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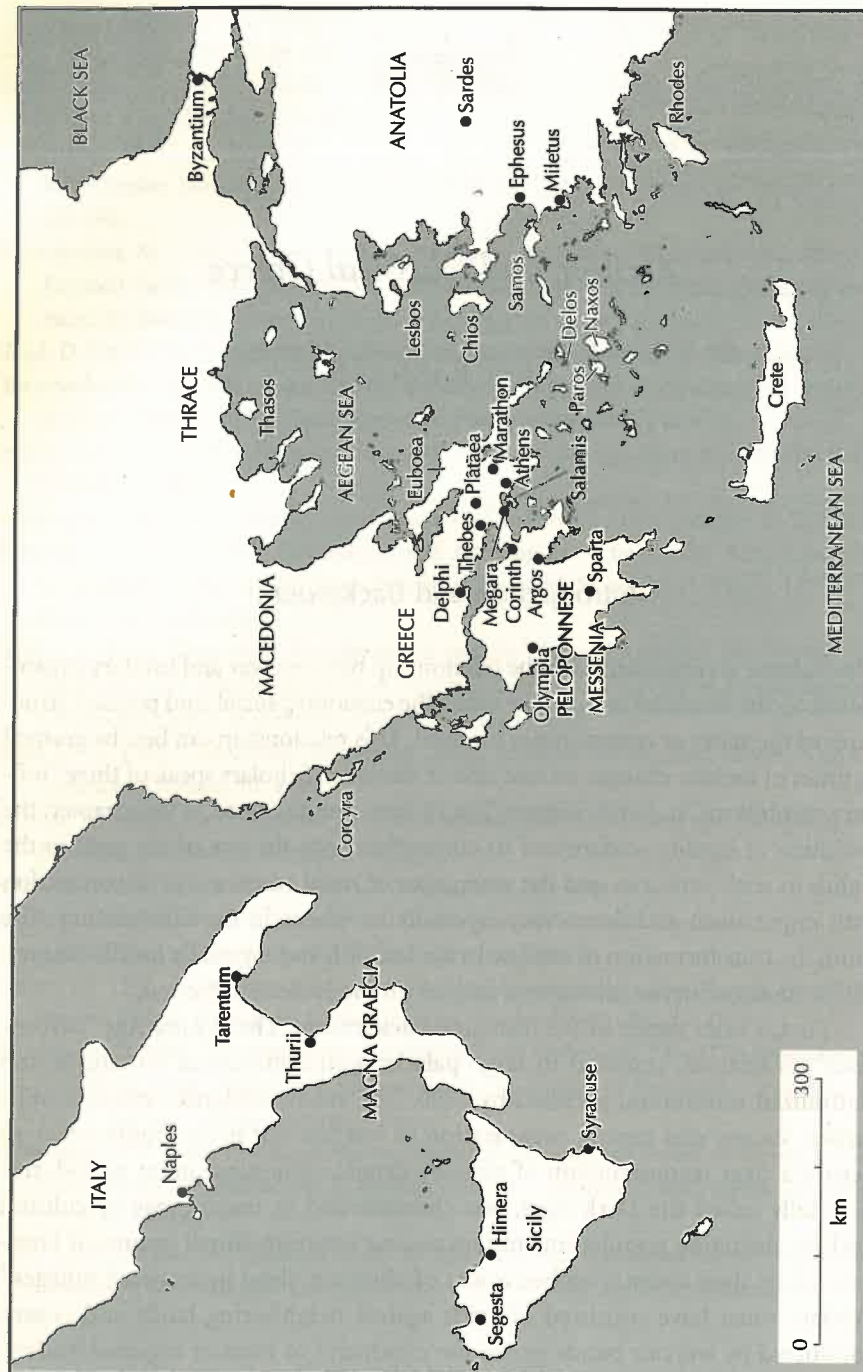
Archaic and Classical Greece

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Introduction and Background

This volume is concerned with the relationship between war and military organization on the one hand and, on the other, the economic, social, and political structures of the states or communities involved. This relationship can best be grasped in times of incisive changes on one side or the other. Scholars speak of three "military revolutions" in Greek history. Two of these are discussed in this chapter: the evolution of hoplite warfare and its connection with the rise of the polis in the eighth to sixth centuries and the emergence of naval warfare and its connection with imperialism and democracy especially in Athens in the fifth century. The third, the transformation of warfare in the late fifth and especially fourth century, will be analyzed in the subsequent chapter on the Hellenistic period.¹

First, a brief sketch of the historical background. The Bronze Age "Mycenaean" civilization, centered in large palaces with hierarchical structures and centralized economies, perished by 1200. The extant evidence reflects a militaristic society and central organization of warfare but is too fragmentary to permit a clear reconstruction of military details.² The subsequent period, traditionally called the Dark Ages, was characterized in many areas by cultural decline, shrinking population, and increasing isolation. Small groups of families, led by their ablest member, a sort of chieftain, lived in scattered villages.³ Warfare must have consisted of raids against neighboring lands and coasts, conducted by warrior bands under the command of local or regional leaders. Such raids are amply illustrated in the Homeric epics.⁴



The Greek World, 7th to 5th cent. B.C.E.

From the tenth to the eighth century, the population increased and contacts with other peoples broadened; the eighth century in particular was a period of rapid change. In the course of this process the "polis" evolved; in many parts of the Aegean and abroad, where Greek emigrants settled ("colonized") from the eighth to the sixth century, it became the typical form of community, different from the more loosely organized *ethnos* ("tribal state") that prevailed in other areas. Politically and culturally, the polis dominated the Greek world to the conquest of Greece by Philip II of Macedon in the late fourth century.⁵

In the archaic period (750–480) many poleis evolved through a phase of economic and social crisis toward a more balanced constitution. While private or semipublic raids for cattle or booty continued, wars in this period became increasingly communal. They were mostly local affairs, fought, on a fairly small scale and in long intervals, between neighboring poleis over the control of fertile border lands, and usually decided in a pitched battle between citizen armies. Such intercity rivalries, for example between Argos and Sparta, continued for centuries. Sparta was the first polis to form a system of regional power. Following the conquest of Lakonia and Messenia (eighth century), some communities became dependent poleis (*perioikoi*), while large parts of the subjected populations were enslaved (helots), cultivating the farms of the Spartan citizens (Spartiates) but also posing a constant threat. As a consequence, the Spartiates gradually developed a strictly regulated system of communal life. From about 550, Sparta dominated much of the Peloponnese through its hegemony, based on military supremacy, in a system of alliances (the Peloponnesian League). Despite its size, Athens played no major role before the late sixth century.⁶ Until the middle of that century, the Greeks remained outside the power sphere of the Near Eastern empires, but then the Lydians under Croesus, followed by the Persians under Cyrus, expanded their empires to the shores of the Aegean, subjecting the Greek poleis of Asia Minor to their rule.

The nature of politics and warfare changed dramatically in the fifth century, as a consequence of developments triggered by the war between Greeks and Persians. This confrontation, highlighted by Greek victories in 490 and 480/79, continued for thirty years. When Sparta and her allies withdrew from the war in 478/77, a new alliance was established under Athenian leadership (the Delian League). Its activities resulted in several victories over Persian forces and a vast expansion of the Athenian sphere of influence. Within two decades the Delian League was transformed into a tightly controlled and centralized naval empire ruled by Athens, and, in Athens itself, democracy was fully realized.

Both the empire and democracy made conflicts with Sparta and her allies inevitable. These conflicts, with several short intermissions, dominated the second half of the fifth century, from the 450s to the Peloponnesian War of 431–404.

The outcome of these conflicts was heavily influenced by the disastrous outcome of two large-scale Athenian naval expeditions: one in the 450s in support of an Egyptian revolt against Persia, the other in 415–13 in Sicily. In 404 Athens capitulated and lost its fleet and empire.⁷

The “military revolution” of the fifth century consisted of the emergence of large-scale naval warfare, which completely transformed the character of war and made it permanent, professional, and total. Certainly, traditional wars for the control of land continued to be fought between citizen armies of neighboring poleis, but politics and wars now increasingly involved large alliance systems and empires.

Apart from “tyrannies” (short-lived rules by individuals seizing power), monarchies were virtually absent in the Greek world during most of this period. This offers us an exceptional opportunity to study the questions that are central to this volume in the social context of nonhierarchical citizen communities—a context that was crucial for the specific achievement of ancient Greek civilization.⁸

Hoplites and Polis in Archaic Greece

Phalanx and “Hoplite Revolution”

Some of the questions raised in this volume were anticipated by Greek political theory. In the *Politics*, Aristotle sketches the evolution of Greek society, connecting military systems and constitutions: small numbers, the lack of a middle class, and monopolization of military expertise by the elite initially favored an aristocratic system based on cavalry forces. “When, however, states began to increase in size, and infantry forces acquired a greater degree of strength, more persons were admitted to the enjoyment of political rights” (*Politics* 1297b16–28). Aristotle’s theories of constitutional change raise many problems.⁹ Although horse breeding had long been a status symbol of the wealthy elites who dominated the early polis, and even in the classical period cavalries were largely an upper-class specialty, with few exceptions, such as Thessaly and Macedonia, Greece never witnessed a stage of true cavalry supremacy.¹⁰ Aristotle’s linking of aristocracy and cavalry warfare thus cannot be generalized, and the evolutionary connection in his scheme between growth of states, increasing importance of infantry forces, and extension of political rights to nonaristocrats is likely to be theoretical rather than empirical as well, perhaps derived from the observation of a similar connection between naval power and democracy.¹¹ Yet here lies the origin of the modern theory of the “hoplite revolution.”

Phalanx fighting was a remarkable form of warfare, different from any other. Two armies met each other on level ground; they were arranged in dense formations, several ranks deep (the “phalanx”), the soldiers equipped uniformly

with the panoply consisting of helmet, corslet and greaves, spear and short sword, and the big round shield (*hoplon*, hence hoplites). Mounted or light-armed troops, if involved at all, played a minor role. After the two armies clashed, heavy fighting with spear and sword went on for a while before the soldiers in the front ranks locked shields and tried to dislodge each other by pushing and shoving (*othismos*), those in the front being pressed forward by those in the back. All thus depended on maintaining the formation; as soon as one side gave in, the ranks were broken and the battle usually was over.¹² Since the goal was to defeat, not to annihilate, the enemy, the fleeing losers usually were not pursued and casualties, though potentially serious, often were limited.¹³

Herodotus indicates that the Greeks themselves around 430 were fully aware of the peculiar nature of hoplite fighting.¹⁴ How, when, and why did this system come about? A common view long held that in early Greece a “heroic” mode of fighting prevailed—as it *seems* to be depicted in the *Iliad*:¹⁵ the battle was decided by the elite leaders whose status depended on demonstrations of fighting skills and courage, while the masses of the common people mostly stayed in the background.¹⁶ From about 750, the elements of the hoplite panoply, of various origin, were gradually combined and adapted. By about 650, the equipment, formation, and fighting tactics of the phalanx were fully developed. This phalanx required the involvement of larger masses of equally equipped and trained soldiers. Thus the free farmers who could afford the panoply were integrated into the polis army and eventually achieved political integration as well. This process, often called the “hoplite revolution,” ended the phase of elite domination of the polis and ushered in an age of more egalitarian constitutions in which the free farmers played a decisive role.

Essentially, this model assumes that military change prompted political change. It has a venerable tradition, from Aristotle (above) to Eduard Meyer and Max Weber. In the 1960s it was strengthened by Anthony Snodgrass’s seminal work on the evolution of early Greek military equipment and its political consequences; with slight modifications, it has been restated several times even recently.¹⁷ Yet battles in the *Iliad* are decided by the entire army, and the poet’s descriptions contain many references to mass fighting and egalitarian structures.¹⁸ The hoplite equipment, appearing in tombs from approximately 725, shows unique characteristics that must have been developed for frontal fighting in dense mass formations. In particular, a double arm grip made it possible to carry the large round shield in a way that protected the left neighbor’s right side as well, and the shield’s extreme concavity allowed the fighter to let it rest on his left shoulder during the shoving match. The “Corinthian helmet” limited vision and hearing in exchange for maximum protection.¹⁹ Mass fighting thus was common long before 725. In fact, to the poet of the *Iliad* it was so normal that he naturally incorporated it into his battle descriptions. It was then made more

effective by the development of specific fighting tactics and of equipment that supported these tactics.²⁰ Hence the priority of military change is uncertain and the question is how this development relates to contemporaneous forms of warfare and social, economic, and political structures.

Elsewhere I have proposed that the extant evidence can be explained better by a model of polis evolution that assumes the interdependence of military and sociopolitical change: the polis, the phalanx, and the sphere of "the political" in the polis evolved in an interactive process over a long time; the concepts of landownership and "territoriality" were inseparable components of this inter-related process; and polis aristocracies emerged as part of the same process. Furthermore, if mass fighting was essentially egalitarian, the polis must have evolved on a foundation of considerable equality.²¹ This model raises questions that need to be addressed.

Phalanx, Warfare, and Society

Apart from private and semiprivate raiding expeditions, the Homeric epics pay much attention to communal wars between neighboring poleis—conflicts that coexisted with private raids and sometimes appear to have been caused by them.²² The setting of the Trojan War itself—but of course not its heroic story—resembles such a war: Troy and the temporary Achaean city on the shore²³ lie on two sides of a fertile plain, a constellation conducive to war throughout Greek history. In fact, the earliest historical wars attested in Greece took place between neighboring poleis in the late eighth century—the time of "Homer." Such wars, continuing for centuries, were usually fought over control of contested land.²⁴ This thematic and chronological correspondence between history and epics enables us to connect the evolution of polis and communal warfare.

Under the conditions of the Dark Ages (above at n. 4), there probably was neither need nor opportunity for wars between massed armies. As the population increased and economic conditions improved, settlements multiplied, previously unoccupied lands were cultivated, and the polis emerged. The polis territories were filled up, land became precious, the notions of "territoriality" and fixed boundaries assumed increasing importance, and neighboring poleis began to fight about land. Massed fighting in communal armies thus was the consequence of increased population densities, increasing and widespread wealth sufficient to afford the necessary equipment, the new organizational structures of the early polis,²⁵ and, most important, the citizens' need to defend their fields collectively and fight for the territory, if not the survival, of their polis. Ways were then sought to improve the effectiveness of the citizen army: technological and tactical changes interacted with economic and social changes to produce, at the end of a long process, the hoplite phalanx. This process was largely completed by 650. What was its impact on the poleis involved?

A long-standing scholarly consensus holds that at the height of phalanx warfare hoplite fighting was strictly regulated: all soldiers wore the same equipment, which they had to provide at their own expense, and "membership" in the "hoplite class" was often tied to a census requirement, measured by agrarian property and income. In some way or other, in such "timocratic systems" political participation was linked to military and economic capacity. In Athens (as in Rome) citizens were divided into "horsemen" (*hippeis, equites* [those who could afford horses and used them in war as well]);²⁶ hoplites (*zeugitai* [those owning a yoke of oxen or fighting in a tight, "yoked" formation], *classis*); and those who were neither and counted for little socially, militarily, and politically (*thetes, infra classem*, including small and tenant farmers, craftsmen, and traders, some of whom sometimes supported the phalanx as light-armed skirmishers).²⁷

At some point in the development, therefore, the distinction between the citizens who mattered and those who did not was fixed; the criteria determining such distinctions included "membership" in the "hoplite class." Solon's property classes of 594 (although perhaps refining an earlier system) offer a terminus ante. Sparta's earliest "constitution," based on the hoplite class, was enacted around 650. Several new phenomena that emphasize the importance of hoplites, including the dedication of hoplite figurines and equipment in sanctuaries and vase paintings illustrating hoplite fighting, are clustered around the same time. Snodgrass plausibly concludes that all this must reflect an important shift in public conscience connected precisely with the phalanx.²⁸ I have proposed that, since mass fighting and citizen armies were an integral part of war long before the phalanx was fully developed and in fact provided the impetus for its development, this shift was probably prompted by the perfection and formalization rather than the introduction of phalanx warfare. Even after a long evolution, such formalization must have brought about incisive changes in the polis, including the introduction of organizational structures and the definition of who qualified.²⁹

"Timocratic systems," then, resulted from a long evolution, not a "hoplite revolution"; they formalized, but did not introduce, the linking of the triad of functions typical of Greek polis citizens: the landowners (above a minimal subsistence level) fought in the polis army and sat in the assembly to share in the polis's decision making.

Phalanx and Exclusiveness

The distinction between evolution and formalization seems helpful in other respects as well. Many scholars have emphasized the great importance of the principle of self-equipment, and rightly so. To own the—not inexpensive—panoply and be a hoplite determined status and "belonging" in the community. As Paul Cartledge puts it, the principle of self-equipment meant that not

only economic capacity but also the will to enroll was required—which turned the hoplites into a “civic corporation” and explains the apportionment of political prerogatives in accordance with military function.³⁰ But this principle, too, may have changed over time, handled differently by each polis. The equipment of the early citizen-soldiers must have been uneven and cheaper: shield, spear, and sword were essential, but the shield was simpler than the later hoplite shield, and many perhaps wore leather caps and corslets rather than metal ones.³¹ Even after the panoply became the standard, it was perhaps often acquired through spoils or passed on through families and generations—fitting being cheaper than buying.³² Moreover, since status and prestige were involved, citizens might have been willing to make sacrifices in order to qualify. All this suggests larger rather than smaller numbers. At least initially, economic capacity might have been a relative, not absolute, criterion; that is, all those naturally fought in the polis army who owned the (or some of the) equipment.

This raises several connected questions. (1) What was the ratio in the citizen body between those who qualified and those who did not? (2) Why did the polis not make better military use of its subhoplite citizens? (3) What was the purpose of defining the hoplite class in rigid economic terms, and were such definitions applied universally? Concerning the first question, scholars usually assume that throughout its history the polis was structured similarly, comprising a small minority of wealthy elite families, a much larger class (but overall still a minority) of farmers who qualified as hoplites, and a majority of subhoplites.³³ This is certainly true for poleis with a highly diversified economy and a developed secondary sector. But such conditions applied only from the late sixth and especially fifth century and only in exceptional cases, among which Athens was quite unique (below at n. 69). In the archaic period, when polis populations were almost completely agrarian and few other opportunities existed to earn a decent living, when the poor and dissatisfied often emigrated and thetes who depended on others for their livelihood were treated with utmost contempt, the proportion of small farmers and especially nonfarmers must have been much smaller.³⁴ If so, through most of the archaic period the hoplite-farmers would have represented the majority of polis citizens.

Historically, this would make sense. When poleis and polis territories were emerging and interpolis feuds began to be fought by citizen armies, it must soon have been obvious that numbers were decisive. Given the small size of the average polis, the general tendency must have been to field as large a proportion of the citizens as possible.³⁵ The view seems implausible, therefore, that the “will to enroll” was a major factor.³⁶ This view presupposes that hoplites might have been unwilling to serve in the phalanx; it is diametrically opposed to another, that hoplite fighting became so standardized because this proved a successful means to keep the despised lower classes out of the army and hence

out of politics.³⁷ Both assumptions ignore the nature and purpose of hoplite warfare. If the enemy attacked their fields, any farmer would want to help defend them: put simply, the hoplites fought on their land for their land.³⁸ This aspect determined the social and ideological implications of the phalanx. If the defense of the polis could be made more effective by involving more citizens, this would certainly have been—and probably often was—done.³⁹ If the archaic polis relied on hoplites and not on light-armed troops, this was not the result of political conspiracy and manipulation but of compelling economic and practical factors.

The second question involves two aspects. First, given that in most of Greece plains are rare and mountain ranges separate the poleis, and that hoplite warfare often aimed at forcing the opponents to fight or submit by threatening their crops,⁴⁰ why did the communities not defend the mountain passes and use the terrain to their advantage rather than allowing the enemy to penetrate their territory, risking their fields to be ravaged, and relying on pitched battles? The best answer is that a system of border defense would have required fortifications and, considering the relatively short distances, the maintenance of a standing corps of border guards. The resulting financial burden would have exceeded the capacity of almost all early poleis.⁴¹ Before the fifth century, only Sparta could afford a professional army; it was supported by the enslaved Messenians—a system unsuitable for general imitation. The hoplites were a citizen militia; phalanx fighting was adapted to the possibilities of the early polis and the needs of warfare between these poleis. As possibilities and needs changed, the methods of warfare and the personnel involved in war changed too.

In addition, even if the bulk of the polis armies consisted of hoplites, it might still have been useful to support the phalanx with cavalry and light-armed troops. To some extent this was done but rarely in an organized and systematic way.⁴² Although in later periods both types of troops proved their effectiveness, Athens, for example, created a substantial cavalry corps only in the mid-fifth century and never took full advantage of it, and by 424 still had no organized light-armed corps.⁴³ Why such reluctance? Here all indications indeed point to tradition, values, and social prejudice. Throughout the archaic and classical periods, *once the principle was established*, the hoplite's achievement was valued more highly than other forms of fighting: true valor (*aretē*) was seen in facing the enemy in man-to-man combat and holding one's position in the battle formation. Warrior ethics were closely linked with those of tilling the land: the true citizen was farmer and soldier.⁴⁴ The reason for the predominance and persistence of such values most likely lies precisely in the nature of the polis as a citizen community of farmer-soldiers who shared strong interests and learned solidarity and discipline when fighting in defense of their community. These virtues were cemented by the phalanx. Those who did not share

in them indeed did not matter. Hence there developed a tendency to stick to pure hoplite fighting, which—and this is crucial—was facilitated because the underlying values were generally accepted in the world of poleis and because hoplite fighting gradually changed its purpose.

This leads to the third question: Why, to what purpose, and how universally were definitions limiting the hoplite class to farmers above a certain property level used, and how restrictive were they really? One obvious explanation for such limitations, that the number of hoplites exceeded the level deemed necessary, would apply only to the largest poleis, if at all. Another may lie in the process of “ritualization” of hoplite warfare itself.

Before the fifth century, war among Greek poleis was endemic but not permanent (below at n. 61). Although such wars, fought in fairly regular intervals, were serious enough, their impact and function seem to have changed, once the polis system was in place and somewhat balanced (roughly by the late seventh century). Phalanx fighting was increasingly “ritualized,” in the sense of both playing an important ritual role within the community and following widely agreed-upon principles.⁴⁵ In fact, this type of warfare was only possible because the values and behavior codes involved were shared widely and reinforced regularly at interstate festivals and by the ethics promoted by the Panhellenic sanctuaries. As a result, the brutality immanent in war was somewhat reduced, and in the particular world of Greek poleis between the late seventh and early fifth century the function of war—normally—was to determine the prestige rather than the survival of the polis. This helps explain why later tradition remembered so few destructions and enslavements of cities in the archaic period.⁴⁶

The custom of limiting the hoplite class to property owners above a certain level thus may have been a Panhellenic phenomenon, reflecting shared ideals.⁴⁷ The question of where the limit was set, and how exclusive it was, then becomes all the more important. The Athenian example, as so often, may be atypical—or simply wrong. The tradition about its property classes certainly poses serious problems.⁴⁸ In fact, close examination shows that the census figure of two hundred *medimnoi* for hoplites, only one hundred *medimnoi* less than the *hippeis*, although accepted by most scholars, is far too high. Accordingly, I consider it probable that at least well into the fifth century the Athenian hoplite class was far less comfortably propertied, less exclusive, and perhaps less rigidly defined than the tradition suggests.⁴⁹ This is certainly true for most other poleis, which were small in size and population and able to field a decent hoplite force only if almost every independent farmer was enrolled.⁵⁰ This, in turn, confirms the suggestion made earlier that during most of the archaic period the hoplite farmers represented the bulk of the citizen body and all the citizens who mattered.

Phalanx, Polis, and Equality

If the polis citizens were militarily empowered from early on, the traditional view that these same citizens were essentially powerless poses difficulties. On the political side, this view is based on the assumption that early Greek assemblies were insignificant; this assumption, in turn, rests on a one-sided interpretation of several scenes in the Homeric epics that seem to describe the assembly as passive, depending on elite leaders, and easily manipulated. Recent studies, however, have refuted this assumption and made a strong case that even in the epics the assembly plays a crucial role and is communally indispensable.⁵¹ On the social side, essential parts of archaic poetry (especially Hesiod and Solon) reflect elite predominance and various forms of dependence among the demos. Yet, why should this be incompatible in principle with the demos' fighting in the polis army—or with their participation, in elementary but important ways, in communal decision making? Elite ideology, visible already in the *Iliad* (2.200–202), aimed at enhancing aristocratic domination and increasing the distance between elite and masses.⁵² Continuing economic and social differentiation would have reinforced such trends, resulting in a sense of superiority and abuses of power on the part of the elite, and, among the commoners, in both real and perceived dependence and powerlessness. The commoners' military involvement might not in itself suffice to stem this trend, especially if it predated the sketched developments by a long time. In other words, according to the interactive model proposed earlier in this chapter, Greek polis aristocracies emerged and rose to power as the polis evolved; their rivalries and abuses, amply attested in the poetry of the time, thus influenced and changed relations and structures that were in part long established, in part also still evolving. Such abuses, however, met with resistance precisely when they disturbed the egalitarian base on which the polis was built. Hence, not surprisingly, massive protest and resistance eventually forced the elite to compromise.⁵³ Dependence of parts of the demos thus was not identical with powerlessness of the demos as a whole.

Sparta provides an illuminating exception: here around the mid-seventh century an early constitution established regular meetings of the assembly and defined its place in the communal decision-making process, next to the kings and council of elders; eventually, the Spartiate citizen-hoplites were recognized as peers (*homoioi*).⁵⁴ In my view, this was less the result of the long and recurring war with Messenia itself than that of the continuous threat posed to the Spartiate community by the enslavement of the defeated (above at n. 6). The hoplites thus assumed permanent military responsibility for the security of their polis. The difference in warfare between “permanent and essential” versus “occasional and ritual” was decisive. Fifth-century Athens offers another example where the rise of citizen-soldiers to *permanent* and *essential* military significance had far-reaching political consequences.⁵⁵ In such cases the military

factor indeed seems to have been the primary agent of sociopolitical change. In poleis that were less permanently threatened and where the army played a less crucial role, the military factor probably had less of an impact.

Nevertheless, toward the end of the archaic period egalitarian structures were institutionally fixed in many poleis, thereby enhancing and formalizing more extensively the political participation of at least the hoplite farmers.⁵⁶ Such formalization of equality potentially went far beyond earlier timocratic systems; in Athens, the difference is expressed by Cleisthenes' "order of equality" (*isonomia*) of 508/7 versus Solon's traditional "good order" (*eunomia*) reaffirmed almost a century earlier.⁵⁷ If this development was in most cases not directly related to the hoplite phalanx, what brought it about? Since it resulted in incisive innovations, strong pressures must have been at work, from the outside or from within the polis. In most cases, the latter may have been decisive: infighting among elite families, their abuse of social and economic power, and severe social conflicts threatened the polis as well. The formalization of institutions, the enactment of written law, and the appointment of mediators and legislators with extraordinary power served as means, supported by the entire polis, to overcome such crises.⁵⁸ So, too, the increased and formalized political empowerment of the farmers served the purpose of stabilizing the polis that was in danger of complete destabilization. The fact that these farmers were hoplites was less the cause than the condition of their integration: fighting in the phalanx was one of three interconnected factors that were crucial in determining who belonged among the essential part of the citizen body.

Conclusion

The evidence of Homeric and early Greek warfare leaves no space for a "hoplite revolution." The phalanx evolved with the polis and the emergence of communal warfare and represented the Greeks' response to the specific challenges of mostly localized and increasingly ritualized warfare in a fairly balanced system of poleis. From the very beginning, the landowning farmers formed an integral element, both militarily and politically, in the evolving polis. Their roles of landowners, soldiers, and assemblymen were interconnected and naturally made them the essential part of the citizen body. Although the early Greek polis was thus founded on essential elements of equality, economic and social differentiation continued and resulted in elite domination and abuse of power, which in turn provoked resistance and revolt. Eventually, the farmer-hoplites were formally integrated in egalitarian polis constitutions. Usually this happened not primarily as a result of their contribution to the phalanx but as a result of serious social crisis and in an effort, supported by the entire polis, to stabilize the community and set it on a broader base of citizen involvement and communal responsibility. In exceptional cases, especially that of Sparta, permanent outside pressure on the community resulted in a professionalization of the citizens' military function and, in close

connection with this development, in their enhanced and formalized political participation in a system that emphasized their status as "peers" (*homoioi*). ✓

Naval Warfare, Imperialism, and Democracy in the Fifth Century

The hoplites' significant role in fifth-century warfare should not be underestimated. Moreover, although political theorists included them among the supporters of oligarchy, the Athenian hoplites, with few exceptions, identified with and supported democracy hardly less than the lower-class "naval crowds."⁵⁹ Nevertheless, what revolutionized warfare in the fifth century was Athens's reliance on large-scale naval warfare. Many scholars have postulated a direct connection between naval warfare and democracy, assuming, again, that military change prompted political change. Again, however, things might be more complicated. The main questions we need to discuss are, What exactly is the connection between naval power and empire, and between both and democracy? And how did all this affect Athenian society?

The Nature of Naval Warfare

Naval warfare was radically different from traditional Greek land warfare. In the fifth century, it was based on the trireme, a formidable man-of-war, long and narrow, manned by 200 men (of whom 170 were rowers, tightly packed in three tiers), propelled by oars and two sails, very fast and highly maneuverable. Although invented earlier, it was used relatively rarely before the Persian Wars. In the archaic period, naval encounters were mostly fought with smaller ships that served both military and trade or transportation purposes. Even early naval powers (such as Corinth and Corcyra) had relatively small fleets. The Phoenicians, providing the bulk of the Persian fleet, were the dominant naval power in the eastern Mediterranean: in 494 they defeated the combined navies of the Ionian and island poleis that had revolted from Persia. This was one of the first great sea battles in Aegean waters fought with triremes. The Athenians' decision in the late 480s to entrust the survival of their community against the Persians to a fleet of triremes thus was not novel but daring.⁶⁰

Naval warfare contributed decisively to making war more permanent, comprehensive, and brutal. Unlike hoplite campaigns that usually were short and took place only in fairly long intervals, naval expeditions lasted weeks if not months or years. Naval warfare was highly technical and required constant training; hence a small squadron was almost constantly on sea for patrol and training missions. In the fifth and fourth centuries, the Athenians were involved in serious military actions in no less than two out of every three years. Relying on their navy to transport soldiers and resources, they soon became the foremost Greek experts in siegecraft. Henceforth, warfare was more intense and "total": economic blockades and ravaging of the enemy's territory became fre-

quent means of putting pressure on the opponent. Moreover, the Athenians reintroduced into Greek warfare the "Homeric" custom of destroying a captured city, killing the men, and selling women and children into slavery. Reliance on the navy changed their defensive strategy as well: they fortified the Piraeus and constructed the Long Walls, thereby turning their city and harbor into one big fortress; this enabled them to avoid pitched battles with the superior Spartan hoplite army and to yield the Attic countryside largely to the enemy while supplying the city by sea.⁶¹

Naval warfare was very expensive: one trireme cost roughly one talent, and one month's pay for the crew of 200 men between one-half and one talent. A three-month campaign with 150 ships thus would have devoured between 225 and 450 talents. For comparison, according to Thucydides (1.96), the first year's contributions of the Delian League amounted to 460 talents; 1,400 talents were spent on the nine-month siege of rebellious Samos—more than the 1,200 to 1,300 for the Parthenon, including Athena's statue of gold and ivory.⁶² The crews consisted of citizens (especially volunteers of the lower classes), metics (resident foreigners), mercenaries, and slaves. Hence, although the proportion of citizens apparently declined over time, many thousands of them were frequently and over extended periods engaged in paid service for the community.⁶³ The accumulation of public funds and cash reserves, as well as financial planning, therefore assumed unprecedented importance. The required finances were normally provided, in varying combinations, by the allies' tribute and other imperial and domestic revenues, in exceptional cases by loans from the treasuries of Athena and other sanctuaries, or by a special tax (*eisphora*). In addition, wealthy citizens contributed through the institution of the "trierarchy," that is, the obligation to fit out, man, and command a trireme.⁶⁴

Finally, the casualties caused by naval warfare could be astronomical. The records that survive from one year, 460/59, show that one of the ten *phylai* (civic subdivisions) alone lost 177 men (roughly 3.5 to 4.5 percent of its adult citizens) in various actions ranging from Aegina and Megara to Cyprus and Egypt. Comprehensive estimates are difficult, but probably about eight thousand citizens (one out of five or six adult men!) perished in the failed Egyptian expedition of the 450s, at least ten thousand in Sicily (415–413), and twenty-eight thousand overall in the Peloponnesian War.⁶⁵ Many of these died in land, not naval, battles; the essential point is that the vastly increased size and scope of operations, made possible by naval warfare, entailed much higher risks and losses.

Naval Warfare and Empire

The trireme was developed to make naval warfare more effective. Why was it not used more regularly in earlier decades? The answer must be that naval warfare, based on a fleet of triremes that could not be used for anything else, required

tremendous resources and a highly developed infrastructure. Such resources included reliable and enforceable access to shipbuilding materials, most of which (timber, leather, metals) needed to be imported; safe harbors and large shipyards where hundreds of ships could be built, repaired, and kept dry in winter; and enormous numbers of crews, shipwrights, and other personnel. Up to twenty thousand men were needed to operate one hundred triremes, perhaps fifteen thousand to maintain and regularly replace the three hundred hulls of Athens's fifth-century fleet. Even if many rowers were part of that workforce when not on campaign, the manpower demands were staggering, especially since the number of adult male citizens reached five to ten thousand only in a few exceptionally large poleis and even in Athens probably never exceeded fifty thousand. Facilities and resources were needed to house, feed, and entertain such a workforce, an effective administration to organize the labor and materials, and a steady income of unprecedented size to finance it all.⁶⁶ Moreover, given the trireme's limited capacity to carry supplies, extended operations depended on constant access to coastal supply bases.⁶⁷ naval power and control of coastal areas depended on each other.

In all these respects, the potential of all but very few archaic poleis was severely limited. Just as permanent forces of light-armed border guards would have exceeded their resources (above at n. 41), so, too, even large poleis could not afford a permanent specialized war fleet. For occasional naval actions it was sufficient to use transport vessels borrowed from their owners. In fifth-century Athens, however, several unusual circumstances combined to make it possible to build and maintain a large war fleet. Various factors—including knowledge of the causes of the Ionians' failure against Persia, the threat of a massive Persian invasion by land and sea, and the discovery of a new silver mine at Laurium—created a favorable disposition toward naval warfare and provided both the initial stimulus and the funds necessary to build a fleet. After the war of 480/79, the Delian League provided both the necessary resources to maintain this fleet and a wide-flung coastal support network. By the time the Persian danger had vanished and some allies questioned the necessity of this expensive organization, the Athenians had built up their own navy, adjusted their economy and administration, and were determined to hold on to their power, no matter what. Such power depended on continuing access to the League's resources: naval and imperial power were thus interconnected.⁶⁸

Naval Warfare and Society

After the Persian Wars, Athens's imperial role brought about a rapid and comprehensive transformation of economy and society. Although the result of these changes is better visible in the last third of the century, when literary and documentary sources are plentiful, we can make some inferences about causes and beginnings.⁶⁹

A veritable industry must have emerged, encompassing many trades, that focused on building and maintaining warships. The frequent involvement of Athenian hoplites in the city's wars made sure that the manufacturers of arms and armor prospered as well. Major public construction took place especially in Athens and the Piraeus, capped by the building programs on Acropolis and Agora, and the private sector must have experienced a "building boom." Booty and indemnities from wars against Persians and recalcitrant Greek cities, as well as other imperial revenues, brought unprecedented material profits into Attica. Trade and other business activities increased rapidly along with the consolidation of the Athenian sphere of domination: the Piraeus quickly became the central port of the Aegean and far beyond. The labor force probably was mixed; the number of slaves and foreign residents (metics) increased greatly, but by far the largest component must have come from the farming population of rural Attica. As a result, Athens and the Piraeus, connected by the Long Walls, developed into large, densely populated cities with an exceptionally large number of people employed in all kinds of manufacture, industry, and trade, and in the "hotel and entertainment industry."⁷⁰

The "balance sheet of empire" reveals that, despite hardships and setbacks, all Athenians profited greatly from their empire.⁷¹ Economically, socially, politically, and mentally, they adjusted to their city's imperial rule and to the need to be constantly prepared for and frequently involved in war: as Thucydides puts it (1.70), they became activists, restless interventionists and aggressive expansionists. Athenian imperial ideology, too, presented the ideal citizen as incessantly striving to maintain and increase the freedom, power, and rule of his city and emulating the great martial deeds of the ancestors. Even the city's protectress, Athena, now presented herself as a mighty warrior goddess.⁷² All this helps explain the extraordinary politicization and militarization of the entire citizen body and their commitment to public service that lasted well over two generations.

Naval Warfare and Democracy

The Athenian system of government changed considerably as a result of conditions that emerged after the Persian Wars.⁷³ Clearly, though, the great naval victory of Salamis by itself would have been insufficient to engender lasting change. Several allies contributed major fleets to the common war effort; none of them became a democracy. And, as the examples of Corinth, Aegina, and other large island poleis indicate, naval power per se did not necessitate democracy.⁷⁴

The decisive difference, in the case of Athens, was the function assigned to the fleet and the composition of the crews rowing it. As pointed out earlier, naval warfare greatly increased the scope, duration, and frequency of wars. The continuation of the Persian Wars by the Delian League and its transformation into a naval empire turned the fleet into a crucial instrument for Athens's security and domination, made the thetes who mostly rowed this fleet responsible

for their community's security and power, and—this is decisive—caused this new role of fleet and thetes to be *not an exception but the rule*. Accordingly, an entire class of citizens, who normally did not count for much, became *permanently indispensable* to their community and thereby acquired social prestige and self-confidence—which made it possible, even necessary, to integrate them politically. Their military ascendance disturbed the traditional interdependence between landownership, social status, military capacity, and political participation. Since this balance could not easily be restored in the social and economic spheres, its restoration on the political level became all the more urgent. Even opponents of democracy eventually recognized this connection, although it continued to be contested on ideological grounds.⁷⁵

Not least the fact that other Greek poleis with strong navies did not develop democracy has prompted some scholars to question the link between democracy and naval power.⁷⁶ We know little about how other navies were operated. Even if they were rowed by citizens, however, they were fighting Athens's or the Delian League's wars and thus never assumed the role of permanent importance to their own communities that was typical of the Athenian fleet. In Athens, moreover, special circumstances made it possible to break through traditional class and mental barriers that otherwise might have prevented the involvement of lower-class citizens. In cases of "national emergency," class and status boundaries were often ignored; even slaves, liberated before or after the action, were recruited to supplement the numbers of citizens.⁷⁷ The Athenians, too, exposed to existential danger, could not afford to nurture old social prejudices. Once they decided to base their defense against the Persians on the fleet, they had no choice but to call upon all able-bodied citizens, whether noble, farmer-hoplite, or thete, and even to include the metics. During the war of 480/79 and its immediate aftermath, nobody worried about potential consequences of this policy, and then the Delian League offered Athens unique opportunities, too good to decline. After that, there was no way to turn back: the system had proved tremendously successful, and the thetes were to continue to play a crucial military role.

Several additional factors, however, interacted with military change and were necessary to translate it into political change. First, the allies' financial contributions brought much more money into the treasury than was spent on wars. Combined with other imperial revenues, they greatly relieved Athens's military budget, which must have facilitated the—truly revolutionary—decision to introduce pay for certain communal functions.⁷⁸

Second, the imperial city's foreign relations expanded vastly and rapidly, and the agenda of the institutions concerned with this sphere (council, assembly, law courts) multiplied.⁷⁹ Their importance and prestige were enhanced, service in them became more demanding, and they needed to be adjusted structurally to

their new range of responsibilities. All this was unparalleled elsewhere, inevitably challenged the traditional distribution of power in the community, and raised the question of what role the people should play in shaping and controlling policies that directly affected their lives and future.

Third, navy and empire transformed Athenian society (above at n. 69). Thousands of citizens changed their work habits, way of life, and outlook, from village to city, from local affairs to the polis and its policies. By the 460s the impact of a broad range of changes, massive, accelerating, and interacting with each other, must have been felt everywhere. Vast numbers of Athenians who had been marginalized before now assumed communally important functions. Others whose families had belonged among the hoplites all along but who had lived too far away to participate regularly, now moved close to the political center; they might now be counted as thetes, but their political aspirations remained the same. Overall, this enormous demographic shift in the citizen body cannot have left the political sphere unaffected; new ways had to be found for these citizens to articulate their voice in changed circumstances.⁸⁰

Thus in several essential ways—by militarily empowering the thetes, providing unprecedented financial strength, enhancing importance and prestige of the institutions, and creating a large urban concentration of citizens whose work was important to the community—the empire created conditions that contributed decisively to making democracy possible.

Fourth, the Athenian elite was highly competitive, constantly fighting for influence and power. Such rivalries could result in institutional change, if one faction advocated it in order to gain followers and votes. Cleisthenes' reforms originated in such a constellation, and similar considerations perhaps played a role as well in the political integration of the thetes.⁸¹

At any rate, reforms introduced in 462 and supplemented by further measures during the next twelve years brought about dramatic changes in the city's government. The power of those institutions that represented the entire demos (assembly, the Council of 500, and the jury courts) was enhanced at the expense of the traditional aristocratic Areopagus Council; the operation of some of these institutions was modified, reflecting increased duties; pay was introduced for certain civic functions, census qualifications reduced for others, and citizenship defined more strictly. The purpose of these measures clearly was to enable all citizens to participate in their city's government and to determine exactly who was to enjoy these privileges.⁸² The demos was thereby put fully in charge. Although institutional development continued thereafter,⁸³ for all practical purposes the middle of the fifth century marks the beginning of full democracy in Athens.⁸⁴ The realization of this type of democracy was inextricably linked with naval power and the empire, and therefore was possible only in Athens.⁸⁵

Conclusion

The fifth-century "military revolution," brought about by naval warfare, originated in an extraordinary emergency in the Persian Wars. It resulted in deep and rapid economic, social, mental, and eventually political changes in Athenian society. Such changes, however, were caused not directly by the victories in the Persian Wars, but because through the Delian League and empire the Athenians were able to create an organizational framework that made it possible to maintain large-scale naval power. Adapting to the demands of their city's imperial rule, the Athenian citizens became professionals, in both their military and, after the democratic reforms of 462–450, their political capacity. Military change interacted with social and economic change to bring about political change. As in the case of archaic Sparta, here, too, the military factor assumed primary importance only because the citizens' military role became *permanently and decisively significant* to the community.

Due to the severely limited potential of the Greek polis to enfranchise new citizens and the Athenians' propensity to overextend themselves, their empire collapsed at the end of the fifth century. But the changes it imposed, in interaction with democracy, on Greek warfare were irreversible. The traditional brief, limited, and intermittent wars between individual poleis continued, but henceforth they were of secondary importance: the more significant wars were fought between alliance systems over predominance in Greece and, eventually, for the survival of the independence of Greece. The citizen militias continued to play an important military role, but besides them, and often overshadowing them, professional and specialized troops, mostly mercenaries, acquired rapidly increasing importance. Warfare became ever more endemic, "total," and expensive, vastly exceeding the resources of all but the largest poleis—and even these. Hence those who disposed of great financial resources—tyrants (such as Dionysius I of Syracuse) and foreign potentates (especially the Persian kings and Philip II of Macedon)—assumed an ever more decisive role in military affairs, in the advancement of military technology, and in deciding the fate of the Greek world.⁸⁶

Epilogue: A Different Perspective

I have analyzed the interaction of two major innovations in Greek warfare with economic, social, and political changes. From a long-term perspective, one might distinguish two different developments. One, beginning in the Dark Ages and reaching its climax in fifth-century Athens, concerns the polis as a citizen state and the citizens' role as soldiers. Emerging with the formation of the polis, the concept of citizen-soldier was initially realized on the level of the independent farmers fighting as hoplites; under exceptional circumstances prevailing in

Athens, it was extended to the lower-class citizens rowing the fleet. This development is best explained by a model of interaction between military and economic, social, and political factors that took place largely (although not entirely) within the polis and seems responsible for the cohesion, strength, and political predominance, as well as military superiority, of polis-based Greek societies even in conflicts with seemingly far superior non-Greek states.

The second development had a forerunner in archaic Sparta, reached a first climax in fifth-century Athens, and dominated Greek warfare in the late fifth and fourth centuries. It transcended the structures of the polis, largely depended on outside resources in money and manpower, and eventually overtaxed the capacities of polis-based societies, resulting in the political demise and absorption of Greek poleis into larger territorial empires. This development is best characterized by the notions of the professionalization and specialization of warfare and the militarization of politics. These two developments overlapped, but, essentially, the former belongs in the context of intermittent warfare between poleis, the latter in that of permanent warfare between larger entities: leagues, federations, and empires. From this perspective, fifth-century Athens is a "hybrid," and a crucial transition in Greek history coincides, in the period from the mid-sixth to the mid-fifth century, with the intrusion of foreign imperialism into the Greek world and the subsequent emergence of Greek forms of imperialism.

Notes

1. All dates are B.C. I thank Paul Cartledge for sharing his excellent essay (1996b) with me before publication and for generous comments, and Nathan Rosenstein for valuable suggestions. Because of space limitations, I cite mostly recent publications where the reader will find fuller bibliographies. General works on archaic and classical Greek warfare: Kromayer and Veith 1928; Anderson 1970, 1988; Garlan 1975; Delbrück 1975; Ducrey 1985; Ferrill 1985; see also Pritchett 1971–91; Rich and Shipley 1993; Lloyd 1996.
2. Surveys: Chadwick 1976; Dickinson 1994. War: Snodgrass 1967, chap. 1; Lejeune 1968; Drews 1993.
3. Snodgrass 1971; 1987, chap. 6; 1996; Donlan 1989; Morris 1996a, 1997.
4. E.g., *Iliad* 6.414–27; *Odyssey* 9.39–61; 14.211–75; Nowag 1983; Welwei 1992b; Jackson 1993.
5. Eighth century: Snodgrass 1980; Morris 1998. Polis: Ehrenberg 1969.88–102; Starr 1986; its emergence: Snodgrass 1993b; Raaflaub 1993. Rather than a "city-state," the polis was a community of citizens, a "citizen-state": Runciman 1990.348; Hansen 1993.7–29. Colonization: Boardman and Hammond 1982, chaps. 37–39. *Ethnos*: Snodgrass 1980.42–44; Morgan 1991.
6. Welwei 1992a. Sparta: Cartledge 1979; Finley 1982, chap. 2; Murray 1993, chap. 10.

- Neighborhood wars: below n. 23. League: Kagan 1969.9–30. Formation of power: Raaflaub 1990.
7. Surveys: Hornblower 1988; Powell 1988; Lewis et al. 1992.
 8. Vernant 1982; Meier 1990a.51–90. Tyranny: Murray 1993, chap. 9.
 9. Mulgan 1977.118–38; Polansky 1991.
 10. Cartledge 1977.18 n. 60; Snodgrass 1980.98, 100; contra: Garlan 1975.119. Horses: Gschnitzer 1981.38–41. Cavalry: Greenhalgh 1973; Bugh 1988; Spence 1993.
 11. E.g., *Politics* 1304a 22–24; Plutarch, *Aristides* 22.1. Pseudo-Xenophon, *Constitution of the Athenians* 1.2; Plato, *Laws* 706c–707a, observe this connection on the factual but not on the evolutionary level: Ceccarelli 1993; van Wees 1995.154–56.
 12. Examples: Thucydides 5.66–74, 6.66–71. See Anderson 1970; Pritchett 1985; Hanson 1989, 1991. Cawkwell 1989 presents a different model of hoplite battle; see also Holladay 1982.94–97; Krentz 1985b; Lazenby 1991. His claim that extended fighting preceded the *ōthismos* should be taken seriously; contra: Anderson 1984; Hanson 1989. Krentz (1985b.55–57) explains *ōthismos* differently; cf. Luginbill 1994; Krentz 1994. Light-armed troops: below n. 42.
 13. Average: 10 to 20 percent for the losers, 3 to 10 percent for the winners: Krentz 1985a; Strauss 1986.179; Spence 1993.172.
 14. 7.9.2; cf. Polybius 13.3.4 with Walbank 1967.416.
 15. Dated to the late eighth or early seventh century: discussion and bibliography in Raaflaub 1998a.
 16. Garlan 1975.83.
 17. Meyer 1937.512–17; Weber 1968.1352, 1359–60; cf. Nilsson 1929. Snodgrass 1964, 1965, 1967, chap. 3; Bryant 1990; Murray 1993, chap. 10; Cartledge 1996b.
 18. Snodgrass 1993a; van Wees 1994, 1996.
 19. Hanson 1991.63–84; Mitchell 1996.89–90.
 20. Hanson 1991.63–67.
 21. Hanson 1995, chap. 5; Morris 1996b; Raaflaub 1996a: 150–53, 1997a.
 22. E.g., *Iliad* 18.509–40; 11.670–761; Baltrusch 1994.92–99; Raaflaub 1997b. 2–4.
 23. Raaflaub 1993.47–48. Army as polis: Garlan 1975.91–92.
 24. Raaflaub 1991.223–24; Parker 1997; de Ste. Croix 1972.218–20.
 25. Destructiveness of early wars: van Wees 1992.183–99. Territories: de Polignac 1995; Snodgrass 1980.35–40; 1993b.37–39.
 26. If only to ride to the battlefield: Greenhalgh 1973; see above n. 10.
 27. *Zeugitai*: Whitehead 1981; Rhodes 1981.138. Skirmishers: below n. 42; thetes: below nn. 34, 56. Rome: Thomsen 1980, chap. 5.
 28. Snodgrass 1980.99–100, 105–6; cf. Cartledge 1977.26–27; Salmon 1977.85–92. Solon: Andrewes 1982.384–86. Sparta: below n. 54.
 29. Raaflaub 1997a.54; cf. Snodgrass 1967.61; 1993a.60–61; 1993b.34–35.
 30. Cartledge 1996b.705. Cost: Connor 1988.10 n. 30 (75–100 drachmas); Jackson 1991.229 lists epigraphically attested figures (30 drachmas in late sixth-century Athens, 300 drachmas in fourth-century Thasos). The equivalents given by Plutarch, *Solon* 23.3 (1 sheep = 1 drachma = 1 *medimnos* [a grain measure; cf. Rhodes 1981.141–42]) are problematic (Welwei 1992a.181–82); W. T. Loomis suggests for

- Connor's figure "7–10 goats or 25–33 piglets; less certain would be 2–4 cattle or 5–10 sheep" (personal communication; cf. Loomis forthcoming).
31. As was usual again much later (but for different reasons: to increase mobility): Snodgrass 1967, chap. 4. Unevenness of early equipment: Snodgrass 1965.112–13; cf. now Storch 1998. Of course, reality may often have differed from the ideal, and the back of the phalanx been less heavily armed than the front.
 32. Distribution of spoils: Pritchett 1971–91, Vol. 5. 375–401. It seems unlikely that all equipment retrieved by the victors from the battlefield went to the state and was dedicated to the gods (thus Connor 1988.16; cf. Jackson 1991).
 33. Snodgrass 1965.114; 1980.107; Cartledge 1977.23; Starr 1982.423; Hanson 1995.411.
 34. Similarly, Donlan 1997; cf. Hanson 1995.209. Thetes: *Odyssey* 11.489–91; 18.356–75; cf. *Iliad* 21.441–52; Finley 1977.57–58.
 35. Ruschenbusch 1985; cf. below n. 50.
 36. Cartledge 1996b.705.
 37. Snodgrass 1965.114–16, 120–22; Cartledge 1977.23–24.
 38. Snodgrass 1987.173–74; Ober 1991; Mitchell 1996.95–101.
 39. See below at n. 77 for an obvious example.
 40. De Romilly 1968; Foxhall 1993; Snodgrass 1967.62: a "game of agricultural poker."
 41. Recent discussion: de Ste. Croix 1972.190–96; Holladay 1982.97–99, 103; Ober 1985a.33–35, 191–92; 1991; Anderson 1988.685–86.
 42. Van Wees 1995.162–65.
 43. Bugh 1988; Spence 1993; Best 1969; Anderson 1970.
 44. Tyrtaeus 12 West; see Spence 1993.165–79 and the bibliography cited in Raaflaub 1994.138–42.
 45. Connor 1988.18–29; cf. Burkert 1983.47; Meier 1990b.563–78; Cartledge 1996b.697–702.
 46. Ducrey 1968.112; cf. above n. 13; Kiechle 1958. Destructiveness of early wars: above n. 25. Prestige, of course, did not exclude material interests; cf. Herodotus 1.82.
 47. Hanson 1995, esp. chap. 5.
 48. Rhodes 1981.137–46; Welwei 1992a.180–83.
 49. So too de Ste. Croix, as cited in Rhodes 1981.143, 145; Jameson 1992.145; Welwei 1992a.182–83; Foxhall 1997.129–31. Connor 1987.47–49 offers a different solution. Although most scholars now think that *zeugitēs* refers to military function (above n.31), the zeugite property limit is set impossibly high for a broad-based hoplite class. My doubts, briefly, are based on the following considerations. In order to produce at least 200 *medimnoi* (probably not, as Aristotle [*Const. of the Athenians* 7.4] suggests, in a combination of barley and wine but rather in wheat; for sources and discussion, see Rhodes 1981.145; Welwei 1992a.180 n.113, and esp. Foxhall 1997.130–31), a zeugite's property needed to comprise at least ten hectares (ca. 25 acres; Ruschenbusch 1995.440–43 [with one quarter left fallow]; cf. Foxhall 1997.130 [8–13 hectares]; Starr 1977.154–56 [12 hectares]; Hignett 1952.100 n.10 [following De Sanctis and Beloch: 17.4 hectares = 43 acres]; French 1964.20–21 [even more]). Compared with the generally assumed size of the average Greek

- family or hoplite farm (9–13 acres: cf. Ruschenbusch 1995.442; Hanson 1995.181–201; Welwei 1992a.183 n.120), even this minimal estimate puts the Athenian zeugites on the level of well-to-do farmers (so too Foxhall 1997.131). Given, however, that cultivable land in Attica is calculated at between 65,000 and 96,000 hectares (Ruschenbusch 1995.441 [64,800]; Starr 1977.155 [69,000], Garnsey 1988, ch. 6 [84–96,000]), that the members of the higher census classes owned considerably more land, and that the Athenian hoplite army counted 9,000 men at Marathon and 8,000 at Plataea (Beloch 1886.60), this census figure cannot be right (even if we allow for mitigating factors, such as a fair number of father-son pairs or settlement of some Athenian hoplites outside of Attica already at the time of the Persian Wars). Hence, if *zeugitēs* designates hoplite, the zeugite census of 200 *medimnoi* is far too high and must represent an inference from much later and perhaps not directly pertinent data; or else, if the census figure is correct, the zeugites are not identical with the hoplite class whose property qualification then probably was much lower, if one existed at all; in terms of the timocratic system, however, this would relegate most hoplites to the thetic class, which, given the values and ideologies mentioned above, is plainly impossible. The conclusion presented in the text (at n.49) therefore seems inevitable. This problem needs to be investigated more thoroughly.
50. Ruschenbusch 1995.436–39: more than half of all poleis were too small to field meaningful hoplite armies or, because of their location, did not need one. The census for hoplites in Boeotian Orchomenos was approximately 45 *medimnoi*; in many places such requirements may have fluctuated (cf. Hanson 1995.210–11).
 51. Havelock 1978, chap. 7; Gschnitzer 1991; Raaflaub 1997b with bibliography.
 52. Van Wees 1992 (index under "idealization"); 1995.165–70. Incompatible: Bryant 1990.492.
 53. Aristocracy: e.g., Starr 1977, chaps. 6, 8; Donlan 1980; Stein-Hölkeskamp 1989. Solonian Athens offers a good example of conflict and compromise: Andrewes 1982.375–91; Murray 1993, chap. 11; Raaflaub 1996b. Frost 1984 argues that the Athenian hoplites' role was very limited before the late sixth century.
 54. See n. 6 and Raaflaub 1993.64–68 with bibliography; Cartledge 1996a.
 55. Below at n. 75.
 56. Morris 1996b; Robinson 1997. I consider it doubtful that the thetes shared full political rights in Cleisthenes' system of the late, let alone in Solon's in the early, sixth century: Raaflaub 1997c; cf. Rhodes 1981.141; Bleicken 1994.23–24.
 57. Solon, fr. 4 West (*eunomia*); *isonomia*: Raaflaub 1995.49–51; 1996a.143–45. *Isos* versus *homoios*: Cartledge 1996a.
 58. Stein-Hölkeskamp 1989.94–103; Meier 1990a, chaps. 3–4; Gehrke 1993, and the bibliography in Raaflaub 1993.68–75. See also van Wees 1995.169–70. Crisis (best known from Athens): Welwei 1992a.150–61, and above n. 53.
 59. Ridley 1979; Hanson 1995, chap. 8; 1996. Oligarchy: Raaflaub 1994.139–40 with bibliography.
 60. Naval warfare: Rodgers 1937; Morrison and Williams 1968. Trireme: Morrison and Coates 1986; Wallinga 1993. Battle: Herodotus 6.7–17.

61. Hanson forthcoming. Frequency: Garland 1975.15. Brutality: Ducrey 1968; Karavites 1982; Rosivach forthcoming. Strategy: Ober 1985b; Starr 1989, chap. 3; Spence 1990.
62. Gabrielsen 1994, chaps. 5–6. Samos: Meiggs 1972.192. Parthenon: Stanier 1953. Daily wages: one-half to one drachma (1 talent = 6000 drachmas).
63. Amit 1965; Jordan 1975; Rosivach 1985; van Wees 1995.160–61. Metics: Whitehead 1977.84–86. Slaves: Welwei 1974.65–104.
64. Thomsen 1964; Kallet-Marx 1993, 1994. Trierarchy: Gabrielsen 1994.
65. Meiggs and Lewis 1988, no. 33. Ruschenbusch 1979.153–56; Strauss 1986.179–82; Hansen 1988.14–28.
66. Materials: Morrison and Coates 1986, chap. 10; Meiggs 1982, chap. 5; Finley 1982.53–57. Maintenance: Blackman 1968; Garland 1987.95–100; Gabrielsen 1994, chap. 6. Administration: Jordan 1975, pt. 1. Funding: above n. 64. Number of citizens: Ruschenbusch 1985 and esp. 1983a, 1983b. Athens: Hansen 1988.7–10; French 1993.
67. Gabrielsen 1994.6.
68. Ionian Revolt and Persian Wars: Boardman et al. 1988, chaps. 8–11. Laurium: Herodotus 7.144. Delian League: Meiggs 1972; Rhodes 1992b.
69. Surveys: Davies 1992a, 1992b; Raaflaub 1998b.
70. Demography: Frost 1976.70–71; Garland 1987.59–61; Hansen 1988.7–13. Industry and trade: French 1964; Garland 1987. 83–95; Gabrielsen 1994, chaps. 6–7. Building and city planning: Boersma 1970, chap. 5; Hoepfner and Schwandner 1994.22–50. Population of Athens: 36,000 to 45,000 (Drögemüller 1969.97); up to 50,000: Kolb 1984.83 (75 percent occupied in the secondary sector); Piraeus: above 30,000 (Garland 1987.58).
71. Meiggs 1972, chap. 14; Finley 1982, chap. 3; Schmitz 1988.
72. Herington 1963; Raaflaub 1994, forthcoming.
73. Fornara and Samons 1991, chap. 2; Rhodes 1992a; Morris and Raaflaub 1997.
74. Raaflaub 1995.35; 1997c.44–50, 95–97; cf. Bleicken 1994.52; contra: Bleicken 1995.
75. Above n. 11; cf. Strauss 1996; Raaflaub 1994.138–44; van Wees 1995.158–60. Thetes as crews: above n. 63.
76. Beloch 1922.134–35; Amit 1965.57–71; Ceccarelli 1993. Van Wees 1995.157–62 uses other arguments.
77. Welwei 1974.
78. Aristotle, *Constitution of the Athenians* 27.3–4; Finley 1982.48–51; Schmitz 1988.57–70. Income: Kallet 1998.
79. Schuller 1984.88–90; cf. Ruschenbusch 1979.15–17.
80. See above at nn. 70 (demography), 49 (hoplites); Frost 1976.72; Davies 1992b.291–302.
81. Thus Eder 1997, but see Raaflaub 1995.44–46. Cleisthenes: Herodotus 5.66.2.
82. Fornara and Samons 1991.58–75; Rhodes 1992a.67–77; Bleicken 1994.43–46; Raaflaub 1997c. 48–50, 97–101.
83. Eder 1995, 1997.
84. On the political exclusion of women and reliance on slaves, common to ancient societies and far beyond, see Strauss 1997.

85. Bleicken 1994.47, 64.

86. Militias versus mercenaries: Burckhardt 1996. "Total" warfare: Ober 1985a, chap. 2. Specialized troops: Best 1969; cavalry: above n. 9. See generally, Anderson 1970; Garland 1994; Austin 1994; Hamilton 1995. See further Hamilton, this volume.

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