"There is no avoiding war; it can only be postponed..." (Machiavelli) Indeed, this is true, as war has been a part of human culture since the beginning of time. Battles will be fought and wars will wage on; there is nothing that can be done. No matter how many pacts are signed, no matter how extraordinary the leader is, and no matter what race or religion, fighting is as unavoidable as the plague.

The Renaissance brought tremendous enlightenment and development across Europe. Individuals were becoming more interested in the importance of self-expression, scholastic achievement, literature, the sciences, art, and the world as it began to emerge. Renaissance men, such as Leonardo da Vinci, Michelangelo, Raphael, Descartes, and Bocaccio gave contributions to society that are still appreciated today. Even with all of these positive and exciting changes, man's fatal flaw reared its ugly head throughout this period. A plethora of wars and battles tarnished the Renaissance. The Thirty Years War, the Wars of Religion, St. Bartholomew's Day Massacre, the English Civil War, and the Peasant's War were responsible for only a fraction of the lives that were wasted across Europe in the 15th to mid-17th centuries.

The focus of this essay is not the wars that occurred during the Renaissance. Rather, it is the implements of these wars. In any fight, a man must be able to defend himself and be able to attack when the time is right. In a battle or war, certain tools or devices are used in order to gain an advantage. In the heat of battle, when thousands of men are killing each other, an unarmed man is a dead man. During the Renaissance, many new creative weapons and extravagant forms of armor were formed. Although these creations did a lot for the science of war and made it much easier for men and women (many innocent) to be slaughtered, without the development of such tools of destruction, who's to say where we would stand now? The balance of power that stands today is directly related to the outcomes of the battles during the Renaissance.
Without the advantages of new technologies in weapons and armor, the world could be a vastly different place today.
The most important part of a fighter's equipment is what he uses to defend himself. Often bulky and extremely heavy, some types of armor could be a hindrance to his mobility. Although this limited their movement, not a single person who fought would be without their protection. If an unarmed man is a dead man in the heat of battle, a man without armor is a slaughtered man. Any person would be proud to die for their country if they truly loved it, but to be dismembered or decapitated is something that a soldier's family would never recover from.

The basic fighter would certainly have some specific items before he or she stepped on the field. All would wear some sort of body armor for protection from swords strikes, flying arrows, and the like. The quality and amount of protection offered by different body armor could vary greatly, but even the shoddiest was better than nothing. A helmet of some sort, ranging in durability from rawhide to the strongest steel, would also be worn by a fighter. Of course, this would be worn to protect the head, which was the most vulnerable place on a man's body to attack. A blow to the head from such a simple weapon as a club could leave a man dead, but with better protection, this could be avoided. Often, two layers, one thin and one much thicker, were worn for head protection. Some type of footwear would have to be worn, as well. A simple pair of leather shoes would offer good protection from jagged rocks and debris scattered across the battlefield, but iron or steel boots could protect from even the hardest strikes of a sword. Sometimes, spikes would be added to these boots so and they could be used as an offensive weapon as well. And finally, a shield would almost always be used in combat. Most shields were round and made of metal and could be of various sizes, but they could also be irregularly shaped to help protect more area from attack. A small, round shield, called a buckler, was most often used. "Euery Seuruing-man, from the base to the best,

carried a Buckler at his backe, which hung by the pommel or hilt of his Sword- which hung before him (Poor)."

There were many, many forms of protection and only the rich, such as knights, could afford the best. A knight would wear several layers of armor, with the least bulky and most comfortable on the inside. This layer would usually be some sort of cloth or leather material. Other than covering one's nude body, this layer served virtually no protection but helped to block any jagged edges or rough spots in the outer layers. Usually, though, most of the serfs, peasants, or others in the lower class that were fighting would be able to afford only this basic protection. Many lives were taken because of the lack of equal distribution of finer armor throughout the army, and many people could have been saved if they had been protected. The cloth or leather armor was the cheapest form of protection, thus it was the most common. Of all types of armor, this was the most used and least appreciated. Leather was also used to make shields and helmets. Again, this was the "basic," form of protection and most common.

The next step up from leather was a series of linked chain rings that was formed together to make an article of clothing. This was called mail, and it was used for various types of armor. It could be formed into almost complete body protection, from the head to the knees, or it could be formed into just a type of helmet. There are many other variations of mail: a coif, which protects the head as well as the upper shoulders, a Bishop's Mantel, which protects the neck and shoulders as well as the upper chest, or a full "shirt" which covered the entire upper half of the body. Mail was fairly flexible and easy to maneuver in. It protected the body from almost all attacks but straight jabs from a sword or an arrow, thus making it an ideal armor for the quick, nimble warrior. If a wealthier fighter had a more expensive, thicker form of armor, mail could even be worn as inside for added protection. Mail was also fairly cheap, but still much more expensive than leather or cloth. Even so, peasants could occasionally be seen wearing it on the battlefield ("Mail." 1986 ed.).
Mail was not very convenient to mold into boots or shields, but it was done in some occasions. It would be draped over a leather shield for added protection or it could be worn over leather boots. It was a very practical form of armor; it was very durable and fairly impervious. Indeed, it would have been an excellent choice for the "middle" class warrior.

A slight step up from mail was scale. Scale armor used small metal plates instead of rings. It was used in very similar applications to mail. The small linked plates resembled fish scales, thus its name is derived. It was a little harder to move around in and not as comfortable as mail; sometimes the plates would scrape against a man's skin and slice it, which could be very distracting in battle. Yet it did offer more protection than mail. It was much harder for a sword or an arrow to pierce this type of armor, but like mail, it was pervious to crushing blows from any type of bludgeoning weapon, especially an axe. A man's lungs could collapse from a well place blow to the chest, which, along with other similar injuries, could kill any man.

Widely considered the "be all and end all" of Renaissance armor, plate mail the most expensive and durable of all. It was constructed of large slabs of iron or steel welded to sheets of regular mail at the joints of the body. This allowed the body to move freely, albeit very awkwardly. The plates were so large and heavy that the entire suit, including the boots, leggings, breastplate, arms, and helmet, weighed in excess of one hundred pounds. This made the knight wearing it unable to move quickly in battle. This was acceptable, though, as a person wearing plate armor was a relative "tank." The plate mail could withstand virtually all attacks with the exception of a few weak spots at the joints. Swords could rarely penetrate the armor and bludgeoning weapons such as clubs and maces would just bounce off. The vital protection that plate mail offered was invaluable, and

anybody on the field would have happily accepted the loss of mobility that came with the armor ("Armor." 1996 ed.).

Iron and steel (when it was invented in the 16th century) were also used to make rugged helmets. The Pembridge Helm, an irregularly shaped helmet that protected the entire head, had a rounded top to deflect blows. The Gothic Sallet covered the entire skull as well, but was fitted closer to the head to prevent unnecessary movement. It also had a "tail," or a series of linked plates, attached to the back of the helmet to prevent neck injuries. The Maciejowski Barrel Helm was the type of helmet most people think of when they imagine a knight. It was constructed of steel and bronze (for decoration), and was very classy. It was very bulky, but allowed for the best vision of any full size helmet. These metal helmets provided superior protection, but were not impenetrable. A well placed arrow or sword could be jabbed into the eye slits or breathing holes. This did not happen often, though, as it would take tremendous skill to hit that small of a target. Many of these strikes were accidental or lucky.

A blacksmith would work tremendously hard and for extremely long periods to create any type of armor. A good suit, shield, or pair of boots was well cherished. Many people would have a priest or some other religious figure bless their armor to give it the strength of God. Often, these items would be passed down from family to family as an heirloom (Bull 14). If an article of armor was good enough to protect a man through a battle, his family would take tremendous care in keeping it safe, clean, and sturdy.

A battle could not be won with just good protection, though. Weapons, such as knives, clubs, swords, and maces were used to kill the enemy. There were as many different types and varieties of weapons as there are stars in the sky, and usually, the weapon chosen was a matter of personal choice. When a squire trained to become a knight, he would learn some basics on how to use all types of weapons. If a man wanted to become an archer, he would train to use the bow or crossbow. If a man wanted to be a foot soldier, chances are he would train to use either some sort of impact weapon or a sword. The common, who usually had no choice, used weapons with a longer reach, such as spears. This was strategic, since the peasants were usually sent in to fight first, and would preferably like to destroy the first line with as few cuts and bruises as possible. Other types of weapons, such as catapults, battering rams, flaming oils, and eventually, cannons, will not be discussed here. The primary focus of this section is the weapons that could be equipped and held in a person's hand.

One weapon that was common to all people who fought during the Elizabethan Age was some sort of knife (Bull 63). The knife or dagger was the quickest and most accurate weapon on the field. It was usually extremely sharp and often deadly. If a man's primary weapon was knocked from his hand, he would have to resort to his knife. Often, the man would wait until his enemy was unprepared, where he would quickly thrust the knife towards the foe. It was most often kept in a small sheaf under the pant's leg. It could also be seen dangling from a man's belt so that it could be easily accessed.

Knives were usually side arms and a well-chosen one could be extremely useful. There were a variety of knives, including daggers, scabbards, and parrying daggers. The traditional medieval knife was a plain, sharp blade, from four to ten inches long, attached to a block of wood or a piece of metal. The handle, was crafted into a grip that rested comfortably in the hand. A lot of times, these knives were used on more than just the battlefield. They could be used for a lot of everyday tasks, such as cutting meat or rope. There was nothing flashy about this weapon, it just got the job done. A dagger is a flashier, sharper knife. The handle could be made of walnut, leather covered wood, or fine steel. The end of the dagger, called the pommel, was often made of bronze or gold and could contain a valuable

gem for decoration. The chief difference that separated a dagger from a knife was the guard. The guard was a piece of metal that separated the handle from the blade. It got this name from the protection it offered; it blocked a man from slicing his own hand when he stabbed something, and it could block a sword strike. Sometimes, with luck, an enemy's sword could get caught in the guard and, with a quick turn of the wrist, that man would become unarmed.

A parrying dagger was another type of knife. Although it shared only a few differences with the regular dagger, a parrying dagger was used for different purposes. This special dagger was usually much flashier, with more ornate decorations such as engravings, diamonds, more gold, and the like. The guard was longer and rounder, providing more protection. The blade was longer as well, extending up to fifteen inches. It was more of a defensive weapon, which is seen by the lengthier guard. Sometimes the guard would have a "S" shape in order to protect the knuckles. A fighter usually used the weapon in one hand with a sword or rapier in the other. The parrying dagger was used to block (parry) the opponents strikes, leaving him open for attack. More or less, the parrying dagger, when accompanied by a beautiful rapier, was a rich man's weapon. The tower dagger was an excellent example of the functionality and beauty the Renaissance craftsman could produce. It was a double edged blade with depressions on the face to be used as thumb rests. The pommel was shaped somewhat like a turban with the swirled pattern echoed in the finials of the guard (Poor). The Rondel Dagger was one of the longer knives, with a length of twelve inches. Knights used this weapon as a last resort in battle, thrusting it through the visor or a chink in the armor as mentioned earlier. The Saxon parrying dagger was used in northern Europe. Unlike others, it had a short guard. It was worn at the back, tucked in a belt, and was used only in emergencies. It was less cumbersome than other parrying daggers, as it was a narrower blade (Poor). These blades were extremely useful to a skilled knight, bringing defense and offense together in a nice, small package.

The weapon most used by the commoners on the battlefield was the spear. Of all the weapons used during the Renaissance, the spear was the cheapest and easiest to produce; it only had a small amount of metal on the ends. Even though it was the cheapest, it was one of the most effective hand to hand combat weapons. George Silver, an English Fight Master, said the spear was superior to all other weapons. In feudal Japan, spearmen were respected so much that they were paid twice as much as swordsmen (Poor). It had an excellent range, as it could be up to eight feet long. The blade on the end was usually finely sharpened to a double-sided blade which could penetrate the toughest armor. Almost always, the spear would have another piece of metal shaped into a cone at the opposite end of the blade. This is the butt of the spear, used to prevent against splitting of the wood. Several types of spears were used during the Renaissance, but all were basically the same with a few minor differences in the shape of the blade. The most common, though, was the 12th century spear, with its heavy mid range and superior strength. It is odd that such a simple, common weapon that had been developed in the Stone Age, could be so popular and effective up until the end of the Renaissance.

The bow and arrow, which is often cited as one of the greatest inventions ever, along with its more advanced brother, the crossbow, were the most effective of all weapons. Nothing could match the range of the long bow, and nothing could match the speed of the crossbow. A carefully placed sniper atop a tree could pick off fifty men on the battlefield without breaking a sweat. Hundreds of thousands of men died in battle without knowing what killed them. These weapons were so dangerous and lethal that entire battles were decided on who had the most archers or where the archers were strategically placed. The bow was a simple instrument, too, and could be easily produced. With only two components, a thick wire and a piece of sturdy, well-shaped wood, they were cheap as well. Arrows, on the other hand, had to be produced in massive quantities, for often, a single archer could carry over a hundred in his quiver. The traditional hunter arrow, with its classic

arrowhead shape, was the most common of arrows used. Not only used it war, it was also used for hunting and shooting. The Bodkin arrow was designed for only one purpose, to penetrate armor. It had an extremely tapered head that fit perfectly through the kinks. The barbed arrow was shaped like the hunter arrow, only about twice the size. It was used primarily to stop charging horses.

The crossbow, on the other hand, was an extremely complicated and sophisticated piece of weaponry for the time. It was technologically paces ahead of any other weapon out there and was more accurate than the bow. It used bolts, specifically made arrows with special tips, and often fired them straight through shields. Bolts were fired with velocities nothing else could match. The crossbow was constructed with many wooden parts and metal switches, gears, and other various mechanisms. Because of its complicated design, it took a lot of time to make and was very expensive. It was common to see a thousand bowmen on a battlefield and only a dozen or so crossbow artists. Bolts, though, were simpler in design than the specialty arrows, since they basically had a universal structure. The wooden shaft was shorter and needed no feathers to obtain the accuracy needed.

Impact weapons, such as the mace, axe, and flail, were some of the most destructive and effective weapons created. Of all weapons that could be held in the hand, these were often the heaviest and most powerful. A double-sided battle axe, for instance, could weigh as much as fifty pounds. A strong warrior wielding this weapon could cause massive damage to the enemy. The weight of some types of impact weapons was a disadvantage, though, as only the strongest men could wield them in heated battle. Any man can swing an axe, but it takes a powerful one to wield it skillfully and accurately.

There were many different types of impact weapons. The mace was a practical and extremely effective tool of destruction, but it maintained a simple design. Usually crafted completely of steel, with a steel handle on one end and spiked protrusions from the other. Most maces were perfectly weighted so that they could be swung with enough force to crush a man's skull. The spiked end could be formed in a variety of ways, including a solid sphere or a shape resembling the feathered side of a dart. The spikes could be up to four inches in length, just long enough to create a nice hole in an opponent. Maces could also have flanges, or sharp diamond edges, on the end. Maces such as these were used to slice through an adversary's armor or skin rather than pierce it. The Italian mace and Gothic French mace were examples of this type and was used during the High Renaissance. Highly dangerous and lethal, the mace was not only a symbol of rank, but a brutally efficient weapon in the hand of the armored knight (Poor).

A sibling of the mace, the flail, had the same properties of the mace. The flail still maintained the spiked end (usually a spiked ball), but it was attached to the handle by a chain. This allowed for more range, often giving an extra foot or two to the average mace. Although the flail was one of the hardest hitting weapons known, it had a serious disadvantage. In the hands of the untrained, it was as dangerous to the user as the opponent (Poor). The traditional spiked flail had a jointed head which increased the already lethal force.

The axe was one of the most devastating impact weapons, as one swing could pass straight through bone. Most had three methods of attack, one from each side for slicing and chopping and one from the top for stabbing, but it was not uncommon to see a single sided axe. The Flemish axe was an example of a three way axe. The blade was made of extremely sharp steel and it had a spikes protruding from the opposite end and top. This allowed for some creative and brutal attacks. A knight could thrust one of the spikes into a man and completely rip him open with a strong tug. The Renaissance Italian axe did not have a spike from the top, but had both the blade and opposite-end spike. This allowed for better wind flow and aerodynamics, which yielded swifter strikes. The double axe had a blade on each

side, which allowed a warrior to chop a trail through the enemy lines. It was well weighted and vicious if in the hands of a strong, skilled knight. The axes used during the Renaissance were the most sophisticated of any other axe in previous times. Without doubt, they were an extremely effective instrument of death.

Specially designed hammers were also used in combat during the Renaissance. The war hammer, or "martel de fer" in French, was a one of the more common weapons of the time. It had a heavier blunt side used to crush bones and a spiked side that was used to penetrate armor. It was extremely effective in getting pass the plate armor of the time. Similar to some axes, it had a spike on the top of the hammer for stabbing. The dragon war hammer was very similar but didn't have the third spike. The hammer's ability to pierce even the strongest armor made it one of the most useful of all weapons (Bull 142).

The rapier was another type of blade. It was skinnier, narrower, and lighter than the sword, but longer than a dagger or knife. It had a very accentuated hilt with a long, very curved hilt and knuckle guard. There was also a large circular band of metal attached to the handle that was used to trap the opponents blade. Similar to the guard, a skillful twist of the wrist could free the opponents weapon from his grip. Rapiers where almost never seen on the battlefield; they were much to delicate and artful for the harsh treatment of war. Instead, a gentleman would carry a rapier at his side, usually accompanied with a parrying dagger, and solve his everyday confrontations with a quick thrust. The Writhen rapier had a flashy, bright hilt that reflected the light excellently. This was to either impress or distract a foe. The Dresden rapier was similar to the common rapier, but it had a wider, heavier blade much like a broadsword. These blades were extremely heavy compared to other rapiers and were often carried alongside members of the cavalry. The rapier was a beautiful weapon carried by many rich, influential men during the Renaissance, but it was rarely seen in all out combat between countries.

Finally, the sword is a mythical weapon that is the most known and appreciated of all ancient weapons. In Renaissance times, a sword was a symbol of a true warrior. Families would keep a sword as part of the family heritage for generations upon generations. The king and his knights always had the finest swords in the land at their sides. The only proper way to dangle a blade by the side was to keep it in an Elizabethan sword hanger. The hanger was made of the finest leather and was fully adjustable to suit every man. The traditional sword was from twenty-seven to thirty-eight inches of the finest and sharpest metal in the land. It had a metal handle with a leather covered grip and, usually, a finely decorated hilt. There was also a two-handed version which was longer at approximately fifty inches. This sword was not much heavier than an average sword but took much more skill to wield effectively. The sword was the preferred weapon for knights and they spent years training to perfect its use. The blade, while heavier than a rapier or dagger, was still not as heavy as one would expect. On average, swords weighed four to five pounds and were quite easy to swing. It was its awkwardness that was the hurdle to its mastery. A squire or training town boy would constantly slice himself in his practice. Still, once the sword was mastered, it was a beautiful spectacle to see in the open field.

There were countless forms of the sword during Renaissance, but there were some worth special note. The Castillon sword was an excellent example of the traditional single-handed sword. Its finely balanced and forged blade and comfortable grip were classic features throughout the Renaissance. The Irish sword was one of only a few types of swords that can be attributed to one nationality. It has the a distinctive metallic ring attached to the pommel with a tang passing through it. The broadsword had a wider and heavier blade and was used for more powerful and destructive blows. Because of its heavier weight, only the strongest warriors would attempt to wield it. The German branch sword was one of the lightest and fastest swords of the age. It was a "riding sword," that is, a

sword that was worn as an everyday side arm. The Schloss Erbach arming sword was designed in the 15th century when armor reached its peak of effectiveness. This sword was very well balanced and could be used with one or two hands to pierce the enemies armor. Finally, the scarf sword was a very rare type. It was created in an effort to link the development of the rapier and sword. It had a thin blade similar to that of a rapier and a hilt like that of a sword. It was probably the fastest and most accurate sword ever created.

There have been entire books written about the weapons and armor of the medieval and Renaissance times, and the weapons and armor described here are only a fraction of them. Without a doubt, the Renaissance was not just a time of tremendous growth, education, and individualism. It was also a troubled time plagued with war and death. The strides in technology that sprouted from the Renaissance led to creative designs in weapons and armor, and they were put to good use.

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