing by the author

Fig. 3.13 Arsago Seprio, graphic reconstruction of the spatha-holding belt of Tomb 19. Drawing by the author

Fig. 3.14 Arsago Seprio, bronze harness of the belt of Tomb 20 (Collection of Civic Archaeological Museum of Arsago Seprio). By permission of the Italian Ministry of Culture—Archaeological Superintendence of Fine Arts and Landscape (Soprintendenza Archeologica per le Belle Arti e il Paesaggio) for the Provinces of Como, Lecco, Monza and Brianza, Pavia, Sondrio, Varese. Reproduction and duplication by any means is prohibited

buried with a *spatha* placed between the torso and right hip, a spear (See Fig. 3.16) between the torso and left shoulder, a damascened iron spur placed between the thighs, and a belt with damascened iron embellishments at the hips. There is no trace of a scramasax or shield.

The only remaining part of the *spatha* is the central section of the blade. On it, the central Damascus pattern is very clear, with a slanted herringbone pattern divided into three parallel strips. The spear tip has the shape of a willow leaf, a type widespread in Italy's northern territories, which corresponds significantly with tips discovered in Transalpine areas and traceable to Germanic Alemanni and Bavarian peoples (De Marchi 2013, 528–534) (See Fig. 3.17).

3 The Warriors of Stabio

The first warrior tomb in Stabio came to light between 1833 and 1838 in the Alla Vigna area. It contained the remains of an ornamental shield and a golden cross. Nothing could be seen of any weapons or other artifacts. The shield is embellished with

Fig. 3.15 Arsago Seprio, graphic reconstruction of the Longobard warrior from Arsago. Drawing by the author

decorated ormolu plates, shaped into plant-like figures, the tree of life, a *kantharos* (ancient Greek cup for drinking), and animal and human figures: a knight and a rampant lion cub/dog looking behind itself (See Fig. 3.18). The shield and gold cross allows the tomb in which they were found to be dated back to the middle third of the seventh century (Cardani Vergani et al. 2003, 3).

Fig. 3.16 Castelseprio, drawing of the spear point (De Marchi 2013, 530)

In 1973, scientific research carried out in the area in front of the Church of Santi Pietro e Lucia uncovered another two Longobard tombs. The grave goods in the first tomb are clearly military equipment. They consist of a scramasax, with the remains of its scabbard (of which only the tip has been preserved), ornamental bronze nails and studs, two bridge support elements, a knife, and weapon belt with multiple iron adornments. There was also a fire striker and the corresponding flint. Some of the objects were laid out beside the body, others worn. The weapons are limited to the scramasax. There is no sword, spear, or shield, which were perhaps looted in antiquity, or perhaps we can presume that the body was only dressed in accessories with a high symbolic value, according to Christian tradition. That means the scramasax, which relates to the world of warriors, would have been buried as a status object, but the fact it was placed upside down suggests its function was primarily symbolic (Cardani Vergani, Amrein, Boissonnas 2003, 4–5). In the second tomb, there were remains but no grave goods.

The last warrior grave in Stabio was uncovered in the Barico area during an archaeological survey which, in 1999, enabled the unearthing of a Longobard necropolis consisting of six tombs. Among them, one in particular—Tomb 3, dating back to the first half of the seventh century—contained the remains of an upper-class man, accompanied by a wealth of grave goods, including metal utensils, damascened belt decorations, weapons, a fragment of a golden cross, and various remains of organic materials (See Fig. 3.19). Specifically, the grave goods contained a spear, a sword, a

Fig. 3.17 Graphic reconstruction of the armament of the Longobard warrior (Drawing by the author)

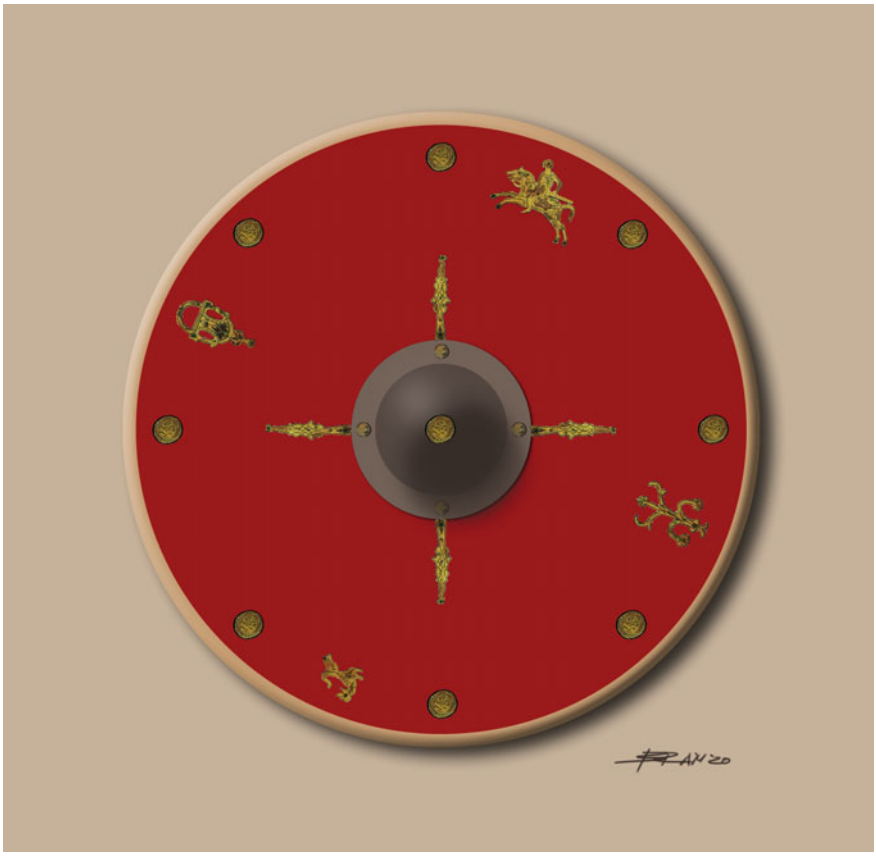

Fig. 3.18 Stabio, graphic reconstruction of the parade shield. Drawing by the author

scramasax, a knife, a penknife, a *spatha* belt with damascened iron embellishments, a "multiple belt" which also had damascened iron embellishments, a horse rider's spur, a pair of shears, a comb, a golden cross, and probably a wooden box (Cardani Vergani, Amrein, Boissonnas 2003, 5–15) (See Fig. 3.20).

4 Concluding Remarks

The Seprio has always occupied a key role in the geopolitical matters affecting ancient Insubria, at all points in its history, from the Upper Paleolithic to the Visconti and Sforza duchies of Milan. Crossed by important communication waterways such as the Ticino, and by communication routes on land such as the Mediolanum-Verbanus, it saw cultures develop including the Neolithic Lagozza and the protohistoric Golasecca

Fig. 3.19 Stabio, a panoply of arms from Tomb 3 (Cardani Vergani et al. 2003, 11)

cultures, before later becoming an important center of military and civil power during the Longobard era and later.

In the last 50 years, a great deal of evidence about the Seprio *Arimannia* has been unearthed and studied, but so much still lies buried there. After the ancient *castrum* of Castelseprio and the Torba Monastery became part of the UNESCO World Heritage List (in June 2011), scientific research was resumed a few years ago. Targeted archaeological surveys and studies have been underway for some years now, carried out by the Università degli Studi di Milano Statale and by the Università Cattolica del Sacro Cuore, in Milan.

Archaeological research is a fundamental activity to continue to duly value this important territory that has strongly marked and characterized the history of Longobardy and beyond. We hope to soon be able to restart the archaeological surveys, including at the Arsago Seprio necropolis and also—but no less importantly—at the Castelnovate site. This would mean adding so many of the still missing pieces to the area's history. Doing so here and in the many other Longobard locations within our peninsula, would contribute to restoring to us one of the many identities that contributed to forming our roots.

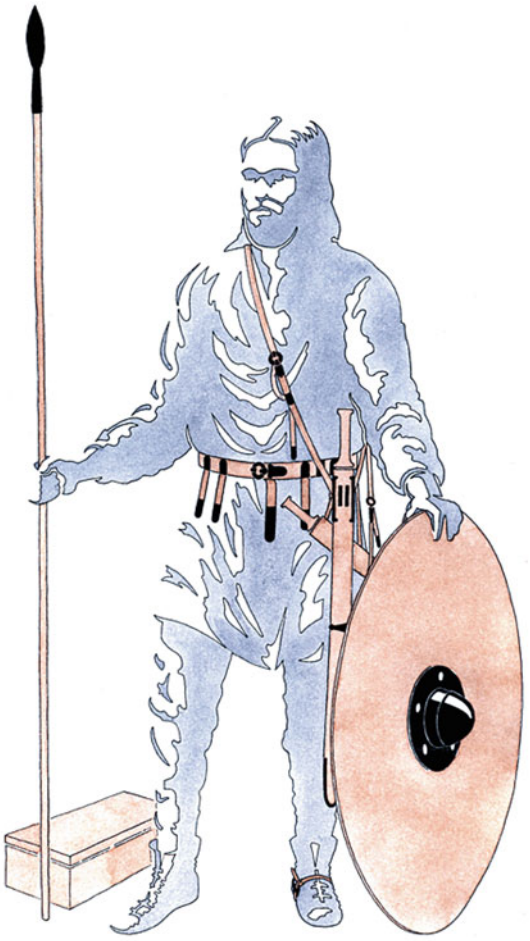

Fig. 3.20 Stabio, graphic reconstruction of the Longobard warrior from Stabio (Cardani Vergani et al. 2003, 15)

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The Dynamic Sphere: Thesis on the Third State of the Vitruvian Man

Roberto Gotti

Abstract The subject of this paper is the basic principles of a martial art that has been perfected over millennia of social strata, skirmishes, and settlements, and is the amalgamation of different cultures and traditions which flourished during the Renaissance. We can learn this art today thanks to the texts written and printed during that period. In his most famous drawing, Leonardo da Vinci (1452–1519) shows a man drawn inside two geometrical shapes: the square with the center at his groin and the circle with the center at his navel. But there is another possible representation that provides an anthropometric revelation with his center at the solar plexus. That is the man I define as dynamic. Many traces of him may be found in the Masters' texts and we have magnificent examples of him in daily life: the man who, through performing perfect combat moves, is able to move and "become" a sphere, the "*Palla*," or ball, as Camillo Agrippa calls it, with changing circumference and surface. He can move his center within his own body and outside of it, to the palm of his hand, to the blade of his sword, and even to inside his enemy. The dynamic man represents the development upon both the natural man, depicted in a square with his groin at the center and the speculative man, depicted in a circle with his navel at the center. This man creates a sphere around himself, with the solar plexus at its center. He has the ability to move that center to any part of his body, even to his blade and as far as the blade's end, thus modifying the circumference of his sphere as he pleases. The findings presented here are the fruit of over twenty years of research and practice, reflecting my own progression in the theoretical and practical understanding of Italian martial arts.

Keywords Martial arts · Dynamic sphere · Vitruvian man · Human body · Solar plexus · Renaissance · Italian martial arts · Hermetic · Treatises · Master-of-arms · Combat arts · *Assalti* · Martial traditions · Biomechanics · Movement

> God is an infinite sphere, the center of which is everywhere and the circumference nowhere.
>
> — Alano di Lilla.

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1 In Search of the Dynamic Sphere: The Third State of the Vitruvian Man

In the late nineteenth and early twentieth century, steps were made toward understanding the third Vitruvian man, which Frenchman Auguste Choisy (1841–1909) depicts well (Choisy, 1909), as does Le Corbusier (1887–1965) in *Le modulor d'or* (*Corbusier*, 1942; 1955). Yet none of them moves the center to the plexus nor shifts the shoulders entirely, as the masters of martial arts intend. That is because their research has a static goal, intended for painting, architecture, and construction, rather than to understand movement in a dynamic manner. Le Corbusier identifies the plexus and makes it a subdivision point for the human body, in accordance with the Fibonacci sequence. That is perfect and will lead to some incredible architectural solutions—including the Fuksas bubbles and clouds. But when Le Corbusier lifts the arms of a man of 183 cm, he lifts them to a maximum of 226 cm rather than the 238–243 cm he can actually reach, as we will see at the end of this chapter. What he calls the plexus is in reality the navel, found at 110–112 cm from the ground. Isadora Duncan (1877–1927) does achieve the center in the plexus but is too focused on flying on the stage to transform that understanding into an explicit representation as we do. Her photographs and the sculptures that she inspired are among the most beautiful depictions of movements I know.

The *Huygens codex*, which contains a series of figurative studies of human movement by Carlo Urbino (1525–1585),[1] seems to be an early study of the dynamic man (Panofsky, 1940). However, on closer inspection, it focuses on movement as a "natural study" of the body's positions, with the aim of understanding how to draw it better, while none of the drawings actually considers the dynamic man we seek. What it *does* depict is moving bodies that are only *apparently* moving, akin to wooden figurines with moving limbs, which are ultimately restricted by their nature as anatomical studies. Further, throughout the codex, the arms are never raised, not even in the "fifth figure and principle of movement." As with Leonardo da Vinci's Vitruvian Man (Cecconello, 2019; Lester, 2011; Perissa-Torrini, 2009; 2018), this study is limited to an artistic scope and to the study of movement *for art*. On the other hand, the concept of the dynamic sphere—a sphere that does not rest on its poles and can change its diameter—comes from those who received and passed on the teachings of a perfect martial art in the fifteenth to sixteenth centuries. In my view, that art is the fruit of developments in the perception and performance of the human body, specifically in relation to the art of combat, that date back many centuries. Urbino and Da Vinci received teachings and inherited the search for the Vitruvian man from a wider circle of humanists that include the mathematician Luca Pacioli (1445–1517), the architect and military engineer Francesco di Giorgio Martini (1439–1502), and the master-of-arms Pietro Monte (1457–1509). The scientific and artistic studies by Da Vinci started a revolution by separating the center at the lower point in the groin from the center at the navel. However, this discovery was only partial.

[1] Carlo Urbino is the illustrator of Master Camillo Agrippa's treatise.

Well before Da Vinci, during his own era and after him, the idea of representing man in relation to geometrical shapes in order to compare him to the natural world was widespread. The desire was to show how the human microcosm mirrors the macrocosm of the universe, where it can at once be influenced by, and in turn, influence the macrocosm. The center of that man is almost always identified as the navel, rarely the groin, or with two separated centers. To my knowledge, the center of the referential geometrical shape and that of man has never in western culture been identified (explicitly) as the plexus. To give a list of examples, we can take into consideration the following: the tenth-century fresco in the Church of Sant Quirze de Pedret kept in the Diocesan Museum of Solsona, in which a man is depicted with his arms extended within a circle, while a bird lifts them both into the air (See Fig. 4.1). We may also consider the man in *Liber divinorum operum* by Hildegard of Bingen (1098–1179) in the Lucca State Library, in which man's microcosm is depicted at the center of celestial spheres; Fra Giovanni Giocondo in the printed edition of Vitruvius (1511); Cesare Cesariano (1475–1543) in the printed edition of *De architectura* (1521); the Vitruvian man depicted in a circle and a square with legs together in

Fig. 4.1 *Orante*, wall decoration from the Church of Saint Quirze de Pedret, Lerida, end of the tenth–beginning of the eleventh century (Collection of Museu Diocesà i Comarcal de Solsona, Solsona)

Giacomo Andrea da Ferrara's manuscript, dated between 1490 and 1518 and kept in the Ferrara Ariostea Library; and Francesco di Giorgio Martini's *Homo ad circulum* in the treatise on civil and military architecture in the Ashburnham manuscript (See Figs. 4.3, 4.4, 4.5, 4.6, 4.7 and 4.8). It is a long list, but the following also deserve a mention: Cornelio Agrippa di Netteshelm (1486–1535) in his *De occulta philosophia* (1533) and the planetary man depicted in a pentagram in a circle, and Enea Salmeggia (1556–1626) in his proportional study of the figure in movement, an ink manuscript from around 1607, kept in Bergamo at the Carrara Academy. Salmeggia's study presents a beautiful synthesis of circles around rotation points, but the center of the circle remains at the navel. The left arm is lifted a great deal further than by Leonardo, but still is not pushed upward (See Fig. 4.2 and 4.11).

Not a representation of Vitruvian proportions but still strongly relevant to this study is a relevant page in Giovanni Sacrobosco's (1195–1256) *Tractatus de Sphaera* (circa 1470) devoted to the sun (See Fig. 4.2). Here, the sun has its center at the groin. Drawn within a sphere, it overlooks a scene of martial art training. The plexus is the place of fire, from which movement springs—movement being the foundation of the martial arts.

Although Girard Thibault d'Anverse (1574–1627) handles the subject in a measured and explicit manner in his 1628 encyclopedic publication *Academie de l'Espée*, I see Federico Ghisliero, in 1585, as the first master-of-arms to use the drawing of the Vitruvian man in a treatise on fencing and to reference the teachings of the ancients on proportions (See Fig. 4.12). In his book, there are numerous unspoken references to the teachings of Pietro Monte, who was acquainted with Leonardo (Brioist, 2013). Ghisliero's teachings are very close to those of Camillo Agrippa (1520–1595), who studied the celestial spheres and planets and was linked to Carlo Urbino (See Fig. 4.10). Ghisliero's text possesses at once a classical and modern flavor. He was a nobleman and a soldier and even hosted Galileo Galilei (1564–1642) in his home. The Renaissance was indeed an enlightened time, rather than simply a time when some geniuses happened to live.Fig. 4.11Enea SalmeggiaEnea Salmeggia. Proportional study of figure in motion, circa 1607, inv. STP00788 (Collection of Accademia Carrara, BergamoBergamo)

2 Gathering Evidence

This paper stems from a realization that accepts its own state of doubt and believes it can become an answer. It stems from a sensation long felt in the body. When putting my thoughts down in writing, I rely upon and find comfort in the words of the masters, discovering their doubts and brilliant realizations.

There are differences among the treatises of armed combat that we have inherited. Some are richer in content, others less so; some offer detailed descriptions of the techniques, others are more taciturn with information but still interesting for many reasons. All too often they are analyzed individually, which is a serious flaw

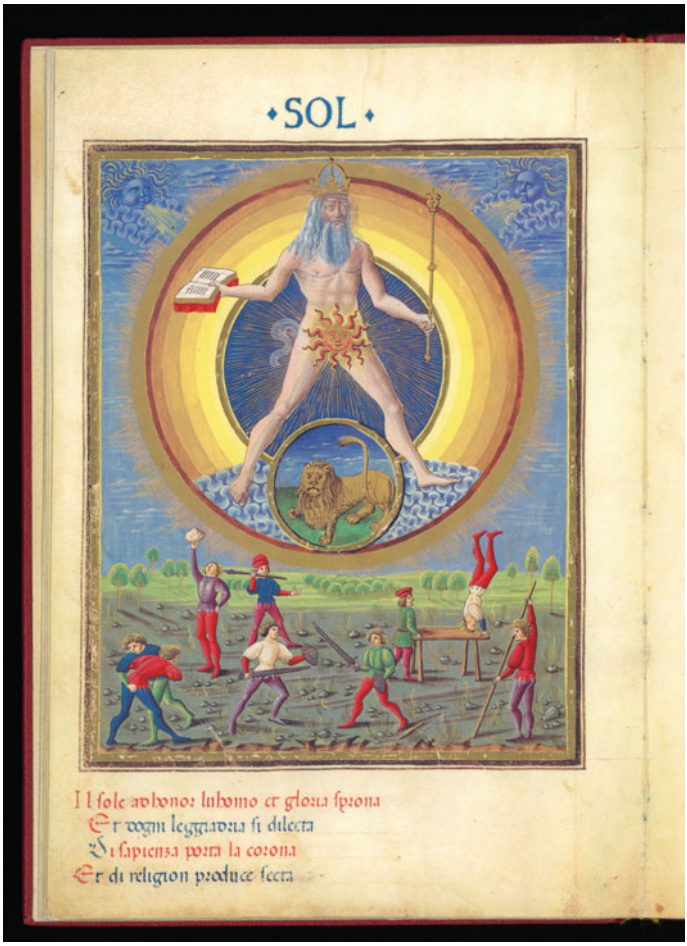


Fig. 4.2 Sol (Sun). *De Sphaera* (Alfa. X. 2. 14 = Lat. 209). Giovanni Sacrobosco, original work from circa 1230, image from a copy of the fifteenth century (Collection of Gallerie Estensi, Biblioteca Estense Universitaria)

when studying an art form that, by its very nature, draws its strength from the diversity of confrontational situations, leading to the settlement and layering of different experiences.

This research sought the common element in the teachings of those masters or martial artists who left behind written records. This is found in the insistence upon improving dynamic movement, uniting all the limbs behind a blow or a parry. Renaissance scholars who were also masters-of-arms strove to put down in writing (insofar as they knew or were able) the knowledge passed on to them from the past. That knowledge was deeply rooted in history, perhaps as far back as pre-history.

Fig. 4.3 Hildegard von Bingen. *Liber divinorum operum*, thirteenth century, MS 1942, f. 9r (Collection of Biblioteca Statale, Lucca)

Through action and operation, man becomes sublimated, transcending the bounds of intellectual study and science, bringing him closer to the essence of God.

A vital heuristic key, which has not received sufficient research attention, is what Nicola Bizzi begins to investigate in his *Camillo Agrippa la quintessenza del Rinascimento* (*Camillo Agrippa: the Quintessence of the Renaissance*) (2020). Martial art masters of the Renaissance period were bound to the quest for ancient knowledge and wisdom. They wanted them, sought them, and often successfully gained possession of them—in other words, they used them as a tool for understanding their art.

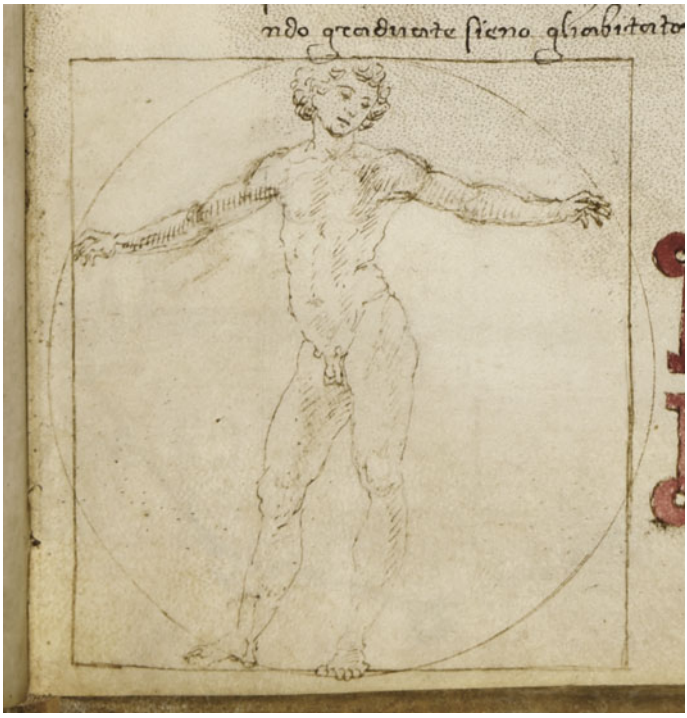


Fig. 4.4 Francesco di Giorgio Martini. *l'Homo ad circolum*, MS Ashburnham 361, f. 5r (Collection of Biblioteca Medicea Laurenziana, Firenze)

Taking Agrippa as an example (it was he who clearly inscribes the dynamic man in a sphere), Bizzi expressly labels him an esotericist. He highlights the involvement of Cosimo I de Medici (1519–1574) (to whom the fencing treatise is dedicated) in a consolidated Eleusinian tradition associated with the Orphic rites. He reminds us how the *Dialogo sopra la generatione dei venti, baleni, tuoni, fulgori, fiumi, laghi, valli et montagne* (*Discourse on the origins of wind, lightning, thunder, thunderbolt, rivers, lakes, valleys, and mountains*, printed in 1584) is dedicated to Cardinal Aloisio d'Este (1568–1624) who, as a cardinal, spent his entire life investigating the Orphic-Eleusinian rites. Annibal Caro (1507–1566), a friend of Camillo Agrippa, with whom he engages in a discourse toward the end of his treatise on fencing, is someone Bizzi calls a "learned Eleusinian initiate," who was "the point at which the learned circles of the Farnese, Gambara and Orsini families met." Nonetheless, I would like to underline that these studies may be traced back to a concept much closer to humanist-scientific studies than to some obscure magical context. They should be placed in studies where geometry, classical texts, mathematics, astronomy, and philosophy meet with the study of weapons and with Hebrew texts, as described by Angelo Viggiani dal Montone (?–1552), and as illustrated in the studies represented in the engravings of Agrippa's treatise (Scarpi, 2009; Souzenelle, 1999; Victor, 1980).

Fig. 4.5 Giacomo Andrea da Ferrara. Human body proportions inscribed in a square, in Pellegrino Prisciani, *Vitruvius M. Pollio*, *Architectura*, MS cart., 1490–1518, classe II 176, f. 78v (Collection of Biblioteca Comunale Ariostea, Ferrara)

I do not remember when the title page of Master Achille Marozzo's (1484–1553) treatise ceased to be for me a simple title page with a delightful architectural structure on it and became a cultural manifesto of the martial arts. To my mind, this is a possible reading: the master kneels inside an altar of everyday life, rectangular in shape, to recall the first earthly state. Before that altar, he performs his daily work in the city through which the river Reno flows, perhaps near his textile workshop. He bears the arms of his trade (Master General of Arms) while carrying out kabbalistic-alchemical

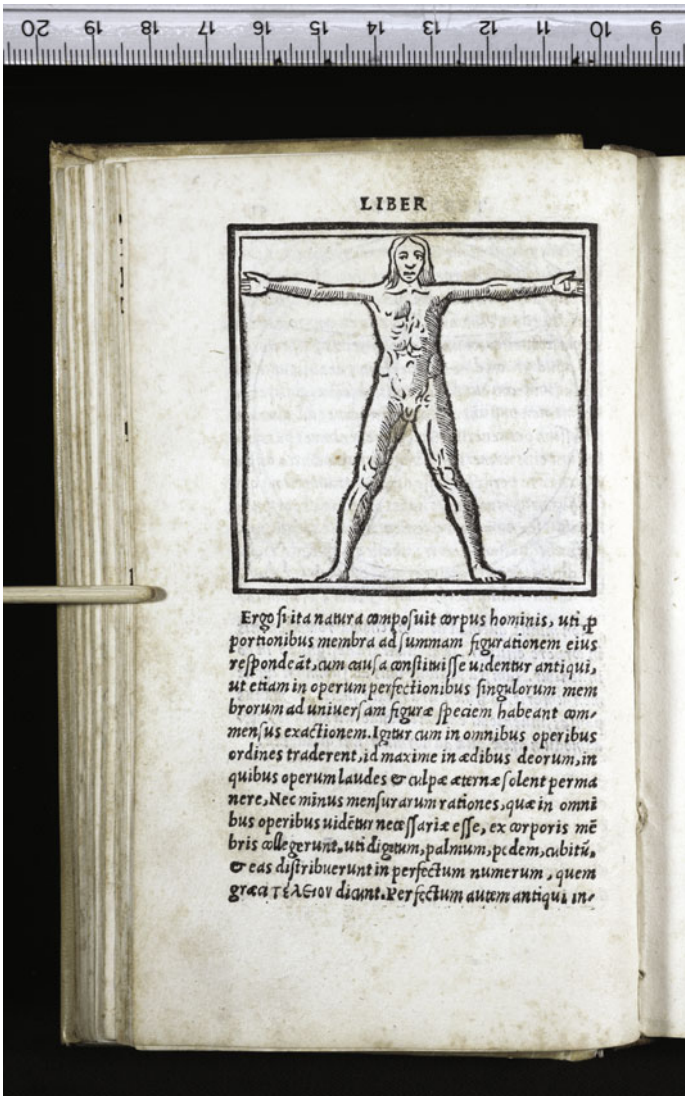


Fig. 4.6 Fra Giovanni Giocondo. Man in the square, *M. Vitruuius iterum et Frontinus a Iocundo reuisi repurgatique quantum ex collatione liquit*, Firenze 1513, RARI, 0724–0725 (Collection of Biblioteca Nazionale Marciana, Venezia)

activities—a hermetic study that permeates the structure of teachings on the *assalti* that he expounds in his text. Inside a protective circle, he sketches symbols that remain to be deciphered today, copying them from a book. From this altar rise two Caryatid figures. They represent the master himself and support a new, higher level, upon which the master sits on his throne, with a sword and a sphere (the "*Palla*" or

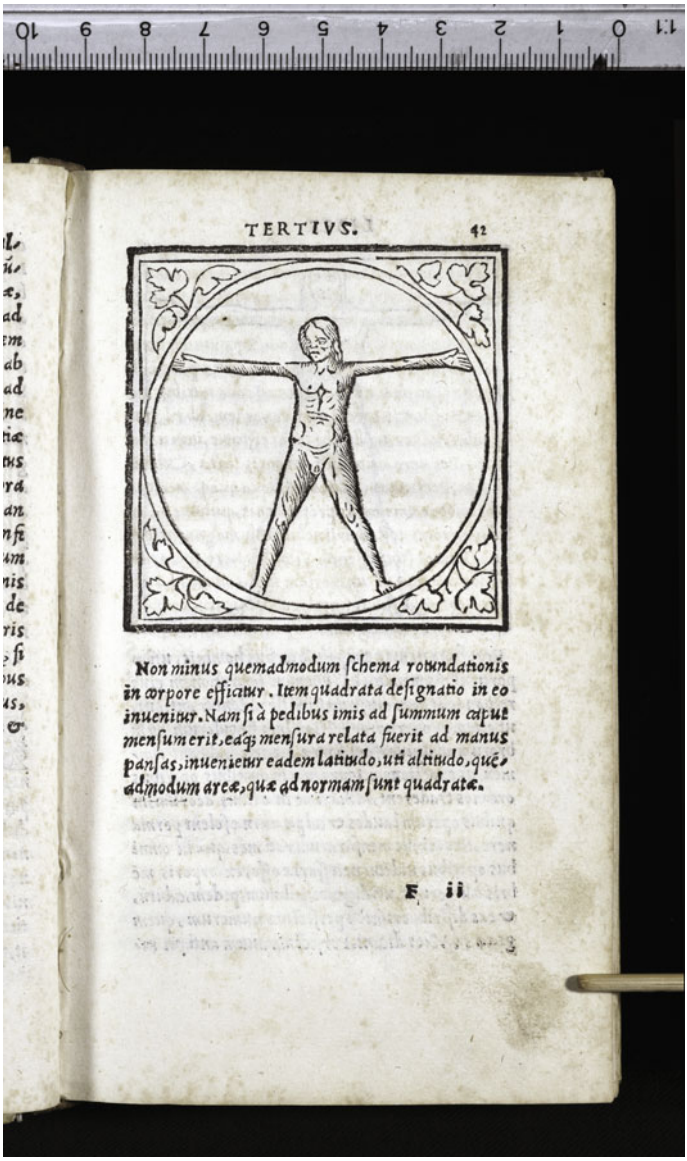


Fig. 4.7 Fra Giovanni Giocondo. Man in the circle, *M. Vitruuius iterum et Frontinus a Iocundo reuisi repurgatique quantum ex collatione liquit*, Firenze 1513, RARI, 0724–0725 (Collection of Biblioteca Nazionale Marciana, Venezia)

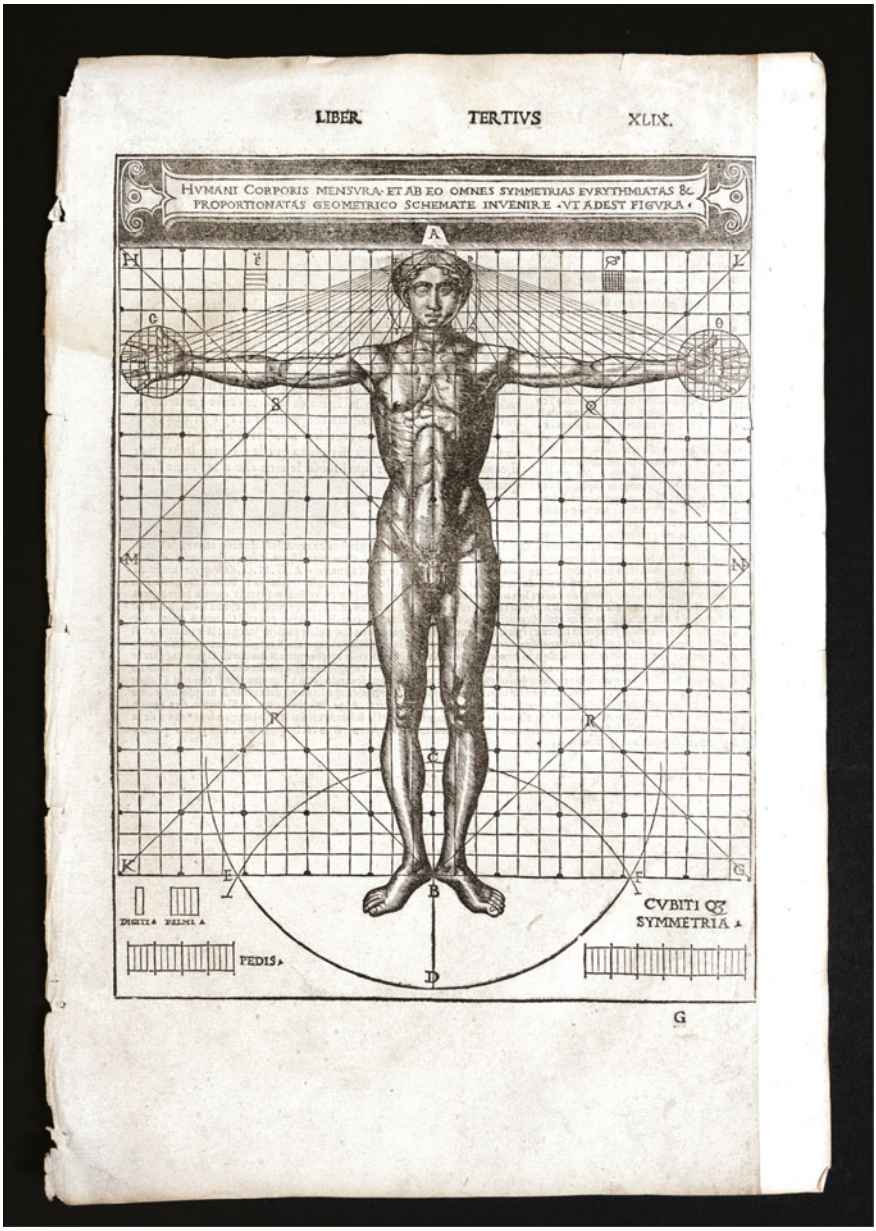


Fig. 4.8 Cesare Cesariano. Man in the square, *Di Lucio Vitruuio Pollione De Architectura libri dece*, Como, 1521, p. L

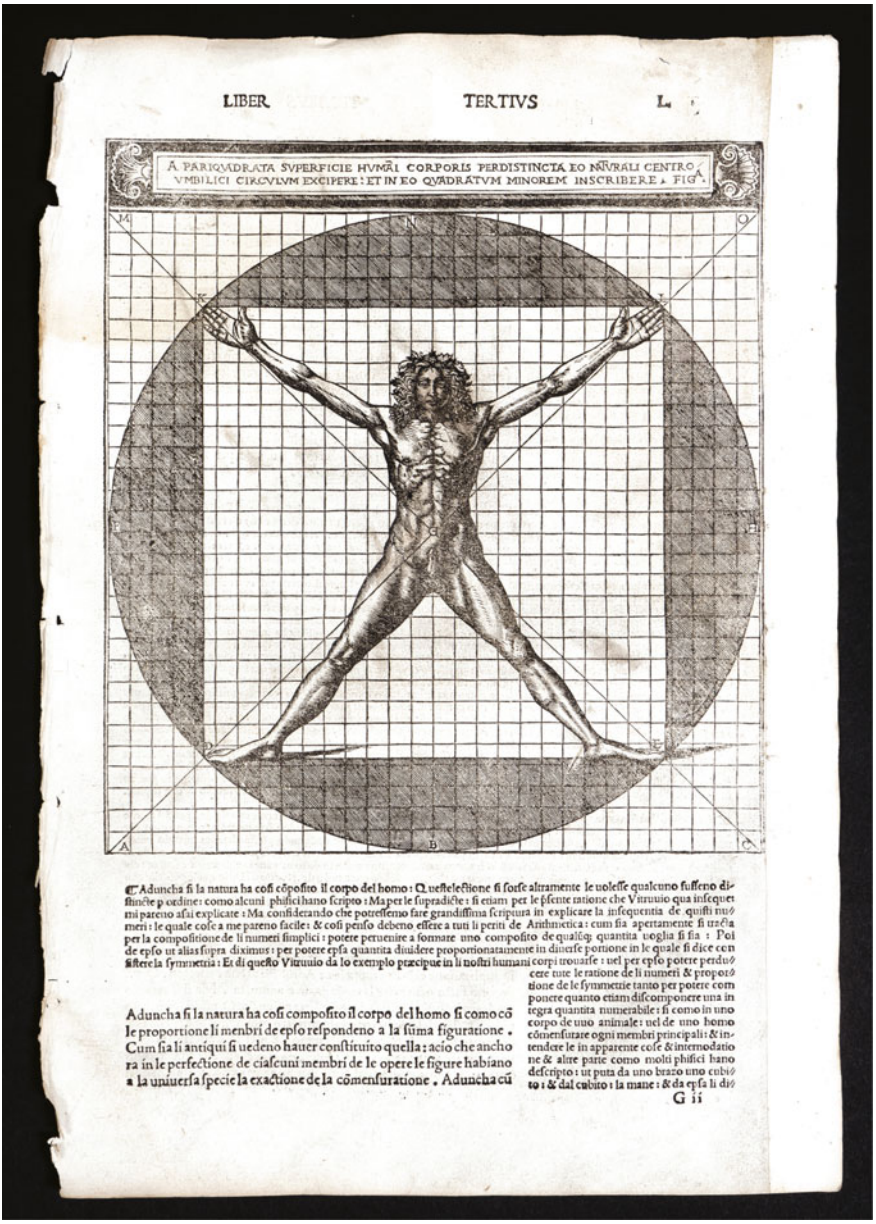


Fig. 4.9 Cesare Cesariano. Man in the circle, *Di Lucio Vitruuio Pollione De Architectura libri dece*, Como, 1521, c. XLIX

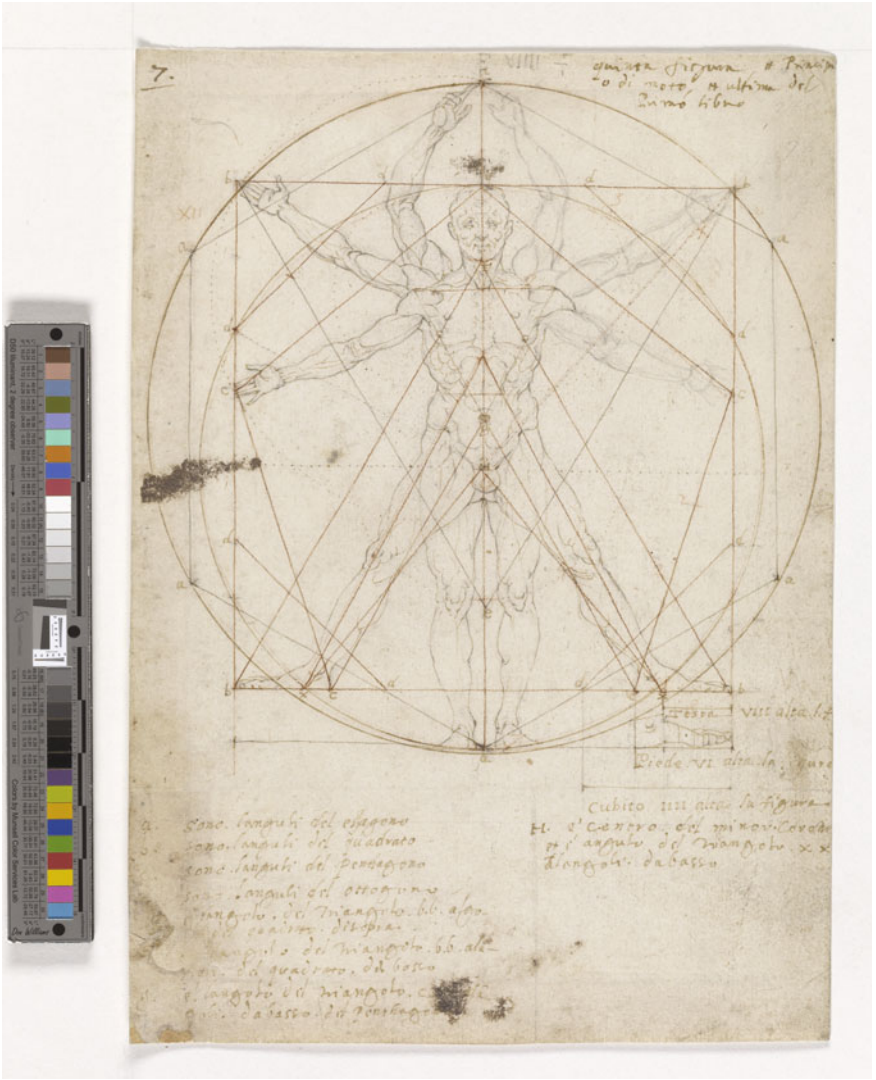


Fig. 4.10 Carlo Urbino. *Quinta figura et principio di moto et ultima del primo libro*, Codex Huygens, circa 1570, MA 1139, fol. 7 (Collection of the Morgan Library and Museum, New York)

ball) in each hand, and wearing a tiara (triregnum) on his head. Beside the throne, there are two sphinxes, the symbols of ancient knowledge. All of this is framed by an open curtain. At the center of this raised structure, a cartouche is rolled out, allowing us to see a new dimension, inside which the title of the book, *Opera Nova*, appears, alongside his name and his title, "Master." This is not the place for more than a mention: all the master's teachings are made up of cyclical references—three in threes, five in fives—and of actions that are "diluted and dried" (*diluito e asciugato*).

Fig. 4.11 Enea Salmeggia. Proportional study of figure in motion, circa 1607, inv. STP00788 (Collection of Accademia Carrara, Bergamo)

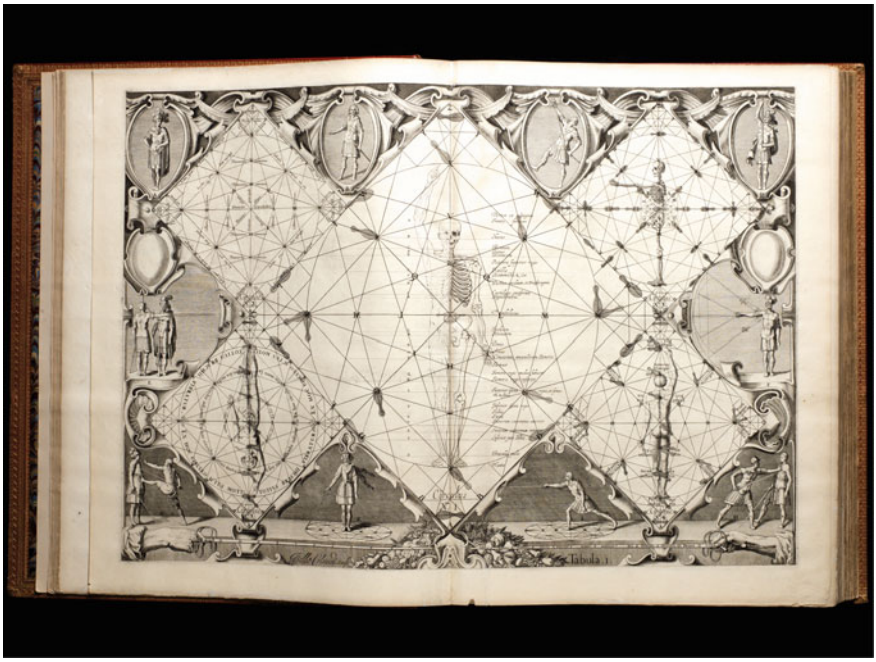


Fig. 4.12 Gérard Thibault d'Anvers. *Académie de l'espée*, 1628 (1630), Leiden, Bonaventura and Abraham Elzevier, tab. I (Collection of Martial Art Museum (BS), Botticino)

These components of knowledge are only linked together after an initial theoretical understanding becomes actualized through practice and experience. Only by playing the game of comprehension (theory first, then practice, and, finally, improvement by experience) can we then better understand the theory and return to a new practice, which brings greater experience.

One passage, more than others, tells of the old masters' attempt to reach out for the deeper truths. It was written by Marco Antonio Pagano in 1553:

> One can be neither the means nor the end, and in this action, one sees the proof of what I am saying, as since the beginning until our own time, the true and grounded principle has not been found. The true and grounded principle has not been found because those who get into it remain uncertain of it. Not differently from those who try to find the end in a very fine entangled thread, because that is also the way the orders of this game are, as it is not possible to find the end of this big skein, taking this instead of that and that instead of this, or regarding a thing as necessary whereas it is not and should be left behind, and left behind what is necessary (Pagano 1553).

The true and grounded principle should be sought in man's natural state, which can be perceived when the maximum possible proportions are reached. Such proportions may then be reduced in half-sword play, in narrow play, and with bare hands, but maximum proportions should first be sought. Marco Antonio Pagano said he did not know what they were, but placed them at the foundation of his work. On the other

hand, Marozzo drew the aforementioned title page, depicted himself on a throne with a sphere and a sword, and in a way structured his treatise according to the principle of the dynamic sphere, without hinting at further reflections that may be found in the other masters (See Fig. 4.13). The true and founding principle that troubled Pagano's thinking was the dynamic sphere laid down by Agrippa, of which the other masters let us glimpse into the fundamental principles: the ability to mobilize the limbs; the ability to move one's weight from the ground toward the first center—the solar plexus—and lay it down again elsewhere; the ability to move the center of the dynamic sphere around the inside of the body; the ability to expand and draw upon the energy of dynamic moves (whether they are cuts, parries, displacements); the ability to place the sphere temporarily on one possible pole out of an infinite series existing on its surface, to draw upon the support within the nucleus and to send it to the periphery of the sphere.

The treatises of the masters, perhaps even the schools—the systems—are all part of an enormous, single iceberg, of which only a small part is visible above the water. They are the martial arts of the masses, the "common folk" mentioned by Monte (in a sense that is anything but negative) that includes the masters, apprentices, pupils, assassins, and champions, from pre-history to the Renaissance, and are the custodians of ancient lessons that emerge from the treatises. Our thoughts go to Agrippa who, while declaring ignorance of the two-handed sword and fencing on horseback and, and mainly addressing the sidesword, still highlighted the most vital element of ancient martial arts that may be a possible bridge to cultures geographically distant from Italy: *the man in the dynamic sphere*. He does this by suggesting a few basic exercises but, more importantly, he acknowledges something more ancient and greater than himself, and states it in such a way as if to engrave it in stone:

> In our people, through their movements executed with dexterity and agility, it is possible to see the very same as in the *Palla* [...]. It represents us as the shape of our bodies, which are similar to a *Palla* not in terms of the true substance of matter, but in terms of movement (Agrippa 1553).

The concept of the dynamic sphere as applied to that third Vitruvian man—a warrior—was clearly present in the minds of the Renaissance masters. The "*Palla*" (always with a capital "P") is the perfect geometrical shape, used by Agrippa to explain a warrior's movements and dynamics. This becomes easier to understand when we take all the Italian Renaissance treatises into consideration. They are, of course, only a small part of the ancient wisdom but they are all that we can be certain of.

The most important passages identified in the texts of the old masters are presented below (not in chronological order), beginning with Camillo Agrippa's treatise.

Fig. 4.13 Achille Marozzo. Frontispiece, *Opera Nova*, D. Antonio Bergolae, Modena 1536 (Collection of Martial Art Museum (BS), Botticino)

3 The Twelve Masters

3.1 Agrippa, Camillo. 1553. Trattato di Scientia d'Arme, con un Dialogo di Filosofia *[*Treatise on the Science of Arms, with a Dialogue on Philosophy*]. Rome: Antonio Blado*

In this volume, the master introduces the image of a forked branch of wood, which he calls *forchina*, into the text and drawings. There are also many other geometrical drawings that originate from its use as a compass. He teaches the reader how to animate that rough inanimate object by applying force to the grip while resting lightly on the two legs of the compass. He underscores the resemblance of this *forchina* to man—or in any case, his legs and torso. From such operations with the wooden fork, it is possible to draw the *Palla*—the sphere—which the master identifies with the dynamic warrior. He further invites us to experiment with both the wood and the sphere, showing how this, by its very nature, avoids blows while not having to fight force with force; that is how he wants fencing to be, and this is how he conveys his teachings.

The *Palla* teaches us to triumph over larger forces with lesser ones, to give way when we are pulled, and to pull when we are pushed. The master discerns a similar relationship between the celestial spheres and earth, saying that the center of the sphere/warrior is the place from which the dynamic force is unleashed. However, the center is not static but moves in us, just as for him it moves on the earth during the change of seasons. To successfully lift one's weight and further achieve the ability to use it as an engine for the sphere, he suggests keeping the feet close together which allows for easy transfer of weight, thereby avoiding the idea of a static pole (by pole, he means the point on which the sphere can be anchored to build an armillary sphere mechanism).

There are two key depictions—two beautiful full-page images—where he leaves the way open to perceiving the depth of discourse that he was reluctant to reveal entirely. In the first image, he speaks with a group of friends around the table in his workshop. He uses a compass, showing his mechanism of celestial spheres, and he has one foot on the *Palla*. In the second, he depicts a dream he had the night before deciding to publish the treatise: here, the ancient philosophers and their modern disciples hold him back, while his friends and "patrons" push him to complete his work; in the background, there is an obelisk, laden with hieroglyphics and other ruins of the past, showing clearly that his theories are rooted in ancient wisdom. On the ground is the disputed secret: the *Palla* (See Figs. 4.14, 4.15, 4.16, 4.17 and 4.18).

Fig. 4.14 Camillo Agrippa. *Trattato di Scientia d'Arme, con un Dialogo di Filosofia I*, Antonio Blado, Roma 1553 (Collection of martial art museum (BS), Botticino)

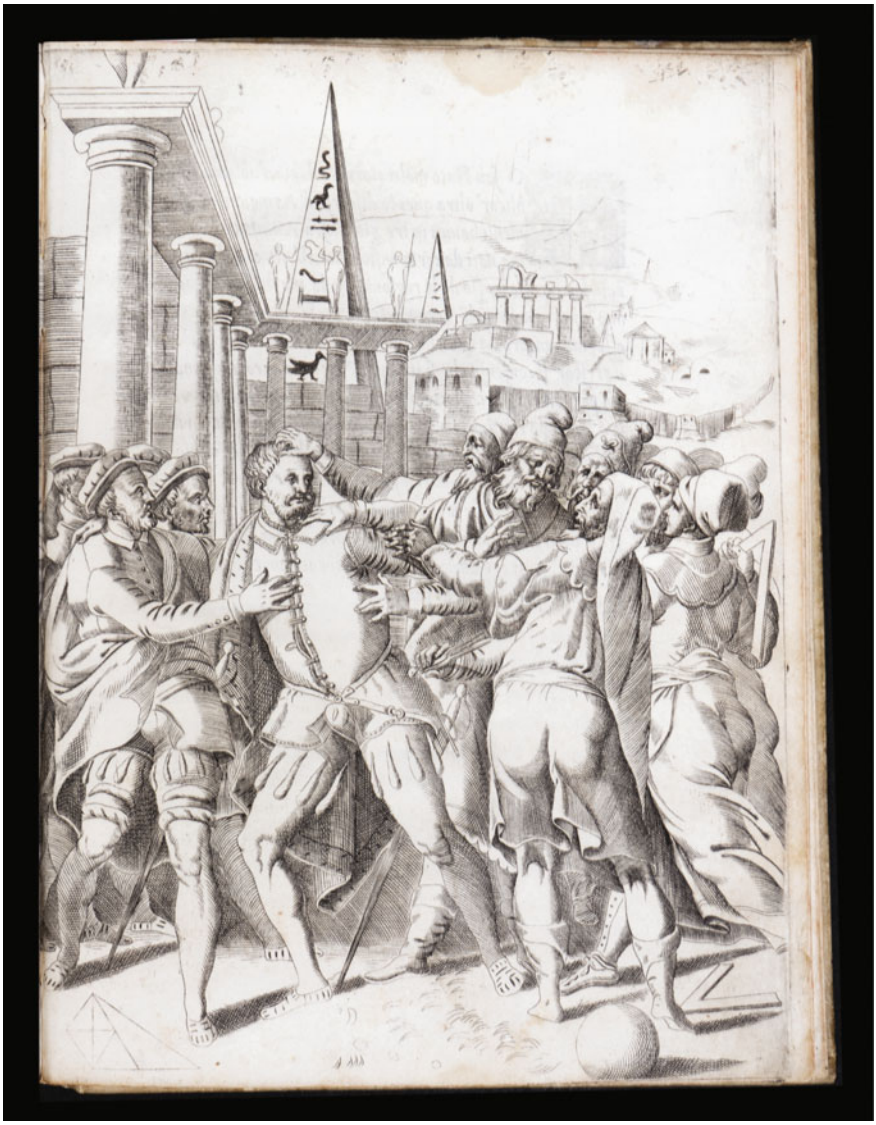


Fig. 4.15 Camillo Agrippa. *Trattato di Scientia d'Arme, con un Dialogo di Filosofia LXIII*, Antonio Blado, Roma 1553 (Collection of Martial Art Museum (BS), Botticino)

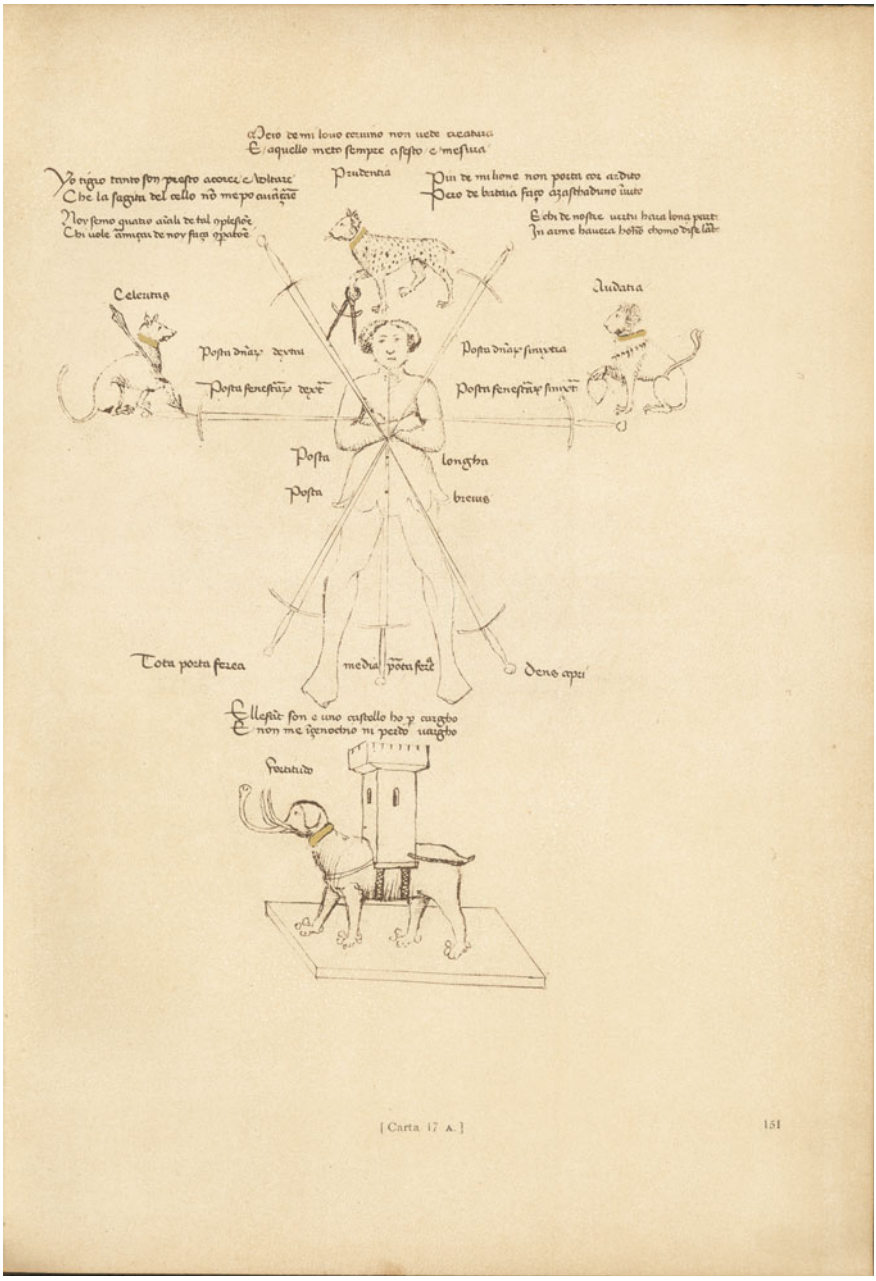
Fig. 4.16 Camillo Agrippa. *Trattato di Scientia d'Arme, con un Dialogo di Filosofia LXVII*, Antonio Blado, Roma 1553 (Collection of Martial Art Museum (BS), Botticino)

Fig. 4.17 Camillo Agrippa. *Trattato di Scientia d'Arme, con un Dialogo di Filosofia X*, Antonio Blado, Roma 1553 (Collection of Martial Art Museum (BS), Botticino)

Fig. 4.18 Camillo Agrippa. *Trattato di Scientia d'Arme, con un Dialogo di Filosofia XXI*, Antonio Blado, Roma 1553 (Collection of Martial Art Museum (BS), Botticino)

3.2 dei Liberi, Fiore. Late Fourteenth–Early Fifteenth Century. Il Fior di Battaglia [The Flower of Battle], Ludwig XV 13 Codex. Los Angeles: J. Paul Getty Museum

In the famous drawing of the elephant carrying a tower by master Fiore (as important as it is overlooked in the modern reconstructions of his techniques), all the elements are there: the strength that lies in the tower, carried by a being with trainable intelligence—the elephant/legs—which is nothing if not the piece of wood which Agrippa animates and instructs with. The torso/tower/handle of the compass is the fortress from which defensive and attacking moves stem; the fast and powerful animal represents the legs. The choice of an elephant highlights the gifts of power and stability, but also the option to be fast. The master describes the art of combat as an occult subject and declares how he occultly teaches the essence of this art. The sentence that accompanies the image reads: "Fortitude. I am an elephant and I carry a castle upon me. I neither kneel nor lose my stride (See Fig. 4.19)."



[Carta 17 A.] 151

Fig. 4.19 Fiore dei Liberi. *Flos Duellatorum*, 1409–1410, reprinted by Francesco Novati, Bergamo 1902, page 151 (fol. 17a) (Collection of Martial Art Museum (BS), Botticino)

3.3 Vadi, Filippo. 1482–1487. De Arte Gladiatoria Dimicandi [On the Art of Swordsmanship]*, MS. Rome: Rome National Library*

The drawing that the master from Pisa gives us in folio XV recto is invaluable despite being poorly studied (Vadi, 1482–1487). To understand such a vital lesson, contained within an apparently simple drawing, it is necessary to live entire lives devoted to the art, in order to arrive at an understanding that, starting from the written word, would become dynamic movements that could be replicated and perceived. In turn, this allows one to go back a thousand times to writing and drawing, and then finally discover its fundamental principles. Indeed, very interesting and oft-overlooked information manifests not just from the drawing, but also from the master's text: he describes a form of fencing with no geometric end but is performed with an infinite series of strokes and movements, which he explains in the language of mathematics and geometry. Music, with its pauses, rhythms, crescendos, and accents, is like fencing and as such is made of notes, pauses between notes, passages, and interpretations thereof.

All that we seek is already very much present in Vadi, including the dynamics and the spherical aspect of movement. Fencing has no end: it is a continuous and dynamic series of clashes, rests, dodges, and *ripostes*. He too demands—as does the Italian Renaissance school in general—that the measure (of the footwork) be reduced. In the explanation of the half-sword, we find the arms outstretched, a fundamental principle that is present in all the treatises as a *conditio sine qua non*. The movements, which may be wide or narrow (but in any case, full and not broken) are led by the hand which is "serene and slow" (*serena e tarda*) in its movements. The steps are not out of the norm. In another sentence, he talks about the search for what I like to call the "subterranean rivers" of the ancient martial arts: "to find the river and the river bed of art." This is part of the truth, which Vadi definitely knew was enclosed in the beautiful drawing.

Analyzing them for the matters that interest us, we see the legs/keys that "open and close the game" (*che aprono e chiudono il gioco*) and are at once joined together and separate like a compass; the rotation of the "bear shoulder" should be natural and able to move and direct energy in every direction; the sun, the tower and the mill wheel. Everything will be better explained by later masters perhaps, but the teaching is already there. The feet move (*fanno molesta*) one after the other. Therefore, it would be a serious error to just think in terms of the tower on the left foot and the sun on the right foot: that rigidity and body asymmetry is not found in any Renaissance master's work. The mill wheel represents the correct distance between the compass legs, as well as the need to move the feet together, in synchronization with one another, swapping lightness and strength. We know this thanks to the words in Vadi's text and the texts written by the other masters, but the meaning is already clear in Vadi's diagram. The sun, which is the moving leg, is free to come and go; the tower is the temporary pole upon which the sphere rests, which is ready to become the sun in an energy/weight swap, facilitated by the grip on the compass. With the half-sword the

master teaches that the strikes are performed without swapping feet (which is instead normal in the wide-measure footwork), turning the legs, and bending the leg on the side where you strike while extending the other. It is this weight shift that we find very well explained, for example, in Ghisliero or in Viggiani (See Fig. 4.20).

3.4 Monte, Pietro. 1509. Petri Montii Exercitiorum: Atque Artis Militaris Collectanea in Tris Libros Distincta *[*The Collection of Military Arts and Exercises in Three Books, by Pietro Monte*]. Milan: Giovanni Angelo Scinzenler*

Pietro Monte (1509) was the first Italian master to publish a printed book on fencing. It is rich in the diverse contents of the art of war. Though little studied the master is a cornerstone in western martial arts, and for myriad reasons may be considered the link between Italian fencing and the Spanish *destreza*. In general, his treatise had a great influence on sixteenth-century fencing, but for the purpose of our discussion here, it suffices to mention that many of the underlying principles of the dynamic sphere are already well present in Monte: relaxed and extended hands, light feet, and strength in the torso, withdrawing the body to distance it from the attacking enemy, and the need for continuous movement (See Fig. 4.21).

3.5 Unknown Author of the Classense Library. Early Sixteenth Century. Trattato Della Scherma *[*Treatise on Fencing*], MS 345–346. Ravenna: Classense Library Institution*

I believe that the unknown Classense (Anonimo Classense) author is so close to the teachings of Marozzo that we need not be concerned about whether he is his master or a training partner. He tells us that fencing is the dynamic union of intellect, intent, and the entire body. Without traveling "the path of experience," one cannot understand an art that relies on movement. Experience is the foundation of the true understanding that may ultimately reproduce the perfect symbiosis of all the elements that create the man in the dynamic sphere, bringing him to life: that is very well depicted in the text, from the union of intent and movement, both in a wide-measure tempo and in a half-measure tempo. In fact, it is this work that reveals the basic effects and principles: practicing, making mistakes, and repeating the masters' *assalti* again and again, in order to discover the correct method. The unknown author provides an important definition: the "limbering up" of a person, that is the absence of breaks or fragmentation of the movements, resulting in a smooth and truly "admirable" art.

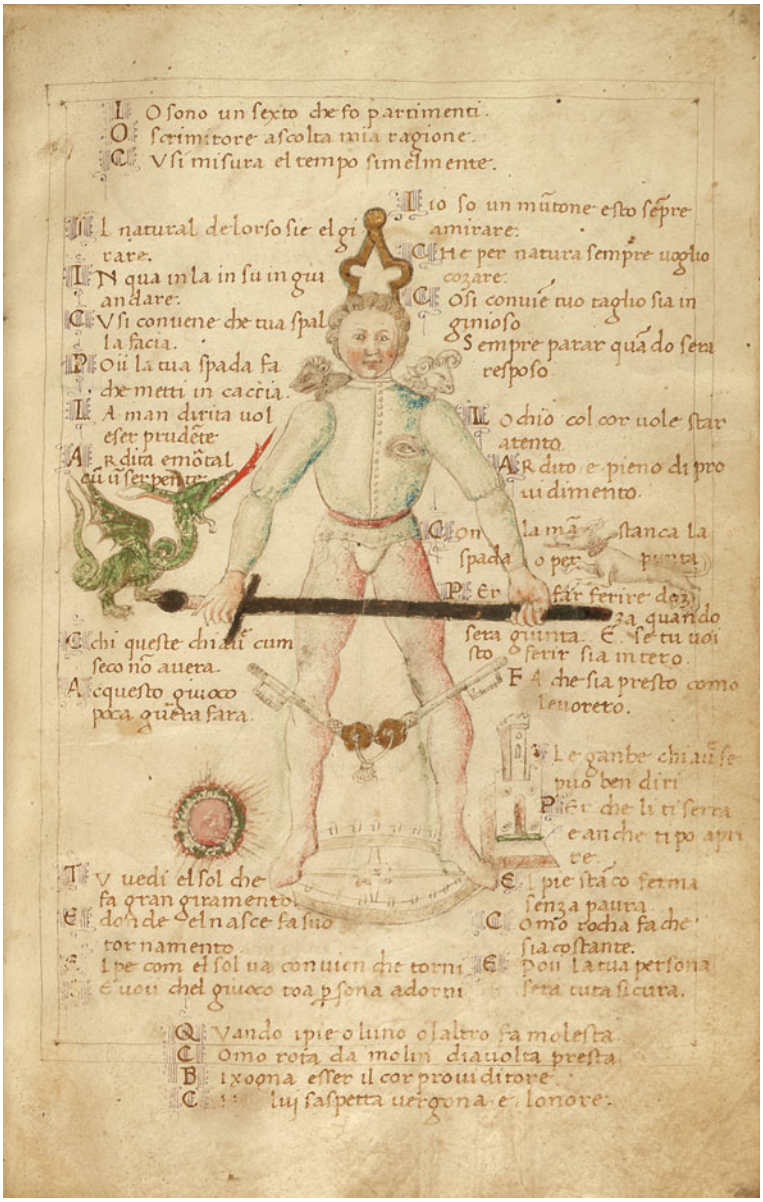


Fig. 4.20 Filippo Vadi. *De Arte Gladiatoria Dimicandi*, before 1487, MS Vitt. Em. 1324, Rome, Biblioteca Nazionale Centrale, Sez. Manoscritti e Rari, 15r (Collection of Biblioteca Nazionale Centrale, Rome)

Fig. 4.21 Bronze medal. Italy, circa 1490–1510, recto "PETRUS MONTIUS" verso: "VIS TEMPERATA FERT IN VITA DURABILEM" ("durabilem" is written on the open book) (Collection of Martial Art Museum (BS), Botticino)

The unknown author provides a beautiful definition of light footwork, drawing comparison with the movements of dance. After having provided a good depiction of a large circumference, the master describes a smaller one in which the sword, with the body composed well behind that narrower circumference, performs its fencing actions, while skillfully covering the entire person.

3.6 Manciolino, Antonio. 1531. Opera Nova *[*A New Work*]. Venezia: Zoppino*

Antonio Manciolino (1531) is very close to the school of Marozzo and the unknown Classense author. He confirms what the Italian Renaissance inherited a profound legacy from the preceding centuries and millennia: the need to extend the arms as far as possible. Following the Italian school's tradition, he demands unity in footwork and unity in that footwork with the upper body, from which comes lightness and strength. Although it is Marozzo who leaves us with the largest and most varied number of *assalti*, Manciolino gives a beautiful explanation of why these prolonged combinations of movement are useful. He is very clear on the matter, "The person, their legs and their hands will become swift and active." These elegant steps are as defining as stars are to the night. He not only insists that practice of the *assalti* is necessary for one to become a good fencer, but that the moving into play (*andare a gioco*) is also necessary (which is unrelated to striking and parrying well, and concentrates only on good body movements and moving weapons).

3.7 Di Sandro Altoni, Francesco. 1539–1569. Monomachia [Dueling]*, MS II.Iii.315–L.V. 23. Florence: Florence Central Library*

In describing the means to form guards, Altoni divides the human body into three parts—the upper, the middle, and the legs—and further identifies the plexus as one of the useful points to divide the body. The master seeks a balance between the forward hand that carries the weapon and the backfoot: it seems to be a form of fencing where the movement has already lost the dynamic force we find in earlier writings, in its statically supporting the weight of the arms and the gesture, but this division of the body into three parts and the use of two of the three to define posture and balance of the body/weapon is very interesting. It should be noted that two-thirds of a man of 183 cm in height is around 122 cm—that is, the height of the endpoint of the solar plexus, which begins just above the navel and ends under the diaphragm. The plexus is located at two-thirds of a man's height but in the center of the circumference, with the shoulders mobilized and the arms fully raised. The proportional step that this affords still aligns with the traditional one, but the posture he describes, with one foot "propped up," does not (di Sandro Altoni, 1539–1569).

3.8 Pagano, Marc' Antonio. 1553. Le Tre Giornate [The Three days]*. Napoli: Luigi Acilio Alife*

Like dall'Agocchie (1572), Pagano regards fencing as the foundation of all military disciplines. He adds that, if the execution of fencing movements is ephemeral in itself, fencing principles are eternal insofar as they pertain to the soul, bringing fencing closer to an Eastern mantra on a philosophical plane. He stresses that theory must be tested and verified through practice. Agility, beautiful and quick execution, nimbleness, and speed, are the correct way to put theory into practice, and it is only through practice that true fencing principles may be discovered. He further states that correct execution of the strokes—fluid but controlled, loose but not disorderly—must be accompanied by correct footwork and hand coordination. All in all, Pagano advocates the need to seek the truth, the true and grounded principle, which is the fulcrum of martial arts. However, whether by choice or by accident, he declines to explain this principle.

The true principle should be sought in a man reaching his maximum proportions in whatever situation he finds himself, whether constricted in half-sword, narrow play, or unarmed combat. Pagano understands the true principle but paradoxically states that he does not know it: whether he is missing a speculative passage or wishes to keep it a secret, we do not know. In his incredibly visionary text, he attacks those who lose themselves trying in vain to describe the gestures with measurements, only to lose the harmony and the fullness of the gestures in the process.

The dynamic sphere is the "true and grounded principle" he is searching for, where the body can expand to the point of extreme extension, or contract to the smallest nucleus as it leans on a temporary point of balance, while always keeping that concave surface—the shield—extended. Pagano's lesson is as strange as it is beautiful. In his exposition, he alternates between various banquets, shows, and lectures with real pearls of wisdom on fencing. We find two such passages which allow us to link the solar plexus with an important phrase from Pietro Monte. The following reflection, alongside Viggiani's on controlled anger, seems to allude to the fire inside the plexus, the center of the spherical man from where actions are generated: force. Monte, or someone on his behalf, has engraved on the back of his medal the phrase "*Vis temperata fert in vita durabilem*." Pagano says,

> On what to do, I repeat that it is necessary for the action to be measured and controlled [...]; however, a man who is perturbed with fiery emotions and is driven by an appetite for revenge, stirs in his entire body, we see how this directs the fist upward. It is therefore suitable for him to enter the first guard with which I want the man to stand straight with his fist raised in the air, with his arm extended, with the right foot forward, with the legs together and the knees straight (Pagano 1553).

An agitated man, provoked by controlled anger and driven upward, is upright with his limbs raised, legs together and knees straight... This is the third Vitruvian man, with his center in the solar plexus, suspended like the man depicted inside the San Quirce de Pedret circle. I believe that, at least with the experience of the body, Pagano had experimented with and taught the "true and grounded principle." He confirms the need for the body to move together as a single object, a single machine. In moving the hands and feet together and freely in a long-phrase (in all the movements necessary for approaching, entering into, conducting, and exiting play), we find the necessity, highlighted by all the masters, for movement dynamics, which is the essence of martial arts. Herein lies the richness of the *assalti* left by a master—Marozzo—because to perform them well (without killing, breaking down, and depriving the movements of life), it is necessary to seek this dynamic and prolonged union—"bit by bit," as Viggiani says. It is necessary to generate force and then keep it alive for all prolonged fencing actions.

3.9 Di Grassi, Giacomo. 1570. Ragione di Adoprar Sicuramente l'Arme [Discourse on Wielding Arms with Safety]. *Venice: Giordano Ziletti*

This master has given us an entire chapter on training the body, which teaches us how to use the arms properly and mobilize each section of the arm, including the shoulder. He further suggests that the practitioner should suspend himself from a rod or a pole to facilitate that process. This is a vital concept that allows us to see the shoulders not as static elements embedded in the torso, but as dynamic ones, which may move toward the opponent and his strokes—even when our own movement is

focused on making cuts with the wrist—or when performing a thrust rather than a cut. This research into the art's principles is beautiful, as it seeks to list out and describe them for the others' benefit.

One of the most essential lessons in the master's discourse concerns force: the (martial) art has a job to do, to injure while avoiding being injured, which depends on the use of force and *destreza*. The word *destreza*—dexterity or skill—is highlighted as a cornerstone of fencing in almost every treatise of the Italian Renaissance masters. The sixteenth- and seventeenth-century Spanish fencing—the true heir of the martial attitude that I propose in the present chapter—would take it as its name. *Destreza* is the ability to generate force, to oppose a stronger force with a lesser one, but one that knows how to handle both. The basic principle is the subject of the ancient masters' research, but it is also a precious secret, a hidden one for Fiore, hinted at in Pagano, and only superficially touched upon—by his own admission—by Agrippa.

The words Di Grassi uses to describe his quest across Italy in search of the necessary "*parte di giuditio*" provide a window through which we may glimpse into the ancient schools: he speaks of Italy and Italian fencing, of notable schools, secret schools, good strokes—some beautiful others erratic—and of his itinerant research. Di Grassi describes and emphasizes the straight line and the thrust, but also the force of cuts given on the circumference; he provides good analysis of the point at which the sword injures best, with four fingers under the thrust. He depicts the arm as having three main nodes: the wrist, elbow, and shoulder. He suggests not turning the shoulder to strike, because it takes too long and leaves you exposed. Even the use of the elbow and wrist requires the full mobility of the displaced shoulder. Likewise, the thrust is made up of rings of nodes on the arm. Therefore, a shoulder that has been shifted and is moving is the basis for the fastest wrist strikes and thrusts.

The master depicts himself in a straight half step, with the feet *in passo mediocre*, as he says, in line with the old Italian school. The waist is still (like Fiore's tower) and it is precisely in this still waist and working arms that the fundamental need for those mobile shoulders lies. The master tells us that one foot should always be still and stable as in Vadi's tower (not completely still and static in absolute terms, but rather a temporary resting point, the temporary pole). The other must be free—a part of the sphere and potentially a new pole. He explains better than others the triangle that becomes a sphere and sphere that becomes a triangle (the symbol of the school I founded), as well as the management of the necessary fury/impetus for a proper cut. By practicing alone in order to gain strength, he makes a statement on the need to train the whole body to move in harmony, and then counsels the practitioner not to train the arm with a heavy sword, as it is not a matter of establishing who can lift the heaviest. Instead, we must mobilize all the nodes of the arm as once mobilized, one may execute the blow even with just the node of the hand (but the other two nodes should remain mobile and active). This is very much in line with the suggestions of earlier masters such as Monte and the unknown Classense author, who want the shoulders to shift toward the opponent and the strokes to be as extended as possible. To mobilize the three nodes and extend the arm as high as possible (*guardia alta* or high guard), the master instructs that one should hang by the hand from a rod planted in a wall. That is the position in which we can draw the third Vitruvian man, the

one depicted inside the dynamic sphere. Legs and arms move together, joined at the torso, which remains a tower, to connect the elephant to other animals: the bear and snake as well as the ram with the greyhound are united. Arms and legs: or rather, the four main pillars of movement (See Figs. 4.22, 4.23 and 4.24).

CHE OGNI COLPO DI PVNTA FERISCA
circularmente & come ferendo di punta si ferisca rettamente.

HAVENDO detto di sopra & posto per un de principij di questa arte Che la linea retta e la piu breue di tutte l'altre il che e verissimo, ne ha punto bisogno di dimostratione & che poi hauendo come per uero suggetto che il ferir di punta sia ferir rettamente non essendo cio semplicemente vero parmi raggioneuole prima che si uada piu inanti dimostrare come i colpi di punta feriscano circularmente & come rettamente il, che mi sforzero di fare

Fig. 4.22 Giacomo di Grassi. *Ragione di Adoprar Sicuramente l'Arme*, Giordano Ziletti, Venezia 1570 (Collection of martial art museum (BS), Botticino) (di Grassi 1570, 8)

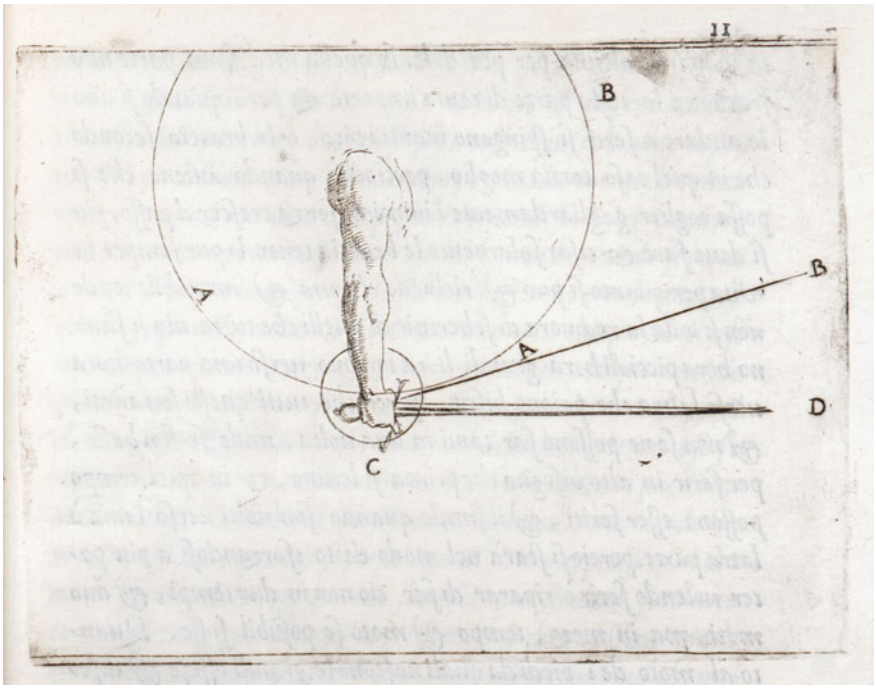


Fig. 4.23 Giacomo di Grassi. *Ragione di Adoprar Sicuramente l'Arme*, Giordano Ziletti, Venezia 1570 (Collection of martial art museum (BS), Botticino) (di Grassi 1570, 11)

3.10 Dall'Agocchie, Giovanni. 1572. Dell'Arte Di Scrima Libri Tre [Three Books on the Art of Defense]. *Venice: Tamborino*

The importance of this treatise, written as a dialogue between the master and Lepido Ranieri in the palace of Girolamo Martinengo (1504–1569) in Brescia, lies in its clear explanation of how "modern" fencing was moving away from "traditional" fencing, which was founded on the requirements of war (thus losing its very nature), as well as how the martial arts themselves were moving away from fencing as their basic element, having been replaced by firearms and armies less and less trained in close combat. Even before he begins to teach Lepido his fencing, the master clearly presents his vision of fencing, summarizing wide play with loose arms and waist, and explaining how this type of play is essential in making the art complete (dall'Agocchie, 1572).

DELLA CONVENIENTIA DEL
piede & della mano.

LA GAMBA diritta deue sempre esser fortezza della man dirritta, & similmente la sinistra della sinistra onde qual uolta accaderà di spingere una puntà, il douer uole che el la sia dalla gamba accompagnata, perche altrimenti dalla furia & dal peso che è fuor della linea perpendicolar della uita non hauendo sotto alcuno puntello si ua a rischio di cadere, & si deue sapere

Fig. 4.24 Giacomo di Grassi. Ragione di Adoprar Sicuramente l'Arme, Giordano Ziletti, Venezia 1570 (Collection of martial art museum (BS), Botticino) (di Grassi 1570, 14)

3.11 Dal Montone, Angelo Viggiani. 1575. Lo Schermo [on Fencing]*, Written Before 1550. Venice: Giorgio Angelieri*

Like the real dialogue between Agrippa and Annibal Caro, or the one between dall'Agocchie and Lepido Ranieri, Viggiani gives an imaginary dialogue between Luigi Gonzaga, also known as Rodomonte, and the philosopher Lodovico Boccadiferro (1482–1545), which is drawn on the title page of his manuscript. He brings a lively intimacy to the description of the two interlocutors' rooms, which could be those of any of the masters, men-of-arms, or philosophers. From the books in Latin, Greek, and Hebrew, on arms and armor, and trophies and spoils, a "common" sphere emerges, amidst the geographical and celestial spheres. The printed edition of Viggiani's book has a little gem on the title page. A reference to alchemy lies in the image, showing the water of temperance and the sun of bravery working together to nurture the art "bit by bit," as it applies to the organic growth of any living creature.

In a long dialogue, Viggiani-Rodomonte maintains that a dynamic, functional art is superior (in this world) to a purely speculative one. Research into the origins of motion in man, the dialogue between offense/violent action and defense/active resistance shows that the master's interest lies in the interplay between opposing forces. According to Indian wisdom, the fire of movement lies in the third chakra, which itself is in the solar plexus, the driver and soul of movement. Like Pagano, Viggiani speaks of a controlled fire. That is what Fiore called *audatia* mixed with *prudentia* or, for Vadi, the eye of the heart. It is also the *Vis Temperata* on Monte's medal. Viggiani writes, "But if it is such a tempered rage that obscures all reason; I will tell you that it will be of great benefit: for rage is a fire of blood about the heart. Being tempered, it sets the heart on fire in a tempered manner and, consequently, the ignited spirits rise, providing better agility and strength to the moving soul and making actions quicker in every sense."

In the entertaining dialogue in which he shows and teaches his interlocutors how to strike and move, the master greatly condenses his knowledge, to speak truth with simplicity, as seen for example in the following exchange:

> ROD. That's what I like to do.
>
> CON. Oh great: how do you hold that sword in your hand after so many envelopments?
>
> ROD. I cannot describe it, my dear Conte, but open your eyes and take diligent care of the nodes in the hand and the dexterity of holding it as before. See how I do it? Similar actions are shown and learned with greater efficacy through practice and perception, rather than with words... but just watch again, please, this *rovescio*, which by contrast increases as it goes: don't you see how far the arm is now extended, and how the shoulder rises and continuously increases the injury? (dal Montone 1575)

Viggiani emphasizes how few techniques there are in his treatise. Equally, we find very little of the complex and rich art in the treatises of the second half of the sixteenth century (compared to the masterpieces of the unknown Classense author and Marozzo). In the works of two Bolognese authors, the vast numbers of techniques

show the art's complexity to the greatest possible extent. In these others, we find traces of the fundamentals of the art (perhaps overlooked in those). Equally, in the two older masterpieces from Vadi and Fiore—on account of the era and also of the tools (illuminated manuscript)—there are fewer techniques and the sequences are shorter, but those documents have other selling points, such as the drawings of man in relation to objects and animals. The text of the indisputable master Monte is more skeletal still than all the others, and would have been incomprehensible were it not for the techniques laid down by the two Bolognese masters and the treatises that followed. On the subject, Viggiani says, "But I, who am not the master of a school, to you who are not my disciple, do not today intend to teach our full exercise by play. I will instead choose only one." Viggiani confirms the teachings of the school, according to which having the feet close together increases the ability to generate force in less time.

Time is the measure of movement and of stillness. The description that Rodomonte-Viggiani gives of striking tells us of the chain of muscles and the entire body that must move together behind the blow. He gives a splendid lesson on how to free oneself from being static to becoming stable in movement and describes the need to carry the weight in the body's core to free up the feet. Movement comes from combining the body's power into a single unit: the upper and lower parts move together and extend as far as they can. He often repeats the sentence, "And here, combining all the forces of the body together, you perform that *rovescio tondo* with the same hand and footwork about which I have told you." In the last pages, he clearly maintains that he teaches "only one fencing [technique]," because that is enough to give the lesson, but states that there are many more blows and moves. He further defines what he calls "the great blow," as in the most powerful stroke—"The *magno colpo* is so-called because one must act with all the forces of the body, intelligence, emotions and art in synchronization and union (See Figs. 4.25, 4.26, 4.27 and 4.28)."

3.12 Ghisliero, Federico. 1585. Regole [Rules (of Many Knightly Exercises)]. *Parma, Together with Ms. Kept at the M.A.M. In Botticino (BS), Italy, Pre-1585. Botticino: Martial Art Museum*

If Agrippa was the master who revealed to us the man/sphere correlation, Ghisliero was the one who expressed the need to channel those ideas generated by the men-of-arms into the larger thread that unites so many scholars and which has its roots in Vitruvius, and in others before him. Ghisliero was the master who sought to explain our microcosm's resemblance to the macrocosm around us. Before Thibault, it was Ghisliero who sought to show through mathematics and geometry the perfection of man, who must be placed at the center of creation. The master accepts the teachings that place the center of the circle at the groin or navel, and the center of the square at the groin (in his drawings of a man in a circle, the center is once at the groin

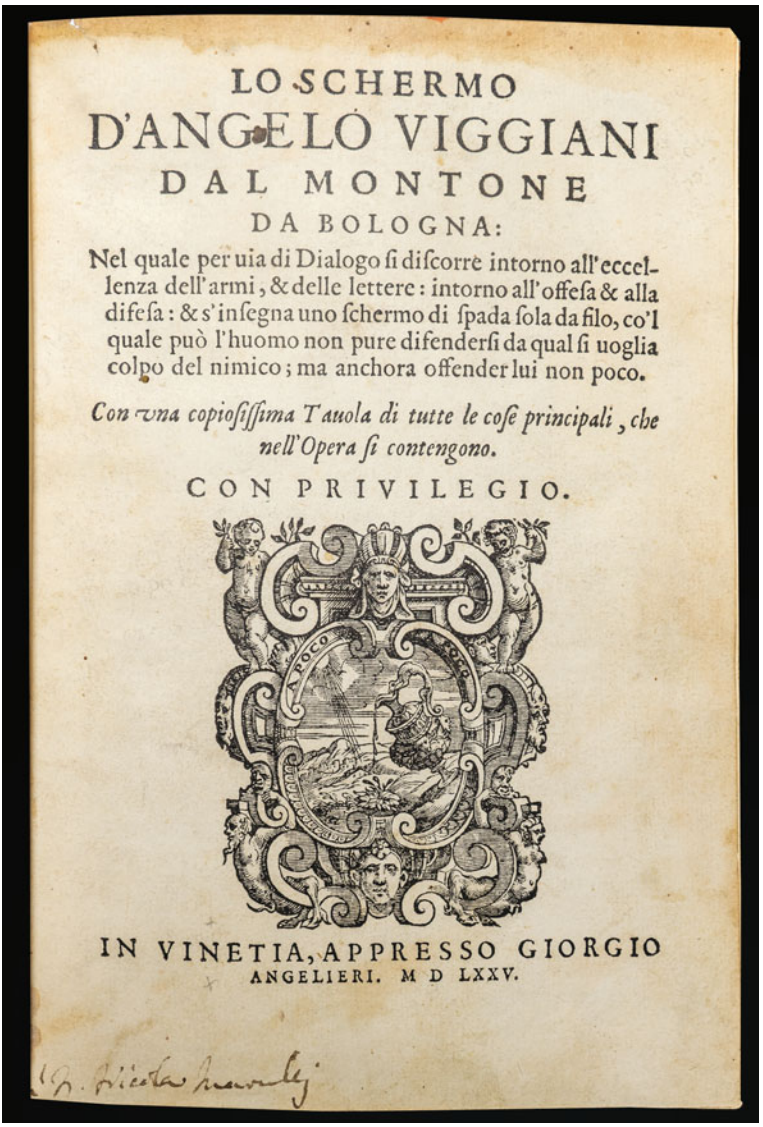

LO SCHERMO
D'ANGELO VIGGIANI
DAL MONTONE
DA BOLOGNA:
Nel quale per uia di Dialogo si discorre intorno all'eccellenza dell'armi, & delle lettere: intorno all'offesa & alla difesa: & s'insegna uno schermo di spada sola da filo, co'l quale può l'huomo non pure difendersi da qual si uoglia colpo del nimico; ma anchora offender lui non poco.
Con una copiosissima Tauola di tutte le cose principali, che nell'Opera si contengono.
CON PRIVILEGIO.
A POCO
IN VINETIA, APPRESSO GIORGIO
ANGELIERI. M D LXXV.

Fig. 4.25 Angelo Viggiani dal Montone. *Lo Schermo*, Giorgio Angelieri, Venezia 1575 (written before 1550), Frontispiece (Collection of martial art museum (BS), Botticino)

and once at the navel), but he contributes a magnificent addendum to enrich that teaching: he believes that in man there are many rotation points. He is perhaps driven to this conclusion by the genius of necessity—knowledge that comes from observing movement—which led him (together with the best martial art masters) to an elevated

Fig. 4.26 Angelo Viggiani dal Montone. *Trattato d'uno schermo*, MS Codex 10,723, Österreichische Nationalbibliothek, Vienna, Austria. 1551, completed in 1567 by Battista Viggiani, Frontespiece

level of understanding of human movement above even the most celebrated architects and painters.

On the surface, one might think that in the treatises of Agrippa, Ghisliero, and others from the second half of the sixteenth century, just like in Thibault's in the seventeenth century, new truths, and new anthropometric discoveries were made. That is not the case. What emerges in the stunning phrases and concepts in some parts of those treatises is found in the older works, such as those of Marozzo, the unknown Classense author, Vadi, and Fiore. Just think back, for example, to Marozzo's instructions to disarm someone equipped a dagger, which is in fact very close to Vadi's methods. The principles of movement described above are clearly present in those techniques. In fact, I believe that our search could go as far back in time as the rock engravings of Val Camonica, to the beginning of what I call the "sedimentation of martial culture" and the creation of combat art. Long ago, such physical truths were already revealed to the martial art masters. These laws were not suddenly "discovered" during the Renaissance; rather they were subjected to the study and expressed in a new language of geometry and mathematics. Weapons evolved over time, beginning with the femur, jaw, rod, and stone, but the human body remains the same. In my view, such knowledge as written down by the cultured Ghisliero and the hermetic Marozzo goes back through a long line of oral transmission to unknown men—generations of masters—who discovered, then gradually refined and codified their knowledge into principles, the traces of which remain in the treatises.

The idea that Ghisliero puts forward, of having the arms, hands, and feet extended, is excellent; but in the images, he shows outstretched but not raised arms. In the three

Fig. 4.27 Angelo Viggiani dal Montone. *Lo Schermo*, Giorgio Angelieri, Venezia 1575 (written before 1550), 69v (Collection of martial art museum (BS), Botticino)

drawings that portray a man in a frontal, 3/4, and side view, he suggests the other great opportunity that the sphere presents—withdrawal of the side target, so well explained by Agrippa and Ghisliero by identifying the two possible points in our body: one on the right and the other on the left of the central axis. These points are to be hidden as they are the enemy's target, one or the other. Ghisliero speaks of chains and keys: Vadi's keys at the knees, Di Grassi's mobility. He gives a good explanation of how to mobilize not just the arms but all the limbs and provides a full analysis of

Fig. 4.28 Angelo Viggiani dal Montone. *Lo Schermo*, Giorgio Angelieri, Venezia 1575 (written before 1550), 74v (Collection of martial art museum (BS), Botticino)

the two compass columns or legs and their function as a temporary but indispensable support of the compass, which would otherwise fall.

His study of the fulcrum and opposing weights is very important. It can be taken to extreme and infinite conclusions, as far as inside the opponent's body and anywhere within our own. In Ghisliero's in-depth geometrical descriptions concerning the steps and the arrangement of weight on them, and his description of the archipendulum, which is the plumbline that comes out between the legs of the ancient A-frame level, are important. All of his teachings match up with the drawings made by Agrippa's *forchina*, but also with the wheel under the feet in Vadi's work. In all these movements, the limbs are connected by a chain of muscles that allow them to extend and retract together while keeping the perpendicular axis at the center of their movements. It is this axis that Agrippa identifies to start from the pole, which supports and defines the center of the dynamic sphere. The possible positions of the legs and the weight on all of them create circles beneath the human figure, the smallest of which is as large as the feet, the largest as tall as the man from head to toe.

The master further identifies three types of *moti* (generic movement): two simple ones and a complex movement that combines these two. The two simple movements are classified, respectively as natural and violent. Natural movement is made up of heavy bodies which tend to fall downward under the effect of gravity; violent movement is the opposing tendency, upward and against gravity. Natural movements

begin weakly and increase in strength as they go; violent ones, on the other hand, tend to lose strength. In addition, there are four types of movement in spatial terms: push, pull, carry, turn (or rotate). Analyzing the fourth gives rise to what I consider the most beautiful definition of a cut I have ever found in the old texts:

> ...we may classify the fourth turn or rotation as the movement of any object in a circle and then toward us, drawing and pushing it away simultaneously, we turn so that such a movement is almost a withdrawal and a push combined, as can be seen with circular injuries.

Perhaps Agrippa's oval—the ellipse of the blow of a sword he describes so well—lies in this push and pull.

More than anyone before him, the master explains five of the possible circumferences of a dynamic sphere. That is the symbiosis created between a moving man and the sword he carries, which becomes almost a part of his body. The centers of the five circumferences are in the left foot, the waist, the shoulder, the elbow, and the wrist. In the third rotation, the shoulder's action is ideally carried out without the movement of the feet, which could be in any of the five possible positions of the open compass that represents the legs. In the fourth, it is the decision to turn the elbow to strike after the enemy's parry. It is interesting to note that the master here identifies the act of disengaging. In reality, these and other unidentified centers are useful for everything, not just to injure or disengage, but also to parry, withdraw, push or bind, with or without weapons. Finally, on this matter, he gives a clear vision on the different values each of the five circumferences holds: energy decreases as circumference decreases, while the speed of execution increases. Starting with an analysis of the terrain on which combat most commonly takes place, he emphasizes what most of the masters requested: that the feet must be close together. The master sets the objective of injuring the center of the enemy's body, evoking Agrippa's teaching, in which the center of the sphere draws everything closer to it. He hints at the need to move the weight within the body and between the limbs in a controlled manner and as required. He distributes and frees up the weight on Agrippa's *forchina*, which we may identify with the lightness of the legs of the unknown Classense author and of Monte. The master often speaks of "moving power," which is the force a man develops and that passes from the shoulder through the arm to the sword, but remains active thanks to the transfer of weight from the legs to the torso, a weight that can also rest on the blade, on the hand, or on the shield, etcetera. The method of parrying that Ghisliero teaches is similar to that of Agrippa and amounts to withdrawing the target, which is made possible by the sphere's agility and mobility as well as the ability to move the vertical diameter, the axis—around which the sphere may rotate—inside the body. The free handling of force is a concept well present in Ghisliero's teachings and clearly set forth here. Indeed, this principle is found throughout the teachings of the old masters: "...When the sword feels impeded, one must give in to that force and injure using the movement that the same force allows, and this means of operating with arms is perfect." Finally, he returns to the extension of the arms and limbs that the masters require and also to the use of the steps as an action to support the weight (See Figs. 4.29, 4.30, 4.31, 4.32 and 4.33).

Fig. 4.29 Federico Ghisliero. *Regole*, MS. before 1585 (Collection of martial art museum (BS), Botticino) (Ghisliero 1585a, b, 33)

4 Summary

Fencing is motion, execution. Motion is generated internally as controlled fury, like a fire igniting the limbs and raising the body. The movement thus generated is instilled with what Agrippa calls Infinite Power (*Potenza Infinita*). The locus of power is the point at which the four columns—the arms and legs, which form the dynamic sphere's

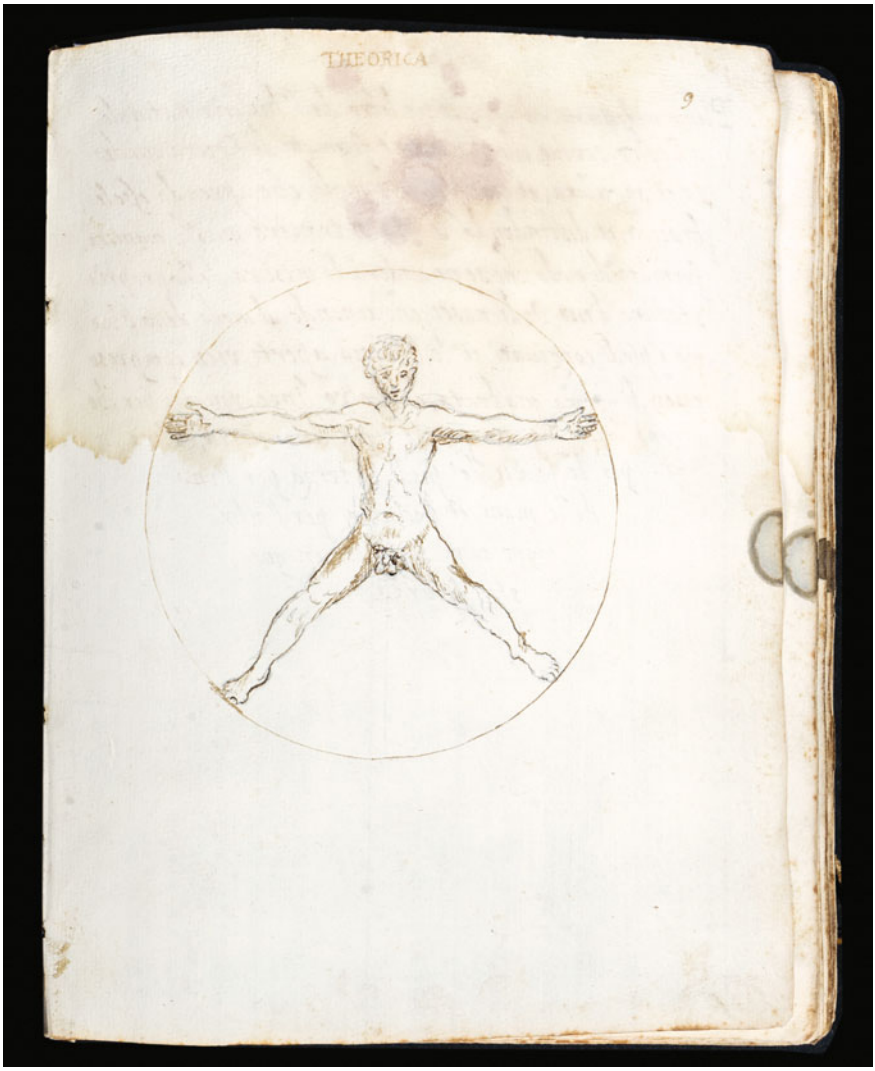


Fig. 4.30 Federico Ghisliero. *Regole*, MS. before 1585 (Collection of martial art museum (BS), Botticino) (Ghisliero 1585a, b, 9)

axes of movement—meet. It is the point between the navel and the diaphragm, commonly referred to as the solar plexus, which refers to a triangular area framed by the nipples and navel. No temporary resting pole holds the sphere still. Instead, force—which enters every column and returns to the solar plexus to pass to another column—keeps the sphere continuously dynamic. The sphere's center of rotation may move to any part of the body or weapon(s) held by the martial artist, in so far as they are considered an extension of the body. It is in or through these weapons

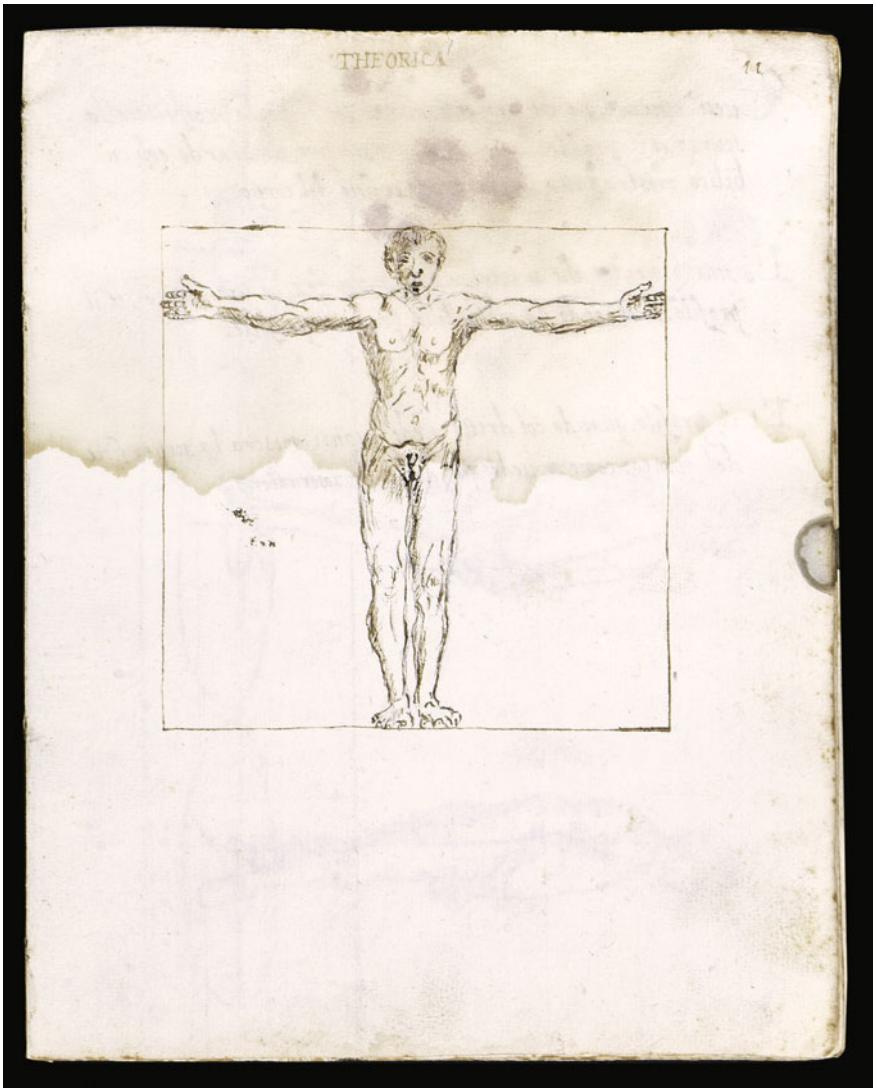


Fig. 4.31 Federico Ghisliero. *Regole*, MS. before 1585 (Collection of martial art museum (BS), Botticino) (Ghisliero 1585a, b, 11)

that Ghisliero and other masters ask us to *feel* the opposing force and transform the weapons into a sentient part of our body. The circumference of the sphere of dynamic energy that we create around ourselves, through blows, parries, resting or withdrawing, may be pushed to the maximum extension of the man/weapon collective, mobilizing and even displacing joints in our body to temporarily become the surface of the body or the point at which the weapons cross.

Fig. 4.32 Federico Ghisliero. *Regole*, MS. before 1585 (Collection of martial art museum (BS), Botticino) (Ghisliero 1585a, b, 13)

In martial art movements, whether executed with a long sword or knife or unarmed, it is as if the dynamic man were painting a glass sphere from the inside. That sphere does not fall inward or collapse, but is able to constrict and expand, as is well described in the dialogue between Agrippa and Annibal Caro. The square is the symbol of the first state of the Vitruvian Man. The circle is the second—temporary, fleeting, extending toward the sky; it is also the octagon. The sphere is the third, perfect, generative condition. From an alchemical perspective, it is symbiotic with the spirit of the cosmos, the planets, and God. One can only achieve that state through training and conditioning one's body. The second state is achieved with reasoning, awareness, and study; but there is a higher mystery and that must be experienced with the body. Playing with the compass that creates drawings, we are both the rough and inanimate branch as well as the light hand that moves it: at once the moving force and the moved object. We are the sword that has become part of the body, as well as the infinite supreme power that makes the sword-body alive and sensible. We are not just the goal—the body to be saved with action—neither are we only the means—the body, the intelligence, or its mode of action—but we are at once the true and grounded principle, the origin of movement, and the movement itself. When Pagano decides

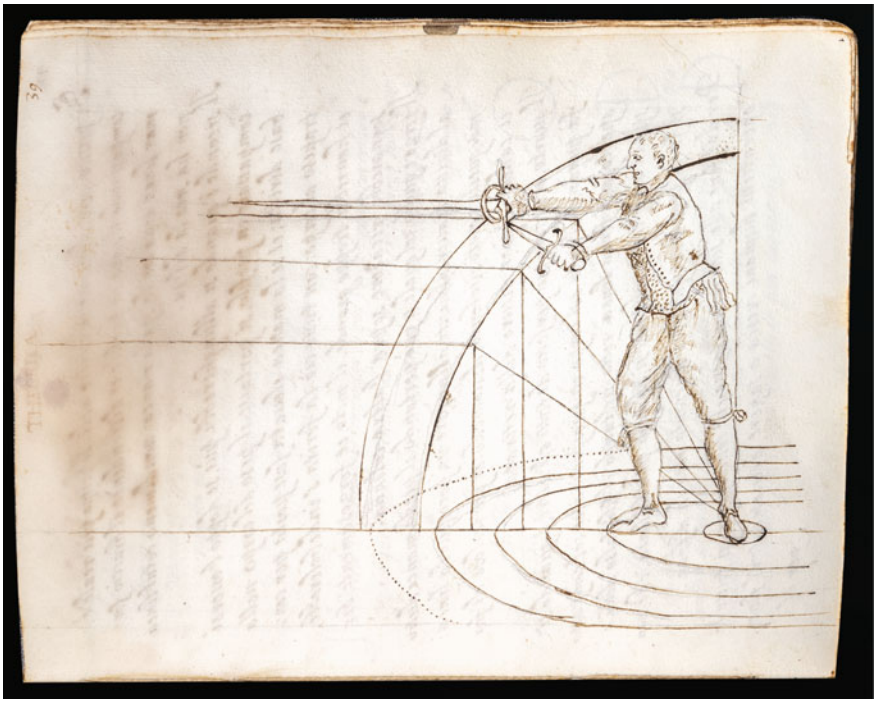


Fig. 4.33 Federico Ghisliero. *Regole*, MS. before 1585 (Collection of martial art museum (BS), Botticino) (Ghisliero 1585a, b, 39)

not to measure the body's proportions, he does so in the knowledge that everything comes before them.

Returning to the *forchina*—the tool used to build the sphere—the vertical part is the shaft to be gripped and represents the torso, the part of the body stretching from the collar to the base of the groin. Just as the vertical part of the *forchina* is the center of movement so in a human body, the center of movement is found in the middle of the torso. If we want to locate that center, we will find it much higher than the navel, a result also achieved by geometrical/mathematical observations. Fiore's tower is the shaft of the *forchina*. The elephant is the living system of the two columns/compass legs. To complete the system, the other two columns, in addition to the legs, linked to the torso should also be considered: the arms.

The man of the dynamic sphere reaches his essence, transcending his elemental nature, only in movement, alternately exploding toward the last circumference of the sphere and contracting toward any one of the possible nuclei. He cannot remain static in any place; rather, he must call upon and release that life energy, either toward the nucleus or any point along the circumference toward the extremity of his reach. If the dynamic man were to remain with the soles of his feet on the earth and his shoulders recessed in the resting shoulder position, then he would not be dynamic. The dynamic man is the ultimate evolution of the one linked to the square. He will return to it, but

only when the dynamic state returns to stillness. There is, of course, movement in both the square and the circle, but it is quite different from that of the sphere. This is precisely because of the position of the various centers of these three elements and of this third condition (in relation to the first and second conditions). Basketball, *ginga*, the football played by the Brazilian Pelé, artistic gymnastics, tennis, contemporary dance, and many other refined performance arts tell similar stories: humans, at their best dynamic condition, are not bound or constrained and may pass freely from their maximum to their minimum proportions.

5 Anatomical Proportions, Measurements, the Third Center of the Vitruvian Man

When I considered that the *Palla* Agrippa speaks of, Ueshiba Morihei's dynamic sphere and Duncan's fluid dancer (Duncan 1927) are one and the same thing—that is, the dynamic man of the ancient masters in Italy, the man similar to the Hermetic God—I began to ask myself whether this man, stretched upward with his arms fully extended, driven by the fire of controlled fury, could be drawn or had already been drawn in accordance with Vitruvius' proportions. The answer I gave myself is that the man of the dynamic sphere is the third state of the Vitruvian man; just as, in reality, he is the evolution of the natural man into speculative man, and the speculative man into a man who is one with his spirit, the Hermetic God. This is the New Man who achieves this state thanks to doing, to operating, and to achieving the perfect unison between action and active contemplation. He is drawn here in such an ideal state (See Figs. 4.34 and 4.35).

These anthropometric analyses show us that the center of that man—the third state of the Vitruvian man—is located above the navel and below the diaphragm: in the celiac or solar plexus. I took my own height of 183 cm as an example. The center of the square is correct, the base of the groin is 91.5 cm from the ground. The navel is the center of a hypothetical circumference with a 220 cm diameter. If I hold my arms as in Da Vinci's drawing the navel lies at 110 cm. But in reality, if I lift my arms, stretching them, without rising onto my toes, I extend my total height to 238 cm. Halfway then becomes 119 cm, 9 cm higher than the navel: the solar or celiac plexus, from which a ganglion of nerves radiates like rays of sunshine. It is there that the dancer Isadora Duncan, who is considered the founder of fluid contemporary dance, identifies as the home of emotions and the source of movement that explodes from inside and is projected outward (Duncan 1927). With his feet on the ground, the dynamic man's center is 9 cm above the navel. That point is also the intersection between the lines that connect the arms and legs where they join the trunk, that is the Fiore's tower, the vertical shaft of the compass and of the wooden *forchina*. If I then rise on my toes, as if to shift the body, everything increases by 5 cm. That puts the navel at 115 cm, so creating a hypothetical diameter of 230 cm puts the groin at 96.5 cm. Therefore, the height of the square should be, improbably, 193 cm. My

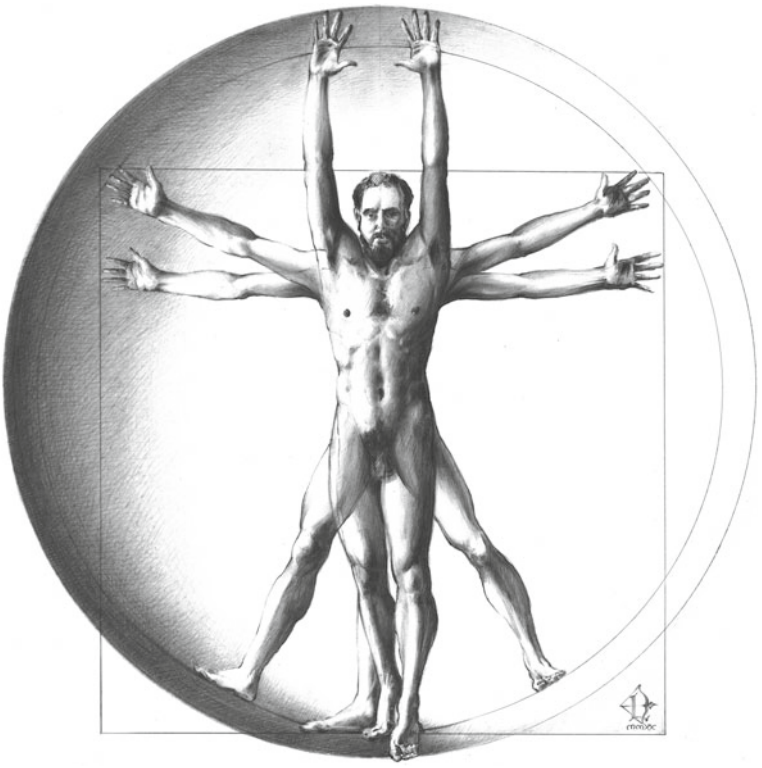


Fig. 4.34 Luciano Bertolotti. *The Three States of the Vitruvian Man*, pencil on paper, 2020

arms would never reach that height even if pushed as far out as possible along the horizontal line. The plexus would be at 124 cm and so the diameter of the sphere would have to be 248 cm, while the true measurement of the sphere would not exceed 243 cm. The center of this would be at 121.5 cm, 6.5 cm above the navel measured with pointed feet. Therefore, the center of the dynamic man can be identified, in this example, as being between 6.5 cm above the navel with pointed feet and 9 cm above the navel with feet on the ground. And this is perfect since the plexus is commonly identified as being between a little above the navel and beneath the diaphragm. The natural man and the speculative man depicted, respectively in a square and in a circle, lose their symmetry the moment he rises on his toes, but that is right: they are not dynamic, they are connected to the ground, chained to it, and it is in that position that they are and should be measured. They are non-active and, because of the conceptual constraint under which they were created, we could even go further and say they are *anti*-action.

For the drawing we, therefore, choose the square, the circle, and the sphere, keeping the man's head at the same point so as to keep the groin and the navel in the same place. The result is that the sphere drops to 5 cm below the plane supporting the

Fig. 4.35 Gesture of elevation performed by Isadora Duncan, graphic elaboration by Linda Balboni Gotti

square and circle and it may rise and widen so far as the shoulders shifting upward allow.

There is a final note that arises from observing some of the most beautiful photographs of Isadora Duncan, but also movements in basketball or tennis, as well as bringing to life the words with which Pagano describes the energetic explosion that leads us to the first guard: if, rather than lifting both the arms upward we should raise only one arm, the center of the sphere we are going to create would be further still from the navel, generating even more of a dynamic strike full of power, thus accounting even for being *en pointe* and not just raising the feet by 5cm on tiptoes.

6 The Hidden Teachings in Marozzo's *Assalti*

What is not explicitly written in the masters' texts, however, is necessary for practicing the art. Such hidden teachings lie on the basis of the techniques they wisely instruct. In order to clarify this, I would like to recall certain sequences of Marozzo's, taken from various disciplines, and to show how, in order to perform them, it is necessary to observe the principles described above. In my personal experience, seeking a faithful way to perform techniques composed of prolonged movement sequences

give rise to a mindset that is free to grasp what the words do not always teach didactically. A few selected examples are shown in the video which the reader may access using the QR code included below (See Fig. 4.36).

In addition, I encourage the interested reader to look at the two dynamic postures or guards from the anonymous combat manuscript kept in the Martial Art Museum (M.A.M.), which dates back to the early seventeenth century. These help us understand how the dynamic sphere and its laws govern the very core of martial arts, which is unarmed fight. Where is the boundary between dance and the third postura (See Figs. 4.37 and 4.38)?

Fig. 4.36 QR code for the video *La Sfera Dinamica* (*The dynamic sphere*)

Fig. 4.37 Anonymous manuscript on wrestling with illustration. Postura, end of the sixteenth–beginning of the seventeenth century, Italy, MS, fourth postura (Collection of martial art museum (BS), Botticino)

Fig. 4.38 Anonymous manuscript on wrestling with illustration. Postura, end of the sixteenth–beginning of the seventeenth century, Italy, MS, third postura (Collection of martial art museum (BS), Botticino)

7 Conclusion

This paper was inspired by a desire to illustrate the following theory: that applying geometry to anatomical measurements allows us to identify a third center of proportions as we seek symmetry in the human body. That center is the solar plexus, to add to the groin (the center of a square whose height is the same as that of the man) and the navel (the center of a circle that can be drawn which Da Vinci—and others—drew around a man with arms raised to head height). This new center is achieved by pushing the arms as far upward as possible, while the feet may either remain on the ground or be on the tiptoes, for a 5 cm lift, when dynamic. Being able to extend the arms as far as possible is an essential state for a man of arms—the perfect representation of the dynamic man. The third center—the center of the third state of the Vitruvian man—also coincides with the man of the dynamic sphere as described by Master Agrippa and suggested in the basic elements of other old texts. The sphere is the element drawn around that third man because that is the state sought by the masters: the absence of fixed anchor points, the freedom to temporarily rest the man/action on any part of the circumference, which can expand and retract with the force originating in the plexus (the third chakra in Oriental cultures). It is a nucleus that moves around inside the body. A man of arms knows how to oppose a larger

force with a smaller one by moving that sphere, as the dynamic warrior strives to embody the sphere in his movement. The natural and simple square is replaced by the circle: a speculative tendency toward perfection, which is found in the infinite sphere, whose center is everywhere and whose circumference is nowhere.

Appendix

(Note: This appendix intends to provide additional information for the video *La Sfera Dinamica* (*The Dynamic Sphere*) which can be accessed by scanning the QR code included above).

In the fifth book of *Opera Nova* (Marozzo 1536), which discusses catches against a dagger, we study the ninth *presa* (catch): the right-hand traces the first visible surface of the sphere in *roversa,* or rather, with the little finger facing the attacking direction. In this way, it carries out the catch by following the rotational movement of the wrist, which happens as the hand moves in *roversa.* Then, the left hand is immediately applied, acting upon the opponent's elbow. Together, the two hands control the enemy's forearm, which acts upon the shoulder and therefore on the body, while simultaneously restricting his joints. The hands act in sync and in opposing directions, which means that while the right drops to our left, the left moves outward toward our right. But our action would hardly be effective if we did not focus on the *coupé* just received, releasing the movement and strength to advance with the left leg and knock the opponent off balance. The hands force the opponent's tower to lean, and the leg action displaces the enemy's elephant, taking their balancing space from under them.

With a two-handed sword, see the fifth part of the first *assalto*: the *tramazzone* followed by a thrust draws a high parry from the opponent so that the sword may pass beneath, entering with a clockwise rotation from below as indicated by the rising *ridoppio roverso*. The action requires two steps with the same foot (the left foot) in succession, one on the side and another in the direction of the enemy. This is possible only if after the first step with the left foot, the same foot is freed up by transferring the weight to the plexus (the center) and the right foot. The left hand that seeks the catch initiates an anti-clockwise motion in order to move the sphere's pole to the left hand, which seeks contact. This returns to widen in the *mandritto* and the *tramazzone*, then returns to perform a large clockwise rotation with an upward *filo falso*, which continues in the *roverso* from high left to lower back right. This begins an incredibly nimble action known as *fugi et crove*. The sphere first rotates in a continuously shifted *montante di filo falso*, upward, and then a downward *fendente*, followed by four blows connected in a sort of infinity sign: the *roverso sgualembro*, *roverso ridoppio*, *mandritto sgualembro* and *mandritto ridoppio*. This long chain of free long strikes, delivered by weapon or by hand, as is the holding attempt, requires exceptional freedom in how the legs are managed, as it is a sort of dance. Meanwhile, the sword and the hand trace the inside of a sphere with various circumferences.

From the first part of the second two-handed sword *assalto*: Firstly, the two descending *falsi* on the right and left must be borne by the right and left feet, respectively, as Vadi and the masters of the two columns and compass legs instruct. The weight is swapped between the two extremities while being in a stationary position, drawing the first surface of the sphere to the right and then to the left of the adversary, exploiting from standing those two points to withdraw as Ghisliero tells us. The third blow works in the same way, with a weight swap that creates a new sphere to the right of the enemy's weapon. That sphere constricts under the parry and passes beneath the enemy's sword. This is shown better than any other by Joachim Meyer (1537–1571) in one of his precious prints. The movement continues with a feinted *roverso* and returns with a change of direction in the *ridoppio*, on a sudden but full weight swap in the legs. It widens again while pausing at half-sword, with the right foot withdrawing as the *roverso* descends to ascend again in the *mandritto tondo* which proceeds in wide play.

In the third narrow play *assalto* with two-handed sword, the master dictates a poem: it is a dance passage that stresses the importance of lightness. This passage is a musical composition that is difficult to perform without character and personality. While the thrust shoots toward the enemy, the body begins to rotate—a prolonged move of retracting and then widening on dancing feet. The shoulders first become the pole of rotation, which rests on the enemy's body as it leaves the running of the blade on blade of the *punta incrociata* created by the *filo falso a filo falso*. With a pommel strike on the head, the head becomes a temporary pole. The new point of contact is the sword hilt on the enemy's neck, a lever created by bringing the hand to half-sword, which now interferes, controlling and breaking it down, using the enemy's own machine/sphere against him then, inflating one's sphere, retreats from the opponent and stands in a long guard called *guardia di coda lunga e alta.* Having a different weapon does not change the system. That applies to the dagger as well, like in the first part: here as elsewhere, with a short weapon rather than a long one, the body replaces the weapon when it can, by poking it into the enemy's sphere. The key moment is parrying the enemy's blow with the armed arm in the *guardia di intrare*, under which our own sphere passes, then, leaning forward—the sphere momentarily becoming smaller on the point of contact between our left hand and the enemy's arm—until a strike is delivered, as the sphere grows once again as one retreat in the exit steps.

The two swords further enhance the system. From the first and second parts: the master considers the martial arts involving two swords to be the *art par excellence*, where they behave as if they were two separate dominant hands while connected by the movement of the dynamic sphere. The first parry on the *filo falso* on the left becomes the rotation point that launches the thrust to the side. While the right leg recovers the weight which has first been shifted to the left, the two swords rise together to parry, blades crossed. Still, in the *roverso* parry, the left arm extends toward the right with the sword blocking, point down, while the right shoulder is displaced to form the *roverso*, drawn by the left shoulder's action. Meanwhile, the rotation is accentuated by the right foot which turns behind the left.

In the cloak-and-dagger *assalto*, we find a simple and interesting movement in the first part: the cloak is lifted to form the surface of the high sphere. That frees up a clockwise rotation beneath it, composed of two steps that almost turn the back. The blow also involves a *ponta roversa*, to accentuate the rotation and withdraw both the body from the enemy's aggression and the blow from the possibility of being parried by the enemy. In the second part: the cloak forms the surface of the sphere, whose resting pole is on the enemy's dagger. The entire sphere turns clockwise, aiming at keeping the surface broad. The left step moves out as far as required, the thrust—or rather, the *roverso*—enters clockwise to continue outlining the surface that is created by resting the cloak on the enemy's hand/dagger. In order to make the dynamic moves airy, slick, beautiful, and effective, the movement is naturally spherical in the gesture of throwing one's hand/cloak from high left to low right over the enemy's weapon.

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The Material Dimension of the Sword

Evolution of the "Crescent Guard" in Chinese Swords

Gong Jian

Abstract Iron and steel arms appeared in China during the late Warring States while guards on Han dynasty *jian* (double-edged sword) mainly continued Warring States designs. Single-edged ring-pommel sword (*huanshoudao*) which appeared during the same period did not have a guard. During the Jin dynasty, a type of V-shape sword guard appeared, which continued into the Southern and Northern dynasties. In the Tang dynasty, on the one hand, arms design continued Northern Zhou and Sui trends; at the same time, it absorbed Turkic and Sassanid influences from the west, which gave rise to a unique Tang sword aesthetic. From then on, V-shape guards started to gain popularity in China. Developments of this style were to have a major influence on sword guard designs during the Song, as well as among the Mongols and Tibetans until it finally attained the familiar form of zoomorphic guard during the Ming and Qing dynasties.

Keyword Crescent · *Bazi* · Guard · sword guard (*jiange*) · Sword aesthetic · Tang · Song · Dynasty · Tibetan · Mongol

During the Tang dynasty, weapon design mainly followed the form of the preceding Northern Zhou and Sui dynasties. As the Sui and Tang entered a golden age, cultural exchanges with the west led to the development of a "Western region style," which in turn gave rise to a new aesthetic in Tang swords. A new type of guard in the shape of the Chinese character of "eight (*ba*)" (*bazi* guard) appeared in the Dunhuang frescoes. This sword guard type continued to develop and ultimately had a significant influence on sword designs during the Song, as well as in Mongolia and Tibet, and eventually evolved into the familiar zoomorphic types in the Ming and Qing dynasties.

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1 Sword Guards in the Tang Dynasty

In the Northern and Southern dynasties, double-edged swords (*jian*) had already withdrawn from the battlefield. The army used a straight, single-edged sword (*zhidao*), which was without a guard and whose blade design followed the style of the Han dynasty. The combat action of Han's ring-pommel swords (*huanshoudao*) was relatively simple, which mainly relied on slashing and cutting, with limited thrusting applications. Most early ring-pommel swords did not have guards, as they were not seen in Han dynasty frescoes and stone reliefs, nor testified in archaeological finds (Peng 2018, 163). Due to the scarcity of material evidence, we know very little about sword form and design of the Northern and Southern dynasties. However, a ring-pommel sword discovered in the Northern Zhou tomb of the Shangzhuguo Captain General (*Shangzhuguo/Zhuguo da jiangjun*) Li Xian and his wife is described as follows, "The hilt is silver-coated. The single-edged blade is heavily rusted and cannot be pulled from the scabbard. The scabbard is wooden with brown lacquer on the surface. Its lower part (locket) is covered with silver and attached with two ear-like silver holds (Han 1985, 14)." The Central Plains absorbed this style from the Sassanid Empire which gave rise to the Northern Zhou sword.

In the Sui and Tang periods, sword guards started to appear. A single-edged sword (*hengdao*) found in an imperial tomb at Mang Shan, north of Luoyang, Henan Province, in 1929, now in the Metropolitan Museum of Art ("the Met") in New York in the United States, is a typical example. This type of guard is also seen in private collections in China (See Fig. 5.1a, b). This guarded design continued into the late Tang, as seen in the Dunhuang frescoes. In the Mogao Grottoes Cave 057, there is a drawing of a Tang sword on the western wall in the front chamber (See Fig. 5.2), which has the same style as the sword in the Met (Digital Dunhuang website 2010).

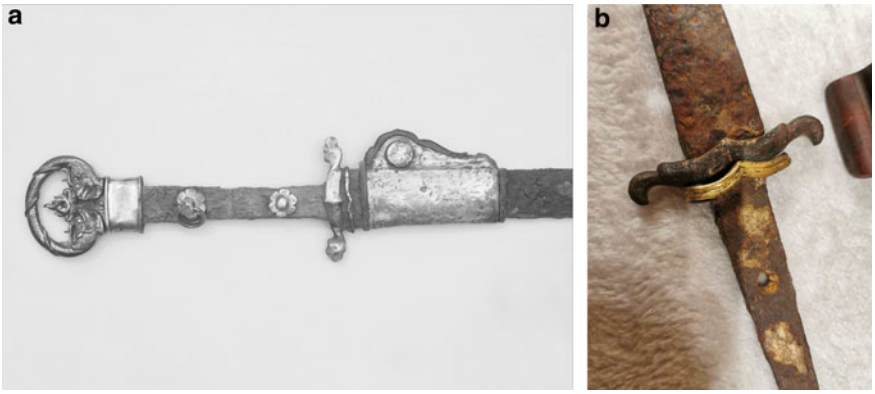

Fig. 5.1 Examples of Tang sword guards

Fig. 5.2 Hilt of a Tang sword (western wall, front chamber, Mogao Grottoes Cave No.057) (Collection of the Dunhuang Academy China)

In the Tang dynasty, sword guards began to proliferate after the Wu Zhou period. Ringless *guishou* pommels started to appear on swords which often had a diamond-shaped guard (*guishou* refers to the pointed part of the jade tablet, which is a traditional Chinese ritual vessel). A mural in a tomb chamber in Taiyuan from the Wu Zhou period clearly illustrates such a style (See Fig. 5.3). As a matter of fact, this diamond-shaped guard not only appears in frescoes but is also seen in the tomb guardians of imperial Tang burial sites. Early Tang tomb warriors hold guardless, ring-pommel ceremonial long swords. After the mid-Tang, ceremonial swords carried by tomb guardians started to have guards, mainly in two types: diamond-shaped guard; and a guard with cloud-shaped quillons and a relatively flat middle section. The sword held by the stone sculptural figure within the tomb of the Emperor Suzong of Tang (711–762) is a classic example of the latter (see Fig. 5.4).

Between the early to mid-Tang period, sword design underwent significant changes as a result of the Tang's expansion into the Western Regions. Under the open and inclusive rule of the Tang dynasty, the Tang started to appropriate the style of the Western Regions in an extensive manner. In general, Tang swords either had a ring pommel or *guishou* pommel. The guard tended to have a diamond shape, the scabbard usually had a single carrying ring or double studs, while the chape had a deep socket with an arced bottom. Diamond-shaped guards first appeared on the

Fig. 5.3 A Tang sword from the Wu Zhou period (Xu 2012, 102)

Fig. 5.4 Tomb figure in the Jianling Mausoleum of the Emperor Suzong of Tang (Developed by Eric Suen; derived from "Gong Jian: Evolution of the 'Crescent Guard' in Chinese Swords" www.sohu.com)

swords of the Sogdians and the Turks. In the Xinjiang Uyghur Autonomous Region Museum (Xinjiang Museum), a Turkic warrior stone statue holds a sword with just such a guard design (See Fig. 5.5). Being active in the Western Regions at the same time, Sogdian sword guards also had a diamond shape as well. On a silver plate of Sogdian warriors (Anikova Plate) in the State Hermitage Museum of Russia, marks of diamond-shaped sword guards can be clearly noted (See Fig. 5.6). Tang smiths absorbed and applied this design on their swords, which later had a profound effect on sword designs of the Liao dynasty and Japan. The "*kara-tachi* sword with glided silver fittings and inlay", preserved in the Shōsō-in Repository in Japan, is an excellent example of such a design, as Japan appropriated and indigenized the Tang long sword (*Tang dadao*) (See Fig. 5.7). The crucial difference between Japan's *kara-tachi* (or *Tang dadao*) and that of the Tang is the function of the guards. Japanese swords are designed to cut and to stop the enemy's blade while Tang swords are made for

Fig. 5.5 Example of a Turkic warrior stone statue (Collection of the Xinjiang Uyghur Autonomous Region Museum)

Fig. 5.6 A silver plate showing two opposing Sogdian warriors (Smirnov 1909)

thrusting, where the guard served to prevent the hand from slipping (Fu 2000, 43). This provided the foundation upon which Japanese sword guards developed during the Heian period.

Besides the diamond-shaped guards, *bazi* guards were also used in the Tang dynasty. This style started to appear extensively in the Dunhuang murals and silk paintings from the mid-Tang until the end of the dynasty. From the Five Dynasties onward, this type of guard started to become popular throughout the Central Plains, while variants evolved from this. "The Mourning Princes from Various Kingdoms," a mural in the Mogao Grottoes Cave 158 dated to the mid-Tang era, which depicts the moment of Shakyamuni's death, contains a striking scene where the princes from various kingdoms in the Western Regions expressed their extreme grief by "cutting off their ears and noses" and "stabbing their chest and disemboweling." In fact, "cutting off their ears and noses" was a mourning custom among the Sogdians in Central Asia and the Western Regions, and among the *hu* in the Northern China, which was well-known and accepted by the Chinese during the Sui and Tang dynasties. The practice of "stabbing their chest and disemboweling" was related to esoteric Zoroastrian practices in the Sogdian communities (Rong and Zhang 2004, 47). In the southern wing of the MIHO Museum, "Mourning," one of the eleven stone reliefs arranged in the funerary couch, depicts how six Sogdians and five Turks slash their faces and cut their ears while laying the deceased to rest, proving that such a funerary custom existed in Sogdian and Turkic communities, as corroborated by academic research in China (Lei 2003, 95–104). The Dunhuang Cave 158 was created during Tibetan rule from 756 to 781 and later repaired during the Western Xia. In the "Mourning Princes from Various Kingdoms," a prince at the bottom right corner of the mural is piercing his chest with a sword. His sword has a *bazi* guard with straight quillons

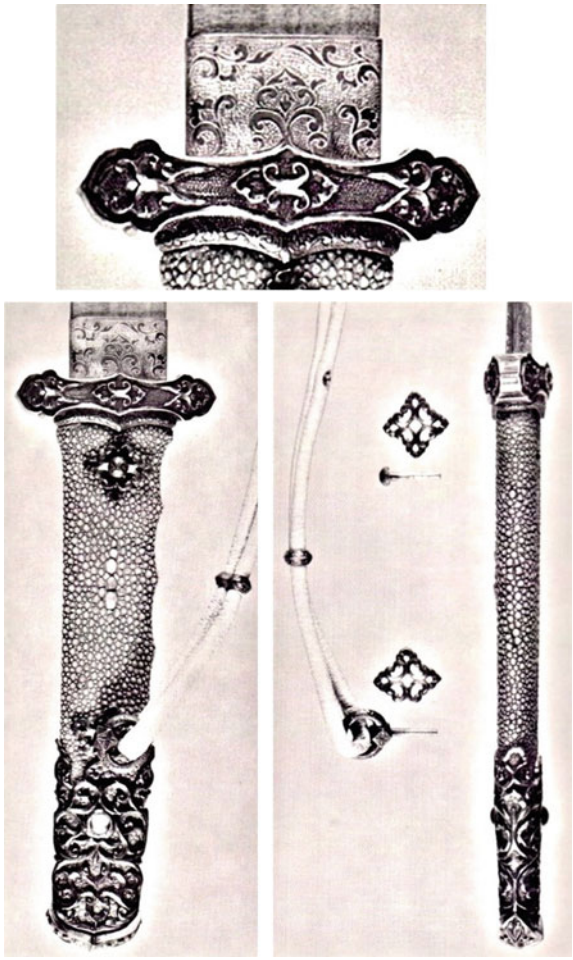

Fig. 5.7 A *kara-tachi* sword with glided silver fittings and inlay (Collection of the Shōsō-in Repository)

and a ridged middle section (See Fig. 5.8). On the left side of the mural, a prince with his back to the fresco and his head wrapped in a turban also wears a sword by his waist. Although the hilt is somewhat obscure, we may clearly discern it has a *bazi* guard. Unlike the previous sword design, this one has straight quillons with a completely flat middle section, while its scabbard is bound with metal along the edges. The Mogao Cave 061 is a cave of a dedicatory nature (*gongde ku*) built by Cao Yuanzhong and his wife. Cao was a military commissioner (*jiedushi*) of the Return to Righteousness Army (*guiyi jun*) in the tenth century. The family temple was created in the Five Dynasties period, while modifications were made on the murals during the Song dynasty. In the paintings on the eastern wall of the main chamber, warriors hold long swords that have *bazi* guards with relatively straight quillons (See Figs. 5.9 and 5.10).

Fig. 5.8 The painting "Mourning Princes from Various Kingdoms" (Mogao Grottoes Cave No.158) (Collection of Dunhuang Academy China)

The silk paintings of the Tang dynasty in the Buddhist Scripture Cave (*cangjing dong*), now in the British Museum and Musée Guimet, contain a large number of drawings of the Eleven-headed Guanyin (*shiyimian guanyin*) and Heavenly Kings (*tianwang xiang*). The Eleven-headed Guanyin in the British Museum dates to the period between 701 and 850, while the date of the Heavenly Kings in the Musée Guimet is unclear. However, judging from its composition, it should not be later than the Five Dynasties period. In the groups of Dunhuang paintings in the Musée Guimet

Fig. 5.9 The sword style used by the Return to Righteousness Army in Dunhuang 1 (Mogao Grottoes Cave No. 061) (Collection of Dunhuang Academy China)

(E01162), Saraswati holds a long sword with a slightly curved crescent guard and a ring attached to the pommel (See Fig. 5.13). The swords held by Guanyin and the Heavenly Kings in Dunhuang's silk drawings also have *bazi* guards with straight quillons (See Figs. 5.11 and 5.12).

By this time, the two Tang guard forms had reached a mature development. Diamond-shaped guards with Turkic and Sogdian characteristics began to emerge in the Wu Zhou period and gradually disappeared in the late Tang. Based on known

Fig. 5.10 The sword style used by the Return to Righteousness Army in Dunhuang 2 (Mogao Grottoes Cave No. 061) (Collection of Dunhuang Academy China)

Fig. 5.11 *Bazi* guard from the painting of the Eleven-headed Guanyin (Collection of the British Museum) © The Trustees of the British Museum. All rights reserved

Fig. 5.12 *Bazi* guard from a late Tang painting of the Heavenly King

Fig. 5.13 Note the Crescent guard of the long sword held by Saraswati on a Dunhuang silk drawing (Collection of the Musée Guimet)

specimens, this exotic guard design is mainly associated with *dao* (mainly single-edged swords) rather than *jian* (mainly double-edged swords). This style of guard did not develop in the Central Plains region and disappeared after the fall of the Tang empire.

The *bazi* guard design that started to appear in Dunhuang murals and silk paintings rather suddenly from the mid-Tang seems to have been a new design from those

already in use in the Central Plains. It became dominant in the late Tang, as evinced by its frequency in the Dunhuang paintings. This new sword style usually has a ring-hilt construction. The straight-quillon *bazi* guard design in the Dunhuang frescoes and silk paintings is consistent with a specimen in my personal collection (See Fig. 5.14a, b). The blade is approximately 4 cm wide beneath the hilt, tapering quite sharply to 2.5 cm before the triangular tip, which contrasts markedly with later Chinese swords, which tend to taper more gradually. Song swords generally have broader and thicker blades with a less obvious taper. This sword has straight quillons with a slightly enlarged upper portion toward the hilt, with a ridge on the outward-facing side of the guard, while the inside is flat. The grip is similar to a Han sword and is of a fine and standardized craftsmanship. This sword is an archetypal example of the new *bazi* guard design that appeared in murals and silk paintings in the late Tang.

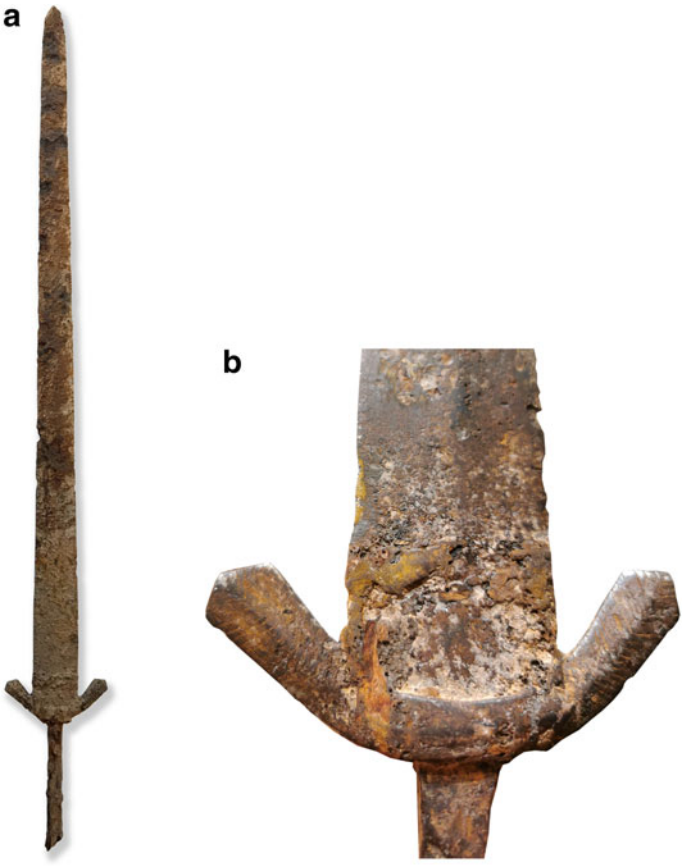

Fig. 5.14 Tang dynasty sword excavated in Mianyang, Sichuan Province

2 Development of Sword Guards from the Five Dynasties to the Song

The *bazi* guard did not disappear with the demise of the Tang dynasty. Instead, it spread widely across the Central Plains. As the Central Plains entered the Five Dynasties and Ten Kingdoms periods new forms of *bazi* guards appeared, whose quillons gradually assumed a more rounded shape until they formed a continuous curve to resemble a crescent moon, although in some designs the guard retains a ridge in the middle. In Shaanxi Province, the Mausoleum of Li Maozhen (the King of Qin during the Tang dynasty) in Baoji county, fifteen groups of thirty-four stone statues are arrayed along the path toward the mausoleum (*shendao*). The warriors among the stone carvings hold long swords with a ringed *ruyi* hilt design, while the guards are in the crescent moon shape (See Fig. 5.15). Li Maozhen's Mausoleum was built in 920. Li was elevated to the position of military commissioner (*jiedushi*) of the Fengxiang Longyou region for his role in guarding the Emperor Xizong of Tang. After the end of Tang dynasty, Li refused to submit to the Later Liang and continued to adopt the Emperor Ai of Tang's regnal name *Tianyou*, and was enfeoffed as the King of Qin by the Later Tang. The warriors standing next to the gate of the Qinling Mausoleum of Li Bian, the founding emperor of the Southern Tang, also hold swords with identical crescent guards that also have a sharp convex middle like the ones in the King of Qin's Mausoleum (See Fig. 5.16). The long sword clenched by the Azure Dragon Warrior (*Qinglong wushi*) at the entrance of a Five Dynasties mausoleum also has a crescent guard, though it did not have a sharp convex in the middle (see Fig. 5.17).

Stone statues and paintings from the Northern Song dynasty give us more clues on the form of Song sword guards. The stone figures of the Yongyu Mausoleum of the Emperor Shenzong of Song hold long swords with *ruyi* pattern ring hilts, which are decorated with floral cravings beneath the ring pommel. A rope passes through the ring and is tied to the figure's left hand. The sword guard has a slightly curved edge and a ridge in the middle (See Fig. 5.18). The Northern Song painting "Procession of Immortals Paying Homage to the Primordial" by Wu Zongyuan depicts eighty-seven immortals. Next to or above each deity, a rectangular title box indicates his or her name and identity. In this painting, one can clearly see that "The Mighty King of Swords" (*Weijian Shenwang*) carries a sword with a crescent guard and *ruyi* pattern ring hilt. "The Evil Breaker" (*Poxie Lishi*) on the left also holds a long sword with a *ruyi* pattern ring hilt. The sword guards of the two deities do not have a ridge (See Fig. 5.19) (Deng 2013, 96). This type of guard continues to be seen in Southern Song paintings. In "The Four Generals of Restoration" (*Zhongxing sijiang*), it is apparent that the attendants of Han Shizhong and Yue Fei wear swords with *ruyi* hilt design and their sword guards are of the *bazi* or crescent type (Zhu 2006, 3–9). The sheath chamber has a metal binding edge and is decorated with sheet metal from the throat to the lower ring. On the two sides of the sheet metal, the *ruyi* pattern was engraved from the lower ring to the tip. The middle section of the scabbard is decorated with sheet metal on which wavy patterns are engraved. The chape is a tubular-shaped

Fig. 5.15 Tomb relief in the Mausoleum of the King of Qin, Li Maozhen. Five Dynasties and Ten Kingdoms period (Developed by Eric Suen; derived from "Gong Jian: Evolution of the 'Crescent Guard' in Chinese Swords" www.sohu.com)

metal. Double rings are attached for wearing the sword on the waist (See Figs. 5.20 and 5.21). In the Cleveland Museum of Art, the "Ink Treasure of Wu Daozi" (*Daozi mobao*) album, originally untitled, is a sketchbook of ink drawings about the Daoist mural themes on paper. Although the album was created by the "Painter Sage" Wu Daozi during the Tang, it might have been dated and reproduced in the Song dynasty. Published in the early twentieth century, this album's content can be divided into three parts: "Homage to the Highest Power (*Zhushen chaoye tu*)," "Painting of Scenes of the Hells (*Diyu bianxiang tu*)," and "Searching the Mountains for Demons (*Soushan tu*)." In the painting "Searching the Mountains for Demons," the god Erlang (*erlang shen*) and his subordinate generals (*pijiang*) hold long swords with *bazi* guards and crescent guards, respectively (See Fig. 5.22).

Fig. 5.16 Stone relief in the Qinling Mausoleum of the first Southern Tang emperor Li Bian. Five Dynasties period (Developed by Eric Suen; derived from "Gong Jian: Evolution of the 'Crescent Guard' in Chinese Swords" www.sohu.com)

These paintings and stone reliefs indicate the widespread nature of *bazi* and crescent guards in the Five Dynasties and the Northern and Southern Song dynasties. They further suggest that the Song army made extensive use of such sword guards, which may be found in the collections of Gong Jian (the author), Tie Chui, and Lan Ding. My own sword came from Nanjing (See Fig. 5.23). A typical sword of this period has a broad and thick blade, which fits the description, "thick ridged short blade, quite convenient for military use", in the *Complete Essentials for the Military Classics* (*Wujing zongyao*) (Zeng et al. 2017, 212). Its guard is of the typical crescent type except it does not have a ridge in the middle. The grip and the guard are detached. The Northern Song sword guard in Mr. Tie Chui's collection came from Jiangxi Province. The guard is bronze while the hilt and the crescent guard are made in one piece, with swirl patterns under the cross-guard which is inscribed with the

Fig. 5.17 Detail on a stone relief in Wang Chuzhi's tomb showing a sword held by a warrior (Developed by Eric Suen; derived from "Gong Jian: Evolution of the 'Crescent Guard' in Chinese Swords" www.sohu.com)

words, "*Xuanhe yisi*" (the seventh year in the Emperor Huizong's reign in the Song dynasty, 1125) (See Fig. 5.24). This is the only known Northern Song sword guard that carries such an inscription and supports the claim that "swords are decorated with silver, chalcopyrite, and copper", as recorded in the *Complete Essentials for the Military Classics* (Tuo Tuo/Toqto'a et al. 2013, 2522). Mr. Lan Ding's specimen is from Hangzhou. Engraved with gold spiral patterns, the sword guard has a narrow crescent shape, with fine quillons, and is of exceptional quality (See Fig. 5.25). In the same period, Western Xia swords also use *bazi* guards. Swords from Western Xia commanded a good reputation and were much valued in the Song, being collected by the imperial court, while the *History of Song* (*Song shi*) records that, on one occasion, "the emperor Qinzong took off the Xia sword he was wearing and gave it to Wan Lun as a gift (Tuo Tuo/Toqto'a et al. 2005, 8069)." Among all the Western Xia swords that have been excavated, the one from the Western Xia royal tomb, which has a round, crescent guard, is the most representative. Yet, crescent guard is not the only form of Western Xia sword guard, as shown by the colorful warrior painting at the tomb entrance of the M2 Tomb of the Western Xia in the Western suburbs forest farm of Wuwei (*Gansu Wuwei Xijiao linchang Xixiamu*), discovered in 1977 in Gansu Province. In this painting, the warrior carries a sword with a classic *bazi* guard (See Fig. 5.26).

All the iconographic and material evidence from murals, stone reliefs, artifacts, etcetera, show that during the Song period the crescent guard mainly appears south of

Fig. 5.18 Tomb stone statue in the Yongyu Mausoleum of the Emperor Shenzong of the Song dynasty (Developed by Eric Suen; derived from "Gong Jian: Evolution of the 'Crescent Guard' in Chinese Swords" www.sohu.com)

the Yellow River, with Hebei being the northernmost location of any such archaeological discovery. Since the northwestern regions were primarily controlled by Western Xia, this suggests that the distribution of crescent guards is concentrated in areas effectively controlled by Northern Song, Southern Song, and Western Xia. It also tells us that in the Central Plains the *bazi* guard of the Tang dynasty continued to evolve and that during Northern and Southern Song the straight-quillon *bazi* guard and crescent guard existed side by side, until the later Southern Song period when a new type of peach-shaped guard became dominant and replaced the crescent guard.

Fig. 5.19 Crescent moon guard held by the Mighty King of Swords in the painting "Procession of Immortals Paying Homage to the Primordial" (*Chaoyuan xianzhang tu*) by Wu Zongyuan during the Northern Song dynasty

However, this guard type did not have an impact on weaponry in Liao and Jin, which in general carried the nomadic style of North Asia.

Crescent guards were not only preserved in the Central Plains but also in Tibetan areas, as shown in the two Tibetan swords below (See Figs. 5.27 and 5.28), whose pommels have kept the *guishou* design of the Tang and Liao periods, while their guards are of the crescent form. This type of hilt design could be explained in two possible ways: direct inheritance from the late Tang sword design, or it could have been introduced into this area in the Yuan period.

Fig. 5.20 Portrait of Han Shizhong's attendant, from "The Four Generals of Restoration" (*Zhongxing sijiang tu*) by Liu Songnian, Southern Song dynasty (Collection of the National Museum of China)

3 Guard Development in the Yuan, Ming, and Qing Dynasties

The rise of the Mongols brought about the Mongol-Jin War which lasted twenty years. In 1234, the Mongols formed an alliance with the Song and invaded Cai Province (*Caizhou*). Jin was defeated and its dynasty came to an end. In 1260, Kublai Khan became the Great Khan. Eight years later, the Mongol empire began its invasion of the Song in 1268. In 1271, Kublai Khan founded the Yuan dynasty. In 1279, the Yuan army finally crushed Chinese resistance and ended the Song dynasty. As the Mongols continued their push to the south they adopted the crescent guard of the Central Plains. Figure 5.29 shows a new form of crescent guard that emerged during the Song-Yuan transition (See Fig. 5.29). The once pronounced central ridge now gives way to motifs of mythical animals. This example provides important material evidence for the transformation from the crescent guard to a new design that carries zoomorphic motifs. Continuation of Song crescent guard designs during the Yuan can, however, be observed in water and land paintings (*shuilu hua*) in Shanxi region,

Fig. 5.21 Detail showing the sword carried by Liu Guangshi's attendant, from "The Four Generals of Restoration" (*Zhongxing sijiang tu*) by Liu Songnian, Southern Song dynasty (Collection of the National Museum of China)

including the representation of a Yuan sword with crescent guard in a mural in the Yongle Palace (or the Palace of Eternal Jollity) in Ruicheng, Shanxi Province (See Fig. 5.30). The long sword held by Virūlhaka (King of the South and Growth) in the Cloud Platform of Juyong Pass (*Juyong guan*) in Beijing also shows an evolved type of crescent guard (See Fig. 5.31). In addition, a number of extant Yuan swords have a relatively simple crescent guard, which is a simplified design of the original type.

Crescent guard slowly lost its mainstream position after the Yuan dynasty as it gave way to three derived types. The first type is characterized by a mythical beast in the center of the guard. In the Ming and Qing dynasties, the mythical beast became increasingly elaborate and detailed, as it now assumed a dragon's head and a jackal's body, symbolizing a warrior deity skilled at combat. Later, this motif was appropriated by civilians and eventually became the origin of zoomorphic-shaped guards on Longquan swords (*longquan jian*). The second type was the result of crescent guard's evolution with the addition of wing quillons under the influence of dragon veneration, i.e., the appearance of the dragon motif, which was the most common decorative motif on sword guards during the Ming and Qing periods. This type can be

Fig. 5.22 A section of the painting "Ink Treasure of Wu Daozi" (*Daozi mobao*) (Collection of the Cleveland Museum of Art)

seen in swords or scabbards used by both the imperial court and civilians, and eventually spread to Central Asia, where it exerted an influence on sword guard design (Peng 2015, 79). During the Ming-Qing transition, Nurhaci was given a sword by the Ming court when he received his title as "the General of Dragon and Tiger" (*Longhu jiangjun*), which is now in the Shenyang Imperial Palace Museum. The pommel of this sword is covered with persimmon calyx pattern and carries the inscription, "The Heavenly Official confers its blessing" (*tianguan cifu*). The two "wings" of its guard (which are the quillons) bear a dragon head on each end, tilted toward the blade (See

Fig. 5.23 Song dynasty sword (Collection of the author)

Fig. 5.32). The third type shows a widening in the middle where the ridge is replaced with *ruyi* pattern. This kind of sword guard abounds in the water and landscape paintings in the Yuan-Ming periods (See Fig. 5.33), and is known as the "big turkey tail" guard (*da yunzhi jiange*) in the Ming dynasty. It, too, can be regarded as a type that is derived from the *bazi* or crescent guard. In the Qing dynasty, zoomorphic guards became mainstream. During this period, the direction of the two quillons of the guards also changed. A close examination reveals that the direction of the two wings was either in the upward or downward position (See Figs. 5.34 and 5.35), an interesting extension of the old *bazi* and crescent guard designs.

4 Influence on Neighboring States and Cultures

China has always been an important cultural center in Asia before the eighteenth century. It had a profound influence on neighboring countries, not only in terms of cultural development but also in the military domain. In the Mongol Yuan dynasty, Chinese sword guard types spread to Central Asia. For example, the Met has a jade sword guard of the Timurid dynasty from the fourteenth to fifteenth century

Fig. 5.24 Song dynasty sword inscribed with the characters "*Xuanhe yisi*" (Collection of Tie Chui)

(02.18.765) (See Fig. 5.36). Its overall shape takes the form of a crescent, while its quillons are carved into two Mongol-style dragon motifs. As the Timurid dynasty was ruled by Turkified Mongols, its cultural DNA carried strong Mongolian features. This type of guard was probably brought to Central Asia during the Mongol conquest of the west or at a time when the Ilkhanate was still a satellite khanate of the Yuan dynasty. In fact, we can also find traces of the crescent guard on Japanese swords. For example, a seventeenth-century sword dedicated to the Yasaka Shrine (*Yasaka jinja*); its pommel with gold plating is a continuation of the Tang *guishou* design, while its guard is a transformation of the crescent guard. Another example is Korea's Sanyin sword, which has a lily-shaped guard, which in fact is also derived from the crescent guard. Last but not least, Vietnamese sword guards also faithfully preserve the style of Qing's Longquan sword (See Fig. 5.37).

Fig. 5.25 Southern Song sword (Collection of Lan Ding)

5 Conclusion

Since the straight-quillon *bazi* guard first appeared in the mid-Tang period, it gradually evolved into the crescent guard, which became the most prevalent sword guard type in the Five Dynasties and Northern Song, used for all double and single-edged swords. However, this style started to decline in the Southern Song until it eventually became exclusive for *jian* mounts. In the Yuan dynasty, this type of guard still maintained the Song style, until a new form of design with a mythical beast dominating the middle section began to emerge in the late Yuan and early Ming, which later evolved into zoomorphic guards. This latter type continued to evolve throughout the Ming, while variations in the quillons gradually developed. During the Yuan and Ming, this type of guard spread to neighboring areas, including Central Asia, Japan, and Vietnam. Zoomorphic guards became the mainstream design in Chinese swords in the Qing dynasty. Along with the end of the cold weapon era, crescent sword guards had completely lost their evolutionary *raison d'être.*

Although the inheritance and development of the five-thousand-year-old Chinese civilization have endured many ordeals, the secret codes of its civilization are hidden in extant ancient manuscripts, murals, statues, and objects, like so many scattered

Fig. 5.26 Wood panel painting showing a Western Xia warrior wearing a sword (Yang 2000)

pearls. Discovering these codes has always been a core mission in examining Chinese civilization which, despite the passage of millennia, has left deep imprints on the axis of time. Through a painstaking analysis of murals, statues, and ancient swords, the author has attempted to string the pearls together, to present a clearer picture on the evolution of the crescent guard, and to remind ourselves that the glorious civilization of the ancient Tang has never vanished, only passed on in other forms.

Fig. 5.27 A Tibetan sword of the twelfth–thirteenth century 1 (Collection of the author)

Fig. 5.28 A Tibetan sword of the twelfth–thirteenth centuries 2 (Collection of the author)

Fig. 5.29 *Bazi* sword guard decorated with a zoomorphic motif from the Yuan dynasty (Collection of Tie Chui)

Fig. 5.30 Detail from a mural in the Yongle Palace from the Yuan dynasty

Fig. 5.31 Stone relief on the Cloud Platform of the Juyong Pass produced. Yuan dynasty

Fig. 5.32 The sword of the General of Dragon and Tiger, which was conferred on Nurhaci (Collection of the Shenyang Imperial Palace/Mukden Palace)

Fig. 5.33 Sword guard from the early Ming dynasty (Collection of Tie Chui)

Fig. 5.34 Qing dynasty sword guard 1 (Collection of the Metropolitan Museum of Art)

Fig. 5.35 Qing dynasty sword guard 2 (Collection of the Metropolitan Museum of Art)

Fig. 5.36 The jade sword guard of the duo-dragon motif produced during the Timurid dynasty (Collection of the Metropolitan Museum of Art)

Fig. 5.37 The sword guard of a Vietnamese sword (Collection of the Metropolitan Museum of Art)

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Archaeometallurgical Investigation on Historical Sword-Making Techniques in Northern Italy Between the Sixteenth and Seventeenth Centuries

Gabriele Tonelli, Michela Faccoli, Roberto Gotti, and Giovanna Cornacchia

Abstract The history of Brescia (Latin *Brixia*), a city in northern Italy, is characterized by a long manufacturing tradition, in particular the crafting of steel weapons and armor. This was made possible thanks to the availability of iron ore, the great forests from which to obtain charcoal, the numerous streams used as the driving force for power hammers and forges, but most importantly the ingenuity and industry of the people. Beginning in the pre-Roman age, the skills of the masters and craftsmen steadily progressed over the centuries, until Brescia and its vicinity became one of the most important arms production centers in Europe between the sixteenth and eighteenth centuries. This paper presents an overview of the weapon manufacturing region of northern Italy, in particular Brescia. Moreover, a metallurgical study performed on an early seventeenth century north Italian "*storta*" sword has shed light on historical sword-smithing technologies and enabled us to discover the secrets behind the high-quality Italian weapons.

Keywords Archaeometallurgy · Renaissance sword · Metallurgical characterization · Sword-making · Storta · Rapier · Northern Italy · Brescia

1 Introduction: Origins

Many historic sources agree that the Iron Age began in Italy between the ninth and tenth centuries BCE and that it predominantly developed alongside the large and rich iron ore deposits present in the Etruria region (now Tuscany) and on Elba Island (Ridgway 2000). From the eighth century BCE, this contributed to the rise of the Etruscans, who became highly skilled in manufacturing iron products. Numerous

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findings in burial sites dating back to the period between the seventh and fourth centuries BCE serve as evidence of this.

Some historians believe that when the Etruscans expanded toward the north of Italy, they came into contact with the Celtic peoples who inhabited these lands and shared their knowledge of how to extract and work iron (Bartoloni 2012; Sassatelli 2001). Specifically, the engraving on rock no. 35 in the National Park of Rock Engravings in Capo di Ponte, Val Camonica, Province of Brescia, dated between 600 and 400 BCE, illustrates what is likely a blacksmith forging a tool (See Fig. 6.1). This activity is also depicted in other engravings (Anati 1968).

After the Romans annexed the land held by the Etruscans in the early fourth century BCE, Brescia became a colony of the Roman Republic, under the name of *Brixia.* Under Roman influence, the production in Brescia of iron weapons and objects saw its first period of prosperity. This was supported by trade and exchanges in technological innovations that the Romans helped to propagate among the peoples they ruled. Developments in manufacturing also owed much to the rich iron ores and vast forests in the wide valleys north of the city, particularly Val Trompia and Val

Fig. 6.1 Peoples inhabiting the Italian peninsula between the seventh and fourth centuries BCE, before the expansion of Rome. Right: rock engraving from c. fifth century BCE known as the "blacksmith scene." Naquane Park, Capo di Ponte, Brescia

Camonica, which fueled the melting furnaces and forges (Cornacchia et al. 2015). The capacity of Brescia's existing mines and smithies was improved to meet the Roman legions' demand for weapons.

The city of Brescia became an important commercial hub for iron products and weaponry, linking up transalpine peoples with the Po Valley. Specifically, the legion recruited in northern Italy in the first century BCE (consisting largely of Brescians) was the Sixth Legion. It was also known as the *Legio VI* "*Ferrata*" (literally, "iron-clad"), precisely because its soldiers were heavily armed (Abeni 1984; Morandini et al. 1998). After the fall of the Western Roman Empire in the fifth century CE, northern Italy became the theater of numerous wars and Barbarian invasions, until the Longobard occupation in the sixth century CE.

During the Longobard period, Brescia was once again acknowledged as an important center for the manufacture of weapons, iron products, and more (the name *Lombardia*, or Lombardy, is derived from *Longobardia*. This region includes many of northern Italy's large cities, such as Milan, Bergamo, and Brescia) (Cornacchia et al. 2021). Even after Charlemagne defeated the Longobards in the eighth century and the Holy Roman Empire annexed the north of Italy, Brescia continued as a standard-bearer for the production of iron. Weapons from Brescia continued to be appreciated and traded both during the Communal Age (from the year 1000 to the thirteenth century) and under the reign of the Duchy of Milan (from the fourteenth to the fifteenth century) (Jarnut 2002; Fusari 2016).

2 Brescia Under Venetian Rule

Brescian production reached its peak while under the domination of the Republic of Venice, especially between the sixteenth and eighteenth centuries (See Fig. 6.2). The weapons that emerged from Brescia's smithies were sent to the Venetian Lagoon. From there they were sold all across Italy and Europe, where they were highly valued and much sought-after. How the work was coordinated, the availability of raw materials, the suitability of the land for this type of work, and the skill of the artisans were all factors that contributed to this development. The supply chain, which began with the extraction of the raw materials and ended with the sale of the finished product, involved the work of thousands of people, each of whom had a precise task to carry out within a broad and complex system that was very well coordinated.

Chief Magistrate Giovanni Da Lezze's *Catastico Bresciano,* a cadastral report printed in 1610, contains a chapter dedicated to the "*Arte della Spaderia*" (*The Art of Sword-making*), wherein he gives a precise and detailed description of the entire production cycle for iron weapons (Da Lezze 1969). According to his narrative, iron ore extracted from the mines was taken to the foundries. There, the raw iron, which was extracted from the ore, was sent to the many smithies who worked all over the Brescian territory and particularly in the towns close to the main smelters. Depending on its workforce, each smithy could create tools for agriculture, construction, or daily life, as well as swords, spears, armor, and other products (Cornacchia et al. 2020).

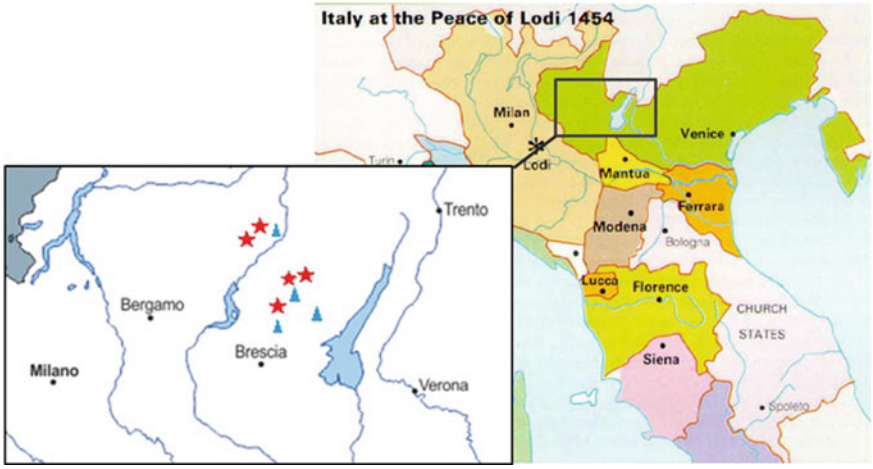


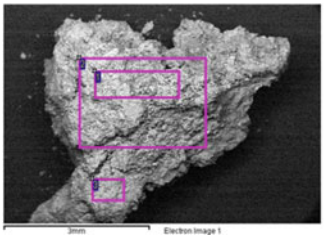
Fig. 6.2 This map depicts the political situation in northern Italy during the Renaissance. The green color indicates the territory ruled by the Venetian Republic. The areas around Brescia are particularly rich in iron deposits (red stars) and smelters (blue triangles)

Though documents indicate that cold weapons could be made entirely by individual smithies (Martinelli 1542), in reality, they tended to specialize in making specific individual components of a weapon, such as the blade, the guard, the pommel, etcetera, in order to optimize mass production (Martinelli, from State Archives of Brescia). All these components would then be sent to the city of Brescia, where artisans assembled them and decorated the swords or pole weapons in their workshops before selling them as finished products.

It is interesting to note how Da Lezze often uses the word "*maestri*" or "masters" in his description as if to underline the importance of the quality of the work done. The skills acquired over centuries of tradition allowed these masters to gain favorable treatment from the Republic of Venice, which protected their business. However, it was precisely because these artisans were so highly valued that they were forbidden from emigrating beyond the Republic or from selling their professional secrets without permission from the authorities (Flangini 2017).

3 Production Process in the Sixteenth-Century Northern Italy and Brescia

Around the sixteenth century, the main iron ore deposits were located in the mountains to the north of Brescia, in Val Trompia and Val Camonica, where siderite and limonite were mined. Analysis of a limonite sample from one of these mines shows a high percentage of manganese typical of its composition (See Fig. 6.3). The presence of this element made this Brescian ore particularly valuable for the production of



Spectrum	O	Al	Si	K	Ca	Mn	Fe	Total
1	34.23	0.63	16.09	0.43	0.89	9.73	38.00	100.00
2	30.56	1.19	12.63	0.48	0.98	8.08	46.07	100.00
3	33.04	0.80	5.37		1.04	7.90	51.85	100.00

Fig. 6.3 SEM/EDS chemical analysis of a sample of Brescian limonite

high-quality steel. Once brought to the surface, the mineral was heated for the first time (roasted) in specific furnaces. The purpose of this operation was to remove the water content (around 25–30% of its weight) and other undesired substances present in the mineral, such as sulfur.

Beginning in the fourteenth century, iron was smelted in blast furnaces (See Fig. 6.4) through a process known as "indirect reduction," which is still used today (Tognarini 1984). By collecting layers of iron ore and of carbon inside a tall tower, and injecting air from underneath, it is possible to reach temperatures of up to 1400 °C. At these temperatures, the iron reduction reactions take place, whereby it passes from an oxidized state to a metallic one. With a large quantity of carbon present, the iron becomes saturated in carbon, turning into pig iron. In its liquid form (≈1250 °C), pig iron gathers at the bottom of the furnace, that is the crucible.

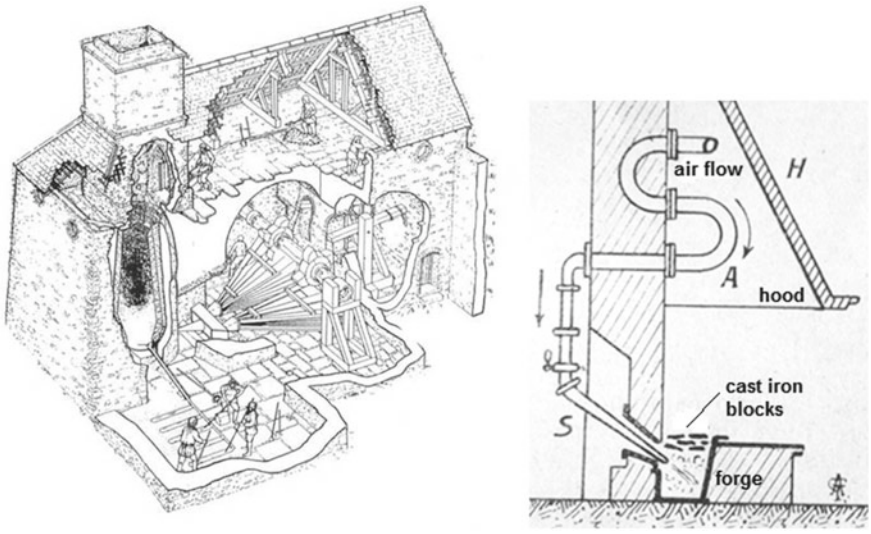


Fig. 6.4 Left: a drawing of a typical pre-industrial blast furnace. Right: a diagram of a "*Brescian forge*" used to transform pig iron into steel (Paoli 1984)

The residual mineral becomes slag with a doughy consistency that floats on top of the liquid pig iron. The presence of the slag is important at this point because it protects the liquid metal from oxidation and holds damaging elements such as phosphorus and sulfur inside it. When loading the furnace, fluxes such as lime were also added along with the iron ore and coal. Their role was to decrease the slag's viscosity thus making it easier to separate it from the metal. The action of loading the smelter took several days, during which the furnace burned continuously, day and night.

When the furnace master believed the moment was right, a clay stopper was broken, and the liquid pig iron would flow out through holes made in the crucible to be cast into ingots. In order to make iron and steel, the pig iron produced by the blast furnace had to undergo a refining process. This took place in a special forge, referred to as a *Brescian forge* or a *Bergamascan forge* (See Fig. 6.4) (Paoli 1984).

The pig iron ingots that came out of the blast furnace were broken up into small pieces using a trip hammer, to obtain what at the time was referred to as "raw iron." This was sold to the smithies that specialized in refining. They were called "*fuochi grossi*" (big forges) and were equipped with Brescian forges. In these ovens, the pig iron fragments were arranged over burning coals and were covered by specific powders, mainly consisting of iron oxide. The iron mass was kept in constant contact with the airflow so that progressive decarburization could be achieved, allowing steel with increasingly lower carbon content to be made (Galassini 1920). Through experience, the master in charge of the refining process could estimate the percentage of carbon and thus recognize the different types of steel being made, by observing the amount of sparks, the color of the flames, and the malleable consistency of the metal mass. Finally, to homogenize the chemical composition and remove slag and carbon residues, steel was made by forging it with a trip hammer into a bar or "*azzale*." The bars could be ductile iron, also known as Ladin iron, or steel, which was categorized according to its carbon content. From the lowest to the highest grade, the categories were: common iron, middle iron, strong iron, or "*azzale rompente*" (breaking iron). The required heat was provided by burning charcoal, which was made by masters who specialized in its production (See Fig. 6.5). Wood was selected and piled into large heaps which were covered with earth and clay. After this, the whole pile was

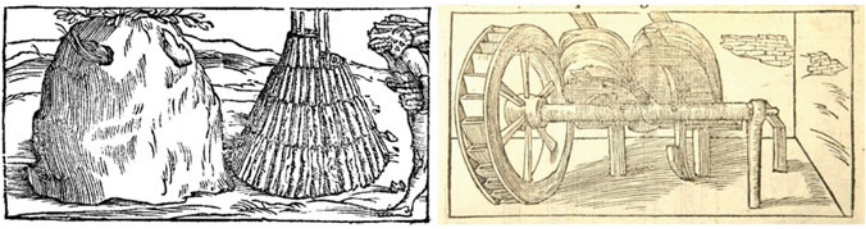


Fig. 6.5 Left: illustration of the process for producing charcoal. Right: bellows for the furnaces in the book *De la Pirotechnia* (*On Fire Techniques*) by Biringuccio (2013, 1977)

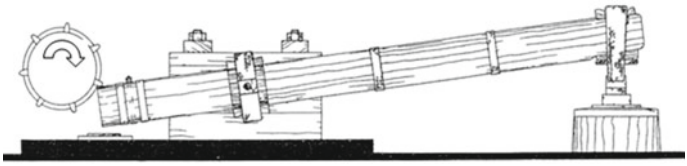


Fig. 6.6 Diagram of how a pre-industrial trip hammer operates (Fauzza 2005)

burned. This had to be done very slowly and with very low quantities of oxygen. The carburization process lasted several days.

When this process was completed, the heap was dismantled and the carbon generated was collected. The carbon was classified in line with its quality as either *strong essence*—denser, at around 250kg/m^3, and with a higher heating value of around 8000 kcal/kg—or as *weak essence*—lighter, at around 200–180kg/m^3, and less effective, at about 7000 kcal/kg.

Strong essence carbon, obtained from beech, oak, and hornbeam, was considered of higher quality, suitable for use in smelting furnaces; weak essence carbon, produced with chestnut, poplar, or larch, worked well for use in smithies (Tizzoni and Tizzoni 1999).

Smithies were typically built to be very tall and dark, with their internal walls blackened by smoke. They were built partly underground to muffle the vibrations and noise. They did not have proper windows, but rather openings arranged at random on the walls and on the roof, to provide a bit of light inside and especially to let the smoke out. All the machinery was installed on the rammed earth floor, which, during the warmest months was sprayed with water to cool it down and lower the surrounding temperature. At the center of the forge work area, there was the trip hammer (See Fig. 6.6), which has been found in several apparently identical examples. These, in reality, had differing features that made them suitable for different processes. The trip hammer was driven by the force of falling water, through a water wheel moved by a stream. Its hammering speed was correlated with the wheel's rotation speed and could be adjusted by changing the amount of water that hit the wheel's blades. The flow was adjusted using a valve, which was controlled by a lever near the work area.

A smithy could employ up to seven workers: the master forger stood at the trip hammer, aided by an apprentice who acted as his assistant. There were also the hearth operator and the finishers who refined the blades that the hammer had roughly forged on the anvil. Depending on the type of smithy, there could also be a grindstone operator or worker who cut away imperfections with shears. Numerous tools, molds, dies, and models used in production were hung on the walls. The color of the metal was used to determine the temperature of the steel blanks when they were taken out of the forge: dark red, around 700 °C; cherry red, around 1000 °C; red-white, around 1200 °C; white-silver melting at 1300 °C (Rotasso 2007). The forges were powered by continuously blowing air onto the burning coals. Until the fifteenth century, the air flow was produced using large bellows which were driven either by using the force

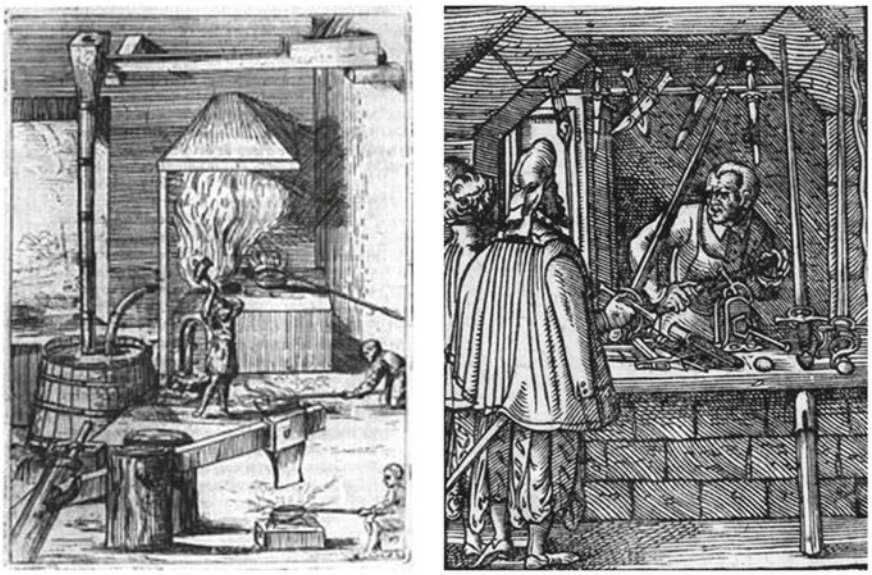


Fig. 6.7 Left: illustration taken from Marco Antonio Della Fratta's book *Pratica Minerale (Working with Minerals)* (1678) depicting a smithy complete with hearth, trompe and trip hammer. Right: a sixteenth century print by Jost Amman depicting a swordsmith's workshop (Fratta and Antonio 1985)

of water or manually. Toward the middle of the sixteenth century, trompes—water-powered air compressors—appeared. This was a new system for producing air jets by using the force of falling water (See Fig. 6.7). A part of the water that was used to drive the wheel was taken and allowed to fall through a pipe into a barrel. As the water dropped, it brought air with it. This came out as a constant jet from the upper part of the barrel, while the water flowed out from the lower part. According to some sources, the Brescians were among the first to adopt this new technology (Marchesi 2003).

Often one or more grindstones were found inside the smithy to provide a rough grinding finish to the products. However, there were also buildings equipped with several grindstones, each with a different grain, which specialized in mirror polishing the weapons. It has also been documented how specific abrasive lime-based pastes were used to further polish the blades (Biringuccio 2013, 67).

Manufacturing in Brescia included a wide range of weapons of war, such as cutlasses, two-handed long swords, infantry swords, and rapiers. Short blades such as daggers could also be produced, as could blades destined for civil or agricultural applications: knives, billhooks, long axes, or scythes. The smithy had to be able to meet market demands and to fulfill client commissions as quickly as possible, while still guaranteeing a reliable, quality product.

4 Techniques for Forging a "*Storta*" (Falchion) in Brescia in the Seventeenth Century

Despite the high number of swords produced in northern Italy and, in particular, in the province of Brescia, not many details are known today concerning the forging techniques. This is because the techniques and materials used were kept secret by the master forgers, who only passed them on to the worthiest apprentices. Furthermore, for the most part, these master artisans were illiterate and did not leave many written records. To discover what sword-making techniques were used in the sixteenth century and understand the reasons why the weapons produced in Brescia gained such status on the market, some "reverse engineering" is therefore necessary. Such a work is referenced below. The authors conducted this recently, on an archaeological finding: an Italian *storta* that dates back to the end of Renaissance (See Fig. 6.8) (Tonelli et al. 2016).

A *storta* is a sword gripped with just one hand. It has a broad and rather short blade, usually, 40–60 mm wide by 500–750 mm long. The *back* is 4–6 mm thick. The blade is *single-edged*—sharpened on just one side—with a curved cutting edge and a straight back that curves only near the tip. The curvature of the tip can be more or less pronounced and can also have a final sharpened section on its back edge. Often there are one or more fullers on the blade. The guard is usually composed of two arms. Depending on the period of history or on its area of origin, these can have different shapes. Among the most common is an "S" shape. The pommel should be quite hefty, to balance the bulk of the blade but without drawing the sword's center of mass too far back, which needs to be more forward to give power to cutting actions.

Between the fifteenth and seventeenth centuries, the *storta* was one of the most commonly used and popular swords, both among soldiers and the common people, such as peasants or merchants (See Fig. 6.9). The key to the success of this type of sword probably lay in how intuitive it was to use and in its versatility.

From the study of the part of the *storta* shown in Fig. 6.8, despite its poor state of preservation, we were able to draw significant information with regard to its forging methods (Biringuccio 2013, 67). The symbols imprinted on the *ricasso* (the letter "I"

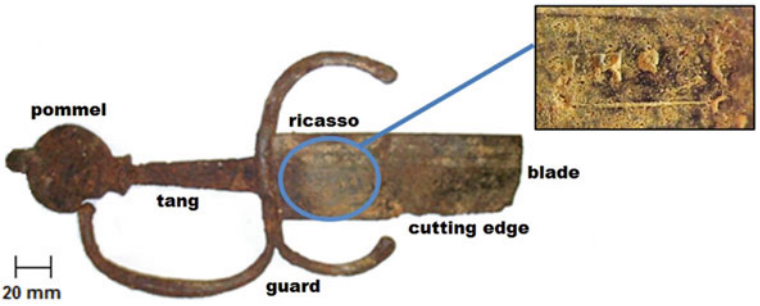


Fig. 6.8 Image of the artifact analyzed by Tonelli et al. (2016)

Fig. 6.9 Examples of *storta* swords made in Caino (Brescia) in the seventeenth century. Top sword is from private collection, center and bottom sword are from Martial Art Museum collection. Right: Image taken from Cesare Vecellio's book (1590), depicting a peasant armed with a *storta.* Printed image from Martial Art Museum collection (Collection of Martial Art Museum (BS), Botticino)

and the loops joined by a crescent) were identified after a careful pickling process. This permitted the object to be dated with some precision. It is very likely that this *storta* was forged in Caino, a village 15km from Brescia, between the sixteenth and seventeenth centuries. During that time, Caino was well known as a center of production of excellent blades. They were forged in four smithies: the *Fucina Scanzi,* the *Ponte Tegolo* smithy (run by the *Sassi* family of master swordsmiths), the *Cartole* smithy, and the *Terminello* smithy (run by the *Desenzani* family of master swordsmiths) (Rossetti 1995).

Once the finding had been dated, a study was made on the dimensions of both the finding itself and on other *storta* swords manufactured in Caino (See Fig. 6.9) which are in good condition. The measurements were initially taken in millimeters and then converted into the units of measurement used in Brescia in the sixteenth century.[1] It emerged that the length of the hilt is almost the same in every sword—34 *punti*, with small variations of just millimeters between different swords. Specifically, the length of the pommel and of the grip is always the same: 13 and 21 *punti,* respectively. The two measurements follow the proportions of the golden ratio ($\varphi = 1.6180339887...$), used since Grecian times for architectural and artistic projects.

As a single smithy could produce up to twenty-five blades in a day, it is reasonable to believe that the masters had developed a system for "standard" production based on the use of models, dies, and dimensional proportions that allowed a good repeatability of the production (Da Lezze 1988).

The study made on the *storta* actually reveals some interesting geometric considerations that confirm these theories (Tonelli et al. 2016). This sword was definitely produced in Caino in the early seventeenth century, as "CAINO" was stamped onto the *ricasso*. Further, the blade also features the words, "F. TOMASO." "F." stands for the Latin "fecit," or "made by"; "Tomaso" is the name of the master who forged

[1] Units of length in use in Brescia in the sixteenth century: 1 *punto* = 4.13 mm; 1 *inch* = 12 *punti* = 49.6 mm; 1 *braccio* = 12 *inches* = *144 punti* = 595 mm.

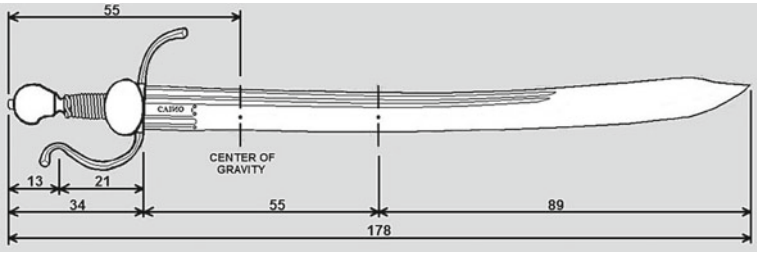


Fig. 6.10 Depiction of the *storta* forged by Tomaso Desenzani (Caino, seventeenth century), with measurements in *punti*

it—Tomaso Desenzani, who owned the *Terminello* smithy (Gotti and Minuzzi 2011, 98 and 158).

As shown in Fig. 6.10, the dimensions of this sword—including the length of the blade (144 *punti* or 1 *braccio*), follow the Fibonacci Sequence (1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, etcetera) which is closely linked to the golden ratio. It is therefore possible that the blade and sword makers followed precise numerical, mathematical, and proportional systems to ensure their products were both beautiful and well balanced.

4.1 Blade

A good blade requires a balance between hard steel that may be sharpened and penetrate the opponent's armor and flexible or resilient steel that does not scratch or break from impact in battle (fracture toughness). The metallographic study below (See Fig. 6.11) shows a pearlite and bainite microstructure (rich in carbon content) on the external surface of the blade. This is much harder than the ferrite-core microstructure, which is more flexible and resilient.

The microhardness tests reveal average values of around 150 HV in the core section and 350–400 HV on the external surface, with peaks of 550–600 HV in some areas very close to the surface. These two areas, having such different microstructures and hardness levels, are separated by lots of elongated non-metallic inclusions, which most likely can be identified as weld lines.

The inclusions on the weld line are formed of vitreous slag entrapments. They are very rich in silicon and calcium oxides. These results are in agreement with the few available written testimonies of forging techniques, according to which glass powder (rich in silicon) was used, mixed with lime and eggshells (rich in calcium), and other unknown ingredients (Biringuccio 2013, 67). The percentage of carbon in the blade varies between the core (around 0.2%) and the surface (around 0.5%). This has also been verified by historical sources where heat treatment using case hardening pastes with clay, carbon, salt, glass powder, animal horn, urine, and other secret ingredients was reported (Petrini 1963, 111–139). These heat treatments probably

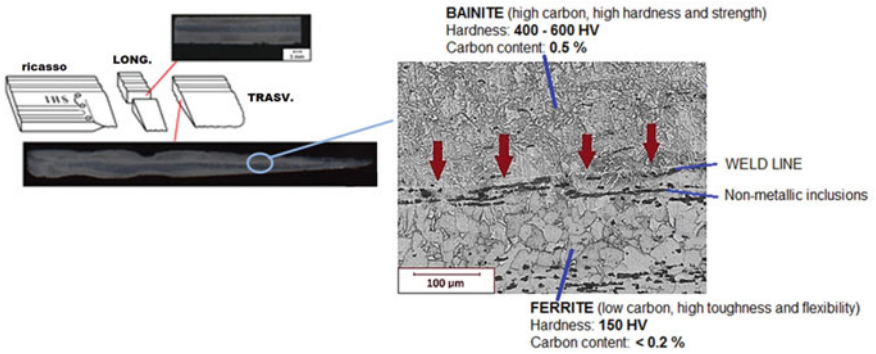


Fig. 6.11 Diagram of the parts of the blade and their metallography after polishing and chemical etching. Note that the central area (the core) is darker than the periphery: the difference in color shows the differing carbon content of the two areas. Right: a micrograph of the blade (200x – Nital2 etching) with indication of the microstructures observed

were used to harden the outer layer of the blade. The study allowed us to establish that it is very likely that the *storta* was produced by welding together two blocks of steel with different carbon content: one low in carbon, and therefore flexible and resilient, inserted into the other, which was rich in carbon, hard and strong, obtained from pattern-welded Damascus steel. To further increase the mechanical properties of the surface, the blade then underwent a carburizing thermochemical treatment (case hardening) and quenching. In this way, a blade that combines the properties of resilience, flexibility, and impact resistance, with an extremely hard, strong, and durable surface, is achieved. Unlike the blade, the tang—which joins the blade to the pommel and guard—was neither case hardened nor quenched.

4.2 Pommel and Guard

The pommel and guard require different characteristics from the blade. Specifically, as the guard was used to block blows, it had to be made using an impact-resistant (resilient) material. The analyses confirmed that both the pommel and the guard were forged using steel with a very low carbon content (<0.1%). Numerous residues of organic material were found inside the pommel. This is likely because animal glue was used in order to assemble the pommel, rather than wood or leather inserts. The grip that enclosed the tang was almost certainly made of wood, coated in strips of leather or braided metal.

5 Comparison of the Techniques for Making the *Storta* and the Rapier

An interesting point to understand is whether the production techniques changed according to the type of sword being made. This question led to the comparison of the structure of the *storta,* which was the focus of this study, summarized above, and the structure of the blade of a rapier (See Fig. 6.12), which also came from Caino and was made between 1575 and 1630 (the *storta* dates to the same period). The imprint on the *ricasso* of a crowned S and the word Caino suggest the blade was produced by the *Sassi* family, who worked at the *Ponte Tegolo* smithy (Gotti 2011).

A rapier is a sword with a long, thin, double-edged blade and a diamond section that tapers toward the tip. It was designed for a type of fencing based on thrusting rather than cutting. This requires a very flexible blade that could withstand the point load without breaking. The *storta* is instead shorter and was mainly used for cutting. That is why the blade is curved, wide, and thick, and just has a single sharp edge (comparison in Fig. 6.13).

The images above show how rapier blades were made in pattern-welded Damascus steel, combining two billets with differing carbon content. Repeated folding of the billets results in the typical layered structure, distributed somewhat at random. Unlike the *storta*, there is no ferrite area in the core. This is probably because of its geometry (long and thin), a rapier blade is fundamentally more flexible than a *storta* blade, thus there is no need for a flexible ferritic core. In addition, the rapier blade does not

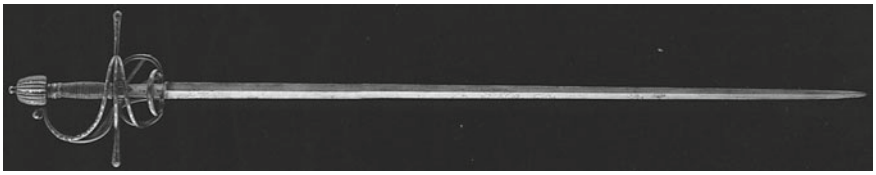


Fig. 6.12 A rapier whose blade was forged in Caino in the sixteenth century (Gotti 2011)

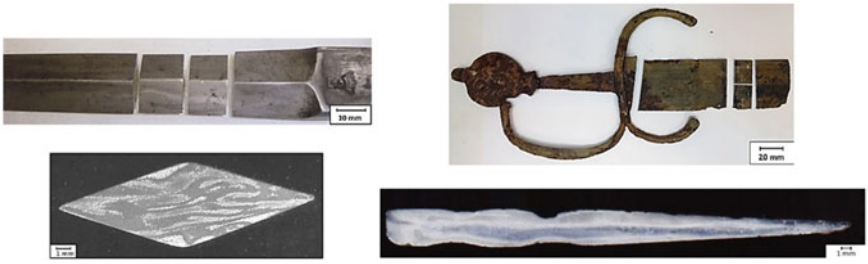


Fig. 6.13 Cross sections, after polishing and chemical etching, of the rapier blade and of the *storta* blade (Gotti 2011). The light areas are those with lower carbon content. Note how the microstructures are distributed differently in the two swords

show carbon-rich areas on the outside surface. This indicates that it was probably not case hardened either, precisely so as not to make the blade too brittle and prevent point load breakage.

In summary, it is reasonable to conclude that blades were produced using different techniques (see Fig. 6.14) for incorporating the steel billets and, depending on the type of sword being made, i.e., the mechanical characteristics required for good use in battle, they might or might not be subjected to thermal/thermochemical treatments.

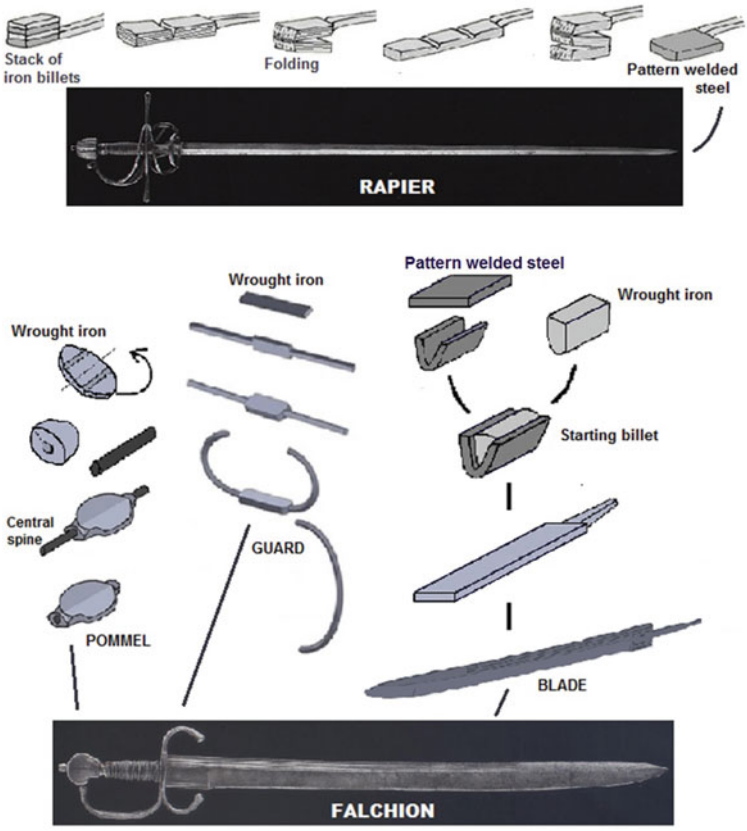


Fig. 6.14 Diagram of the possible methods used for forging the rapier and the *storta*. This hypothesis agrees with the results of the studies undertaken by Gotti (2011) and Tonelli et al. (2016), respectively

Fig. 6.15 Top: the original *storta* (Caino, seventeenth century). Bottom: the finished replica (Sartori 2019)

6 Reconstruction of a *Storta*

A replica of Tomaso Desenzani's *storta* (See Fig. 6.10) was recently reconstructed, following the procedure hypothesized in the metallurgical study described above (Sartori 2019). The replica was forged in a still-operational seventeenth-century smithy in a small Val Camonica town (Bienno, in the province of Brescia). For the blade, steel from a nineteenth-century carriage was used. For the pommel and guard, bars of soft iron from a seventeenth-century balustrade were used.

The blade's starting billet was assembled as shown in Fig. 6.14, by combining an external layer of pattern-welded Damascus steel folded into a "V" around a billet of soft iron in the middle. The polishing stage was performed manually using lime, grindstones, and natural abrasive powders. The result of the project was a faithful copy of the original, made using the same materials. It had the same geometries and the same weight (just a 4g difference between the original and the copy) (Fig. 6.15).

7 Concluding Remarks

This work was intended to be a scientific study of the techniques used by the master swordsmiths in Brescia to better understand what gave the weapons such high value. Prior archaeometallurgical research made it possible to develop theories on the materials and the forging techniques used. In the case of the *storta*, it was possible to reconstruct the entire production process, by identifying the steel utilized for all its components (blade, guard, and pommel) and the method by which the starting billet was probably assembled. The artisans understood that a *storta*—used mainly in combat—had to be hard and durable, but also flexible and resilient so as not to shatter. By combining steels with differing carbon content and therefore with different mechanical properties, and through clever use of heat and thermochemical treatments such as quenching and case hardening, it was possible to obtain a weapon with the characteristics desired for battle. The results of the metallographic analysis

and comparison with a rapier from the same period and origins show that different forging techniques were used depending on the type of weapon and its intended use in combat.

This is all fascinating considering that in the sixteenth century, it was not known what carbon or manganese was, nor was the effect of temperature on the microstructure of steels during the forging process fully understood. Furthermore, there were no thermocouples or other measuring devices, which are required today to guarantee the repeatability of processes. The swordsmiths had only their own experience to rely on, which was developed—as described in these pages—thanks to centuries of tradition in working with iron. These conclusions made it possible to manufacture a replica of a *storta*, using the same techniques that were used during that era and seeking also to use the same raw materials. The result was rather encouraging and opens the way for other future studies to analyze and reconstruct various other types of swords.

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Rediscovering Ancient China's Sword-Making Techniques: Insights from Reconstructing a Han-Dynasty Ring-Pommel *Dao*

Hu Xiaojun

Abstract Sunzi said, "Warfare is pivotal to the state. [It is] a milieu where life and death are decided, [it holds] the path to survival or extermination and cannot be neglected." In like manner, *the Commentary of Zuo* (*Zuozhuan*) states, "Rituals and warfare are of vital importance to the state." From this we see that besides ritual matters, such as ancestor worship and maintaining the temples, rulers in ancient China considered warfare and military training to be of utmost importance. Consequently, much attention was paid to sacrificial implements and weapons of war. The production and maintenance of arms was an integral part of this effort as it impacted state security as a whole. The study of ancient arms therefore not only teaches us about ancient weaponry and methods of combat but also yields unique insights into the technology and organization of war. The principal short-range weapons during the Han dynasty were *jian* (double-edged sword) and *dao* (single-edged sword), while the latter gradually replaced the *jian* in military use as the dynasty wore on, partly as a result of the rise of cavalry. This paper contains three parts: iron smelting and weapon production in the Han dynasty; the ancient techniques of iron smelting in shaft furnace; and reconstructing the Han ring-pommel *dao* with ancient methods.

Keywords Sword-making · Forging · Stacking · Ironmaking · Shaft furnace · Weapons · Han dynasty · Ring-pommel *dao* (*huanshoudao*) · "100-fold-refined" steel (*bailian gang*)

Sunzi said, "Warfare is pivotal to the state. [It is] a milieu where life and death are decided, [it holds] the path to survival or extermination and cannot be neglected." Similarly, *the Commentary of Zuo* (*Zuozhuan*) states, "Rituals and warfare are of vital importance to the state." Hence, apart from ancestor and deity worship, rulers in ancient China also considered warfare, which involved violence and destruction, to be an indispensable part of statecraft. Consequently, from an early period in Chinese

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history, special attention was paid to ritual objects and weapons of war. As Confucius said, "I heard that civil administration (*wenshi*) must be supported by military preparedness (*wubei*)." Military preparedness is indispensable to a state's long-term survival, while weapons and arms hold the key to state security. This is why weaponry is a topic worthy of examination.

It is commonly believed that extractive iron metallurgy originated from the Hittites, a nomadic group who occupied the mountains and desert in southern Anatolia, to the northwest of the Euphrates and Tigris rivers. By the twelfth century BCE, iron metallurgy in the eastern Mediterranean had become quite advanced. A large number of iron artifacts dated to this period have been discovered, including bronze-hilt iron swords, which had replaced iron-hilt bronze swords. The earliest smelted iron weapon found in China is a jade-hilt iron sword discovered in a late Western Zhou tomb in Shangcun hill, Sanmenxia city, Henan Province. Another early iron sword, unearthed in Changsha, Hunan Province, dated to the late Spring and Autumn period, was made from medium carbon steel. Compositional analysis indicates a homogenous microstructure with 0.5% carbon content, while the steel for this sword came from carburized bloomery iron (Han 1994, 19).

The use of iron and steel in weapon production led to changes in weapon form and typology, as seen for example in the narrowing of the blade. Among the weapons manufactured in the Warring States period, iron weapons are the most representative. Among those found in Hebei Province, which include *dao* (single-edged sword), *jian* (double-edged sword), dagger, helmet, etcetera, five of them have been chemically analyzed. All of them are steel objects made from carburized bloomery iron, which is significantly harder than bronze. As burial objects, these weapons were likely used by their owners as personal arms during their lifetime, then accompanied them to their graves. All in all, archaeological evidence suggests that iron weapons had become common by the mid-third century BCE during the late Warring States period.

1 Iron Smelting and Weapon Production in the Han Dynasty

Arms are fundamental tools in warfare and provide a key parameter when assessing the military power of a polity. With advancements in metal smelting and forging, Chinese metalworkers developed diverse types of arms during the Han dynasty, manufacturing such polearms as spears and halberds, short-range weapons such as *jian* and *dao*, long-range weapons such as bows and arrows and crossbows, defensive equipment such as armor and shields, as well as heavy arms such as different types of battle-axes, maces, and clubs. These Han-dynasty arms and armor were mostly made from high-quality iron, which significantly enhanced the military prowess of the Han army.

Arms production reflects the technological level of a society. Owing to rapid developments in smelting skills during the Qin and Han periods, there was a transition in arms manufacture from bronze to iron. Although iron weapons were already in use during the Qin, during this period most arms were still made of bronze. By the Han dynasty, however, metalworkers were able to produce various types of iron weapons. In particular, a substantial number of iron arrowheads were found in Han period armories. Given those vast quantities of arrowheads were consumed in warfare, the predominance of iron arrowheads suggests that iron weapons had eclipsed bronze arms during this period. The typology of weapons in the early Han period largely resembles the preceding ones in the Qin, with *jian*, *dao*, spears, and halberds as the main arms for hand-to-hand combat, bows, and crossbows for long-range combat, while armor and shields remained prevalent. Nonetheless, changes in the technology and techniques in arms manufacture, as well as ongoing conflict with the nomads in the north, brought significant changes to weaponry design.

During the Han period, iron gradually replaced bronze in the production of various weapons, including the crossbow, arrowhead, *jian*, *dao*, spear, halberd, armor, etcetera. Metal weapons unearthed from the Han tomb of Liu Sheng in Mancheng County, Hebei Province, provide remarkable insights into the metallurgical technology in arms production (Lin and Chen 2004, 37). These weapons, similar to those dated to the Warring States period, were primarily made from steel, obtained from carburizing bloomery iron, but they had fewer impurities and a more consistent carbon level. Compositional evidence indicates that metalworkers performed cycles of annealing and forging to improve the quality of iron. The edge of the Han sword was partially annealed to increase blade hardness and enhance the flexibility of its body. Such metal properties responded to the needs of cavalry combat. Moreover, in order to resist the greater impact of iron weapons, there was a marked improvement in the quality of defensive equipment during the Han. For the ferrous laminar armor discovered in Ershijiazi, Inner Mongolia, the surface of armor plates is made of ferrite, while the core parts consist of 0.1–0.5% carbon (Han 1994, 19). Such a composition suggests that annealing was carried out after forging to decarburize the surfaces of the plates in order to increase malleability.

Based on the decarburization techniques of the Warring States period, further innovations in iron metallurgy were made in the Western Han. To decarburize cast iron, it was heated at a high temperature to oxidize carbon effectively in a solid-state and, by controlling the degree of decarburization, metalworkers could produce high, medium, or low carbon steel. This carburizing technique was highly advanced. First, using cast iron, it involved the production of slabs and bars, which were subsequently decarburized and annealed to produce high-quality steel for forging. This kind of steel would have been a suitable material for making weapons. In various iron-smelting sites in Henan Province, including Yangcheng, Guxingzhen, Shengtiegou in Gongxian county, and Nanyang, this type of cast iron slab has been found. The ring-pommel *dao* discovered in the Han-dynasty Mancheng tomb and the Beijing Dabaotai tomb were also made from this type of steel (Wang and Lu 1998, 63).

The primary short-range weapons of the Han period were *dao* and *jian*, which were mainly used as cut-and-thrust weapons in hand-to-hand combat. One of the major shifts in the development of short-range weapons during the Han period is the gradual replacement of *jian* by *dao* as the dominant short-range weapon on the battlefield. Such a trend could be attributed to the rise of cavalry combat during the Han. By the early Western Han period, chariots had disappeared from the battlefield, as cavalry became the main force in the Han armies. Since cavalry troops slashed and hacked at their enemies with swords from horseback, the double-edged *jian* was no longer suitable and was replaced by the single-edged *dao* which had a fine blade and a thick back. With highly developed iron metallurgy, Han metalworkers successfully produced *dao* using *sanshilian* ("30-fold refined"), *wushilian* ("50-fold refined"), and *bailian* ("100-fold refined") steel. The ring-pommel *dao*, which has a ring-shaped pommel at the end of the grip, appeared during the Han period. This type of *dao* has a long, straight single-edged blade with a thickened back. The ring-pommel *dao* excavated from the Han tomb of Liu Sheng in Mancheng County, Hebei Province, is characteristic of the early Han type (Yang 1991, 39). I have collected several complete Han ring-pommel *dao*, all of which show sophisticated craftsmanship and a perfect appearance. These swords have yielded invaluable information and reference for the reconstruction of the ring-pommel *dao*.

Around the mid-Western Han period, metalworkers invented a new iron metallurgical technique called *chaogang* ("stir-fry steel"). To produce it, iron ores were first converted into cast iron through smelting. The cast iron was then molten with a strong air blast into a liquid. Simultaneously, the liquid was stirred, prompting oxidation of carbon in the cast iron melt. In this manner, cast iron was converted to wrought iron, which was subsequently carburized and forged into weapons. Another method of *chaogang* involves controlling the level of carbon oxidation in cast iron. After carbon loss reached a certain level, the cast iron was forged repeatedly. The *chaogang* technique originated in the Western Han, but it was consolidated and extensively adopted in arms manufacture in the Eastern Han. Fifty iron *jian* dating to the second year of the Jianchu era (77 CE) in the Eastern Han dynasty have been found in Xuzhou city. On the tang, twenty-one words are inscribed in clerical script with gold inlaid: "*Jianchu ernian Shujun xi gongguan Wang Yin zao wushi lian* [three words illegible] *sun jian* [one word illegible] (In the second year of the Jianchu era, the official of the western workshop of Shu county, Wang Yin, produced fifty…*jian*…) (Xuzhou Museum 1979, 51–2)." Moreover, thirty ring-pommel *dao* dated to the sixth year of the Yongchu era (112 CE) in the Eastern Han period, were discovered in Cangshan County, Shandong Province. The tang is inscribed with eighteen gold-inlaid words in clerical script. It reads, "*Yongchu liunian wuyue bingwu zao sa dong dadao jiyang yi zisun* (On the *bingwu* day in the fifth month of the sixth year of the Yongchu era, thirty large *dao* were made. Auspicious. Good for offspring) (Ibid., 51–2)." Chemical analyses suggest both swords were made from the *chaogang* technique, that they were repeatedly forged during production, and had a relatively high carbon level (Yang 2007, 132).

From the end of the Eastern Han to the Three Kingdoms period, the *bailian gang* ("100-fold refined" steel) technique was developed based on the *chaogang* technique. This technique involved repeated hot forging, folding, and stacking of *chaogang* bars in order to refine the crystals and inclusions. Steel with relatively low carbon content could sometimes be used as an ingredient to form composite steel. The number of laminations indicates the counts of *lian* (refining). The higher counts of *lian*, the higher number of forging cycles in the steel processing. The crystals and inclusions in steel would be more refined, and the steel products would be of higher quality. The earliest use of the word *bailian* ("100-fold refining") appeared toward the end of Eastern Han. During the Jian'an era, Cao once ordered swordsmiths "to make five *Baipi dao*. Upon completion, one will be bestowed on a *Wuguan* general, [while] the other four will be conferred on my sons who dislike martial arts but enjoy literature." In the *Domestic Commandments* (*Neijie ling*), he claims that using "*bailian* weapons can keep away misfortune and deter villains (Li et al. 2000)."[1] In the twenty-fourth year of the Jian'an era, his son Cao Pi also produced a *baipi dao* that was four *chi* and two *cun* in length. The form of the Han *bailian dao* (i.e., a *dao* made with the 100-fold refined steel) may be further inferred from an Eastern Han period iron *dao* found in Japan. It is dated to the Zhongping era (184–189) during the reign of the Eastern Han emperor Ling (*Han Lingdi*). Its blade has the inscription "*bailian qinggang*" (hundred times forged, pure and hard). It was unearthed in the Tōdaiji Mountain Tumulus (*Tōdaiji-yama kofun*) tomb in Tenri city, Nara Prefecture, Japan, and is now stored in the Tokyo National Museum. This *dao* is 110 cm long and inscribed with twenty-four words with gold inlaid. It writes, "*Zhongping* [two words illegible], *wuyue bingwu, zaozuo wendao, bailian qinggang, shangying xingxiu, xiapi buxiang* (The sword was made on the *bingwu* day in the fifth month of the … Zhongping era. A hundred times forged, [it is] pure and hard. [It] reflects the constellations above, and keeps [one who wears it] from misfortune)." In 2014, I produced an exact copy of this *dao*. It is now in the International Guoshu Association collection (See Fig. 7.1 a, b). The use of *bailian gang* in the production of *dao* from the end of Eastern Han to the Three Kingdoms period enhanced the quality of weapons and stimulated the development of short-range weapons.

[1] This sentence was from the *Domestic Commandments* (*Neijie ling*) by Cao Cao, the Emperor Wu of the Wei dynasty (*Wei wudi*), which was compiled into the *Imperial Readings of the Taiping Era* (*Taiping Yulan*), fascicle 345 "Volumes on weapons, no.76: swords (Part I)" (*Bingbu qishiliu: dao shang*).

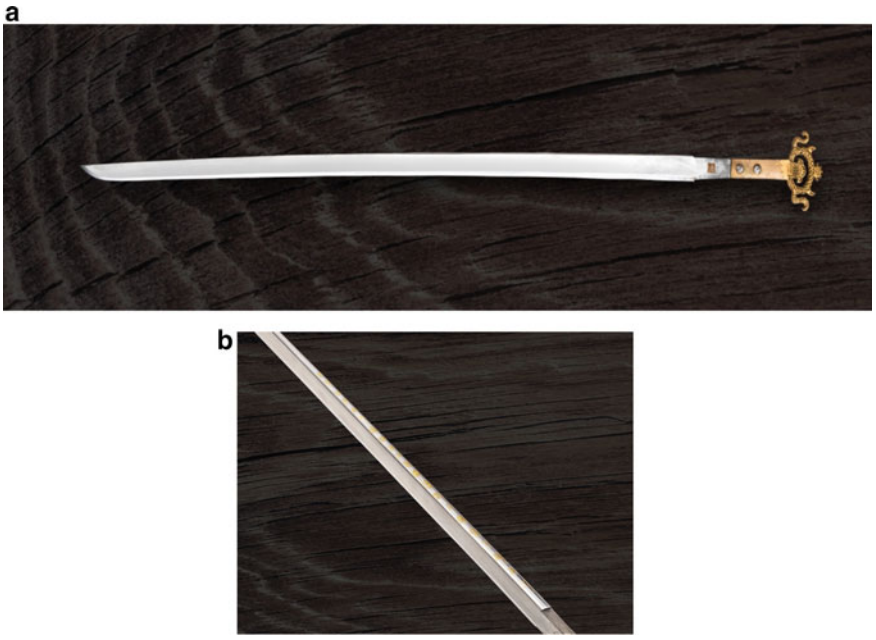


Fig. 7.1 Copy of *Zhongping dao* made by the author with *bailian gang*

According to the records in the *Imperial Readings of the Taiping Era* (*Taiping Yulan*), Pu Yuan, a master swordsmith from the state of Shu during the Three Kingdoms period, once made three thousand *dao* for Zhuge Liang.[2] They could split bamboo tubes filled with iron marbles and were honored as "divine swords" (*shendao*) (Li et al. 2000). The key to Pu Yuan's exceptional swords lies in his skills

[2] The *Imperial Readings of the Taiping Era*, fascicle 345 "Volumes on weapons, no.76: swords (Part I)" cited from the *Biography of Pu Yuan* (*Pu Yuan zhuan*), "Pu Yuan once forged three thousand *dao* for Zhuge Liang at Xiegu. He had an uncommon iron-smelting technique. He inspected a *dao* that had been completed and was dissatisfied at its poor quality, saying that the water of the Han river was not suitable for quenching and sword-making, while the water from the Shu river was clear, powerful, and possessed the essence of metals. Thus he instructed this water to be brought from Chengdu. After the water was delivered, the Master plunged a *dao* into the water, and immediately said that it was mixed with the water from Fu river, thus useless. The conveyor insisted the water was pure, but the Master said, 'There were eight liters of water from Fu river. Why don't you admit it?' Thereupon the conveyor knelt down and answered, 'In truth, I spilled the water at the pier near Fu river. As I was afraid, I added eight liters of water from Fu river.' Afterwards, the people wondered at the Master's perspicacity. After the *dao* were finally made, the Master cut off a bamboo tube which was filled with iron marbles with a single crisp stroke, as if weeding the grass. The *dao* made by Pu Yuan were unsurpassed and, as a result, were known as 'divine swords'."

The original Chinese text reads,「蒲元於斜古為諸葛亮鑄刀三千口, 鎔金造器, 特異常法。刀成, 自言漢鈍弱, 不任淬用, 蜀江爽烈, 是謂大金之元精, 天分其野。乃命人於成都取之。有一人前至, 君以淬刀, 言雜涪水, 不可用。取水者猶悍言不雜, 君以刀畫水雲, 雜八升, 何故言不?取水者方叩頭首伏雲, 實於涪津渡負倒覆水, 懼怖, 遂以涪水八升益之。於是咸共驚服, 稱為神妙。刀成, 以竹筒密內鐵珠滿其中, 舉刀斷之, 應手靈落, 若薙生。故稱絕當世, 因曰神刀。」

in quenching with water of differential qualities. With these skills, he could make iron swords that attain optimum hardness. Pu Yuan's utilization of water from the Shu river (*Shu jiang*) in the quenching process implies that Han metalworkers had already gained considerable insights into the relationship between the cooling rate in quenching and the mechanical properties of iron.

The advancement of iron metallurgy in the Han period was also depicted in tomb paintings. In Shandong Province, a major iron-smelting center in the Han empire, paintings portraying the process of iron smelting, smithing, and casting have been unearthed in Hongdaoyuan and Huangjialing in Teng county. The one from Hongdaoyuan depicts bellows with multiple blowpipes and the iron manufacturing process in an iron-smelting workshop. The painting from Huangjialing depicts an arms manufacturing workshop, which provides us with first-hand information on weapon production in the Han period. There are three metalworkers in the drawing. Two of them, both on the right side of the painting, appear to be engaged in the acts of annealing iron in a furnace and forging hot iron. The third metalworker, on the left side of the drawing, is inspecting the sharpness of the weapons. Other weapons are hung on the walls.

During the Han dynasty, the highly developed iron industry supplied numerous iron weapons for external wars. The abundance of iron weapons enabled the empire to campaign against the Xiongnu in the north, the Yue "barbarians" (*yiyue*) in the south, establish protectorates in the Western Regions (*Xiyu*), and in general expand the territories of the empire. Such military campaigns and territorial expansion highlight the significance of iron metallurgy in the Han dynasty.

Like the Western Han, weapon production during the Eastern Han continued to be directly controlled by the state. The Eastern Han empire adopted the Western Han's administrative model to divide state arms production into two systems—the central and the local systems. Both were coordinated by specialized institutions and officials. Apart from the *kaogong* (craftsmen) and *shangfang* (officials who supplied prestige goods to the royal family) working for the central government, all ranks of *gongguan* (officials who managed craftsmen) and *tieguan* (officials who coordinated iron production) were assigned tasks in weapon production. According to the historical records, the authorities imposed strict standards on weapon production in order to uphold stable production and quality. Production units had to ensure that the weapons were made to the required standard, and moreover, in accordance with the state's plan. The quality of weapons was tightly monitored by designated departments. However, by the reigns of the Emperors An and Shun of the Eastern Han (*Han Andi, Han Shundi*), political corruption caused a decline in the discipline and efficiency of the administration, which in turn had a detrimental effect on the quality of weapons. *The Imperial Readings of the Taiping Era* cites Cui Shi's *Commentary on Politics* (*Zhenglun*), "Corrupt officials embezzle money [from the production] and appoint wily workers who persistently steal [the assets]. As a result, hemp is being used to cover bows and crossbows. Iron is quenched in alcohol containers, so [the iron products are] fragile while the smelting operations become easier. Armors are too small to be worn by people. The reason the Han were able to restrain the Hu was their powerful and strong weapons. Now, armors are no longer tough, and

crossbows are no longer powerful. [The Han] have lost the advantage over [the Hu] (Li et al. 2000)." Textual evidence shows that even though the Eastern Han inherited a robust weapon production system from the preceding dynasty, owing to flaws in the institutions responsible for arms manufacture, weapons in the late Eastern Han period were of poor quality and not battleworthy. Hence, the stability of a state, along with an upright government with determination and empathy, are vital to state arms manufacture.

2 The Ancient Techniques of Iron Smelting in Shaft Furnace

In ancient China, iron was a resource of great strategic importance to state economy and general welfare. In addition, the technological level and the productivity of iron metallurgy are key parameters to gauge the development of a society.

Generally speaking, there were two parallel but distinct trajectories in ancient steel technology. One of them, originating in western Asia, derived from the carburization of bloomery iron. This technology was extensively used in the ancient world. Another one, based on the production of steel from cast iron, was invented in China. Both technologies were used in China, but they played different roles in Chinese history. Current evidence suggests that Chinese metalworkers started to use shaft furnaces to produce cast iron no later than the sixth century BCE (University of Science and Technology Beijing 2016, 4). Subsequent development of iron and steel metallurgy centered around cast iron and its conversion to steel.

Cast iron and steel metallurgy formed the backbone of the iron and steel industry in ancient China. It provided cost-effective raw materials to low- to mid-end manufacturing industries, and greatly fostered developments in agriculture, crafts, armament, and transport. Such economic benefits brought prosperity to ancient China, making it one of the most advanced civilizations in the ancient world. It is impossible to overstate the significance of cast iron and steel metallurgy, which must be considered among the most important inventions in Chinese history.

As one of the first items inscribed on the National List of Intangible Cultural Heritage in China, the craft of sword-making in Longquan has more than two thousand and five hundred years of history. This precious heritage has been handed down through generations. However, a key element of this craft, namely producing cast iron through iron smelting in shaft furnaces, is gradually being lost because of a lack of interest. As an inheritor of the sword-making craft, I consider it my duty to conduct in-depth research and rediscover every aspect of sword-making in ancient China, including the techniques of smelting iron in shaft furnaces, converting cast iron to steel, forging and polishing, etcetera. Reconstructing the *chaîne opératoire*, an integral part in the ancient sword-making process is undoubtedly our responsibility as inheritors of China's sword-making heritage. Indeed, more than a social responsibility, it also stems from my passion as an inheritor of the way of sword-making.

2.1 Constructing the Shaft Furnace

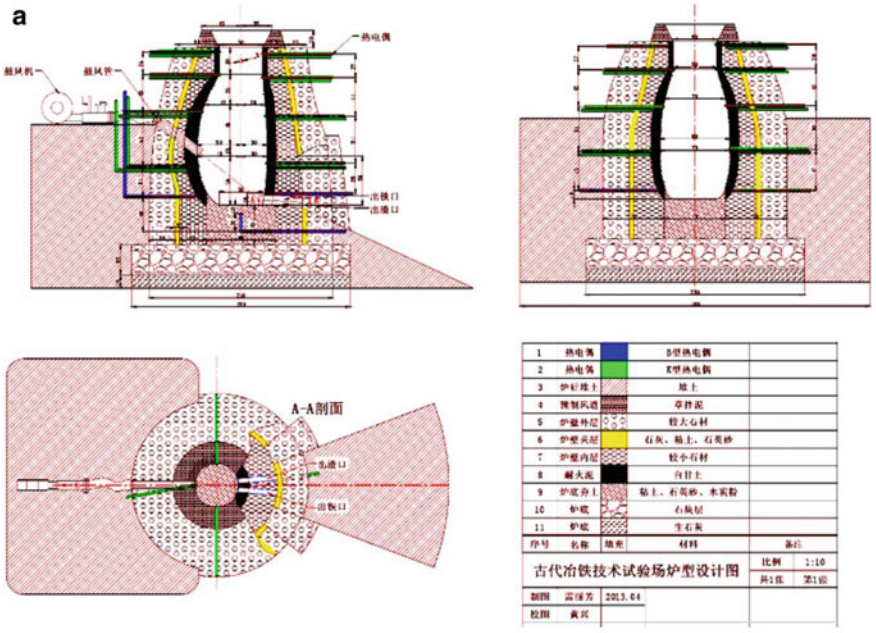
In spring 2019, Longquan Jiancun Sword Research Academy collaborated with the Institute of Historical Metallurgy and Materials, University of Science and Technology Beijing, with support from Professor Huang Xing from the Institute for the History of Natural Sciences, Chinese Academy of Sciences, to reconstruct the ancient shaft furnace. In April 2019, I undertook experimental reconstruction of two shaft furnaces and a Han ring-pommel *dao* in accordance with the ancient methods. The collaboration connected professional researchers from the academia and expert craftsmen from the community. This project followed the model of iron-smelting shaft furnace that was used between the Warring States and the Han periods and drew reference from the archaeological remains of ancient shaft furnaces. We applied local quartz, clay, sand, charcoal powder, etcetera, to build the furnace. We also burned wood to produce the type of charcoal that is suitable for iron smelting. In addition, we extracted iron sand from the Ou river (*Ou jiang*) in Longquan according to ancient iron-smelting practices. We designed the bellows and devised plans to feed ores, supply charcoal, and blast air into the furnace from the start of iron smelting. In the experiment, we also applied various analytical instruments, including thermocouples, infrared thermometers, thermographic cameras, hot wire anemometer, pressure transmitters, paperless recorder, portable X-ray Fluorescence device (pXRF), etcetera, to monitor the experiment and collect data.

Following the smelting operation, we dissected one of the furnaces to photograph and make observations on the internal space, and to collect samples for further analyses. These steps formed the first stage of this experiment. Using the cast iron produced from smelting in shaft furnaces as raw materials, we reconstructed the ancient process to convert iron to steel, and forge the sword with cast iron and decarburized cast iron.

There are eight main steps in reconstructing the craft of traditional iron smelting with the shaft furnace, which I present below:

1. Design the furnace with reference to furnace types used during the Warring States and Han periods (See Fig. 7.2 a, b).
2. Process iron sand from the Ou river in Longquan by washing and filtering out impurities (See Fig. 7.3 a–c).
3. Burn wood to produce the required type of charcoal (See Fig. 7.4 a, b).
4. Reconstruct the shaft furnace using local quartz, sand, clay, and charcoal powder from Longquan (See Figs. 7.5, 7.6, 7.7, 7.8, 7.9, 7.10 and 7.11).
5. Smelt iron sand in the shaft furnace (See Figs. 7.12, 7.13, 7.14 and 7.15).
6. Collect and analyze data. Details of the result of experiment are recorded in unpublished document, "Reconstructing the Thousand-year-old Ironmaking Process" (*Qiannian zhi lian shiyan baogao*)[3] (See Figs. 7.16 and 7.17).
7. Dissect the furnace to examine the changes in temperature inside the furnace and the reduction of iron sand (See Figs. 7.18, 7.19 and 7.20).

[3] This report is for internal use and unpublished.



b

Section	Size for Reference	Actual Size
d	610	366
h1+h2	1190	714
D	880	528
h3	300	180
h4	2800	1300-1680
h5	700	420
d1	610	366
Tuyere position (h2 and above)	490	294
Opening for adding iron ores	280	168

Unit : mm

Fig. 7.2 Layout drawing of a traditional iron-smelting shaft furnace

8. Apply the *guan'gang* (literally, "steel-pouring") method to make the Han *dao*. Referring to extant samples of the Han *dao* as well as records of the Han sword production (Geng and Bai 2003, 349–350), we strictly followed the traditional sword-making techniques by applying the *guan'gang* method and performing repeated folding, stacking, and forging (See Figs. 7.21, 7.22, 7.23, 7.24 and 7.25).

Fig. 7.3 Wash high-grade iron sand from the Ou river, Longquan, to remove impurities

Fig. 7.3 (continued)

Fig. 7.4 White charcoal made from burnt Wugang oak. They are of great heat output and can burn for a long time

Fig. 7.5 The quartz mine in the western part of Longquan. It yields highly pure and high-quality quartz

Fig. 7.6 Break quartz with a hammer to construct the furnace

2.2 Observations from Reconstructing the Iron-Smelting Process with the Shaft Furnace

My iron-smelting experiment drew extensive reference from shaft furnaces used during the Warring States and Han dynasty. The structure of the furnace was inferred from the archaeological remains of iron-smelting sites. We built the furnaces using local quartz, clay, sand, and charcoal powder from around the Longquan region. The construction of the two furnaces took more than half a month and required around 15 tons of quartz. For this experiment, we specially produced 3.6 tons of charcoal that were suitable for iron smelting. From the Ou river in Longquan, we extracted 1.3 tons of iron sand, which corresponded in quality to those used for smelting iron in ancient times. In addition, we designed bellows to blast air into the furnace.

Fig. 7.7 The foundation of the furnace is crucial. The soil underneath the designated area for the furnace was tamped

We also formulated plans to supply ores, charcoal, and blast of air into the furnace during the operation of iron smelting. This experiment applied five thermocouples, an infrared thermometer, a thermographic camera, a hot wire anemometer, a pressure transmitter, a paperless recorder, and a portable X-ray Fluorescence device (pXRF), etcetera, to keep track of the entire smelting process, and to collect data. Throughout this experiment, we dried the furnaces three times during construction. The furnaces were kept burning for around twenty hours each day and consumed more than 500 *jin* of wood. It took us around a week to build one shaft furnace. Before the start of iron smelting, the furnaces had to be preheated for around thirty hours until their interior space had been evenly heated up. The first round of iron smelting took around five hours to convert iron ores into molten cast iron. It burned about a ton of charcoal to smelt 500 *jin* of iron sand, which yielded around 150 *jin* of cast iron. After the smelting operation, one of the furnaces was dissected. Its interior was photographed while observations were recorded. Samples were also collected from the furnaces for analysis. These steps formed the first stage of this experiment.

The second stage of the experiment used the cast iron produced as raw materials to replicate the Han *dao* by applying the *guan'gang* ("steel-pouring") technique, which I describe below.

Fig. 7.8 Start building the furnace wall by piling up a mixture of fire clay and red clay with quartz

3 Reconstructing the Han Ring-Pommel *Dao*

3.1 Looking for an Ancient Dao

Intact Han ring-pommel *dao* rarely survives, and it took me many years to find an ideal Han ring-pommel *dao*. Eventually, in 2013, I chanced upon this exquisite, nearly intact Han *dao* in Guangxi Province. Its blade measures 96 cm in length while its hilt is 13 cm long. Its pommel is 4.8 cm in diameter and 3.3 cm tall. It has a smooth, graceful profile with a nice texture. Thereafter, I am motivated to reconstruct this *dao*!

Fig. 7.9 Burn charcoal to roast the furnace to remove water content from the building material. It facilitates rapid temperature rise during iron smelting

3.2 Reconstruction of the Han Dao

3.2.1 Forging the Blade

The reconstruction of the Han *dao* applied welding to laminate three layers of *bailian gang*.[4] The core layer of the blade is made from the cast iron obtained from smelting in the traditional shaft furnace. It was subsequently mixed with wrought iron in a ratio of 4:6 (four parts cast iron, six parts wrought iron), then repeated-folded, stacked, and hot forged following the ancient *guan'gang* technique. Since the cast iron contained significant impurities, it was necessary to refine it by folding, stacking, and hot forging. This step had to be repeated many times until reaching around 36,000 stacks, at which point the impurities were completely removed as the steel became pure and strong. The two outer layers consisted of the materials recycled from ancient *dao* blade fragments (See Fig. 7.26). As these fragments were more than a thousand years old, many were severely corroded, and a lot of impurities were forced out during forging. Thus, forging a new *dao* required more than around twenty

[4] The author refers to the welding process as the *maya* technique applied in brick wall construction. It involves constructions of brickworks that sandwich a column of reinforced concrete with comb joints. This technique improves the strength and stability of the building.

Fig. 7.10 Limestone footsteps were constructed for the convenience of ore feeding

Fig. 7.11 Roast the furnace to dry off water in its interior

old fragments. Three layers of ferrous metal were forged. The core part consists of *bailian gang* made by the *guan'gang* technique, sandwiched by the *bailian gang* from ancient swords (See Fig. 7.27). The three-layer composite structure was then meticulously forged together. This is the most laborious and technically challenging step. Success mainly depends on the smith's experience in forging and his ability to control the flame, as welding the iron bars depends on attaining the right flame temperature in the furnace. If the temperature is too high, the iron will melt; if it is too low, the iron bars will not bind. It must reach the precise equilibrium before the bar is withdrawn from the furnace, then hammered vigorously to complete the final step. If a mistake occurs, ashes will be enfolded by the metal layers and the *dao* will become defective. During the process of forging this blade, several defective *dao* was made. The material applied in forming the blade was carefully selected from five semi-finished steel slabs.

Fig. 7.12 Feed ores and charcoal into the furnace

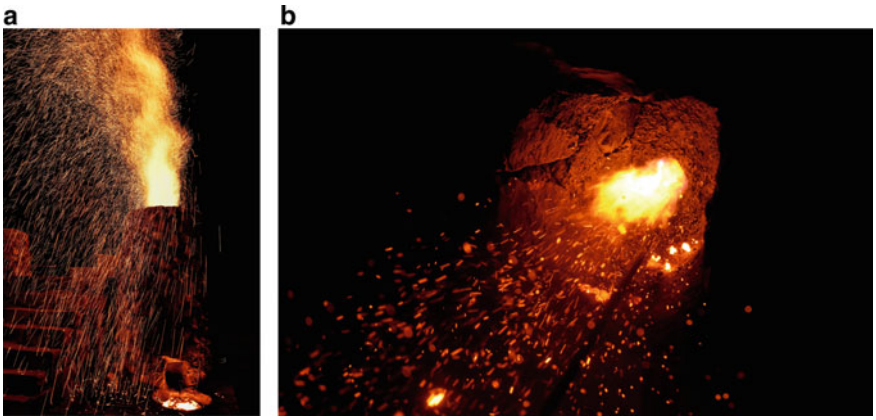


Fig. 7.13 Continue feeding ores. The sparks generated flared up to a height of more than 10 m

The blade of the original Han ring-pommel *dao* has a quadrangular cross-section, with a thick back and a fine edge, and a slight inverse curve toward the point. During the reconstruction, I compared the new blade with the original over and over to ensure they are identical. The blade was manually polished, particularly on its plane surfaces. After fine polish, both sides of the blade reflect a whitish light while the ridges produce a gleam. The patterns on the blade are exquisite and vivid. In my view, the blade has achieved the level of "*shuangxue longquan*" ("frosty and snowy Longquan [sword]"). The heat treatment of the Han style *dao* involved quenching with water from the Qixing well, the oldest well still in use in Longquan. The hardness of its edge reaches around 59HRC while its back attains hardness of around 45HRC. The blade is of high quality and may easily cut through five straw mats.

3.2.2 Shaping the Profile of the Blade

The *dao* blade profile was formed with reference to the ancient sword. Every detail of the *dao* was carefully matched, particularly the point, which shows ingenious details, with a slight warp toward the tip and a streamlined profile. One would never be able to reconstruct such an exquisite curvature if the ancient *dao* was not taken as a reference (see Fig. 7.28).

3.2.3 Covering the *Dao* with a Layer of Soil and Annealing

Annealing the blade with a soil cover strengthens its mechanical properties. Its edge was enveloped in a thinner layer of soil while its back was wrapped with a thicker cover (See Fig. 7.29). This differential hardening technique allows one to manipulate

Fig. 7.14 Tap iron for the first time

heat dissipation in quenching to obtain a harder blade edge and a softer back, which gives the blade an optimal balance of hardness and toughness.

The key to heat-treating the blade lies in precise control of flame temperature. It is a challenge to achieve an even heat treatment on a long thin blade. However, uneven temperature causes either excessive or insufficient heat in the blade. The blade must

Fig. 7.15 Release molten iron for the first time

be heated evenly when it is being quenched, which can be determined by its color. I had to pull the blade out of the furnace back and forth to heat it evenly in the flame until it was heated to around 700 degrees Celsius. It was then promptly removed from the furnace and immersed in the sink (see Fig. 7.30 a, b).

During quenching water sizzled and released white stream, but the soil cover on the sword had to remain intact (see Fig. 7.31). This is difficult to do. As the red-hot blade contracts dramatically during quenching, the soil enclosing the blade can easily fall apart. If that happens, heat will not be dissipated from the blade body as planned. The back of the blade will have cooled too quickly and will be over-hardened. The optimal condition is to maintain an intact soil cover. When the blade is quenched in water, its edge, which is enveloped in a thin layer of soil, cools more rapidly. Its back, of which the soil cover is thicker, cools at a slower rate. In this way, both hardness and toughness are optimized in the blade, which produces a superior blade (See Fig. 7.32).

3.2.4 Adjusting the Profile of the Blade

After quenching, the blade developed immense internal stress that could cause deformation. Hence, the curvature and surface of the blade had to be adjusted in accordance with the form of the original *dao* (See Fig. 7.33 a, b). After tempering, the blade was cold-forged to carefully fine-tune its curvature and smooth its surface. Any mistake could cause the blade to break, and all the hard work would be in vain.

Fig. 7.16 Install a thermometer during the construction of the furnace

3.2.5 Polishing and Sharpening the Edge

Polishing is an extremely delicate craft. Since the blade of the Han ring-pommel *dao* has a slightly inward curve, I had to fashion a smooth curve to connect the blade's edge and its ridge (See Fig. 7.34 a, b). Such polishing could be easily overdone, leading to indentations in the blade, which is why it demands extra attention. Inattentive over-polishing will create rough surfaces, which will disrupt its geometry. Therefore, when I was polishing the blade, I must consistently adjust the angle of the sharpener to achieve a flawless curvature and the desired shape.

Fig. 7.17 Fill the gaps between quartz with red clay

3.2.6 Completion

As the original *dao* has survived for more than a thousand and eight hundred years, the scabbard is nowhere to be found, with only traces of the carburized wooden hilt attached to the blade. Therefore, I had to refer to other sources when making the scabbard and the hilt (Liu et al. 2003). From carving and applying lacquer to the wooden scabbard, to twining threads around the hilt, I endeavored to revive the authentic spirit and flavor of the ancient *dao* every step of the way. Finally, the reconstructed Han ring-pommel *dao* has a graceful blade, with a smooth contour and natural banding patterns on the surface. The blade is 27–28 mm wide and 96.5 cm long. Excluding the ring-pommel, the hilt is 13 cm long. The entire *dao* weighs 1000 g. Wrapped in waxed cotton cord, the hilt affords a comfortable feel in the hand (See Fig. 7.35a, b).

Fig. 7.18 Dissect the furnace to observe the temperature changes inside

4 Conclusion

During the process of making the Han ring-pommel *dao*, from processing iron sand to building the furnaces, producing charcoal, iron smelting, and forging to mold the semi-finished steel bar, along with annealing of the soil-wrapped *dao* and polishing of the blade, I spent more than eighteen months. In total, it took me around twenty-four months to make this Han ring-pommel *dao*. It is impossible to describe the challenges and satisfaction I experienced during this process. Nonetheless, whenever I felt exhausted and discouraged, the mere thought of the significance of this project motivated me to persist. Whenever I dive into the exquisite details of the precious sword, I am always mesmerized by the consummate craftsmanship of swordsmiths

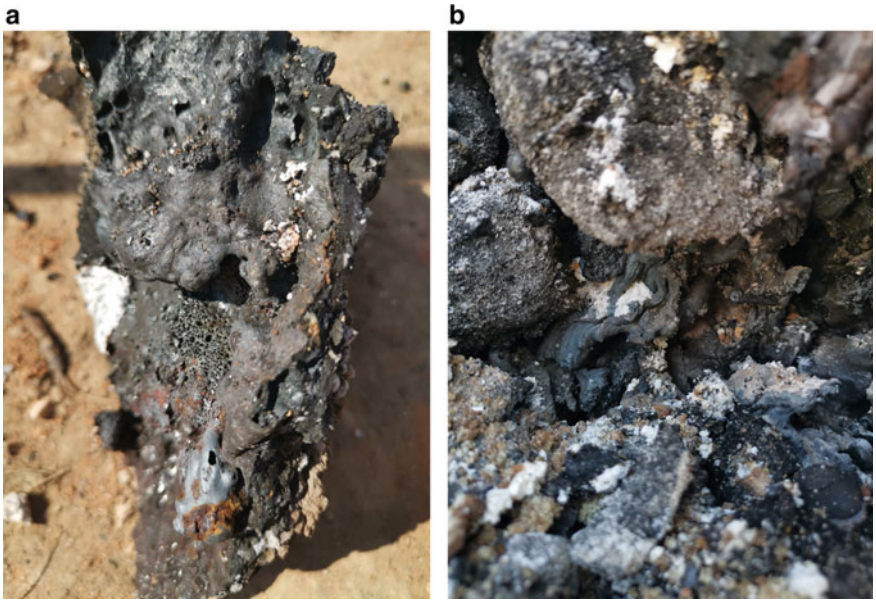


Fig. 7.19 Slags that were drained out of the furnace prior to molten iron

one thousand eight hundred years ago. They also constantly remind me that I have plenty of room to improve.

The ancients once said, "save petty courage for great courage." For the revival of the Chinese sword culture, reconstructing ancient iron-smelting furnaces and reconstructing the precious Han ring-pommel *dao* are not only the responsibilities of modern swordsmiths, they are also crucial to the future of Chinese sword culture. In recent years, sword collection and production have become increasingly popular. However, due to lack of research on Chinese sword culture as well as the influences from popular martial culture, in particular *Wuxia* literature (literature of martial heroes), many swords made "in the style of" ancient blades are inaccurate, as the construction process often fails to follow historical sword-making methods, which in the end distorts historic sword-making techniques and technology. Such distortions have a detrimental impact on contemporary revival of Chinese sword culture. Importantly, they mislead the public about Chinese swords. Hence, I believe we must start from serious research on ancient swords—which necessarily involves reconstructions that strictly follow ancient sword-making processes. Then, and only then, on the basis of the reconstructed historic methods, do we innovate.

Fig. 7.20 Dissect the furnace to observe the melting of iron sand

Fig. 7.21 Constructing the furnace

Fig. 7.22 Fold, stack, and hot forge the steel repeatedly with traditional methods to remove impurities from steel

Fig. 7.23 The product of *guan'gang*, an amalgamation of cast iron and wrought iron

Fig. 7.24 Fold, stack, and forge the blade to refine it

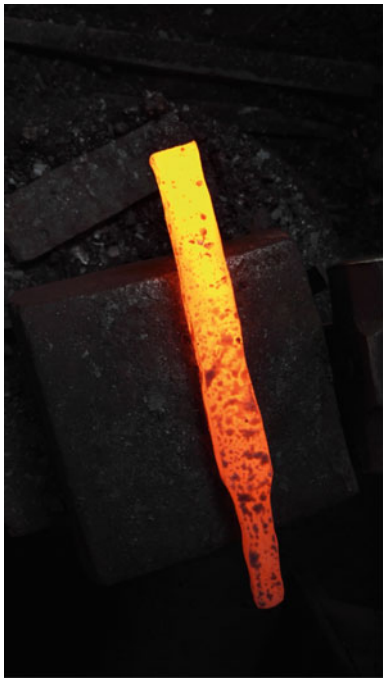


Fig. 7.25 The refined blade that has been repeatedly folded, stacked, and forged

Fig. 7.26 The three-layer composite steel that was used for forging the blade

Fig. 7.27 Ancient blade fragments are placed in-between the *bailian gang* steel. The outer layers are *bailian gang* derived from recycled ancient blades, while the core layer is *bailian gang* made by the *guan'gang* technique

Fig. 7.28 Comparing the semi-finished *dao* with the ancient blade

Fig. 7.29 The *dao* was covered with soil to be air dried

Fig. 7.30 Heating the blade before quenching

Fig. 7.31 Quench the blade in water

Fig. 7.32 Coldwork the blade to adjust its shape

Fig. 7.33 Adjust the shape of *dao* to conform to the original Han *dao*

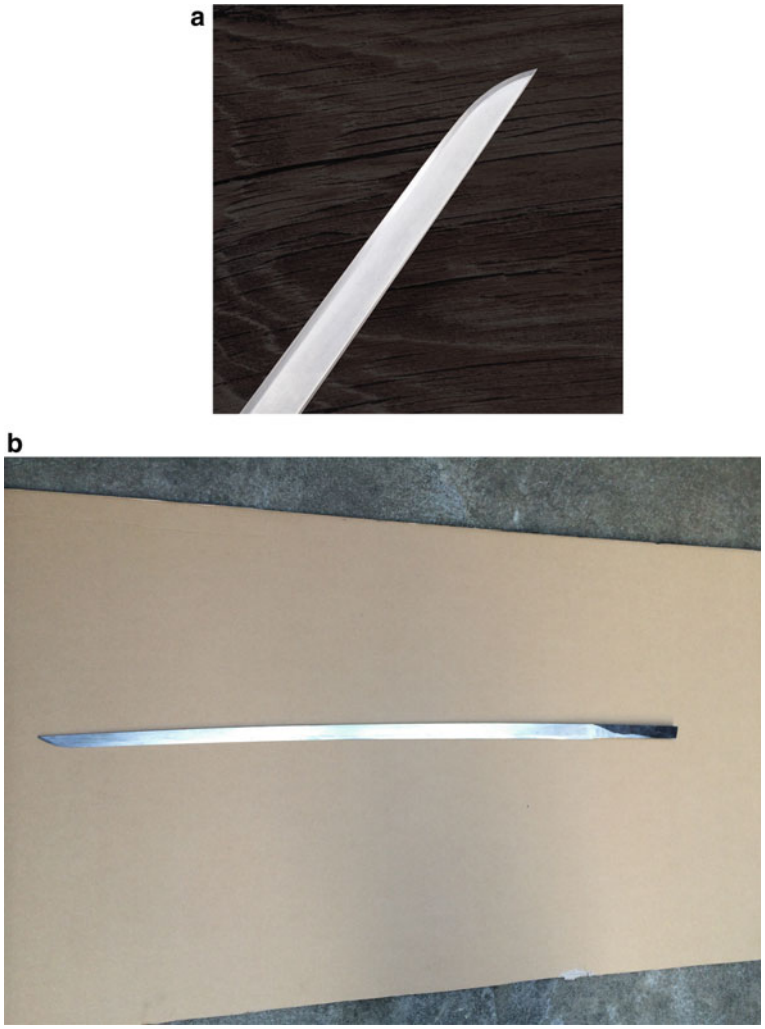


Fig. 7.34 Fine polish

Fig. 7.35 Finished product and a comparison with the ancient Han *dao*

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Decorative Techniques in Oriental Swords: *Savoir Faire* in Craftsmanship and Artistry

Betty Lo

Abstract One important aspect in the study and appreciation of arms is the techniques and methods for their decoration. The wide range of materials and techniques used in the creation of swords and daggers were intended to add to the aesthetic qualities of functional items, either for everyday or ceremonial use. Throughout the ages, beautiful swords and daggers were worn by the elite and were presented to warriors and courtiers as gifts to symbolize victory, honor, virility, and to reinforce the bond of loyalty. They were also worn by men as jewelry of prestige and status. Techniques used by artisans to embellish these swords and bladed weapons are the subject of this paper. Examples from museums and private collections are selected to demonstrate the exquisite craftsmanship of gilding and coloring, inlay and damascening, stone and gem-setting, embossing, chasing and engraving, enameling, 3D carving, wiring and filigree, etching and openwork. This chapter focuses on how these techniques were used to produce distinctive details of decorated antique swords and daggers of Eastern origins from the Ottoman empire, Persia, and India.

Keywords Sword · Dagger · Oriental · Decoration · Gold · Islamic · Techniques · Ceremonial · Symbolic

1 Sword Decoration in Antiquity

Major innovations in the history of edged weapons are the adoption of different materials—from stone to different metals and precious materials—to indicate artistry and status, and the developments of different styles of blades to support or counteract different battlefield tactics and defensive equipment.

The oldest known decorated swords, dated to 3300–3000 BCE, were found at Arslan Tepe in the Taurus mountains of southeastern Anatolia in Turkey (Palmieri 1981). Nine swords, ranging in length from 45 to 60 cm, were found in a palace

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Fig. 8.1 A gold blade excavated at the Royal Cemetery in Ur, whose hilt has gold bead inlay

complex and were made from an arsenic-copper alloy. Three of them were beautifully inlaid with silver.

Two gold swords from around 2500 BCE were uncovered during excavations at the Royal Cemetery in Ur, a city of southern Mesopotamia (a historical region now covered by Iraq). One has a blade and lower portion of the hilt made of gold, while the upper portion of the hilt and pommel are comprised of a carved white stone with gold bead inlay for decoration. The other has a blade of gold, while the hilt has gold bead inlay (see Fig. 8.1). Of particular interest is that this sword was found with its sheath intact. The sheath is made of gold decorated in openwork and has two vertical slits on the back to allow it to be attached to a belt.

In ancient Egypt, daggers were usually made of copper or bronze. In pre-dynastic Egypt (circa 3100 BCE), daggers were adorned as ceremonial objects with golden hilts. More ornate and elaborate construction started to appear in the New Kingdom of Egyptian history. The opening of the tomb of Tutankhamun (1342–1325 BCE) revealed two daggers, one with a gold blade, and one of meteorite iron with gold hilt and sheath with a floral lily motif on one side and a feather pattern on the other (see Fig. 8.2). The daggers are exceptional because of their composition and their high manufacturing quality.

From the region of the Aegean Sea, which separates Greece from Turkey, there are also finds of gold-hilted swords and daggers from the Minoan civilization (2700–1450 BCE) centered in Crete and the Mycenaean civilization (1600–1100 BCE) (see Figs. 8.3a, b).

Found in a Hattic royal tomb dated about 2500 BCE, at Alaca Höyük in northern Anatolia, is another gold-hilted dagger with a smelted iron blade (see Fig. 8.4). In the first millennium BCE, the Persian armies used a sword that was originally of Scythian design called the *akinaka* (*acinaces*). However, the great conquests of the Persians made the sword more well known as a Persian weapon, to the extent that the true origin of the weapon has been lost. The name *akinaka* has since been used to refer to whichever form of sword the Persian army happened to be using at the time (see Figs. 8.5).

Fig. 8.2 The two daggers excavated in the tomb of Tutankhamun (Developed by Eric Suen; derived from Viking Sword, Ethnographic Arms and Armors, Meteoric Blades on Bronze Age Weapons)

What does the original Scythian *akinaka* look like? An impressive burial of an ancient Scythian warrior has been found in Ukraine in 2019 which has yielded many treasures among which is a remarkable gilded *akinaka* (Whelan 2019). The weapon, which is somewhat corroded, is a remarkable piece. It has a ribbed grip and a cross-guard, which are in good condition and still have some of their original gilt. Early Scythian precious metal technology in the manufacture of gold jewelry and ornamented weapons were recovered in a kurgan of a seventh-century BCE Scythian royal necropolis in the Republic of Tuva, in Siberia between 2000 and 2003. Iron weapons decorated with gold and silver inlay, such as daggers, knives, arrowheads, and a battle-ax form part of the precious grave goods. The majority of these weapons are decorated in the Scythian animal style (see Figs. 8.6).

Other cultures from circa 600 BCE also had edged weapons embellished in gold. These included Assyria, which fell to the Babylonians in 605 BCE; Persia, which conquered Babylon in 539 BCE (see Fig. 8.7); the Medes, who joined with the Persians in the conquest of Babylon, and the Scythians, who migrated from Russia and Afghanistan to the Near East (see Figs. 8.8). All these weapons were unearthed from the graves of kings and members of the ruling class of these empires.

In China, precious materials such as turquoise were used to decorate bronze dagger ax as early as the Shang dynasty (1600–1046 BCE) (Harvard Art Museum 1943) (see Fig. 8.9). Recent excavations demonstrate that the use of gold for sword decoration had been widespread since the eighth century BCE. Fittings and rings of gold appear regularly in late Western Zhou tombs and in tombs of the eighth to sixth centuries in Henan and Shaanxi Provinces. Gold is likely to have worked its way to the heart of China from the West, and in many cases, it is found as part of weapons. During the late twentieth century, discoveries were made from a Xiongnu tomb of Warring States period (fourth century BCE) in Xigoupan, Inner Mongolia, of a group of gold sheets bearing embossed animal motifs. These gold sheets, found near the decayed wood scabbards of both iron and bronze swords, were produced in different sizes

Fig. 8.3 Gold hilted swords and daggers were found in the region of the Aegean Sea from the Minoan civilization and the Mycenaean civilization

Fig. 8.4 Gold hilt dagger from a Hattic royal tomb, northern Anatolia, 2500 BCE

Fig. 8.5 Gold Scythian sword from the fifth century BCE

Fig. 8.6 Daggers from the royal necropolis in the Republic of Tuva, Siberia, seventh century BCE

and shapes, for putting together as claddings of the scabbards. Rich burial objects including gold and silver ornamental plaques and pottery were also discovered in the same tomb, indicating the tomb owner was an elite warrior of Xiongnu origin (see Fig. 8.10).

Fig. 8.7 Persian gold ceremonial dagger

Iron daggers and short swords decorated with cast gold hilts were also uncovered from excavations in Shaanxi Province. There are two known examples, respectively in the British Museum and in China of openwork cast gold hilt decorated with interlaced dragons (see Fig. 8.11). The openwork decoration with spirals and granulation of the cast gold hilt was derived from Central Asia. The hilt shape of the two daggers is known from Central Asian and Bactrian blades and is also characteristic of the steppe region (The British Museum 1937).

It was in the fifth century BCE that combination techniques were deployed to decorate swords in China. The Sword of Goujian is one of the earliest known swords in China that deployed sophisticated multiple metallurgical techniques. Black rhombic etchings cover both sides of the blade and blue glaze, and turquoise is imbedded on the sword handle. On one side of the blade, two columns of gold inlaid text are visible with eight characters in ancient Chinese script near the hilt. The grip of the sword is bound by silk while the pommel is composed of 11 concentric circles. The original owner of the sword was Goujian (496–465 BCE), King of Yue.

Fig. 8.8 Scythian gold hilt sword, fifth century BCE (Collection of the State Hermitage Museum, St. Petersburg). Photograph © The State Hermitage Museum/Photograph by Vladimir Terebenin

Fig. 8.9 Turquoise inlaid bronze dagger, Shang dynasty, China

Contacts between China and Central Asia during the Han dynasty were facilitated through extensive military campaigns, diplomatic missions, and scouting expeditions to regions as far as the Black Sea and the Persian Gulf, resulting in an unprecedented growth of commerce and cultural exchanges along the route which became known as the Silk Road. Knowledge of certain aspects of Near Eastern material culture such as ornamentation of luxury wares expanded exponentially by China's mercantile contacts with the Mediterranean region and the Islamic world from the Tang dynasty onward. Scabbard fittings of distinctly Persian form are testaments to the influence of Western Asia on the metal craft of medieval China (Tom 2006).

Fig. 8.10 Examples from the Mengdiexuan collection similar to the gold sheets unearthed at a Xiongnu tomb of Warring States in Xigoupan, Inner Mongolia

Fig. 8.11 Cast gold hilt, Eastern Zhou period, eighth century BCE, Shaanxi Province, China

2 A New Era

Since the seventeenth century, decoration of swords has taken many forms, from the simplest addition of precious elements like gold and silver to more fancy decorations involving the mechanical alteration of the shape, form, and surface, or adorning them in a variety of artistic techniques and styles with additional materials such as semi-precious stones, enamel, ivory, coral, shell, bone, and horn. Sometimes multiple materials and techniques might be combined to decorate one single sword.

Many examples of Oriental arms are especially noteworthy for their opulent ornamentation. They were decorated using a variety of techniques such as gold and silver damascening, inlaying, encrusting, gilding, wiring, and filigree as well as gem-setting and enameling. On some ceremonial items, the decoration could achieve such sumptuous and spectacular effects that the final appearance of the object has more in common with an item of jewelry than a weapon (The Metropolitan Museum of Art 2004).

Through the written and pictorial records in museums, numerous miniatures, and private collections, we came to know that the majority of weapons at the Mughal court in India of the seventeenth century and onward are notable for the richness of their materials, and the great opulence in display. Lavishly adorned hilts were popular in Turkey, Iran, and particularly in Mughal India. Many of the finest examples, with hilts and scabbards sculpted in jade and precious material like crystal, ivory, or rhino horn, were inlaid in gold and gemstones. Others were beautifully carved with animal head pommels (Hales 2013).

Examples from the Mengdiexuan Collection are used here to demonstrate the different techniques applied to decorating edged weapons in the last four hundred years. A khanjar from the Mughal court, inscribed in gold in Devanagari reading, "Rai Sahib Raja Shri Ranjit Singh Ji dagger made in the armory 1882 (Mohtashemi 2018)" was embellished with dense floral and leafy sprays motif in thick gold overlay on the iron hilt and the metal mounts of the scabbard (see Fig. 8.12). This technique represents the peak of gold overlay craftsmanship of the Mughal court in the new era. Another example of applying multiple techniques and precious elements is a nineteenth-century Mughal court dagger from the former Louis Cartier's collection. On the white jade hilt of this dagger are kundan-set emeralds and rubies in floral design (Baral et al., n.d.) (see Fig. 8.13). The gilt-metal mounts of the scabbard were gem-set en suite on one side and with repoussé decoration of birds and flowers on the other side.

Princes and nobles of the Mughal court were often portrayed wearing a katar at their side. This was not only a precaution for self-defense but also meant to show off their wealth and position. Upper-class Rajputs and Mughals would even hunt tigers with a pair of katar. For a hunter to kill a tiger with such a short-range weapon was considered the surest sign of bravery and martial skill. Unique to the Indian subcontinent, katar is the most famous and characteristic of Indian daggers. Jade however was rarely found on katar hilt. But this katar of circa 1800, formerly in the collection of Muharram Jah Asaf Jah VIII, Nizam of Hyderabad (see Fig. 8.14) has an unusual hilt carved from one piece of jade. The H-shaped hilt, with two parallel upright arms and a pair of baluster-shaped grips, was carved from a single piece of fine quality translucent pale celadon jade. The sides of the upright arms of the katar are carved with floral sprays of stylized iris and lotus blossoms.

From the HH Sheikh Hamad bin, Abdullah Al-Thani collection is a kard with a clear rock crystal hilt carved in the form of a ram's head (see Fig. 8.15). The rock crystal has been selected for its clarity and carved in the form of a ram's head, with cabochon ruby eyes set in the kundan technique. Around the neck is a collar with parallel bands of gold wire bearing a square emerald locket under the chin. In complement to the ornate precision of the ram's head pommel, the flawless rock crystal is free from fissures or inclusions and brought out by a simple smooth polish. This dagger was articulated with three-fold visual pleasures: the carving of the zoomorphic hilt, the geological and gemological enjoyment of the pure natural quartz; and the connoisseur's appreciation of the virtuoso blade work in wootz.

Another notable example to demonstrate the great opulence in the decoration of Indian-edged weapons is a seventeenth-century Mughal tulwar with scabbard fitted

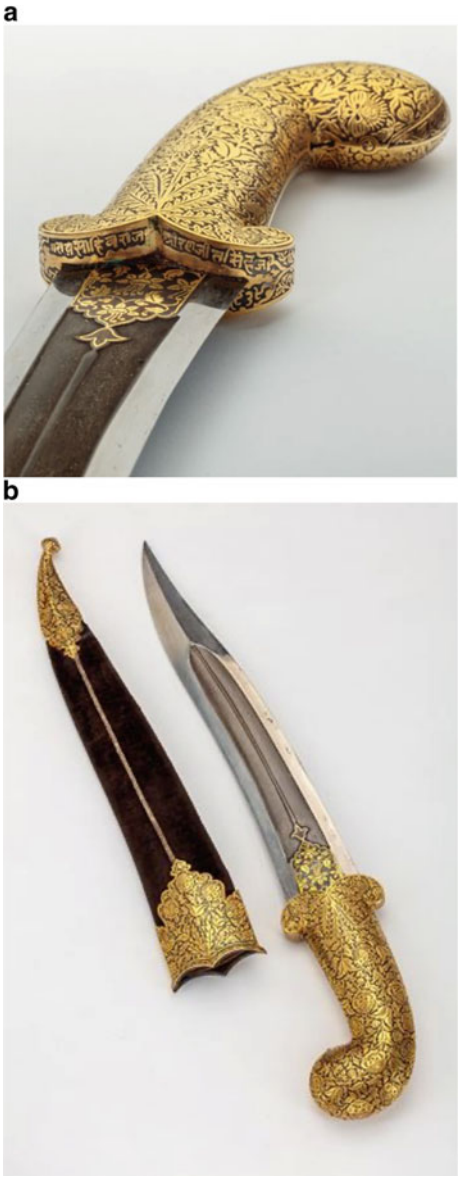

Fig. 8.12 Gold encrusted and inscribed 1882 dagger, nineteenth century, India

with a throat-piece and chape crafted in solid gold pierced in openwork showing lovebirds perching against dense vegetal motifs (see Fig. 8.16). The al-Sabah collection in Kuwait has two similar examples and both are illustrated by Salam Kaoukji in the book *Precious Indian Weapons* (Kaoukji 2017).

Fig. 8.13 Jade hilt gem-set dagger, nineteenth century, India

Fig. 8.14 Jade hilt katar, circa 1800, India

Fig. 8.15 Crystal hilt dagger with ram's head

Swords of high value, often elaborately decorated, were produced as presentation pieces and diplomatic gifts throughout the ages. An example is a classic nineteenth-century Arabian saif mounted in gold with an exceptionally long wootz blade (see Fig. 8.17). Associated with the tribal royalty of the House of Saud and the other royal houses of the Arabian peninsula coast such as the Bahraini royal family, the sword represents an apex of a classically known form. The decorative work on this example is one of the finest found on an Arabian saif, including filigree and the use of gold granules to form intricate scrolling geometric motifs and roundels. The cross-guard has a central floral element and bud-form quillons entirely covered in gold. A sword with a very similar scabbard and near identically decorated hilt is in the Victoria and Albert Museum in London. It was presented to Lord Athlone in 1938 by Shaikh Isa of Bahrain (Elgood 1994).

In the universe of Islamic arms, the jambiya is a characteristic form of dagger that is worn throughout the Arab World and wherever Arabian influence has penetrated historically. Jambiya differs in form or shape from one area to another. The upper-class tuza-type jambiya often has a rhino horn handle and ornate scabbard adorned with metal fittings. An example is a nineteenth-century belted jambiya from Yemen (see Fig. 8.18), splendidly ornamented with a rhino horn hilt inlaid with gold coins,

and a scabbard finished with large iron mounts decorated in damascened gold and silver (see Fig. 8.19). The broad leather belt is lavishly adorned and stitched with gold and silver thread.

Jambiya was taken by travelers throughout history to other cultures including the Ottoman empire, Persia, and India, where they were adopted with slight differences in the blade, hilt, and scabbard. Examples include a nineteenth-century Ottoman jambiya with plain agate hilt and silver filigree scabbard inlaid with coral (see Fig. 8.20), a Qajar jambiya with a steel hilt chiseled and gold-damascened in floral motif (see Fig. 8.21), a Gujarat jambiya with repousse gilt copper hilt and scabbard

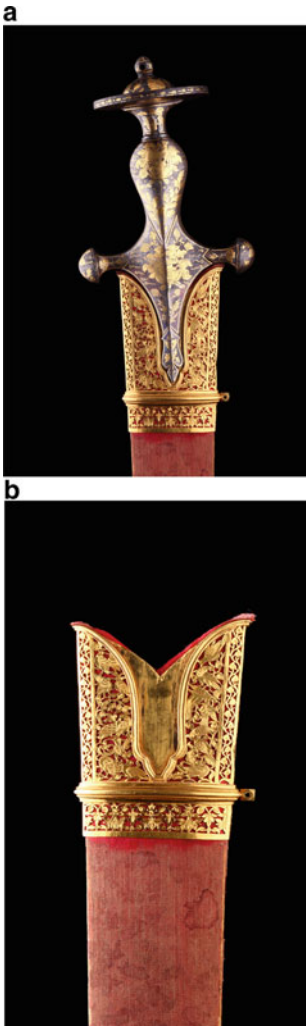

Fig. 8.16 Tulwar in openwork gold mounts, seventeenth century, India

Fig. 8.16 (continued)

mounts (see Fig. 8.22), and a luxurious Mughal gold-hilted jambiya set in diamond, rubies, and emerald (see Fig. 8.23).

Napoleon's conquest of Egypt in the late eighteenth and early nineteenth centuries sowed the seeds for European interest in the Middle East and, during the nineteenth century, there began a surge in admiration and interest for all things Eastern. European goldsmiths and jewelers were commissioned by wealthy patrons to make Eastern weapons like the jambiya with a bespoke purpose. An example is a diamond-studded, enameled gold jambiya made in fine European fashion workmanship that simulates the luxury objects produced in the great empires of the Ottomans, Persians, and Mughals (see Fig. 8.24). This jambiya bears a gold hallmark of France during the second half of the nineteenth century on the gold sheath and on one of the rings of the sheath. The sumptuous use of premium grade gemstones, the fine enameling, and the talismanic color combination of emerald green, ruby red, and sapphire blue are typical of the eighteenth- and nineteenth-century European design of luxury jewelry under the influence of Orientalism. It is likely that the dagger was a presentation object or an important diplomatic gift.

Meanwhile, contacts with Central Asia and India facilitated the import of western as well as Islamic ornamental elements to sword-making in China. The appetite for

Fig. 8.17 Saif with filigree hilt, nineteenth century, Bahrain

exotica and for products made domestically from rare, imported raw materials was a phenomenon among the upper class in the Ming dynasty and the Qing dynasty. Steel blades from Islamic countries were desirable commodities. Steel from Inner Asia, imported to China to be reworked into various luxurious goods often commanded prices higher than silver. Records from thirteenth–fifteenth centuries indicate that jeweled swords and iron were imported to China from Bengal.

The exchanges of material culture between the Middle Kingdom and the Islamic world were further invigorated by the tribute system and the maritime trade route across the Arabian Sea and Indian Ocean, up through the Straits of Malacca to the South China Sea. During the Qing dynasty, the scarcity and beauty of these exotic products inspired the perception that they were superior, and thus fueled a strong desire for the Qing emperors, notably the Emperor Qianlong, to commission native craftsmen to incorporate these exotic decorative elements into his own princely

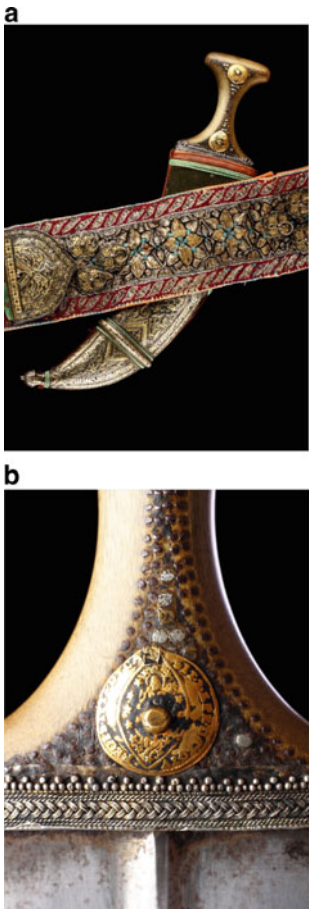

Fig. 8.18 Rhino horn hilted Jambiya and its belt, nineteenth century, Yemen

Fig. 8.19 The lavishly adorned scabbard finished with iron mounts decorated in damascened gold and silver

Fig. 8.20 A nineteenth-century Ottoman jambiya with plain agate hilt and silver filigree scabbard inlaid with coral

Fig. 8.21 A Qajar jambiya with a steel hilt chiseled and gold-damascened in floral motif

Fig. 8.22 A Gujarat jambiya with repousse gilt copper hilt and scabbard mounts

Fig. 8.23 A luxurious Mughal gold-hilted jambiya set in diamond, rubies, and emerald

Fig. 8.24 A diamond studded, enameled gold Jambiya made in fine European fashion workmanship which simulates the luxury objects produced in the great empires of the Ottomans, Persians, and Mughals

objects, including swords and sabers. Known as a martial artist and for his exotic taste, Emperor Qianlong in 1748 recruited a group of skilled craftsmen from all over the world as well as from his Imperial Workshop to create 30 swords and 30 daggers for himself between 1748 and 1757. These weapons are for personal collection to satisfy the emperor's appetite for luxurious exotica rather than for use and were inventoried and stored inside the palace. Among them was a 100 cm sword with steel blade, gilt-iron fittings, and wooden sheath covered with red-stained shark skin decorated with auspicious emblems in openwork. On the blade was inlaid in gold characters "number one of the Earth categories" (*dizi yihao*) and "emerging from clouds" (*chuyun*). This sword is presently kept in the Palace Museum (see Fig. 8.25).

Fig. 8.25 A sword manufactured during the Qianlong era, whose blade was inlaid in gold characters "number one of the Earth categories" (*dizi yihao*) and "emerging from clouds" (*chuyun*) (Collection of the Beijing Palace Museum)

Fig. 8.26 One fine example of the Mughal-inspired jade hilted blades featuring pistol pommels, with gold and silver inlays on the forte, which was in the Qianlong emperor's possession

The emperor also had in his possession numerous Mughal-inspired jade-hilted blades featuring pistol pommels, with gold and silver inlays on the forte (see Fig. 8.26).

The movement of people, the transfer of technology and artistry, and the subsequent allure of fashions had changed the outlook of arms design and production in the last six hundred years. Sophisticated techniques were practiced by different groups of artisans skilled in their respective areas across different cultures, who were commissioned to create weapons that are strong statements of the status and aesthetic taste of the patrons of this new era.

3 Transmission of *Savoir Faire*

The *savoir faire* of time-honored craftsmanship and creative skills has been passed on for centuries, and the skills of arms artisans have guaranteed the excellence that goes into crafting swords throughout the ages. This *savoir faire* constitutes a unique, intangible heritage that lies at the heart of a universal sword culture. Techniques, commonly used to decorate swords have been passed down generations since antiquity and are still being honored, enhanced, and practiced by modern-day artisans. In the final section below, I provide a sketch of the main decorative techniques.

These methods originated in different parts of Eurasia—some being discovered considerably earlier than the others, depending on complexity. The earliest such techniques—hammering and chasing, inlay and overlay, for example—were already

extensively used for weapon decoration by a wide range of groups in the second millennium BCE. Other techniques tended to be more culturally specific and reflected the unique taste and aesthetic preferences of certain societies. In this regard, openwork (piercing) decorations were exclusively associated with ancient China for a long stretch of time, and only gradually spread to neighboring countries. A number of techniques were more recent, as they were created to meet the increasingly exacting demand for ornamentation in the late imperial period. Among these are enameling, which was established *circa* 1600 in Mughal India, and filigree and granulation, which gained favor in the Himalayas, and South and Southeast Asia. In any case, the eight main techniques discussed below had become common in the decorative traditions of Asia by the eighteenth century. In this way, we may regard them as the alphabet for an aesthetic language of Oriental arms. A summary of these techniques is provided below with examples of antique arms for illustration purposes.

3.1 Piercing

Openwork technique was known in ancient China as early as the Shang dynasty 3500 years ago. It creates a see-through effect and makes the motif on the metal stand out (see Figs. 8.27 and 8.28).

3.2 Hammering and Chasing

Hammering is shaping a malleable metal like gold and silver from the back to create a design in low relief on the front. Detail is added to the raised design by carving, known as chasing. The two techniques are often used in conjunction to produce elaborate motifs in low relief and fine details on metal (see Figs. 8.29 and 8.30).

3.3 Fire Gilding

Gold is mixed with mercury to create a thin paste or amalgam, and is applied onto the base metal which is heated to drive off the mercury, and the gold remains firmly on the base metal surface (see Fig. 8.31).

3.4 Engraving and Carving

Engraving is incising a design onto a hard, usually flat surface by cutting grooves into it with a sharp tool. Carving is normally applied to precious materials like jade,

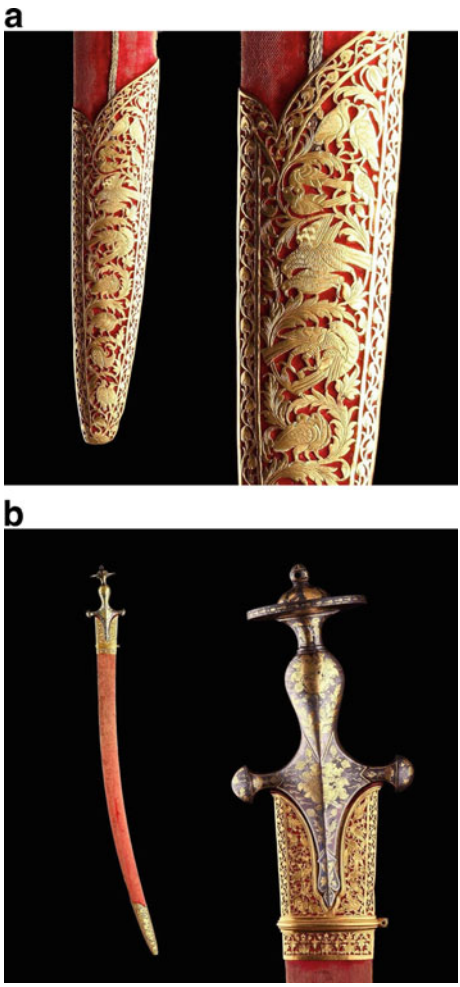

Fig. 8.27 A seventeenth-century Mughal tulwar with scabbard fitted with a throat-piece and chape crafted in solid gold pierced in openwork

crystal, semi-precious stones, ivory, or horn to produce 3-dimensional sculptures for use as hilts (see Figs. 8.32 and 8.33).

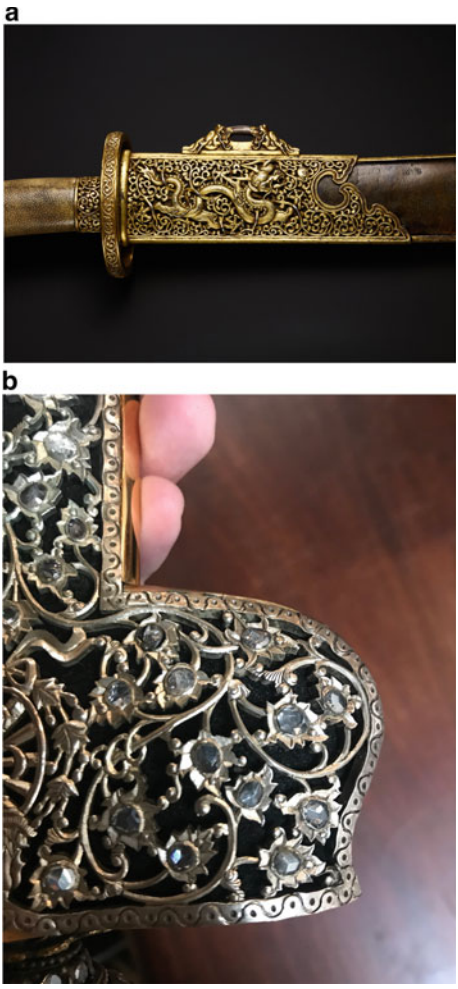

Fig. 8.28 **a** nineteenth-century Chinese *dao* with damascened gold dragon highlighted against the green shark skin leather. **b** A Kris from Indonesia in pierced white silver motif on black

3.5 Inlay and Overlay

Gold inlay technique dates back to the ancient Mycenaean period of about 4000 years ago. It remained one of the most common methods of decorating arms and armor until modern times. Inlaying involves cutting channels into the metal surface, then filling them with metal such as gold, silver, or copper alloys. Overlaying is laying gold foil or wire over a rough cross-hatched surface to produce a similar effect (see Figs. 8.34 and 8.35).

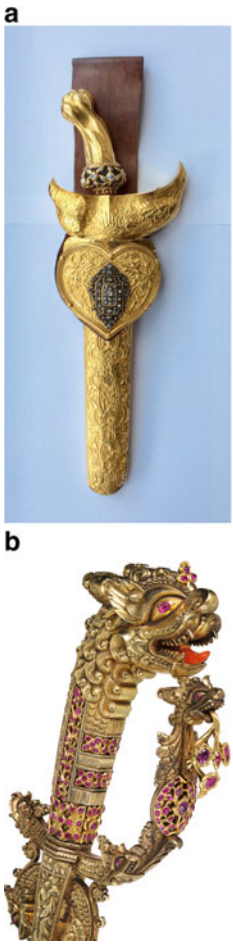

Fig. 8.29 **a** An eighteenth–nineteenth century gold Kris. **b** A nineteenth-century Kastane from Sri Lanka

3.6 Enameling

Enameling is applying a thin coat of finely ground glass to a metal. When heated to a high temperature, the glass melts and fuses to the metal. Enameling was established in the Mughal Empire around 1600 for decorating gold and silver objects including swords and daggers (see Figs. 8.36 and 8.37).

3.7 Filigree and Granulation

Filigree is made with tiny beads or fine twisted threads, or both in combination soldered together and arranged in artistic motifs of fine lace-like metalwork, usually

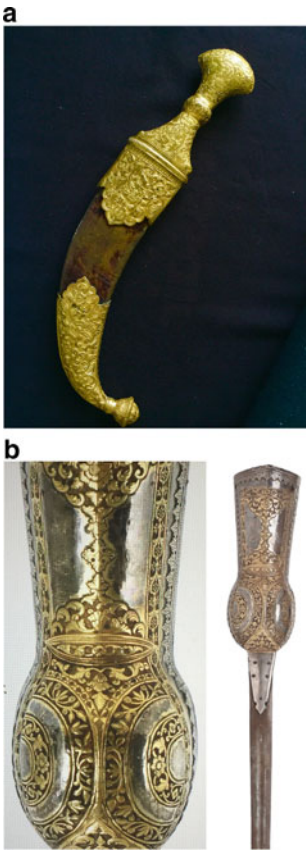

Fig. 8.30 **a** nineteenth-century Kutch Jambiya. **b** A nineteenth-century Pata from India

of gold or silver. This technique remains popular in the Arabia peninsula as well as in India, Asian regions, and the Caucasus (see Figs. 8.38 and 8.39).

3.8 Gem-Setting

The most dazzling weapons are those lavishly encrusted with gemstones like diamonds, rubies, and sapphires. Gem-setting methods varied in different cultures,

Fig. 8.31 **a** A nineteenth-century Sino-Tibetan dagger with gilt copper hilt and scabbard. **b** An eighteenth-century partially gilded Kutch dagger. **c** A gem-set gilded hilt in the shape of a demon of a Kris

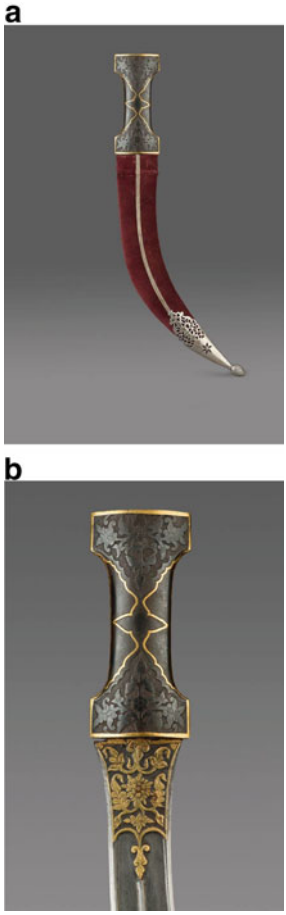

Fig. 8.32 A nineteenth-century Persian dagger

but gemstones were usually set on premium quality jade or on precious metal to exemplify the status of the owners (see Figs. 8.40, 8.41 and 8.42).

The examples discussed in this chapter elucidate the prevalence and importance of sword decoration in different parts of the Eurasia continent in the ancient and early modern times, as well as the variety of techniques used to decorate treasure swords, owned by the ruling elite and high-status warriors. It reveals the extensive nature of cultural exchange between different societies and peoples since the ancient times, as techniques originating in one place were transplanted elsewhere, often merging with local taste and existing techniques. Further, as noted by other authors in this volume, weapons were an important vehicle for the transmission of technology and design, in addition to cultural ideas, artistic forms, and decorative techniques. Such

Fig. 8.33 **a** A steel blade of an eighteenth-century Bhuj axe. **b** A close-up of Fig. 8.33a. **c** A nineteenth-century crystal hilted dagger

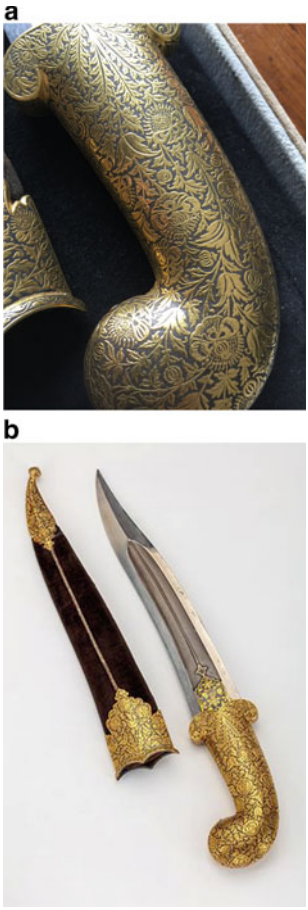

Fig. 8.34 A nineteenth-century inscribed and dated dagger from the Ranjit Singh of Bandanwara armory with hilt and scabbard decorated in gold overlay

exchanges continued through subsequent centuries until the end of the age of cold weapons. It is important to note that, as personal adornments and symbolic carriers of social status, daggers and swords continued to be worn ceremonially long after the weapons themselves retreated from the field of action. For this reason, unlike the manufacturing of blades, which suffered a marked decline in quality after it was replaced by firearms, sword decoration continued to evolve and arguably reached its peak during the seventeenth to nineteenth centuries, particularly in Mughal India, Iran, and the Ottoman empire. In almost all cultures, the decorated sword has grown in stature to represent more than just a weapon. These beautifully ornamented weapons have taken on a variety of characteristics with deep emotional meaning and symbolic significance, and they have been ingrained into the cultures and rituals of many historic traditions in the last five millennia.

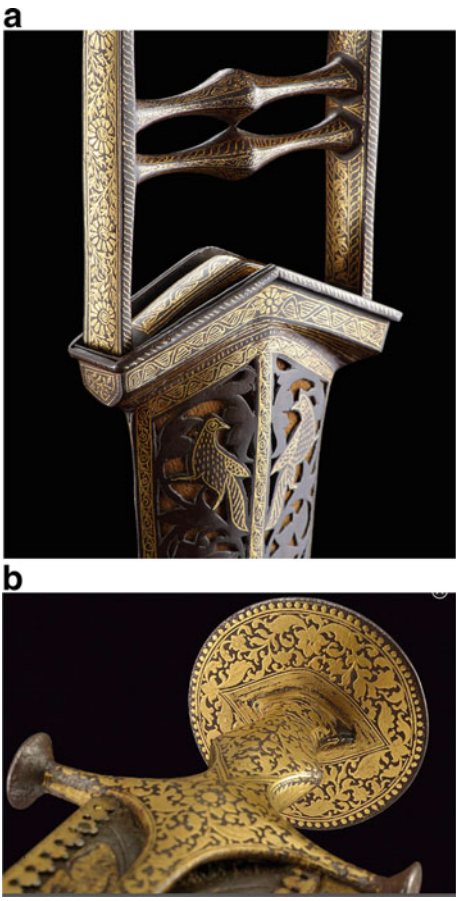

Fig. 8.35 **a** Nineteenth-century katar with gold inlay motif. **b** A nineteenth-century Indian ceremonial sword Thega in gold koftgari

Fig. 8.36 A nineteenth-century India dagger embellished profusely in polychrome transparent enamel

Fig. 8.37 Opaque enamel was found on an eighteenth-century Ottoman Turkey dagger

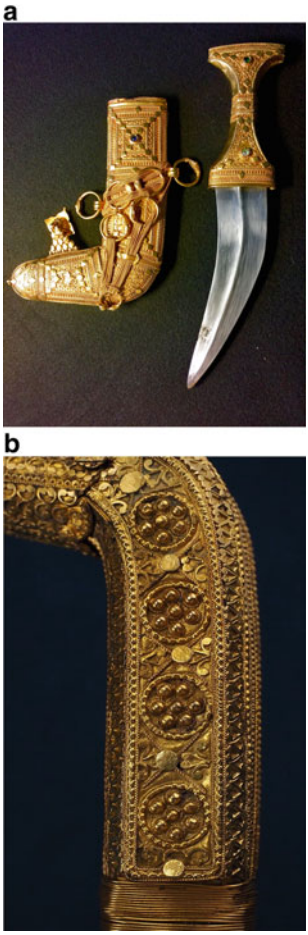

Fig. 8.38 **a** nineteenth-century Jambiya from Oman. **b** The hilt of a nineteenth-century Saif from Bahrain

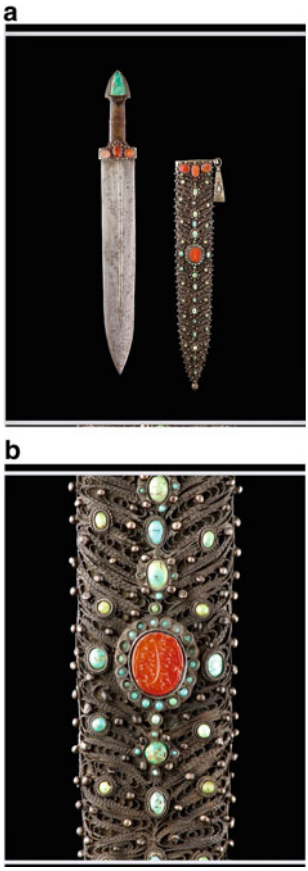

Fig. 8.39 A Qama, a straight sword from Caucasus has scabbard decorated in fine silver filigree work

Fig. 8.40 A nineteenth-century Indian Jambiya with gold hilt set in diamond, rubies, and emerald

Fig. 8.41 **a** A European enameled gold Jambiya set in diamond, rubies, and sapphire. **b** A gold Kris mounted in semi-precious stones

Fig. 8.42 **a** An eighteenth-century Indian jade hilted dagger set in rubies and sapphire. **b** An early twentieth-century Indian silver sword set in semi-precious stones. **c** A nineteenth-century Indo-Nepalese saber

Fig. 8.42 (continued)

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Historical Fencing Books and the Transmission of Knowledge in Swordsmanship

Martial Arts Knowledge on and Beyond the Page: From Visual Mantras to Hyperrealism with Words and Brushes

Daniel Jaquet

Abstract Martial arts are cultural phenomena shaped by the societies in which they develop. They were—and still are—transmitted through interpersonal exchanges, from body to body. Martial arts experts use speech for devising these martial skills into complex systems of bodily knowledge. Once the systems are complex or vast enough to be verbalized, they are transmitted through bodies and speech with mnemotechnical texts such as poems, codified knowledge canons or a constellation of technical words associated with metaphors or images. Some of these mantras (mnemonic devices) found their way into writing or depiction. This process is a translation (transcription) from speech to the page, or to depiction. The written word or the depiction of bodies fighting on a wall, a painted canvas, or embedded into a sculpture, endures through time and survives the masters who created them. However, in most cases, those who wrote the words painted the images, or sculpted the stone were not the martial art experts themselves. The documents, depictions, and sculptures preserved for the study of martial arts culture of the past must be explored while taking into account the perspective of those who created them. Based on previous research about the circulation of knowledge based on the dissemination of European fight books, this contribution allows for a new approach to categorization of martial arts knowledge, on and beyond the page, with a focus on early modern fight books.

Keywords Fight books · Europe · Martial arts · Middle ages · Renaissance · Technical literature

Martial arts are cultural phenomena shaped by the societies in which they develop (Bowman 2021). They were—and still are—transmitted through interpersonal exchanges, from body to body. Martial arts experts use speech for devising these martial skills into complex systems of embodied knowledge (Farrer and Whalen-Bridge 2011). Once the systems are complex or vast enough to be verbalized, they are transmitted through bodies and speech with mnemotechnical texts such as poems, codified knowledge canons, or a constellation of technical words associated with

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Fig. 9.1 Detail of the wrestling scenes, mural painting in tomb 15 at Beni Hassan, twenty-first–seventeenth centuries BCE © Wikimedia Commons

metaphors or images. Some of these mantras (mnemonic devices) found their way into writing or depiction. This process is a translation (transcription) from speech to the page, or to a depiction. The written word or the depiction of bodies fighting on a wall, a painted canvas, or embedded into a sculpture challenged time and survived the masters who invented them. However, in most cases, those who wrote the words painted the images, or sculpted the stone were not the martial experts themselves (Anglo 2012). The documents, depictions, and sculptures preserved for the study of martial arts culture of the past must be explored while taking into account the perspectives of those who created them.

The first preserved depiction of a martial system in the West dates from Ancient Egypt (Middle Bronze Age, 21st–seventeenth centuries BCE), with a mural painting in one of the tombs of Beni Hasan. The tomb of Baqet III contains wrestling positions in series, labeled as MnTw "Montu", translated as arts and sciences (Decker 1987, 82–6) (See Fig. 9.1).

Similar depictions can also be found in ancient European cultures, such as the petroglyphs of the Val Camonica in Italy (Priuli 2022). Few documents with proper attempts to translate the martial art practices on paper from the antiquity and early Middle Ages have survived. Only three fragmentary papyri give us insights into antique European combat sports (Ijas 2020). However, we do find more stories and traces of these practices in narratives from that period. Besides the athletic contests testing force or endurance in the Graeco-Roman worlds, three categories of bare hands combat sports emerged as well: boxing (πυγμή), wrestling (πάλη), and pankration (παγκράτιον) (Poliakoff 1987). Heracles, the mythical figure of the Antiquity, is credited by Appolodorus (Bibl. 2.7.2) to have instituted the games of Olympia and is described as a pankratiast, mixing boxing and wrestling. The glory of Olympic champions, such as the athlete Milo of Croton (sixth century BCE), echoes through time constituting legends and myths (Roubineau 2016). The martial culture of the Greeks is celebrated in major epic works, such as the Homer's *Illiad*, which depicts the Trojan War over 15,693 lines. In the episode of the funeral games for Patroclus, long descriptions of combat sports reveal the richness of agonistic practices, with or without weapons (Hom. *Ill.* 23).

In the Roman World, these major contests became notorious public spectacles. Gladiatorial schools were managed by martial entrepreneurs (*lanistae*) who owned and provided training to the athletes. The golden era of gladiatorial spectacles reached

its peak between the first century BCE and the second century CE, but the "games" lasted longer up to the early Middle Ages after the end of Roman rule, mainly in the form of horse races (Bougard 2012). No translation or transcription of those martial arts survived, but again traces can be found in other literary genres and media. For example, Vegetius compiled a military treatise, *Epitoma Rei Militari*, even if he had no military experience himself. This work lived an interesting fame, as one of the most copied works throughout the Middle Ages. No proper description of combat techniques is included, only one passage advocating the use of thrusting over cutting with the Roman gladius, and one mentioning the striking a pell as a proper training for the soldier (Veg. *Mil.* 1.12).[1]

During the Early (500–1000 CE) up to the High Middle Ages (1000–1250 CE), no proper translation or transcription of martial arts survived. Traces of martial arts practice are to be found in epic literature, military treatises, and mirrors of princes (*speculum*, didactic literature for princely education). For example, much like the Homeric tales, the Viking sagas are full of descriptions of martial arts including technical vocabulary (Wetzler 2017), as do chivalric romances. Like the military treatise of Vegetius, the anonymous Norwegian thirteenth century *King's Mirror* (*Konungsskuggsjá*, Lat.: *Speculum regale*) contains one passage on the training with sword and shield, as well as advice for the mounted warrior. Such information and the inclusion of technical terms are proof that martial traditions were alive at the time of the writing, but the surviving literature from this period does not allow proper insight into the contemporary martial art systems. The same is true of the bronze age mural paintings of the Egyptian tomb, the inclusion of martial exchange in Homeric tales, or mosaics representation of gladiators, up to chivalric romances. Insights into martial knowledge were fragmentary and insignificant compared to what followed at the end of the Middle Ages—the fight books.

1 Fight Books: A Specific Kind of Technical Literature

Fight books are a specific genre of technical literature. Just before the advent of printing machines, which changed forever the relation between knowledge and its production, a new book culture started to develop at the end of the Middle Ages. Formerly restricted to the scriptorium of monasteries or princely libraries, the books entered into the possession of lower social strata within the walls of cities during the fourteenth century. Following the development of universities, religious and laic book production centers or small workshops allowed the book to become a more common object of consumption. That is the time of the first fight book featuring a martial arts system with the sword and buckler. The anonymous *Liber de Arte Dimicatoria* contains combat techniques grouped in seven parts, based on seven

[1] One English translation, based on an earlier Medieval French translation contains anonymous additional instructions regarding the training at the pell, unique to this version of the early fifteenth century (British Library, Cotton Titus A xxiii, fol. 6 and 7).

guards, featuring technical images with commentaries (Forgeng 2018). The fencing teacher is depicted as a priest with several students including a woman. The language is Latin mixing versified knowledge canons with prose commentaries, including technical terms stemming from the Germanic vernacular language. This book is an exception in many ways, one of them being a particularly early example of naturalistic drawing, dialoguing with technical commentaries for describing complex embodied knowledge. More importantly, the martial expert was involved in the production of the book, and this is not always the case. In technique 28, the author complains that the images are not accurate, "And note that no more is illustrated of this sequence than these two figures, which was the fault of the artist (Forgeng 2018, 122)." The book was planned and involved several individuals. The images were realized before the text was written—by three different hands, one being obviously the actual master.

From then on, the production of fight books developed. They constituted at the end of the sixteenth century a heterogeneous corpus of more than two hundred sources (printed books and manuscripts), in most of the main European languages (Jaquet 2020). Fight books should not be confused with other literary genres about fighting, which also developed their own corpuses, including tournament books, military books, books about dueling matters, and horse-riding treatises. These literary genres may record martial embodied knowledge in passing or in a dedicated section, but it is not the main topic of our discussion. Fight books are different in the sense that they focus solely on inscribing, describing, or codifying martial embodied knowledge (Jaquet 2018). The inscription is the action of writing down for personal matters, usually without intent of being read by others. This category includes student notes, teacher notes, or non-martial practitioners noting down martial gestures. The description is the action of writing down with the didactic intent to be read and understood by others. The codification is the action of writing down with codified words, signs, or images, rendering the reading to the non-initiate difficult. An example of primary sources belonging to this category is the translation or transcription of poems on the page, filled with the mantras (mnemonic devices) of martial systems. Of course, the borders of these categories, as well as those of the literary genre by definition are blurred. Moreover, the fact that most of these texts or images were copied, re-invented, or re-organized makes the study of these primary sources, as well as the concept of martial traditions itself, an increasingly complex puzzle.

To refine this threefold theoretical typology (inscription, description, codification), I propose to build categories with examples illustrating it. It creates a panorama of different innovations for the translation or transcription of embodied knowledge into the page within the heterogeneous corpus of the fight books.

2 Categories of Martial Arts Knowledge

2.1 Poetry as Versified Knowledge Canons

Most of the early European fight books are structured with the use of versified knowledge canons, usually series of couplets. Most fight books not only transcribe those couplets from a living oral tradition but add prosaic commentaries in order to make sense of the codified meaning of the verses, obscure to the untrained reader, but familiar to the learned practitioner. This is the case with the aforementioned *Liber de Arte Dimicatoria* and the German fight books, structured around the poem of Johannes Liechtenauer over three centuries, but also with the early Italian fight books. Four early fifteenth-century manuscripts are attributed to Fiore dei Liberi, a late fourteenth-century fencing master from North Italy (Lagomarsini 2011). The different versions preserved contain text in Latin or Italian vernacular, in prose or verse, in connection to decorated technical drawings. These are the first works allowing technical insights into the medieval Italian martial systems by combining different media (See Fig. 9.2).

When prose commentaries and images are missing with only the verses preserved, the martial arts knowledge is usually barely accessible. For example, the anonymous writing of a knowledge canon from 1420 contains only eight couplets in Latin with

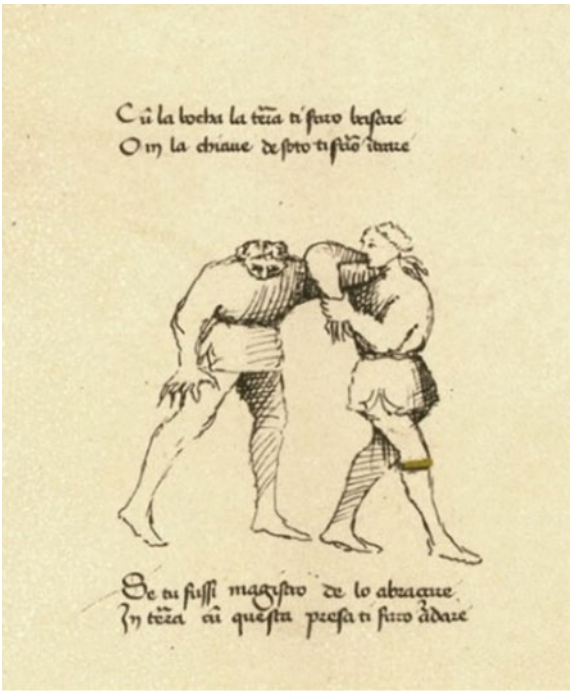

Fig. 9.2 Detail of a wrestling technique. Fiore dei Liberi, Flos Duellatorum, 1409. Edition of the Pisani-Dossi version, by Francesco Novati (1902). Translation of the embedded text: I will make you kiss the ground with your mouth, or I will force you into the lower key (*Cum la bocha la terra ti farò basare/O in la chiaue de soto ti farò intrare*)

Italian vernacular technical terms, outlining guard positions for a master and his student (*Hec sunt guardiae in dimicatione videlicet*).[2] Besides the names of the guards and their opposing postures, we do not know the intended weapon of use for this martial arts system, and no actual fighting techniques are described in the text. This text is preserved by luck. It is an unfinished project of noting down a knowledge canon. This sheet of parchment was later used to protect the quires of a vade-mecum book for a professional scribe, in Florence in the first third of the fifteenth century. Nothing in the content of the book is connected to martial arts practice. For example, another sheet of paper with a random recipe for a meat sauce is also bound into it to protect the next quire. We however can guess that this represents a complete martial art system, now completely lost to us. In that case, the Florentine example is an inscription of martial knowledge, when the fight books of Fiore dei Liberi are descriptions.

2.2 Visual Mantras as Metaphors

When the complexity of a martial art system is transcribed in the form of a versified knowledge canon, some of the underlying principles can be transferred into images using symbolism. Such depictions are as complex to read as the technical words of the codified verses. The treatise of Philippo Vadi (*De Arte Gladiatoria Dimicandi*, 1482–7), one of the followers of Fiore dei Liberi, included a *segno* (diagram) with such visual mantras. The objects and the animals, represented in connection to different parts of the human body, symbolize key skills in connection to the martial system which is put into writing in the fight book. In Fig. 9.3, the different verses in connection to the animals are translated.

Interestingly, several technical terms used to convey martial techniques or principles stem from popular collective knowledge or use common images. Several guard positions are named after animals, mimicking attitudes, or signatory features of the animal. For example, in Fiore dei Liberi's fight books, we find the Boar's tooth (*dente di zenghiaro*) for the two-horned guard (*bicorno*). In contemporary German fight books, some technical terms stem from the agricultural lexis, such as the guard of the plow (*pflug*) in the system attributed to Johannes Liechtenauer.

Powerful visual metaphors are commonly used in martial art systems for conveying a complex embodied knowledge to untaught pupils. As such, the intent is didactic, however, without proper prosaic descriptions (or face-to-face instruction), such as those found in the fight book of Philippo Vadi, visual mantras belong to the codification type of fight books. Indeed, only the practitioners taught in the system can unfold the complexities hidden behind the visual mantras.

[2] The canon is preserved at the Thomas Fisher Rare Book Library of the University of Toronto Library, Toronto (MS 01,020).

Fig. 9.3 Segno. Philippo Vadi, *De arte Gladiatoria Dimicandi*, 1487. Roma, Biblioteca Nazionale Central, MS Vitt.Em.1324, fol. 15r. Translation of the embedded text: Bear: The nature of the bear is to turn/Here, there, up and down/Thus your shoulder should move/Sending your sword out to hunt. Ram: I am a ram, always on the lookout/Naturally always looking to clash/So your cut should be clever/Always parry when [your cut] is answered. Serpent: The right hand should be prudent/Bold and deadly as a serpent. Greyhound: With the left hand I have the sword by the point/To strike already when it is joined/And if you want the strike to be complete/Make it as quick as a greyhound

2.3 Assalti *or* Flourishes *as Martial Forms*

Martial art forms (sequence of movements performed alone) are familiar features to students of contemporary Asian martial arts, designed for learning fighting techniques. The *kata* of Japanese martial arts, or the *taolu* of Chinese martial arts, follow the same principle: sequencing technical movements for offense and defense in a formal pattern that can be repeated. It allows the student to develop complex motor skills by repetition and to bring the embodied knowledge into muscle memory. Such didactic principles are documented early on in the European fight books' corpus. The first person to explicitly use this feature is Achille Marozzo, a Bolognese fight master of the early sixteenth century (Penso 2022). His fight book contains *assalti* for the different martial disciplines. These condensed didactic martial forms allow the outlining of a complex system to maneuvere between the various martial disciplines, from fighting with the dagger to fighting with the pike. The section dealing with the use of the two-handed sword contains, for example, three *assalti*—divided into up

to ten subsections in each *assalto*—which allow the practitioner to study more than fifty fighting techniques.

Usually, German fight books describe martial art techniques in the context of opposing actions. If the partner or opponent is doing this or that, the performer of the technique should do this or that. Several examples however also seem to refer to sequences performed alone. They might be in the context of training sequences, or in the context of performances, including competitions. The earliest German fight book is known by its shelf number Hs 3227a (*Nuremberg, Germanisches National-museum*), which is a collection of notes for personal use (Burkart 2016), and contains an anonymous text describing such a sequence for fencing schools (*Schulfechten*), which refers to public competitions (fol. 52v). The text describes a series of actions changing from guard to guard with specific stepping and blade actions, and then contextualizes it to the beginning of a fencing bout in a competition when the fencer was approaching the fencing partner. This type of sequence (or specific context) is referred to, in English fight books, as "flourish" (Deacon forthcoming), and in later German fight books as "bouts" (*Gänge*). By extension (metonymy), these terms also refer simply to martial art techniques.

2.4 Cinemascope as the Precursor of Video

Sixteenth-century Italy was a theater of major changes in a long process of cognitive, productive, and societal transformation that is often referred to as the Scientific Revolution. Printers, mathematicians, engineers, scientists, and artists were involved in the development of a new use of the scientific image, in relation to the production of printed technical treatises (Smith 2006). New solutions were adopted to solve old problems in the translation or transcription of embodied knowledge using text and images. The still image can render neither the depth of a three-dimensional body nor the caption of a moving body. This problem is called parataxis (Anglo 2011, 7–8), and involves time and space issues. This is solved with the chrono-photography by Eadweard Muybridge in the nineteenth century, and later with the invention of the video. Fight book authors, however, already bypassed the problem with several innovations, before the invention of the printing machine. In 1553, Camillo Agrippa presented the most stunning innovation on the matter, by using similar ideas with the means of his time. With the assistance of renowned and talented artists (including Carlo Urbino), using the latest technology of copper engraving, he deconstructed the human motion into a series of images superimposed on the same engraving (See Fig. 9.4).

Several authors used mathematical concepts and applied geometry in order to rationalize the human motion parameters while devising their martial art systems. The first authors to do so are Spanish in the sixteenth century (Valle-Ortiz 2016), but this trend developed in parallel in Italy, starting with Camillo Agrippa. The most elaborate fight book using mathematical formulas and applied geometry is Girard Thibault d'Anvers, *Académie de l'espée*, in 1630. Such mathematical demonstrations

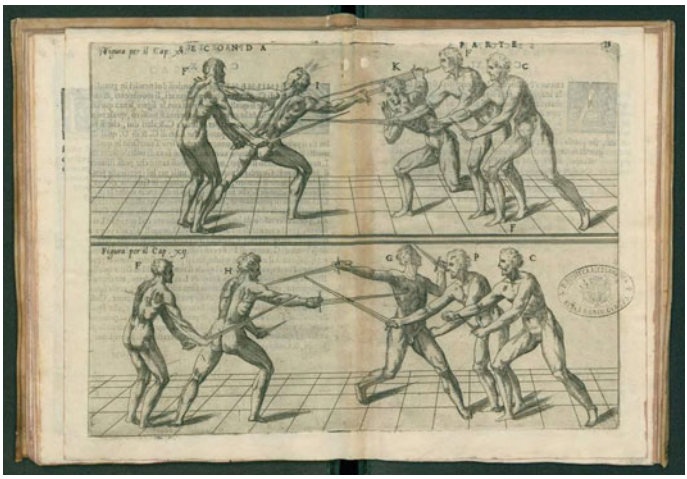

Fig. 9.4 Camillo Agrippa, *Trattato di Scienza d'arme*, Venezia, Antonio Pinargenti, 1568 (Second edition) © Wikimedia Commons (Collection of the Allessandrina University Library, Roma)

and use of geometry to translate embodied knowledge on the page are completed examples of the "description type" of fight books, where the authors use all means and innovations available to them to explain their art to potential untrained readers.

2.5 Hyperrealism with Words and Brushes

Renowned Renaissance artists such as Albrecht Dürer or Carlo Urbino were involved in the production of fight books.[3] For works dedicated to princes and kings, the best quality was of course expected, while fight books produced with more modest means paid less attention to the quality of the images. Most of the authors of the former category looked for hyperrealistic depiction of the human body. The production of the masterpiece of Girard Thibault d'Anvers involved sixteen master engravers working together (De la Fontaine Verwey 1977). Other masters focused on the collaboration with one artist. Such is the case with the Italian fencing master Ridolfo Capo Ferro da Cagli when he produced his treatise for the Duke Francesco Maria Feltro della Rovere. He worked with the late Mannerist and early Baroque artist Raffaello Schiamirossi (1572–1622), refining high-quality images and caring for the transfer of the quality of the drawings in the etching process (See Fig. 9.5).

The quest for hyperrealism in the images is mirrored by the need to "paint with words" by several authors. The manner and detail in which the movements

[3] Albrecht Dürer is known for the production of the manuscript "Wien, Albertina, Hs 26–232," and Carlo Urbino is known for the production of the images for Camillo Agrippa, *Trattato di Scienza d'arme*, Roma, Antonio Blado, 1553.

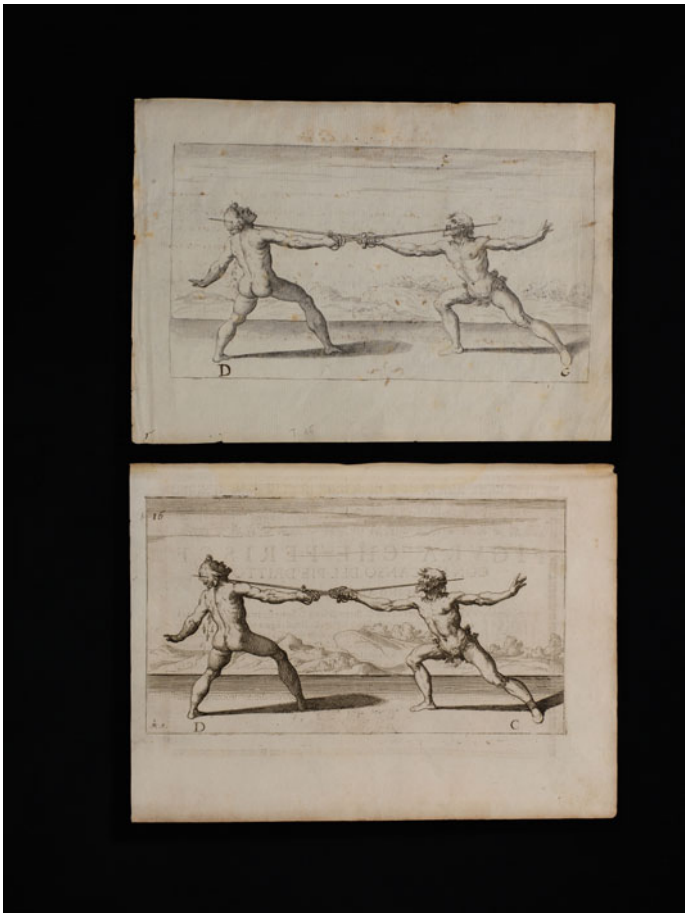

Fig. 9.5 Top: Preparatory drawing of Raffaello Schiamirossi, 1610 (Collection of Martial Art Museum (BS), Botticino). Below: Ridolfo Capo Ferro da Cagli, *Gran Simulacro dell'Arte e dell'Uso della Scherma*, Siena, Salvestro Marchetti e Camillo Turi, 1610 (Collection of Martial Art Museum (BS), Botticino)

are described sometimes rival the artistic brush of master painters. While some authors, such as Pietro del Monte, literally wrestle with language (Forgeng 2014) inappropriate to describe the martial arts, others paint their words with eloquence. For example, Giovanni dall'Agocchie wrote his *Dell'arte di scrimia* in 1572 in the form of a dialogue where the lack of image is compensated with rhetoric magniloquence:

> ***{Mandritto.}*** The *mandritto* is called that because it originates on the right side; and it is called "*fendente*" because it cleaves from the head to the feet in a straight line. ***{Sgualimbro.}*** But one calls that *mandritto* "*sgualimbro*" that goes through diagonally, that is, from the adversary's left shoulder to his right knee. ***{Tondo.}*** The *tondo*, or *traverso*, is the name of the one that turns crosswise. ***{Ridoppio.}*** *Ridoppio* is that which departs from beneath with the true edge of the sword and finishes at the point of the enemy's right shoulder. ***{Tramazzone.}***

> *Tramazzone* is that which is done with the wrist in the manner of a little wheel. ***{Riverso.}*** But *riversi* are named such because they are the opposite of the *dritti*, beginning on the left side and ending on the right. And they are similar to the *mandritti*, that is, of the same types. ***{Thrusts.}*** But coming to the thrusts, ***{Imbroccafa.}*** that which is clone overhand is called *imbroccata*, ***{Stoccata.}*** and that which is done underhand, *stoccata*; ***{Punta riversa.}*** and that which issues from the left side, *punta riversa*. And this will do for the second heading.

In his treatise, which qualifies as description type, the author marginalized the technical terms as additional support for the reader willing to find information on techniques for reference, without having to read the whole dialogue. His prose is flourished with mental images and symbolism designed to both clearly explain the actions and to offer a pleasing reading experience.

3 Lost in Translation or in Transcription

Mentions, or traces, of martial art practices in words or images found in narrative literature, canvas, wall, or sculptures do not provide proper insights into the martial art systems of the past. Fight books do, as a specific kind of technical literature devised to do so. Fight books build a heterogeneous corpus, in which some examples are inscription, description, or codification of embodied martial knowledge. The inscription type, as the codification type, is not meant to be read by others outside a closed circle of specialists, sometimes only the author himself. The description type represents an attempt to unfold the complexities of embodied martial knowledge on the page and is meant to be read by trained or untrained readers. The challenge to translate or transcribe a complex system of embodied knowledge, including the dimensions of time and space on a two-dimensional media with still images, has been tried by many authors, with different levels of success. Besides attempting an almost impossible task, the authors of the description type fight books find innovative ways to overcome the limits of the page. As such, and with the perspective of the history of science and technology, these books are key to writing a history of the technical literature on martial arts. Fight books are treasure troves also for European cultural history. Besides being invaluable sources for art historians, arms and armor specialists, historians, and anthropologists, they represent the keyhole guarding the closed door on European martial arts traditions, presumably interrupted or transformed through time. Reading and interpreting these books is a difficult task, requiring skills as complex as those of the locksmith re-inventing a lost key and re-shaping the partial remains of a rusted key to open an old lock.

One must remember, however, that books are not the ideal media to preserve and transmit embodied knowledge; the ideal channel being interpersonal exchanges. Therefore, the quantity or the quality of these surviving books do not correlate fully with the actual practice of martial arts in a given cultural context. Moreover, in the end, these books are discourses about martial arts, not manuals in the modern sense of the term.

Some of these books—which purport to discuss specific martial art traditions––stand far away from the original knowledge holders who devised the martial art systems. Some were copied over a large span of time, others were translated, and others were plagiarized or rewritten. Where some are masterpieces written by the martial art experts themselves, others are low-quality perverted versions, and others are unachieved projects left unfinished. Recognizing to which of these categories each fight book belongs is essential. This panorama of chosen examples only scratches the surface of the corpus of fight books, which calls for in-depth research on case-by-case basis before attempting proper comparative studies.

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The Ferrara Manuscript: A Discussion of Destreza and Vulgar Fencing Traditions in Spain

Manuel Valle-Ortiz

Abstract The destreza was a characteristic fencing system present in Hispanic countries during the Golden centuries. Contemporarily, there were other fencing systems of possible European origin known as common or vulgar fencing. Even with striking differences, both systems share some technical terms and concepts. We present the Ferrara manuscript, a recently discovered item which, although written from the perspective of verdadera destreza, also covers many features of both systems. This book was written on behalf of an Austrian nobleman present at the Spanish court, probably Johan Ferdinand von Kueburg. It includes some basic destreza techniques as well as a description of a number of vulgar techniques and their counters. It also contains a nice set of illustrations, which is uncommon for destreza manuals.

Keywords Fencing · *Destreza* · *Verdadera* · Vulgar · Common fencing · Ferrara manuscript

1 Introduction

Destreza can be translated as dexterity or skill. It has been employed as the denomination of specific fencing practices that were widely employed in the Hispanic kingdoms and dominions from the sixteenth century until well into the nineteenth century (Valle Ortiz 2016). Originally, this denomination appeared in opposition to the "common" or "vulgar" *esgrima* (fencing), suggesting an elevated level of scientific knowledge and moral superiority on their side. However, as some vulgar fencers also used the denomination of destreza in order to increase their prestige, the qualification of *verdadera* (true) was added, while the term "vulgar" had a derogative association, even if attached to destreza (Fallows 2012).

There are discussions about the limits and definitions of these different modalities of fencing, with heated debates between different schools claiming their approach is the "authentic" one. This is nothing new, as such competing claims were made by

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historical masters, each stating that their approach was the "true" destreza while their rivals were practitioners of mere common or vulgar traditions. A further distinction could be made between common and vulgar fencing: the popular fencing systems already in use when the destreza and its derivatives appeared (in the late sixteenth century) may be called the common destreza, while vulgar destreza is those aspects of these systems as viewed by the verdadera destreza practitioners. This distinction is modern and, in my opinion, only adds unnecessary confusion.

There is a considerable corpus of Hispanic fencing treatises (more than five hundred documents) with perhaps more than two hundred from the sixteenth and seventeenth centuries. Unfortunately, some of the oldest treatises, such as those authored by Jaime Pons de Perpinan and Pedro de la Torre or Francisco Román in the fifteenth or the early sixteenth centuries, were already lost at the time of destreza's creation (Valle Ortiz 2012; Valle Ortiz and Curtis 2009). Nonetheless, there is enough information in the surviving materials to reconstruct and bring back to life a full fencing system or at least certain approaches to the verdadera destreza systems (see caveats by Burkart 2016). In this chapter, we will analyze the distinction between verdadera and vulgar destreza in light of the Spanish fencing treatises and other sources, with a focus on the work of Octavio Ferrara based on a previously unknown manuscript dated to 1625.

2 Verdadera Destreza and Vulgar Fencing: Opposition or Continuum?

There is a shared language between common fencing and verdadera destreza, as we can see in works such as *Arte de Esgrima* by Godinho (2015), published after 1599, which is the only surviving manual of Iberian common fencing, or in the *Manuscrito da espada* (2013) compiled during the seventeenth century—an eclectic work where the concepts and terminology of destreza are mixed with techniques clearly on the vulgar side.

On the other side, the destreza masters, starting with Jerónimo Sánchez de Carranza (1539–1600), have made descriptions of vulgar techniques, often mocking them, sometimes counteracting them, with more or less accurate descriptions of these techniques. Eventually, Pacheco de Narvaez (1570s–1640) established some sort of a canon, initially with eighteen vulgar techniques (*Las cien conclusiones y 18 contradicciones*) up to a total of almost thirty in his last work (*Nueva ciencia*) (Pacheco de Narváez 1608, 1672). There are some additional and occasional techniques that appear in other treatises or in literary sources as *Las valentonas y destreza* by Francisco de Quevedo (1580–1645) (*Manuscrito da espada* 2013; Valladares Reguero 2001).

Destreza masters usually describe only a series of techniques but not the fundaments and core doctrines of vulgar destreza. However, in the only extant book of common destreza, a complete fighting system with several arms is described

(Godinho 2015). Usually, the vulgar destreza is reported by most of the destreza masters as the counterpart of verdadera destreza, claiming their work as the definitive rebuttal of such corrupt practices, but under this derogative attitude, we can find some meeting points.

We do not know the methods and contents of other common fencers if indeed there was common ground between them since the early works are lost. Some of the remaining works of early authors such as Pons, de la Torre, and Roman, can be found as partial copies or are mentioned in later treatises. They appear to have constructed complete fighting systems that include the use of a range of weapons, based on underlying principles that unite their practice, such as the positions *uñas arriba* and *uñas abajo* (with fingernails up and down), as recorded by the verdadera destreza practitioners in later books (Rivera 2012a, b, c).

We have a few clues about the origin of vulgar fencing. There is a European background with some fencing representation in manuscripts and other pictorial manifestations (Dawson 2016) where striking similarities appear. We do not know if this is a manifestation of a common practice or the result of scribal fancies. However, there is cumulative evidence that a number of written sources across Hispanic, German, or English backgrounds share certain names, concepts, and techniques through a European common ground. Some have even proposed to avoid such terms as common or vulgar destreza, which could have derogatory connotations, but use instead commonplace or customary fencing (Acutt 2014).

As for the fencing books, it has been proposed that some early works as *Les secrets du premier livre sur l'espée seule* by de Saint Didier (1573) are closely related to Iberian common fencing (Rivera 2013). The Iberian countries might have had an autochthonous style that survived the eruption of destreza, maintaining this dual tradition during a long period as can be seen as late as the early seventeenth century (Cruzado y Peralta 1702). In classical destreza fencing treatises such as *Nueva ciencia* where many vulgar techniques are described, certain techniques are attributed to specific countries or styles (for example, Italian or Flemish) (Pacheco de Narváez 1672). In late seventeenth and early eighteenth centuries, the destreza masters started to address the appearance of such styles, mainly Italian and French, and describe specific counteracting actions against these new foes (Ettenhard y Abarca 1697; Guerra de la Vega 1681; Lorenz de Rada 1705; Rodrigo Noveli 1731).

In conclusion, if the destreza masters were so interested in fighting against the vulgar practitioners during such a long period of time, even if we only have scant evidence of the extent of vulgar practice, common destreza must have been well established if the destreza masters went to such lengths to oppose it.

3 The Ferrara Manuscript

As a manifestation of the opposition between "vulgar" and "true" practitioners of verdadera destreza (*diestros*), several works were written during the seventeenth century—from the classical works of Pacheco's *Grandezas*, *Cien conclusiones*, and

Nueva ciencia (1600, 1608, 1672) to other works such as Perez de Mendoza's *Principios* (1672), which deal specifically with the vulgar techniques and the way to fight them. A very singular work is the Ferrara manuscript, not only for discussing, to some extent, the vulgar techniques but for the descriptive illustrations, which are extremely rare in destreza manuals. This previously unstudied manuscript is here described and analyzed for the first time. A codicological description is included in Appendix.

A copy in trace paper of illustrations of an unknown manuscript of destreza is in the Corble collection in the Leuven University Library. Based on the watermarks of the tracing paper, the copy was made at the end of the nineteenth or the beginning of the twentieth centuries. Galas (2006) identified it as work from Octavio Ferrara, but the original was lost. We have no documentation as to how it became part of the Corble collection, nor do we have any information on the original manuscript. It has been found again by Roberto Gotti and bought in a public auction. It is now part of the MAM collection (Martial Art Museum, Botticino).

The manuscript is titled *Compendio y Filosofía y destreza de las armas reducido a su simplicidad* and is authored by Octavio Ferrara in 1625. The author is born in Zaragoza. No further information is known about him, except that he was active as a fencing master in Madrid in 1624.[1] This paper manuscript (22 × 30 cm, oblong format) has thirty-nine pages including thirty-six illustrations in ink and watercolors. It is written by one hand, with additions by a second. The high number of illustrations is uncommon for destreza treatises. As an example, Fig. 1 depicts a *diestro* with a sword and his opponent armed with sword and buckler. The steps of the *diestro* during the attack are marked on the floor. Different ways to fight an opponent with a buckler, and how to react to their successive actions are described in great detail on the facing page.

It is dedicated to Barón Don Juan Ferdinando Quiemburg. This can be a Spanish rendering of an Austrian name. The most likely candidate according to our conjecture is Johan Ferdinand von Kuenburg (also written Kienburg, Kühnburg, or Küenburg, all of which can be spelled in Spanish in a similar way, see Kneschke 1852, 489). He belonged to a Salzburg family of the lower nobility which had several branches, many of whose members were involved in the Church (with several bishops) or held administrative, legal, or official positions. He was born in 1600 and died in 1641, so he was contemporary with the manuscript. We have no data if he was in Spain or was related in some way with the book, so this is only a guess. Previously, based on the Leuven copy, Galas (2006) has identified him as Baron Gruemberg, but this appears to be inaccurate.

During most of the sixteenth century and the whole of the seventeenth century, the Habsburg dynasty of Austrian origin ruled the Hispanic countries. There was frequent inbreeding between the Spanish and the Austrian branches of the dynasty which led to considerable consanguinity. The King Carlos II had a consanguinity index of 0.25—similar to a union between a brother and a sister (Ceballos and Alvarez 2013). There was also a cultural exchange between the courts of both countries, so Spanish

[1] Archivo General Palacio: Personal, caja 778/5, quoted in Ceballos-Escalera et al. (1997).

Fig. 1 Octavio Ferrara, *Compendio y Filosofia y destreza de las armas*. Zaragoza or Madrid, 1625. f.21v–f.22r. *Segunda treta contra el broquel* (second technique against the buckler) (collection of Martial Art Museum (BS), Botticino)

comedies performed at the Royal Palace were fashioned on the Viennese Court, while certain chivalric practices such as Spanish horsemanship continue to be practiced in Austria even today (*Spanische Hofreitschule*) (Noe 2001). There were also frequent exchanges of ambassadors and courtiers who brought home cultural artifacts from the other country. For example, we can point to Pacheco's book, *Grandezas de la espada*, in the National library of Austria,[2] which belonged to the Earl Pötting.[3] The manuscript *Llave y gobierno de la destreza*, also a copy of Pacheco work, now in Budapest,[4] once belonged to a Zacharias Conrad von Offenbach (Fernández Lanza 1991, 26). There is also the manuscript from the Prince Gundaker von Liechtenstein's *Über die Fechkunst*,[5] again in Vienna, that includes some instructions about Spanish fencing system with drawings and commentaries on the Pacheco work *Grandezas de la espada* (Fortner and Schrattenecker 2015).

The first part of the book is a brief exposition of some elementary concepts from the destreza: basic lines and circles, the right-angle stance. It also introduces

[2] Östereichische National Bibliothek 58.G.32.

[3] Franz Eusebius Graf Pötting (1627–1678) Ambassador in Spain for Leopoldus I (Noe 2001).

[4] Archivo Széchényi, Ms. 1. Inventarium Codicum Manuscriptorum, Hispanicorum.

[5] Palais Liechtenstein Archive Aa298.

core concepts in destreza such as proportions, which determine the relative distance between the fighters. The section, *Las Generales* (*General Techniques*), introduces a series of techniques that allow the fencer to safely approach his opponent and perform effective strikes. The book also discusses the basic cuts (*tajo*, *reves*, half *tajo*, and *half reves*); as well as *atajo*—a concept very particular to destreza, which implies control of the opponent's blade and protection from their attacks, the "conclusion movement," which is a technique directed to disarm or disable the sword of the opponent while simultaneously gaining a dominant position to wound him unopposed; fighting against left-handed opponents; and the use of double weapons (sword with *rotella* or *daga*). The book also discusses the different guards used in destreza. Then comes a description and counter to several vulgar techniques. The book ends with a table that lists out the best destreza measures against the vulgar techniques. Several appendices are added at the end that deals with the remarkable points, dangerous places, and a commentary on Girard Thibault's work.[6]

In several places, the author mentions his master without naming him. The only master who is named is Thibault, once in the text when explaining "*La Torneada*" (*The Turn*) with some mockery, and again in one of the appendices. But most of the destreza theories being discussed follow the teachings of Pacheco de Narvaez, including the five ways to make an attack, which are represented in the general demonstration at the beginning of the book, and the description of "*tretas generales*," with only some minor changes.[7] The description of the vulgar *tretas* and the way of counteracting them is, for the most part, original and different from other sources.

4 Conclusion

The destreza system had a wide distribution across Europe, mainly in the Hispanic dominions and the allied and related countries. This manuscript serves as an introduction and provides a unique perspective on the contemporary verdadera destreza and vulgar fencing techniques. It is a valuable addition to the bulk of destreza texts, showing more nuances and details of the techniques. Its illustrations are uncommon in destreza books and add a lot of information to the extant texts. It is clearly written and intended as an introductory manual for teaching destreza in a very practical way. The amount and the extension of material dealing with vulgar techniques (which

[6] The *Academie de l'Epee* (1628) is a monumental work on fencing. It can be regarded as destreza-related. Its author was living in Spain for a period of time, was able to write (and perhaps speak) Spanish, and developed a friendship with the masters in Spain such as Perez de Mendoza. Although his book had not yet been published when the manuscript was dated, there are other indications that the doctrine of Thibault was known in Spain.

[7] *Tretas generales* refers to the techniques employed to initiate and engage combats in a safe way. The techniques provide the fencer several options to continue and end a fight (in a way which we could compare them to chess openings).

take up almost half of the manuscript) are remarkable. It perhaps reflects the presence of common fencing as a widespread practice; this would explain the interest in counteracting it.

The discovery of this book opens up expectations for rediscovering lost or other unknown sources of destreza, either the precursors, such as De la Torre, Pons, Román, or more recent losses like *Destreza iluminada* de Rejón de Silva (Valle Ortiz 2012).

In closing, I would like to thank Roberto Gotti for his incredible enthusiasm which made this research possible.

Appendix—Codicological Note of the Ferrara Manuscript

Compendio y Filosofía y destreza de las armas reducido a su simplicidad. Dirigido a Don Juan Ferdinando, Baron de Quiemburg, por su maestro Octavio Ferrera, natural de la ciudad de Zaragoza, residente en la corte de el Rey católico de España. N. Sr. Año de 1625.

Kept at the Martial Art Museum, Botticino.

Description

MS. 2 f.b. Frontpage, 39 f. (36 plates in ink and watercolors depicting diverse fencing positions, with related text on the facing page), 2 f.b. 22 × 30 cm oblong.

Hand-copied manuscript on paper. Clear Spanish cursive hand from the seventeenth century, main text f.1–38r, dark ochre ink. Second hand in addenda, f.38v–39v, and in marginal notes and corrections, period or slight posterior, black ink. Contemporary foliation in ochre ink. Full page text inside borders. Modern binding in full parchment with the authors' name in gilded letters on spine.

Author

Octavio Ferrara. Birth and death date unknown. He was active as a fencing master in Madrid in 1624 (Ceballos-Escalera et al. 1997).

Dedicatee

Johan Ferdinand von Kuenburg (1600–161) (also spelled as Kienburg, Kühnburg, or Küenburg).

Provenience

Late nineteenth, early twentieth centuries. Trace paper, partial copy kept in the Corble Collection at the University Library of Leuven. No information prior to Roberto Gotti's purchase in 2017.

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Masters Through the Ages: Interpretation of a Renaissance Martial Art System and the Foundation of a Modern School

Jacopo Penso

Abstract This paper aims to describe the modern experience and process of reconstructing a five-hundred-year-old martial art (the Renaissance *arte delle armi*) from the study of extant sources and materials, mainly treatises and weapons of the time, for the understanding and practice of motions and embodied concepts. The approaches, methods, and praxis will be analyzed, exploring the delicate operation of reconstructing a martial art system from written words. Among the masters of the past, this experience focuses on the teaching of Master Achille Marozzo from Bologna, who published his treatise on fighting, *Opera Nova*, in 1536. Today, the Opera Nova School brings back to life this art of the past through its ongoing research and teaching, thanks to a complex and syncretic approach that condenses a wide range of information and experiences into contemporary practice. In this paper, I discuss the example of the two-handed sword discipline. The fixed sequences of codified moves, the *assalti* or forms, are the precious teachings provided by the historical source, which form the basis for modern interpretation. Through cycles of theoretical comprehension and practical application, it is possible to grasp the complexity of a martial art system, giving new life to an ageless art.

Keywords *Assalti* · Combat · Fencing treatise · Historical fencing · Italian martial arts · Martial tradition · Renaissance · Sport · Two-handed sword · Training system · Opera Nova

1 Introduction

Opera Nova is the title of one of the first printed books on the art of combat, published in Italy in 1536 by the Bolognese master-at-arms, Achille Marozzo (Marozzo, 1536, 2007). The text, one of the most complex and complete of its kind on the art of sword-fighting, offers explanations on different types of armed and unarmed combat, accompanied by illustrations, summarizing the experience and knowledge of a Renaissance

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master-of-arms. Opera Nova is also the name of the school that now practices, studies, and continues that same art, reconstructed through years of research and experiments by its founder, Roberto Gotti, and his students (Gotti, 2011; Gotti et al. 2019; Gotti et al.). This Italian academy has rediscovered forgotten knowledge thanks to the words of the old masters, allowing a modern practice that can be more than just a sport but to become a tool for self-improvement, expression, and a way to question the past and learn from it.

Interpreting a text and translating its teachings into movements, rediscovering the lessons therein and bringing them back to life, understanding the dynamics of a Renaissance art were—and still are—an endeavor that takes time, huge commitment, and sacrifice. In this chapter, I attempt to provide a summary of this long, laborious, and ongoing path. I set aside personal details, not because they are of secondary importance but because they will be part of future autobiographical narratives.

2 Historical Sources: Masters of the Past

2.1 European Martial Arts

The term "martial arts" is commonly associated with traditional Eastern combat disciplines. An example of this semantic shortfall can be found in many famous encyclopedias, such as the *Encyclopedia Britannica*, *Cambridge Dictionary*, and *Treccani* (in Italian), which apply it solely to Chinese or Japanese contexts. However, a vast sphere of practices and notions, with ample evidence and rising interest, refers to Western history. The word "martial" refers to the Greco-Roman god of war: Mars, which is a Latinized version of the Greek god Ares. At the start of the 1500s, the anonymous author of the manuscript held in the Classense library in Ravenna (usually named Anonimo Classense or Anonimo Bolognese) refers to *costumi marciali* (martial customs) speaking of the art of fighting with edged weapons (Istituzione Biblioteca Classense, Ravenna).

Social and historical processes led to a progressive erosion and radical transformation of these arts. For example, the evolution of edged-weapon combat disciplines, which became increasingly distanced from the battlefield and shifted more toward a sporting context; or the progressive decline of the duel as a convention, as well as the cultural and technological changes in the second half of the twentieth century. Today, there are some rare exceptions where such traditions have survived, such as certain fighting arts in Southern Italy (for example, the school of the Trimigno family) using a short blade or stick, often of a familiar, ritualized nature that has been handed down orally. These infrequent cases of oral tradition can become useful openings for review and dialogue among scholars of historical martial arts, for whom the value of closeness to the master's direct words is counterbalanced by the uncertainties of interpreting the moves. Indeed, if the value of living tradition lies in the seamless

bond with the past, the study of a written source guarantees solid conformity to the lesson of the master who composed the text.

In Italy, numerous textual and iconographic sources of Western martial traditions have endured through the centuries and are nowadays available to the public. They render technical skills and their transmission, providing precise historical contexts, weapons and methods of their use and, sometimes, the master's personal approach and vision.

The art of combat, however, includes movement, timing and rhythm, stylistic and motional nuances, which are almost impossible to preserve and communicate through the limited medium of the written word, or the static constraints of images. Apart from the challenge of translating the movements into concrete training, the barriers posed by the passage of time must also be borne in mind, as should the consequent distortions deriving from cultural codes, norms, and settings.

The oldest known written sources in Italian martial arts, which already offer an organized semantic system, are dated to the beginning of the fifteenth century. These are the manuscripts of the medieval master Fiore dei Liberi.[1] However, it was not until the sixteenth century that sword-fighting manuals began to appear in significant numbers, thanks to printing technologies. Jaquet's research (2020) identifies seventy-eight texts (in multiple copies) published in Europe from 1493 to 1630 that discusses the art of combat. Twenty-five such titles were printed in Italian cities. Of this considerable literary production, the most outstanding volume in terms of richness of content and variety of teachings is the book written by Master Achille Marozzo, first printed in Modena in 1536 (see Fig. 1). His work is unique and precious, so it is a preferred reference for the delicate operation of reconstructing and understanding of the art of the sixteenth century.

2.2 The Writings of Achille Marozzo

Marozzo introduces himself as "General Master of the Art of Arms." An in-depth analysis of the work leads us to think that the Bolognese master composed the text later in life, condensing the knowledge of a lifetime accrued through practice of his craft, which covers the use of a wide range of arms from the short dagger to pole weapons. This variety of disciplines and weapons is partly explained by the social context, which still provided for the duel as a legal practice, and is common among contemporary authors; at the same time, it reflects the complexity and extension of Marozzo's teaching.

He presented his work as a selection of teachings he received from his master (cited as Master Guido Antonio De Luca, whose school is said to have contained "more warriors than the Trojan horse"), referring to an earlier tradition, and as the result of merging these transmissions and of personal innovation. We can therefore

[1] Some manuscripts of Fiore dei Liberi include MS Ludwig XV 13, MS M.383, MS Latin 11269, and MS Pisani Dossi.

Fig. 1 The frontispiece of Achille Marozzo's Opera Nova, 1536 edition (collection of Martial Art Museum (BS), Botticino)

say with reasonable confidence that Marozzo's art derived from a long, consolidated tradition (one whose roots could be even traced back through antiquity, if we accept the hypothesis that martial art transmission forms a continuum that goes back to ancient times, and the presence of universal truth in the art of combat). At the same time, we can also state that for the historical period and the type of teachings he imparted, he was one of the last champions of an art still deeply embedded in the reality of war. It is no coincidence that in the ensuing decades we find statements, such as those by Master Agrippa (a later master, born in Milan, who published his book in 1553), criticizing the corruption of the duel—the final vestige of traditional combat practices—which had by then been sidelined by firearms. Also noteworthy is Master Dall'Agocchie's (whose work was printed in 1572) criticism that the masters of his time lacked skills, and his lament on the loss of *gioco largo* (wide play, the combat from a large distance) in contemporary swordplay.

Outwardly, Marozzo's teachings, with regard to both the types of weapon being used (for example, single-handed swords fitting a broad blade, which are perfect for cuts as well as for thrusts) and his martial training (we recall that military leader Guido Rangoni was his fellow student), do not yet seem to distinguish between the fencing hall and actual combat. Nonetheless, the art of combat had also reached the full expression of technical skill and complexity, in the supreme expression that combined beauty with efficiency in the action.

With the exception of Book Five of his *Opera Nova* which describes the duel, overall, the work is devoted entirely to the different disciplines, addressed in separate sections, with very little space dedicated to general notions, which are scattered throughout the pages. Marozzo describes these weapons in this order: *spada e brocchiere piccolo* (sword and buckler),[2] *spada e pugnale* (sword and dagger), *pugnale solo* (dagger-alone), *pugnale e cappa* (dagger and cape), *spada e cappa* (sword and cape), *due spade* (two swords), *spada e brocchiero largo* (sword and broad buckler), *spada sola* (sword-alone), *spada e rotella* (sword and *rotella*),[3] *spada e targa* (sword and targe),[4] *spada e imbraciatura* (sword and *imbraciatura*),[5] *spada a due mani* (two-handed sword), *partesana e rotella* (partisan[6] and *rotella*), *partisan*, *picha o lancioto* (pike), *spiedo* (winged spear), *roncha* (bill). He ends with a discussion on disarming techniques called *prese di pugnale* (knife disarms). There are also chapters dedicated to the sword and shield, the two-handed sword against pole weapons, as well as stances, footwork, strikes, combat with left-handed opponents, and with opponents on horseback.

Marozzo's description is far from straightforward. The teachings are often confusing and not presented in a logical order; terminology is used without clear explanations, with definitions appearing too late, and general advice is scattered throughout the entire book. This may be because most of the books were intended

[2] Buckler is a small round shield held with the non-dominant hand.

[3] *Rotella* is a large round shield, strapped to the non-dominant arm.

[4] Targe is a small rectangular or square shield held with the non-dominant hand.

[5] *Imbraciatura* is a wide kite-shaped shield.

[6] Partisan is a staff weapon with a long triangular blade.

as supplements for face-to-face learning with the master himself. Master Marozzo's work appears—perhaps deliberately—to be drafted with the intention of unveiling its contents gradually. The study of it requires continuous correction and adaptation, and patient revision of previously constructed and supposed knowledge. The apparent paradox is that it appears crucial to know the work in full in order to understand any single lesson set out in a sentence or paragraph.

A peculiarity that Marozzo's work shares with very few other fight books are the presence of long sequences of formalized actions. The master calls such formal sequences *assalti* or *abbattimenti* (literally "attacks" and "takedowns") and they have much in common with Japanese *kata* and Chinese *taolu* traditions. These forms condense and enclose different nuances of their author's understanding and indeed contain vast technical, tactical, and even educational and conceptual values. Unlike the individual sequences of single actions from much of other fencing literature, the forms represent entire swordplay phrasings, lessons unchanged over time, which hundreds of years later students can still repeat and experience.

3 Interpreting the Source: Today's Masters

3.1 Modern-Day Martial Arts

Nowadays, there is an increasing number of historical martial art practitioners who are seeking to interpret European treatises of the past starting from the middle ages. In general, the intention is to translate them for modern sports practice for rapid circulation, primarily in Europe and North America. This multifaceted movement is often inexperienced and vague, having begun only in the last decade of the twentieth century. It was not until 2019 that it was introduced in an international sporting event—the Minsk European Games Cultural Program—while only in the last few years did interest in historical works start to be combined with modern practice, materials, and regulations.

The Opera Nova School stands as a leading player on the Italian stage, as it pursues a vision and method of study and practice of the discipline through numerous projects that range from sport to culture (see Fig. 2). Its approach stems from a deep respect for the teachings of the masters from the past, and a wish to build a reality that is able to comprehend, collect and finally hand down those teachings, so that we may once again grasp them intuitively, expressing them autonomously and personally.

"*Il rispetto degli antichi*," the deep respect for people from the past, means starting from the premise that the words of the masters are not random, or the expressions of backward, outdated abilities, but rather an example of extreme technical competence and an essential guide to the use of edged weapons in combat. Our limited theoretical interpretations will require burden of proof, showing itself to be on a par with the legacy of the past. In this way, we avoid the risk of adjusting historical sources to our own models, deforming, or ignoring them to find reassuring confirmations.

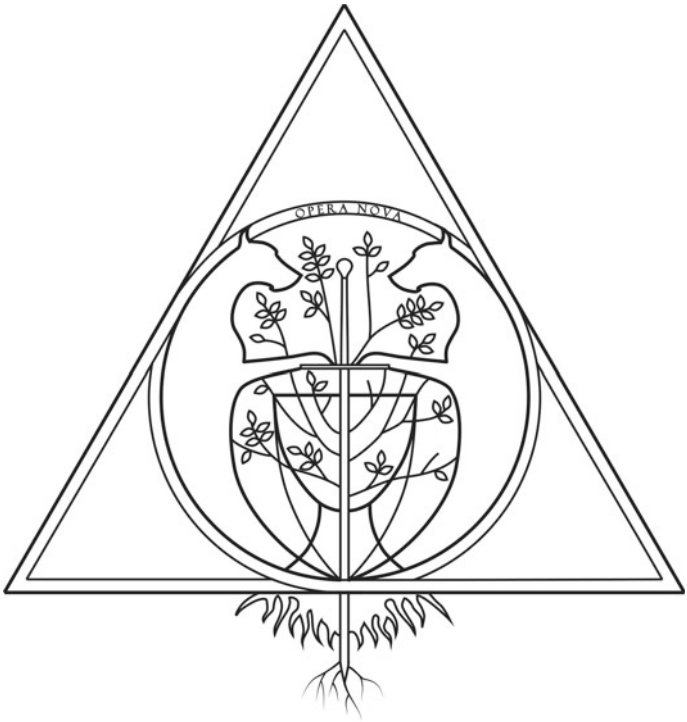

Fig. 2 The Opera Nova School logo

3.2 The Need for a Syncretic Approach

The understanding and reconstruction of an art, especially one that is historical and overlooked, would be impossible without the constant effort to immerse ourselves in the world that produced the art. Failure to understand this premise explains many of today's limited experiments which, all too often, are eager to capture an aspect but, taking it out of context, accept partial and distorted versions. In such contemporary efforts of appropriation, historical swordplay runs the risk of losing all insights and meaning, while the discipline loses its function as an instrument of inner analysis and dialogue with the past and, reduced to infantile play, stands in pale comparison with other sports which have attained a mature development.

In this respect, Roberto Gotti's experience stands as an attempt to unite and connect impressions, information, and fields of study sometimes perceived as distant. In order to implement this demanding operation, it was necessary to gather extremely diverse examples and link them: from the heroic inspiration of knightly epics to the molecular study of blade sections, carried out with the support of academic metallurgy specialists (Tonelli et al. 2016). Every possible source of understanding has contributed to the creation of a journey within the Western martial art world.

Gotti's multifaceted experiences offer numerous examples. His personal interest as a collector and museology puts a spotlight on material aspects and raises awareness of tangible history embodied in the object (see Figs. 3 and 4). The in-depth study of real tools, archaeological finds, and weapons (from the original production techniques to the chemical–physical–mechanical characteristics of the weapons, and the cultural context to which they belong) certainly provide valuable insights into their use. Knowing how to read the life story of an object such as a sword develops the ability to restore life to the object itself and makes it part of a narrative that links it to the past. In this process, every detail is crucial and requires examination: a partial Latin inscription on the blade, the gunsmith's punch, the grouping of notches left by use, even the signs of instrument maintenance implemented by the actual user. Grasping that bond permits an in-depth analysis of everything that surrounded the world of weapons and swords, a world made up of artisanal, scientific, and artistic wisdom, both explicit and secretly transmitted.

The same applies to paper-based sources: written, handwritten, or printed, but also in the form of illustrations and images. Indeed, technical knowledge, terminology, and understanding of conceptual systems would be impossible to glean and organize without texts (written with the more or less obvious intent to pass on information). At the same time, textual descriptions are often enriched by aesthetic and stylistic elements. Elements that stem from a broader study of the artistic and humanist world as a whole that was everyday life for the Renaissance period. Oftentimes, observations of a painting—not necessarily of combat scenes—or a pose rendered by a master sculptor make it possible to grasp extensive clues to the position of the body, while those depicted movements afford further meaning to the words of martial art masters. Conversely, this resonates perfectly both with the role that the art of weapons played

Fig. 3 The room of the smith inside the MAM, Martial Art Museum built by Roberto Gotti in Botticino, Brescia, Italy

Fig. 4 The room of the master inside the MAM, Martial Art Museum built by Roberto Gotti in Botticino, Brescia, Italy

in the formation of men of culture and art and with the very words of the masters themselves when they use words like *polito* and *attilato* (neat and streamlined) when describing elegant movements.

3.3 "Solve et Coagula"

This Latin motto, used to define the knowledge of alchemists, is also well suited to the long course undertaken by Roberto Gotti's school. Two divergent approaches were needed to conduct these studies. On the one hand, it was necessary to sort through all possible sources of information. This includes assimilating concepts drawn from fencing masters of all eras (ranging from the symbolic knowledge of the medieval masters to later visions), collecting precious ideas from paintings and sculptures, enriching studies through analyses of tools and material finds, also exploring the socio-cultural context, and encompassing the biomechanical understandings of East Asian martial arts such as *kendō* and *aikidō*, as well as modern sport disciplines.

At the same time, it was equally necessary to condense and limit the field of practice first to a text, and even more than this, to start with one of the weapons, that of most interest to the master, and make it our starting point. The choice was in part casual but over time was well justified. The chosen discipline was the two-handed sword, contained in Book Three of *Opera Nova*, one of the only two weapons to which Master Marozzo dedicated up to three *assalti*.

In the final analysis, we must maintain both an overview and a focused view, just like the mythological Irish warrior, Cuchulain, who embodied this important ability when he was transfigured by the fury of combat and widened one eye out

of proportion while narrowing the other, knowing how to keep his vision broad but simultaneously focused.

3.4 Interpretation and Practice

For seventeenth-century authors, the art of sword-fighting was learned through the study of "theory" and "practice," but "experience" was also important: the continuous application of the first two overtime. Gotti expertly identifies and manages different elements: the respect for the master, which consists in studying with humility, dedication, and the desire to plunge the depths of understanding; and the acceptance of initial and intermediate stages of partial and imperfect understanding, necessary for further improvements through practical experience, which allows one to gradually refine and arrive at a complete understanding. Lastly, the value of transversal research for identifying those teachings general to and shared by all masters, because they are essential and universal.

The process of learning and understanding Marozzo's art is fundamentally attributable to a cyclical path, which moves from reading the source to making the moves, then returning to the text, but seeking increasingly deeper levels of understanding. The complexity of the lessons in the text prevents a direct, linear, and conclusive relationship between reading the written information (such as describing a series of movements) and understanding and immediately executing the content. The only possible tool is continuous repetition that makes the movement automatic and personal while leaving sufficient room for correction and improvement of the same gesture.

It is possible to analyze the different levels at which this cycle is repeated. In the first step, information is gathered from the source. The text is read and studied using the master's instructions for developing a first, hypothetical concept of the indicated movements. Such notions are still abstract mental representations of the movement dictated by the master and will guide the first practical executions. Repetitions of the gesture will make the movement increasingly natural, building interconnection with the person performing it. Practical execution will also provide important information, in the form of sensory feedback and understanding from a dynamic perspective. This information will assemble the collection of experiences, leading to a deeper evaluation of the wisdom found in the source, and eventually possible re-modulation of technical interpretation.

While this is a circular pathway, the point of return is not the same starting point, because each new repetition brings new awareness and knowledge. The practice is therefore necessary, but we should be aware that it is limited and must be a tool for improvement. Usually, the correct interpretation will be the one that seems consistent and comfortable during execution: we proceed by subtraction, eliminating everything that is superfluous: pauses, breaks, and absence of protection.

The various cycles essential to the study of text require constant review of the meaning of terminologies used by the master in the light of extensive descriptions

scattered around the dissertation, to allow identification of connections with information presented at different points of the written source. A further cyclical path leads from detailed to general information and vice versa: from the technique to the understanding of the fundamentals of sword-fighting and the general system; and from these to a new, stronger interpretation of the technique itself.

3.5 Basics, Techniques, System

The progression of system reconstruction moves from understanding how every single technique functions within the whole to grasping the facets and dynamics of each part. From this reciprocal process emerges the conception of the rules and geometries that command combat. The acquired knowledge can be organized and structured, and after observing recurrent dynamics, redundancies, and exceptions, it will be possible to build a martial art system that permits creative use of the technical expertise thus acquired. Indeed, it is necessary to move from the plane of techniques to that of the structured system that organizes the techniques, then to the geometric and biomechanical fundamentals regulating each movement.

An essential part of the interpretative task is to define what is fundamental and to determine the unique ground upon which to build complexity. For various reasons, which range from providing these written works to trained swordsmen, to the desire to guard the secrets of the teaching methods of their respective schools, historical manuals usually do not provide instructions on basic movements, except with limited, partial descriptions. An example is the extreme conciseness with which Master Marozzo writes about the use of the *segno del passeggiare* (footwork diagram), the geometric pattern needed for understanding and learning how to take up stance in his type of sword-fighting (see Fig. 5). In just three lines, the master sums up all possible alternatives of using the geometric pattern of two circles and an eight-pointed star.

Concrete training methods have been developed in the Opera Nova School, transforming the result of across-the-board research into daily practices. Thanks to those key instruments of the training system, it is possible to embody the gestures that make up the letters of an alphabet or the notes on a pentagram. Moreover, herein lies the extreme value of that ability to expand one's vision and then focus it on a single detail, finally capturing the essence of the most important notions that the masters suggest. Knowing how to grasp the importance of nuances and elevate them to principles, to rules, was one of the critical insights into the development of training tools. The Renaissance master's cuts delivered on the Roman legionary's wooden pole, the thrusts through Master Marcelli's ring, the steps on the *Stella* (star) transferred from the illustration on the page to tangible raised stakes, then enriched with understanding through the study of Master Fiore's (J Paul Getty Museum, Los Angeles) and Master Vadi's (Biblioteca Nazionale Centrale di Roma, Roma) symbols that become embodied concepts, as an example (see Figs. 6 and 7). Furthermore, to seek the extreme gesture in Master Di Grassi's expression *derompere* (to almost break), namely to push arm joints to the limit and aim beyond, summing up

Fig. 5 Printed image of the *Segno del passeggiare*, Achille Marozzo, Opera Nova, 1536 (collection of Martial Art Museum (BS), Botticino)

Fig. 6 The physical reconstruction of the *Segno del passeggiare* diagram as training tool, designed and built by Roberto Gotti, Botticino (BS), Italy

Fig. 7 The symbolic representation of the warrior virtues in the De Arte Gladiatoria Dimicandi, Philippo Vadi, ca. 1485, fol. 15r (collection of Biblioteca Nazionale Centrale, Sez. Manoscritti e Rari, Roma)

and embracing triangular and circular figures, achieving the awareness of a dynamic sphere—felt in *aikidō*—that explodes, and perfectly expressed in the words of Master Agrippa.

Only through the quest for these kinds of awareness and continuous and conscious practice, can we move from the formal rigidity of exercise to the gestural freedom and spontaneity of a trained body. Supported by basics, techniques acquire value and solidity, a real applicability that is otherwise unattainable. A body, liberated by exercise and enabled to manage energy flows, can therefore handle complex gestures, and drop them into the dynamics of timing and distance, coming to understand the peculiarities of the technique in progress. It is then possible to understand how it connects to the previous action, and how it prepares for the subsequent one in a correct manner. The understanding of a historical master's system lies not only in identifying the relationships among techniques but the reconstruction of an organic and structured model of approach to combat, which both underpins and makes such techniques possible, unifying them in the process. This model is built on formalized

lines but at the same time, once truly grasped, allows for improvisation and creativity, leaving space for new architectures.

Lastly, the written source does not always present the system in a complete way, as is the case for many medieval masters or fragmentary sources, and oftentimes that system is not explicit but requires a long, complex reconstructive process.

4 Case Study: Marozzo's Two-Handed Sword

Often mentioned as a preferred weapon in the learning and practice of the art of sword-fighting, the two-handed sword was used for a span of just over two centuries (from the mid-1300s to the end of the 1500s). It is a weapon that requires both hands on the grip (with exceptions of specific wrestling, disarming, or thrusting actions) which imposes certain limitations when using the body, but it is also the origin of a wealth of moves and figures and offers the possibility of unique expression of power and dynamism.

In the Italian scene, Master Marozzo was the last author to deal with the use of the two-handed sword in an expert and highly varied manner (see Fig. 8). After him, this weapon received far less treatment and progressively turned into a heavy combat or physical training tool, the vestige of a past no longer fully understood. Equally, the masters who came before him often presented martial art systems linked to a

Fig. 8 Two guards with the *spada a doi mane*, the two-handed sword, from Achille Marozzo, Opera Nova, 1536 (collection of Martial Art Museum (BS), Botticino)

more elitist or fragmentary diffusion of knowledge, making it difficult to rebuild a real and applicable system. In this sense, therefore, Marozzo can be considered the best master from whom to learn this discipline, but also the most demanding given his enigmatic complexity.

The teachings related to the use of this weapon are divided into three *assalti*. In the forms the master describes first separately, then together, and then skillfully alternated the two main attitudes to combat: what the master defines as *gioco largo* (wide play) and *gioco stretto* (close play). Simply put, one approach seeks ample movements and distance from the opponent, while the other tends to condense moves and bring combatants closer together. There is a third kind of play, *gioco delle prese* (wrestling play), which may arise from short distance, with combat and disarming moves. The three approaches should be perceived as dynamic options dictated by blade and step actions, always aiming to develop a pattern of moves that lead the swordsman to defend himself while seeking to strike safely or dominate the opponent.

The *assalti* can be described as containers, swordplay phrasing patterns, within which the master unfolds his system using examples of application. The *assalti* last for different lengths of time, with elaborate movement dynamics between two opponents in which both technical (each move) and tactical (the master's combinations) content is expressed. The practice of forms, combined with the exercise of basics (as explained above), has been the method for refining interpretation and, equally, individual learning and teaching. The *assalto* is therefore like a forge, able to refine the awareness and understanding of both the school and the trained bodies of those who attend it.

The *assalto* is an individual exercise, with or without a weapon: it is also a team exercise, standardizing the pace of execution; and it is an exercise in pairs, sharing complementary passive and active roles. It can be performed at different speeds, from the extreme slowness required for understanding, to the explosive speed of masterful execution, homogenous or paced according to the natural combat breaks. The *assalto* is also the container from which to extrapolate the technical units that become the subject of specific training or the guide for the creative construction of alternative movements. Lastly, those who have learned the lesson so well they can overcome it, achieving free, spontaneous combination of gestures (see Figs. 9 and 10).

Free combat, if practiced by sufficiently trained experts, is a topic for further analysis and understanding of the art, since it tests and validates the quality of interpretations devised. Infeasible interpretations, with excessive abstractions, can be discarded while at the same time, correct understanding can be extended and confirmed. The free sparring, as usually called, offers an impromptu, non-cooperative context, in conditions of increased speed of performance and uncertainty. Here basics, techniques, tactics, and strategies merge into a form of dialogue where both swordsmen try to "touch without being touched," where reading and hearing the opponent combine with trying to overcome them (see Fig. 11).

The next test bench is the sport, the competition, where the expression of a martial art may take place in a field that displays certain aspects while limiting and distorting others. By maintaining awareness of weapons through regulations, and limiting technical content for safety reasons, the competitive context becomes an opportunity to

Fig. 9 Solo execution of Achille Marozzo's *Assalto*, performed by Jacopo Penso during the first federal competition of forms in Vercelli, 2019 (photograph by Sally Ruth, given to Opera Nova)

experiment the variables and compare different systems and approaches. The study of a martial art within a competitive context has its limits. However, the latter can and must be used as an opportunity for the swordsman's assessment and growth, as well as for testing and building theoretical models and training practices (see Fig. 12).

4.1 Tools

The sword, which in individual practice can just be a simple stick (or even without the use of any instrument), is certainly the first and fundamental tool. The exercise will integrate the tool increasingly with the user, to the point where the separation between the object and the user's body disappears. The sword will become not only the tool for implementing the attacking action, projecting the impulse of force launched at a distance by the body, but also the tool for probing, collecting, and feeling the stimuli that come from the opponent and their weapon (see Fig. 13). Supported by the study

Fig. 10 Paired execution of Achille Marozzo's *Assalto*, performed by Moreno dei Ricci and Jacopo Penso, during a public demonstration in Lausanne, Switzerland, 2018. In this particular case, protections such as masks are not required since the execution is well trained by expert partners (photograph by Daniel Jaquet)

Fig. 11 Example of action in a sparring match between Moreno dei Ricci and Jacopo Penso, during a public demonstration in Lausanne, 2018 (photograph by Daniel Jaquet)

Fig. 12 Roberto Gotti's winning action at the finals of the Italian two-handed sword championship held by national sport body CSEN in the Tempio di Adriano, Rome, 2016 (public photograph from the tournament, anonymous creator. Photograph sent by the organization of the tournament, Accademia Romana d'Armi SSD)

Fig. 13 Example of the blade flexibility in modern replica's designed for sport, courtesy of Caino swords (http://cainoswords.com)

of the historical sources and exploring the history contained in the sword, a huge contribution today comes from the willingness of manufacturers (or those attentive to the needs of the historical fencing community) to provide replicas of historical weapons suitable for safe practice, whose quality comes from characteristics as close as possible to those of originals. Over time, the development of protective equipment has also made possible free combat practice, which simulates the speed and intensity of real combat, while excluding or minimizing the risk to the athletes.

Finally, and importantly, practice locations. We must not forget the importance of an appropriate setting for the study of the art (in terms of wide, anthropological practices) and the experience of it. In this sense, building dedicated space(s) able to elevate the art of fencing is one of Gotti's great insights. His school has a dual nature—originating in sacred, domestic, and natural spaces like that of the *Bosco delle Fare* (Wood of the Fare), it is flanked by a place of fusion of historical art and modern sport, full of light and aesthetical inspiration such as the *Gairethinx* gym (see Figs. 14 and 15). In these places, the practice is enriched with grace and human depth and broadens the horizons of those lucky enough to enter it.

Fig. 14 A lesson in the Wood, Opera Nova summer camp, 2018

Fig. 15 Fencing lesson in Gairethinx, Opera Nova summer camp, 2018

4.2 Comparative Studies

From the original intuition that made it possible to grasp ideas from various masters, hypothesizing the points of contact and a shared thread, it is now possible to observe other masters, in the light of a mature understanding of one of the authors, and using this as a lens to analyze and compare. An example is the study conducted on the art of the two-handed sword of the military leader Pietro Monte,[7] which led to a simplified, different version, but consistent with the teachings of the Bolognese master (Monte, 1509).

The same can and will be said in the future on the subject of two great medieval Italian masters, Fiore dei Liberi and Filippo Vadi, previously misunderstood for their limited, partial essays, but whose technical background may enrich the current understanding of the art. Future studies will hopefully be able to break down linguistic—but certainly not technical or conceptual—barriers to weave a dialogue with the study of European traditions at first (like German and Spanish masters) and later to geographically and culturally distant martial arts.

The same comparative value also exists in observing the different disciplines indicated by the same author. Benefiting from being part of the one coherent system,

[7] Pietro Monte's work was published after his death in 1509. The study of him and his work is under publication.

useful differences and similarities can be found in the study of the weapons that Marozzo outlines. This is valid both as regards the analysis of the text overall, finding internal confirmations of the terminology used and better identifying the recurring elements of the work, but also as regards the identification of precise moves and sensations, better understood thanks to their presentation in different contexts. An example of this is the importance of studying wrestling techniques against knife, essential for learning the close play of the two-handed sword.

5 Conclusion

In the void left by the loss of the historical art, those intending to become masters first had to become students in a candid and complete way. It was necessary to connect with the masters of the past, listen by every possible means, even to the faintest whispers of their teachings, to the point of creating an intimate, continuous dialogue.

The merit of contemporary masters like Mr. Roberto Gotti, who has succeeded in this feat, is to prove that such task is possible, and show the way and share it with those interested in pursuing it. So, it is possible to study the art of the swordmasters while remaining faithful to their teachings, constantly trying to approach the real and original expression of this art, despite the historical distance, restoring its dignity and its role among other, far better-known, valued expressions of human transcendence. Today, experienced students such as Moreno dei Ricci and Jacopo Penso pursue this commitment and support their master in the construction and diffusion of a school, seeking constant improvement and growth.

Much more can and should be done to make this art flourish, no longer forgotten, no longer just "historical" and relegated to a buried, obscure past. Today this art is alive, planted in the bodies of those who practice it, no longer to destroy an enemy but as an instrument of self-discovery and growth, preserving its sublime nature of artistic expression.

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Dialogue with Roberto Gotti: An Initial Foray into Comparing Chinese and Italian Two-Handed Sword Methods

Hing Chao

Abstract Sword culture is a complex phenomenon that encompasses the dimensions of sword-making and polishing, sword appreciation, technical skills associated with the use of the sword, i.e., swordsmanship, as well as the written and oral traditions related to the transmission of fencing. In recent years, this diverse heritage in China and Italy has drawn increasing attention from both professional scholars and the historical martial art community. However, efforts to directly compare Asian and European historical fencing and sword culture are extremely rare. Written in the form of a dialogue with the pioneering researcher Maestro Roberto Gotti, who has been at the forefront of reconstructing Renaissance Italian martial arts for the past two decades, this study is an initial foray to compare Chinese and Italian two-handed sword traditions of the early modern period (*circa* 1400–1630). At the same time, the author recognizes the inherent challenges to such an undertaking, such as the fact Italian and Chinese martial arts have come down to us in very different states. While Chinese martial arts continue to be practiced as a living art, Italian martial arts have mainly survived in written form. On the other hand, notwithstanding the difficulties in interpretation, Italy has preserved far more documents from which contemporary scholars may seek to uncover the past. At the same time, there are numerous differences in the way fencing knowledge was recorded, which creates an additional layer of complexity for cross-cultural comparison. In summary, considering all the difficulties inherent in this research, the findings presented here are tentative and meant to stimulate discussion and further research—no more than "throwing a stone to attract jade" as the Chinese saying goes—rather than serve as a definitive comparative statement of Chinese and Italian swordsmanship. The reader is encouraged to read Gotti's *The Dynamic Sphere: Thesis on the Third State of the Vitruvian Man* and the reply to this study, jointly written by Gotti and Penso (appended to the end of this chapter), in order to form a more complete view of the dialogue.

Keywords Way of the Sword · Sword culture · Swordsmanship · Martial arts · China · Italy · *Shuangshou dao* · *Shuangshou jian* · Two-handed sword · Historical fencing · Dynamic sphere · Humanism of the sword

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1 Introduction

Martial arts are the result of long-term cultural exchanges between individuals, communities, and states, which involve material and technological, cognitive, technical, textual, as well as ideational dimensions. Born out of the need for survival and created as combat techniques to settle quarrels, demonstrate valor, as well as to enhance prestige and honor, in time martial arts became an embodied system of knowledge, carrying multi-dimensional information about technology, material science, as well as social and cultural values. Martial arts also reveal essential information about the individuals and communities who practice them, while the social performance of martial arts frequently plays a role in enacting cultural identity. Clearly, martial arts are a fertile field for examination, while martial studies provide unique opportunities for cross-cultural research, the significance of which the academia has only started to recognize. At the same time, the complexity of such research must not be underestimated.

The background of this paper is the multi-layered research partnership between International Guoshu Association, Ma's Tongbei Martial Studies, and Opera Nova that began in 2019. It led to the third International Martial Studies Conference *Sword Culture Across the Eurasian Continent* (2020), where researchers from Europe (in particular, Italy) and China exchanged views on the history, technology, and material culture, as well as transmission and teachings related to historic fencing, and the exhibition *Way of the Sword: Warrior Traditions in China and Italy* at Tai Kwun—Center for Heritage and Arts (2021). It is also the result of an ongoing personal dialogue with Roberto Gotti, visionary founder of the Opera Nova School and pioneer at the forefront of revitalizing Italian martial arts as a living art, who has been encouraging me to consider the similarities and potential connections between the martial art traditions of China and Italy. To a significant degree, therefore, this paper is a response to his invitation to comment on his study, *The Dynamic Sphere: Thesis on the Third State of the Vitruvian Man* presented as the fourth chapter of this volume.

The research process leading up to the exhibition *Way of the Sword*, which involved regular and frequent exchanges with Gotti, including a rare opportunity both to participate in the training and to teach martial arts at Gairethinx in Botticino, the headquarters of the Opera Nova School. These experiences gave me invaluable first-hand glimpses into both the astonishing similarities between Italian and Chinese martial arts, as well as some of the differences. This paper is, therefore, to a large extent, also an account of my own reflections.

It is beyond the scope of an initial foray such as this to compare the two systems as a whole. Instead, this study will focus on the theory and practice of the two-handed sword, which is an important feature in the historic martial arts of both countries. Before launching into the main disquisition, however, it is necessary to emphasize some of the inherent difficulties and potential pitfalls when attempting to compare Italian and Chinese martial arts.

First and perhaps most important, Chinese and Italian martial arts have come down to us in very different states. Italian martial arts—more precisely, Italian martial

arts of the fifteenth to early seventeenth centuries—largely disappeared long before the twentieth century. At the same time, a significant corpus of historic martial art literature has survived and been the subject of reconstructive study by Gotti and his scholars, forming the basis of the curriculum at the contemporary Opera Nova School and Gairethinx, which is now recognized by the Italian Fencing Federation as the national center for historical Italian fencing. By comparison, Chinese martial arts are a living culture with popular following both in China and overseas. With a small number of historical schools and lineages, it is even possible to trace the transmission back to the Qing dynasty. However, the inherited teachings have evolved with the times and been subject to significant—and in many instances, radical—transformations. In addition, much of what we now call "traditional" Chinese martial arts was created between the late nineteenth and mid-twentieth centuries. Therefore, it would be hazardous to take contemporary practice—even what we consider having survived from historical martial arts—to be fully reflective of the past. Even the most respected historic lineages are not free from modern influences.

Second, there are significant disparities between the primary sources in China and Italy, which differ both in terms of quantity and in the nature of the information they convey. In the first instance, extant historical martial art texts in Italy considerably outweigh Chinese manuals of the same period. Gotti considers at least fifteen treatises, dated between the late fifteenth century (Vadi, *De Arte Gladiatoria Dimicandi*) and the beginning of the seventeenth century (Anonymous, *Postura*), to be central to his study (Gotti). The total surviving corpus would be considerably greater if we also take into account the dueling manuals, instructional texts for military drills and training, etcetera. By comparison, only a small corpus of sword manuals has survived from the Ming and early Qing dynasty (and nearly nothing before that). Even if we include Qi Jiguang's (1528–88) military-style two-handed sword methods (which he styled *Xinyou daofa*)—derived from a Japanese *kenjutsu* scroll of the *Kage-ryū* tradition[1]—and the "imported" *Chaoxian shifa* recorded in the Ming military encyclopedia *Wubeizhi*, the total number of texts is less than ten.

Third, from a content and presentational viewpoint, Chinese manuals take a more compact form. In Italy, the birth of humanism and the intellectual transformation it brought about had an enormous impact on the human mind and on the ways in which knowledge was articulated, recorded, and transmitted. While Renaissance Italian martial art treatises still retain a certain Medieval flavor, as Gotti has noted, particularly in the expressive metaphors various masters-of-arms use in describing the human body and the nature of its parts,[2] what is even more noticeable is the growing attention to detail, logical reasoning, and use of mathematic principles for understanding human structure and movements—all tell-tale signs of a nascent scientific mode of thinking. In contrast, with one or two exceptions, Chinese sword manuals

[1] The *Kage-ryū* is considered one of the three main traditions of historical fencing in Japan, alongside with *Shintō-ryū* and *Ittō-ryū*. While *Kage-ryū* itself is no longer practiced, the various *Shinkage-ryū* (i.e., "new" *Kage-ryū*) schools remain popular to this day. *Yagyū Shinkage-ryū*, which is discussed in some detail in this chapter, is derived from *Kage-ryū*.

[2] The best example is Vadi, who compares the human body to a moving fortress mounted on an elephant, with a lion and a dragon sitting above his shoulders.

provide instructions in a fairly general manner. Martial arts in China were—and are—primarily an oral tradition. This highlights an essential difference between Chinese and Italian traditions—in the former case, written text primarily served as an aide to memory, a point of reference for the essential principles and techniques. Italian sword treatises, on the other hand, despite the masters' occasional reluctance to fully disclose their knowledge, are meant to stand on their own to a much greater degree. This in turn illuminates the need to consider the inherited oral traditions when we look at Chinese swordsmanship, while at the same time recognizing the protean nature of oral transmission.

Pursuant of these observations, this study makes equal use of two types of text—written and embodied. Historic documents are chiefly from the period between the fifteenth and seventeenth centuries, while the contemporary masters themselves (and their performances) constitute the embodied text. Historic sword treatises are essential in so far as they are the *only* primary sources—directly written down by the masters—from this period. In the same breath, we must acknowledge that the knowledge transmitted through the pages is necessarily mediated through subjective interpretation. Ultimately, when we compare Italian and Chinese martial arts *qua* dynamic systems, our only reference is those performed by the living masters. In this sense, the body—and the movements enacted with the body—serve as an essential text for this study. Therefore, the methodology adopted here combines textual research and the study of the embodied knowledge.

My point of reference for Italian martial arts is the Opera Nova School founded by Gotti and his teachings, whereas for historic Chinese swordsmanship I refer to two different systems: the two-handed sword methods transmitted by the Ma family, and the techniques passed down within the Jieyuantang school of southern Fujian (or Minnan region).

I do not profess to an in-depth knowledge of Opera Nova, nor do I claim that the teachings of the school offer the only possible interpretation of Italian martial arts of the Renaissance period. However, for the purpose of this study, Gotti and Opera Nova serve as my sole guide and the ultimate authority on Italian martial arts. When I write about Italian martial arts or Italian swordsmanship, it is therefore filtered through Gotti's interpretive lens, which serves as my guide to the labyrinthine martial art system of Renaissance Italy. I also rely on Gotti's reading of the Italian treatises in my discussion of the various masters and their theories.

As to contemporary practice of the two-handed sword in China, I rely on Ma's Tongbei system of martial studies and the Jieyuantang school. The Ma family's two-handed sword methods, a northern tradition with association with the military system of the late Qing period, are the most respected historic swordsmanship system in China, while the Jieyuantang school, founded in the nineteenth century, is the only school I know in southern China to transmit two-handed sword techniques. As a longstanding member of both schools, I have recourse to oral transmissions and my personal experiences, including my own practice with the two-handed sword and related weaponry training.

Last but not least, as the development of the Chinese two-handed sword is intricately linked and, in some ways, derived from the Japanese sword, I also draw from

Japanese sources where that shed light on our discussion. This paper is constructed as an answer to Gotti's essay on the dynamic sphere, so I will begin with a summary of his exposition.

2 Gotti's Exposition of the Dynamic Sphere

Gotti believes the teachings passed down by the Renaissance Italian masters are unified under a set of common principles—or rather, *the* principle. In his view, their transmissions are intrinsically complementary, in the sense that each contributes unique elements and perspectives toward understanding the system as a whole. The quest then is to uncover "the common element in the teachings of those Masters or martial artists who left behind written records (Gotti)." He further says, "There are differences among the treatises of armed combat that we have inherited. Some are richer in content, others less so; some offer detailed descriptions of the techniques, others are more taciturn … All too often they are analyzed individually, which is a serious flaw when studying an art form which, by its very nature, draws its strength from the diversity of confrontational situations, leading to the settlement and layering of different experiences (Gotti)." Therefore, to make sense of one treatise, it is preferable—or, in order to arrive at a complete understanding, it is essential—to study all the treatises together, for concepts revealed in one source illuminate another, like pieces of a complex jigsaw puzzle which are only fully known when they are assembled and put into the right places.

Gotti's study of the primary sources over a period of more than two decades ultimately led to the discovery of what he considers the holy grail of Italian martial arts—the dynamic sphere—which he defines as follows:

> (T)he concept of the dynamic sphere—a sphere that does not rest on its poles and can change its diameter—comes from those who received and passed on the teachings of a perfect martial art in the fifteenth to sixteenth centuries. … (This is) the common element in the teachings of those Masters or martial artists who left behind written records … the insistence upon improving dynamic movement, uniting all the limbs behind a blow or a parry (Gotti).[3]

In his view, the dynamic sphere is the ideal motional state the Renaissance masters sought in the martial arts. It leads to the actualization of what the early sixteenth-century fencing master Camillo Agrippa (1520–1595) described as *potenza infinita* (infinite power), which manifests in a continuous motional flow within a sphere, which may expand and contract as the actor responds to new confrontational situations.

To intuit the workings of the dynamic sphere, the actor has to establish his "maximum possible proportions," which in turn leads to the (self-)discovery of what Gotti calls the third state of the Vitruvian Man. In this state, the center of man is located at the solar plexus, between the diaphragm and the groin, while his limbs (in particular, the upper limbs) extend outward to their maximum reach. The solar plexus is seated

[3] Note that for all of these references to Gotti's work, please see the fourth chapter of this volume.

at the core of the dynamic sphere, whose surface is described by the edge of the blade as it strikes at the enemy. Once the maximum reach is discovered, the martial artist may then freely change or adjust the circumference of the dynamic sphere as he pleases. Gotti says,

> The true and grounded principle should be sought in man's natural state, which can be perceived when the maximum possible proportions are reached. Such proportions may then be reduced in half-sword play, in narrow play and with bare hands, but maximum proportions should first be sought … The true and founding principle that troubled Pagano's thinking was the dynamic sphere laid down by Agrippa, of which the other Masters let us glimpse into the fundamental principles: the ability to mobilize the limbs; the ability to move one's weight from the ground toward the first center—the solar plexus—and lay it down again elsewhere; the ability to move the center of the dynamic sphere around the inside of the body; the ability to expand and draw upon the energy of dynamic moves (whether they are cuts, parries, displacements); the ability to place the sphere temporarily on one possible pole out of an infinite series existing on its surface, to draw upon the support within the nucleus and to send it to the periphery of the sphere (Gotti).

According to this view, the dynamic sphere is a complex concept that is at once a movement principle, while it also encompasses the strategies and mechanisms of attack and defense. In a word, it is a totalitarian principle that holds the key to all aspects of martial arts.

Later we will look more closely at some of the concepts described by the various masters, which we may view as conceptual components of the dynamic sphere *qua* a theoretic system. For now, let us examine the Chinese tradition to see whether there is a comparable theory.

3 The Chinese Two-Handed Sword Tradition

The idea of a three-dimensional circular power that moves within a spherical space is endemic in Chinese martial arts. Popular "styles" such as Taijiquan, Baguaquan, Yiquan, and Fujian White Crane, frequently invoke such ideas as *baoyuan* (embracing the circle) in static and dynamic practice, which further draw support from traditional Chinese cultural and cosmological concepts like "*tian yuan di fang*". In Fujian White Crane boxing, for example, one of the most fundamental training exercises is *sanyuan jiushi* (Three Circles and Nine Movements), which reduces dynamic motion analytically into three movement planes.[4] Taken together they constitute a dynamic sphere not dissimilar to the one described by Gotti and the Renaissance masters. Indeed, practitioners are taught to visualize and perform their movements within an invisible sphere. The example of Fujian White Crane is particularly interesting, as it forms a core component of the teachings at Jieyuantang, which also transmits the methods

[4] Master Lee Kong offers an in-depth discussion on the "circle" in a sub-section entitled "*Sanyuan jiushi*" in his book (Lee 2020, 127–140), to which I refer the interested reader.

of the two-handed sword. According to the oral transmission of Lee Kong, a fourth-generation master of the school, the principles in empty-hand martial arts also apply to the two-handed sword.[5]

However, before getting carried away it is important to note that there are crucial distinctions between the concept of *yuan* (the circle or sphere) in Fujian White Crane and the dynamic sphere. While the dynamic sphere initially seeks the greatest possible extension, White Crane begins on the opposite end of the spectrum, with a small circle whose radius is defined by the length of one's forearm and teaches the practitioner to keep the circle tight and close to the body. It also involves specific cultural notions about the human body, in particular, the need to extend and contract the spine as a governing movement principle which—common across Chinese martial art styles—is not found in the Italian tradition as far as I am aware. Therefore, even though Chinese and Italian martial arts both ostensibly make use of the sphere as a dynamic principle, there are subtle but important differences in how it is understood and expressed.

Another important point is that when we consider Chinese sword manuals of the fifteenth to seventeenth centuries, they make no reference to such concepts as the sphere, which are typically associated with a specific cultural attitude to understanding martial arts—a so-called "internal" approach—which did not appear until the very end of the Ming dynasty.[6] In fact, in the surviving martial art literature of the period, there is no discussion at all of such abstract theories, while the focus is firmly placed on the practical matter of combat and the strategies therein. Circular movements exist in so far as they apply to the actual methods of attack and defense, cutting and parrying, but do not form the basis of a higher or more abstract movement principle such as the dynamic sphere.

The Ming dynasty was an unusual time in terms of martial art development. On the one hand, it has long been acknowledged that general military preparedness (and martial skills) suffered a sharp decline during this period. On the other hand, ongoing military crisis and mounting threats of invasion both on the northern border and along

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[5] In his article, "*Fujian shuangshou dao fa*" ("Fujian's Two-handed Sword Methods") in *Xianggang wulin* (*Hong Kong's Martial Arts Community* 2014, 52–59), Lee Kong discusses the common principles between the two-handed sword and White Crane, which he further explains in the video demonstration (https://youtu.be/s3osKAjh0ao).

[6] Under the growing influence of Neo-Confucianism—which was heavily influenced by Taoism—from the Song dynasty onward, body practices increasingly drew upon Taoist cosmological concepts. In particular, the cosmological concept of Taiji, which the Northern Song (960–1127) scholar Zhou Dunyi (1017–73) developed into diagrammatic form, gave impetus to esoteric health cultivation techniques. In origin, the "internalization" of such Taoist concepts into body practices aimed primarily at cultivating longevity and had nothing to do with the martial arts. However, from the Southern Song (1127–1279) onward, as Neo-Confucianism of the Li School began to dominate the mainstream intellectual landscape, concepts such as "*yi dong buru yi jing*" ("movement to give way to stillness") began to penetrate other cultural domains. At the beginning of the Qing dynasty, the concept of "internal boxing" (*neijiaquan*) appeared for the first time in *Wang Zhengnan muzhi ming* (*Tomb stele in commemoration of Wang Zhengnan*), composed by the late Ming and early Qing literati Huang Zongxi in commemoration of his friend and martial artist, Wang Zhengnan. However, it is likely that this concept already existed in the late Ming.

the coast encouraged innovations in military tactics, weaponry, and martial skills, which often took place outside the official domain, as civilian and military martial arts interacted in unprecedented ways in an effort to reform the corrupt and degenerate military system. Ming's sword culture mirrored such contradictory tendencies in mainstream martial culture, as it was at once marked by decline and loss, as well as innovation and revival.

In his paper, "*Shuangshoudao fa yuanliu*" ("Genesis of two-handed sword methods"), Ma Lianzhen states that the two-handed sword, which emerged in the late Warring States and reached its peak during the Tang dynasty, fell sharply into decline during the Ming, such that "swordsmanship skills had become degenerate, (while) the swords manufactured were coarse … and became an impractical martial art fit only for performance (MLZ 2018, 40)." However, from extant sources, we know that the "ancient" techniques of two-handed sword (*shuangshou jian*)[7] were still practiced by civilian masters in the sixteenth and seventeenth centuries, notably Li Liangqin, who transmitted the methods of "Jing-Chu *changjian*" to the celebrated general Yu Dayou (1503–79).[8] At the same time, incursions by *Wokou* pirates, who terrorized communities in the coastal provinces with the two-handed Japanese sword (*nihontō*), which reached its height between the Jiajing (1522–66) and Wanli (1573–1620) eras, encouraged civilian as well as military martial artists to study its techniques. This led to one of the most febrile and interesting periods of exchange between Chinese and Japanese martial arts, which gradually progressed from imitation of Japanese methods to a more profound fusion of Japanese and Chinese swordsmanship (MMD 2000a, 222–225, 240–246). Ultimately, this gave rise to a number of classic fencing treatises, notably Cheng Chongdou's (b. 1561) *Dandao faxuan* and Wu Shu's (1610–94) *Dandao tushuo* (see Fig. 1).

Reflecting this hybridity, two parallel systems of the two-handed sword existed side by side during the Ming. The first is an ancient native tradition, already over a thousand and five hundred years old by the early Ming, which makes use of a straight blade that could be either double- or single-edged. The second is an imported tradition from Japan, which itself evolved from earlier Chinese and Korean forms.[9] Around the eleventh century, a distinctive Japanese sword with its own characteristics—including a curved blade (as opposed to the earlier straight blade from China, called *chokutō* in Japanese), ridge, and finely polished surface—emerged. Ultimately, this type of blade was responsible for the second, imported tradition. For the sake of simplicity, we will refer to the indigenous Chinese form as *shuangshou jian*, irrespective of whether a double or single-edged blade is used, and to the form derived from Japan *shuangshou dao*.

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[7] *Shuangshou jian* refers to a type of two-handed sword with double edges.

[8] In the "Introduction" to *Jianjing*, in the opening sentence Yu Dayou writes that he "learnt Jing-Chu *changjian* and was conversant with its methods," which indicates he was a master in this art. His teacher was Li Liangqin, as clearly recorded in *Yu-gong Dayou gongxing ji*, written by Li Du (Ming dynasty). For further discussion see MMD (2000a, 236).

[9] The straight single-edged sword, known as *chokutō* in Japan, was imported from China in large quantities, especially during the Tang. For a more detailed discussion see MMD (2000a, 215–216).

Fig. 1 "*Shanggong dao shi*" in Cheng Chongdou's *Dandao faxuan* illustration

While these two traditions had a profound historic connection, there are fundamental differences both in their form and techniques. We will begin with the *shuangshou dao*, which was the more popular during the Ming. It is to this tradition that most of the living "historical" two-handed sword techniques are traced, including the Ma's Tongbei two-handed sword methods.[10]

[10] Ma's Tongbei's two-handed sword methods originated from Huang Linbiao, who in turn learnt from the Ji family of Tianjin, who were hereditary martial art instructors for the Green Standard army during the Qing. The source of Ji's two-handed sword is unclear but likely to have derived from the military system of the long-hafted *shuangshou dao*. At the same time, Huang passed down a manual which was substantially based on Cheng's *Dandao faxuan*, thus, according to Ma Lianzhen, his methods were likely a fusion of Japanese two-handed sword and the Qing military *shuangshou dao*. See MMD (2000a, 247–248) and MLZ (2020, 45–46).

3.1 *Shuangshou dao*

A notable feature of the interactions between Chinese and Japanese swordsmanship during the Ming was the concerted Chinese effort to copy Japanese form. Imitations of the Japanese sword, known under the name of "*wogun dao*" or "*wodao*", became standard military weapons and were manufactured *en masse* by the state (MMD 2000a, 220). Mirroring this development, commanders assiduously incorporated Japanese sword methods into military training. Qi Jiguang, for example, created the Xinyou two-handed sword methods based on his observations of Japanese swordsmanship. The same trend is also evident among civilian martial artists. Cheng Chongdou learned his methods from the Zhejiang sword master Liu Yunfeng, while Wu Shu acquired his art from Shi Dian. Intriguingly, Liu and Shi apparently both learned from the same Japanese master, so in effect Cheng and Wu's methods derived from the same source.[11] According to Ma Mingda, "Cheng's *dandao* fully copies the original style of Japanese swordsmanship, while such details in his manual as drawing and sheathing the sword also closely follow the 'Japanese form', which [therefore] gives a meticulous and faithful representation [of the Japanese sword] (Ibid., 245) (see Fig. 2)." By comparison, Wu showed considerable ingenuity in the way he fused Chinese sword techniques with Japanese swordsmanship, particularly the various grips he introduced in holding the sword, changing flexibly between single-hand and two-hand grips (Ibid., 245). However, it remains the case that this two-handed sword tradition essentially had the *nihontō* and Japanese swordsmanship as its basis.

Japan is one of the only countries to preserve its historic martial arts, particularly *kenjutsu* (swordsmanship), as a living tradition. However, it is worth bearing in mind that the Japanese sword itself went through a significant transformation during the Edo period (1603–1868), as the shogunate proscribed the wearing of the long sword used for field combat—sometimes known as *nodachi* (field sword), which was particularly popular during the Nanbokuchō (1336–1392) era—in favor of a shorter blade no longer than 69–70 cm in length.[12] By a historic irony, at the same time as the longer field sword went out of fashion in Japan, it was adopted and ultimately became the model for the Chinese *shuangshou dao*.

In *Dandao faxuan*, Cheng states that a normal *wodao* (i.e., Japanese sword) measures three *chi* and eight *cun* while long ones go up to five *chi*, which translates to around 122 cm and 160 cm in today's measurement.[13] Extant two-handed

[11] MMD (2000a, 245). Also see "*Ming mou wushujia Shi Jingyan kaoshu*" for a more in-depth discussion on the martial arts (included two-handed sword methods) of Shi Dian (Jingyan) (MMD 2000b, 88–111).

[12] The Tokugawa regime instituted a series of regulations to consolidate the new shogunate's power, including outlawing the wearing of the extra long *odachi* (literally, "large longsword"). See "Sumptuary Regulation and Status in Early Tokugawa Japan" by Shively. For a more general summary on the development of the Japanese sword, see Harada, "History of the Japanese Sword," in *Art of the Samurai*.

[13] In the section where Cheng describes the two-handed sword ("*dandao shi shuo*" or "Description of *dandao*"), he states, "There is an ancient saying, '*kuai ma qing dao*' ('a fast horse and a light

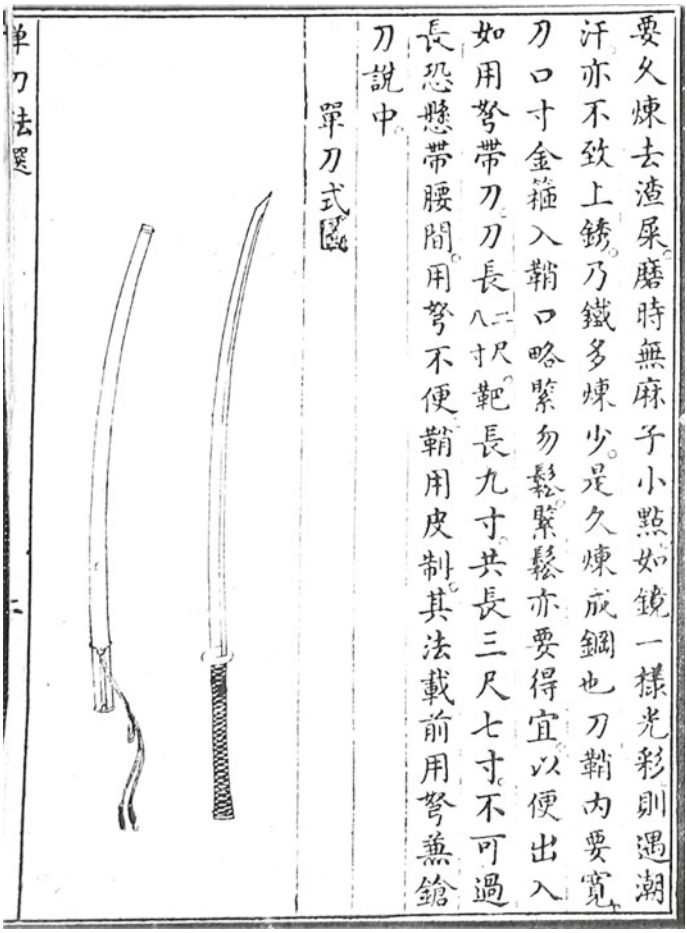

Fig. 2 Two-handed sword (*dandao*) illustration in Cheng Chongdou's *Dandao faxuan*

swords of the Ming dynasty, including specimens in Mr. Ma Yuwei's private collection, leave us in no doubt that the information provided by Cheng is accurate (see Fig. 3). By comparison, Edo period swords were normally between 90 and 110 cm, so we can see that many of the swords used by the *Wokou* pirates, which struck such fear in coastal communities in China, were war swords of pre-Edo standards.

We may further gain a flavor of the impressive size of the *nihontō*, as well as the techniques and movements of Japanese warriors from Qi Jiguang's famous statement,

> Longsword, it has been around since the *Wokou* pirates' incursions into China. Flashing [the sword], they leap and dance before us, which take the wind out of my troops. The *Wokou*

sword'). Today I take the Japanese sword (*wodao*) as model. It is three *chi* and eight *cun* in length, while long ones are five *chi* long." He then specifies the metallic properties required to make a good *wodao*.

Fig. 3 Ming dynasty two-handed sword from Ma Yuwei's private collection. The sword measures 146 cm overall (not including the pommel). The blade is 101 cm from the guard to the tip

> pirates like to jump, leaping over a *zhang* with each step, while their sword is over five *chi* long, thus adding five *chi* to their reach. It is hard for my soldiers to ward it off with short-range weapons while long-range weapons are too slow, thus those who meet them end up being cut in two. The reason is that their weapon is sharp and wielded with two hands, thus with great force.
>
> (Qi, Jixiao xinshu: duanbing changyong jie)

In a similar vein, Ma says, "after Chinese sword methods entered Japan, through a long period of development and exploration … [they] created the Japanese fencing techniques that were simple, practical, exacting, and full, and further characterized by powerful and flowing movements. In particular, it should be mentioned that … Japanese warriors … created a system of footwork that is extremely quick and agile, to combine with swift, forceful big cuts …" (MMD 2000a, 240).

The foregoing gives us a flavor of what the sword techniques of the *Wokou* pirates were like. Given the Chinese *shuangshou dao*'s intimate connection to the *nihontō*, including many martial artists' conscious effort to learn and closely imitate the Japanese style, we may expect them to be quite similar. However, to appreciate more fully the quality of their movements, it is necessary to go beyond the text and study the principles *in* movement.

During the production of *Way of the Sword*, I had an opportunity to closely examine an *assalto* (first *assalto*, fifth part)[14] performed by Jacopo Penso, Gotti's disciple and one of the leading practitioners of historic Italian fencing, and compare it with a performance of the two-handed sword by Prof. Ma Lianzhen. An important objective was to annotate the key movement principle(s) of the respective schools/traditions. To this end, I spent a considerable amount of time discussing with Gotti and Ma Lianzhen, respectively the head of Opera Nova and the third-generation inheritor of

[14] According to Penso, the fifth part is one of the most complete parts of the first *assalto* (made of ten parts). It is the only that offers a grappling action as a possible alternative, and concludes with an "embellishment" that mirrors the conclusion of the entire *assalto* at the end of the tenth part.

Ma's Tongbei, in order to gain a deeper understanding of the movements and to find the most effective and accurate way for annotation. During this process, I became aware of some of the key differences in their movement, which I summarize below.

Ma's performance included a sequence of two-handed swords that consists of twenty-three movements and several shorter sequences from a poem used for transmitting the principles of swordsmanship. The movements are crisp, strong, and fluid, accentuated with clear changes of pace, dynamic rising and sinking of the body, sudden turns, and quick changes of direction, and delivered in long, measured strides. The general style is evocative of the military-style of the pre-modern period, intended to cut through an opponent with powerful strokes. Indeed, if we compare this with the illustrations in Ming sword manuals, particularly Cheng and Wu, the resemblance is striking (see Figs. 4 and 5).

Naturally, given the close connection, it also invites comparison with historical Japanese swordsmanship. Qi said of Japanese swordsmanship, "Those who meet them [in battle] end up being cut in two." In fact, "splitting the enemy in two" (literally, "one cut, two halves") is the name of a technique in *Yagyū Shinkage-ryū*

Fig. 4 Illustrated figure in *juanqi shi* posture from Ma's Tongbei two-handed sword methods

Fig. 5 Illustrated figure in *yingtuici shi* posture from of Ma's Tongbei two-handed sword methods

kenjutsu,[15] and in *Heihō kadenshō*, one of the most important Japanese sword treatises ever composed, Yagyū Munenori (1571–1646) stresses both the importance to "keep the stance low" and the ability to gain victory through a combination of reading the opponent's intent, proper timing, and delivery of a single powerful stroke—which he calls the "ultimate single stroke."[16] Miyamoto Musashi (1584–1645) writes in a similar vein about "the single stroke" in his equally classic *Book of Five Rings*, which is "to gain victory with certainty by the accuracy of a single stroke" (Miyamoto 1993, 31).

Similar concepts are found in European swordsmanship, in particular the Italian master Angelo Viggiani dal Montone (d. 1552), who speaks of the "*magno calpo*" ("great cut"). However, if we look more closely at the text, both in Viggiani and other Italian masters, we discover that there are considerable differences in the technique and execution compared to Chinese (and Japanese) methods. With Viggiani the focus

[15] "One Cut, Two Halves" is the first of the five elementary techniques in *Yagyū Shinkage-ryū kenjutsu*, as shown in both Munenori's *Heihō kadenshō* and the illustrated catalog produced by his father Sekishūsai, which fully illustrates its importance.

[16] Munenori discusses the "ultimate single stroke" in a section of the same title in the third scroll of his work, "The Life-giving Sword." However, to understand his meaning it is important to consider more broadly the lessons within the second and third scrolls, under the "Three Rhythms," "The Moon on Water and Its Reflection," "The One Principle," etcetera.

is on how to "carry the weight in the body's core to free up the feet" when delivering the cut. According to Gotti's analysis, the muscular chain behind the stroke aims to maximize the force of the stroke while simultaneously freeing up the lower body to allow for freedom of movement (Gotti). Indeed, this is a general rule one may observe in Opera Nova. While the martial artist draws strength from the ground, one leg is always free, which of course is consistent with Gotti's philosophy of combat. This contrasts with Chinese and Japanese two-handed swords, where the swordsman "should tread strongly on your heels (Miyamoto, *The Book of Five Rings: The Water Scroll: On Footwork*)," with the "forward knee … carry[ing] the weight of your body and the rear knee should be extended" (Yagyū, *Heihō kadenshō: The Shoe-presenting Bridge: The Three Learnings*). In a similar vein, Yu Dayou states in *Jianjing* that when using a hafted weapon, including a long two-handed sword, one should keep "the front leg bent and the left leg extended (Yu)." Evidently, there is a difference in emphasis on stance and footwork where East Asian swordsmen, in general, prefer to take a wider and lower stance, keeping their center of gravity closer to the *dantian*, several inches below the navel, while distributing their weight evenly on the two feet, whereas Italian swordsmen adopt a slightly narrower and higher stance, with the feet closer together, while maintaining a higher center (around the solar plexus) and lean slightly toward the front.

If we now look at these principles *in practice*, in Ma's Tongbei the power of the descending cut is maximized by bringing the sword down, while simultaneously "closing" the spine and pressing down the forward shoulder, with *both* feet firmly planted on the ground, if only for a moment. This dynamic principle is the subject of a detailed discussion in the article, "*Cong tongbi dao tongbei*," to which I refer the interested reader (MMD 2017, 267–273). Obviously, there are of course instances (and techniques) where the weight is mainly on one leg, but more often we seek balance between the two feet (see Figs. 6 and 7).

From the foregoing, we may perceive that the methods of *shuangshou dao* place great emphasis on delivering precise, powerful strokes from mainly strong, long stances. This makes a sharp stylistic contrast with the Italian two-handed sword of the late Renaissance, which is characterized with smooth, flowing strokes that are performed as a continuous motion within a moving sphere. It is true that both Chinese and Japanese manuals also make reference to circular cuts that combine parry and counter in a swift single movement, particularly in specific situations where, for example, one has to fend off multiple opponents from different directions.[17] Such similarities and differences illuminate, on the one hand, the role of culture in determining specific styles or preferences in the approach to combat, but also the ultimate unity of the human experience that leads to common strategies and solutions.

Let us now consider the *shuangshou jian.*

[17] An example is the *yinmang shi* (Silver Serpent Movement) in *Chaoxian shifa*, which I discuss in the section on "*Shuangshou jian*".

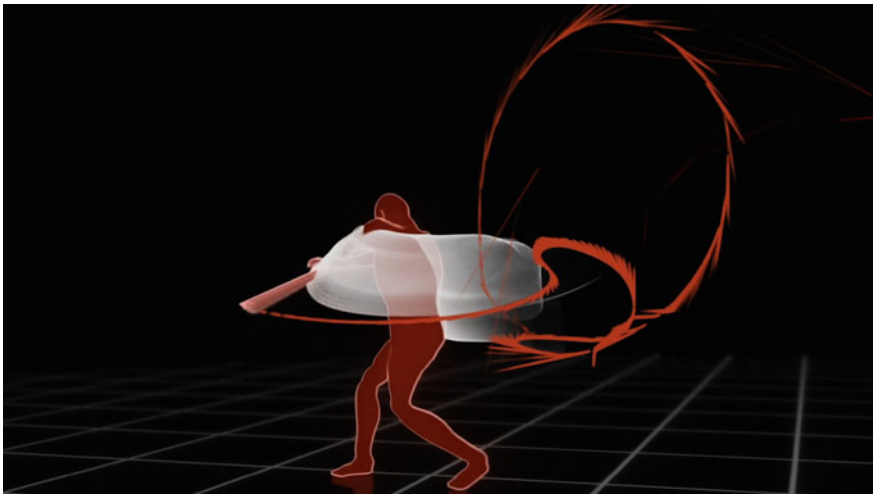

Fig. 6 Animated figure showing a movement in Ma's Tongbei *shuangshou dao*. From *Way of the Sword* exhibition (2021)

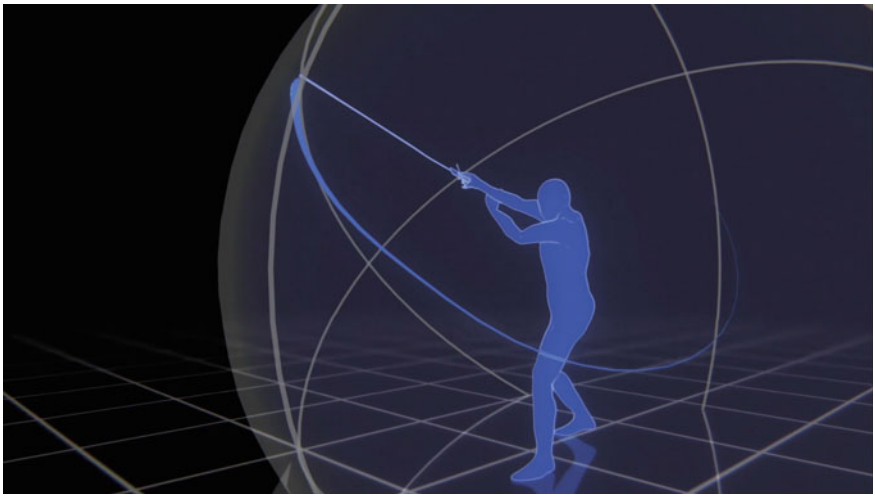

Fig. 7 Animated figure showing the dynamic sphere. From *Way of the Sword* exhibition (2021)

3.2 Shuangshou jian

Shuangshou jian is a native swordsmanship tradition with a very long history in China. It emerged in the late Warring States, in particular, in the kingdoms of Chu, Yan, and Qin, and was in essence an extended form of *changjian* (longsword). From archaeological records, we aver that by the Qin and Han dynasties, *shuangshou jian*,

also known as *changjia* for its long hilt,[18] had attained a mature form. According to Ma Mingda, this type of longsword first emerged in the state of Chu, and later gained currency in Qin after the latter defeated and absorbed Chu (MMD 2000a, 228). Archaeological work at the imperial mausoleum of Qin *shihuang* (the first emperor of Qin) produced several bronze longswords, measuring on average over 80 cm. The dimensions of these swords and, in particular, the length of the hilt (which commonly exceeds 20 cm), suggest they were intended for two-handed use.

These are not isolated finds as great swords of similar lengths were found in other archaeological sites throughout the country, notably the King of Nanyue's royal tomb of the Western Han dynasty in Guangzhou. Fifteen long iron swords of varying lengths were found in the inner burial chamber, suggesting they were the personal belongings of the king. The longest of these is D143, which measures 146 cm in length, of which the blade measures 103.8 cm.[19]

The appearance of *changjian* marked a significant breakthrough in metallurgy, which made it possible to make a long, narrow blade that could withstand the stress of combat. If we compare bronze and iron swords of the late Warring States, we note a remarkable shift in blade design. The prevalent bronze sword design had a relatively wide, waisted, blade that tapered toward the tip. Such swords were seldom more than 60 cm long. By comparison, iron longswords between the late Warring States period and Han were commonly around 100 cm in length, and displayed a completely different blade profile—slender with no waist, and ran parallel for the full length until it gradually tapered toward a (often slightly rounded) triangular tip. It is interesting to note that, despite developments in blade design, two-handed swords of the fourteenth to seventeenth centuries in China and Japan remained similar in length. This suggests *shuangshou jian* had attained a mature form already at this early stage. By comparison, swords of comparable design and length are not known in Europe until the twelfth century, while proper two-hander only developed toward the end of the fourteenth century, to flourish in the sixteenth century.

Jian or the double-edged sword reached the peak of its cultural development between the Warring States and the Han dynasty. During this period, sword-making and sword appreciation, swordsmanship, as well as philosophic discourses surrounding the sword reached an unprecedented height—never to be scaled again in Chinese history. Such developments also led to the birth of *Jiandao*, or *Way of the Sword*, which is the subject of an earlier chapter (*Sima Qian and the Way of the Sword in Ancient China*). Sadly, due to the shift in cultural values and ideology, *Jiandao* was lost in an early period of history, and that by the Tang dynasty it was already considered a lost art. At the same time, from the Eastern Han onward the rise of the single-edged sword gradually replaced *jian* as the dominant short-range weapon.

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[18] According to Ma Mingda, the name "*changjia*" originated in the state of Chu to refer to a "long-hilt" sword. For a more detailed discussion see MMD (2000a, 229).

[19] The iron swords from the royal tomb of the King Nanyue are the subject of many papers. For a more recent discussion see, for example, "*Shilun Nanyue wang mu chutu de tiezhi wubei*" in *Wenwu tiandi*, 2019, vol. 1.

Nonetheless, despite these setbacks *shuangshou jian* retained its prestige as a weapon of war for several centuries. Between the end of Tang and the Five dynasties, a military unit specializing in *shuangshou jian* was created, which became a mainstay in the army (MLZ 2020, 39). Ma Lianzhen reckons that *shuangshou jian* swordsmanship reached its peak during this period. The Ming military write Mao Yuanyi writes, "in ancient times *jian* could be used for combat" and that "[the emperor] Tang Taizong had over a thousand *jianshi* (swordsmen) (Mao, "Introduction", in Anon, *Chaoxian shifa*)."

Following the fall of the Tang *shuangshou jian* fell out of use, although it continued to survive in some form down to the Ming. In fact, it had fallen so far that Mao considered *shuangshou jian* all but a lost art—until it resurfaced in a single manual, which Mao published as *Chaoxian shifa* (*Korean [Swordsmanship] Movements and Methods*) in his military encyclopedia, *Wubeizhi* (*Records of Military Preparedness*). Besides this sword treatise, the only other martial art author to mention *shuangshou jian* was Yu Dayou, who studied the methods of "Jing-Chu *changjian*" from Li Liangqin, but he left behind no record except for what one can glimpse from his *Jianjing*, which is a staff manual. Wu Shu also mentioned a certain Yuyang *laoren*, whose *jian* techniques he incorporated into his *shuangshou dao* methods, but it is unclear whether the methods were specifically for two-handed use.

Chaoxian shifa is remarkable in many ways. The manual consists of three parts: brief introduction by Mao Yuanyi, a sword poem, and the actual manual. The three parts were written at different times but with the exception of the introduction, the manual predates the Ming. In the introduction, Mao laments the loss of *shuangshou jian* and mentions that the current manual came into his hands from a "*hao shi zhe*" ("helpful man") who in turn obtained it in Korea, and further refers to a "*gejue* (literally, poetic formula) from broken bamboo slips and fragmented passages." This probably refers to the sword poem that follows the introduction. If this interpretation is correct, then this section comes from a different source with no aetiological link to the manual. The poem contains fourteen stanzas. Mao states that "its meaning is obscure," but nonetheless goes on to provide annotations with instructions for performance. We shall return to the poem a little later. Finally, the third and main part of the text is the manual itself, which consists of "The Four Methods" and twenty-four illustrated techniques (movements).

Ma Mingda reckons that the manual in its current form was created in the Ming dynasty, while the text might have been written during the Yuan or earlier. His assessment is based on a linguistic study of some of the technical terms, that he has been able to identify in Yuan dynasty literature (in particular, *Water Margins*) and theater. I encourage interested readers to refer to the relevant part in his important paper, *Historic Examination of Swordsmanship Exchange between China, Japan and Korea* (*Lishi shang zhong ri chao jiandao wuyi kao*) (MMD 2000a, 234–235).

Without going into too much detail, what is remarkable is that this manual has preserved several techniques not found in any other Chinese sword manual. Of the twenty-four movements, at least three of them—the Silver Serpent Movement (*yinmang shi*) (see Fig. 8), the Spreading Wing Movement (*zhanchi shi*) and Against-the-Scale Movement (*nilin shi*)—appear to be unique. What is even more interesting,

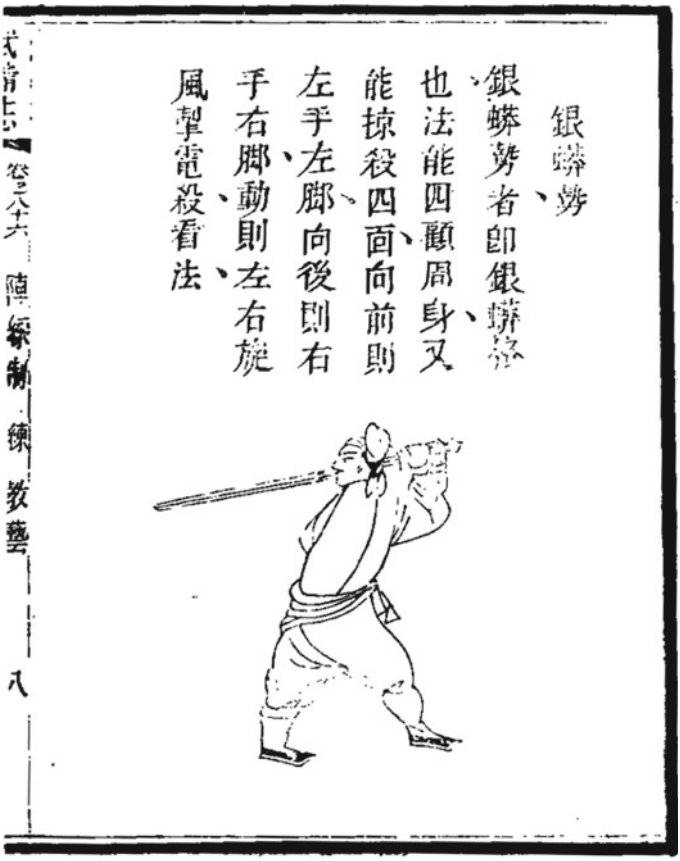

Fig. 8 *Yinmang shi* in *Chaoxian shifa*

similar methods are testified in contemporaneous European (including Italian) sword manuals. The Spreading Wing Movement is a signature technique in Opera Nova, known as *fendente/tramazzone di filo falso* (false edge vertical cut), while the Silver Serpent Movement corresponds closely to a technique known as *Spazza campagna*, recorded in a seventeenth-century two-handed sword manual (Ferdinando Alfieri: *L'arte di ben maneggiare la spada*, 1653), and further invites comparison with *posta di finestra instabile* in Fiore dei Liberi's *Trattato della scherma* (early fifteenth century) (see Figs. 9 and 10). The name *nilin* (against-the-scale) is also highly intriguing, as it vividly evokes the idea of piercing through scale armor with a thrust from below—thus exposing the weakest point of the scale armor. It is interesting to note that from the Achaemenid period (550–330 BCE) onward scale armor was the most popular type of armor in the Near East until it was superseded by lamellar armor in the Middle Ages (Tsurtsumia 2011, 68). The name of this movement also conjures up memories of the Tang dynasty's conflict with the Abbasid empire. In

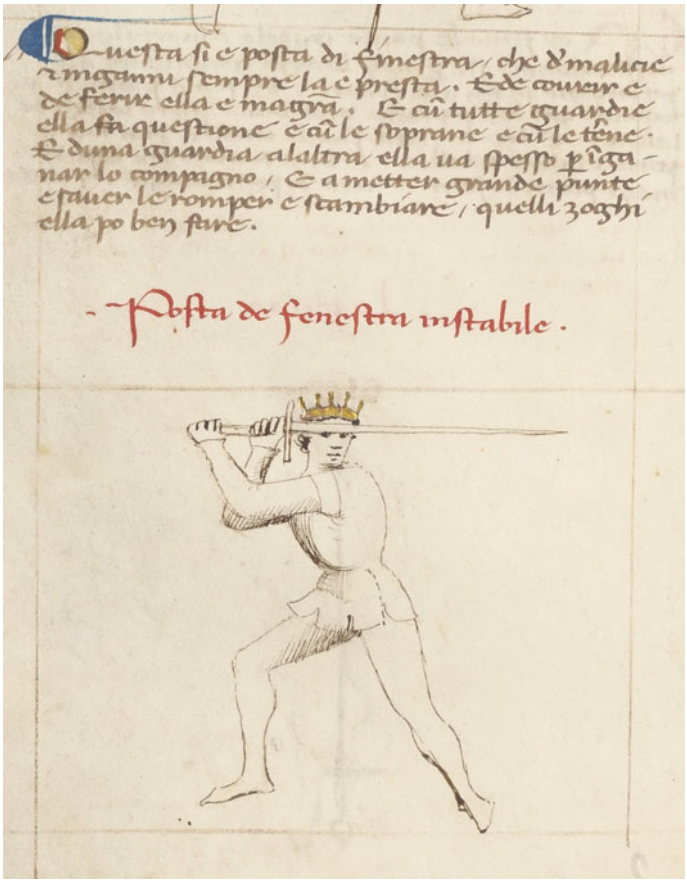

Fig. 9 *Posta di finestra instabile* in Manuscript Ludwig XV 13, Fiore dei Liberi (early fifteenth century)

the absence of concrete evidence, such a notion may only be a fancy, but could this technique have been used by the Tang's *shuangshou jian* unit at the Battle of Talas (751 CE)?

The highly evocative and cryptic sword poem is even more intriguing. Consider, for example, the following stanzas:

> Sweep past the knee(s) and, connecting the shoulder(s), strike at the two sides; step forward as the air is filled with white snow.
>
> (*Luexi lianjian pi liangpang jinbu mankong fei baixue*)

The two stanzas describe the movement and technique of the ascending stroke(s). Couched in poetic language, they nonetheless provide the key to execution. The expression *lianjian* (connecting the shoulder), in particular, points to the vital role of the shoulder, which connects on the one hand with the lower body that initiates the

Fig. 10 *Spazza campagna* in *L'arte di ben maneggiare la spada*, by Ferdinando Alfieri (1653)

movement, and with the arms and the sword on the other, extending them upward as "the air" becomes filled with the "white snow" of the blade's reflection.

Another stanza, "spreading the flower petals over your head to cover the front and back" ("*sanhua gaiding zhe qianhou*"), resembles the description for *yinmang shi*, which reads,

> *Yinmang shi* (Silver Serpent Movement) is the same as *yinmang ji* (Silver Serpent Stroke). This method allows you to look around and [at the same time] to lay about (*lue*) and strike in the four directions. [When you are] Facing the front, [you should have your] left hand [arm] and left leg [forward]; [and when] facing the back, [you should have your] right hand [arm] and right leg [forward]. [And when you are] In motion [you should] swirl around from left to right [and from right to left] like a whirlwind, with the speed of lightning, [delivering] killing-blow[s] [as you do so].
>
> (*Chaoxian shifa: Yinmang shi*)

"Spreading the flower petals over your head to cover the front and back" also reminds me of "The Wheel" in the *Yagyū Shinkage-ryū*, which Munenori describes in the following terms,

> The Wheel … is so named because you move your weapon in a circular pattern. Assume a side stance. Allowing your opponent to cut at your left shoulder, defeat him by rotating your sword in accordance with his cutting action.
>
> (Munenori, *Heihō kadenshō: The Shoe-presenting Bridge*)

For the most part, teachings such as these are extremely brief. However, they indicate a deep pool of knowledge that is hinted at but not fully explained.

Elsewhere, the annotations themselves offer interesting insights about *shuangshou jian* practice of the Ming dynasty. In this connection, the annotation for the final stanza is particularly useful. The stanza reads, "*huishen yema qu sixiang*" ("the wild stallion turns around as it remembers its native land"). The annotation gives the following interpretation: "right hand wipes the shoulder, one cut; right hand wipes the foot, one cut; wipes the eyebrow, one cut; left hand wipes the waist, one cut, (then) one thrust on the right; withdraw the sword." The passage suggests a smooth flow as one delivers four cuts and a thrust in a continuous chain of movements. The pattern here, as well as the emphasis on circular motions throughout the poem, hints at an underlying movement principle that may be compared to the dynamic sphere in the Renaissance Italian sword tradition. Unfortunately, the tantalizing clues of this single *shuangshou jian* treatise do not allow us to draw any firm conclusion, only revealing some of the subtleties in the technical features of China's native *shuangshou jian* tradition.

I end this section with a passage from the Han dynasty (Liu Xiang, *Garden of Stories: On Martial Arts* [*Shuoyuan: zhiwu*]) which provides one of the most exquisite expositions on the ancient *Way of the Sword*. Because it is attributed to the mythical swordsman Lu Shigong, we may perhaps aptly call it "Lu Shigong's sword discourse":

> Lu Shigong's sword responds when it is pressured and moves when it senses. It perceives the infinite, changes without form; it is soft and yielding, like a shadow or an echo. It protects the gate like a guardian spirit, and whirls around like a prancing horse. [It is] echo to sound, and shadow to form. The city gate is inferior to a lamellar armor of rhinoceros hide; exhaling is inferior to inhaling; lifting one's foot is inferior to concentrating [one's energy]. Departing like the wings of a cicada, to be so minute as a point between the eyebrows. Never assume [as a rule] the great extinguishing the small, as [equally] the small could become great. Thus is the way of military tactics! (Liu 1987, 374–375)[20]

This passage is an instance of ancient sword discourse of the highest level. It is interesting to note that the description of the sword "whirl[ing] around like a prancing horse" sounds very similar to "the wild stallion turns around as it remembers its native land." It is likely that they convey a similar principle and are, as the saying goes in Chinese, "different tunes to the theme." This provides further proof that the ideas and principles in *Chaoxian shifa* could indeed be ancient. Moreover, the opening sentence of this passage—describing a sword that "responds when it is pressured"—suggests a form of swordsmanship of the highest sensibility and skill. To reach the state of the third Vitruvian Man that Gotti speaks of, no doubt the same level of sensibility is required, so that "through these weapons … [we] *feel* the opposing force and transform the weapons into a sentient part of our body (Gotti)." In a sense, Lu Shigong's sword discourse gives expression to the ultimate state of supreme subtlety that every martial artist aspires to—being able to perceive the infinite and change without form, to become echo to sound and shadow to form.

[20] This passage is also treated in Ma Mingda's earlier chapter.

4 The Italian and Chinese Martial Art Bodies: Comparison Across Three Essential Aspects

In the sections above, I have compared the Italian two-handed sword with the twin traditions of *shuangshou dao* and *shuangshou jian*. In particular, through analyses of historic sword manuals from the Ming dynasty, as well as the principles and performances in contemporary practice, I have tried to identify the principles in Chinese swordsmanship that share similarities with what Gotti regards as the ultimate, governing principle in Italian martial arts—the dynamic sphere. The initial result is inconclusive: while similarities certainly exist, the foci in Chinese and Italian martial arts are often at variance, not least due to the contrasting written traditions for documenting martial arts in these countries. Equally, because of the size of the country, the extended length of transmission—the fact the two-handed sword has existed in China for a very long time—as well as the very nature of a living tradition, Chinese martial arts are unified to a far less degree when compared to the Italian two-handed tradition.[21]

To further our investigation, in this section I will look into greater technical details across three main aspects: footwork, movements, and coordination of the body and arms, and perception.

4.1 Ding-*Character Step or Moving Poles*

Footwork is arguably the first principle in martial arts. Without proper knowledge of how to move with your feet, methods of advance and retreat, attack and defense, are altogether impossible; you could neither strike your opponent nor evade his attack. This is why Yagyū Munenori placed stance and movement as the first of the "Three Learnings" (Yagyū, 2–3). As we have seen, Qi Jiguang also saw fast, dexterous footwork as a core strength of Japanese martial arts, which provided the foundation to "defeat the long with the short" (Qi, *Jixiao xinshu: Duanqi changyong jie*) by rapidly bridging the gap with the enemy. In *Sword Treatise*, Yu Dayou likewise stressed the importance of footwork, which is encapsulated in his famous phrase, "*bubu jinbi, tianxia wudi*" ("pushing with every step, thus you become invincible under heaven"), which is as much a description of the character of South Chinese staff-fighting as it is a reflection of his general strategic thinking. At the same time, while other Ming dynasty martial art writers might not have devoted specific sections in their works to stance and footwork, their instructions leave us in no doubt about the vital role of footwork in the art of combat, which is none other than the art of "hitting without being hit."

[21] In an earlier chapter of this volume, Penso mentions that the two-handed sword had a relatively short and condensed period of development in Italy, between *circa* 1450–1600. See "Masters Through the Ages: Interpretation of a Renaissance Martial Art System and the Foundation of a Modern School" by Penso.

Unsurprisingly, footwork is no less important in Italian martial arts. One of the earliest Italian martial art theorists, Fiore dei Liberi, compares one's legs to an elephant. In Gotti's words, a martial artist is visualized as a "tower on elephant." The tower is the body, which is "carried by a being with trainable intelligence—the elephant/legs." Further, "the … elephant highlights the gifts of power and stability, but also the option to be fast. … The sentence that accompanies the image reads: 'Fortitude. I am an elephant and I carry a castle upon me. I neither kneel nor lose my stride' (Gotti)." In Gotti's universalist thinking, he further takes the view that Fiore's elephant is the same as Camillo Agrippa's pole (*forchina*), except the two authors choose to focus on slightly different, but mutually complementary, aspects. Whereas the metaphor of the elephant highlights its movement, strength and stability, speed, and intelligence, the *forchina* draws attention to an important feature of footwork in swordplay—the ability to draw circles with your feet.

Agrippa invites his readers to imagine the human body as a mathematical instrument—the compass or *forchina* (see Fig. 11). As we engage in swordplay, the most effective and fastest way to dodge our opponent's attack and change our own line is by pivoting on our foot, which serves as a temporary pole on which we turn our entire body. At the same time, Agrippa teaches us to embody and indeed *become* a spherical ball when we engage in combat, which Gotti summarizes as follows,

> The *Palla* teaches us to triumph over larger forces with lesser ones, to give way when we are pulled, and to pull when we are pushed … To successfully lift one's weight and further

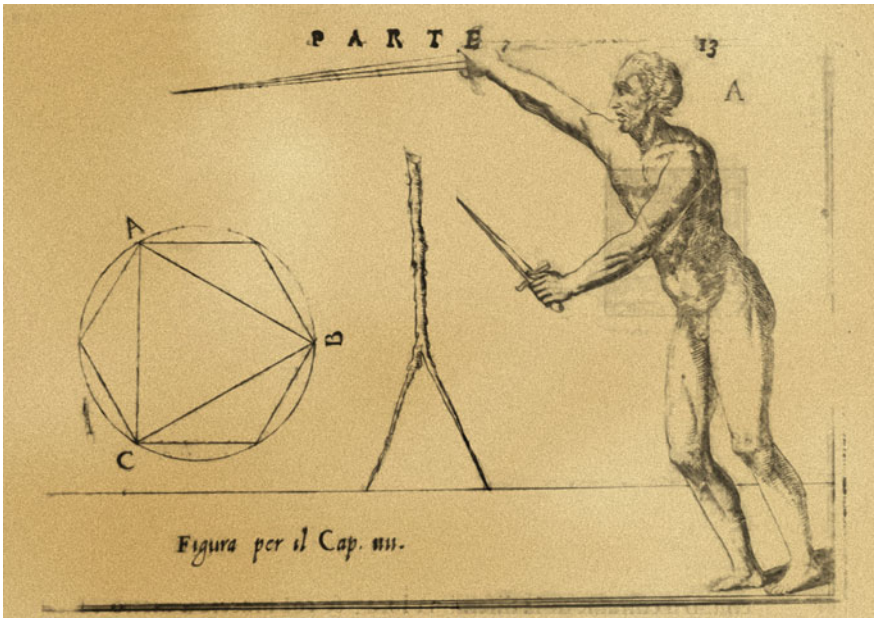

Fig. 11 Illustrated human figure holding two swords from Camillo Agrippa's *Tratto di Scienza d'Arme*, with the *forchina* in the center of the picture

> achieve the ability to use it as an engine for the sphere, he suggests keeping the feet close together which allows for easy transfer of weight, thereby avoiding the idea of a static pole (by pole, he means the point on which the sphere can be anchored to build an armillary sphere mechanism) (Gotti).

We do not find a similar concept as the compass or *forchina* in Chinese sword manuals. But this is not surprising as we would hardly expect a sixteenth-century Chinese martial art writer to use the language of mathematics to explain his principles. However, the idea of pivoting on one's foot to make a sudden change in position is well testified in Chinese treatises, which is described by the Chinese character *ding* 丁. Yu provides several interesting examples in *Sword Treatise*, which we may consider here.

Toward the front of his work, Yu records a number of short sequences under "Footwork Practice" ("*Xi bufa*"), immediately following an "overall poetic formula" (*Zong juege*, i.e., a mnemonic song). The first movement includes the following instructions, "*pianshen sha*, *dingzi hui sha*" ("strike from an oblique position, [then] turn in a *ding*-character movement and strike"). According to Yu, the meaning of this movement is clear: strike as you move your back (left) leg to the right behind the front leg, then swing the back leg to the left and strike again, turning your body sharply as you do so.

Another good example is "after stepping in to strike, you must quickly retreat in a *ding*-character movement to be safe (Ibid.)." The movement sequence described in this teaching is clear—step in to strike, then pull back to the side with your back leg, and in doing so move out of your opponent's direct line of attack. We may also consider the following instruction several lines later: "I enter through the main gate (*da men*) with [my staff in the] high guard, make a *ding*-character turn as I pull my staff down. Then, as he [the opponent] rushes in, I pull [my staff] and flip [*jie*] it back, entering and striking a blow at the same time (Ibid.)." Again, this instruction is easy to follow. As you approach the enemy, step obliquely to the [right] and strike your opponent's weapon. Whether you successfully hit his weapon or not, he will step forward to strike. As he does so you pull back your staff to parry or push his weapon to the side, then decisively step in and deliver a blow.

In each of the examples, Yu teaches us to use our feet in a dexterous manner, moving from the center to the left or right as we advance and retreat, then suddenly pivoting to change our angle of attack as we draw in the opponent, in the process surprising and catching him off the line. As we visualize these movements, it is clear that one leg is being used as a pole, upon which the entire body turns to shift our weight, while the other leg is free. Here, on one of the most critical and important points, while different words are chosen to describe the movement pattern across Italian and Chinese traditions, the meaning is very close.

However, before moving on to the next part, let us observe that there are different approaches to footwork in East Asian swordsmanship traditions. According to Miyamoto Musashi, who was undefeated in sixty-one duels and therefore had first-hand experience of footwork across a multitude of schools, "[t]here are various ways of quick-stepping, such as those known as the floating step, the leaping step, the springing step, the stomping step, the crow step, and so on (Miyamoto, op. cit., *The*

Wind Scroll: "Footwork in Other Schools")." In Miyamoto's view, however, there is just one type of footwork—"following the rhythm of the opponent, finding the right physical position in conditions of both hurry and calm, the stride should be orderly, without slack or excess (Ibid.)." While it is impossible to generalize, such a direct approach also holds true for other influential fencing schools in Japan at the time and may be observed, for example, in the general combat philosophy of the *Kage-ryū* tradition.[22] Under this light, the "side-step and pivot" tactic discussed above is an important—but not the only, nor perhaps even the most important—stepping method in East Asia.

4.2 Body and Arms: The Moving Tower with Rotational Points

In Chinese martial arts, we believe that the weapon is an extension of one's arms. Therefore, to become proficient with arms, it is vital to understand your body and to gain the ability to wield a weapon with freedom and ease—like moving your own limbs. In many ways, the ability to coordinate the entire body to maximize the effectiveness in attack and defense—to deliver a forceful strike without over-extension or to parry the opponent's stroke while keeping your body and limbs free—is an ideal state for the martial body across cultures. The power one generates in such a state is known in Chinese martial arts as *zhengjin* (whole-body force). In Qi Jiguang's terms, this means to "advance with one's body and feet together, [and to move one's] arms and legs as one" (Qi, op. cit., *Changqi duanyong jie*). Yu Dayou expresses the same idea when he writes that "movement of the arms and advancement of the feet must be coordinated." When this is done, "the entire body is filled with strength (Yu, op. cit.)." In the Italian martial tradition, the idea to move the body as a single object is found in the writings of different authors, notably Vadi (1482–1487) and Pagano (1553), but also Agrippa (1553), Manciolino (1531) and, of course, Marozzo (1536). After all, in Gotti's words, "movement dynamics … [are] the essence of martial arts."

While the contents and format vary considerably across Chinese authors, the manuals commonly begin by laying down the principles and fundamental techniques, and then provide instructions for solo practice or "fixed sparring." Much variation exists within this framework thus it is hard to generalize. Nonetheless, we may take *Chaoxian shifa*, which has the best and most complete structure among the Ming sword treatises in my view, as representative. The manual begins with "*Chuxi*" ("Training for Beginners"), which lists the "methods of looking," the "methods of

[22] Besides the opening part where Yagyū stresses the importance of stance and footwork, he does not give it further treatment in the rest of his work. However, just as Miyamoto speaks of there just being a single type of footwork in his school, so in the *Yagyū Shinkage-ryū* the key lies in timing the opponent *off* rhythm, rather than in the use of any specific footwork. *Yagyū Shinkage-ryū* is part of a broader system of swordsmanship known as the *Kage-ryū* founded *circa* the mid sixteenth century.

striking," the "methods of deflecting," and the "methods of thrusting." The subsequent section, which names the individual methods, also adds the "methods of parrying." Altogether, there are twenty-four movements (*shi*). Each explains the principle of a given technique and how it is applied in combat. Some of the descriptions afford multiple interpretations and may further be practiced as fixed short segments of movement. This kind of practice is still found in schools that have preserved the methods and the spirit of classical martial arts, such as in Ma's Tongbei.

A similar principle may also be discerned in Japanese martial arts, even if it may not be explicitly stated. For *Yagyū Shinkage-ryū*, Munenori does not speak specifically about coordination. However, a careful reading of his work reveals the centrality of this principle. In particular, the order of the "Three Learnings"—mainly transmitted through studying a series of movement sequences presented as *kata* ("forms")—discloses the learning process, which begins with the stance, then hands and feet, and finally, the sword (indeed, finally to the state of "no sword"), ultimately leading to full mastery of the art of swordsmanship (Yagyū, op. cit., *The Shoe-Presenting Bridge*).

When comparing martial art traditions of Italy and China (and Japan), an interesting discovery (from an East Asian perspective) is the emphasis in Italian martial arts on form training, which is often perceived as unique to East Asia (*taolu* in Chinese and *kata* in Japanese). Marozzo's *Opera Nova* (1536) is perhaps the notable example where his teachings are largely contained within the set forms. Writing in the same tradition, Manciolino explains that through learning these forms, "The person, their legs and their hands will become swift and active" (Gotti). As Gotti notes, "He not only insists that practice of the *assalti* is necessary for one to become a good fencer, but that the moving into play (*andare a gioco*) is also necessary (which is unrelated to striking and parrying well and concentrates only on good body movements and moving weapons)." Therefore, in much the same way as one is expected to gain mastery of swordsmanship through studying the forms, so in the Italian tradition, much the same learning process leads to the "unity in footwork and unity in that footwork with the upper body (Gotti)."

Writing more broadly, the Italian master Fiore dei Liberi compares the body to a fortress. According to Gotti, it is also "the torso/tower/handle of the compass … from which defensive and attacking moves stem" (Gotti). It is moreover a *moving* fortress carried by an elephant as we have seen. This reminds me of an expression from *Lu Shigong's Sword Discourse*, "[t]he city gate is inferior to a lamellar armor of rhinoceros hide," which emphasizes the importance of movement and mobility over static strength. Other Italian masters provide more details on the correct use of the body to generate force. Viggiani, who emphasizes the need to move the body in unison, is an outstanding example. Gotti's masterful description sums up Viggiani's (1575) principle,

> The description that Rodomonte-Viggiani gives of striking tells us of the chain of muscles and the entire body that must move together behind the blow. He gives a splendid lesson on how to free oneself from being static to becoming stable in movement and describes the need to carry the weight in the body's core to free up the feet. Movement comes from combining the body's power into a single unit: the upper and lower parts move together and

> extend as far as they can. He often repeats the sentence, "And here, combining all the forces of the body together, you perform that *rovescio tondo* with the same hand and footwork about which I have told you." In the last pages he clearly maintains that he teaches "only one fencing [technique]," because that is enough to give the lesson, but confirms that there are many more blows and moves and defines what he calls "the great," as in the most powerful strike, "The *magno colpo*" is so-called because one must act with all the forces of the body, the intelligence, emotions and art in synchronization and union (Gotti).

This passage can almost be read as an annotation to what is called the "ultimate stroke" or the "single stroke" in Japanese swordsmanship, the notion of which even provided the conceptual foundation for a major fencing school in Japan, *Ittō-ryū*.

As to how one should move his body and arms to maximize one's potential, historic Chinese and Japanese sources are reticent on the subject, preferring to focus instead on strategy as well as the mental and spiritual aspects, although such principles are amply provided in contemporary schools such as Ma's Tongbei and Jieyuantang. As transmission was mainly oral, the idea that some of these principles might have been known or combined with sword practice cannot be rejected out of hand, particularly as a few of the most important body and martial art concepts, such as the notion of the two arms being joined through the back and shoulders, were established by the Ming-Qing period (MMD 2017). However, as there is more written evidence in Italian treatises, I will turn to these first.

Di Grassi (1570) speaks of the different sections of the arm and applies geometric principles, in particular the triangle and the sphere, when analyzing the structure of the human body and its movements. He divides the arm into three parts, the wrist, elbow, and shoulder, where each is a rotational point that is capable of describing circular movements. In this way, one can imagine making a circle either with your hand, forearm, or your entire arm (from the shoulder down to the hand). This is a crucial point for Gotti, as the idea of the shoulder as a dynamic node holds the key to what he calls the Third Vitruvian Man and the dynamic sphere. The ability to turn the sword on any one of these rotational points also allows the swordsman to change the circumference of the dynamic sphere at will while keeping the motion continuous and alive as it were.

Interestingly, Di Grassi's thesis invites comparison with both Jieyuantang and Ma's Tongbei. In Ma's Tongbei, its movement philosophy centers around the idea that one's arms are joined through the shoulders and back. The name "Tongbei" is a conjunction of two characters *tong*, meaning "through" or "without obstruction", and *bei*, which in the originally context is written 背 (meaning the back), and later abstracted to 備 (meaning "to be prepared" or the state of "preparedness") (MMD, *Cong tongbi dao tongbei*). According to Tongbei philosophy, the most effective way to use one's body and arms is to move them together as a single unit. Once we have understood their interconnected nature, we learn to perform movements that optimize their potential, no longer restricted by the fallacious and limiting perception of the two arms as being separate. In this regard, the most important conjunctive node is the shoulder, which joins the arm to the body. This again reminds us of the sword poem in *Chaoxian shifa*, "Sweep past the knee(s) and, connecting the shoulder(s), strike at the two sides," which likewise emphasizes the role of the shoulder. However, while

Ma's Tongbei (or the Tongbei philosophy) recognizes the essential role of one's shoulders, the movement principles they developed are different from those in Italy, as already touch upon in an earlier part of this discussion.

As for Jieyuantang, the similarities are even more striking. Like Di Grassi, Lee divides one's arms into three parts, which the martial artist is trained to move, either in isolation or in unison, on three movement planes. Such training is fundamental to the concept and practice of *sanyuan jiushi*, where the practitioner has to further coordinate his arm movements with the rest of his body, thereby gaining bodily harmony and awareness of the subtlest changes in his body movement. In addition, the idea of moving the two arms in unison is also embedded within the principles of White Crane and Jieyuantang. Whether delivering a punch or a sword stroke, at the same time as you are pushing out with one arm/hand, the other is retracted and pulled in the opposite direction; and it is precisely in tightening and creating a sudden tension between the two arms that we maximize the force of our blow.

Having reached this point, after one has mastered the ability to manifest whole-body force, when hands and feet are able to move as one, masters in East and West teach us to move from techniques to stratagem. Among Italian masters, this is most clearly demonstrated in Marozzo's movement sequences, but also in Vadi, who teaches us that the knees are the keys that "open and close the game," and moreover that movement should be "serene and slow," to emphasize the movement quality of an accomplished swordsman. The same principles are found in East Asia. Among extant Chinese manuals, *Jianjing* provides the most extensive list of movement sequences that unlock the secrets of strategic thinking in Chinese martial arts. Further examples are found in all the Chinese and Japanese manuals of this period which need not be discussed here. The important thing is that once a person has learned stance and footwork, and the method to generate force with your whole body and to coordinate your hands and feet, everything should come together if you have the right mindset and a proper strategy. Musashi speaks of the critical importance of footwork in the martial arts and military science; in the same breath, he tells us that to be effective one also has to know the intent and the rhythm of your opponent, and then calmly make the decisive step—while dealing a single, victorious blow. This goes back to the ultimate unity of the principles in the art of combat which tend to achieve a common but elusive goal—perfection.

4.3 Perception: Eyes That See Emptiness

For those beginning in the art of swordsmanship, *Chaoxian shifa* lists the "methods of seeing" as the first of four fundamental methods. No further detail is given but we may expect such training to initially focus on the "external" aspects—using the eyes to perform the techniques accurately, then to respond to adversarial situations—and then, upon mastering the techniques, to move on to "internal" observations, where you learn to read the opponent's intent while liberating your own mind. In this sense, seeing may be bifurcated into a physical act of looking with your eyes, and a deeper

perception that can "cut through" phenomenal appearance into the hidden reality. Concerning the physical act of seeing, we may refer to an account by Miyamoto, who gives a characteristically direct and succinct summary of the "Focus of the Eyes in Martial Arts" in *The Water Scroll* in *Book of Five Rings*. As the passage is insightful and concise, I cite it in full below,

> The eyes are to be focused in such a way as to maximize the range and breadth of vision. Observation and perception are two separate things; the observing eye is stronger, the perceiving eye is weaker. A specialty of martial arts is to see that which is far away closely and to see that which is nearby from a distance.
>
> In martial arts it is important to be aware of opponents' swords and yet not look at the opponents' swords at all. This takes work.
>
> This matter of focusing the eyes is the same in both small- and large-scale military science.
>
> It is essential to see to both sides without moving the eyeballs.
>
> Things like this are hard to master all at once when you're in a hurry. Remember what is written here, constantly accustom yourself to this eye focus, and find out the state where your eye focus does not change no matter what happens.
>
> (Miyamoto, op. cit., *The Wind Scroll*: Focus of the Eyes in Martial Arts, 1993, 19)

Having laid down these instructions, Musashi then makes it clear that sensorial perception with the physical eye is merely the first step. In fact, in *The Wind Scroll*, he explains that the "observing eye" includes perception of a broad spectrum of things such as "the heart and mind of the adversary" and "the state of the situation," and may be extended to the broader context of military conflict to include "the conditions for battle," "the strength and weakness of the occasion," etcetera (Miyamoto, *The Wind Scroll*, 49–58). In Miyamoto's view, the ultimate criterion that determines the outcome of combat is having the correct state of mind, which must "remain the same as normal." It must be calm and relaxed, open and clear, in such a way that "[e]ven when still, your mind is not still," and "even when hurried, your mind is not hurried." At the same time, it must remain impenetrable (Miyamoto, *The Water Scroll: State of Mind in Martial Arts*, 17–18).

Miyamoto is not the only one to write about mental perception in such a way. His contemporary Yagyū Munenori also devotes the greater part of his work to discussing the importance of mental mastery, which in his view would ultimately lead to the "ordinary mind that knows no rules." For Yagyū, all the basic technical training—including stance and footwork, methods of attack and defense, and even mastering the forms and the stratagems embedded therein—is merely a bridge. To attain the true "Way of the Martial Arts" he exhorts the practitioner to forget the techniques he has learned, in order to attain an empty mind. Only in such a state, unburdened with thought, can one attain the celerity and spontaneity of "the interval into which not even a hair can be entered."[23] This allows the swordsman to maintain

[23] Takuan Sōhō describes the interval when two things come together simultaneously as the "interval into which not even a hair can be entered." The example he uses is when a person shouts and claps his hands at the same time, with no break in-between. To do so one must not think about one or the other, as that moment of reflection will create an interval between the two actions. This is a key point in Buddhist thinking, which abhors fixation of the mind which is considered an affliction or sickness. Takuan explains this principle in his letter to his friend Munenori.

complete mental clarity and freedom, not abiding in any fixed attitude of either attack or defense, but rather, in Munenori's words, to "attack and abide" at the same time.

In Chinese sword manuals of the same period, discussions of the same kind are largely absent. This partly has to do with the nature of the surviving treatises, as well as the intent of the authors, who were primarily writing within the established genre of *bingshu* (military treatises). Three of the Ming authors—Qi Jiguang, Yu Dayou, and Mao Yuanyi (who was responsible for compiling a large number of military and martial art treatises, including *Chaoxian shifa*, into his classic military compendium)—belonged to this tradition. This shared identity accounts for the matter-of-fact style of their works, which leaves little or no space for more contemplative reflections. As to Wu Shu and Cheng Chongdou, even though they were civilian martial artists and wrote for a lay audience, as educated members of the *shi* class, they were also highly conscious of the *bingfa* genre, within which they set out to establish their own writings.[24]

As to whether or not Ming dynasty to early Qing Chinese martial artists subscribed to or taught *xinfa* (oral transmissions) of the kind that deals with such notions and practices as intent (*xin* or *yi*) and introspection of one's intent (*guanxin*), this seems quite likely given the strong cultural links between China and Japan, the fact most of these concepts originated in Chinese philosophy, and the general philosophic trends then under way, in particular developments in Buddhist philosophy and its close association with the martial arts during this period. In this regard, it is especially worth considering Cheng Chongdou.

Cheng was a lay follower and inheritor of the Shaolin martial art tradition. It would be surprising if he did not learn or even practice some Buddhist concepts in so far as they related to the martial arts. This seems highly unlikely as his *Shaolin gunfa chanzong* (*Zen Tradition of Shaolin Staff Techniques*) includes an illustration of Jinnaluo-*wang*, Shaolin's guardian deity, as well as a number of dedications by lay and monastic followers of Shaolin martial arts, which were very much written in Buddhist terms. Evidently, Cheng maintained a close relationship with the Shaolin temple as well as both monastic and lay followers of Shaolin martial arts. Of the dedications included in *Shaolin gunfa chanzong*, the one written by the monk Puxing includes a particularly important clue. Describing the character of Shaolin's staff methods, he says that they should "follow the abiding [principle] to overcome the active [principle], [and] such is the way in both intent and [in the use of your] hands" ("*suishun jingding yi zhi dong, xinshou ru ru*") (Cheng, *Shaolin gunfa chanzong: zang* by Puxing). On the surface, the words "*suishun jingding yi zhi dong*" appear to echo the idea of "*yijing zhi dong*" ("overcome action with passivity"). However, there are subtle but important differences. The words *suishun* ("to follow") suggest that one should "follow the path of," while *jingding* 靜定 is also not to be confused or equated with *jing* 靜. Whereas *jing* denotes passivity, the conjunctive *jingding*

[24] In his four-volume *Gengyu shengji*, the first volume is devoted to Shaolin staff methods, which lay at the foundation of his martial arts. In the section "*Zonglun*" ("*Discursus*"), he begins with a discussion on the principles of military tactics. These principles are then used to analyze the Shaolin staff methods. See Cheng Chongdou, *Shaolin gunfa chanzong: zonglun.*

refers to the mental state of "immovable calm." Taken together, "*suishun jingding yi zhi dong*" means to be able to overcome your opponent by being in a mental state of imperturbability. In this state, one's mind is "immovable"; therefore, the phrase refers not so much to overcome your opponent's action through passivity, but rather to defeating the "wavering mind," whether it is present in your opponent or in yourself. If this reading is correct, then the philosophic concepts that underpin the Shaolin martial art tradition (which Cheng inherited and passed down) are the same or at least very similar to those expressed in the Zen martial art tradition in Japan, as represented by Takuan Sōhō and Yagyū Munenori.

Perfection in the martial arts is achieved when the practitioner attains not only complete technical mastery and the mastery of his body, but more importantly when he gains complete freedom of his mind. Only then is he able to perceive the intent of his opponent, and to move with the unhurried freedom of an unfettered mind.

Italian treatises do not deal with this subject to the same degree, which is not surprising, as East Asian authors who speak on the mental-spiritual aspects of swordsmanship were mainly influenced by Buddhism, which of course did not exist in Italy in the sixteenth and seventeenth centuries. However, it is not to say that the Italian masters were unaware of the significance of the mental state in fencing—indeed, the necessity of possessing such a state in order to attain freedom of movement in combat. One of the authors to pay attention to this subject was the unnamed Classene author. Gotti says,

> He tells us that fencing is the dynamic union of intellect, intent, and the entire body. … The unknown author provides an important definition: the "limbering up" of a person, that is the absence of breaks or fragmentation of the movements, resulting in a smooth and truly "admirable" art (Gotti).

5 Conclusion: Humanism of the Sword

In this paper, I have reviewed and offered a preliminary comparison of the swordsmanship principles between China and Italy across three vital aspects: stance and footwork; use of the body and arms; and finally, perception and the mental state in combat. In addition, based on Gotti's study and theory on Italian martial arts, I have considered the dynamic sphere *qua* a governing principle of Italian swordsmanship and, on this basis, sought analogies in China.

On the whole, while there is considerable overlap in the movement principles of these traditions, the difference in focus is equally obvious. Fighting arts in Italy and the Far East both stress the importance of footwork and share certain common principles. However, they differ in the relative significance assigned to such principles. In Italian martial arts, the idea of the *forchina*, or the leg of the compass, as expressed by Agrippa, is fundamental to the dynamic sphere as a whole. As such it lies at the heart of the system. In East Asia, however, while a comparable notion is found—as manifests through the *ding*-character step—it does not occupy a comparable role within the system. Moreover, this principle finds greater currency in staff-fighting

rather than two-handed sword. Indeed, early Edo writings on Japanese swordsmanship—which is closely related to the Chinese *shuangshou dao*—reveal a system of combat that in general advocates a more direct line of approach, where a side-step is usually followed by an advancing step forward, rather than swinging the back leg sideways. In this way, we see that cultural preference could play an important, and sometimes decisive role, in formulating a martial art system and the strategies therein.

Cultural difference is also at root of the differential emphasis being placed on perception, which in Italy tended to be a relatively minor consideration, mainly with reference to the practical aspects of observing your opponent, whereas in the East Asian tradition(s) perception and the mental state were a dominant theme under the influence of Buddhism, particularly in Japan where the towering figure of the Zen monk Takuan loomed large. To a lesser degree, Buddhist ideas and ideology also penetrated Chinese martial arts during this period as a result of the Shaolin monastery's ascendency as a major martial art center. However, compared to contemporaries in Japan, Chinese martial art writers kept out personal beliefs from their writings to a much greater degree as they self-consciously wrote within the genre of *bingshu* (military treatise).

This further throws open the question of whether it is even reasonable to assume, as I have in the beginning of this paper, that a principle similar to the dynamic sphere might be expected in Chinese martial arts of the Ming and Qing period at all. Such an assumption would have as its premise that Chinese martial arts and martial artists somehow shared similar cultural concerns or outlooks with Italian martial art theorists of the same period. Having reviewed the evidence at some length, we may say with some confidence that they did not.

The Italian Renaissance was a time when the late Medieval views of the world were gradually being replaced by the new paradigms of science. However, in reality, many late Medieval ideas and concepts co-existed and developed side by side with the new spheres of knowledge, and it is precisely this ideational dialectic between the old and the new that gave birth to humanism. If we look more closely into the language and expressions within the Italian treatises of the fifteenth to early seventeenth centuries, we see a linguistic shift from one dominated by Medieval metaphors and hermetic lore, to arguments put forward in the terms of mathematics, science, or Platonic dialectics, which increasingly appealed to the reader's logic and power of reason rather than relied on the persuasion of experience and arcane knowledge. However, for the Renaissance masters, such tendencies did not manifest as a form of contradiction but rather, as Gotti argues, they existed as parallel and complementary paths to the truth. He sums it up as follows,

> Martial art masters of the Renaissance period were bound to the quest for ancient knowledge and wisdom. They … used them as a tool for understanding their art. Taking Agrippa as an example (it was he who clearly inscribes the dynamic man in a sphere), Bizzi expressly labels him an esotericist. He highlights the involvement of Cosimo I de Medici (to whom the fencing treatise is dedicated) in a consolidated Eleusinian tradition associated with the Orphic rites … Nonetheless, I would like to underline that these studies may be traced back to a concept much closer to humanist-scientific studies than to some obscure magical context.

> They should be placed in studies where geometry, classical texts, mathematics, astronomy, and philosophy meet with the study of weapons, with Hebrew texts, as described by Viggiani and as illustrated in the study represented in the engravings of Agrippa's treatise (Gotti).

Illumined in this light, we may start to appreciate the perspective of those who wrote the treatises, i.e., the masters. For Ghisliero, his study (1585) tends to "show in numbers and geometry the perfection of Man, who must be placed at the center of Creation" (Gotti). In the same way, Marozzo's *Opera Nova* should not be read as a simple technical manual that offers instructions in the martial arts. Rather, it is a manifesto of his humanist thinking where he professes his faith in the perfectibility of man; equally, it provides the means where fellow men could attain a higher state—through martial art training.[25]

Here, I am reminded of the teleology of Munenori, Musashi, and Takuan's teachings, which tend not only toward perfection in skill, but rather, through perfecting the martial body to purify one's body and soul, to assist the practitioner to discover his true self, by severing the bonds of desire and delusion. This is the humanism of Japanese martial arts of the early Edo period, and perhaps the humanism of such Chinese masters as Cheng Chongdou, who followed in the Zen tradition of Shaolin martial arts. I am also reminded of the Way of the Sword in ancient China, which sought to "humanize" the "killing sword" by imbuing it with Confucian philosophy, in the process sublimating and conferring upon it a new cultural dimension.

Appendix—Reply from Roberto Gotti and Jacopo Penso

Master Chao's study analyzes the differences and similarities between the martial cultures of China and Italy. This is an impressive effort, the result of a fruitful meeting

[25] It is worth quoting Gotti's relevant passage in full, "To my mind, this is a possible reading: the Master kneels inside an altar of everyday life, rectangular in shape, to recall the first earthly state. Before that altar, he performs his daily work in the city through which the river Reno flows, perhaps near his textile workshop. He bears the arms of his trade (Master General of Arms) while carrying out kabbalistic-alchemical activities—a hermetic study that permeates the structure of teachings on assaults that he leaves in his text. Inside a protective circle he sketches symbols that remain to be deciphered today, copying them from a book. From this altar rise two Caryatid figures. They represent the Master himself and support a new, higher level, upon which the Master sits on his throne, with a sword and a sphere (the "*Palla*" or ball) in each hand, and wearing a tiara (triregnum) on his head. Beside the throne there are two sphinxes, the symbols of ancient knowledge. All of this is framed by an open curtain. At the center of this raised structure a cartouche is rolled out, allowing us to see a new dimension, inside which the title of the book, *Opera Nova* appears, alongside his name and his title, "Master." This is not the place for more than a mention: all the Master's teachings are made up of cyclical references—three in threes, five in fives—and of actions that are "diluted and dried" (*diluito e asciugato*). These components of knowledge are only linked together after an initial theoretical understanding becomes actualized through practice and experience. Only by playing the game of comprehension (theory first, then practice and, finally, improvement by experience) can we then better understand the theory and return to a new practice, which brings greater experience."

and of the desire to share and to look for a middle ground, to grow in deeper understanding through exchange and cross-germination, so that we may together discover a "new humanism of the sword" as Chao says at the end of his paper. His analysis pushes us to try to share further our vision, which we present below, and by way of replying to some of the topics he raised.

The Triangle

The first is the concept of the "triangle." Our focus on showing and describing the dynamical sphere has perhaps hidden this second—but inseparable and not less important—concept. In combat, the lines drawn from the base of one's shoulders to the vertex toward the opponent form a protective triangle. This triangulation is always sought whether delivering a stroke or a parry, since it is the only geometric form that allows the body to be protected behind the sword, serving at once as an offensive weapon and a defensive shield (as master Vadi instructs). This principle prevents us from launching suicidal attacks and ultimately achieves the goal to "touch without being touched."

In historical martial arts, circular motions always end in (or alternatively start from) linear motions. The symbol master that Gotti uses as the basis for many of the logos he has designed (for the various entities related to his school) consists of a triangle and a circle, which flow from linear to circular lines ad infinitum. In this dynamic model, the movements of the warrior truly are without end, as the energy produced by the body is kept alive from one action to another. In modern fencing, geometry is simplified as the fencer is constrained by the platform to move lineally, whereby circular motion is restricted mainly to the wrist. Historical masters, on the other hand, apply these concepts with the entire body, using the shoulders, elbows, wrists, and weapons as a composite system. Master Di Grassi shows a clear example of triangulation when he teaches us to keep the defensive weapon far from the body, thus allowing a larger area of oneself to be covered by the "shadow" of the weapon—a linear projection of the lines where the opponent might attack. Master Monte stresses the same principle when he warns against the bending of one's arms during parries or attacks. Similarly, Di Grassi highlights how to create an elliptical pattern with a combination of linear and circular geometries. Our practical interpretation of the symbolism in Master Vadi, who shows a bear and a ram on the shoulders of the warrior, is also exactly the ability to combine rotational and linear dynamics in order to deliver the right impulse in the strike. Finally, Master Agrippa explicitly discusses different situations where the choice of a linear line (like a direct thrust moving in the centerline, which is the most direct line between two fencers) or a circular motion (for example using a side-step to move the body out of the central line, keeping only the weapon in the previous position while moving the body away) may be preferred.

Descending Blows

Regarding the power of the descending blow, it is well known to the Italian two-handed swordmasters. The *fendente* is the heroic blow of the *chansons de geste*, but also the most used blow. Marozzo always uses it when changing the side of attack, to better protect oneself while leaving no space of protection to the opponent. However, Pietro Monte also explains how to oppose it with the ascending blow, without directly opposing it with an inferior force, but remaining sideways and targeting the hands, from which the enemy's attack originates. The purpose of a martial art system is to create a complete range of possibilities, giving to the swordsman the ability to attack and defend in any situation, from any position, and against any choice or move by the opponent.

The Use of Two-Handed Sword

Longswords were used before the thirteenth century. We may note that there are evidence and exemplars of such weapons even in the eleventh and twelfth centuries. Longer weapons or weapons held with two hands are depicted in several iconographic sources; also, a number of Sardinian bronze swords are more than a meter long and leave open some questions (for example, the methods of gripping the sword and the technical nature of their use), still to be discussed and explored. The written sources (treatises) start from the end of the fourteenth and the beginning of the fifteenth centuries with Fiore's manuscripts, but surely this weapon was used even before that. There is also a connection to the use of wooden staff with two hands, which has been transmitted up until the modern era, but mainly in the form of folkloristic knowledge, with scant written sources before the nineteenth century.

Footwork

Footwork in the Italian two-handed sword (and in other European traditions) consists of a great variety of steps: there are crossed steps in front and behind, steps called "foot chases foot" in which one approaches the other to push it forward or backward, jumping steps (leg raised, forward or backward to follow the motion of the upper parts), legs that twist around the other leg (like in Marozzo), and "counter steps" (*contrappasso*) in which one leg opens to the outside.

Regarding the presence of wider stances, they are used especially in lunges and in actions of extension toward the opponent, usually followed by rapid recovery in legs position that allows for rapid motion. Agrippa provides an example where he starts a position with close feet, which develops into a wider stance as he pushes the thrust forward. The German author Joachim Meyer (1537–71), who published his

work around 1570 and is closely connected to the Italian school, uses very deep and wide stances in longsword, but always in dynamic actions and keeping the weight of the torso stable.

In our school, the approach to swordfight has always been focused on freeing the body from the ground, helped in this feeling by the application of physical exercises as the training tool built following Marozzo's diagram. The ground does not "give strength" but, on the contrary, the force originates in and is expressed by the body (starting from his center in the plexus and exploding through the legs) pushing against the ground to give motion and elevation. This is clearly expressed in Master Ghisliero's thought when he describes the legs as dynamic columns which push against the "natural motion" toward the ground (i.e., gravity), which are able to receive and give back the weight to the center of the body, as Master Vadi already depicted with his symbols about a century earlier (the tower, the sun and the wheel).

Mental Attitude and Training

When talking about freedom of mind in the Eastern culture, we find strong connection with some of the Italian masters' teachings. A very beautiful phrase by Agrippa speaks of *mente sottile* (subtle/sharp/light mind), a mental state that apprehends and reacts in a better way than the rational mind. The forms, the *taolu* of Marozzo and the other masters, have precisely the function of transforming techniques into the "quiet instinctiveness" of trained automatism. In Vadi's beautiful drawing, an open eye is placed on the heart, bringing together perception and emotions in a body-mind unity. It is also useful to understand the words that many masters use—very similar from the medal of Monte to the words of some of the great masters—the *vis temperata* (tempered force) or *collera temperata* (tempered rage) which describes the state of the quiet mind, absent of thought but full of disruptive energy, which may be equated with the mental-spiritual state sought in Eastern martial arts. It is that state of controlled anger, which combines cold and reflexive mental clarity with emotional activation and the will to act, with the body and mind in readiness and synchronicity.

Moreover, the historical sources often mention the motivational attitude one should adopt when approaching a fight. Fiore's lion (one of the four virtues) is a metaphor for courage, as he encourages one to display fearlessness as a way to demotivate the opponent. The motion of the body to show conviction and aggression is suggested in several authors, for example, the anonymous author of Classense manuscript, who discusses how one could inspire terror through adopting a certain body attitude, and how fencing footwork is similar to dance but with a different attitude and purpose. This is the important role of *andare a gioco.* The experience in fencing—the result of several cycles of theory and practical understanding essential to the learning of fencing (the *teorica-prattica-esperienza* mentioned by several authors of sixteenth and seventeenth centuries)—is the result of going beyond rational understanding (theory) or mindless physical exercise (practice) to achieve a state of

mastery in the art, in which trained automatic bodily response is combined with the possibility to "read" the opponent and to use the intellect and creative mind to defeat him.

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