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Chariot Usage in Greek Dark Age Warfare

Carolyn Nicole Conter
THE FLORIDA STATE UNIVERSITY
COLLEGE OF ARTS AND SCIENCES

CHARIOT USAGE IN GREEK DARK AGE WARFARE

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CAROLYN NICOLE CONTER

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The members of the Committee approve the thesis of Carolyn Nicole Conter defended on 

_______________________
Chistopher A. Pfaff
Professor Directing Thesis

______________________
Daniel J. Pullen
Committee Member

______________________
Kathryn B. Stoddard
Committee Member

The Office of Graduate Studies has verified and approved the above named committee 
members.
To Mom and Dad,
for your patience, encouragement and steadfast support.
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ABSTRACT

It is generally thought that that the peoples of the Greek Dark Age did not use chariots for warfare. This theory is based on the assumption that the Greek Dark Age (ca. 1100 B.C.E to 750 B.C.E.) was too impoverished for people to own, much less use chariots. It is also often argued that the Homeric description of war-chariotry represents a distorted memory of the proper way to use chariots on the battlefield. Because of this, the Homeric evidence shows that chariots had not been used in Greece for a long time prior to the traditional date of the Iliad. The purpose of this thesis is to oppose this commonly held theory. In order to do so, I will examine various types of evidence, including chariot- related artifacts as well as textual and pictorial documentation for chariots. The evidence that will be examined dates to the Bronze Age, Dark Age and the eighth century. It is my contention that when looking at all of the evidence for chariotry in Greece diachronically, a continuum in the design of Greek chariots as well as how chariots were used militarily is established. This continuum, in turn, shows the plausibility that chariots were used for warfare throughout the Dark Age.
INTRODUCTION

The chariot, possibly invented in the Near East, became one of the most innovative accouterments in ancient warfare. Unlike the previous heavily built war-carts that were drawn by oxen, the chariot was a light two-man vehicle drawn by horses.¹ This combination of a light vehicle and fast horses gave ancient armies the capability of unprecedented movement on the battlefield. When used with the right weapons, particularly the composite bow, a chariot squadron became a highly successful military wing. In the case of Greek war-chariotry, however, it appears that chariots were never used to their full capabilities. It seems that the Mycenaean palaces expended a lot of effort to manufacture and distribute chariots for military matters, but those chariots are never shown being used actively in battle. Likewise, in Homeric descriptions of the chariot in battle, the chariot is relegated to a rather debased use. There is no question that the Mycenaean used chariots because these vehicles are pictured with frequently in art and are mentioned in Linear B texts. After the fall of the palaces, however, pictorial and textual evidence for chariots cease. Because of this, it is often thought that chariots disappeared from Greece at the end of the Bronze Age. Consequently, Homer’s seemingly impractical use of the chariot in warfare has generally led scholars to assume that he had no experience with the chariot and its use in warfare.

The problem with this assumption is that, despite a gap of ca. 400 years, the way that the chariot is used in the *Iliad* corresponds to the way the Mycenaean show it being used, that is, as primarily a transport vehicle for foot-soldiers. Furthermore, although there is no a written or pictorial record of chariots during the Dark Age, there is some physical evidence of chariots dating to this time. The purpose of this thesis is to discuss the possibility that chariots were used during the Dark Age, and that they retained a military function. As a result, Homer’s description of the chariot’s function in war may

¹ Littauer and Crouwel 1979, 15-20.
not be entirely fictitious, because his descriptions are based on a contemporary, or near contemporary, function of the war-chariot.2

This thesis is divided into two parts. The first part, comprising chapters I and II, is concerned with establishing the existence of chariots during the Dark Age. Chapter I will address one of the most significant problems of Greek chariotry: the fact that no chariot has survived in Greece and that, therefore, the physical evidence of chariotry is limited and generally circumstantial. Nevertheless, what evidence has surfaced will be surveyed in chapter I. Chapter II will address the fact that, regardless of a gap of about four hundred years in the pictorial record, the last type of chariot pictured in the Bronze Age is the same type of chariot pictured in eighth-century Geometric art. It will be argued that this continuation of the vehicle’s design is further evidence that the chariot remained in use during the Dark Age.

The second part of this thesis, comprising chapters III and IV, is concerned with the possible use of the chariot in warfare. Because there is no textual or representational evidence for chariots in the Dark Age, this discussion is dependent on Mycenaean and eighth-century evidence. Chapter III is concerned specifically with Mycenaean chariot warfare. It is important to discuss how the Mycenaeans may have used their chariots in war because there appears to be a link between this usage and Dark Age war-chariotry. Finally, in chapter IV Dark Age chariot warfare will be considered. Analysis of the Homeric portrayal of how the chariot was used in battle will be a large component of this discussion because it is the only lengthy description of Greek chariots in warfare. This analysis will show that Homer relayed a feasible depiction of Dark Age warfare. It is hoped that the result of this thesis will show that the idea that chariots did not exist, or were not used during the Dark Age for warfare, is false. In addition, I hope to show that it is important to study Greek chariot warfare diachronically, because one cannot fully understand Dark Age war-chariotry without also examining Mycenaean war-chariotry. When Greek chariot warfare is studied in this way it becomes clear that there is a consistent picture from the Bronze Age to the eighth-century in terms of both the vehicle’s design, and in its unusual function.

2 Because chariots were used for other activities outside of warfare, such as for racing or ceremonies, the term war-chariot is used throughout this thesis for a chariot used for strictly military purposes.
CHAPTER I

PHYSICAL EVIDENCE FOR CHARIOTS DATING TO THE BRONZE AGE AND DARK AGE

As briefly mentioned in the Introduction, there are no extant chariots in Greece. There are some artifacts that suggest that chariots were practiced during the Bronze Age and Dark Age, but they are only loosely related to chariots. Thus, these artifacts require other types of evidence, such as contemporary textual and representational evidence, to confirm their relevance to the use of the chariot.

One possible indication of chariotry in the archaeological record is the presence of roads. For the purpose of this thesis, we are limited to Bronze Age examples, because the roads that can be securely dated to the Iron Age date to the Archaic, Classical, or Hellenistic periods. The lack of roads securely dated to the Dark Age does not necessarily disprove the existence of chariots during this period. It may only imply that chariots were not as widely used as they were during the Bronze Age, or that the Bronze Age roads continued to be adequate for the needs of the peoples in the Dark Age. It is generally accepted that the primary purpose of Mycenaean roads was to service military needs, and consequently they were built to carry chariot traffic. This view is based on the fact that the chariot is the most commonly featured vehicle in Mycenaean art and it is also the only vehicle shown in military scenes. Jansen, however, questions whether roads were built solely to carry chariot traffic. He argues that a road could facilitate all types of traffic, including pedestrian traffic. Jansen asks whether it is possible that chariots

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3 Bronze Age roads are dated mainly by the construction techniques, such as cyclopean masonry and relieving triangles for bridges, and by associated pottery sherds; see Mylonas 1966, 86-88 and Hope Simpson 1981, 17, 34, 1998, 239-260. For Iron Age roads, see Pritchett 1980; Young 1956, 94-97; Crouwel 1992, 21-23. Iron Age roads are also dated by construction techniques, such as the wheelruts of “track roads” that were purposely carved to guide the vehicles. Associated pottery sherds are also used to date Iron Age roads.


5 Jansen 1997, 1-16.
simply took advantage of a road system already developed for all forms of transportation or whether other forms of transportation took advantage of roads built specifically for chariots.\footnote{Jansen 1997, 5-6 also rejects the military purpose of the ‘blockhouses’ located near the roads. He argues that these structures more likely had an agricultural function.} It seems that the latter is the more likely of the two possibilities. Because the palaces seem to have had a relatively large number of chariots, and that in military actions many chariots probably would have been deployed, roads may have been necessary to facilitate their movement to the battlefield. Overland communication was probably also necessary, and since the chariot was evidently the vehicle of officials and the fastest vehicle to date, roads probably were necessary to facilitate chariot traffic for that purpose as well.\footnote{For association of chariots and the power elite, see Ventris and Chadwick 1973, 369-375; and Chadwick 1976, 177; Roads have often been used to help determine the sphere of influence of the palaces; see McDonald 1964, 217-240; Hope-Simpson 1998; for opposite view, see Mellican 2002.} Nevertheless, Jansen may be correct in believing that other vehicles, such as wagons transporting agricultural goods, would also have used roads. Therefore, the existence of roads is not a definitive proof of the use of chariots, but roads probably were a necessary accompaniment to the extensive use of chariots.

Hope-Simpson argues that one indication that Mycenaean roads were most likely built principally for chariots is that a lot of effort was expended in order to make them suitable for wheeled traffic.\footnote{Hope-Simpson 1998, 239-260; see also McDonald and Hope-Simpson 1964, 241.} One of the main requirements for a carriageable road was that it was wide enough for the vehicle to fit. In addition, road grades needed to be slight to avoid abrupt rises and declines, and hairpin turns needed to be avoided when the road traversed a steep incline.\footnote{Crouwel 1981, 29-30; Hope-Simpson 1998, 241.} A smooth road surface was also needed not only for the preservation of the wheels of the chariot, but also because horses were most likely not shod at that time.\footnote{Hope-Simpson 1998, 241; for shodding, see Anderson 1961, 91.} The problem with Hope-Simpson’s argument is that although the above features were necessary for chariot traffic, they were also needed for other kinds of wheeled traffic. For that reason, again, Mycenaean roads are not specifically indicative of chariotry. Regardless of this, evidence for roads that are suitable for wheeled traffic...
has been reported for the Argolid, Messenia, Boeotia, Phocis and Crete.\textsuperscript{11}

Because chariots are drawn by horses, the presence of horse bones and horse bits is another indication of chariotry in the archaeological record. Unfortunately, neither of these two pieces of evidence occurs frequently in the archaeological record of Greece. Generally, in Bronze Age and Dark Age contexts horse bones account for only a small percentage of all animal bones excavated.\textsuperscript{12} For example, at Nichoria horse remains constitute only 1% of the animal bones found.\textsuperscript{13} The bones that have been found belong to the \textit{Equus caballus} species, or the ‘true horse.’\textsuperscript{14} These horses were smaller than the average horse today. Their height, ca. 1.45m at the withers, corresponds to the height of a large pony, and although these horses are small by modern standards, they were large enough to pull a chariot.\textsuperscript{15} That their height is sufficient for chariotry is evident by the fact that horses in Egypt and the Near East, both of which are well known chariot powers, are of the same species.\textsuperscript{16}

It should be noted that the mere presence of horse bones in the archaeological record does not specifically imply that chariotry was practiced; rather, these remains are only indicative of equitation. For example, when horse bones are found in settlement contexts, unless the whole skeleton is found, the bones are normally interpreted as being a food source.\textsuperscript{17} The horse burials that have provided evidence for chariotry come from cemetery contexts, but even in these contexts not all horse remains found reflect chariotry. For instance, if only one horse is buried, as in the case of a grave at Nauplion,

\textsuperscript{11} For Messenia, see McDonald 1964, 217-240; McDonald and Hope-Simpson 1964, 240-241; for Mycenae, see Jansen 1997, 1-16; Lavery 1995, 264-265; Hope-Simpson 1998, 239-260; Crouwel 1981, 31; Mylonas 1966, 86-87; for Phocis, see Kase 1973, 74-76; for Crete, see McDonald and Hope-Simpson 1964, 241-242.

\textsuperscript{12} Piggott 1992, 59; Crouwel 1981, 33. The earliest known horse remains in Greece date to EHIII and are from Tiryns; see A. von den Driesch and J. Boessneck in \textit{Tiryns, Forschungen und Berichte, XI.} (1990). The next oldest remains date to the MH and are from Lerna and Nichoria; for Lerna, see Gejvall 1969; for Nichoria, see Sloan and Duncan 1978, 69-70.

\textsuperscript{13} This percentage is consistent for Bronze Age and Dark Age levels; see Sloan and Duncan 1978, 69 and Table 6-1 on pages 62-63.

\textsuperscript{14} Payne 1990, 103; Sloan and Duncan 1978, 69; for breeds of ancient horses, see Anderson 1961, 15-39.

\textsuperscript{15} Sloan and Duncan 1978, 69.

\textsuperscript{16} Littauer and Crouwel 1979, 24, 56.

\textsuperscript{17} Sloan and Duncan 1978, 69; Prontonariou-Delaki 1990, 102 n. 81. Finding a whole skeleton in a settlement context would be unusual because it would take up too much space. There is, however, one possible intentional horse burial in the settlement at Lerna (Lerna VII); for a description of this burial, see Caskey 1954, 11-12; Wiencke 1998, 183-4.
then it is not clear if the horse was part of a draught team or if it was ridden.\textsuperscript{18} There are also cases where one or more horses were dismembered at the time of burial, indicating that the animals were part of the ritual slaughter for the funerary rites.\textsuperscript{19} In these cases, the bones are either piled in or near the tomb, or only parts of the animals may be recovered from the tomb.\textsuperscript{20} When, however, the articulated equine skeleton is found in a tomb, it may be suggested that the horse was intended to be used by the deceased in the afterlife.\textsuperscript{21}

Moreover, when whole skeletons are found in pairs it may be inferred that they are chariot teams to serve the dead. For the Bronze Age only a few sites, Dendra and Marathon, have yielded the remains of teams of horses.\textsuperscript{22} At Dendra two separate pits were found that contained paired horse burials. The first, dated no later than LH I, was found near the edge of Tumulus B.\textsuperscript{23} The pit is shallow and narrow and holds only the horse skeletons. The size of the pit led Prontonariou-Delaki to assume that it was dug specifically for the horse burial. Both of the horses were placed with their heads facing northeast and one horse partially overlapped the other. Neither horse had a bit in its mouth and there was no trace of a vehicle in the pit. Prontonariou-Delaki interpreted these horses as the draught team of a chariot solely because they were paired, which “gave the appearance of [the horses] being yoked to a chariot.”\textsuperscript{24} The second horse burial was found in Tumulus C, located northwest of Tumulus B.\textsuperscript{25} The horses were again buried in a special pit located on the northeastern side of the tumulus. Each horse was lying on its left side. This pair, which is the earliest horse burial found, dates to the

\textsuperscript{18} For the Nauplion burial, see Andronikos 1968, W85; Prontonariou-Delaki 1990, 101; Kosmetatou 1993, 28. This horse, found by Stais, has never been well published. It was apparently found in connection with a chamber tomb, which dates to LH III A-B; a single horse burial (tomb 8) was also found in the Deiras at Argos, see J. Deshayes, \textit{Argos. Les fouilles de la Deiras}. 1966. In this case, however, the head of the horse was removed and the rest of the skeleton was buried with two human skulls.

\textsuperscript{19} Prontonariou-Delaki 1990, 101 n. 76.

\textsuperscript{20} For example at Mycenae in the dromos of chamber tomb 505 the skulls of a horse, dog and pig were found; see Wace 1932, 14; Andronikos 1968, W85; Crouwel 1981, 34.

\textsuperscript{21} Prontonariou-Delaki 1990, 101 n. 76.

\textsuperscript{22} At the site Dara in Messenia a full horse skeleton and the skulls of a horse and a deer were found together in a tholos tomb. Piggott interprets the full skeleton and the skull as reflective of a chariot team; see Piggott 1992, 59. For the Dara tholos burial, see Hope-Simpson and Dickinson 1979, no D114.

\textsuperscript{23} Prontonariou-Delaki 1990, 94, 101. The date of this burial is based on the associated pottery sherds.

\textsuperscript{24} Prontonariou-Delaki 1990, 101.

\textsuperscript{25} Prontonariou-Delaki 1990, 97, 101.
Middle Helladic period.²⁶ Again, neither horse has a bit in its mouth and there is no trace of a vehicle in the burial.

Another paired horse burial at Marathon is very similar to the two found at Dendra.²⁷ In this case, the horses were buried inside the entrance of the dromos of a tholos tomb dating to LH IIB. Their heads pointed to the entrance of the dromos, and their bodies lay on their sides facing each other. Again, the horses were placed in a specially dug shallow pit in which there is no evidence of the vehicle. In addition, neither of the horses has a bit in its mouth. Therefore, their identification as a chariot draught team is based solely on their paring and position within the pit.

The majority of horse bits in Bronze Age contexts have been found in settlement sites, many of which are from Mycenae and Thebes. Interestingly, three pairs of bits were found in the “Arsenal” at Thebes.²⁸ The pairing of these bits suggests that they were intended for a chariot team. Their find context in the “Arsenal” suggests that these chariots were part of the military equipment. Another pair of bits was excavated from a Mycenaean chamber tomb at Miletus.²⁹ Perhaps these bits were placed in the tomb in lieu of horses, as no horse bones were found in the same context. The rest of the bits from Bronze Age contexts have not been found in pairs; therefore, they are not necessarily applicable to this discussion because they imply only equitation.

The earliest known horse burials of the Dark Age are at Lefkandi, of these the best known was found in the so-called Heroön tomb.³⁰ This burial is interesting because it includes four horses, which leads to the assumption that this is the draught team of a four-horse chariot (quadriga). If this interpretation is correct, then this burial is the first evidence for the quadriga in Greece. In Classical times, the quadriga was a popular chariot for racing and because of this it could be presumed that the Heroön burial reflects a chariot racing team. It is also possible, however, that this chariot was used for warfare,

²⁶ The dating of these horses is based on associated pottery sherds.
²⁷ Vanderpool 1959, 280; Anderson 1961, 185 n. 7; Andronikos 1968, W85. In 1970 another horse burial (single) was found at Marathon, but has subsequently been dated to the Turkish occupation, see Crouwel 1981, 34.
²⁸ Crouwel 1981, 158 B5-10. All of these bit pairs probably date to LH IIIB.
²⁹ Lorimer 1950, 308 n. 3; Wiesner 1963, F56-F58; Blegen 1952, 219; This pair dates to LH IIIB-LH IIIC.
because the man buried in the Heroön appears to have been a warrior. Along with his cremated remains an iron sword, an iron spearhead and a whetstone were found. The horses were placed with one pair on top of the other, with all four lying against the west wall of the chamber. The bodies extend in a generally easterly direction. Interestingly, the two top horses still have the remains of iron bits in their mouths. The bits are of a rather simple construction consisting of two plain iron rods (the mouthpiece) that interlock at the center. The outer ends of the bits were folded to provide an opening in which to tie the reins. No cheekpieces were found. These bits are the earliest known pair dating to the Iron Age in Greece, and they have antecedents that date to the Greek Bronze Age. No evidence of a vehicle was found with the horses or in the rest of the tomb.

Another Protogeometric horse burial was found at Lefkandi in Toumba tomb 68. This burial is located at the northernmost point of the Toumba cemetery. Unfortunately, its associated human burial is unknown. In this case only two horses were buried, with one lying on top of the other. They were placed in a large, deep shaft. Again, there was no evidence of a vehicle. Like their counterparts in the Heroön tomb, both horses have the remains of iron bits in their mouths. These bits have the same simple design as those found in the Heroön burial.

One significant aspect of these burials is that because they both date to no later than 950 B.C.E, they cannot be considered as deliberate imitations of Homeric funerary practices, as might be the case for the horse burials from Salamis and Kouklia, which date to the eighth- and seventh-centuries. Because of the proximity in date of these burials to the traditional date of the Homeric epics (late eighth-century), scholars such as

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31 Popham et al. 1992, 19. Another tomb at Lefkandi (Toumba tomb 50) also had the same combination of weapons including the whetstone, see Popham et al. 1988-89, 118.
32 Winter incorrectly states that only one horse had the remains of a bit in its mouth; see Winter 1982, 54.
33 Popham et al. 1992, 71.
34 Crouwel 1992, 48l, 1981, 104 type 4. This bit type is characterized by two canons interlocking in the middle. The outer ends of the canons fold over to provide a loop for rein attachment. The canon is the mouthpiece and can be either two pieces joined at the middle or one solid bar.
36 For the Salamis and Kouklia burials, see Coldstream 1977, 349; Andronikos 1968, W86; Crouwel 1987, 101-118. It is noteworthy that some of these burials also had the remains of the chariot to which the horses were harnessed.
Coldstream have considered these burials to be modeled after the epics.\textsuperscript{37} The fact that the Lefkandi burials have an early date has allowed the possibility that Homer, when describing a funeral such as that of Patroklos, was actually describing the type of funeral that a warrior or leader might have been given during the Dark Age.\textsuperscript{38} While acknowledging that Homer probably exaggerated the details, it should be noted that other features found at the Lefkandi cemeteries also recall Homeric funerary rituals. One such example is the cremation of the deceased and placing the ashes in a receptacle.\textsuperscript{39} In the \textit{Odyssey} Homer refers to placing weapons on the funeral pyre, a practice for which there is some evidence at Lefkandi.\textsuperscript{40} In addition, the \textit{Iliad} refers to the practice of burying a pet dog, for which there is also evidence at Lefkandi.\textsuperscript{41} The possibility that the Homeric epics reflect real funerary practices indicates that elaborate funerals were widespread in Greece and not isolated to just Lefkandi. Because of this, one might also conclude that paired horse burials occurred in other communities outside of Lefkandi, which would suggest that chariots were more commonly used in Dark Age Greece than initially thought.

There are no other horse burials dating to the Dark Age from the Mainland, but there is one double horse burial in the North Cemetery at Knossos.\textsuperscript{42} The date of this burial is not entirely clear, however, because the tomb appears to have been reused from the Late Geometric through the Early Orientalizing periods. The paired horse burial occupied the lowest stratum of the tomb, which led Catling to assume that the later human burials may have been a reuse of an earlier animal grave.\textsuperscript{43} The horses were placed in the pit one on top of the other with the bottom horse facing west and the top horse facing east. Interestingly, a dog was also placed in the pit. Neither of the horses has a bit in its mouth and there is no associated evidence for a vehicle.\textsuperscript{44}

\textsuperscript{37} These burials share other similarities with Homeric funerary practices, such as placing the cremated remains in a metal vessel, and burying the tomb under a tumulus.
\textsuperscript{38} Popham et al. 1992, 22; Dickinson 1986, 23-25.
\textsuperscript{39} See \textit{Iliad} 23.243.
\textsuperscript{40} See \textit{Odyssey} 11.71-8. Pyre 14 had the remains of a warrior who was cremated with his sword; see Popham et al. 1992, 22.
\textsuperscript{41} See \textit{Iliad} 23.73-74. Pit 10 had the remains of a dog; see Popham et al. 1992, 22.
\textsuperscript{42} Catling 1979, 50, 1996, 125-126.
\textsuperscript{43} Catling 1979, 50.
\textsuperscript{44} It should be noted that neither horse is well preserved.
Another possible indication of Dark Age chariots comes from two tombs where two horse bits were found among the grave goods. Although these bits were not found with any associated horse bones or vehicle, the fact that two bits were buried may indicate that they belonged to a draught team. One such case is from another tomb located in the North Cemetery at Knossos, Tomb 219. This tomb is one of the largest tombs found in this cemetery and had a long period of reuse beginning in the Protogeometric period. Consequently, many objects were found in a rather chaotic state within the chamber and in the dromos. Nevertheless, the excavators were able to determine which objects are associated with the different interments. The Late Geometric burial had an associated mass of metal objects within which was found one complete bronze bit and the bronze cheekpieces of another. It should be noted that the type of bit found in this tomb is unknown outside of Greece. This bit type is characterized by two interlocking canons and sharply curved, rod-like cheekpieces. The other sites where this bit type has been found are Olympia and Prinias. Also amongst the grave goods of this interment were the remnants of iron javelin heads, an iron dirk, an iron sword fragment and an iron spearhead.

The Athenian Agora also produced two bits, found in Grave XXVII, that date to ca. 900 B.C.E. These Agora bits were made of iron and are of the same simple design as the bits found at Lefkandi. That these pairs of bits from Athens and Lefkandi are similar is expected because they are not that far apart in date. Several weapons were also found in this grave, implying that the individual buried here was a warrior. One of the weapons found was a long iron sword, probably the Naue II type, which was bent around the neck and shoulder of the amphora that contained the ashes of the deceased. In addition to the sword, there were two iron spearheads, two knives, a possible javelin point and a whetstone.

The presence of weapons in both Tomb 219 at Knossos and Grave XXVII in the

45 Catling 1996, 210-224.
46 Crouwel 1992, 46; Anderson 1961, 40-49.
47 One bit of this type found at Olympia dates to the sixth century, those at Prinias date to the eighth-century or earlier; see Crouwel 1992, 46-47.
49 Blegen 1952, 219; The date of this grave is based on the style of the associated pottery.
Athenian Agora implies that the individuals buried in these graves were warriors. In addition, the fact that two bits were buried in these graves implies that the horses were draught horses. Yet, it can not be conclusively stated that these horses pulled a chariot. Of course, the same can be said of all of the horse burials described above because none of them include the remnants of a vehicle. An alternative explanation for why there is a pair of horses or bits in these tombs could be that the horses pulled the funeral cart used to bring the deceased and all of his grave goods to the tomb.51

Regardless of the lack of conclusive chariot-related artifacts, horse burials dating to the Bronze Age are generally identified as representing a chariot team. Scholars are able to make this identification because chariots are featured in Linear B texts and in contemporary art. After about 1200-1100 B.C.E, however, neither textual nor representational evidence for chariots appears in Greece until the eighth-century. Herein lies one of the main problems with establishing the existence of Dark Age chariots. Because there is not any corroborating evidence for chariots, scholars have often disregarded the possibility of a widespread use of chariots during the Dark Age. Nevertheless, because the same type of chariot-related evidence occurs in both Bronze Age and Dark Age contexts, it can be argued that chariots were still used between the eleventh and eighth centuries. One significant point that should be noted is that the Bronze Age has produced almost as few chariot-related artifacts as the Dark Age. Therefore, because it appears through the Linear B evidence that the palaces owned relatively large quantities of chariots, it is clear that the amount of remaining physical evidence is not indicative of the number of chariots that existed at one time.

51 For example, Snodgrass interpreted the bits from the Agora grave as implying that the horses were used for the funerary cart; see Snodgrass 1999, 46. Snodgrass, in the same work, identified the horse bits found at Thebes as indicative of chariotry, 27. Compare Snodgrass’ view with Benson 1970, 23 who states that any single horse burial in the Bronze Age first and foremost refers to a chariot burial.
CHAPTER II
THE EVOLUTION OF THE CHARIOT’S DESIGN IN GREECE

The following is a discussion of the evolution of the Greek chariot from the Bronze Age through the eighth-century. Because one of the main contentions of this thesis is that the chariot remained in use during the Dark Age, an emphasis will be placed on the last chariot pictured in the Bronze Age, and on the first type of chariot pictured in the eighth-century. Through this discussion, it will become clear that the last Bronze Age chariot and the first Iron Age chariot pictured are essentially the same, reinforcing the notion that chariots were used during the Dark Age. It is also necessary to show that the Greek chariot developed a design that was independent from that of Near Eastern and Egyptian chariots. Although the chariot was initially adopted from the Near East, the Mycenaean from very early on, possibly ca. 1500 B.C.E., adapted this vehicle to suit their own needs. In order to show the indigenous character of the Greek chariot, certain salient features of the other chariot types in Greece will be considered. Identification and analysis of the independent design features of the Greek chariot will eliminate the idea that the chariot was reintroduced into Greece from the Near East in the eighth-century.

Before beginning this discussion, however, the problems with analyzing Greek chariots should be addressed. As discussed in the last chapter, no Greek chariot has survived. As a result, the study of the chariot’s design is limited to pictorial representations and Linear B ideograms. At times, comparisons to extant Egyptian

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52 All chariot names are taken from Crouwel 1981 and 1992 because these are the most current classifications. All Greek chariots discussed in this chapter are from the Mainland. Eastern Greek chariots tend to possess Near Eastern qualities, but will be mentioned where needed.
chairs can be helpful, but since the design of Greek chariots departs from that of Egyptian chariots, these comparisons do not provide a definitive reconstruction. The same is true of comparisons of Greek chariot depictions to Near Eastern chariot depictions. Of course, relying on pictorial representations is problematic. Consideration has to be made for artistic liberty. It must be determined whether the artist chose to depict the chariot accurately, or if he resorted to convention or pattern.  

The problem of reliability can be seen, for example, on the Grave Stelae at Mycenae, which have some of the first representations of chariots in Aegean art, dating to ca. 1600-1500 B.C.E. On the best-preserved chariot stele from Grave Circle A, it appears that the artist chose to depict the chariot with an impractical and unrealistic structure (fig. 1). One problematic feature is that the wheels are placed directly under the center of the box floor. This placement suggests that this chariot has a central axle. A centrally located axle, when used with a neck yoke, would have adversely affected the stability of the box; therefore, the placement of the axle on the stele might not be reflecting reality. In addition, the box is shown completely above the wheel. This too is probably an unrealistic, artistic convention because having the chariot box so high would not have been practical; it would have made mounting the chariot difficult and would have rendered the vehicle less stable. The draft pole, which should run from the box floor to the yoke, is also omitted from the representation. These three peculiar features may be the result of compromised space. Because the artist did not have the room to depict the whole chariot, he may have chosen instead to show its essential features, i.e. the box, the wheel, and the horse. Another explanation could be that the artist was not concerned with rendering the accurate details of the chariot and so simplified the vehicle. Regardless of why the artist chose to depict the vehicle this way, the fact remains that the chariot has an unrealistic design.

Space is also at times an issue when dealing with Geometric vase depictions of chariots, but in this case, it is not a question of what is taken away, but rather, what is

55 Piggott 1985, 129.
58 Crouwel 1981, 80.
added to the chariot in order to fit the space. Although the Geometric artist typically shows only one wheel per chariot, a convention that is meant to represent both wheels, at times two wheels, one in front of the other, are shown (fig. 2). Greenhalgh argues that two wheels could be explained as an alternative convention needed when the box itself is elongated. Because the box floor is longer, the artist most likely added another wheel to fill the extra space. Merccklin argues that when two wheels are depicted it is actually the artist’s primitive need to represent all the main elements of the chariot. This, according to Merccklin, also explains the unusual double handrails that are at times featured on Geometric chariots. Both of these explanations are satisfactory in cases where a vessel has only two-wheeled vehicles, but they do not explain why one vessel might have both one-wheeled and two-wheeled chariot profiles. Snodgrass argues that it would be impossible that a pot painter would have used both conventions on one vessel. Therefore, the two-wheeled vehicle must be a four-wheeled cart (fig. 3). Greenhalgh claims, however, that having both conventions on one vessel is not a problem. He argues that a two-wheeled profile is usually used only with chariots that are elongated to accommodate either two people or a warrior with a Dipylon shield. In addition, artists were not averse to using different conventions on the same vessel for horses, as can be seen in Figure 3. Here the left chariot is depicted with a single horse, whereas the other two chariots are depicted with two horses. Because chariots were not in reality pulled by one horse, this is a clear example of the artist’s willingness to use different conventions on one vessel.

Regardless of the difficulties of using representations of chariots, common characteristics can be isolated. These characteristics can then be used to determine the Greek chariot’s design and the evolution thereof. There are four recognizable Aegean chariot forms in the Bronze Age. The first two, the box and quadrant chariot, are closely related to Near Eastern prototypes, and examples of each are found in Egyptian...
representations of Hittite chariots in the reliefs at Abu Simbel showing the Battle of Kadesh.\textsuperscript{66} Although these two chariot types were probably originally imported from the Near East, it is with these two chariots that Aegean features begin to appear. First, both the box chariot and the quadrant chariot have four spoked wheels. Near Eastern and Egyptian chariots also used four spoked wheels in the fifteenth century, but both of these areas shortly thereafter increased the number of spokes to six or eight.\textsuperscript{67} In Greece, however, using four spokes remained constant down into the eighth-century.

Secondly, and most importantly, Aegean chariots had a distinctive traction system, which first appears in representations of the box and quadrant chariot (fig. 4).\textsuperscript{68} The function of the traction system is to help stabilize the vehicle and to connect the box to the yoke. Typically, the traction system consists of a central pole, called a draft pole, which runs from the underside of the vehicle’s floor to the yoke. For the box to be better supported, the draft pole should be fixed to the floor and should run along the floor’s entire length.\textsuperscript{69} As the pole ascends beyond the underside of the box floor to the yoke, it bends in two places. Egyptian and Near Eastern chariots used a simple version of this type of ‘straight’ or ‘angled’ draft pole. Aegean chariots, on the other hand, added a complex support system. In addition to the angled draft pole, the Mycenaeans added a horizontal wooden bar, called a pole stay, which ran from the top of the box frame to the yoke (figs. 5-6).\textsuperscript{70} The pole stay sat on top of another wooden element called the pole brace.\textsuperscript{71} Both of these elements were tied together either by cords or leather thongs.\textsuperscript{72}

The pole brace, which was L-shaped, was connected to the draft pole near the front of the

\textsuperscript{66} Lorimer 1950, 313; Littauer and Crouwel 1979, 77.
\textsuperscript{67} Littauer and Crouwel 1979, 80; Crouwel 1981, 81. Eight-spoked wheels are rarer than six-spoked.
\textsuperscript{68} The first appearance of the traction system is on the sardonyx seal from the Vapheio tholos dating to ca. 1500; see Lorimer 1950, 310-11; Åkerström 1978, 27. It is not seen on the stelae, but no traction system is depicted; therefore, it is possible that this traction system was already used at that time; see Crouwel 1981, n.30.
\textsuperscript{69} Crouwel 1981, 90.
\textsuperscript{70} Rodenwaldt identified this element, through examination of the Tiryns frescoes, as wood; see 1912, 102-3. This suggestion is followed by Åkerström 1978, 33; and Crouwel 1981, 93; Lorimer thought that it was a leather thong; see Lorimer 1950, 311.
\textsuperscript{71} Rodenwaldt initially distinguished these two elements because they are painted in different colors, but thought that the brace was cloth or leather and acted as the trace; see Rodenwaldt 1912, 102-3; Lorimer 1950, 311 neglects to distinguish between these two elements.
\textsuperscript{72} Crouwel 1981, 93. That these two elements were tied together is clear from wall paintings, such as the Boar Hunt Fresco from Tiryns.
box. Between the pole brace and draft pole there were either leather thongs or wooden struts that created an arcaded effect.

This construction, called a “reinforcing triangle” by Åkerström, is quite controversial. To begin with, how the pole brace was actually assembled is disputed. Åkerström, who first recognized that this triangular element was something more than decoration, argues that the struts were added wooden elements, attached to both the pole brace and the draft pole. Crouwel argues that the struts were not additional pieces, but that the whole contraption, both the pole brace and the struts, was carved from one piece of wood. Crouwel also suggests that the struts may not have been made of wood, but that they were actually leather thongs attaching the brace to the draft pole. Åkerström, in response to Crouwel, claims that the struts and the pole brace could not have been fashioned out of one piece of wood because this would have made the structure too stiff and likely to break. He argues against the leather thongs as well, stating that the idea of leather is inspired by the misconception, introduced by Rodenwaldt, that the vertical arm of the pole brace was a decorative leather flap.

Regardless of what material that the struts of the pole brace were made of, the brace itself seems to have performed the important function of adding support to the draft pole. The place at which the draft pole leaves the underside of the box floor and begins to curve up toward the yoke is the pole’s weakest point. This point needs extra support; otherwise, when the horses begin to run, or when held at a constant gallop, the up and down movement would likely break the pole. The Egyptians and Near Easterners solved this problem by either tying a strap of leather between the top of box frame and the draft pole, or affixing wooden struts between these two points (fig. 7).

In the Aegean system, the vertical strut of the pole brace fits into the draft pole at

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73 Åkerström 1978, 34.
74 Åkerström 1987, 124-25.
75 Crouwel 1981, 90-96 presents both possibilities in the same work. Lorimer 1950, 311 sees the struts as pennon-like flaps.
76 Åkerström 1987, 125. Rodenwaldt 1912, 102 came to this conclusion after analyzing the chariot frescoes at Tiryns. The leather flap, or “Wimpel” or “Zipfel” as Rodenwaldt calls it, refers to the piece coming down in front of the chariot box.
77 Åkerström 1978, 34; Crouwel 1981, 95.
78 For the Near Eastern pole support, see Lorimer 1950, 311; Littauer and Crouwel 1979, 80.
precisely the point where it begins to curve upward. Placing a strut in that location allows the extra wood to absorb the shock caused by movement. In addition, the pole brace may have helped support the pole stay at its weak points. The function of the additional arcaded elements is unclear, but they may have served as added support. The question is why would the Mycenaeans have developed such a complicated system instead of using a simple central pole tied to the box frame as in Egypt and the Near East? Ultimately, there is no definitive answer to this question, but some argue that it has to do with the rough nature of the Greek terrain. Crouwel argues that the Aegean system may have helped redistribute stress in order to reduce the amount of banging on the horses’ necks. Wiesner suggests that the complex system helped to redistribute the weight of the yokes off the horses’ necks. This suggestion is most likely incorrect, however, because the amount of weight placed on the horses is determined by the placement of the axle. The further back the axle, the more the weight there is on the horses’ necks. Conversely, the more centrally located the axle, the less weight on the horses’ necks.

Although determining the exact reason for why the Mycenaeans chose such a complex traction system would aid in determining how the Aegean chariot was used, the important thing to note is that it existed only in Greece and is a product of Greek invention. Also significant is that beginning with the earliest chariots, this system remained a part of the Greek chariot throughout the Bronze Age and that the traction system of Greek Iron Age chariots might have evolved from it.

The next chariot in the Aegean sequence, the dual chariot, as it is commonly called, continues to illustrate the unique features of the Greek chariot (fig. 8). This type of chariot, by far the most common, is featured in all of the chariot frescoes, Linear B ideograms and many vase paintings. Because the dual chariot is depicted frequently in the frescoes and Linear B, a clear picture of what it looked like can be determined. Fresco representations can be considered the most reliable depictions because of their

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79 Åkerström 1978, 34.
81 Crouwel 1981, 94.
82 Wiesner 1968, F 52; see also Lorimer 1950, 311.
83 Powell 1963, 158; Crouwel 1981, 95.
84 This chariot type was first identified and named by Furtwängler and Loeschke, Mykenische Vasen, 1886, 27; see Crouwel 1984, n. 31.
large size, which allowed the artists to depict the chariots more accurately, using less pattern and fewer abbreviated features. The Linear B ideograms show the dual chariot in different stages of completion and thus provide valuable information about how the chariot was constructed and stored.

The dual chariot is characterized by semi-circular extensions attached to the back of the chariot box. These extensions, or “wings,” were unknown outside of Greece. They were probably made from heat-bent wood with either textile or oxhide stretched across the frame. The box also seems to have had the same covering, which enclosed it on three sides. Using textile or oxhide would have reduced the weight of the chariot. The function of the “wings” is unknown, though it has been suggested that they served as handrails, racks for trophies, added protection for the occupants, or as mud-flaps. The design features of the box frame of the dual chariot just mentioned represent the developments of this type of chariot. Other design elements of the dual chariot, such as the four-spoked wheels and the traction system, were like those of the previous chariots.

The axle position of the dual chariot is especially worth noting. According to the frescoes, it seems that the axle was positioned near the rear of the box (fig. 8). This location is shown on some pottery representations as well (fig. 9). In representations of earlier chariot forms, as mentioned above, the axle is usually centrally located. Either the central location was an unrealistic feature executed by the artist, or the dual chariot used a new axle position. Axle position is important because it may determine how the Mycenaeans used the chariot. This will be further discussed in chapter III; for the purposes of this chapter, however, it should be noted that the axle is not positioned at the very back of the box floor frame, as it is on Egyptian and Near Eastern chariots (fig. 7).

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85 Powell 1963, 159.
86 Ventris and Chadwick 1973, 361-369. Chariot ideograms specify wheeled chariots (*240, in the standard Ventris and Chadwick designation), chariots without wheels but with the traction system (*241) and only chariot frames (*242).
87 Crouwel 1981, 66; Catling 1968, 45; Lorimer 1950, 316; Cameron 1967, 333-44.
88 The boxes of the box and quadrant chariot appear to have been enclosed with solid wood or latticework on the front and the sides.
89 For handrails, see Powell 1963, 162; for trophy racks, see Vermeule 1964, 202; for added protection, see Catling 1968, 45; for mud-flaps see Crouwel 1981, 67.
90 It is important to remember that the side screens, or wings, project back from the end of the box frame, thus the flat end of the wing is the back of the box. The position of the wheel is placed before the division between the wing and the box frame; see Lorimer 1950, 314; Crouwel 1981, 79.
91 Littauer and Crouwel 1979, 78.
If we accept that these representations show the true axle position of Aegean chariots, then it is apparent that the Aegean chariot deviates from Egyptian and Near Eastern chariots in this aspect as well.

Another significant feature of the dual chariot is what Crouwel calls the “triangular spur.”\(^92\) Located under the box floor, it projects slightly behind the end of the frame. On the “Boar Hunt Fresco” from Tiryns (fig. 8), it is painted white, contrasting with the red of the box.\(^93\) The difference in color, according to Crouwel, suggests that the artist wanted to intentionally demarcate it as a separate element.\(^94\) On some of the chariot kraters the “spur” is outlined, in order to mark it as a separate element (fig. 9).\(^95\) What the “spur” is meant to represent is not entirely clear, but Crouwel argues that it could be the draft pole extending past the chariot floor. His reasoning for this is that the draft pole is white, except where it is wrapped in leather. The “spur” is also white.\(^96\) The draft pole of Near Eastern and Egyptian chariots ended at the back of the box frame, fitting into a U-shaped mortise between the axle and the rear floor frame.\(^97\) Interestingly, this “spur” is also sometimes depicted in some Geometric chariot representations, which suggests that this element continued in eighth-century chariots (fig. 3).

The rail chariot is the last chariot featured in Bronze Age art, and it appears on Late Helladic vase paintings generally dating to 1250-1150 B.C.E. Unfortunately, this chariot type is not well documented because the scenes in which it is depicted are quite fragmentary (fig. 10). As a result, the exact features of the rail chariot are difficult to reconstruct. Nevertheless, enough details can be pieced together from the various fragments to provide an idea of the rail chariot’s basic structure.

Most importantly, the rail chariot was very light and characterized by an open frame, from which it derives its name. The rail probably came up to the hip and ran horizontally over the front of the box.\(^98\) Variations in the representations suggest that the

\(^{92}\) Crouwel 1981, 65.
\(^{93}\) This “spur” appears in other representations, but is most clearly depicted in this fresco.
\(^{94}\) Crouwel 1981, 65.
\(^{95}\) Lewartowski, K. 1992, 95, 97. The “spur” also appears in some chariot ideograms; see Ventris and Chadwick 1973, 363.
\(^{96}\) This conclusion is based on the chariot featured in the Tiryns fresco. Crouwel does allow for the possibility that the “spur” represents the ends of the floor frame converging, but he prefers it being part of the draft pole because there is a precedent for this on Chinese chariots; see Crouwel 1981, 65.
\(^{97}\) Littauer and Crouwel 1979, 76, 80.
\(^{98}\) Crouwel 1981, 71.
rail may have curved upward at the front corners. Though it is not entirely clear because the representations are somewhat sketchy, the frame probably also ran along the sides of the box.\(^99\) This is apparent from the representation on a krater fragment from Tiryns (fig. 11). Here the two occupants are placed one behind the other and not abreast, as is the usual convention in Mycenaean depictions. The rail extends beyond the second occupant and behind the wheel. This was possibly an attempt by the artist to show a side rail without distorting the view of the occupant. The screens that covered the box of the dual chariot were no longer utilized, and the “wings” were no longer added to the frame. This marks a substantial change in Aegean chariot construction and it begs the question of why the lighter construction was needed.

The wheels of the rail chariot were four-spoked. Although the axle position is unclear, it appears from the available evidence that the axle was near the rear of the floor frame (fig. 11).\(^100\) The traction system is unclear as well, but one fragment would seem to confirm that the Aegean traction system was still utilized at this time (fig. 12).\(^101\) On this fragment, what appear to be the pole stay and pole brace extend forward over the tail of the horse and below the reins.

This chariot type is usually thought to be a direct copy of an Egyptian design. Scholars such as Catling identified the rail chariot as an Egyptian type called the Rosellini chariot, which dates to the fifteenth century.\(^102\) This chariot, an example of which is in Florence, has an open rail that curves downward toward the end of the box frame (fig. 13). It has the typical traction system of Near Eastern and Egyptian chariots, including a leather thong tightly wound around the draft pole and the frame. This chariot has four-spoked wheels, as was typical of fifteenth century Egyptian chariots, and the axle is at the very rear of the box frame. It is significant to note, however, that by the thirteenth and twelfth centuries, when the Mycenaean rail chariot developed, the Egyptians no longer used this type of chariot with an open rail. Instead, Egyptian chariots had a fenestrated siding, that is, a partial covering over the front and sides of the

\(^{100}\) Littauer 1972, 154. The information available to determine the axle position is limited because in most of the representations of the rail chariot the wheels have not survived.
\(^{101}\) Crouwel 1981, 96.
\(^{102}\) Catling 1968, 42; Lorimer 1950, 316-17; Greenhalgh 1973, 31.
box frame. Other differences between the thirteenth and twelfth century Egyptian chariot and the Mycenaean rail chariot are that the Egyptians attached quivers to the frame, which is something that the Mycenaean never did and could not easily have done with an open rail. The wheels of Egyptian chariots during the thirteenth and twelfth centuries were six-spoked. The Egyptian traction system is in no way similar to the Mycenaean. Finally, the axle of an Egyptian chariot was always at the very back of the box. Therefore, it is apparent that the rail chariot was most likely not directly copied from the Egyptian. It may have been related to Egyptian chariots, as the box and quadrant chariots were, but ultimately the rail chariot has an indigenous development.

Late Helladic IIIB-IIIC depictions of rail chariots were the last pictorial representations of wheeled vehicles until the mid-eighth-century, when the chariot again became a popular subject for Geometric artists. Two types of chariots have been distinguished for the Geometric period. The identification of the first chariot to appear in the eighth-century pictorial record, however, is highly disputed. Depicted on one vase fragment and some bronze and terracotta models found at Olympia, it has a light, open frame and four-spoked wheels (figs. 14-16). The example on the vase shows that the frame may have had latticework, possibly made of leather thongs. Most scholars think that this chariot is a descendant of the last Mycenaean type. Yet, there is still a problem with identification because how the last Mycenaean chariot is identified affects how scholars classify the first Geometric type. Those who identify the last Mycenaean chariot as the Rosellini chariot see the first Geometric chariot as also being the Rosellini type, or a descendant of it. Crouwel, on the other hand, argues that the first chariot to appear in Geometric art is actually the Mycenaean rail chariot.

According to Crouwel, the Mycenaean rail chariot and the first Geometric chariot have the same light rail work and four-spoked wheels. In addition, the first Geometric chariot has a traction system that is probably a derivative of the Aegean traction system. The eighth-century traction system has a new upward curving draft pole, rather than the

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103 Littauer and Crouwel 1979, 91; Crouwel 1981, 72.
105 Mercklin 1916, 397 makes this chariot the Rosellini type. Lorimer 1950, 318 and Catling 1968, 48 argue that this chariot is related to the latest Bronze Age type, though they identify the Bronze Age chariot as the Rosellini type. Greenhalgh 1973, 20 and Rombos 1988, 93 follow Mercklin.
older straight pole. Using a curved pole was probably a response to the dorsal yoke, which was adopted in Greece in the Iron Age.\textsuperscript{107} The eighth-century traction system is similar to that of the Mycenaeans, because it uses a leather thong or a rope, called the pole-end support. The pole-end support attaches the box frame to the top end of the draft pole at the yoke, much in the same way as the wooden pole stay did (fig. 14, 17).\textsuperscript{108} Its purpose may have been to help maintain the upward curve of the draft pole, which would have initially been obtained by bending the wood with heat.\textsuperscript{109} The Assyrians used a similar pole-end support, which connected the top of the frame to the end of the draft pole at the yoke.\textsuperscript{110} The difference, however, is that it was not just a strap of leather or rope as was used by the Greeks. Instead, the Assyrian pole support was pea-pod shaped and was often decorated. The design of the Assyrian chariot also differs in that the Assyrians still used a neck yoke and the boxes were substantially heavier than those of the Greeks (fig. 18).\textsuperscript{111}

As this analysis shows, the first Geometric chariot, which will be referred to as the Geometric rail chariot throughout this thesis, differs significantly from any contemporary Near Eastern chariot. It is, however, reminiscent of the latest Mycenaean type. The only possible explanation for the similarities of the Mycenaean and Iron Age chariots is that the chariot survived through the Dark Age, a possibility upon which many scholars agree. Snodgrass, however, adamantly disagrees, arguing that the chariot could not have remained in use during the Dark Age. He presents several explanations for the reappearance of the chariot in Geometric art.\textsuperscript{112} First, he states that in the eighth-century the chariot could have been reintroduced from Egypt. In support of this idea he notes that this Geometric chariot type is similar to the Rosellini chariot, but he does not give a plausible explanation for how a fifteenth century chariot from Egypt was introduced into eighth-century Greece. The second explanation that he offers is that the Geometric rail

\begin{itemize}
\item \textsuperscript{107}There are still examples of the neck yoke in the Geometric period, but the dorsal yoke seems to be more prevalent. The Eastern Greeks continued to use the neck yoke with the straight draft pole, as did the peoples of the Near East and Egypt; see Crouwel 1992, 42.
\item \textsuperscript{108}Crouwel 1992, 38.
\item \textsuperscript{109}Crouwel 1992, 38.
\item \textsuperscript{110}Lorimer thought that the Geometric system was related to the Assyrian pole support system of the ninth century; see 1950, 307.
\item \textsuperscript{111}Littauer and Crouwel 1979, 104.
\item \textsuperscript{112}Snodgrass 1964, 159-60.
\end{itemize}
chariot was actually inspired by Homeric descriptions or by Mycenaean examples in art. This suggestion too is problematic. Homer, though showing familiarity with the chariot’s structure, never provides a detailed description. Nor does this suggestion explain the technical differences, such as the dorsal yoke, shown in Geometric representations. Snodgrass’ insistence on arguing that the chariot was not used during the Dark Age is based on his conception that the peoples of that time were too poor to own chariots. As shown in the last chapter, this clearly is not true, since horse/horse bit burials signifying chariot use dating to the Dark Age have been found.

The second chariot type to appear in the Geometric pictorial record is called the Helladic chariot or high-front chariot, and is the most frequently depicted type of chariot in the Iron Age. It also is the standard type after the eighth-century (fig. 3, 17). There are many variations of this chariot’s form in Geometric vase painting, but common characteristics can be isolated in order to reconstruct its structure. Usually the wheels have four spokes, though at times six and eight spokes are shown in vase painting. Mercklin suggested that the eight spokes might have been an attempt to show both of the wheels overlapped. The extra spokes, then, were the spokes of the wheel in the background. Nevertheless, four-spoked wheels are most prevalent. The high-front chariot also has the same traction system of the first Geometric type previously described.

The high-front chariot differs from the Geometric rail chariot with respect to its body work. The box again has a light construction, but is formed out of three rails, one at the front and one at either side, rather than a single continuous rail. All three rails were partially covered by either a linen or leather siding. The front rail rises to hip height or slightly above and was supported by a central strut. The side rails are lower than the front, rising to about mid-thigh, and are curved backwards behind the floor. They also had a vertical support. The side rails probably served as handrails for mounting. Although the Bronze Age rail chariot probably had only one heat-bent rail, the high-front

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113 Mercklin was the first to use the name ‘Helladic’ for this chariot, and did so in order to differentiate it from the Rosellini chariot, see Der Rennwagen in Griechenland (1902). Crouwel argues that ‘high-front,’ a name based on the structure of the chariot, is more appropriate because of the indigenous nature of the Greek chariot; see Crouwel 1992, 30. Greenhalgh, classifies this chariot as G1 and G3. His classifications are based on different pictorial conventions; see Greenhalgh 1971, 20-25.

114 Mercklin 1916, 405.

chariot may have antecedents in this type. According to Crouwel, at times the frame of the Bronze Age rail chariot appears to curve sharply upward at the corners (fig. 11). He states that this would have been extremely difficult to do with a single heat-bent piece of wood; therefore, it may be an indication that the front of the frame rose above the side rails, as does the frame of the high-front chariot.\footnote{Crouwel 1992, 33.} Regardless of this, the light framework is most likely an indigenous development because it does not resemble any contemporary chariot in the Near East.\footnote{Lorimer 1950, 307; Rombos 1988, 94; Crouwel 1992, 33.} Furthermore, since the other chariots in the Greek sequence always had indigenous qualities, there is no reason to believe that the last type would have derived from somewhere outside of Greece.

It is apparent, through this analysis of the development of the Greek chariot, that shortly after its adoption from the Near East the Mycenaeans adapted the chariot to suit their needs. The result of this was a chariot design that was unlike any chariot produced in the Near East and Egypt. Despite a gap of about four hundred years in the pictorial record, the indigenous character of Bronze Age chariots remained intact into the eighth-century. These facts would seem to eliminate the possibility that the peoples of the Dark Age reacquired their chariots from the Near East or Egypt. Because of the indigenous development of the Greek chariot and because of the physical evidence for chariots dating to the Dark Age, it is reasonable to conclude that at least some people during this period in Greece used chariots. Now that the existence of chariots during the Dark Age has been established with some degree of plausibility, it is necessary to consider how these chariots may have been used.
CHAPTER III
MYCENAEAN CHARIOT WARFARE

While the basic design of the Greek chariot can be determined from artistic representations, its use in warfare is not as apparent. There is no question that the Mycenaeans had war-chariots, but how they used chariots in warfare is controversial. It is important, however, to determine how the Mycenaean war-chariot was used because this information will potentially help determine how the chariot may have been used in the Dark Age. Therefore, this chapter will discuss the evidence concerned with the military use of the chariot during the Bronze Age.

The predominant theory concerning chariot warfare in Bronze Age Greece is that chariots were primarily used as a means of conveyance to and from battle.\textsuperscript{118} Greenhalgh and Drews, however, have opposed this theory stating that the Mycenaeans must have used the chariot in a more efficacious way. It is important to discuss both the Mycenaean chariot warfare models that Greenhalgh and Drews present and the problems therewith in order to more fully understand why the prominent theory is the most likely scenario.

Greenhalgh claims that economically it would not make sense for the chariot to have had such a mundane use because using the chariot merely for transportation does not take advantage of the full potential of a war-chariot. Greenhalgh further argues that, because the Mycenaeans had large squadrons, as indicated by the Linear B tablets at Knossos and Pylos, chariots must have been a major arm of the military.\textsuperscript{119} He argues that the Mycenaeans would have used the chariot in mass charges, while thrusting spears at enemy charioteers or chariot warriors, because “it is in the massed attack at speed that the chariot is most effective as a weapon of war.”\textsuperscript{120} He chose the spear as the chariot

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\textsuperscript{118} Littauer 1979; Crouwel 1981; Dickinson 1994; Piggott 1996; Snodgrass 1999.
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\textsuperscript{119} Greenhalgh 1973, 10.
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\textsuperscript{120} Greenhalgh 1973, 7.
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weapon because the spear is most frequently shown with the chariot in art. He defends the viability of the massed charge with spears by referring to the Hittites, who, according to Egyptian reliefs of the Battle of Kadesh, may have been equipped with two or more long thrusting spears.\textsuperscript{121}

For additional evidence Greenhalgh turns to the Dendra cuirass, which dates to the late fifteenth century and is constructed of fifteen bronze plates including a neck-guard and shoulder guards (fig. 19).\textsuperscript{122} According to Greenhalgh, the neck-guard of the cuirass is definitive evidence that the Mycenaeans fought from the chariot because it was probably a specialized piece of armor for chariot warfare.\textsuperscript{123} Greenhalgh supports his argument with two points. The first is that the neck is a highly vulnerable point of attack, as is demonstrated in Mycenaean art. The second point he makes is that, because the weapon of the Mycenaean chariot was a thrusting spear, the warrior wielding this weapon would not have been able to hold a shield.\textsuperscript{124} Greenhalgh points out that the Hittites remedied this problem by having a third man in the chariot crew acting as a shield bearer. The Mycenaeans, instead of employing a third man for their chariot crews, used armor like the Dendra corselet to resolve this problem of protection. He further adds that because some Linear B ideograms for corselets include the neck-guard, it must have been an important part of the cuirass (fig. 20).\textsuperscript{125}

Greenhalgh’s theory that the Mycenaeans fought on their chariots in massed charges with thrusting spears is interesting, but it is also problematic. He does not address the dearth of representations of chariots in warfare. It is true that the stelae from the Shaft Graves at Mycenae may place the chariot in an active military context, but these representations are questionable iconographically. If Greenhalgh is correct in his

\textsuperscript{121} Greenhalgh 1973, 10.
\textsuperscript{122} For the Dendra cuirass, see Åkerström 1987, 129-134. Åkerström argues that a corselet like the Dendra corselet could not have been effectively used at all by a warrior, whether on a chariot or on the field. Instead, he argues that only the charioteer would have worn this type of corselet. The problem with this is that according to Linear B texts two corselets were assigned to each team; see Palmer 1963, 331, Ventris and Chadwick 1973, 376, 523; Snodgrass 1999, 24.
\textsuperscript{123} Greenhalgh 1980, 201-205.
\textsuperscript{124} The thrusting spear, because of its size had to be held with two hands; see Snodgrass 1990, 16-17; Höckmann 1980, E282. The only Mycenaean shields represented before LH III are full body length shields, which would have been hard to use in a chariot. It is not until ca. 1200 B.C.E. that shields appear in the Mycenaean chariot. These shields are smaller and round.
\textsuperscript{125} Greenhalgh 1980, 203.
assumption that large numbers of chariots owned by a palace is a sure indicator of the chariot’s prominence in warfare, then why do the Mycenaeans not show it in battle? In other areas, such as Egypt, where the chariot is a major arm of the military, it is shown prominently in art and/or literature.

The second problem with Greenhalgh’s theory concerns weapons. Greenhalgh is correct that the spear is the usual chariot weapon in Mycenaean art. In addition, it is generally accepted that, on account of pictorial evidence and grave goods, the Mycenaean warrior came to war with a spear, a sword and a dagger. Greenhalgh does not consider, however, that these weapons are ground weapons; i.e. they are more efficient weapons for a foot soldier than for one mounted on a chariot. Moreover, although the spear is shown with the chariot, it is typically not shown being used from the chariot. Usually, when the spear is actually shown being used, whether in military scenes or hunting scenes, the wielder is on the ground.

There is in fact only one example of a chariot warrior holding a spear poised for action. The Vapheio seal, dating to ca. 1500 B.C.E., depicts two occupants in a chariot, one of whom holds a spear with two hands (fig. 4). This seal, however, does not provide definitive evidence of Mycenaeans charging their chariots while thrusting spears at the enemy, as Greenhalgh would have us believe. On this seal the horses appear only to be trotting. It is hard to believe that a massed charge of chariots closing in on the enemy lines would be traveling only at a trot. Secondly, the chariot in this scene is isolated; that is, no enemy is shown. It is, therefore, unclear if this scene should be interpreted in a military context, as opposed to a hunting context. Finally, it is unclear as to how the

127 That the weapons of a Mycenaean warrior are better for ground warfare can be supported by the fact that they are always shown being used by a warrior on the ground; see Osgood et al. 2000, 123-125; Dickinson 1999, 21. For the use of spears and swords in ancient warfare in general, see Gabriel and Metz 1991, 58-60 (spears), 64-66 (swords).
128 Greenhalgh 1980, 203
129 Lorimer 1950, 310-11; Littauer and Crouwel 1983, 189. Typically, running animals are in the ‘flying gallop’ pose.
130 For frequency of spears shown in hunting scenes, see Höckmann 1980, E275-E285. Although hunting in a chariot in Greece may seem absurd, it is possible that beaters would have been used to scare the animals into land more suitable for chariots, as was done in the Near East; see Littauer and Crouwel 1979 63; Crouwel 1981, 121.
weapon in this seal is about to be used because, according to Littauer, the spear is held at an angle as if it is about to be thrown, not thrust.\footnote{Littauer 1977, 363; Crouwel 1981, 123} Greenhalgh rejects the possibility that the spear on this seal is a javelin because he argues that a javelin, if used from a chariot, would be “too feeble and uncertain of a weapon to remain effective.”\footnote{Greenhalgh 1973, 9. That a javelin could not be used from a chariot is an inaccurate assumption because the British Celts threw javelins from their chariots; see Anderson 1965, 349-50.} The problem in assuming that this spear is about to be thrown is that the warrior is holding it with two hands, and one does not throw a javelin with two hands. Furthermore, if this spear is thrown then the warrior, or hunter, will be disarmed, as there is no other weapon in the chariot. Therefore, because this scene is ambiguous, it is not very helpful as evidence of actual Mycenaean chariot warfare.

Representations aside, the thrusting spear probably is not a practical weapon to use from a moving chariot, as Littauer and Crouwel argue. The core of their argument rests on two factors. The first is the length of the axle, and the second factor is the length of the spear.

The axle of a chariot was long and extended beyond the box, which was about a meter in width.\footnote{This measurement is based on extant Egyptian chariots. The box was large enough only to fit two people standing abreast; see Crouwel 1981, 78.} Extant Egyptian chariots have axles that vary in length from 1.98 to 2.36m, and made a wheel track of 1.75m (5.74 feet) on average.\footnote{Littauer and Crouwel 1979, 78; Crouwel 1981, 78; Littauer and Crouwel 1983, 187.} Mycenaean axles were most likely of a similar length because a long axle aided in stabilizing the chariot during turns. According to Littauer and Crouwel, because the axle also extended beyond the wheels, a space of at least 1.60m (5.25 feet) was needed between the boxes of passing chariots on a charge.\footnote{Littauer and Crouwel 1983, 187.} This amount of space is needed in order to prevent the axles and/or the wheels of the opposing chariots from entangling.

The Mycenaean thrusting spear is estimated to have been about 10 feet long.\footnote{Snodgrass 1999, 17 derives this length from the size of the spearheads (2 feet is the largest) and the spears depicted on the Lion Hunt dagger. 10 feet is the overall length.} The spear, because of its length and the weight of its bronze head, had to be held with
two hands with a portion of the shaft behind the wielder. The full 10 feet, then, would not have been extended beyond the chariot box. Considering this factor together with the fact that at least 5.25 feet had to be left between the boxes of two opposing chariots, the thrusting spear would not have been long enough to adequately strike an opposing charioteer/warrior. If two opposing chariots attacked each other head-on, a spear held by a warrior in one of the chariots would have at best only been long enough to reach the forehead of one of the opposing horses. Striking one of the horses would have disabled the opposing chariot, but because not enough space would be left to drive around the fallen horse/chariot, the Mycenaean chariot would have possibly collided with it. If the opposing chariots were meant to pass side by side, after leaving enough space to prevent the ends of the axles or wheels from entangling, a ten foot long thrusting spear would not have been sufficiently long to stab the opposing warrior. In such a situation, the thrusting spear would have only been long enough to give a glancing blow. A thrusting spear is a piercing weapon, and as such is at it most effective when directly aimed at the opponent from the front. The only conceivable way that a spear could have directly pierced an opponent riding on a chariot would have been if the chariots were exactly parallel. Considering that the chariots were presumably moving at a quick pace, there would not have been a lot of time to accomplish this; therefore, successfully using a thrusting spear during a chariot charge is unlikely.

Littauer and Crouwel further their argument by adding the problem of the spearman maintaining stability after striking his opponent, especially if a direct hit was actually achieved. Because the thrusting spear had to be held with two hands, the spearman could not have held onto the rail. The force of a direct blow could possibly have thrown him out of the back of the chariot. Even if the spearman was meant to hit an infantryman, retaining the weapon after a successful hit would be next to impossible in a speeding chariot. As for the possible use of thrusting spears by the Hittites, Littauer

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137 Littauer and Crouwel 1983, 187. Höckmann, 1980, E277-E279 mentions that the silver siege rhyton shows spearmen with their shields flung behind them and holding the spear with two hands. The warriors on the Lion Hunt dagger hold their spears and shields in a similar manner.
139 Gabriel and Metz 1991, 58.
140 Littauer and Crouwel 1983, 188.
141 Littauer and Crouwel 1983, 189.
and Crouwel point out the fact that the Hittites are usually not shown with their spears poised for action, possibly indicating that the weapons were meant to be used on the ground (fig. 21).\textsuperscript{142} When spears are poised for use, however, they are held either at eye level or above the head with one hand at the butt, as if to be thrown.\textsuperscript{143} It should be noted that in the poetic inscription of the Battle of Kadesh, Ramesses, while describing his valor in the battle, boasts that the Hittites “found not their hearts to seize their javelins.”\textsuperscript{144}

Returning to Greenhalgh, the third problem with his theory is his assumption that the Mycenaean cuirass, more specifically the neck-guard, was a specialized type of armor for the chariot warrior. In fact, this type of cuirass, such as the one found at Dendra, has raised more questions than answers because of its weight and size. This type of cuirass would have been difficult to wear and maneuver for an infantryman, but it would not have been entirely suitable for a chariot warrior either. On the ground, one could not have traveled far wearing it.\textsuperscript{145} On a chariot, if fighting with a spear, the weight of this cuirass would have made the warrior more likely to have fallen off after hitting his target.\textsuperscript{146} Moreover, according to Åkerström, the shoulder guards, or pauldrons, would have prevented the warrior from lifting his arms while thrusting his spear.\textsuperscript{147} Greenhalgh specifically mentioned the neck guard of this corselet type as an important piece of armor for protecting the neck when fighting from a chariot, but protecting the neck in ground warfare was equally as important. Representations of man-to-man fighting clearly illustrate that protecting the neck under those circumstances was crucial. The most common stroke of the sword was a thrust to the neck (fig. 22a-b).\textsuperscript{148} Therefore, the neck-guard of a cuirass like that found at Dendra could have been for protection needed in ground warfare, and was not necessarily a type of armor specialized for chariot warfare.

\textsuperscript{142} Littauer and Crouwel 1983, 189.
\textsuperscript{143} Littauer 1977, 363. See also Gabriel and Metz 1991, 76 who argue that the javelin was used with the chariot only when the chariot neared the opposing infantry. After the javelins were thrown, then the chariot crew would have quickly dismounted to fight man-to-man.
\textsuperscript{144} P135-40, see also P160-165. For translation, see Gardiner 1960, 10; see also Drews 1993, 182.
\textsuperscript{145} Benton 1968, 69; Snodgrass 1999, 24.
\textsuperscript{146} Littauer and Crouwel 1983, 189.
\textsuperscript{147} Åkerström 1987, 134.
\textsuperscript{148} Hiller 1999, 323; Peatfield 1999, 71.
Robert Drews, in his *The End of the Bronze Age*, puts forth an unorthodox hypothesis for Bronze Age chariot warfare in general. According to him, chariots were the main, in fact essentially, only regiment used in Bronze Age warfare. He argues that the assumption of scholars, such as Powell and Watkins, that chariots were only employed at critical points in battle, and were used only to support infantry, is incorrect. The basis for these theories is that chariots and horses were too expensive to risk loosing. Drews, on the other hand, argues that large losses were the whole point of Bronze Age warfare. It was the priority of each side to deplete the other’s chariot forces as much as possible. Essentially, according to Drews, Bronze Age warfare was about who had the largest chariot squadrons and not the largest infantry.

The strategy for chariot warfare that Drews postulates occurs in lines of chariots, wider than deep, charging at one another with archers on the chariots, trying to eliminate as many enemy charioteers, archers and horses as possible. Because this strategy would result in mass destruction, large chariot squadrons were essential and were the main component of any Bronze Age army. As evidence, Drews uses Egyptian battle reliefs, which typically emphasize chariot warfare over infantry fighting. He also refers to textual evidence that gives information about the numbers of chariots that some kingdoms possessed. The Mitanni, for example, according to the Nuzi tablets, had several thousand chariots; at the Battle of Kadesh, the Hittites may have had around 3500 chariots. Consequently, because the chariot squadrons were so large, infantry must have played a secondary role in any major battle. Drews limits the infantry’s function to only what he calls “chariot runners,” for which he claims there is evidence in Egyptian texts. Taking from Schulman’s work, Drews points out that the Egyptian word *phrr* means “the runner.” The purpose of the *phrr* would have been to ride on a chariot out

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149 Drews 1993, 104-134.
150 Powell 1963, 166 posits that in the opening stages of battle arrows were shot from chariots which moved up and down their own fronts at a range that would not have endangered the horses. Watkins 1989, 31 argues that chariots was too expensive and vulnerable to be the main arm; rather, it was probably deployed only to break the ranks of opposing infantry lines. Both Powell and Watkins are discussing Near Eastern chariot tactics, not Mycenaean. See also Gabriel and Metz 1991, 75-79 who argue that the most important function of the chariot in warfare was for pursuing the fleeing enemy.
151 Drews 1993, 106, 128.
to battle and then dismount to kill injured opponents who fell to the ground. They also
would have protected friendly soldiers.\textsuperscript{154} Therefore, the \textit{phrr}, or skirmishers, were
meant to support the chariot crews, as opposed to chariot squadrons meant to support
ground warriors.

Drews’ strategy for chariot warfare is contingent on the use of the bow. Without the bow, his model does not work. In order to emphasize this point, he argues that the Hittites did not really use the spear from their chariots; the only reason anyone thinks that they did is because the Hittites are depicted with spears in the Kadesh reliefs.\textsuperscript{155} According to Drews, “thrusting a spear from a speeding chariot is quite simply impossible.”\textsuperscript{156} Drews, therefore, concludes that the Mycenaeans did not use the thrusting spear from chariots either. Instead of arguing that the Mycenaeans used their chariots for transportation, however, he argues that they must have used them in the same way as the other Bronze Age kingdoms, as a firing platform for archers during mass charges. He admits that there really is no direct evidence for this. In fact, he states that, “Mycenaeans did not use the chariot as transportation not because there is evidence to the contrary but because it makes no sense.”\textsuperscript{157} He claims that chariots probably were the main force in the palace’s army and because of the expense of keeping such a large chariotry, the Mycenaeans must not have used their chariots merely for transportation.\textsuperscript{158} In addition, Drews states that scholars have “stubbornly” insisted that the bow held no military importance to the Mycenaeans because no composite bow has been found in Greece. Arrows are inventoried, however, at Knossos and arrowheads were found in a storeroom near the Room of the Chariot Tablets.\textsuperscript{159} According to Drews, the reason that

\begin{footnotes}
\item[154] Drews 1993, 143-44.
\item[155] Drews 1993, 114, 121.
\item[156] Drews 1993, 116.
\item[157] Drews 1993, 118.
\item[158] Drews estimates at least a thousand chariots at Knossos and several hundred at Pylos; for Knossos, see Drews 108, for Pylos, see 107. His estimates are based on the Linear B tablets at the respective palaces. Because of the fragmentary state of the tablets, however, different estimates have been made. Ventris and Chadwick 1973, 365 approximate 400 chariots at Knossos. Lejeune 1968, 47 estimates 189 field-ready chariots at Knossos. The number of chariots for the palaces depends on accounting for field-ready chariots and/or chariots in production. Nevertheless, both Pylos and Knossos probably could have deployed several hundred chariots.
\item[159] Drews 1993, 122, 124.
\end{footnotes}
scholars think that the Mycenaean palace relied heavily on infantry comes not from archaeology, but from Homer.\textsuperscript{160}

The problem with Drews’ theory is obvious: he ignores all the evidence that contradicts it. His first problem is that he neglects the fact that most weapons of the Bronze Age are for hand-to-hand combat, such as swords, daggers and spears.\textsuperscript{161} He, himself, argues that thrusting spears were impossible to use effectively from a chariot, but he does not explain why the thrusting spear is typically shown with the chariot in Mycenaean art. He argues that the earliest Mycenaean chariot warriors, those of the time of the Shaft Graves, probably used the bow, but does not address why they are not depicted using it on the stelae. Furthermore, as Dickinson points out, arrowheads are rare in the earliest warrior graves, which would not be expected if these elite warriors were chariot archers.

There is no evidence to support Drews’ argument that those who did fight on the ground in the Mycenaean military were just skirmishers or as he calls them “chariot runners.” There is, as he admits, no word for ‘runner’ in Linear B as there is in Egyptian. There is also no Mycenaean representation of a runner. Typically, only two people are shown in a chariot; if they were carrying skirmishers to support the chariots, as he argues, then there should be three occupants. In addition, fighting from chariots is not generally shown; therefore, if Drews is correct, then the Mycenaeans placed an emphasis on the skirmishers and not on the chariot warriors. Therefore, Drews’ entire theory concerning Mycenaean chariot warfare is unsubstantiated.

Of course, a lack of evidence is a problem for any theory concerning Mycenaean chariot warfare, making these theories little more than conjecture. Unlike the situation in Egypt, there are no battle descriptions or complete representations explaining how the Mycenaeans used the chariot. The evidence that has survived is fragmentary and tenuous. What is certain is that the Mycenaeans had chariots and that they had some kind of military use. We know this through two sources, Linear B and artistic representations.

The Linear B tablets are not very explicit, but they do establish that the chariot had a military function. Tablets concerning chariots and chariot parts have been found at

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\item Drews 1993, 119.
\item Dickinson 1999, 21.
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Knossos, Pylos, Tiryns and Khania. These texts can be divided into two groups; they deal either with the production of chariots or with the distribution of chariots, chariot parts and associated armor and weapons to individuals. The tablets at Knossos and Pylos are the most informative. Those of the Sc series, found at Knossos in the Room of the Chariot Tablets, are classified as distribution texts. They list various individuals, one name per tablet, and equipment assigned to each. There are 140 in total and they generally follow the pattern of name, corselet, wheeled chariot and horse(s). There are variations of this scheme, such as sometimes two corselets are listed, sometimes no chariot and so on. The tablets never list more than two of each of the items and there is never more than one chariot. The variations indicate that what is listed is either what was needed by the individual named or what was already possessed.

Chadwick interpreted the Sc series as a record of what was already possessed by the chariot team and as such assumed that these tablets represent a poorly equipped squadron. Uchitel, however, compared the Sc texts to chariot texts of the Assyrians and of the Nuzi tablets and found that poorly equipped chariot squadrons were not unusual. Apparently, the marijannu of Assyria during the reign of Sargon II suffered from a shortage of horses. The Nuzi texts indicate that they also had a shortage of horses and corselets. Uchitel also concluded through his analysis of the Assyrian and Nuzi texts that these palatial records documented long-term distribution of military equipment. In order to understand that these armies worked under a system of long-term distribution, it should be remembered that ancient armies were not housed in barracks throughout the year as modern armies are. When campaigning was over, these charioteers or chariot warriors went home, possibly taking their equipment with them. According to Uchitel, having a record of chariot equipment that was issued by the palace would be useful if

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163 Uchitel 1988, 47.
164 It should be noted that Chadwick takes these texts as scribal exercises; see 1976, 168. This view is generally not agreed upon, but even so, they still provide some information about equipment that was assigned.
165 Only 28 tablets have complete information, on the rest relevant numbers are lost.
168 Uchitel 1988, 56.
169 Uchitel 1988, 56.
equipment was lost, damaged, or illegally sold. Therefore, as Uchitel argues, the Sc series at Knossos is likely to also be a listing of long-term distribution of military equipment to either the charioteer or chariot warrior. This idea can be reinforced by the fact that on some of the tablets a place name, such as Amnisos, follows the person’s name.

In any case, because corselets are listed with the equipment, the Sc tablets must be concerned with military matters. Unfortunately, weapons are not listed in the Sc series. Some tablets at Pylos, however, do contain references to both chariots and weapons. Spears and javelins on tablets such as Va 1324 and Vn 1339 list these weapons along with chariot axles. These tablets were found in the northeast workshop, which is thought to be a chariot workshop because tablets concerning the repair and possibly the manufacture of chariots were also found there. One tablet that is part of the Sa series, a series that lists the distribution of chariot wheels, was also found in this area.

When looking at representations of the chariot in a military setting it is best to study them in chronological order because it becomes apparent that a change in function of the chariot occurs. For instance, it is only in early Mycenaean representations that the chariot has a clear active use, i.e., either a weapon is being used from the chariot or it appears to be actively participating in a military scene. These early chariot representations occur on the grave stelae at Mycenae and a gold signet ring from Shaft Grave IV in Grave Circle A (ca. 1600-1500 B.C.E), and the lentoid seal from Vapheio (ca. 1500 B.C.E.). The gold signet ring is the only example from the Mainland that shows an archer shooting an arrow from a chariot. This scene is a hunting scene, however, and therefore is not pertinent to this discussion. The problems with interpreting

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170 Uchitel 1988, 58. There apparently are records from Nuzi concerning lost armor and damaged chariots.
171 Uchitel 1988, 48; Crouwel 1981, 128. Crouwel interprets the place names as where equipment is coming from, not where equipment has already been issued.
172 Sc226 has the word e-ko which was initially interpreted as ἐγκο (spear), but is now thought to be ἐκο. Therefore, this tablet should read as “Triopas: one chariot, one corselet, one horse—having one,” see Ventris and Chadwick 1973, 380.
173 Shelmerdine 1999, 403.
174 Shelmerdine 1999, 403.
176 Hiller 1999, 323. Hiller divided the warfare scenes into Early (LBA I-IIIA:1), Middle (LBA IIIA:2-IIIB) and Late Mycenaean phases (LBA IIIC). Here, I follow his divisions, but I will employ the Helladic dating system for consistency. Therefore, Hiller’s LBA I-IIIA:1 will be LHI-IIIA:1, and so on.
the Vapheio seal have been explained above. Therefore, we turn to the grave stelae, which show the earliest Mycenaean chariot representations.\textsuperscript{177} The best preserved scenes of chariots occur on three stelae found above Shaft Grave V. Each has one occupant in the chariot armed with either a sword or a dagger, which is the only time in Mycenaean art that a sword or dagger is the accompanying weapon in a chariot in a war scene. The scenes are as follows: Stele IV shows a warrior on the ground aiming a spear at the charioteer (fig. 23).\textsuperscript{178} Stele V shows a charioteer possibly pursuing a man on foot who is armed with an unidentified weapon (fig. 1). This figure is going in the same direction, however, and so is either fleeing the chariot or is accompanying the chariot. The third, Stele I, depicts a chariot driving over a prostrate warrior armed with a figure-of-eight shield (fig. 24).

Though these scenes seem promising for showing chariot warfare, they are questionable. First, none of these stelae show the weapon actually being used from the chariot; rather, the charioteer is only driving. In one case, Stele IV, the weapon is behind the charioteer and seems to be more of an afterthought on the part of the artist. Second, only one occupant is in the chariot, which may explain why the weapons are not being used. It is highly doubtful that a charioteer would be able to drive and wield a sword at the same time. A chariot with only one occupant is probably a Near Eastern/Egyptian inspired motif and could be intended to emphasize the power of the deceased person to whom the stele is dedicated. Showing only one occupant is common in Egyptian reliefs, where the pharaoh is often depicted alone in his chariot shooting arrows at the enemy (fig. 25). The pharaohs, however, have the reins tied around their waist, and although the practical reason for this would be for stabilization, in reality fighting alone in a chariot would have been impractical in war, as the chariot would have needed to be maneuvered around various obstacles.\textsuperscript{179} Another Near Eastern motif, seen on Stele I, is the vehicle driving over the deceased enemy, or the “enemy beneath the hooves” motif, a common motif symbolizing victory.

The associated motifs in these chariot scenes indicate that the stelae were meant

\textsuperscript{177} Crouwel 1981, 119.
\textsuperscript{178} All stelae numbers are taken from Heurtley 1921-3, 126-146; see also Younger 1997, 229-239.
\textsuperscript{179} Littauer and Crouwel 1979, 63; Crouwel 1981, 120.
to be symbolic of the valor of the deceased and not realistic depictions of warfare. Nevertheless, it should be asked if they are indicative in any way of how the Mycenaeans may have used their chariots during a war. None of these scenes show a clash of chariots; therefore, mass charges, as Greenhalgh and Drews envision Mycenaean chariot warfare, can probably be ruled out. Although it could be argued that showing a massed chariot clash would be inappropriate because these stelae are meant to highlight an individual, such a clash could have been depicted while still emphasizing one warrior. For example, the artist could have rendered the deceased charioteer on a larger scale than the other figures in the scene, as is done in Egyptian reliefs. Another possibility could have been to show two opposing chariots charging at one another with the intent of symbolizing a massed charge and clash. Instead, the artist chose a common scheme of a chariot charging a man on foot, which perhaps indicates that chariots were used by the Mycenaeans for pursuit of foot soldiers or charging infantry lines. To test the validity of this statement, the weapons shown on the stelae need to be considered. Naturally a dagger would be too short to use from a chariot and the swords may have been too weak.

The two types of swords used at this time were the Type A and Type B swords. The Type A sword is characterized by a long blade, which can exceed three feet; a high midrib; and a short, narrow tang.\textsuperscript{180} This is the first sword in the Aegean to have a tang, but the tang was still short and insubstantial enough that the sword remained weak at the join between blade and hilt. This limited its use to long range cut-and-thrust movements, which are best suited to single combat dueling.\textsuperscript{181} The Type B swords are shorter, and have a full tang, which is sometimes flanged.\textsuperscript{182} The tang gave the sword more strength, allowing a fuller range of movements and the ability to withstand sword-to-sword contact. Peatfield, however, points out that even the strongest bronze sword could not withstand prolonged metal-to-metal or metal-to-bone contact without bending.\textsuperscript{183} If this is true, it seems unlikely that these swords would have been able to withstand multiple blows from a moving chariot onto an infantryman. This may help explain why swords, in

\textsuperscript{180} Sandars 1961, 17; Snodgrass 1999, 16; Peatfield 1999, 68. The classifications of these swords were originally devised by G. Karo, \textit{Schachtgräber von Mykenai}, 1930-33.

\textsuperscript{181} Peatfield 1999, 67.

\textsuperscript{182} Sandars 1964, 17.
Aegean art, are only shown in duels being used by foot soldiers. Swords are never shown actually being wielded from a chariot.

The second phase of Mycenaean military scenes (LH IIIA:2-IIIB) is represented by the palace frescoes, which can be divided into two categories: preparation scenes and fighting scenes. The preparation scenes, such as the “Megaron Frieze” and the “Groom Fresco,” both located at Mycenae, are characterized by grooms leading out single horses and unyoked chariots (fig. 26). The grooms are unarmed, but figures wearing helmets and greaves standing with unyoked horses appear with them, thus placing these scenes in a military context. It can be difficult to distinguish military scenes from hunting scenes in the frescoes because similar weapons and armor are shown in both contexts, but helmets are shown only in a military context.

The preparation scene of the “Megaron Frieze” was probably thematically part of the rest of the frescoes in the Megaron. This frieze, which would have probably stood at eye level, had fighting scenes and what appears to be a city siege. Amongst the fighting warriors were at least two harnessed chariots. Rodenwaldt reconstructed each with only a charioteer in the box, though only one fragment actually shows the remnants of a figure in the box (fig. 27). This figure, holding a goad, stands too close to the back of the box to allow for another figure, so Rodenwaldt’s reconstruction is probably correct. Behind the other chariot is a pair of bent, greaved legs facing in the opposite direction (fig. 28). Rodenwaldt reconstructed this figure as an archer because the stance of the figure parallels that of the archer on the Lion Hunt dagger. Littauer questions this identification, however, suggesting that this figure could be a spearman, as the stance of the legs also corresponds to spearmen in other representations. Besides, as she argues, it would not make sense to have an archer on the ground, because the height of a chariot would give an archer a better vantage point. Regardless of what type of warrior this

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183 Peatfield 1999, 70. According to Polybius (Histories 11.33) the Celtic long sword, which was made with iron, had a problem with bending and blunting of edges after the first strike; see J.N.G and W.F. Ritchie 1995, 48.
184 Kontorli-Papadopoulou 1999, 333.
185 Immerwahr 1990, 123-4.
186 Immerwahr 1990, 123.
187 Rodenwaldt 1921, 41; Crouwel 1981, 129.
188 Rodenwaldt 1921, 42.
189 Littauer 1972, 151-2; Crouwel 1981, 130.
figure is, the important thing to note is that the figure is on the ground and that neither of these chariots are actively participating in the battle. They are, instead, either moving at a slow pace or are stationary, which is evident because neither horse is in the “flying gallop” pose.

From the north wall came two fragments, which Rodenwaldt was able to join. These fragments show greaved legs that appear to be falling under what may be the underside of a belly (fig. 29). Rodenwaldt reconstructed this scene as a warrior falling below a horse depicted in the “flying gallop,” to which he added a chariot and charioteer. He interprets the scene as a warrior falling from the chariot.\textsuperscript{190} This scene is often referred to when discussing chariot warfare. It is thought, by those who argue against the limited use of the chariot, to be evidence that the chariot had a more aggressive use in war. Although Rodenwaldt’s reconstruction may be correct, it does not provide definitive proof that the Mycenaeans used their chariots for anything more than transporting their warriors to battle. If anything, Rodenwaldt’s reconstruction shows familiarity with Egyptian art, which in fact inspired Rodenwaldt’s reconstruction.\textsuperscript{191} Additionally, these figures are placed next to and above a cityscape, suggesting that this fresco is depicting a city siege. Chariots are not very useful in siege warfare.\textsuperscript{192} Because of this, it is not clear if this chariot, if in fact this is how this fragment should be interpreted, is meant to be taking part in the scene. It is also unclear compositionally if the warrior is falling from the chariot or from the building. Regardless of this, it is impossible to determine what this hypothesized chariot is doing in this scene. These fragments, therefore, are not very useful for studying Mycenaean chariot warfare.

The LH IIIB palace at Pylos has produced one chariot fresco, which is badly damaged (fig. 30). There is, in this scene, one occupant in a slowly moving chariot with a man behind it holding a spear. In the lower right hand corner of the fragment is the tip of another spear. All the figures move to the right. Because the figures are very faint, all

\textsuperscript{190} Rodenwaldt 1921, 55-8. Vermeule interprets this scene as the chariot driving over a fallen enemy and not as a warrior falling from the chariot; see Vermeule 1964, 200. For an alternative reconstruction, see N. Thomas 1999, 305. She argues that the animal is a lion and not a horse, and leaves out the chariot altogether.

\textsuperscript{191} Rodenwaldt 1921, 55-8 refers to a relief at Abu Simbel that shows a figure flung out of a chariot. For the opposite view, see Littauer 1972, 150.

\textsuperscript{192} Dickinson 1999, 22-23.
the clothing and armor in this scene was restored.\textsuperscript{193} It is, however, probably safe to assume that this is a military scene and not a hunting scene, because this fresco was found in Hall 64, which is also where the duomachies, or Mycenaeans fighting “barbarians,” are located. It is not clear if the warrior behind the chariot is about to mount the chariot, or if he has already dismounted. Either way, where fighting is actually taking place in the frescoes of Hall 64 chariots are not actively involved. Instead, those warriors who are fighting, fight while standing on the ground.

At Tiryns there is one fragment that is significant for this discussion (fig. 31). This fragment, part of the “Alter Palast,” shows a charioteer holding the reins and a goad in his right hand. The figure may be wearing a helmet, as Rodenwaldt recognized the lower part of a cheek-piece.\textsuperscript{194} Littauer, however, challenges this suggestion and argues that it could as easily be the remnants of a beard.\textsuperscript{195} Beards do not seem to be common in Mycenaean frescoes, however, so Rodenwaldt may be correct that this figure was helmeted. A spear also appears on this fragment, though it is not entirely clear who is holding it. Rodenwaldt thought that the driver holds the spear in his left hand. If so, then the spear is held horizontally over or just below the driver’s shoulder. This is a position without parallel in Aegean art and in the Near East, and is not proper if the spear is about to be used.\textsuperscript{196} Crouwel suggests that the spear is actually held by a second occupant. This suggestion, however, does not make any significant changes to the interpretation. Even if another occupant is actually holding the spear, it is still not poised for immediate action, as Crouwel admits.\textsuperscript{197} Therefore, though this fragment is probably militaristic in theme, it does not seem to show fighting from the chariot.

Thematically, fighting scenes were important in the frescoes, but although chariots are included in military scenes, they are relegated to transportation. There is, instead, an emphasis on close-quarter combat and city sieges, both of which are repeated from the early Mycenaean phase. Even the poses of spearmen and of swordsmen common in early Mycenaean art are reused in the frescoes.\textsuperscript{198} What is interesting,

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\textsuperscript{193} Lang 1969, 73. \\
\textsuperscript{194} Rodenwaldt 1912, 8-9. \\
\textsuperscript{195} Littauer 1972, 150. Immerwahr 1990, 128 interprets this scene as a hunting scene. \\
\textsuperscript{196} Rodenwaldt 1912, 8-9; Littauer 1972, 150; Crouwel 1981, 132. \\
\textsuperscript{197} Crouwel 1981, 132. \\
\textsuperscript{198} Hiller 1999, 325.
\end{flushright}
however, is that an active function for the chariot, such as that on the Grave Stelae, is not securely attested in this later period.

The third phase of Mycenaean military scenes (LH IIIC) is seen mainly on pictorial pottery found in Tiryns and Mycenae. These representations differ from the chariot scenes from the palaces in several ways. They typically show two occupants in the chariots, both of whom are at times armed either with spears and/or shields (fig. 10, 11, 32). Pictorial pottery that was contemporary with the frescoes tended to show two occupants in a chariot as well, but these occupants were not armed because these scenes had more of a ceremonial/processional character. Having both chariot occupants holding a shield is new to Aegean representations altogether. Prior to this point, if shields were included, they were held by men fighting on the ground. In addition to shields, the figures on the LH IIIC vases also wear greaves and corselets. Though these figures are well armed, they are not fighting from the chariots. The spears are never poised for use, and though the chariots move at a faster pace than in the frescoes, they are not charging.

Through this discussion of the chariot in Mycenaean art, it appears that the chariot was relegated to a rather inactive use in warfare. The majority of the representations of the chariot in military scenes show it acting as nothing more than a conveyance. The only scenes that show a chariot participating in the fighting belong to early Mycenaean art, and these scenes seem to have been more concerned with emphasizing the military prowess of the deceased individual than depicting realistic chariot warfare. Instead, throughout the different phases of Mycenaean art an emphasis is placed on man-to-man combat and ground warfare, i.e. there is an emphasis on infantry rather than chariotry. This emphasis on duomachies contrasts with the Asiatic fascination with grand chariot battles. The Mycenaean emphasis on infantry warfare has been considered unusual, especially in light of the fact that the Mycenaeans went through the expense of having chariotry. Consequently, some scholars have asked if Mycenaean representations

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199 Immerwahr 1990, 123. The palace fresco battle scenes do not include shields at all; the only armor included are greaves and helmets.
actually relate a historically accurate picture of warfare or if they only transmit a heroic ideal of warfare.\textsuperscript{201}

Judging by Mycenaean weapons, it seems that man-to-man combat, or more likely close combat infantry warfare, was the preferred method of fighting, and not massed chariot charges. Most frequently in warrior graves combinations of swords, daggers and thrusting spears are found, all of which are more suitable for close combat.\textsuperscript{202} In fact, the predominance of the thrusting spear adds more credence to the idea that the Mycenaeans fought in close combat, because, according to Gabriel and Metz, the thrusting spear is most effective when used in close combat formations.\textsuperscript{203} Arrowheads have also been found in Bronze Age contexts, indicating that archery was used for warfare.\textsuperscript{204} Typically, however, when an archer is depicted in Mycenaean art, whether in a military or hunting scene, the archer stands on the ground and not in a chariot. Conversely, in Egypt and the Near East the bow, specifically the composite bow, was a prominent weapon in war scenes. The pharaohs and kings are typically shown using it rather than a sword or spear. Moreover, the composite bow is the usual chariot weapon in both of these regions.

Whether or not the Mycenaeans may have used their chariots in the Hittite manner is a question that remains to be considered. As discussed above, it is possible that the Hittites threw javelins from their chariots. It is also possible that the Hittites and the Mycenaeans had close relations, as is indicated by the Tawagalawas letter.\textsuperscript{205} If this connection is reliable, then it is possible that the Mycenaeans also used javelins with their chariots. Javelin heads appear in the archaeological record, though infrequently, and sometime around 1200 B.C.E. spears are generally shortened, perhaps with the intention of throwing them rather than thrusting.\textsuperscript{206} Nonetheless, though it cannot be denied outright that the Mycenaeans did not use javelins with their chariots, there is again very

\textsuperscript{201} Osgood et al. 2000, 134.
\textsuperscript{202} Snodgrass 1999, 15-34; Osgood et al. 2000, 123.
\textsuperscript{203} Gabriel and Metz 1991, 58.
\textsuperscript{204} Snodgrass 1999, 17-18, 23. A particularly notable cache of arrowheads was found at Knossos in the ‘Armory.’
\textsuperscript{205} For Hittite connections with the Aegean, see Bryce 1998, 60-63; Güterbock 1983, 133-143; Huxley, 1960.
\textsuperscript{206} For evidence of the shortening of spears, see Dickinson 1994, 202, 206; Snodgrass 1999, 29. It should be noted that these new spears date to around the same time as the Linear B tablets found at Pylos that list both javelins and spears with chariot axles; see above page 13.
little evidence for it. The Vapheio gem may show a chariot warrior about to throw his spear, but that is not entirely clear. If the warrior on the Vapheio gem should be interpreted as throwing his spear, this would be the only Mycenaean depiction of a javelin being used with a chariot. Moreover, Mycenaean chariots are never shown with a container to hold extra javelins, which surely would be necessary during a battle. Mycenaean warriors also are generally not shown holding more than one spear. It should also be noted that while the Hittites used a three-man crew, the Mycenaeans apparently only had two warriors in a chariot at one time. Because of this difference, it seems that the Hittites were somehow using their chariots differently.

The design of the Aegean chariot may shed light on how it was used militarily. As shown in chapter II, the Aegean chariot did not place the axle under the rear floor frame. Not having a rear axle is significant because it affects how the chariot can be used. When the axle is fixed to the back of the frame, the floor becomes a stable platform, which would be necessary for a chariot warrior to fight successfully. When the axle is more centrally located, any shift in weight from front to back, such as would occur when someone is fighting would disrupt the balance of the chariot.\(^{207}\) The importance of the rear axle is further demonstrated by the fact that it adds more stress to the necks of the horses because it adds more weight to the yoke.\(^{208}\) Consequently, the advantage to switching to a rear axle had to have outweighed the disadvantages or Egyptians and the Near Easterners would not have done so. Perhaps the Mycenaeans did not attach the axle to the rear floor frame because it was not necessary. The advantage of a more centrally located axle, i.e. less stress on the horses’ necks, can only be achieved with a stable load. If the Mycenaeans did not use their chariots as aggressively as chariots were used in Near Eastern/Egyptian battles, the occupants would not need to move much, thus providing a stable load.

The wheels of the Aegean chariot may also provide evidence for how the chariot was used. In the Near East and Egypt, after the fifteenth century, spokes were increased from four to six. Adding more spokes was not, as Crouwel explains, necessarily a technological advancement over Aegean wheels. In fact, Aegean wheels were probably

\(^{207}\) Powell 1968, 158-9; Littauer 1972, 147.  
\(^{208}\) Littauer 1972, 147.
constructed with the same composite method where both the spokes and the nave were strengthened with leather and glue.\textsuperscript{209} The increase of spokes, however, does signify that there was more stress on the wheels. Eastern chariots, because of how they were used in warfare, probably needed extra support. More spokes would have strengthened the wheels. Aegean chariots then, may have retained four spokes because it was not necessary to add more support to the wheels. If the Mycenaes used their chariots mainly for transportation, four spokes probably were sufficient.\textsuperscript{210}

Finally, the economics of chariotry need to be considered. The expense of having a large chariot squadron would seem to indicate that the Mycenaes used their chariots in a more active way in battle than any of the artistic representations show. Yet, the expense of chariotry could possibly reinforce the position that chariots were not used actively on the battlefield. It is true that having a large chariot squadron required a vast bureaucratic system capable of gathering the appropriate materials needed and overseeing the craftsmen necessary for the production and maintenance of chariots.\textsuperscript{211} The Linear B tablets described above show that the palaces devoted a lot of time to chariot production.\textsuperscript{212} The tablets also show that the palaces were probably the main provider of the chariots and associated equipment to the chariot teams. Moreover, it appears that the Mycenaean palaces may have been involved in the breeding and caring for the horses needed. On one tablet from Pylos it appears that a man named Kretheus was leased a parcel of land “on account of the horse.”\textsuperscript{213} Another tablet, Fa 16, assigns a quantity of some kind of grass to horses.\textsuperscript{214} That the palaces would be involved in the feeding of the horses makes sense when considering how much food was needed to keep them healthy. Stuart Piggott has estimated, on the basis of the Roman scale of feeding, that a horse would need about 30 bushels of grain a year, an amount that would require 4.2 acres to

\textsuperscript{209} Crouwel 1981, 81-90. The nave is the point where the spokes join at the center of the wheel and where the axle connects to the wheel. The composite construction is suggested for Aegean chariots by lines on the spokes in the frescoes and in other representations where the spokes widen near the wheel (felloe).
\textsuperscript{210} Powell 1963, 158; Littauer 1972, 155; Crouwel 1981, 90.
\textsuperscript{211} See Cassin 1968, 297-308 for the bureaucratic administration needed to support a large chariotry. Her article is about Mesopotamian palace centers, but it offers a good comparison.
\textsuperscript{212} This can be demonstrated by the fact that it appears, through a study of scribal hands, that the scribes who wrote the chariot tablets at Knossos partook only in chariot record keeping; see Lejeune 1968, 14-15.
\textsuperscript{213} Text Ea 59, line 5. For translation, see Ventris and Chadwick 1973, 260 (text 140); see also Crouwel 1981, 39.
\textsuperscript{214} Crouwel 1981, 39.
grow. A chariot team naturally would require double that, and thus would need eight to ten acres of arable land a year.\textsuperscript{215} These large estimates of food required also may indicate that the palaces were in charge of the training of the horses. According to Hittite horse training texts, chariot horses were brought into condition through an intricate feeding and exercising program.\textsuperscript{216}

In addition to the expense of producing and maintaining chariots and chariot horses, the training of charioteers and chariot warriors is also a factor that needs to be considered. Driving a chariot successfully or fighting from a chariot in battle were difficult and a prized skills. Consequently, charioteers and chariot warriors in the Near Eastern kingdoms were considered part of the elite. At Ugarit, for example, the \textit{marijannu} were given special land allotments from the king, which their sons inherited in addition to their father’s military position.\textsuperscript{217} At Nuzi, the charioteers were allowed to live in and around the palace.\textsuperscript{218} The Linear B tablets do not provide any information about the status of charioteers/warriors, but could it be assumed that if the Mycenaeans actually used their chariots in a similar way as the peoples in the Near East then their charioteers/warriors would have a similar status? Considering the status possibilities of charioteers with the various expenses of maintaining a large chariot force, how can it be explained that the Mycenaeans never indisputably show the chariot being used on the battlefield? Perhaps the best explanation for why there are not any Mycenaean chariot battle scenes and why the Mycenaeans seemed to have prized infantry warfare over chariot fighting is that the chariot did not have a very active role in battle. On account of the above factors, it seems reasonable to assume that the Mycenaean pictorial scenes that show the chariot in war are not only showing a heroic ideal of warfare, but are also relaying some historical truth.

In short, there is no convincing evidence to prove that the Mycenaeans used their chariots for much more than transportation. It is possible, as explained above, that the javelin might have been used with the chariot, but if this were the case, it could not have

\begin{footnotesize}
\begin{enumerate}
\item Piggott 1986, 27.
\item Piggott 1986, 27.
\item Rainy 1965, 19-20. In fact \textit{marijannu} means “noble chariot-warrior” and is related to the Vedic term \textit{márya}, “man, hero or youth.”
\item Drews 1993, 113 n. 41.
\end{enumerate}
\end{footnotesize}
been a major component to any battle that the Mycenaeans may have fought. Why the Mycenaeans did not use their chariots in the manner of the Near East and Egypt is at present impossible to explain. It is interesting to observe, however, that what can be determined about the Mycenaean use of chariots in warfare corresponds to the Homeric use of war-chariots.
CHAPTER IV
DARK AGE CHARIOT WARFARE

The main contention of this thesis is that chariots were used for warfare during the Greek Dark Age. In the previous chapters it has been shown that there is physical evidence for chariots dating to the Dark Age and that this evidence can be confirmed by the fact that there was a continuation of the design of the Greek chariot from the Bronze Age into the eighth-century. Yet, the mere existence of chariots does not prove that they were used for military activities. Although some of the horse and bit burials dating to the Dark Age also contained weapons, this evidence has not been sufficient to convince some scholars that chariots retained a military function during this time. It is important, therefore, to look for other corroborating evidence. Because there is no textual or representational evidence for chariots that dates to the Dark Age, we must look to the eighth-century when the chariot again features prominently in the pictorial and written record.

Before discussing the eighth-century evidence for chariot warfare we must dispel the theory proposed by Greenhalgh about the use of chariots in the Dark Age. He agrees that the chariot survived through the Dark Age, but he does not think that it would have been used for warfare; rather, he argues that the chariot was used solely for racing. He reasons that if chariot racing was well established in the eighth-century then it had to have been practiced earlier. As evidence for chariot racing in the eighth-century, Greenhalgh first turns to Geometric vase representations. He identifies any figure in a chariot who is unarmed and robed, and is the only occupant in the chariot as a racing charioteer.219 He admits that these charioteers are generally not shown racing but are usually only shown driving in a procession. He argues, however, that these vase

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representations depict processions that were probably meant to be understood as funerary processions leading up to the funerary games. According to Greenhalgh, these games would have included chariot racing.\footnote{Greenhalgh 1973, 27.}

Next, Greenhalgh turns to Homer for evidence of chariot racing. In addition to the famous racing passage in Book 23 of the Iliad, Greenhalgh refers to evidence showing that Homer had a technical knowledge of the chariot’s design. Greenhalgh points to these passages in order to argue that the chariot race for Patroklos’ funeral is not a Mycenaean relic passed down through the epic tradition, because Homer clearly had first-hand knowledge of chariots. The structural details of chariots that Homer provides suggest that he was describing light-railed chariots, such as the Mycenaean/Geometric rail chariot or the high-front chariot.\footnote{The chariot is light enough for one man to carry; see Iliad 10.505. See also Stubbings 1962, 521.} He usually uses the plural, ἁρτονᾶς, when he mentions the rails, but only Hera’s chariot is specified as having “double” (δοιά) rails.\footnote{For passages concerning chariot rails, see Iliad 5.262, 322, 728, 11.535, 16.406. See also Delebecque 1950, 177. The word ἐπιδοφοιάς is used once for the chariot rails; see Iliad 10.475. It is used to describe the part of the chariot to which Rhesus’ horses are tied while they are at rest. This word may, therefore, be referring to the front rail; see Delebecque 1950, 177.}

Homer refers to the ἁρτονᾶς, or rails, frequently.\footnote{Lorimer 1950, 326; Greenhalgh 1973, 3.7} He usually uses the plural, ἁρτονᾶς, when he mentions the rails, but only Hera’s chariot is specified as having “double” (δοιά) rails.\footnote{Lorimer 1950, 326; Greenhalgh 1973, 3.7} The δίφος, or chariot box, is described with the epithet ἐπιπέλεκτος, well plaited or well twisted. Though it is not specifically stated what part of the chariot box is well plaited, this epithet may be referring either to the box floor or to the covering for the sides of the frame.\footnote{See Iliad 23.335, 436; Greenhalgh 1973, 37. For the construction of the box floor, see Crouwel 1992, 32. That the chariot box had a woven thong flooring is indicated by the use of cross-hatching in Geometric depictions where the floor is shown. Using a woven thong floor is attested in the Bronze Age, not only in Greece but also in Egypt and other areas; see Crouwel 1981, 73. Δίφος can also mean the whole chariot itself and not just the box. Other words used for chariot in the Iliad are ἀκμα, ἀξία, or just simply ἰπποι; see Delebecque 1950, 169-174.} There is clearly enough technical vocabulary describing the chariot’s construction to indicate that
Homer was well aware of chariots. Greenhalgh argues, however, that the chariots Homer describes were racing-chariots and not war-chariots.

Lastly, Greenhalgh claims that the use of three- (trigae) and four- (quadrigae) horse chariots in the eighth-century is further confirmation that chariot racing had been practiced in earlier centuries. It is doubtful, he states, that the Greeks would have spontaneously created chariot racing with three- and four-horse chariots without having prior two-horse chariot racing experience, because the addition of horses would have been a technical advancement. It is also unlikely, Greenhalgh states, that the Greeks would have used trigae or quadrigae for war, although there is a precedent for this. The Assyrians, during the reign of Assurnasirpal II (883-859 B.C.E.) added a third horse as a trace horse. Nevertheless, Greenhalgh argues that adding a third horse to the chariot team is acceptable for the Assyrians because during battle they probably charged with their chariots. In Homeric warfare, on the other hand, the chariot mainly acts as a conveyance for the warriors to and from battle; adding a third or fourth horse would have been an impractical expense. Greenhalgh concludes that the fact that Homer at times adds a third or fourth horse to a chariot team, albeit rarely, and yet gives the chariot such a limited use on the battlefield shows that Homer was not familiar with war-chariots. The chariot in the *Iliad*, therefore, was an intended archaism for which Homer used his knowledge of racing-chariots.

Greenhalgh makes a good case for establishing the possibility that people participated in chariot racing during the Dark Age, but just because chariot racing may have existed at this time does not mean that chariots were not used in conjunction with warfare. What Greenhalgh did not know at the time of his writing is that the Greeks

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227 There are other passages that describe parts of the chariot, such as the yoke or parts of the harnessing system, but these terms are not specific to chariots; see Delebecque 1950, 179-188 for a lexicon of chariot, or cart-related words.
228 This opinion is solely based on the tactical use of chariot in the *Iliad*, which will be discussed at length further in this chapter; see Greenhalgh 1973, 7-18; 37-39.
229 Both three- and four-horse chariots are depicted in Geometric vase scenes. In addition, Homer mentions four-horse chariots but infrequently; see *Iliad* 8.184-185, 16.467-476. According to Pausanias (5.8.7) the four-horse chariot race was not introduced into the Olympics until the twenty-fifth Olympiad in 680 B.C.E.
already knew of four-horse chariots before the eighth-century, as is evident through the four-horse burial at Lefkandi. Interestingly, these horses were buried with a warrior, as shown in chapter I. Therefore, one has to ask if this chariot, considering its context, would have been used only for racing or if it is possible that it could have also served as a war-chariot. It is relevant to point out at this point that only two horses of a triga or quadriga team were actually harnessed to the yoke. The third and fourth horses, known as outriggers, were attached to the chariot by means of a trace, a leather strap(s) that ran through a loop attached to the side rail of the chariot box. The trace was then either tied to the rear floor bar or brought forward and tied to the draft pole. Because the outriggers were not harnessed to the yoke they would not have had much pulling power, making them an unessential feature for the chariot to function properly. Therefore, it is conceivable that horses could have been added when the chariot was used for racing, or removed when the chariot was taken to the battlefield. The dual function of a chariot seems even more probable when the design of the chariot box is considered. As is clear from representations of chariots, a light box construction could be used for both war-chariots and racing-chariots in Greece. The Mycenaean rail chariot is most frequently shown carrying warriors, but there is one vase depiction that may depict rail chariots being raced. Likewise, the same light-railed construction is shown in Geometric vase scenes fulfilling a variety of functions, including acting as a vehicle for processions, racing and warfare.

Considering the above factors, the possibility that chariots were used for both racing and warfare during the Dark Age cannot be discounted. As Littauer has stated, “Surely the noble who could afford the luxury of the three- or four-horse racing chariots...might have afforded a military one and might even have granted it priority.” Crouwel agrees that during the Dark Age chariots may have been raced, but he also allows for the possibility that chariots could have maintained a military function. He continues by saying that this possibility cannot be discarded until the rise of hoplite

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234 Crouwel 1992, 41.
235 Crouwel 1992, 43-44.
236 Anderson 1961, 33; Crouwel 1992, 45.
238 Littauer 1977, 364.
warfare sometime in the late eighth or early seventh century.\textsuperscript{239} In addition, Crouwel states that if chariots retained a military function, then they most likely were used similarly to the way they were used by the Mycenaeans.\textsuperscript{240}

It is the last comment that is particularly interesting in light of Homeric descriptions of the chariot’s use in war. The \textit{Iliad} is perhaps one of the most important sources for Greek war-chariotry because it is the earliest surviving narrative that details how the chariot was used by the Greeks. It is also a problematic source because Homer was a poet and as such probably subjected his battle descriptions to poetic fantasy. Nevertheless, the most interesting aspect of Homeric war-chariotry is that the chariot’s use appears to parallel most aspects of what can be determined about Mycenaean war-chariotry. Although the similarities could be due to transference of Mycenaean tactics through the oral tradition, it is also probable that the chariot tactics presented in the \textit{Iliad} actually date to the Dark Age. Because Homer shows no knowledge of the bureaucratic system of the Mycenaean palaces, it may be safe to assume that he also had little knowledge of their battle tactics. There is also a strong likelihood that by the late eighth-century chariots were no longer used in battle because around the late eighth or early seventh century the hoplite phalanx began to develop.\textsuperscript{241} As a result, we are left with the Dark Age as the most likely source for Homer’s battle descriptions and the chariot’s military use.\textsuperscript{242}

Although chariots are mentioned in every major battle in the \textit{Iliad}, they are not used actively on the battlefield. Instead, chariots primarily serve as transportation. Warriors of high status ride in chariots to and from battle and at times ride chariots to different places on the battlefield. Rarely is there any fighting from the chariot, and when this occurs the chariot is driven near enough only to throw a javelin at an opposing

\textsuperscript{239} Crouwel 1995, 311.
\textsuperscript{240} Crouwel 1995, 311.
\textsuperscript{241} Snodgrass 1965, 110-22; Murray 1980, 124, 129.
\textsuperscript{242} It is generally agreed that the \textit{Iliad} was finally written down in the second half of the eighth-century; see Janko 1982, 195-200, 228-31; Kirk 1985, 3-16; Crielaard 1995, 201-202. The date for the “Homeric world” is not as clear; for the poem being an amalgam of different periods from the Bronze Age to the eighth-century, see Snodgrass 1974, 114-125; Kirk 1975, 849; Murray 1980, 35-36; for a tenth- or ninth-century date, see Finley 1979, 47-50, 153, 156-8; Dickinson 1986; Whitley 1991, 344, 364-5; for mainly an eighth-century date, see Crielaard 1995, 201-276; Morris 1986, 94-104.
figure. More frequently, warriors dismount to fight and often remount when they get into trouble, either by being outnumbered by the enemy or when wounded. In this case, the wounded warrior usually leaves the battle and goes to safety. Chariots are almost never used in massed attack, and they never execute an organized maneuver. The only time there is ever a massed charge is in pursuit of the fleeing enemy, after which the warriors generally again dismount to fight. Iliad 4.225-231 best illustrates how the chariot was most commonly used in the Iliad:

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ἀλλὰ μᾶλα σπεύδοντα μάχην ἐς κυδιάγειραν
ἴππους μὲν γὰρ ἔσασκα καὶ ἀρμάτα ποικίλα χαλκῷ.
καὶ τοὺς μὲν θεάσασθεν ὑπάγειε τ᾽ ἔχει φυσίοντας
Εὐρυμέδων, ὦς Πτολεμαῖος Πειραιάδα
τῷ μᾶλα πολλῷ ἐπίτελλε παρασχέμεν, ὅπποτε κέν μιν
γυῖα λάβῃ καμάτας, πολέας διὰ κοισαίγοντα
αὐτὰρ ὃ πεζὸς εώς ἐπεπωλεῖτο στῆχας ἄνδρῶν.
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“but driving eagerly toward the fighting where men win glory
he [Agamemnon] left aside his chariot gleaming with bronze, and his horses,
and these, breathing hard, were held aside by a henchman,
Eurymedon, son of Ptolemaios, the son of Peiraios.
Agamemnon told him to keep them well in hand, till the time came
when weariness might take hold of his limbs, through marshalling so many.
Then he, on foot as he was, ranged through the ranks of his fighters.”

An important aspect of Homeric chariotry is that a bow is never used with the chariot. In fact, Homer emphasizes this point in Iliad 5.192-205. Within these lines Pandaros, a warrior fighting with the Trojans, explains to Aeneas that he opted to bring his bow rather than one of his eleven chariot teams. Pandaros then mounts Aeneas’ chariot with a spear, which he eventually hurls at Diomedes. Further in Book 5, lines 745-746, Homer again emphasizes the association of the spear with the chariot:

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ἐς δ᾽ ἄχεα φλόγεα ποσὶ βῆσετο, λάζετο δ᾽ ἔγχος
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243 For fighting from a chariot see Iliad 5.9-212, 274-281, 835-860, 8.115-129. See also Snodgrass 1964, 260 n. 26; Detienne 1968, 315.
246 All translations are from Lattimore 1951, unless otherwise stated.
247 Iliad 5.238.
“She stepped with her feet in the blazing chariot and took up a spear heavy, huge, thick, wherewith she beats down the battalions of fighting men”

In these lines, which describe Hera mounting her chariot, the poet specifies that the weapon is a thrusting spear (ἐγχρος), which is evident through the epithets βριθύ, μέγα, and στιβαρὸν used to describe it. The reference to a thrusting spear is significant because more often in the Iliad when a weapon is used from a chariot it is a javelin, as in the case of Pandaros described above. The javelin seems to be used more frequently by those fighting on foot as well. The prevalence of the javelin over the thrusting spear in the Iliad may be due to the fact that by ca. 900 B.C.E. the javelin became the popular spear type. Often in graves from this period, two to three spears of identical size are found. The burial of multiple spears probably implies that these spears were meant to be thrown. Sometimes also found in graves of the ninth century, though not as common, is the pairing of one larger and one smaller spearhead. The size difference may imply that one spear would have been thrown while the other would have been used to thrust at the enemy when man-to-man combat ensued. Because the Iliad appears to mirror the contemporary predominance of the javelin, then we might also assume that using the javelin with the chariot might also be founded in contemporary or near contemporary practice.

It is clear from this brief description of Homeric war-chariotry and from the conclusions drawn in the last chapter, that there was a continuation of the chariot’s function in terms of warfare. Both Homeric and Mycenaean warriors seem to have used their chariots primarily for transportation to the battlefield, and in both cases the bow is clearly not the associated weapon. The only main difference is a change in the type of spear used with the chariot, although as stated in the last chapter the possibility that the Mycenaeans used the javelin with the chariot cannot be entirely discounted. Regardless

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248 Lorimer 1950, 259. Epithets such as these are not used to describe a throwing spear (δορος).
250 Snodgrass 1999, 38. Earlier in the Dark Age mainly thrusting spears are attested.
251 Such is the case with Grave XXVII in the Athenian Agora, mentioned in chapter I.
of the similarities between Homeric and Mycenaean war-chariotry, it is often thought that Homer fabricated the function of the chariot on the battlefield and thus presented a distorted picture of Mycenaean chariot warfare.\textsuperscript{253} Generally, however, all of Homeric warfare has undergone much discussion, because it is dubious as to what type of warfare Homer is representing. The nature of Homeric warfare needs to be discussed, because the type of battle Homer describes, of course, affects how we should interpret the use of chariots throughout the \textit{Iliad}.

Because the \textit{Iliad} was composed by a poet and not a military historian, the main concern probably was not to record true-to-life battle scenes; therefore, some allowance for artistic liberty and poetic exaggeration must be made. Keeping that in mind, the basic picture of battle that Homer draws is one of individual prowess achieved through man-to-man or man-to-group fighting. Yet, the army is described as large, and at times Homer makes possible references to close battle formations. The fundamental problem with Homeric warfare, therefore, is whether the battles are fought by individual combats that are loosely connected or by a concerted force that comprises lines and columns that fight as a unit.\textsuperscript{254} Wees argues, rightly in my opinion, that we should regard the emphasis on individual combat as merely a poetic device, whereby individual heroes fight amidst the masses.\textsuperscript{255} One intent of the \textit{Iliad} was to highlight the military prowess of individual heroes during battle, but while doing so Homer leaves the impression that these individuals are not fighting alone by inserting phrases such as \textit{ἐν ὀμιλοῖς}, or \textit{διὰ πρόμαχον}, to remind the audience of the others on the battlefield.\textsuperscript{256} Although there might be many warriors on the battlefield, Wees argues that this does not mean that they are fighting as a consolidated force; rather, we should assume that the heroes are surrounded by and fighting with their followers or ‘companions,’ called \textit{hetairoi}.\textsuperscript{257} Therefore, when a hero fights, he fights with a band of men. Because of the mobility of the heroes, Wees argues

\textsuperscript{253} Wace and Stubbings 1962, 521; Greenhalgh 1973, 7-18; Kirk 1976, 61; Pritchett 1985, 14. Pritchett, however, does not think that chariots would have been used at all because of the rugged nature of the Greek terrain.
\textsuperscript{254} Wees 1986, 286.
\textsuperscript{255} Wees 1994, 2, 1986, 286.
\textsuperscript{256} Wees 1986, 286; see also Kirk 1968, 110-114; Pritchett 1985, 15-21.
\textsuperscript{257} Wees 1986, 286, 289, 1988, 6.
that the poet must not have conceived of a large number of followers for each hero but
that they may have reasonably amounted to a few dozen.\textsuperscript{258}

This interpretation then implies that Homeric warfare is comprised of bands of
men fighting independently in a more or less loose formation. There are passages,
however, that seem to describe warriors gathering into a close-packed formation, which
may imply that the warriors are going to fight \textit{en masse}. An example of this is found in
\textit{Iliad} 13.130-134:

\begin{quote}
φράξαντες δόρυ δουρί, σάκος σάκει προθέλυμιν
άστις ἄρ’ ἀστιδ’ ἔρειδε, κόρυς κόρυ, ἀνέρα δ’ ἀνήρ
ψαλον δ’ ἰππόκομοι κόρυθες λαμπροίσι φάλοισι
γενότομοι, ὡς πυκνοὶ ἐφέστασαν ἀλληλίσιν,
ἐγχεα δὲ πτυσσόντο θεσσείαν ἀπὸ χειρῶν σειάμεν
\end{quote}

“Locking spear by spear, shield against shield at the base, so buckler
leaned on buckler, helmet on helmet, man against man,
and the horse-haired crests along the horns of their shining helmets
touched as they bent their heads, so dense were they formed on each other,
and the spears shaken from their daring hands made a jagged battle line.”\textsuperscript{259}

Passages such as this have led some scholars to assume that Homer is describing an early
form of hoplite warfare.\textsuperscript{260} Though descriptions such as these do occur, they are rare.
Because of their rarity, it could be argued that they are exceptional and therefore not the
normal fighting style expected on the Homeric battlefield. In any case, as Kirk has
argued, drawing up soldiers into lines or ranks does not have to signify an early form of
hoplite battle per se, because gathering soldiers into some kind of formation for battle can
hardly have been unique to hoplite warfare.\textsuperscript{261} Furthermore, Kirk argues that even if
these few passages refer to early hoplite battle tactics, they could be explained as part of a
late development in the oral tradition.\textsuperscript{262}

The important thing to note, however, is that although the two armies in the \textit{Iliad}
may approach battle in a close formation, they do not generally stay in this formation

\textsuperscript{258} Wees 1988, 6.
\textsuperscript{259} For other examples, see 4.422-429, 446-449, 8.60-3, 13.130-5, 16.212-220.
\textsuperscript{260} See Pritchett 1988, 7-32; Bowden 1993, 54.
\textsuperscript{261} Kirk 1962, 187; see also Snodgrass 1965, 113.
\textsuperscript{262} Kirk 1962, 189; see also Murray 1980, 131 who states that the \textit{Iliad} may at times reflect the very
beginning stages in the development of hoplite warfare, but that most of the battles in the \textit{Iliad} represent a
less organized and older form of warfare.
once fighting begins.\textsuperscript{263} Even when the poet states that the two sides clashed, such as in \textit{Iliad} 13.145-151, soon thereafter the formation breaks down. Later in Book 13, an Achaean warrior, Meriones, throws his spear at a Trojan.\textsuperscript{264} He fails to kill his opponent and abruptly leaves the battle to get another spear from the Achaean camp.\textsuperscript{265} If both sides are clashing in “dense battalions” and fighting in consort, can we honestly believe that a warrior would be able to go back to camp and get another spear?

In fact, as Singor argues, a common feature of Homeric warfare is for heroes, whether alone or with their \textit{hetairoi}, to move around freely from one place in the battle to another, and even back to camp or to the city.\textsuperscript{266} Often times a warrior will leave his place in the battle to go to the aid of another, for example in \textit{Iliad} 5.565-570. Here, Antilochos, fearing for Menelaos, “went through the champions” and “stood close beside” him. Warriors can even retreat to camp and then decide where they will reenter battle. An example of this again concerns Meriones, who, while retrieving his spear, stops to converse with Idomeneus. After they discuss how valorous they are, they plan where it would be best for them to fight and eventually decide to rejoin the battle at the left of the army.\textsuperscript{267} According to Singor, the fact that warriors so commonly wander around during battle shows that fighting in strict rank and file is not how war is fought on the Homeric battlefield. When fighting in strict formation, a vital feature of later Greek warfare, individuals or small bands of men are not allowed to break the formation. The army that first broke formation lost the battle.\textsuperscript{268} In order to maintain the formation, the hoplite shield was designed purposefully to keep the soldiers packed close together; each soldier was covered partly by his own shield and partly by the shield of his neighbor.\textsuperscript{269}

\textsuperscript{263} Wees 1994, 3-4.
\textsuperscript{264} Throwing a javelin may seem strange for hoplite warfare, but it seems that in the early stages of development hoplites carried two spears. Presumably one was to throw and the other to thrust; see Murray 1980, 127; Snodgrass 1965, 111-112; Höckmann 1980, E301-302.
\textsuperscript{265} \textit{Iliad} 13.159-168.
\textsuperscript{266} Singor 1995, 191-192.
\textsuperscript{267} \textit{Iliad} 13.307-329.
\textsuperscript{268} Singor 1995, 191-192, 194. For later Greek warfare, see Murray 1980, 126; Ferrill 1997, 102. Also note that often in Homeric warfare one side can flee and then regroup and resume fighting, which is not generally done in hoplite warfare because it would be too difficult to regroup into the phalanx formation; see Wees 1994, 4.
\textsuperscript{269} Murray 1980, 125. This locking shield to shield is called \textit{synapsismos}. Thucydides, in his description of the battle of Mantinea (5.71), explained that it was important to have an interdependence on each soldier’s shield in order to keep the soldiers in formation.
In addition to warriors wandering around the battlefield, Singor argues that another peculiar feature of battle in the *Iliad* is when the armies do break down, they break down into different ethnic contingents. These contingents then break down into separate battle-lines (φάλαγγες or στίχες) that are individually commanded.\(^\text{270}\) Therefore, Singor’s interpretation of Homeric battle resembles that of Wees, i.e. small bands of men fighting more or less separately on the battlefield.

It is within this framework of small groups of men fighting in open formation that Homeric war-chariotry becomes conceivable. In this type of warfare, chariots would have more readily been able to be used fluidly, driving from place to place on the battlefield. Moreover, because the battles in the *Iliad* are never fought with any overall organization, it should be expected that chariots would not be used in any organized manner either. In fact, chariots in the *Iliad* are generally never used *en masse*. Instead, chariots tend to work singly. When a charioteer receives instruction, it is from the individual who owns the chariot, and not from an overall military commander. If a chariot charges, it usually does so alone and generally against an individual warrior on the ground. In these instances, either a javelin is thrown from the chariot, or the warrior on the ground throws his javelin and kills one of the chariot crew.\(^\text{271}\) In essence, the chariot never plays a significant role in combat, which is apparent because no action made by a chariot ever turns the tide of battle. The tactical insignificance of the Homeric chariot largely mirrors what can be determined about Mycenaean war-chariotry, but is in complete contrast to Near Eastern/Egyptian war-chariotry tactics.

It is this lack of organization, or proper chariot formations, that has garnered the most criticism, and has led to the claim that Homeric war-chariotry is nothing more than a perversion of Mycenaean chariot warfare. Kirk, for example, argues that using the chariot singly for transportation, flight and pursuit is not impossible, but this was not the primary purpose of the war-chariot during the Bronze Age, when it was used in massed


\(^{271}\) An interesting point to note is that usually when warriors fight from a chariot they are Trojan. Likewise, when a warrior is killed on a chariot, he is also usually a Trojan. In fact, having a Trojan killed while on his chariot and then falling to the ground is a typical pattern in the *Iliad*, which leaves the impression that Homer considers those who fight from a chariot as weaker warriors; see Luce 1975, 114; Singor 1991, 56.
Snodgrass similarly argues that Homeric war-chariotry is nothing more than incomprehension. He states that using the chariot mainly as a means of transportation fails to “comprehend the fundamental value of the chariot in war: there is no hint of the employment of chariot-born archers.” What both Kirk and Snodgrass fail to recognize is that neither of these two “true uses” of the war-chariot appear to have been practiced by the Mycenaeans because there is no evidence to support such a claim. Therefore, the idea that Homeric war-chariotry is a misunderstood and largely forgotten version of Mycenaean chariot warfare is based solely on the unfounded assumption that the Mycenaeans used the chariot in the same aggressive manner as it was used in the Near East and Egypt.

Nevertheless, scholars claim that there are some remnants of true chariot warfare in the *Iliad*, i.e. passages that may describe chariots fighting as a squadron. Presumably the most explicit passage of “true chariot tactics” is in Book 4, lines 4.303-309:

> “μηδε τις ἰπποσύνη τε καὶ ἴσαρεῖθι πεποιθώς οἰος πρόσθ’ ἄλλων μεμάτω Τείνεσαι μάχεσθαι, μηδ’ ἀναρχείτω ἀλαπαδνότεροι γὰρ ἔσεσθε. ὃς δὲ κ’ ἀνχή ἀπὸ ὁν ὁρχέων ἔτερ’ ἀκμαθ’ ἱκτιται, ἐγχει ὑεξάσθω, ἐπει ἡ πολὺ φέστερον ὁὕτω. ἤδε καὶ οἱ πρῶτεροι πόλεας καὶ τείχες ἐπόρθεον, τόνδε νόον καὶ θυμὸν ἐνί στήθεσιν ἔχοντες.”

> “Let no man in the pride of his horsemanship and his manhood dare to fight alone with the Trojans in front of the rest of us, neither let him give ground, since that way you will be weaker. When a man from his own car encounters the enemy chariots Let him stab with his spear, since this is the stronger fighting. So men before your time sacked tower and city, keeping a spirit like this in their hearts, and like this their purpose.”

The above passage is advice that Nestor gives to his men while they are arraying for battle. Nestor’s advice is for his soldiers to neither enjoin battle too eagerly, nor to flee, but when each man encounters an enemy chariot, to lunge with his spear. Typically, this passage is interpreted as instructions to fight in formation, but this interpretation is

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272 Kirk 1962, 124; see also Finely 1954, 149; Stubbings 1962, 521; Detienne 1968, 313-318; Greenhalgh 1973, 7-18.

273 Snodgrass 1964, 162, 175.
problematic and needs to be considered in more detail.\textsuperscript{274} First, if this passage is to be taken literally, Nestor’s advice then lacks plausibility because armies do not breach walls or destroy cities with chariots; for this siege equipment is needed.\textsuperscript{275} Of course, Homer could have meant “destroyed cities and walls” figuratively. Wees suggests that the whole passage is a figurative expression for the kind of attitude with which his men should approach battle. He argues that in line 304, ἀλλάων could be referring to all of the soldiers arrayed for battle, including the foot soldiers and not just the other chariot warriors.\textsuperscript{276} In that case, Nestor is not ordering his charioteers/warriors to fight together in a separate battalion, but to stay close to the ranks of the whole Achaean army. If Nestor is actually ordering the chariots to stay close to the army, then, according to Wees, Nestor may be telling his warriors not to attack too recklessly or to flee in fear. Furthermore, in the last line of Nestor’s speech, he seems to refer to the mentality of past soldiers, which reinforces the idea that Nestor is speaking of the proper attitude for battle rather than battle tactics.\textsuperscript{277}

Whether Wees is correct in his interpretation is impossible to determine. The more interesting aspect of Nestor’s advice is that it is not followed, not only in the ensuing battle, but also in the whole of the \textit{Iliad}. Subsequently, this passage is the only place in the \textit{Iliad} that shows any possible familiarity with arraying chariots into lines, and fighting with them as an actual battalion. The fact that this advice is not followed, and that this is the only passage that seems to describe a proper chariot formation led Kirk to believe that this passage should not be taken too literally. His reasoning for this is that if there were any true remnants of Mycenaean chariot tactics that were incorporated into the oral tradition, such a consistent misunderstanding of chariot tactics would never have developed.\textsuperscript{278}

Another possible reference to a massed chariot formation comes in Book 11, lines 150-151:

\[ \text{πεσοὶ μὲν πεςοὺς ἀλέκον φεύγοντας ἀνάγκη, ἰππεῖς δ' ἰππήγας} \]

\textsuperscript{274} Kirk 1962, 124; Greenhalgh 1973, 1-9; Wiesner 1968, F26-27.
\textsuperscript{275} Littauer and Crouwel 1983, 191; see also Luce 1975, 116; Dickinson 1999, 23.
\textsuperscript{276} Wees 1994, 12. Nestor, in lines 4.297-8, placed the foot soldiers behind those with chariots.
\textsuperscript{277} Wees 1994, 13.
\textsuperscript{278} Kirk 1962, 123-124; see also Lorimer 1950, 324; Greenhalgh 1973, 9-12.
and footmen killed footmen who fled under strong compulsion, and riders (charioteers) killed riders (charioteers).\textsuperscript{279}

This passage could be interpreted as a chariot clash, and if it is, this is the only allusion to one. These lines are problematic, however, because in some manuscripts the word for charioteer is $\textit{îππεκ '/../}, which is an unusual Homeric plural form. As a result, these lines have been interpreted as an interpolation, and $\textit{îππεκ '/../}$ has been interpreted to mean cavalry and not charioteers.\textsuperscript{280} Regardless of this, the poet is not very specific in his description of the fighting that occurs in these lines. How are the chariot warriors fighting? What weapons are they using? Because these lines are so general, it is impossible to tell if Homer is actually describing a clash of chariots.

Book 15 presents a scenario that could be viewed as a massed charge. In this case, the Trojans, led by Apollo, pursue the Greeks as they flee to their ships.\textsuperscript{281} Although this is the closest resemblance to a massed attack executed by chariots, this attack does not constitute an organized maneuver made by a chariot squadron.\textsuperscript{282} Instead, those who have chariots are rallied by Hektor to follow the Greeks so that they may resume fighting at the Greek camp. After the Trojans breach the barricades, with the help of Apollo, the fight proceeds, but the Greeks fight from their ships and the Trojans fight $\dot{\alpha}φ' \textit{îππονь}$.\textsuperscript{283} Although Homer states that the Trojans are fighting from their chariots, he does not specifically describe how they are fighting from them. Instead, Homer describes the long pikes used by the Achaeans while fighting from the ships. A group of chariots may be charging at the same time in this passage, but they do not move \textit{en masse} or perform an organized maneuver. There is therefore, a consistent pattern of warfare throughout the \textit{Iliad}. There may be masses of foot soldiers, but they do not fight in an organized formation. Likewise, there may be a mass of chariots, but these do not fight

\textsuperscript{279} It should be noted that $\textit{îππεκ '} can be translated as either “rider,” “charioteer,” or “chariot warrior.”

\textsuperscript{280} Lorimer 1950, 325; Snodgrass 1964, 175. Compare with Hainsworth 1993, who interprets these lines with a literal translation and argues that there is no reason to assume that they are referring to cavalry and not chariots. Wees 1994, 13 interprets $\textit{îππεκ '} as referring to the rank of the warriors rather than a chariot/cavalry confrontation.

\textsuperscript{281} \textit{Iliad} 15.352-386 Interestingly, when there is a chariot charge, it is carried out by the Trojans; see also 11.284-290.

\textsuperscript{282} Wees 1994, 13.

\textsuperscript{283} See \textit{Iliad} 15.386.
together as a squadron. Chariots are never used in the *Iliad* as a shock force to break the battle lines of foot-soldiers, nor do they clash with the opposing chariot force.

This disorganized, seemingly impractical tactical role that chariots play in the *Iliad* makes sense for a society such as that represented in the *Iliad*, which is potentially representative of Dark Age society, because it is not a chariot power. Chariot powers, such as Egypt or Assyria, are characterized by the possession of large quantities of chariots. Likewise, chariot powers had a complex bureaucratic system that largely controlled the production and distribution of chariots, horses and all of the related military equipment. Accordingly, a complex military hierarchy commanded their chariot battalions. An example of this can be found in the Egyptian military. The pharaoh acted as the commander-in-chief of the whole military, immediately under him was the Minister of War, and an army council. The two major combat arms of the Egyptian military were the chariot corps and the infantry. The chariot corps was divided into squadrons of 25, each of which was commanded by a “charioteer of the residence.” In battle, some squadrons were deployed at the beginning, while others were kept in reserve to use as an attack force if the opposing army gave ground or to use as a rescue force if something went wrong.

In complete contrast, the Homeric military, though it appears to have a central authority, such as Agamemnon or Hektor, is not divided into separate regiments and chariot squadrons that are deployed at precise moments. Instead, Homeric warfare appears to be more of a chaotic free for all, during which chariots are used on an individual basis, probably because they are individually owned. The private ownership of chariots largely explains why chariots are not used as a consolidated force in the *Iliad*. Generally, the warrior who owns the chariot dictates to the charioteer where to drive, when to charge, and when to stay close by in case the chariot is needed for a quick escape. The individual ownership/control of chariots in the *Iliad* would be

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284 See Cassin 1968, 300 who argues that sustaining large chariot forces required a complex technology that depended on the collaboration of various types of craftsmen and a bureaucratic administration to collect all of the materials needed and to control the production of chariots. See also Ferrill 1997, 71-73 and Gabriel and Metz 1991, 77 who describe Assyrian horse recruiters who wrote to the king on a daily basis concerning the collection of horses from the provinces. Although the above definition of a chariot power would also apply to Mycenaean society, as shown in chapter III, there is no evidence to support that their chariot corps was used extensively on the battlefield.


286 Wees 1994, 10-11.
appropriate to a society that existed during the Greek Dark Age, because the political environment was not palatial and the communities were impoverished. Consequently, those who could afford chariots were probably the wealthy, who may not have needed, nor been able to afford a large chariot squadron.

Furthermore, in the *Iliad* the chariot serves as a status symbol, a role that was perhaps as important as its being a war-vehicle. Its importance as a status symbol would be all the greater in an impoverished society where few could afford such a luxury. According to Qviller, the power of Homeric “kingship” was largely dependent on the display of wealth and on military prowess.\(^{287}\) Wealth was important for attracting followers and for gift giving, a process through which the Homeric “kings” formed their alliances. Military prowess was important for either acquiring the wealth through raids, or protecting the people of the community or the *oikos* of the leader.\(^{288}\) According to Whitley, the type of power structure that Homer represents is consistent with what he calls an “unstable community.” As such, he dates this power system, or big-man system, to the eleventh and tenth centuries, and places it at sites such as Lefkandi, that were short-lived communities.\(^{289}\) If we accept the possibility that Dark Age society in Greece is similar to the political dynamic related in the *Iliad*, then we may assume that the display of wealth and military prowess was in reality also important in the Dark Age.\(^{290}\)

Although scholars such as Qviller claim that the advertisement of wealth is mainly achieved through feasting and gift giving, it seems that owning a chariot could also fulfill such a need. The importance of a chariot as a status symbol is exemplified by Nestor’s story about the Pylian war with the Epeians.\(^{291}\) Nestor had to go to battle on foot because his father hid his chariot and horses in a vain attempt to keep Nestor from going to battle.

\(^{287}\) Qviller 1981, 115-120 states that the *basileus*, or king, in the *Iliad* is characteristic of a “big-man” type power structure that is developing into a chieftain power structure; see also Whitley 1991, 347-351.

\(^{288}\) Qviller 1981, 115-134; see also Donlan 1989, 25.

\(^{289}\) Whitley 1991, 347-351. Other unstable sites that Whitley lists are Kavousi, Vronda; and Nichoria. It should be noted that Whitley does not think that there was one type of power structure during the Dark Age. He claims that “stable communities” would not have had this “big-man” type of society. Sites that he claims were stable are Athens, Knossos and Argos.

\(^{290}\) Donlan, 1985, 302-303; 1989, 25 argues that the *basileis* represented in the *Iliad*, who had a power base centered in their *oikos* which included kin and retainers (*therapon*), are probably consistent with the power structure that existed in the ninth- and early eighth-centuries. Snodgrass 1974, 114-25 sees the political hierarchy in the *Iliad* as unrepresentative of anything that may have existed in the Dark Age.

\(^{291}\) See *Iliad* 11.717-21, 737-44.
When arriving to battle, Nestor made it his priority to capture a chariot immediately, so that he could be among the ranks of those who had a chariot.

Chariot teams were clearly considered a precious commodity in the *Iliad*, which can be demonstrated by the fact that often when either the charioteer or his commander is killed, the body is left on the battlefield in order to remove the horses from any danger. Leaving behind the corpse of a companion is interesting in light of the fact that often when a man dies in the *Iliad* those around him either exact vengeance on the killer or defend the body. The horses, accordingly, seem to take precedence over the responsibilities to the dead. Moreover, when someone is killed who owns a chariot, his chariot and horses are taken as booty whenever possible. The expense of having a chariot, then, can also explain why the Homeric warriors do not use their chariots more actively on the battlefield. They simply could not afford to lose such a precious commodity, so they had to use their chariots cautiously.

The above analysis shows that the use of chariots that Homer presents is consistent throughout his epic, but this still leaves the question of whether or not using chariots in such a way was viable in the real world. Anderson argues that Homer presented a feasible way to use chariots in warfare because there are historical examples of chariots being used in a similar manner. Although his examples post-date the *Iliad* by many centuries and are not exactly comparable, Anderson shows that it was possible to practice chariot warfare in a manner that has been deemed by modern scholars as impractical. Most importantly, Anderson shows that there was not one proper way to use chariots for warfare.

Anderson’s most convincing comparison to Homeric war-chariotry concerns British Celtic war-chariotry for which he refers to Caesar’s *De Bello Gallico*:

“The manner of fighting from the chariot is this. First they drive about in all quarters and hurl javelins and, by mere terror of their horses and whirling wheels, generally throw the ranks into confusion, and, when they have infiltrated among the cavalry squadrons, they jump down from their chariots and fight on foot. Meanwhile the

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293 Wees 1994, 10.
294 See *Iliad* 5.25-26, 5.165, 323-324, 11.736-743, 13.400-401. See Stagakis 1985, 129-152 who argues that even though only the ἐπιτιάθει are mentioned in these scenes, the poet actually means both the horses and chariot.
charioteers gradually withdraw from the battle and so station their chariots that if the warriors are overwhelmed by the numbers of the enemy then they have a ready means of retreat to their own forces.\(^{296}\)

Although this description of Celtic chariotry is not an exact parallel to that of Homer, there are some striking similarities. Most importantly, there is the similarity of the Celts only using their chariots for a short while in the battle, and then jumping down and fighting the majority of the battle on foot. There is also the similarity of the chariots standing close by to take the warriors away from the battle if needed. Contrary to Homeric descriptions of battle, the Celts do seem to have used their chariots as a shock force at the beginning of the battle, but not necessarily as a full-fledged squadron, charging at the enemy in a strict formation. Instead, the Celts “drive about in all quarters” of the battlefield, apparently using disorganization to their advantage by purposefully causing confusion among the enemy ranks. As Anderson argues, Celtic war-chariotry demonstrates that it was possible for people to use chariots in battle on a limited scale and not necessarily in an organized formation. Moreover, Anderson states, Celtic tactics show that using the chariot on a limited scale was proper for those who could not afford chariot squadrons as large as those owned by the Near Eastern and Egyptian, or even Mycenaean, chariot powers.\(^{297}\)

Furthermore, Anderson argues that when we consider the Geometric pictorial evidence for chariot warfare together with the Homeric evidence, Dark Age war-chariotry becomes clearer. In Geometric vase painting, chariots are rarely shown in the foray of battle; in fact, there are only three vases that show the chariot immediately involved in the fighting.\(^{298}\) Two of these examples show only a warrior struck and falling from the chariot (fig. 33). The third example is the only depiction that shows a weapon, probably

\(^{296}\) 4.33; translation taken from Anderson 1965, 349. It should be noted that Anderson also refers to Gallic war-chariotry as well as Cyrenaic war-chariotry. These two examples are problematic, however, because the sources from which Anderson draws were second-hand accounts and may have been intended to make Homeric parallels; for Gauls see Anderson 1965, 350; for Cyrene, see Anderson 1965, 352, 1975, 175-177. See also W.F. and J.N.G. Ritchie 1985, 31-34; 1995, 42 for Celtic war-chariotry.

\(^{297}\) Anderson 1965, 350.

\(^{298}\) Anderson 1965, 351; Ahlberg 1971, 16-18, 41. Although it is difficult to see the chariot in Figure 33, Ahlberg claims that the structure to the right of the falling figure is most likely a chariot because the outline probably represents the side rail, below which there appears to be decoration possibly indicating the side covering.
a javelin, being used from a chariot (fig. 34). Significantly, the bow is never associated with the chariot in Geometric art. When the bow is shown being used, the archer is standing on the ground. Aside from these three vases, other war scenes in Geometric art typically show chariots driving to or fleeing from the battle, without actually taking part in the battle. One such example is the Aktorione oinochoe (fig. 3). Although it is unclear in this example if the twins are mounting or dismounting from the chariot, they are clearly not fighting from the chariot.

Therefore, the pictorial evidence of chariots seems to confirm that the use of chariots in the *Iliad* is based on reality. Generally, however, these Geometric battle scenes are considered a product of the same epic tradition as the *Iliad*, and are consequently dismissed as pure fantasy. Yet, this suggestion presupposes that there was only one epic tradition circulating Greece in the late eighth-century, which is surely not the case. If the Homeric fighting style represents the only epic version of warfare, how does one explain the prevalence of archers in Geometric war scenes? The bow is the second most common weapon used in Geometric land and sea battles. In the *Iliad*, however, the bow plays a rather unimportant role and is generally considered by Homeric warriors as a weapon of a second-class fighter. Clearly, the Geometric vase painters were inspired by sources other than the *Iliad* for their war scenes. In addition, as Anderson argues, it appears that the Geometric vase painters chose to depict stories that are outside of the Trojan war cycle. One example is the scene with the Aktorione twins mentioned above. These twins are only briefly mentioned in the *Iliad*, so another epic probably inspired their depiction. According to Snodgrass, that this vase scene of the Aktorione represents a non-Homeric version of their story is very likely because this...

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299 The problem with this scene is that it is quite late (Subgeometric) and the warrior is aiming his spear, but there is no immediate enemy; see Ahlberg 1971, 55. Snodgrass 1967, 161 sees this scene as the only Geometric scene of fighting from a chariot.
300 Ahlberg 1971, 41.
302 Ahlberg 1971, 48, 53.
303 See *Iliad* 11.390. Diomedes, struck in the foot by Paris’ arrow says, “this [bow] is the blank weapon of a useless man, no fighter.”
scene does not match the events recounted in the *Iliad*. Most importantly, Homer never explicitly states that these twins are Siamese twins, he only refers to them as twins. Yet, in this scene these figures appear to be adjoined because they share a single shield and the ends of their helmets connect. Moreover, according to Nestor’s account of the Pylian and Epeian conflict, Nestor faced the Aktorione alone, but in this scene two warriors are attacking the twins. Likewise, in Nestor’s account the twins escape in a divine mist, but in this scene, if they in fact are trying to escape, they flee in a chariot. It is, therefore, likely that another epic or legend inspired this scene. Nonetheless, it is noteworthy that these twins fight in the Homeric style; that is, they are not fighting from their chariot. The possibility that this scene is based on a story from a non-Homeric epic implies that more than one bard simultaneously devised the same unrealistic chariot tactics, which is highly unlikely. It seems much more reasonable to assume that the use of the chariot as represented by both Homeric and Geometric scenes has some historical validity.

One proposal that has been put forth to explain Homeric war-chariotry still needs to be considered because it might actually help determine how chariots may have been used during the Dark Age. Both Delebecque and Greenhalgh have suggested, independently, that all war-chariots in the *Iliad* should actually be interpreted as mounted war-horses. According to this suggestion, Homer had no knowledge of war-chariots, but knew that the Mycenaeans used chariots. As a result, Homer substituted chariots for horses in order to give the poem a heroic character. Homer, therefore, used chariots the same way as he used bronze throughout the *Iliad*, as a means to archaize the poem.

According to Delebecque, despite the fact that Homer seems to possess an extensive technical vocabulary for the structure of chariots, his tactical vocabulary for chariots is limited. In addition, Homer is inconsistent in his treatment of the chariot in such a way

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305 Snodgrass 1998, 30-31. It should be noted that Snodgrass does not think that Homeric or Geometric chariot tactics are real.
306 See *Iliad* 11.709-10, 23.638. The oldest reference to the Aktorione/Molione twins that describes them as being Siamese is *The Catalogue of Women*, which is attributed to Hesiod; see Snodgrass 1998, 28.
308 Anderson 1965, 351. See also Lorimer 1950, 323 who states, “Of Geometric battle-scenes we have enough to show that that warfare was conducted in the same desultory manner described by Homer.”
310 Delebecque 1951, 90-91.
that any action executed by a chariot in battle could be better explained if we view the warriors as being on horseback.\textsuperscript{311} One such example that Delebecque notes is that some of the warriors in the \textit{Iliad} seem to think that they can jump the ditch around the Achaean camp with their chariots. In Book 8, Hector boasts that his horses will jump the ditch.\textsuperscript{312} In Book 16, Patroklos actually does jump it with his chariot.\textsuperscript{313} Delebecque admits that jumping a large ditch, particularly one with stakes in it, such as this one, would be next to impossible for a ridden horse to do, but would be manifestly impossible for a chariot to achieve. The important thing, according to Delebecque, is that Homer treats chariots as if they would be capable of jumping a ditch.\textsuperscript{314}

Greenhalgh builds on Delebecque’s idea that chariots in the \textit{Iliad} are actually suppressed war-horses in order to support his own theory concerning what he calls “mounted hoplites.” According to Greenhalgh, these mounted warriors would have ridden to battle in pairs, each on his own horse. One of them would have dismounted to fight and the other, a squire, would have stayed back and held the horses. The squire would have kept the warrior’s horse nearby in case he needed to mount quickly to get away.\textsuperscript{315} Therefore, according to Greenhalgh, Homer took this pairing of squire and mounted warrior and placed them in a chariot.\textsuperscript{316} Greenhalgh concludes that, because of a horse’s greater mobility, the use of the chariot on the Homeric battlefield would have been more easily achieved with a horse.\textsuperscript{317}

The idea that Homer used mounted war-horses as his inspiration to create a fantastical use of war-chariots, presents an interesting idea, but not for the same reason that Delebecque and Greenhalgh intended. Before explaining this comment, we need to discount the suggestion that chariots should actually be understood as war-horses throughout the \textit{Iliad}. To begin with, the example that Delebecque presents concerning chariots jumping the ditch built around the Achaean camp is not as problematic as it

\begin{itemize}
\item Delebecque 1951, 85-87.
\item \textit{Iliad} 8.179.
\item \textit{Iliad} 16.380.
\item Delebecque 1951, 77-78, 106-107; see also Greenhalgh 1973, 54.
\item Greenhalgh 1973, 57-62; see also Ferrill 1997, 99. The “mounted hoplite” theory was actually first devised by Helbig in his “Les i\textsuperscript{J}ppei’~ Athéniens,” in \textit{Mémoires de l’Institut National de France}, 1904.
\item Greenhalgh 1973, 42.
\item Greenhalgh 1973, 61.
\end{itemize}
might seem and it does not prove that Homer had no knowledge of war-chariotry. Delebecque himself noted the difficulty of jumping while riding a horse over a wide ditch such the one described in Book 7.\(^{318}\) Moreover, although Hector claims that he will leap across the ditch in his chariot, he chooses to drive along the edge instead.\(^{319}\) Therefore, his boasting should be taken more as bravado than an actual threat. As for Patroklos’ chariot making it over the ditch, this can be explained by the fact that his horses were immortal.\(^{320}\) Regardless of this, Delebecque acknowledges that Homer had knowledge of chariots because of the extensive technical vocabulary he uses to describe them. If this truly is the case and even if Homer only had experience with racing-chariots, could we not assume that he still would have known that a chariot is not likely to be able to jump a ditch?

Furthermore, interpreting chariots throughout the *Iliad* as “mounted hoplites” with their squires is problematic. The main difficulty is how to follow through with this interpretation when a warrior is put out of action because his charioteer is killed. One example of this is in Book 8 when Hector loses his charioteer Eniopeus. In this passage, the Trojans are pursuing the Greeks fleeing back to their ships. Diomedes, with Nestor in his chariot, throws his spear at Hector in an attempt to ward off him. Diomedes hits Eniopeus instead, however, and Hector immediately goes to find another charioteer so that he can resume fighting.\(^{321}\) If Eniopeus is not driving a chariot, but is riding his own horse beside Hector, then Hector could have continued to fight. Another example is in Book 17. After Patroklos is killed, Automedon, Patroklos’ charioteer, begins charging through the ranks of the Trojans. He is unable to kill any of the Trojans, however, because, “he had no way while he was alone in a separate chariot to lunge with the spear and still keep in hand his fast running horses.”\(^{322}\) If, on the other hand, Automedon had been a mounted squire of Patroklos then he probably would not have had a problem killing anyone.

\(^{318}\) See *Iliad* 7.440-441, 12.50-59; Delebecque 1951, 77-78, 106-107; Anderson 1975, 180-181.
\(^{319}\) *Iliad* 8.349; see also 12.50-52: “but now the fast-footed horses balked at the edge of the lip, and dared not cross, whinnying loud since the ditch in its great width frightened them from it.”
\(^{320}\) *Iliad* 16.380-381.
\(^{321}\) *Iliad* 8.118-129.
\(^{322}\) *Iliad* 17.464-465; see Anderson 1975, 179.
It is, therefore, unlikely that chariots take the place of war-horses in the *Iliad*. Yet, this does not mean that Greenhalgh’s theory about the “mounted hoplites” should not be explored further. There is evidence, as Greenhalgh points out, for these mounted warriors in vase painting dating to the seventh and sixth centuries. One particularly interesting depiction is on an early Corinthian vase dating to the late seventh century (fig. 35). Here, a warrior, who has already dismounted, follows behind his unarmed “squire” who directs both of the horses. An interesting aspect of this scene is that both of these figures are labeled. The warrior is identified as a *hippobatas*, a horseman, and his squire is identified as a *hippostrophos*, a horse guide.323

The majority of depictions of “mounted hoplites” date to the sixth century, which is problematic for Greenhalgh’s assertion that they superseded chariots in the Dark Age. There is, in fact, no clear depiction of a mounted warrior and his squire that predates the seventh century.324 It is true that prior to the seventh century there are depictions of armed riders, but they are normally alone or in the midst of chariots and not accompanied by a mounted squire. In any case, depictions of armed riders also do not automatically negate the possibility that chariots were used for war during the Dark Age. This evidence shows only that the Greeks had knowledge of riding, which is not unexpected for a culture that used horses.325

The idea of mounted hoplites is an interesting proposition because it may help demonstrate that the chariot was in fact used primarily as a transport vehicle.326 Greenhalgh, as stated above, postulated that mounted hoplites rode to battle only to jump off the horse and fight on the ground. That they never fought from their horses is reinforced by the fact that vase paintings never depict these mounted warriors actually fighting from their horses. As a result, Anderson points to this period of mounted hoplites as a time when chariots were primarily used for transport.

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324 There is one example on a neck-amphora presently in Buffalo that Crouwel argues may be a mounted hoplite because the figure is a warrior (he holds a spear and seems to have on a corselet) and has a second horse. Crouwel argues that the second rider, the squire, was intentionally omitted by the artist, see 1992, 59. For the opposite view, see Wiesner 1968, F119, 120, and Rombos 1988, 171 who suggest that this warrior would have fought on horseback.
325 There are depictions, for example, of riders alongside chariots in Egyptian Art; see Littauer 1977, 364. There are also Mycenaean vase depictions and figurines of riders; see Crouwel 1981, plates 42 and 80.
326 That mounted hoplites existed can be supported by the fact that the depictions of them are most likely not founded in epic; see Anderson 1965, 351.
warfare in Greece as a transitional stage in the development to full cavalry.\textsuperscript{327} According to Anderson, as part of the transition, the Greeks transferred their use of the chariot to horses, thus explaining why the mounted warrior did not fight from the horse and had a squire to hold the horse back and out of danger. Interestingly, the Assyrians, while they were making the transition from chariots to mounted warfare, developed their cavalry in a similar way. They directly translated their chariot crews to horseback, where a squire accompanied the archer. The squire, who rode on his own horse, controlled the reins of both his horse and the horse of the archer while the archer shot arrows at the enemy.\textsuperscript{328} Therefore, the Assyrian chariot fighting style persisted, but on horseback.

If we accept the possibility that mounted hoplites and squires existed and used their horses primarily for transportation to battle, then it is reasonable to assume that the chariot was used in a similar way. If the Greeks did not, at first, use the war-horse to its full potential, why should we assume that they would not have been willing to do the same with the chariot? Furthermore, because there is not any evidence to support the existence of mounted hoplites during the Dark Age, it seems probable that chariots would have been used up to the point when mounted hoplites first appear in the visual arts. Finally, the mounted hoplite theory establishes a continuum of use that begins in the Bronze Age, during which time the peoples of Greece began to use the war-chariot primarily for transportation and continued to do so until people began to go to war on horseback.

\textsuperscript{327} Anderson 1965, 351; see also Larsen 1968, 106. It should be noted that the date for the development of cavalry in Greece is highly disputed. This seems to be mainly due to the uncertainty of how ‘cavalry’ should be defined; for a discussion of the various theories, see Worley 1994, 1-58 especially 1-6.

\textsuperscript{328} Littauer 1977, 364; Littauer and Crouwel 1979, 134-139; Worley 1994, 32.
CHAPTER V
CONCLUSION

The purpose of this thesis was to argue that chariots existed and were still used for warfare during the Greek Dark Age. In order to make this argument, chariot-related evidence dating to the Greek Bronze Age, Dark Age, and eighth-century had to be considered. In doing so, it became clear that there is a consistency in the types of physical evidence remaining in the archaeological record. Likewise, there is a consistency in the design of the chariot, and there is a consistency in the way the chariot was used for battle. Although these similarities are not always accepted as definitive evidence for the military use of chariots during the Dark Age, I argued that the only plausible explanation for these similarities is that the peoples of that time still used chariots for warfare.

Because no chariot has survived in Greece, the physical evidence for chariots is limited. The only chariot-related artifacts that have survived are paired horse burials and bits, and evidence for roads. The problem with the evidence that has been recovered is that none of it is conclusively indicative of chariots. The existence of roads, though helpful, is not absolute evidence for chariots because all wheeled traffic would have benefited from the smooth, level surface that they provided. Likewise, the presence of horse burials and horse bits only clearly shows that the Mycenaeans and early Iron Age Greeks used domesticated horses. As a result, scholars have had to use textual and pictorial evidence in order to corroborate the existence of chariots in Greece. There is not, however, either a pictorial or written record of chariots that dates to the Dark Age, leading scholars to assume that chariots did not exist, or at least not in any great quantity, after the fall of the Mycenaean palaces. Two significant points, however, arise from an analysis of chariot-related artifacts in Bronze Age and early Iron Age Greece that may counter the problem of the dearth of pictorial or textual evidence for chariots dating to the
Dark Age. First, aside from the roads, both periods have yielded the same types of physical evidence. Second, both periods have produced relatively few chariot-related artifacts. The significance of these two points is that, because certain artifacts dating to the Bronze Age are interpreted as chariot-related, it may be reasonable to assume that the same types of artifacts dating to the Dark Age also represent chariot use. Also, because the Bronze Age has yielded so few chariot-related objects, even though Linear B texts indicate that the palaces owned large numbers of chariots, the amount of objects found clearly does not signify the number of chariots in use at any given time. This is not to say that there were hundreds or thousands of chariots in use during the Dark Age, but that it is possible that there were many more chariots than the Dark Age evidence would seem to indicate.

The position that chariots were more widely used during the Dark Age than previously thought can be reinforced by the pictorial evidence of chariots that appears during the eighth-century. When the chariot reemerges in the pictorial record in the eighth-century, the first depictions show a chariot that closely resembles the last chariot pictured in Mycenaean art. Because of this, it seems that the Mycenaean rail chariot was manufactured and used throughout the Greek Dark Age. The rail chariot was eventually given an updated box design and a new traction system, creating a new type of chariot called the high-front chariot. In order to dispel any notion that the chariot was reintroduced during the eighth-century into Greece from the Near East, it is important to survey the independent features of the Aegean chariot design. These indigenous design features began with the four-spoked wheel. After the fifteenth century, the Near East and Egypt dropped their four-spoked design in favor of six or eight spokes. The Mycenaean, however, continued to use four-spoked wheels, a feature that remained constant through the eight century. The Mycenaean, unlike their contemporaries, did not use a full rear axle, and eventually in the eighth-century the Greeks moved to a central axle. A central axle was never used in the Near East or Egypt. Finally, and most importantly, the Mycenaean traction system was unique to Greece. In the eighth-century, the Greeks also developed a traction system that differed greatly from the systems used by their contemporaries. The traction system used during the eighth-century used a dorsal yoke instead of a neck yoke. Clearly, the development of the chariot’s design in Greece, from
the Bronze Age through the eighth-century, was independent of other chariot powers. The only explanation for why the Geometric chariots are so directly related to their Bronze Age predecessors is that chariots were used during the Dark Age.

Establishing the existence of chariots during the Dark Age, however, does not determine how they may have been used. The fact that some of the Dark Age horse and horse bit burials also included weapons suggests that these chariots had a military function. In order to speculate what that military function could be it was important to discuss how the Mycenaeans may have used the chariot during battle. An analysis of the Mycenaean evidence, although fragmentary and controversial, shows that the war-chariot was not used as a firing platform for archers. First, the bow is never shown in connection with a chariot in a war scene. Likewise, there is no indication from the Linear B records that the bow was used with the chariot. The fact that the bow was not a chariot weapon is fundamental because it was the most commonly used weapon among the Near Eastern and Egyptian chariot powers. The weapon that is consistently shown with the chariot in Mycenaean war scenes is the thrusting spear, but it is never indisputably shown being used from the chariot. Instead, when fighting is shown in Mycenaean art, typically the warriors are fighting on foot, which leads to the next consistent feature of Mycenaean chariot warfare. The chariot is almost never actually shown engaged in battle. More frequently, chariots are depicted in war preparation scenes or transporting soldiers to battle. Only the grave stelae from Mycenae possibly show a chariot involved in the fighting, though these scenes are dubious. The stelae scenes depict one person manning the chariot and charging after a foot soldier, but no actual fighting is shown.

Fighting from chariots is rare in the Iliad and in Geometric vase scenes as well. When it does occur, javelins, never the bow, are used. In these cases, the javelins are quickly hurled at the enemy who is usually on foot. More frequently, the Homeric warriors dismount from their chariots to fight, and their chariots are held aside for either a quick retreat or for transport to another part of the battlefield. Organized mass charges never occur in the Iliad, and when a single chariot charges it is usually in pursuit of the fleeing enemy.

The similarities between the Mycenaean use of the chariot and Homeric portrayals are striking. In both cases, the chariot functions as a transport vehicle. No
organized massed chariot charge is ever shown or described, and chariot squadrons never clash with one another. If the chariot appears to be used in the battle at all, it is against a foot soldier. The bow is never used with the chariot; instead, some type of spear is the common chariot weapon. The similarities between the Homeric and Mycenaean portrayals of Greek war-chariotry provide convincing evidence that the chariot was used for warfare during the Dark Age because they represent a clear continuation of use from the Mycenaean period to the eighth-century.

Still, many scholars disagree, because the idea that the Mycenaeans and the early Iron Age Greeks did not fight extensively from their chariots has been considered unlikely. The reason for this is that the chariot powers of the Near East and Egypt appeared to have used their chariots in massed attack and as firing platforms for archers. Scholars have regarded these uses as the only proper ways to use chariots on the battlefield, and have concluded that the Greeks must have used their chariots in the same way. Too often scholars have tried to force the Mycenaean evidence for chariot warfare to conform to this picture of proper chariot tactics, regardless of the fact that there is no evidence to support this theory. Likewise, the Homeric evidence has frequently been dismissed as poetic fantasy because it does not reflect Near Eastern and Egyptian chariot warfare tactics. What scholars too often disregard is that, despite the fact that there is no pictorial or textual evidence for chariots in the Dark Age, there is a continuation in the way chariots were used in Greek warfare. This continuation is even more remarkable in light of the fact that the war-chariot was used so differently from the way it was used in the Near East and Egypt.

It is, therefore, clear that to understand fully Greek war-chariotry, it is important that all of the evidence from the Bronze Age through the eighth-century be studied together. If the evidence is fragmented into different time periods, then it is easy to consider the information as fallacious or misconstrued. But when all of the evidence for Greek war-chariotry is studied diachronically, a complete and consistent picture of both the Greek chariot’s deign and its military use from the Bronze Age to the eighth-century is formed. In addition, the only way to explain the fact that the Mycenaean chariot and the first Geometric chariot are the same is to accept that the chariot was used throughout the Dark Age. Likewise, the most probable explanation for why Mycenaean chariot
warfare correlates to Homeric chariot warfare is that the peoples of the Dark Age also used their chariots for war.
Figure 1. Grave Stele V, Grave Circle A, Mycenae, ca. 1600-1500 B.C.E.

Figure 2. Detail from the Hirschfeld Krater, Attic Late Geometric, eighth-century B.C.E.
Figure 3. Detail from the “Aktorione Vase,” Attic Late Geometric oinochoe, ca. 700 B.C.E.

Figure 4. Sardonyx Seal, Vapheio, ca. 1500 B.C.E.
Figure 5. Aegean traction system, fragment from the “Megaron Frieze,” Mycenae, LH IIIB.2: A. Draft Pole, B. Pole Stay, C. Pole Brace

Figure 6. Reconstruction of the Aegean traction system: A. Draft Pole, B. Pole Stay, C. Pole Brace
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Figure 8. Dual chariot, detail from the “Boar Hunt Fresco,” Tiryns, LH IIIB:2
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Figure 11. Rail chariot, fragments from a krater, Tiryns, from the ‘Unterberg,’ LH IIIC

Figure 12. Detail of a rail chariot showing the Aegean traction system, Tiryns, LH IIIC
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Figure 14. Geometric rail chariot, fragment from a belly-handled amphora, Attic Late Geometric, eighth-century B.C.E.: A. Pole-end Support

Figure 15. Geometric rail chariot, bronze figurine, Olympia, eighth-century B.C.E.
Figure 16. Geometric rail chariot, bronze figurine, Olympia, eighth-century B.C.E.

Figure 17. Detail of the eighth-century traction system, high-front chariot, early Protoattic amphora, eighth-century B.C.E.
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b. Gold seal, Shaft Grave III, Grave Circle A, Mycenae, ca. 1600-1500 B.C.E.

Figure 23. Reconstruction drawing of Grave Stele IV, Grave Circle A, Mycenae, ca. 1600-1500 B.C.E.
Figure 24. Reconstruction drawing of Grave Stele I, Grave Circle A, Mycenae, ca. 1600-1500 B.C.E.

Figure 25. Detail of Ramses fighting from a chariot, Ramesseum, Egyptian Thebes, ca. thirteenth-century B.C.E.
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Figure 27. Fragments and reconstruction of a charioteer from the “Megaron Frieze,” Mycenae, LH IIIB
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Figure 35. Detail of a vase depicting a “mounted hoplite,” and his squire, early Corinthian, late seventh-century B.C.E.
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BIOGRAPHICAL SKETCH

Carolyn Nicole Conter was born on April 14, 1976, in Milwaukee, Wisconsin. She moved to Tampa, Florida in 1982 and graduated from the Academy of the Holy Names High School in 1994.

She then attended Florida State University from 1994 to 1998, where she graduated Cum Laude with a B.A. in Art History and Classical Civilizations. After a brief hiatus, she returned to school in 1999 and began her graduate work in the Department of Classics at Florida State University.

As a Master’s candidate, she pursued a degree in Classical Archaeology. In the summers of 2000 and 2002, she participated in the excavations at Poggio delle Civitelle in San Venanzo, Italy, under the direction of Dr. Nancy de Grummond and Dr. Claudio Bizzari.