How was a hoplite battle fought? Present orthodoxy holds that the two sides, after each stationed its soldiers about three feet apart and (usually) eight ranks deep, met in the so-called _othismos_ or "shove."¹ The object was literally to push through and break up the opposing line. Once their formation broke, hoplite soldiers could be attacked by light-armed troops and cavalry, as well as by pursuing hoplites.

George Cawkwell recently challenged this view, calling it "wildest folly," since "the front ranks would have been better able to use their teeth than their weapons when a broad shield was jammed against the back with the weight of seven men" and since the _othismos_ appears to come in a second phase after a period of individual combats which sometimes lasted a long time.² Cawkwell

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proposes that terms found in the later tactical writer Asklepiodotos be attached to formations for three separate phases of hoplite battle: first an advance in solid line (*pyknosis*, with each man occupying three feet), then hand-to-hand fighting in open order (each man with about six feet), then the shove or *othismos* with overlapping shields (*synaspismos*, each man with about one and one-half feet).³

These neat phases are surely unworkable in practice. “Who or what,” as A. J. Holladay asks, “would determine the moment at which the lines opened out and then closed up again? There was no referee with a whistle.”⁴ Cawkwell has nevertheless drawn attention to two areas that merit further analysis: the formation of a hoplite phalanx, and the weakness of the traditional view of *othismos*.

I

W. Kendrick Pritchett’s chapter on the width of file in phalanx array sets out the evidence and shows that Polybios, a more reliable authority than Asklepiodotos, does not know of a formation that allowed each man less than three Greek feet (0.89 m).⁵ *Pyknosis* always allows three feet, and *synaspismos* refers once to three feet (12.21.3) and once (by mistake?) to six (12.21.7). Pritchett assumes that these descriptions of the Macedonian phalanx can be applied to the earlier hoplite phalanx. But neither term is used by classical writers, nor by later writers in reference to the hoplite phalanx.⁶ It is not clear that the verb *synaspido*o in Xen. *Hell.* 7.4.23 (“as soon as the two forces had come near to one another, the troops of Archidamos in column, since they were marching along a road, but the Arkadians massed *συνασπιδοῦντες*”) has a technical meaning. Might it not be translated “formed in battle line,” as compared to marching in column? Xenophon’s regular word for an army in battle formation is “phalanx,” and he often describes an army forming εἶς φαλάγγα or ἐπὶ φαλάγγας.⁷ But these terms are not used exclusively. Xenophon can also describe an army forming in line for battle with some form of the verb τόττῳ.⁸ If *synaspido*o in 7.4.23 means something more than these expressions, it is exceptional. But

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³ Asklepiodotos *Tact.* 4.3: “The interval of four cubits seems to be natural (κατὰ φύσιν) and therefore has no name; the one of two cubits and even more that of one cubit are forced formations. Of these that of two cubits, I have said, is called *pyknosis*, and that of one cubit *synaspismos*. We use the *pyknosis* when we march the phalanx against the enemy, and the *synaspismos* when the enemy marches against us.”

⁴ Holladay (supra n.1) 96.


⁶ The only exceptions I have noted are the Townleyana scholia to *Iliad* 13.352 (quoted by Pritchett [supra n.5] 152) and Plut. *Aristeid.* 18.3.

⁷ For example, the former at *Anab.* 4.8.10 and *Cyrop.* 8.5.15, and the latter at *Anab.* 4.3.26, 6.5.7, 25, and *Cyrop.* 6.3.21.

⁸ For example, *συνετάττετο*, *Hell.* 7.5.21; *παρετάξαντο*, *Hell.* 2.4.34.
perhaps the literal meaning of the word should not be forced; in Xen. Hell. 3.5.11 (“if we and you should be clearly συνασπισθούντες against the Lakedaimonians, then others will join us”) it is figurative, and could be translated “stand together.”

If, then, we disregard the evidence about the Macedonian phalanx, what other evidence exists for the width of file in the hoplite phalanx? Representations in art are notoriously difficult to interpret. They fall into two categories: some, like the Chigi vase, show a tight formation;9 others show a looser formation10 or (and these are too numerous to count) simply a duel or duels without any formation. Which category, if either, is realistic? The Chigi vase, recently described as “the most successful portrayal of hoplite tactics which has survived,”11 does not in fact fit the orthodox view of hoplite battle. The ranks are too far apart for the othismos which is about to begin. Can the Macmillan painter have been trying to show the unity of the armies rather than the literal spacing?12 In any case, again the tight formation is exceptional. What is typical is the duel.

A single passage in Thucydides’ account of the battle of Mantinea is the real foundation of the traditional view, since Thucydides says he is describing the norm (5.71.1):

All armies, as they come together, extend toward the right wing, and each side overlaps the enemy’s left with its own right, because in their fear each man brings his uncovered side as close as possible (ὡς μᾶλλοντα) to the shield of the man stationed to his right, thinking that the best protection is τὴν πυκνότητα τῆς ξύραλήσεως.

This passage is less helpful for the study of hoplite formation than at first appears. What did Thucydides consider a ξύραλησις? How compact did a

9. See, for example, the aryballos from Rhodes, the Chigi vase, and the aryballos from Thebes, all c. 650 (Salmon [supra n.1] figs. 1–3); a late-seventh-century Etruscan oinochoe (John Boardman, Eros in Greece [New York 1975] 74); an Athenian black-figure lekanis by the C Painter, 575–550 (ABV, p. 58, no 119 = P. A. L. Greenhalgh, Early Greek Warfare: Horsemen and Chariots in the Homeric and Archaic Ages [Cambridge 1973] fig. 56); a late-sixth-century Etruscan black-figure amphora (P. F. Stary, “Foreign Elements in Etruscan Arms and Armour: 8th to 3rd centuries B.C.,” Proceedings of the Prehistoric Society 45 [1979] pl. 25a).

10. See, for example, an early-seventh-century Protoattic vase (CVA Deutschland 2 [Berlin] 1) pls. 76, 80.2 = Greenhalgh [above, note 9] fig. 44); an early seventh-century Middle Korinthian vase, (CVA Deutschland 4 [Braunschweig] pls. 149–50 = Greenhalgh [supra n.9] fig. 53a); an early-seventh-century ivory seal from Artemis Orthia (Cartledge [supra n.1] fig. 1); an ivory pyxis from Chiusi, c. 650–625 (Stary [supra n.9] fig. 6, 2); an Attic black-figure cup. c. 550–525 (ABV, p. 227, no. 14 = Greenhalgh [supra n.9] fig. 65); a sarcophagus from Telmessos, c. 375–350 (William A. P. Childs, The City-Reliefs of Lycia [Princeton 1978] fig. 2 and pl. 6.3—note that the scenes on this monument that portray a battle already in progress show individual combats [figs. 1. 2 and pls. 6.1, 3]).


12. As Humfry Payne noted, the increased overlap in the shields “marks an advance in the art of relating the figures in a group” (Necrocorinthia [Oxford 1931] 99).
formation have to be for a hoplite to feel safe? The next paragraph (in which Thucydides uses the verb ξυγκάλησε twice) makes it clear that a lack of ξυγκάλησε can mean a gap large enough to hold ½ of the Spartan army; a compact ξυγκάλησε, therefore, need hardly have been as tight as three feet per man. Thucydides’ ώς μάλιστα is little help without a more specific context. He might have thought three feet per man impossible, too cramped for hand-to-hand fighting. Such fighting requires room to fake, to dodge, to sidestep, to wrong-foot the opponent by stepping backward as he delivers his blow or thrust.

The maneuverability of the two-handled hoplite shield is part of the issue here.13 Could it have been used effectively by a soloist? It had several advantages: the porpax or central armband helped support the weight, so that the shield could be larger than earlier round shields;14 it could be held at an angle more firmly than a single-handed shield, so that blows would tend to glance off it; it would not be lost if the hoplite dropped the antilabe or leather thong, so that he could hold a spare weapon in his left hand. Its disadvantages were that it protected the left side better than the right, and that it did not effectively protect the back. But given that it is difficult for a right-hander to reach the right side of his opponent, and given that a hoplite could protect his right side by turning his body as well as by moving his shield (and would naturally do so in order to deliver a spear thrust), an individual fighter would find the double-handled shield preferable to its predecessors. Vase paintings portraying peltasts carrying two-handled shields prove that a double-handled shield is not incompatible with a relatively loose formation.15 Perhaps the clearest indication that individuals found hoplite shields useful is that the epibatai who fought on triremes were armed as hoplites;16 here there can have been no formation. On board ship each hoplite must have used only his own shield to defend himself.

In a land battle some formation would have been desirable, since the helmet limited vision and hearing and the weight of the armor limited agility. A hoplite needed to know that he would not be attacked from the side or rear.

13. I follow A. M. Snodgrass, Arms and Armour of the Greeks (Ithaca 1967) 53–54; Greenhalgh (supra n.9) 71–73; Salmon (supra n.1) 85. Not all have agreed: see Anderson (supra n.1) 16 and Cartledge (supra n.1) 13.

14. The weight, compared to other ancient shields, should not be exaggerated. Connolly’s reconstruction of a bronze-faced hoplite shield, based on a fourth-century example in the Vatican, weighed 7.5 kg; his reconstructions of two Roman oval scuta, based on examples found in the Fayum and in Doncaster, weighed about 10 kg each; his reconstructions of a Roman rectangular scutum, based on a third-century A.D. find at Dura Europos, weighed between 5.5 and 7.5 kg (supra n.1) 53, 131–32, 233).

15. Anthony Snodgrass, Archaic Greece (Berkeley 1980) 103 with pl. 14. For two other illustrations, see J. G. P. Best, Thracian Peltasts and Their Influence on Greek Warfare (Groningen 1969) pls. 8 and B.

16. For hoplites on deck at Sybota, see Thuc. 1.49; at Syracuse, Thuc. 7.67.2. Other references and discussion can be found in J. S. Morrison and R. T. Williams, Greek Oared Ships (Cambridge 1968) 263–65.
while he was engaged with the man in front of him. How close did he need to be to his neighbor to feel reasonably protected? Within a spear’s thrust. I should think. Consider the position from the point of view of the enemy hoplite: how far would hoplite A have to be from hoplite B for an enemy to enter the gap and attack A from the side? Far enough so that the enemy would not have to worry about a spear or sword in his back from B while his attention was directed toward A. The comfortable limit, therefore, would be about six feet per man, as the Roman legionaries had (Polyb. 18.29.6–8). The “natural” interval of Asklepiodotus (see n.3) may be a recollection of the spacing in the classical hoplite phalanx, and the six-foot synaspido in Polybios 12.21.7 may not be a mistake after all. Kallisthenes, whom Polybios is attacking, may have used the word in that loose, untechnical sense.

Of course hoplites did not always stand exactly six feet apart; special situations, such as the storming of a city wall, induced tighter formations.17 Nor was the norm necessarily six feet rather than five. But the typical battle order allowed significantly more than three feet per man. Only such a hypothesis would make sense of the evidence that some hoplites fought in a relatively loose formation: Tyrtaios 8.35–38, which pictures javelin- and stone-throwers among seventh-century hoplites, using the hoplites’ shields for protection; the vase-paintings which show that between 530 and 500 the Athenians experimented with Scythian archers shooting from between men of the front rank,18 the traditional battle-axes which the Etruscans continued to swing, even after they adopted Greek equipment and tactics, until the end of the sixth century.19

A further benefit of this hypothesis is that it accounts for the evidence that Philip II tightened the formation of the phalanx. According to Diodoros, Philip devised the compact spacing of the phalanx (πίν πῆς φαλαγγος πυκνότητα), imitating the synaspismos of the heroes at Troy.20 This statement is supported by Plutarch, who says that the Achaian used a phalanx without synaspismos,21

17. See the scenes on the Nereid monument of Xanthus, c. 380 (Childs [supra n.10] fig. 11) and on the heroon at Trysa, c. 370 (Childs, fig. 20 and pls. 14–17).
19. Stary (supra n.9) 192–93. A reader objected that these examples of experimentation and variation do not come from the classical period. Granted; but they do show that hoplite equipment was not incompatible with fighting in a relatively open style, long after the Chigi vase allegedly shows the development of a close formation.
21. Plut. Philop. 9; cf. Polyain. 6.4.3 and Paus. 8.50.1. Pausanias must be wrong about the Argive shields, since they could not have been used with sarissas.
a phalanx without close-order formation was possible. Pritchett’s belief that the hoplite phalanx and the Macedonian phalanx fought with shields almost touching led him to conclude that the difference between the hoplite formation and the Macedonian formation corresponded to the difference in the size of the shields: 0.10 m, according to the archaeological evidence (preferred by Pritchett), or about three times that much, according to the literary evidence. But ten centimeters would not have been a noticeable difference on a confused battlefield. In my view, Philip devised the tighter formation because the mass of his infantry could not afford the armor necessary for hand-to-hand combat. He developed the hedge of sarissas that later so frightened Aemilius Paullus (Plut. Aemilius 19.2) and that, under the right conditions, prevented the enemy from penetrating close enough to do damage with shorter spears and swords. The change in spacing was more than 0.10 m, perhaps as much as 0.89 m.

II

Both the noun and the verb for “push” can be used both literally and figuratively. The noun othismos is not very common in contemporary descriptions of Greek battles, but the verb otheo and its compounds appear frequently. In most cases, these words should be taken figuratively rather than literally. A crucial point is that the classical historians inherited the word “push” from the earliest writer on Greek military affairs, Homer. In the Iliad, great heroes and their followers fight now at a distance, now hand-to-hand. The formations are rather loose; the heroes can disengage and go elsewhere as needed. There is no othismos in the sense of “shock,” or collision of masses of armed men. Yet Homer repeatedly uses the verb otheo in his battle descriptions. In these instances the word must be metaphorical; it must mean something like “make to retreat” or “compel to give ground.” The burden of

22. Asklep. Tact. 5.1 and Ailianos Tact. 12. If the tacticians are correct (contra Pritchett) that the shield used by the Macedonian Foot Companions was eight palms in diameter, or about 0.62 m (J. K. Anderson, “Shields of Eight Palms’ Width,” CSCA 9 [1976] 3, notes that the monuments may not illustrate the shields carried by the rank and file), then the Macedonian formation, which allowed about 0.89 m, was not literally shield-to-shield, and the assumption that measurements for either the hoplite phalanx or the Macedonian phalanx can be determined by shield size must be discarded.

23. The range in width of hoplite shields is at least four times that large, from 0.80 m to 1.20 m (see Anthony Snodgrass, Early Greek Armour and Weapons [Edinburgh 1964] 64).


26. Even if a few passages are thought to show knowledge of hoplite armor and tactics (a view I reject, following Snodgrass [supra n.23] 176–79), they cannot include all the following: 8.295, 336; 12.420; 13.148; 16.44, 654; 17.274.
proof, therefore, rests on those who would claim that the classical historians changed this familiar meaning of *otheo* in battle contexts.

In a few cases the pushing was undoubtedly literal. Take Thucydides’ account of the battle of Delion (4.96.2): “No contact was made between the extreme wings of either army, since both were held up by water-courses in the way. But everywhere else the fighting was stubborn, with shield pressing against shield (ὦθισμῷ ἀπαύὐνῳ.” Or Xenophon’s account of the fictitious battle of Thymbrara (*Cyrop.* 7.1.33–34):

Here was a terrible fight with spears and lances and swords. The Egyptians, however, had the advantage both in numbers and in weapons, for their spears (which they still have now) are strong and long, and their shields cover their bodies much better than breastplates and small shields, and fitting against the shoulder they aid in pushing (τὸ ὀθεῖσθαι). Making their formation they advanced and pushed (ὁμοθονῦν). The Persians were not able to hold, since they had little shields in their hands, but striking and being struck they retreated step by step, until they reached the towers.

Neither of these passages need imply a mass shove or shock tactic; there is no proof here that hoplites in the rear ranks pushed their comrades in front. The pushing, though literal, might have been individual, i.e., a single hoplite against a single enemy hoplite. A push with the shield could knock the opponent’s shield aside or make him lose his balance—a use of the shield attested specifically for Alexander the Great at Tyre (Diod. 17.46.2). This technique is also found in Homer,27 and I believe that Xenophon had it in mind when he wrote that at the battle of Koroneia “dashing together the shields they pushed (ὁμοθονῦντο), they fought, they killed, they died.”28 Why did the historians single out the clash of shields for specific mention, rather than, say, the thrusting of spears? Perhaps because they meant to indicate that the fighting was at close range; no gingerly or tentative jabs at a comfortable distance, but combat so close that a small slip might be fatal.

In most cases Homer’s use of *otheo* makes good sense in the classical historians.29 They even used this verb and its compounds to describe the results of naval battles.30 What they intended to convey is that one side gradually forced the other to give ground as a result of the outcomes of many separate, but closely related, individual combats.31 When Xenophon tells us that at

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29. Hdt. 9.25.1; Thuc. 2.4.1, 4.35.3, 4.43.3, 4.96.4, 5.72.3, 6.70.2, 8.25.4, 8.100.3; Xen. *Hell.* 2.4.34, 4.3.19, 4.4.11, 6.4.14, 7.2.8, 7.4.30–31, *Cyrop.* 6.4.18, 7.1.33, 7.1.38. See also *othimmos* at Hdt. 7.225 and 9.62.2.
30. Thuc. 7.36.5, 7.52.2, 7.63.1, 8.104.4–105.1; Xen. *Hell.* 4.3.12.
31. Pausanias’ description of a battle in the First Messenian War (4.7.7–8.13) may be rhetoric rather than history, but the terminology is correct: the Lakedaimonians kept their formation and
Leuktra the Spartans held out for a time, but finally ὑπὸ τοῦ ὄχλου ὑθούμενοι ἀνεχώρον (Xen. Hell. 6.4.14), he means not that the weight of the Thebans literally pushed the Spartans back, but that the Spartans were overcome by the Theban numbers rather than by the superiority of the Theban hoplites or by a failure in their own courage—neither of which the pro-Spartan Xenophon could credit—and forced to retreat, step by step.32

The surprisingly scanty evidence about training for war does not contradict this interpretation and may even support it. To bolster his contention that “Xenophon’s own opinion, and probably that of his Spartan friends, seems to have been that . . . at close quarters it was impossible to miss, and that men who had been trained to close with the enemy would not need to be shown what to do once they reached him,”33 J. K. Anderson cites two sources, Xenophon’s Cyropaedia and Plato’s Laches. If his interpretation of them is correct, they would damage the view that individual skills were important.

In the Cyropaedia Cyrus is encouraging the Persian commoners to fight because he needs more troops (2.1.11). This rhetorical purpose must be kept in mind when we hear Cyrus telling his newly equipped men that nobles will now have no advantage in hand-to-hand fighting (2.1.15–16). The commoner Phereulas agrees, saying that he instinctively knows how to fight hand-to-hand (2.3.9–10). This sort of thinking would serve a purpose if it persuaded a significant number of the commoners to stand their ground in battle, but the reasoning is not sound. Plato expressly denies that a well-equipped but untrained soldier can be good (Rep. 374d):

Is a man who takes a shield or another piece of military equipment or tool on that day a competent combatant in hoplite or any other kind of fighting, while no tool will make a man an artist or an athlete merely by his holding it, nor will it be useful to one who does not understand how to use it and has not had sufficient practice?

In the Laches, the speakers consider the usefulness of experts in hoploma-chia, or fighting with hoplite weapons. They have just witnessed an exhibition

were superior in weapons-handling, training, and numbers; the Lakedaemonians particularly used othismos and attacked man against man (ὡθημένω χρώμενοι μάλιστα οἱ Λακεδαιμόνιοι καὶ ἀνήρ ἄνδοι ἐπιτυχεῖ—that is, individual Spartans pushed their individual opponents with their shields); nevertheless the Messenians forced back (βιβκόντοι) the Spartan right; they “pushed” (ἀπώσαντο) King Theopompos and routed (ἐτρέψαντο) the Lakedaemonians opposed to them.

32. As part of his argument that the deep Theban ranks at Leuktra were intended to add weight to the othismos rather than to serve as reserves, Holladay ([supra n.1] 96 n. 23) points to “the revealing detail that Boeotian merchants and baggage-carriers grouped themselves behind the army, thus adding bulk and mass to it. They were not armed as hoplites, so they had nothing to contribute but weight for the othismos.” This argument twists the evidence: Xenophon is clear that the merchants and baggage-carriers tried to leave before the battle but were driven back by enemy forces (Hell. 6.4.9). For what it is worth, the “revealing detail” argues against Holladay. Why would the Spartans intentionally add mass to the enemy army if weight would decide the battle?

33. Anderson (supra n.1) 84–86.
by one Stesilaos. Nikias maintains that the art is good exercise and that only such men as practice it are trained for war. Laches, however, disagrees with Nikias. The Spartans would not have overlooked this art, he says, if it were of any use; and he makes a great deal of the fact that these “experts” avoid Sparta. But Laches’ remarks do not show that the Spartans had no interest in weapons-training; his view of the “experts” is that they were gimmick-loving frauds—he himself had seen Stesilaos fighting, poorly, with a combination spear-scythe (183c–184a). No doubt the Lakedaimonians had no interest in such devices, and Laches is right that such teachers did not go to Sparta. But that does not prove that the Spartans did not have their own teachers in their own tradition.

It may be that weapons-training was so common (if mostly informal: according to Xen. Mem. 3.12.5, Athens had no public training in the fifth century) that it is largely ignored by writers concerned with more complicated matters.34 Hoplomachia did not originate in fifth-century Athens; Ephoros indicates that it began at Mantineia in the mid-sixth century.35 It may have existed earlier elsewhere. The ideal hoplite was agile and strong rather than massive and bulky.36 Agility and dexterity were enhanced by dancing. “Those who honor the gods best with dances are best in war.”37 Dancing may have helped soldiers learn to move in formation, but the leaps and maneuvers with shields were aimed primarily at individuals, not groups, for obviously all could not swerve at the same time to duck an assortment of missiles or parry a variety of blows with common shield movements.

Greek military theory stressed ἐνταξία, or good order. “Without a formation (οὐνταξιαί) hoplites are useless,” wrote Aristotle (Pol. 1297b17). Here is another argument against the orthodox view of othismos. An army engaged in a mass shove would be like the “crowd going out of a theater” castigated by Xenophon in reference to cavalry without formation (Hipparch. 2.7). Drill in formation (see, e.g., Xen. Lac. Pol. 11.5–10) was not intended solely to enable a general to march his troops in whatever direction he wished; it was also to


35. FGrHist 70 F 54, with Everett L. Wheeler’s discussion, “Hoplomachia and Greek Dances in Arms,” GRBS 23 (1982) 225–29—but the evidence does not justify Wheeler’s assertion that “the origins of instruction in hoplomachia are certainly Arcadian.” Wheeler himself writes elsewhere: “The question of Spartan employment of hoplomachoi from Arcadia or elsewhere must be left open, but this does not preclude the Spartans themselves from serving as hoplomachoi” (“The Hoplomachoi and Vegetius’ Spartan Drillmasters,” Chiron 13 [1983] 13). Spartan hoplomachoi must have existed since the institution of the agoge, at least by the early sixth century.

36. On agility and the use of arms see Nepos 15.2.4–5; on fat men see Plut. Mor. 192c–d. For similar sentiments in other authors see Pritchett (supra n.1) 215–16.

37. On the dance in armor see Wheeler (supra n.35), with references. Epameinondas called the Boiotian plain the orchestra (dancing floor) of war (Plut. Mor. 193c) or of Ares (as Plutarch has it at Marc. 21.3)—an image which hardly suits the orthodox view of othismos.
teach hoplites how to avoid getting in each other’s way. A hoplite could hardly do more to hinder his comrade’s freedom of movement than to push him in the back. An experienced hoplite army, with soldiers trained to leave each other room to fight, would have avoided the fate of the French mass at Agincourt. 38 To keep their army in formation, the Spartans advanced into battle to the music of flute-players (Thuc. 5.70).

What determined the formation of a phalanx, if depth was not for literal pushing? A hoplite phalanx, like the proverbial chain, was only as strong as its weakest link. “If we advance drawn up only a few ranks deep,” Xenophon says in his Anabasis (4.8.11), “it would not be surprising if our phalanx should be cut through, being attacked by many weapons and men; and if this happens anywhere, it will mean disaster for the whole phalanx.” To ensure that the line could withstand the deaths or disabling injuries of some of the front-line fighters, it had to be supported. Isokrates could speak rhetorically of a depth of one in a former age of heroes (6.99), but such a formation would never have been adopted in practice. On the other hand, a deep phalanx could be outflanked, and the battle might be over before those in the rear ranks had taken any effective part in the fighting. “When phalanxes are too deep to reach the enemy with weapons,” Cyrus says in Xenophon’s Cyropaedia (6.3.22), “how can they hurt their enemy or help their allies?” Later Cyrus claims that the Egyptians, drawn up 100 deep, “will prevent one another from fighting, except a very few” (6.4.17). The well-trained, well-disciplined Spartans considered 8–12 ranks deep enough; others, less confident, lined up 16 deep. 39 The Thebans tried even deeper formations on one wing: 25 deep at Delion (Thuc. 4.93.4). παντελός deep at Nemea (Xen. Hell. 4.2.18, compared to their allies who were 16 deep), and finally no fewer than 50 deep at Leuktra (Xen. Hell. 6.4.12; in this case, probably only a wedge was 50 deep, rather than the entire wing.) 40

38. See John Keegan’s study of Agincourt in The Face of Battle (New York 1976) 79–116, esp. 100–101 on what happened to the French mass. Of interest too is Keegan’s argument that shock has never taken place: “Large masses of soldiers do not smash into each other, either because one gives way at the critical moment, or because the attackers during the advance to combat lose their fainthearts and arrive at the point of contact very much inferior in numbers to the mass they are attacking. In either case, the side which turns and runs does so not because it has been physically shaken but because its nerve has given” (71).

39. The Syracusans at Thuc. 6.67; the Athenians and their allies at Xen. Hell. 4.2.18. Pritchett has assembled the data on depth of phalanx (supra n.5) 135.

Psychology was also an important consideration, perhaps the most important consideration. Front-line soldiers would fight well only as long as they knew there were men behind them to relieve them if they tired or carry them out of battle if they were wounded. Depth of formation would give them a psychological lift, and it would exert a psychological pressure on the enemy. The sight of an unbreakable phalanx—the realization that however many men one killed, others would take their places—must have made even the courageous think about running away, especially the soldiers behind the front line who had not yet entered the killing zone. The Greeks stationed some of their braver men in the rear to stem this tendency. Nevertheless, whole armies sometimes fled before coming into contact with the enemy, and in a great many battles one side, or part of one side, was routed—i.e., rather than yielding ground gradually ("pushed" back), the hoplites ran. Aristophanes did not exaggerate when he called War ὁ κατὰ τῶν σκέλων, which the scholiast explains as ἀπὸ τῶν διὰ δειλίαν ἀποτιλώντων. Here we can see another advantage the Spartans created for themselves. Confident of their abilities, they did not run and shout to keep up their courage as they charged into battle; their calm, measured, quiet advance to the sound of flute-music must have had a devastating psychological effect on their opponents.

The effect of my argument that hoplite battle consisted of a multiplicity of individual combats is to increase the emphasis A. M. Snodgrass and John Salmon have placed on gradual transition rather than sudden revolution in the switch from "Homeric" to "hoplite" warfare. Snodgrass argued that hoplite equipment was adopted piecemeal by individuals who did not at first use "hoplite tactics" in a phalanx. The essential elements of the panoply were in use in the late eighth century, but the phalanx was not invented until around the middle of the seventh. Salmon modified this interpretation by introducing a

Pelopidas and the Sacred Band formed the head of a wedge in front of the regular Theban line. He concludes that the Theban wedge required only 1,376 men, leaving the rest of the Theban army to be drawn up in conventional order. The difficulties with this hypothesis are that the tacticians' sources are obscure, that it is questionable whether their technical vocabulary can be applied to the hoplite phalanx, and that Xenophon seems to imply that the entire Theban army was 50 deep, not only the point of the wedge. On the other hand, the wedge hypothesis would significantly enlarge the killing zone and would significantly lessen the danger to the Thbons of being outflanked. It would also explain Diodoros' statement that the Spartans advanced in a moon-shaped formation (15.55.3); their line bent around the point of the wedge. With some hesitation, I accept the wedge—but I do not think its precise shape or the number of men involved can be known.

41. Xen. M encoding. 3.1.8; Cyrop. 3.3.41–42; 6.3.25–27.
42. The Kleonians, Orneatians, and some Athenians at Mantinea (Thuc. 5.72.4); the Argives at Koroneia (Xen. Hell. 4.3.17; most of the Arkadians at the "Teary" (from the Spartan point of view) Battle (Xen. Hell. 7.1.31). See also Pritchett (supra n.1) 203–5. The Spartan temple to Fear perhaps recognized its decisive character in battle (Plut. Kleom. 8–9).
43. Peace 241. For other references in Aristophanes to fear causing incontinence, see Jeffrey Henderson, The Maculate Muse (New Haven 1975) 189.
“transitional phalanx” stage, probably c. 675–650, during which hoplites fighting in a phalanx might throw a javelin before thrusting a spear or might use a sword as an alternative weapon to the spear.\textsuperscript{45} But the phalanx was not an invention of the seventh century. Already in the \textit{Iliad} warriors form ranks (\textit{phalanges}: only once in the singular, 6.6). Nestor knows the importance of stationing the brave men in the front and the rear, forcing the less courageous in the middle to fight (4.297–300). Such an arrangement would give a conspicuous role to the men in the front line, especially if they were better armed than the subsequent ranks.\textsuperscript{46} When improved equipment became available, these leaders adopted it. At first the number of hoplites must have been small. That does not mean that the early phalanxes were numbered in hundreds rather than thousands,\textsuperscript{47} only that most men in the ranks were more vulnerable than the aristocrats who could afford the new equipment. The Homeric \(\lambda\omega\zeta\) did not instantly disappear or move to the side. When the rank and file could afford it, no doubt they acquired the new panoply too—with the approval of the existing hoplites.

Later the formation became more standardized. Though experiments such as that of the Scythian archers could take place, generally the light-armed fought separately from the phalanx. Hoplite armor itself became lighter over time, particularly during the fifth century. But the essence of a hoplite battle remained the hand-to-hand fighting of individual hoplites in the front rank, one-on-one, two-on-one, three-on-two, etc. The painting by the C painter on the bowl of a tripod-pyxis in the Louvre, which shows a variety of one-on-one and two-on-one struggles, may be the most realistic of all the battle-paintings.\textsuperscript{48}

Davidson College

\textsuperscript{45} Salmon (supra n.1) 90–92, conceded now by Snodgrass (supra n.15) 106.

\textsuperscript{46} I agree with Geoffrey S. Kirk that the \(\lambda\omega\zeta\) was not only young noblemen, but I think he ignores psychology when he argues that a great anonymous \(\lambda\omega\zeta\) would mean that the exploits of the leaders would be “relatively inconspicuous” (“War and the Warrior in the Homeric Poems,” \textit{Problèmes de la guerre en Grèce ancienne}, ed. J.-P. Vernant [Paris 1968] 113). If a Sarpedon could not withstand Patroklos, it is not surprising that his Lykians did not try (\textit{Iliad} 16.659–60).

\textsuperscript{47} Contra Salmon (supra n.1) 94.

\textsuperscript{48} \textit{ABV}, p. 58, no. 122 = J. D. Beazley, \textit{The Development of Attic Black-Figure} (Berkeley 1964) pl. 8.