OTHISMOS: THE IMPORTANCE OF THE MASS-SHOVE IN HOPLITE WARFARE

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AS A RESULT of recent work on hoplite tactics, the traditional notion that *othismos* (ὠθισμός), or literal shoving, played a decisive role in hoplite battles has been called into question.[1] Since this long-standing idea has come under attack as a theoretically improbable tactic, it seems appropriate, after a brief examination of the traditional view and the objections lodged against it, to offer some arguments of a likewise theoretical nature in support of the assumption that hoplite battles were generally decided by a mass-shove.

I THE TRADITIONAL VIEW

A brief survey of the contemporary historians yields a fairly persuasive prima facie case for the traditional assumption that hoplites pushed *en masse* to punch through an enemy phalanx. Herodotus characterizes the struggle which occurred over the body of Leonidas at Thermopylae as "a great shoving" (ὠθισμὸς πολλός, 7.225), and his description of Marathon argues for the mass-shove, for he attributes the success of the Greek flanks to their mass and depth (τὸ δὲ κέρας ἑκάτερον ἔρρωτο πλήθεϊ, 6.111; cf. 6.113). Literal pushing is also evident in Thucydides. At Delium, swollen torrents prevent the flanks of either army from engaging, but the centers collide in a "fierce struggle and pushing of shields" (καρτερῇ μάχῃ καὶ ὠθισμῷ ἀσπίδων, 4.96), while at Anapus, breakthrough occurs only after the Argives and Athenians have "pushed back" the Syracusans opposite them (ὠσαμένων, 6.90). We get much the same picture from Xenophon, who tells us that at Piraeus, part of the Athenian line was actually pushed into the marsh of Halae (ἐξεώθησαν, *Hell.* 2.4.34), that at Leuctra the Spartans were

[1]The latest attack on the significance of *othismos* has been launched by G. L. Cawkwell in "Orthodoxy and Hoplites," *CQ* NS 39 (1989) 375–389. Expanding arguments first made in his *Philip of Macedon* (London 1978) 150–157, Cawkwell claims that individual weapons-play was the heart of hoplite warfare, and that *othismos* would be used (if at all) only in the later stages of a battle. Other important opponents of the traditional view are A. D. Fraser, "The Myth of the Phalanx-Scrimmage," *Classical Weekly* 36 (1942) 15–16, and Peter Krentz, whose article, "The Nature of Hoplite Battle," *CA* 16 (1985) 50–61, finds *othismos* to be little more than a metaphor. Those taking a more traditional approach include J. Lazenby, "The Killing Zone," in V. Hanson, *Hoplites* (London 1991) 87–109; V. Hanson, *The Western Way of War* (Oxford 1989); W. K. Pritchett, *The Greek State at War* (Berkeley 1971–85) 1.175; 4.65–73; J. Buckler, "Epameinondas and the Embolon," *Phoenix* 39 (1985) 134–143, at 141–142; J. K. Anderson, "Hoplites and Heresies: A Note," *JHS* 104 (1984) 152; and A. J. Holladay, "Hoplites and Heresies," *JHS* 102 (1982) 94–103.

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"shoved back" by the mass of the Theban phalanx (ὑπὸ τοῦ ὄχλου ὠθούμενοι, *Hell.* 6.4.14), and that at Coronea, the opposing sides "set shield against shield and pushed" as they "fought, killed, and were killed" (συμβαλόντες τὰς ἀσπίδας ἐωθοῦντο, ἐμάχοντο, ἀπέκτεινον, ἀπέθνησκον, *Hell.* 4.3.19). While it may perhaps be possible to interpret the "pushing" in these and similar passages as metaphorical, or to see it as something less than decisive, the reason for the longstanding assumption about the primary importance of *othismos* in hoplite battles should be clear: it flows from a natural reading of the best available contemporary witnesses to this sort of combat.[2]

II OBJECTIONS TO THE TRADITIONAL VIEW

The Press of Arms

Could hoplites really fight and shove? Later sources attest to the fact that in post-Classical times, at any rate, massed infantry formations did employ the tactic of generating force by the bodily pressure of rank upon rank.[3] Polybius (18.30.4) explains that "by the very weight of their bodies" (αὐτῷ γε μὴν τῷ τοῦ σώματος βάρει) the rear ranks of the Macedonian phalanx contribute to the battle by "pressing the forward ranks in the charge" (οὗτοι τοὺς προηγουμένους κατὰ τὴν ἐπαγωγὴν πιεζοῦντες) and thus "lend impetus to their advance" (βιαίαν μὲν ποιοῦσι τὴν ἔφοδον). Arrian's comments are similar (*Tact.* 16.13–14).[4] In his opinion, one cannot gain the same advantage by massing cavalry in depth as one can from massing infantry. For by melding with those in front, he says, the infantry forms a single cohesive mass from many parts (συνεχεῖς γιγνόμενοι τοῖς πρὸ σφῶν τεταγμένοις ἔν τι βάρος τοῦ παντὸς πλήθους ἀποτελοῦσιν). It is clear, moreover, that this "advantage" of infantry over cavalry is one of increased physical pressure produced through pushing, for, as he tells us, it derives from the fact that cav-

[2]Among military historians of the pre-war era, there is general agreement on the importance of literal shoving in battle. H. Delbrück, for example, in his *Geschichte der Kriegskunst im Rahmen der politischen Geschichte* 1*: Das Altertum* (Berlin 1920; new ed. by K. Christ, Berlin 1964) 32, refers to the "physical" contribution of the rear ranks in pitched battle, and sees the force so developed as a basic principle of hoplite tactics. J. Kromayer and G. Veith, although viewing *othismos* as a tactic used toward the end of a battle, nonetheless see it as decisive (*Heerwesen und Kriegführung der Griechen und Römer* [Munich 1928] 85). See also H. Droysen, *Kriegsalterthümer* (Freiburg 1888) 90–103, and F. Lammert, *RE* (1938) 1637 *s.v.* Phalanx.

[3]On the value of later tactical writers for hoplite issues see E. L. Wheeler, "The Occasion of Arrian's *Tactica*," *GRBS* 19 (1978) 351–366; *idem*, "The Legion as Phalanx," *Chiron* 9 (1979) 303–318; and *idem*, "The Hoplomachoi and Vegetius' Spartan Drillmasters," *Chiron* 13 (1983) 1–20.

[4]The citations in this article from Arrian's *Tactica* follow the edition of A. G. Roos (Leipzig 1967).

alry cannot "press" (ἐπερείδειν) horse to horse or "shove" (ἐπωθοῦσι) those in front *as infantry can.*[5]

Despite this testimony, however, the feasibility (and, therefore, the importance) of literal *othismos* in the Classical period has been questioned on precisely these grounds. The press of so many men in a true *othismos*, so the argument goes, would knock the front ranks off balance, making it virtually impossible for them to make effective use of their weapons.[6] However, Arrian's description of the manner in which the physical pressure is applied (*Tact.* 16.13–14) helps to explain how such force might have been exerted without robbing hoplites of the stability necessary to manipulate shield and spear. Arrian tells us that infantrymen do not stand with shoulders squared to the fore;[7] rather each soldier "presses" on the shoulder and side of the man in front (κατὰ τοὺς ὤμους καὶ τὰς πλευρὰς αἱ ἐνερείδεις γίγνονται τῶν πεζῶν), not on his back. This explanation of the mechanics of pushing is consistent with Xenophon's description of the Egyptian phalanx in the *Cyropaedia* (*Cyr.* 7.1.33). He tells us that the Egyptians' shields (ἀσπίδες) "are an aid in pushing" (πρὸς τὸ ὠθεῖσθαι συνεργάζονται) when they are set on the shoulder (πρὸς τοῖς ὤμοις οὖσαι).[8] These passages suggest that pushing could be accomplished without a "shove in the back," and the implications for hoplite warfare of the Classical period are significant. For if the hoplites of this time also stood at an angle, not parallel, to the enemy line, and received the "push" in the side (or right shoulder) instead of in the back, they would be better able to brace themselves against the surge from the rear, thus keeping their balance.

There is, in fact, substantial evidence to suggest that hoplites routinely adopted just such a posture, commonly known as the "striding stance."[9]

[5]Compare Mauricius' remark about the comments of "the ancients" on this same point: οὐδὲ γὰρ ὡς ἐπὶ τῆς πεζικῆς τάξεως, ἐκ τῶν ὄπισθεν διὰ τοῦ βάθους ὠθισμός τις γενέσθαι δύναται, ἵνα καὶ ἄκοντες οἱ πρωτοστάται τὴν ὁρμὴν ἐπὶ τὰ πρόσω ποιοῦνται, ὅτι μὴ πεφύκασιν οἱ ἵπποι μετὰ τῆς ὄψεως αὐτῶν συμφώνως, ὡς οἱ πεζοί, ὠθεῖν τοὺς ἔμπροσθεν (*Strat.* 2.6).

[6]The point is made by Krentz (above, n. 1) 58 f.; Cawkwell, *Philip of Macedon* (above, n. 1) 151–152; Fraser (above, n. 1) 15 f.; and A. W. Gomme, *Essays in Greek History and Literature* (Oxford 1937) 135.

[7]Compare *Tact.* 3.5, where Arrian speaks of "the leg which is thrust forward in battle" (τῆς κνήμης τῆς ἐν ταῖς μάχαις προβαλλομένης).

[8]While Xenophon means that the shields are set on each soldier's own left shoulder, the fact that the Egyptian infantry lead with their left shows that we are to understand an oblique stance of the type Arrian described: i.e., the left shoulder and shield are placed against the right shoulder and side of the forward rank.

[9]Many contemporary bronzes, friezes, and vase paintings illustrate this posture: the bronze warrior statuette from Dodona, G. Richter, *Sculpture and Sculptors of the Greeks* (New Haven 1929) 379, fig. 100; the warrior reliefs on the east frieze of the Siphnian treasury at Delphi, S. Meletzes, *Delphi* (Munich 1964) 39–50; the Nereid monument from Xanthus, J. K. Anderson, *Military Theory and Practice in the Age of Xenophon* (Berkeley 1970) plate 13; and the collection of military scenes on vases and *aryballoi*

In this oblique stance, a most natural one for men marching forward in ranks,[10] the left leg and shoulder were advanced toward the enemy, the right leg and shoulder were drawn backward to the right, and the shield was angled forward to the left. The resulting "open v-shape" of this stance enabled front-rank hoplites to hold their opponents at a greater distance than they would otherwise have been able to do with shields parallel and shoulders squared.[11] Advancing left shoulder first with the shield thrust forward at an angle, a hoplite could more easily avoid being thrown off balance, while at the same time directing the pressure from behind forward, thus transferring the shock of the push to the enemy line with the edge of his outstretched shield.[12]

Phases of Battle

Was the pressure generated by *othismos* then continuous, or was *othismos* a tactic used primarily in the final phase of battle? The "final phase" theory of *othismos* rests heavily upon Herodotus' account of Plataea (9.62).[13] Here Herodotus describes the battle between the Spartan and Persian infantry after the collapse of the wall of shields (τὰ γέρρα) as fierce and protracted "until they came to *othismos*" (ἐς ὃ ἀπίκοντο ἐς ὠθισμόν). This has been taken to mean that the Spartans engaged in loose-formation single combat with the Persians until, suffering the loss of their spears, they resorted to the "tactic" of *othismos*. It is unlikely, however, that the Spartan line found itself in any position to engage in such individual combat during this second phase of the battle, because it must have already been formed into close-formation to push down the Persian barricade during the first phase. Herodotus' narrative suggests as much, indicating that after the battle opened with a struggle for this defensive barricade, the wall of shields "fell down" as a result of the fight (ἐπεπτώκεε). The clear implication is that the Spartan line *pushed* it down in the course of their attack in the same way that, at the battle of Mycale, the allied force broke through an identical Persian shield-wall by physically knocking it over as they advanced in ranks

collected by H. L. Lorimer, "The Hoplite Phalanx with Special Reference to the Poems of Archilochus and Tyrtaeus," *ABSA* 42 (1947) 76–138.

[10] As noted by P. A. L. Greenhalgh in his *Early Greek Warfare* (Cambridge 1973) 72.

[11] In this way the outstretched shield could also be used either to deliver blows in the manner of a "left jab," as in the depiction of the battle between the Greeks and Amazons on the Mausoleum, Richter (above, n. 9) 588, and in that of the falling warrior on the Siphnian frieze, Richter (above, n. 9) 391. The shield might also be used to ward off spear thrusts with a sweeping motion, as is illustrated by a red-figured hydria in A. D. Trendall, *The Red-Figured Vases of Lucania, Campania, and Sicily* (Oxford 1967) vol. 2, plate 129, fig. 5.

[12] V. Hanson in "Hoplite Technology in Phalanx Battle," in Hanson, *Hoplites* (above, n. 1) 63–84, argues that the hoplite shield was designed in a concave shape to keep weight off the left arm, increase frontal protection, and facilitate pushing.

[13] Cawkwell, *Philip of Macedon* (above, n. 1) 152.

(διωσάμενοι γὰρ τὰ γέρρα οὗτοι φερόμενοι ἐσέπεσον ἀλέες ἐς τοὺς Πέρσας, 9.102). The clause in question (ἐς ὃ ἀπίκοντο ἐς ὠθισμόν) is best taken as a description of the eventual displacement of the Persian line through the continuing pressure of *othismos* (present from the start). Understood in this way, the clause would mean that after breaking down the wall of shields, there was a long, fierce fight around the temple of Demeter "*until [the Spartans] finally reached the point of pushing-through.*"[14] The reference then would be not to the commencement of *othismos*, but to the eventual Spartan success in driving the Persians back.[15]

The notion that the hoplites of that day had either the discipline or the training to change from an open formation engaged in individual combat to the close order necessary for a push has been justly criticized.[16] It would also have been impractical. No loose formation could hope to resist a mass-shove. Since the first side to organize for *othismos* would thus necessarily be victorious, there would naturally be a huge incentive to form up ready to push from the very start.

The Question of Stamina

This brings us to a third objection to the traditional position on *othismos*: namely, that since *othismos* could not be long sustained, it would not have been a permanent fixture in pitched battle.[17] While the length of hoplite battles may bear upon this problem, it is important to note that protracted combat and *othismos* were not mutually exclusive.[18] In his description of

[14] "Pushing" is similarly equated with victorious displacement of the enemy in Aristophanes' *Wasps*: "But nonetheless with heaven's help we pushed them back at eventide." (ἀλλ' ὅμως ἀπεωσάμεσθα ξὺν θέοις πρὸς ἑσπέραν, 1085).

[15] This interpretation also makes the best sense out of the explanatory clause which follows, since we can now take the γάρ as explaining the Persians' tenacity in prolonging the battle (χρόνον ἐπὶ πολλόν). By breaking off so many Spartan spears, the Persians blunted their opponents' attack somewhat, and thus delayed the outcome. Since the Persians were lightly armored (9.62–63) and particularly vulnerable to Spartan spear-thrusts, Herodotus must have felt that the length and ferocity of Persian resistance after the collapse of their protective barrier called for some explanation: it was a long time before the Spartans could push the Persians back (ἐς ὃ ἀπίκοντο ἐς ὠθισμόν), because the Persians had broken off so many of their spears.

[16] Holladay (above, n. 1) 94–97. The Spartan attempt to make even less radical adjustments to their line resulted in complete disaster at Leuctra. J. Buckler, "Plutarch on Leuktra," *SO* 55 (1980) 75–93.

[17] Cawkwell, *Philip of Macedon* (above, n. 1) 150–153.

[18] The evidence for hoplite battles of long duration is sketchy, as can be seen from Pritchett's chart (above, n. 1) 4.46–51. Statements in the historians to the effect that a particular battle lasted "a long time" (e.g., Hdt. 6.29.1; Thuc. 4.44.1) may be relative to the typical pattern of near immediate resolution such as we find at Mantinea in 418, and at Cunaxa. This pattern is described by Polybius as a quick decision at the moment the two opposing lines collided (εἰς καιρὸς ὁ κατὰ τὴν πρώτην ἔφοδον καὶ σύμπτωσιν τῆς δυνάμεως, 35.1).

the battle of Delium, Thucydides relates that it ended at nightfall (νυκτὸς ἐπιλαβούσης, 4.96); yet, as we have seen, he characterizes the battle as a "fierce struggle and pushing of shields" (καρτερᾷ μάχῃ καὶ ὠθισμῷ ἀσπίδων, 4.96).

A consideration of the possible mechanics of *othismos* may help to explain how its force could be sustained over prolonged periods. In cases where the *primus impetus* did not serve to break the cohesion and shatter the ranks of one of the two lines, we can surmise that the initial shock gave way to a protracted struggle in which the tension caused by continuing *othismos* would wax and wane as the individual hoplites relaxed or intensified their efforts, much in the manner of a "tug of war" in reverse, with the important provision that the very front ranks would be simultaneously engaged in fierce combat. Fatigue, terrain, casualties, skill, courage, and cowardice would doubtless all play a role in varying the amount of force imparted by the leading edge of shields, but whenever two opposing phalanxes "came to grips,"[19] the physical pressure of *othismos* would normally continue until one side literally pushed the other to the breaking point. Polyaenus preserves a tradition which explains how Epaminondas broke just such a deadlock at Leuctra. While the issue of the battle was in doubt, the Theban general encouraged his soldiers to push one more step forward (ἓν βῆμα χαρίσασθέ μοι, καὶ τὴν νίκην ἕξομεν, 2.3). They did, the Spartan line shattered, and the battle was won.[20]

III ARGUMENTS IN SUPPORT OF THE TRADITIONAL VIEW

If it is true that the idea of a literal, sustained *othismos* poses problems of a theoretical nature for adherents of the traditional view, it is also true that there are certain elements of hoplite battle for which an actual, physical pushing is the best explanation. These elements, then, to the extent that they argue for the importance of mass, physically applied, advance the case for *othismos* beyond the explicit literary evidence.

[19]This direct contact of two hoplite lines is commonly expressed by the phrase εἰς χεῖρας or ἐν χειρσί. In Thucydides' description of Delium (4.96.2) the phrase means "engaged in close combat." At Delium, the extremities of the opposing formations never came ἐς χεῖρας because the terrain (swollen torrents) prevented it. It seems likely then that "close combat" was the normal method by which hoplites did battle. If so, the situation would be as Arrian explains it (*Tact.* 4.5; 4.9), when he distinguishes skirmishers (ἀκροβολισταί) from heavy infantry by the fact the former do not come to grips with the enemy (οἱ μὴ ἐς χεῖρας ἰόντες), but rather shoot at them from a distance (ἀλλὰ πόρρωθεν ἐξακοντίζοντες). For a different view, see Pritchett (above, n. 1) 4.54–57.

[20]Lazenby (above, n. 1) 97, notes by way of comment on this anecdote that, while one may wonder whether Epaminondas could have made himself heard by many of his soldiers amidst the din of battle, Spartan soldiers apparently did normally expect to receive orders in combat, as in Thucydides' account of Sphacteria (4.34.3). The problems of noise and distance might have been overcome by relaying the general's commands and exhortations down the line.

The Importance of Order

As Aristotle points out, hoplites are useless "without good order" (ἄνευ συντάξεως, *Pol.* 4.10.10, 1297b20). This judgment is confirmed by the historians. Thucydides informs us that it was for the sake of maintaining especially tight and well-ordered ranks that the Spartans eschewed the charge, and instead made a habit of advancing slowly into battle to the sound of the flute (5.70). Moreover, his *History* is replete with instances in which a disorderly line brings about defeat.[21] In one particularly notable case, he relates how Brasidas assured his own outnumbered troops that their Lyncestian opponents would not prove their equals in a fight, since they observed no disciplined order (οὔτε γὰρ τάξιν ἔχοντες, 4.126.5). Herodotus cites the Persian deficiency in tactical skill relative to the well-drilled Spartans as a significant factor in their poor showing at Thermopylae (ἐν οὐκ ἐπισταμένοισι μάχεσθαι ἐξεπιστάμενοι, 7.211) and their defeat at Plataea (ἀνεπιστήμονες ἦσαν καὶ οὐκ ὅμοιοι τοῖσι ἐναντίοισι σοφίην, 9.62). In both cases, this deficiency is made manifest by the Persian tendency to break ranks in the heat of battle.[22] Xenophon is also concerned with good order, equating it with safety in his initial harangue to the Ten Thousand (*Anab.* 3.1.38). At Leuctra, moreover, it is the disruption of the Spartan phalanx which he sees as at least partially responsible for the overall Theban victory (*Hell.* 6.4.13).

Since hoplites were notoriously vulnerable to attacks from the flank, an unbroken line was a necessity under any theory of hoplite warfare. The examples cited above, however, speak to the importance of maintaining order *within ranks*. If hoplite battles were essentially a mass compilation of *monomachiae*, as indeed *othismos* skeptics claim, a formation seven or eight men deep would be unlikely to develop gaps in the line as a result of confusion in the ranks. Once the two opposing lines were engaged, the sheer mass and depth of the phalanx would tend to prevent the opening up of holes through mere attrition. If, however, direct physical pressure were to be brought to bear through *othismos*, a phalanx whose members were not properly lined up in ranks one behind the other would find itself at a considerable disadvantage in a mass-shove. The *othismos*, then, helps to explain the emphasis placed by contemporary sources upon this principle. With its ranks in disarray, a phalanx was "off balance": that is, without the physical cohesion necessary to withstand the shock of *othismos* and thus more susceptible to being pushed back or ruptured by the physical pressure exerted by an opposing line.

The Charge

One means of producing physical shock was the charge, a brisk advance

[21] Such as 3.108.3; 4.126.5; 5.9.3; 6.97.4; 7.53.2; 8.10.4; 8.25.3.

[22] At Thermopylae, they impetuously pursued the feigned retreats of the Spartans, and at Plataea, they hurled themselves upon the Spartan line individually or in small groups. Herodotus censures both practices.

whose purpose it was to smash the mass of one's own phalanx into the enemy line with maximum force.[23] Marathon was, to Herodotus' knowledge (6.112), the first instance in which a Greek phalanx charged its opponents at a dead run. Yet Thucydides' characterization of the Spartan habit of advancing slowly (βραδέως, 5.70) as exceptional among the Greeks suggests that an energetic advance of the type employed by the Argives at Mantinea was the norm (ἐντόνως καὶ ὀργῇ χωροῦντες, 5.70). This initial, swift advance did occasionally, however, develop into a run, as at Cunaxa, when one part of the Greek line found itself lagging behind and began to race forward, causing the entire phalanx to follow suit (*Anab.* 1.8.18). Thucydides tells us that at Delium the Athenian line dashed forward against the Boeotians "on the run" (4.96.1). Whether a particular "charge" was delivered at a literal run (as at Marathon, Cunaxa, and Delium), or at a rapid, forceful marching pace (as at Mantinea), vigorous assault was a standard feature in hoplite battles.[24] While a swift advance might convey the additional benefits of enhancing morale and limiting exposure to enemy missiles,[25] these factors alone cannot explain the development of the charge into a hoplite convention, given that hoplites charged whether or not missiles were a problem, and given that even short charges in heavy armor were physically exhausting.[26] The charge made a literal clash of lines inevitable, since a rapidly advancing, heavily-armed formation of hoplites eight ranks deep would have to halt abruptly in its tracks to avoid a physical collision with an equally determined, advancing enemy force.

Concentration in Depth

In the Classical period, we know of only a few occasions when a phalanx of hoplites was drawn up for battle with a depth of less than eight ranks.[27] Since the length of the average hoplite's thrusting spear mea-

[23]For the effectiveness of the *primus impetus* see Kromayer and Veith (above, n. 2) 84; Pritchett (above, n. 1) 4.72–73; and Hanson, *The Western Way* (above, n. 1) 135–159.

[24]Consider Herodotus' account of the allied assault at Mycale (διωσάμενοι γὰρ τὰ γέρρα οὗτοι φερόμενοι ἐσέπεσον ἀλέες ἐς τοὺς Πέρσας, 9.102).

[25]Delbrück ([above, n. 2] 61) saw three reasons for the charge at Marathon: "die Wucht des Anpralls moralisch und physisch zu bestarken und den Pfeilschub zu unterrennen."

[26]W. Donlan and J. Thompson, "The Charge at Marathon: Herodotus 6.112," *CJ* 71 (1975/76) 339–343 and "The Charge at Marathon Again," *CW* 72 (1978/79) 419–420.

[27]Pritchett ([above, n. 1] 1.135) has collected the data. Eight is the most common depth. Of the four instances where phalanx depth is reported as less than eight ranks, three refer to Spartan troops (one deep at Dipaea ca 471, Isoc. *Arch.* 99; four deep at Athens in 408, Diod. Sic. 13.72.5–6; two deep at Thebes ca 394, Polyaenus 2.1.24). The fourth instance cited by Pritchett (Xen. *Anab.* 1.2.15) is not a battle, but a description of the Ten Thousand holding a military review. The tacticians consider eight ranks the minimum standard depth (Arrian *Tact.* 5.5; Asclep. *Tact.* 2.1; Aelian *Tact.* 4.2). Arrian

sured two to three meters overall,[28] initially only the first (and possibly the second) rank would be able to bring their spears to bear.[29] The additional ranks seem unnecessary, unless we understand that their purpose was to lend weight for pushing. It is wrong to think of these additional hoplites as reserves, whose primary job it was to step in and replace their comrades in the front-rank as these were wounded or killed.[30] While fallen front-rank fighters were replaced by those behind them, hoplite battles were not decided by attrition. Long before the number of hoplites in the rear ranks of either side had been depleted, one phalanx or the other would crack and flee.[31] Nor should we see the purpose of these multiple rear ranks as merely one of boosting morale by encouraging those in front and preventing their untimely retreat.[32] Soldiers take encouragement from those who can actually render them direct assistance (as the rear ranks could not in the absence of *othismos*). Furthermore, the front ranks would be the last to take up precipitous flight, being the elite of the army, selected for their courage, strength, and skill.[33] In any

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also notes that extending a standard eight-rank phalanx into one of four ranks results in a phalanx "without depth" (ἀβαθὴς ἡ φάλαγξ).

[28]See P. Cartledge, "Hoplites and Heroes: Sparta's Contribution to the Technique of Ancient Warfare," *JHS* 97 (1977) 11–27, at 14–15, and A. M. Snodgrass, *Arms and Armour of the Greeks* (Ithaca 1967) 38.

[29]Arrian *Tact.* 12.1 states that second-file men need a measure of courage second only to the first-file men, because their spears also reach the enemy (δευτέρους δ' ἐπὶ τούτοις κατ' ἀρετὴν χρὴ εἶναι τοὺς τῶν λοχαγῶν ἐπιστάτας· καὶ γὰρ τὸ τούτων δόρυ ἐξικνεῖται ἔστε ἐπὶ τοὺς πολεμίους).

[30]See Buckler (above, n. 1) 141, n. 24. Arrian *Tact.* 12.4 stresses the importance of this duty only in the case of the second rank (καὶ πεσόντος ἡγεμόνος ἢ καὶ τρωθέντος ὡς ἀπόμαχον γενέσθαι, προπηδήσας ὁ πρῶτος ἐπιστάτης ἐς λοχαγοῦ τάξιν καὶ ἀξίωσιν κατέστη, καὶ ἀρραγῆ τὴν πᾶσαν φάλαγγα παρέσχετο; see also 12.1).

[31]Casualty figures for pitched battles in the Classical period simply do not support the argument that multiple ranks were necessary to supply the losses resulting from attrition. In his article, "Casualties in Hoplite Battles" (*GRBS* 26 [1985] 13–20), P. Krentz effectively challenges the assumption that casualties in such encounters were relatively light. According to his data, the average losses for the losing side were 14%, and the highest recorded losses are 20%. Krentz argues that in the small world of the Greek *polis*, even a 5% figure would be a significant loss. This is undoubtedly true, but on the battlefield, even the 20% loss figure would not seem to create a situation in which the rearmost ranks of the phalanx would be needed as attrition reserves. Additionally, many, if not most, of the casualties incurred by the loser of a pitched battle often came in flight and pursuit after their phalanx had already been broken.

[32]See Krentz (above, n. 1) 60 and Pritchett (above, n. 1) 1.141.

[33]Arrian *Tact.* 12.1–2 puts a priority upon the "size, might, and skill" of the file leaders (ἀγαθὸν δὲ εἴπερ τι ἄλλο καὶ τοὺς λοχαγοὺς τοὺς μεγίστους τε καὶ κρατίστους εἶναι καὶ τῶν κατὰ πόλεμον δαημονεστάτους), and likens them to the "cutting edge" of a sword (τὸ ἴσον παρέχεται ἐν ταῖς μάχαις ὅ τι περ τὸ στόμωμα τῷ σιδήρῳ). They are the "yoke" that holds the entire phalanx together (τοῦτο γὰρ τὸ ζυγὸν ξυνέχει τὴν πᾶσαν φάλαγγα). This last comment suggests that Arrian did not envision the front rank being whittled down by attrition in the course of a normal battle.

case, multiple rear ranks dedicated exclusively to such purposes would be superfluous.[34]

Attempts to explain phalanx depth apart from the value of mass and the shock which mass imparts seem particularly ineffective in the case of the Theban phalanx which was 25 deep at Delium (Thuc. 4.93), and 50 deep at Leuctra (Xen. *Hell.* 6.4.12), or in the case of the Boeotian phalanx at the river Nemea, which Xenophon tells us was significantly deeper than sixteen ranks (Xen. *Hell.* 4.2.18). Boeotian hoplites were not in need of greater encouragement or coercion than their opponents, and any incremental psychological advantage gained by this multiplication of ranks could not have compensated for the very real danger of being outflanked (given that a concomitant shortening of the line would be necessary to produce such depth).[35] In each of these three battles, Delium, Leuctra, and the river Nemea, the Theban and Boeotian hoplites did achieve significant breakthroughs, which are best explained by the increased force of *othismos* which the additional ranks produced.[36]

Concentration in Width

In certain cases, the task of breaking through an opponent's phalanx was accomplished by concentrating one's own formation not only in terms of depth, but also in terms of width. Xenophon describes such a situation in his account of the battle of Coronea (*Hell.* 4.3.16–19). The Thebans contracted their interval before charging (συσπειραθέντες ἐχώρουν ἐρρωμένως, 4.3.18), and as a result were successful in their attempt to break through the Peloponnesian line. Thucydides (1.63.1) also describes a similar occurrence, reporting how Aristeus "drew his men together" (ξυναγαγόντι τοὺς μεθ' ἑαυτοῦ ὡς ἐς ἐλάχιστον χωρίον) in order to force his way into Potidaea on the run (δρόμῳ βιάσασθαι ἐς τὴν Ποτείδαιαν).[37]

Instances of closing ranks to increase shock-effect are also to be found in later sources. Plutarch (*Pel.* 17.2) records that Pelopidas used the same

[34]The tacticians felt that the final rank, the "file closers" (οὐραγοί), were sufficient to the task of restraining sluggards in all ranks: τοὺς λειποτακτοῦντας διὰ δειλίαν εἰς τάξιν ἐπάγοιεν, Asclep. *Tact.* 3.6. See also Aelian *Tact.* 5.5 and Arrian *Tact.* 5.5. Arrian also recommends that the file closers be on a par with the file leaders (*Tact.* 5.6).

[35]This is especially true in light of the very real disadvantages of such deep formations discussed by V. Hanson in "Epameinondas, the Battle of Leuktra (371 B.C.), and the 'Revolution' in Greek Battle Tactics," *CA* 7 (1988) 190–207.

[36]Theoretically, a commander could increase the chances of a breakthrough by tightening and deepening his phalanx, but, as Onasander points out (*Strat.* 21.1–2), this would render the flanks particularly vulnerable to attack. A tactical stalemate thus reigned until the advent of the Theban innovation. Better tactical conception and execution, and better use of cavalry to screen the flanks eventually made greater concentration a less risky proposition.

[37]E. A. Bétant explains ξυναγαγόντι here as *contrahere* in *Lexicon Thucydideum* 2 (Genf 1847) 200.

tactic to good effect at Tegyra where he drew his hoplites into a tight formation (εἰς ὀλίγον συνήγαγεν) with the expectation that, in spite of the superior numbers of the enemy overall (ὑπερβάλλοντας πλήθει τοὺς πολεμίους), his own highly concentrated force would thus be able to cut through at the point of impact (ἐλπίζων καθ' ὃ προσβάλοι μάλιστα διακόψειν).[38] The picture given by Diodorus is similar. During the siege of Halicarnassus, Ephialtes' forces won an initial success against the Macedonians by attacking in a formation which was notably compact as well as deep (ἐν βαθείᾳ φάλαγγι πεπυκνωμένων, 17.26.4), assuming that such mass would make them invincible (δόξαντας διὰ τὸ βάρος ἀκαταγωνίτους εἶναι, 17.26.4).[39] They were only defeated after the Macedonian veterans likewise concentrated and closed ranks against them (συναθροισθέντες καὶ συνασπίσαντες, 17.27.2). Diodorus also tells us that it was with a similar result that Epaminondas organized a select group of hoplites into an unusually tight formation during the battle of Mantinea (ἀναλαβὼν τοὺς ἀρίστους καὶ μετὰ τούτων συμφράξας, 15.86.4), and was then able to cut through the enemy phalanx with this concentrated force (διέκοψε τὴν φάλαγγα τῶν πολεμίων, 15.86.5).

In each of the above cases, the tactic of massing hoplites into an unusually tight formation by reducing their file intervals provided some degree of success. Given the increased difficulty a hoplite would have manipulating his weapons in a restricted formation of this sort, such a tactic would seem curious indeed, unless we understand that the concentration thus achieved paid a direct and tangible benefit by increasing the physical pressure of *othismos*.

Othismos helped to make the phalanx of the Classical period the successful military machine it was. Until the advent of superior tactics, only similarly armed and organized hoplites who were equally willing, in Xenophon's words, "to set shield against shield, *push*, fight, kill, and be killed," could hope to oppose it effectively.[40]

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[38]Though writing well after the event, Plutarch had good sources for this particular battle, consulting, as he tells us, Ephorus, Callisthenes, Polybius, and "certain other writers" (*Pel.* 17.2). See Buckler (above, n. 13) 75–76.

[39]The Halicarnassians were presumably still using classical tactics and formations. Ephialtes and his men had assumed that "because of their mass" they could not be stopped (δόξαντας διὰ τὸ βάρος ἀκαταγωνίστους εἶναι, 17.26.4).

[40]συμβαλόντες τὰς ἀσπίδας ἐωθοῦντο, ἐμάχοντο, ἀπέκτεινον, ἀπέθνῃσκον, *Hell.* 4.3.19.