

Alexander – the Great Tactician?

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Abstract

There is little doubt that Alexander the Great was a very successful battlefield commander. Yet what was this success based upon? Many scholars attribute Alexander's success (at least in part) to tactical innovation. But how correct is such a conclusion? An examination of the four major set-piece battles that Alexander fought as part of his Eastern campaign provides the details of his implementation of tactics. By comparing these details to a set of criteria that many modern military theorists use to gauge tactical competency, the level of Alexander's ability as a battlefield commander can be determined. The results of this comparison show that, while in some areas Alexander's tactical ability was nothing original nor inventive, his use of variation within the construct of a base tactical plan was what ensured victory and made him one of the greatest military leaders of the ancient world.

Alexander the Great is one of the most notable military commanders in history – a commander whose campaigns and battles are still studied in many western military academies today.¹ Why is this young king of ancient Macedon the focus of such detailed scrutiny? Certainly the romance of his story (a successful and vibrant leader who dies at a young age) and the sheer scale of his conquests have had a large part to play in Alexander's continuing military and historical legacy. But just how good was Alexander as a battlefield commander? Such questions have aroused scholarly debate and examination of Alexander's major engagements for decades. Yet many of these analyses either simply accept the concept that Alexander was a good tactician, or analyse particular events without detailing the criteria which are being used to judge Alexander's performance on the field. By comparing Alexander's tactics in the four major engagements of his campaign (Granicus in 334BC, Issus in 333BC, Gaugamela in 331BC and Hydaspes in 326BC) to a set of criteria which modern military theorists use to define the art of tactics, it can be seen that while Alexander was a successful commander, there was nothing original nor overly innovative about the base tactics he employed. Instead it was his ability to improvise the elements of this base tactic which was the key to securing victory.

Alexander's reputation as a great general is not a modern concept.² If the account is to be believed, according to Appian both the Carthaginian general Hannibal and the Roman

¹ For example see: Carey, M.G. (1997), *Operational Art in Classical Warfare: The Campaigns of Alexander the Great*, Fort Leavenworth, US Army Command and General Staff College

² The first extant reference to Alexander with the epithet 'the Great' is found in the play *Mostellaria* (line 775) by the Roman playwright Plautus, written around one hundred years after Alexander's death.

commander Scipio considered Alexander the best general of all time.³ Julius Caesar is said to have lamented over the fact that Alexander had accomplished so much by the age of thirty-two whereas he had accomplished so little by the same age.⁴ Napoleon, believed that it was Alexander's ability, and not his army, which allowed him to conquer Persia.⁵ Alexander's tactical abilities are also much lauded by modern scholars. Devine, for example, calls Alexander a 'brilliant and subtle tactician'.⁶ Similarly, Burn calls Alexander 'a great strategist and tactician'.⁷

One of the most comprehensive analyses of Alexander's abilities as a commander is found in the works of Fuller.⁸ Fuller defines the art of strategy as 'operations in plan' while the art of tactics is defined as 'operations in action'.⁹ Fuller bases his examination of Alexander as a tactician on seven different tactical principles:¹⁰

- **Maintenance of the aim or objective:** to gain victory either through attrition or through possession of the field at the end of a battle.
- **Security:** using a strong defensive position to adequately judge the enemy's strength and potential.
- **Mobility:** to be able to move in relative safety towards the enemy.
- **Offensive power:** using the cover of defence to move into a position where a concerted attempt can be made to defeat the enemy.
- **Economy of force:** not exhausting your forces prematurely so that they can be employed offensively when the time is right.
- **Concentration of force:** delivering a decisive blow against a key point in the enemy formation.

³ According to Appian (*Syr.* 10), Hannibal and Scipio had a conversation on the topic of general ship and both placed Alexander at the top of their lists. Hannibal then placed Pyrrhus of Epirus second and himself third. When Scipio asked Hannibal where he would have ranked himself if Scipio had not defeated him at the battle of Zama, Hannibal is said to have replied that he would have ranked himself greater than Alexander. Most scholars consider this passage of Appian's as pure fiction.

⁴ Suet. *Caes.* 7

⁵ Napoleon (1829), *Mémoires écrits à Sainte-Hélène Vol.II (1823-1825)*, Paris, Philippe, 90

⁶ Devine, A.M. (1975), 'Grand Tactics at Gaugamela' *Phoenix* 29.4, 384

⁷ Burn, A.R. (1965), 'The General ship of Alexander' *Greece & Rome* 12.2, 140; for other examples of comments on Alexander's 'greatness' as a commander see: Warry, J. (1980), *Warfare in the Classical World*, Norman, University of Oklahoma Press, 71; Carey, *Operational Art*, 1; Featherstone, D. (1988) *Warriors and Warfare in Ancient and Medieval Times*, London, Constable, 59; Warry, J. (1998) *Alexander 334-323BC*, Oxford, Osprey, 20; Thomas, C.G. (2007), *Alexander the Great and his World*, Oxford, Blackwell, 221; Heckel, W. (2008) *The Conquests of Alexander the Great*, Cambridge, Cambridge University Press, 27; Connolly ((1998) *Greece and Rome at War*, London, Greenhill Books, 73) seems to be one of the few who hold a more negative opinion of Alexander by stating that 'Alexander may be the most successful general of all time but he can hardly be considered the best'.

⁸ Fuller, J.F.C. (1998) *The General ship of Alexander the Great*, London, Wordsworth, 292-301

⁹ Fuller, *General ship of Alexander*, 293

¹⁰ The same, or similar, principles are found in many of the manuals which outline the principles used by modern military institutions. For example see: Australian Defence Force (2012), *ADDP-D: Foundations of Australian Military Doctrine*, Canberra, Department of Defence, 6.7; UK Ministry of Defence (2011), *JDP 0-01: British Defence Doctrine*, Wiltshire, Ministry of Defence, 205-215; US Army (2008), *FM-3-0. Military Operations*, Washington, Department of the Army, A1-4

- **Surprise:** attacking unexpectedly and/or in a way that the enemy cannot guard against.

Fuller applies these principles to an examination of many differing facets of Alexander's campaign – battles, sieges, guerrilla war in Central Asia – in a holistic approach. However, such principles are a valuable means of gauging Alexander's ability in individual areas of his campaign as well – in particular his four major set-piece engagements (overviews of which follow in order to place the rest of the analysis into context).

*Granicus - 334BC*¹¹

Alexander's first confrontation with the forces of Persia was fought across the river Granicus in western Asia Minor in the first year of his campaign. The two main accounts of this battle, those of Arrian and Diodorus, paint very different pictures of the encounter. Yet, both contain similarities which highlight Alexander's tactics on the day.

Upon the receipt of information from scouts about the deployment of Persian forces ahead of his line of march, Alexander deployed his forces along one bank of the river Granicus.¹² According to Arrian, Parmenio advised not going into action immediately, but suggested advancing on the next day to provide enough time to cross the river, which is described as deep and with steep banks in places.¹³ In Arrian's account Alexander dismissed Parmenio's advice and ordered an immediate attack.¹⁴ Diodorus, on the other hand, has Alexander wait until the following dawn before crossing the river and deploying his forces on the far bank.¹⁵

Arrian states that Alexander deployed his Thessalian and allied cavalry on his left wing along with the Thracians.¹⁶ The centre of Alexander's line was held by six contingents of his pike-phalanx.¹⁷ To the right of the phalanx, forming a mobile hinge between the centre and the right wing, Alexander placed his 3,000-strong contingent of elite *hypaspists*.¹⁸ The right wing of the formation, commanded by Alexander himself, was comprised of the Companion

¹¹ For discussions and examinations of this battle and the accounts of it see: Badian, E. (1977), 'The Battle of the Granicus: A New Look' *Ancient Macedonia II*, 271-293; Hammond, N.G.L. (1980), 'The Battle of the Granicus River' *JHS* 100, 73-88; Devine, A.M. (1986), 'Demythologizing the Battle of the Granicus' *Phoenix* 40.3, 265-278; Hammond, N.G.L. (1997), *The Genius of Alexander the Great*, London, Duckworth, 69; Bosworth, A.B. (1998), *A Historical Commentary on Arrian's History of Alexander Vol I*, Oxford, Clarendon Books, 114-116; Fuller, *Generalship of Alexander*, 147-154; Bosworth, A.B. (2008), *Conquest and Empire: The Reign of Alexander the Great*, Cambridge, Cambridge University Press, 40-41; Heckel, *Conquests of Alexander*, 48; Pietrykowski, J. (2009), *Great Battles of the Hellenistic World*, Barnsley, Pen and Sword, 34-46; English, S. (2011), *The Field Campaigns of Alexander the Great*, Barnsley, Pen and Sword, 33-60; Campbell, D. (2013), 'Alexander's Great Cavalry Battle: What Really Happened at the River Granicus?', *AncWar* 7.2, 48-53

¹² Arr. *Anab.* 1.13.2

¹³ For Parmenio's advice see: Arr. *Anab.* 1.13.3; for the description of the river see: Arr. *Anab.* 1.13.4; Plutarch (*Alex.* 16) describes the river as flowing swiftly and with banks that were wet and slippery

¹⁴ Arr. *Anab.* 1.13.6-7; see also: Plut. *Alex.* 16

¹⁵ Diod. Sic. 17.19.3

¹⁶ Arr. *Anab.* 1.14.3

¹⁷ Arr. *Anab.* 1.14.2

¹⁸ Arr. *Anab.* 1.14.2

cavalry, archers, javelineers and three other mounted contingents¹⁹ On the opposite bank, the Persians deployed a large screen of cavalry, which they thought adequate to engage the Macedonians as they attempted to ford the river, with an equally large contingent of Greek mercenaries positioned behind (*Figure 1-Page 57*).²⁰

The Macedonian attack began with an advance of the cavalry and skirmishers on the right wing.²¹ This was no doubt designed to draw the Persian left wing forward, engage them, and keep them occupied. Arrian later states that this advance force suffered badly in the opening engagement.²² While the Persian left wing was occupied, Alexander moved his companion cavalry obliquely to the right, upstream from the battle.²³ As they began to cross the river, the current of the water pushed the Companions back downstream towards the battle. However, Alexander was able to cross with little initial resistance which suggests that his oblique move had taken the Companions quite a distance to the right of his line.

Once across the river, and with the pike-phalanx and left wing also advancing to pin the remainder of the Persian line in place, Alexander wheeled his cavalry to the left and drove headlong at the flank of the Persian line, a place where we are told the Persian commanders were putting up the most resistance (see *Figure 1-Page 57*).²⁴ Faced with attacks from two directions – from the Macedonian advance force from the front and from Alexander and his cavalry from the side – the Persian left wing broke, soon followed by a rout of the entire Persian line.²⁵ Attention was then turned on the Greek mercenaries - with the pike-phalanx engaging them from the front and the cavalry on both wings.²⁶ It was a resounding victory for the Macedonians.²⁷

¹⁹ Arr. *Anab.* 1.14.1

²⁰ Arr. *Anab.* 1.14.4

²¹ Arr. *Anab.* 1.14.6

²² Arr. *Anab.* 1.15.23

²³ Arr. *Anab.* 1.14.7

²⁴ Arr. *Anab.* 1.15.3-8; Polyaeus, *Strat.* 4.3.16; it is here that the descriptions of Alexander's tactics in the accounts of both Arrian and Diodorus are essentially the same. See: Diod. Sic. 17.19.6-17.20.2; Plutarch (*Alex.* 16) says that infantry on both sides engaged on the far bank of the river. This contingent of Persian infantry along the river bank is not mentioned by Arrian or in the differing account of the battle by Diodorus. However, Diodorus (17.21.4) does state that the Macedonian phalanx routed the Persian infantry. It is unclear whether this is a reference to possible units of Persian infantry posted along the riverbank as Plutarch describes or is a reference to the later engagement with the Greek mercenaries which is described by Arrian (see following).

²⁵ Arr. *Anab.* 1.16.1; Plut. *Alex.* 16

²⁶ Arr. *Anab.* 1.16.2

²⁷ For the various casualty figures given by the various sources see: Arr. *Anab.* 1.16.3-4; Plut. *Alex.* 16; Diod. Sic. 17.21.6; Just. *Epit.* 9.6

*Issus – 333BC*²⁸

At Issus in the following year Alexander again fought the Persians – this time on a narrow coastal defile, bordered on one side by the sea and on the other by a range of hills, in south-eastern Asia Minor. As he had done at Granicus, Alexander again deployed his pike-phalanx in the centre of his line.²⁹ To the right of the pike-phalanx stood the *hypaspists* in their customary position as a hinge between the pikemen and the right wing which was composed of, as at Granicus, the Companion cavalry and skirmishers with Alexander in personal command.³⁰ The Macedonian left, under the command of Parmenio, comprised the Peloponnesian and allied cavalry, the Thessalian cavalry (which was transferred from the right wing to reinforce the left), and contingents of Cretan archers and Thracians.³¹ On the right wing units of skirmishers and mounted archers formed a line deployed at an angle to the right-rear of the main line (or ‘refused’ in military terminology) to engage advance Persian units who had been positioned on the high ground on Alexander’s right flank which threatened to encircle his position.³² Another line, refused forward-right, and comprised of skirmishers and mercenaries, was deployed to try and outflank the Persian left wing.³³ The remaining contingents of Greek mercenaries were posted in the rear as a reserve (and to possibly counter any encircling move).³⁴

Across the river the Persian king, Darius, positioned his Greek mercenaries in the centre of his line, as a counter to the Macedonian phalanx, with contingents of heavy infantry on either side.³⁵ Other units, some of them missile troops, were dispatched to the heights to try and outflank the Macedonian line.³⁶ Cavalry was massed on either wing with the Persian right more heavily weighted due to the presence of more suitable ground in that area for a cavalry action (hence Alexander’s reinforcement of his left wing with the Thessalian cavalry).³⁷ Due to the narrow nature of the defile, all of the Persian forces (which outnumbered Alexander’s) could not be deployed in line and the Persian infantry was posted in a second line, behind the Greek mercenaries.³⁸ Arrian states that Darius commanded from the centre.³⁹ However, it is more likely that Darius was on the left wing of the infantry line (*Figure 2-Page 58*).⁴⁰

²⁸ For discussions and examinations of this battle and the accounts of it see: Murison, C.L. (1972), ‘Darius III and the Battle of Issus’, *Historia* 21.3, 399-423; Hammond, N.G.L. (1992), ‘Alexander’s Charge at the Battle of Issus in 333BC’, *Historia* 41.4, 395-406; Fuller, *General ship of Alexander*, 154-162; 395-406; Bosworth, *Conquest and Empire*, 55-64; Hammond, *Genius of Alexander*, 83-86; English, *Field Campaigns of Alexander*, 71-109; Pietrykowski, *Great Battles*, 47-60

²⁹ Arr. *Anab.* 2.8.3-4; Curt. 3.9.7

³⁰ *Hypaspists*: Arr. *Anab.* 2.8.3; Curt 3.9.7; the Companions: Arr. *Anab.* 2.8.9; skirmishers: Arr. *Anab.* 2.9.2; Alexander’s command of the right wing: Diod. Sic. 17.33.2; Plut. *Alex.* 20; Curt. 3.9.8

³¹ Arr. *Anab.* 2.8.4, 2.8.9-10, 2.9.3; Curt. 3.9.8, 3.9.9

³² Arr. *Anab.* 2.9.2; Curt. 3.9.10

³³ Arr. *Anab.* 2.9.3-4; Curt. 3.9.10

³⁴ Arr. *Anab.* 2.9.3

³⁵ Arr. *Anab.* 2.8.6; Curt. 3.9.1-3

³⁶ Arr. *Anab.* 2.8.7, 2.8.10-11; Curt. 3.8.27, 3.9.1

³⁷ Arr. *Anab.* 2.8.10

³⁸ Arr. *Anab.* 2.8.8

³⁹ Arr. *Anab.* 2.8.11

⁴⁰ It seems more likely that Darius positioned himself on the left wing of his infantry formation as Alexander is said to have later charged directly at the Persian king (see following). This could have only occurred if Da-

As at Granicus, the action began on Alexander's right. The skirmishers who had been deployed in the refused line on that flank dislodged the Persian troops manning the heights and 300 cavalry (possibly the mounted archers already stationed there) were left to keep them in check.⁴¹ As the pike-phalanx slowly advanced across the river (which is described as possessing banks which were steep in some places and reinforced with palisades in others), Alexander, at the head of the Companion cavalry, launched a spirited charge across the watercourse at the Persian troops holding the far bank directly opposite him.⁴² The troops stationed on the Persian left would have been reluctant to face Alexander's assault as, had they chosen to stand their ground, they risked being encircled by the skirmishers who formed Alexander's forward angled right wing. Under such pressures from Alexander's opening charge and skilful deployment, the Persian left broke and fled. This allowed the Macedonian right wing to wheel inwards against the flank of the Persian centre which was pinned in place by fierce fighting against the advancing pike-phalanx.⁴³

While this was occurring on the Macedonian right, the Persian cavalry massed adjacent to the sea charged against Parmenio on the Macedonian left who fought a hard defensive action against this assault.⁴⁴ After a fierce struggle Parmenio forced the Persian cavalry back and pursued the fleeing horsemen – leaving the right of the Persian line vulnerable.⁴⁵ With his forces being attacked from the front and both sides, Darius fled – the sight of which caused the entire Persian line to break.⁴⁶ The fleeing Persians were chased down by the pursuing cavalry and the Persian camp was stormed – another decisive victory for Alexander.⁴⁷

rius was not in the exact centre of the infantry line as Arrian states. However, as the infantry formed the centre of the Persian battleline, Darius could still be considered to have 'commanded from the centre', as Arrian puts it, regardless of exactly where in the infantry line he was positioned. This would also account for the seemingly contradictory passages recounting Darius' position at the battle of Gaugamela (see n.57).

⁴¹ Arr. *Anab.* 2.9.4; Curt. 3.9.11-12

⁴² The river and its defences: Arr. *Anab.* 2.10.1, 2.10.5; Alexander's charge: Arr. *Anab.* 2.10.3; Diodorus (17.33.5) states that Alexander drove straight at Darius' position in the centre of the Persian line. See also: Diod. Sic. 17.34.2-4; Plut. *Alex.* 20; Curt. 3.11.7-10

⁴³ Rout of Persian left and Macedonian wheel towards the centre: Arr. *Anab.* 2.10.4, 2.11.1; hard fought battle in the centre: Arr. *Anab.* 2.10.5-7; Diod. Sic. 17.34.9; Curt. 3.11.4-6

⁴⁴ Arr. *Anab.* 2.11.2-3

⁴⁵ Arr. *Anab.* 2.11.2-3; Diod. Sic. 17.33.6-7; Curt. 3.11.1, 3.11.13-15

⁴⁶ Arr. *Anab.* 2.11.4-7; Diod. Sic. 17.34.7-8

⁴⁷ Storming of the Persian camp: Arr. *Anab.* 2.11.9-10; Diod. Sic. 17.35.1-2; Curt. 3.11.20-26; Persian casualties: Arr. *Anab.* 2.11.8; Diod. Sic. 17.36.6; Curt. 3.11.27; Plut. *Alex.* 20; Just. *Epit.* 11.9.10; Macedonian casualties: Arr. *Anab.* 2.10.7; Diod. Sic. 17.36.6; Curt. 3.11.27; Just. *Epit.* 11.9.10

*Gaugamela – 331BC*⁴⁸

Darius faced Alexander again a few years later at Gaugamela. Darius had assembled a massive army – reportedly bigger than the one that had been assembled at Issus.⁴⁹ Darius, possibly learning from his previous reversal at Issus, deployed on a large open plain where his numbers, and especially his cavalry, could be used to better effect.⁵⁰ Arriving late in the day, Alexander dismissed the suggestion of a night attack on the Persian camp – preferring a decisive battle in light of the following day to ‘stealing’ the victory in the darkness.⁵¹

The next day Darius positioned a mixture of cavalry and infantry on both wings of his line, with further cavalry and a contingent of scythed chariots acting as a screen ahead of each.⁵² The centre of the Persian line was a mix of different infantry units from across the Empire ranging from the elite Royal Guard to archers and Greek mercenaries.⁵³ Elephants may have been posted in an advance screen ahead of the centre.⁵⁴ A second line of mixed infantry units was positioned behind the main battleline to act as a reserve.⁵⁵ Reports vary as to where Darius himself was positioned. Arrian states that he was located in the centre, while both Curtius and Diodorus have him positioned on the left wing.⁵⁶ Later events of the battle would suggest that Curtius and Diodorus are correct.⁵⁷

Opposite the Persians, Alexander arranged his troops, 40,000 infantry and 7,000 cavalry, in a now common deployment with only a few variations.⁵⁸ The Companion Cavalry were deployed on the right wing with the *hypaspists* as a hinge between the cavalry and the phal-

⁴⁸ For discussions and examinations of this battle and the accounts of it see: Stein, A. (1942), ‘Notes on Alexander’s Crossing of the Tigris and the Battle of Arbela’, *The Geographical Journal* 100.4, 155-164; Griffith, G.T. (1947), ‘Alexander’s General ship at Gaugamela’, *JHS* 67, 77-89; Devine, ‘Grand Tactics at Gaugamela’, 374-385; Burn, A.R. (1952), ‘Notes on Alexander’s Campaigns, 332-330’, *JHS* 72, 81-91; Burn, ‘The General ship of Alexander’, 140-154; Fuller, *General ship of Alexander*, 163-180; Bosworth, *Conquest and Empire*, 74-85; Hammond, *Genius of Alexander*, 103-111; Pietrykowski, *Great Battles*, 60-73; English, *Field Campaigns of Alexander*, 110-157

⁴⁹ For the Persian numbers see: Arr. *Anab.* 3.8.6; Diod. Sic. 17.53.3; Plut. *Alex.* 31; Curt. 4.12.13; Just. *Epit.* 11.12.5

⁵⁰ Diodorus (17.55.1-2) states that Darius had initially thought of fighting on the banks of the Tigris. This would then mirror his deployment at Issus – albeit with more room to deploy his forces. However, this position was abandoned as it was thought that the river was too deep for the Macedonians to attempt a crossing and so a different location for the battle was sought, this time on an open plain.

⁵¹ Arr. *Anab.* 3.9.5-3.10.4; Curt. 4.13.1-17; Plut. *Alex.* 31

⁵² Arr. *Anab.* 3.11.3-4, 3.11.6-7

⁵³ Arr. *Anab.* 3.11.5, 3.11.7

⁵⁴ Arrian mentions these elephants (*Anab.* 3.11.6) but they are not mentioned in any other source other than in a fragment attributed to Aristobulos (*FrGrHist* 139 F17). Surprisingly, even in Arrian’s account, these beasts appear to have played no part in the battle as they are not mentioned again.

⁵⁵ Arr. *Anab.* 3.11.5

⁵⁶ Arr. *Anab.* 3.11.5; Curt. 4.11.14; Diod. Sic. 17.58.1

⁵⁷ Alexander assaults the main Persian line from their left and several sources state that Alexander aimed this charge directly at Darius. Interestingly, the events of the previous battle at Issus follow a similar sequence with Alexander striking at the left of the Persian infantry line and directly at Darius. This would suggest that Darius was at least at the left hand end of the main infantry line. However, this could still be considered ‘in the centre’ as Arrian would have it in his account of both battles.

⁵⁸ For the Macedonian numbers see: Arr. *Anab.* 3.12.5

anx in the centre.⁵⁹ Javelineers and archers were posted before the right wing in a protective screen.⁶⁰ Although greatly outnumbered, the pike-phalanx was deployed in the centre in a double-depth of two lines – the idea being that, should the position be encircled, the rearward line could turn about and engage any enemy attacking from the rear.⁶¹ A rear-guard of Thracian infantry was stationed behind the main battleline guarding the Macedonian baggage.⁶² The Thessalian and allied cavalry formed the left wing of the line with contingents of archers and mercenaries forming the hinge between these units and the centre.⁶³ To further protect his position against possible encirclement, Alexander placed units in lines refused to the rear of both wings – similar to what he had done on his right wing at Issus. Extending rearward from the position of the Companion cavalry were contingents of javelineers, archers and mercenaries, with units of cavalry in front of the javelineers and a contingent of mercenary cavalry in front of the whole refused line with instructions to outflank any encircling move made by the Persians.⁶⁴ On the left a similar refused line was deployed consisting of Thracian javelineers and allied cavalry, with a screen of mercenary cavalry before them (*Figure 3-Page 59*).⁶⁵

The battle began with Alexander moving his right wing cavalry obliquely further to the right.⁶⁶ At the same time Darius commenced his attack by launching the Scythian cavalry, which was forward of his own left wing, against the skirmishers positioned in front of the *hypaspists*.⁶⁷ Observing Alexander's oblique move, Darius ordered his own left wing cavalry to shadow them to prevent the Macedonians from executing an outflanking manoeuvre.⁶⁸ The Greek mercenary cavalry positioned ahead of Alexander's refused right flank then charged the Persian troops shadowing Alexander from the rear. The mercenary cavalry was repulsed by a counter-charge of the Persian Scythian and Bactrian cavalry and both sides were required to commit more troops to prevent the position from falling.⁶⁹ For Alexander, the commitment of more troops to the fray meant that Persian attention on their left was somewhat diverted to this struggle, and less Persian troops could be used to shadow his oblique movements with the Companions. This bears many similarities to Alexander's use of skirmishers and cavalry to pin the left of the enemy line in place at Granicus years earlier.

The Persian chariots then charged the Macedonian right wing. Some were taken down by the screen of skirmishers while others passed through these lines only to be taken out by

⁵⁹ Companion Cavalry: Arr. *Anab.* 3.11.8; Diod. Sic. 17.57.1; Curt. 4.13.26; the *hypaspists*: Arr. *Anab.* 3.11.9; both Diodorus (17.57.2) and Curtius (4.13.27) state that the *hypaspists* were positioned behind the Companions. However, this would not correlate with the role of this unit acting as a hinge.

⁶⁰ Arr. *Anab.* 3.12.3

⁶¹ Arr. *Anab.* 3.11.9, 3.12.1; Diod. Sic. 17.57.2-3; Curt. 4.13.28; Curtius states (4.13.30-32) that this second line initially deployed facing to the rear.

⁶² Arr. *Anab.* 3.12.5; Curt. 4.13.35

⁶³ Arr. *Anab.* 3.11.10; Diod. Sic. 17.57.3-4; Curt. 4.13.29

⁶⁴ Arr. *Anab.* 3.12.2-4; Diod. Sic. 17.57.5; Curt. 4.13.31

⁶⁵ Arr. *Anab.* 3.12.4-5; Diod. Sic. 17.57.5

⁶⁶ Arr. *Anab.* 3.13.1-2; Diod. Sic. 17.57.6; Curt. 4.15.1

⁶⁷ Arr. *Anab.* 3.13.2

⁶⁸ Arr. *Anab.* 3.13.2

⁶⁹ Arr. *Anab.* 3.13.3

the *hypaspists*.⁷⁰ The Persians then attacked along the entire line – including a charge of chariots against the right wing of the pike-phalanx which, as a whole, was rolling forward into action.⁷¹ The formations in the Macedonian centre began to lose cohesion under attacks delivered at different times and by different type of opponents – leaving the centre-left of the line separated and in trouble.⁷² Persian cavalry forced their way through some of these gaps to attack the Thracians guarding the Macedonian baggage behind the line.⁷³ As instructed, the second line of the phalanx about-faced and advanced against the rear of these Persians attacking the baggage train.⁷⁴ On the Macedonian right, Alexander continued his oblique move. This caused a gap to form in the Persian line between the cavalry that was shadowing him and the cavalry which was still engaged in front of the right wing of the Macedonian infantry line. Splitting the forces he was leading to the right, some of the Macedonian cavalry continued advancing obliquely, forcing the shadowing Persian cavalry to follow suit, while Alexander wheeled the remainder of his mounted troops around and drove into the gap making straight for Darius – which suggests Darius was positioned on the left of his own infantry line.⁷⁵ With the Macedonian pike-phalanx pressing in from the front, and Alexander attacking from his left, Darius and most of the Persian centre fled with Alexander and his cavalry in pursuit.⁷⁶

The cavalry continuing the Macedonian oblique move now wheeled against those who were shadowing them. Once engaged, this would prevent these mounted Persian troops from coming to the aid of the beleaguered king. However, rather than face the Macedonian attack, the cavalry on the Persian left took fright – no doubt due to being attacked by this force on the one side and having Alexander charging on the other – broke, and fled.⁷⁷ The Macedonian left flank was still in trouble and Parmenio, commanding that sector, sent urgent requests to Alexander for support.⁷⁸ Alexander broke off his pursuit of Darius, swung around to attack the Persian right from behind, and put it to flight after a fierce struggle.⁷⁹ The pursuit of Darius was resumed while daylight allowed and into the next day. Darius managed to evade capture but the Persian army was all but destroyed.⁸⁰

⁷⁰ Arr. *Anab.* 3.13.5; Diod. Sic. 17.58.2; Curt. 4.15.2; Diodorus (17.58.4-5) suggests that these chariots were taken out by the pike-phalanx. However, the chariot attack on the centre of the Macedonian line appears to have occurred a little bit later (see following).

⁷¹ Arr. *Anab.* 3.14.1; Curt. 4.15.3-5; this is most likely the event that Diodorus is describing at 17.58.4-5 and even here the charge is probably only against the right wing of the pike-phalanx.

⁷² Arr. *Anab.* 3.14.4-6; Curt. 4.16.1; Plut. *Alex.* 32

⁷³ Arr. *Anab.* 3.14.5; Diod. Sic. 17.59.5-7; Curt. 3.15.5, 3.15.9-11

⁷⁴ Arr. *Anab.* 3.14.6; Curtius (4.15.12) says that the Persians were attacked by cavalry rather than by the second line of the phalanx.

⁷⁵ Arr. *Anab.* 3.14.2; Diod. Sic. 17.60.1; Curt. 4.15.20; Plut. *Alex.* 33

⁷⁶ Arr. *Anab.* 3.14.3; Diod. Sic. 17.60.3; Curt. 4.15.32; Plut. *Alex.* 33

⁷⁷ Arr. *Anab.* 3.14.3

⁷⁸ Arr. *Anab.* 3.15.1; Curt. 3.16.2; Plut. *Alex.* 33; Diodorus (17.60.5-7) states that these messages never reached Alexander.

⁷⁹ Arr. *Anab.* 3.15.1-3; Curt. 4.16.3; Plutarch (*Alex.* 33) says that the battle on the Macedonian left wing was resolved before Alexander arrived.

⁸⁰ The pursuit and escape of Darius: Arr. *Anab.* 3.15.4-5; Diod. Sic. 17.61.1; Curt. 4.16.7-25; Persian casualty figures: Arr. *Anab.* 3.15.6; Diod. Sic. 17.61.3; Curt. 4.16.26-33; *P. Oxy.* 1798

*Hydaspes – 326BC*⁸¹

Alexander's fourth and final large-scale engagement occurred in India on the banks of the Hydaspes River. Alexander, descending from the Great Salt Range, encamped his forces on the western bank of the river. Opposite him, on the eastern bank, the Indian king Porus marshalled a large army to counter any Macedonian advance.⁸² Reluctant to make a direct assault across the river, Alexander employed a series of feints, night manoeuvres and deceptions to keep Porus and his army in place and blind to his intentions.⁸³ Under the cover of a stormy night, Alexander marched a large part of his army 27km northward to a place where the river could be more easily forded, while the remainder of his forces, under the command of Craterus, were kept in place opposite Porus with orders to make a demonstration of an attempt to cross in order to deceive him about the Macedonian movements.⁸⁴ Craterus was also given instructions that, if Porus moved his force out of camp and left the opposing bank only lightly guarded, he was to cross the river with all speed and attack the Persian line in the flank and rear.⁸⁵

Alexander's advance force crossed the river on rafts made of skins filled with chaff and on specially constructed segmented boats which had been transported with the army and assembled at the water's edge.⁸⁶ After gaining the opposite bank, Alexander organised his forces for the march south against Porus.⁸⁷ A skirmish took place between Alexander's forces and advance units of the Indian army under the command of Porus' son near the place where the Macedonians had crossed.⁸⁸ Survivors of this skirmish reported to Porus that Alexander was advancing on his position. This placed Porus in a predicament. Should he move against Alexander, Craterus and his forces could cross the river and strike him from the rear. If, on the other hand, he moved against Craterus, Alexander would attack him from behind. Porus marshalled his forces and advanced northward to meet Alexander, leaving a contingent of troops in place to keep Craterus in check.⁸⁹ Alexander, the last infantry contingents of his advance force having now crossed, rested his men.⁹⁰

Porus deployed his shock troops, a large contingent of elephants, evenly spaced across the front of his line. The Indian infantry were drawn up behind the beasts, in a staggered for-

⁸¹ For discussions and examinations of this battle and the accounts of it see: Stein, A. (1932), 'The Site of Alexander's Passage of the Hydaspes and the Battle with Porus', *The Geographical Journal* 80.1, 31-46; Hamilton, J.R. (1956), 'The Cavalry Battle at the Hydaspes', *JHS* 76, 26-31; Fuller, *General ship of Alexander*, 180-199; Bosworth, *Conquest and Empire*, 125-130; Hammond, *Genius of Alexander*, 164-167; Pietrykowski, *Great Battles*, 73-85; English, *Field Campaigns of Alexander*, 180-215

⁸² For the Indian numbers see: Arr. *Anab.* 5.15.4; Diod. Sic. 17.87.1; Curt. 8.13.6; Plut. *Alex.* 62

⁸³ Arr. *Anab.* 5.10.3-4; Curt. 8.13.18-22; Plut. *Alex.* 60

⁸⁴ Arr. *Anab.* 5.11.1, 5.12.1-2; Curtius (8.13.22-27) says the Macedonian advance and crossing happened on a dark cloudy day.

⁸⁵ Arr. *Anab.* 5.11.4

⁸⁶ Arr. *Anab.* 5.12.3-4, 5.13.3; Curt. 8.13.22-27; Plut. *Alex.* 60; Diodorus does not mention this crossing of the Hydaspes.

⁸⁷ Arr. *Anab.* 5.13.4-5.14.2

⁸⁸ Arr. *Anab.* 5.14.3-5.15.2; Curt. 8.14.1-8; Plut. *Alex.* 60

⁸⁹ Arr. *Anab.* 5.15.3-4; Plut. *Alex.* 60

⁹⁰ Arr. *Anab.* 5.16.1

mation covering the gaps between the animals.⁹¹ Indian cavalry was placed on both wings to protect the flanks of the line, and contingents of chariots were placed before the cavalry in a protective screen.⁹²

Alexander placed his contingents of cavalry on his right wing – the Companions furthest to the right with mounted archers opposite the chariots on the Persian left wing – and with the infantry holding the centre.⁹³ Cavalry units under the command of Coenus, which had initially been deployed on the left flank, were redeployed to the right. Alexander's plan, similar to that used at Gaugamela, was to draw the Indian cavalry opposite his right wing further to the right with an oblique movement of the Companion cavalry. Once a gap had formed, Coenus was instructed to charge into the gap and strike at the shadowing Indian cavalry from behind (*Figure 4-Page 60*).⁹⁴

Alexander set the mounted archers on his right against the massed Indian left wing – taking out many of Porus' chariots and preventing forces from this sector other than the Indian cavalry from moving to shadow Alexander's oblique opening move with the Companion Cavalry.⁹⁵ This is the same as had occurred at Gaugamela. When the Indian left wing cavalry had followed Alexander far enough to create a significant gap in the Indian line, as instructed, Coenus and his cavalry stormed into this breach to attack from the rear. Simultaneously, Alexander wheeled the Companions about to attack from the front.⁹⁶ Faced with attacks from two directions, the Indian cavalry broke and retired to try and find safety among the elephants on the left wing.⁹⁷ Some of the elephants on the Indian left turned to face Alexander's pursuing cavalry while the remainder moved against the Macedonian infantry who was now advancing.⁹⁸ Skirmishers brought down many of the beasts and their drivers while the rest crashed headlong into the pike-phalanx, inflicting terrible casualties.⁹⁹

The routed cavalry on the Indian left attempted a counter-attack, but this was repulsed by Alexander and the Companions and it was forced back onto the left wing of the infantry line – with Alexander aggressively pressing the pursuit.¹⁰⁰ Many of the elephants, exhausted and frenzied with wounds, many now also driverless, rampaged across the battlefield, killing and injuring friend and foe alike as the surviving beasts attempted to make for safety.¹⁰¹ With the ease of pressure due to the withdrawal of the elephants, the Macedonian phalanx

⁹¹ Arr. *Anab.* 5.15.5; Curt. 8.14.9; Diodorus (17.87.4) says that the units of infantry were positioned in the gaps between the elephants rather than covering the gaps from behind.

⁹² Arr. *Anab.* 5.15.7; Diod. Sic. 17.87.4

⁹³ Arr. *Anab.* 5.16.2-3; Curt. 8.14.14-15

⁹⁴ Arr. *Anab.* 5.16.3; Curt. 8.14.14

⁹⁵ Arr. *Anab.* 5.16.4; Diod. Sic. 17.88.1

⁹⁶ Arr. *Anab.* 5.17.1-2; Curt. 8.14.17; Plut. *Alex.* 60; Plutarch also says that a concurrent attack took place against the Indian right wing.

⁹⁷ Arr. *Anab.* 5.17.2-3; Curtius (8.14.18) says Porus ordered the elephants to reinforce the beleaguered cavalry.

⁹⁸ Arr. *Anab.* 5.17.3; Diod. Sic. 17.87.5-17.88.1; Curt. 8.14.22

⁹⁹ Arr. *Anab.* 5.17.3; Diod. Sic. 17.88.1-3; Curt. 8.14.24-29; Plut. *Alex.* 60

¹⁰⁰ Arr. *Anab.* 5.17.3-4

¹⁰¹ Arr. *Anab.* 5.17.5-6; Diod. Sic. 17.88.3; Curt. 8.14.30

reformed its shattered lines and continued to advance on Porus' centre while Alexander directed the cavalry against the retreating elephants. Unable to withstand the advance of the pike-phalanx, the Indian army broke and fled through gaps in the encircling Macedonian cavalry.¹⁰² Porus himself, fighting valiantly to the last from the back of the largest elephant, surrendered – bringing Alexander's last major battle to a triumphant end.¹⁰³

Alexander as a Battlefield Tactician

Many scholars describe Alexander as a brilliant and innovative commander who altered his tactics to suit his opponent.¹⁰⁴ Yet just how innovative Alexander's tactics are is very much dependent upon the level of focus given to the scrutiny of their employment. For example, when looking broadly at Alexander's four major battles, the tactics that he employed are all fundamentally the same – those of the 'hammer and anvil'.

Warfare in the Hellenistic Age, developing out of the methods of warfare employed by the Greeks at the end of the preceding Classical Age, centred upon the co-ordinated use of the various arms of an army to create opportunities where a decisive blow against an enemy formation could be delivered. For the armies of the Hellenistic Age, the two dominant forces within an army were the large phalanx of pike-bearing infantry and the more mobile cavalry and both of these forces played a different, yet inter-related, role on the battlefields of the Hellenistic world – with the cavalry acting as the 'hammer' against the phalanx's 'anvil'.

Many scholars have accepted the principle of the hammer and anvil tactic and have used it as the basis for their own examinations of Hellenistic warfare.¹⁰⁵ One need look no further than Alexander's four major engagements to see the 'hammer' and the 'anvil' in effect. In

¹⁰² Arr. *Anab.* 5.17.7

¹⁰³ Arr. *Anab.* 5.18.4-7; Diod. Sic. 17.88.4-6; Curt. 8.14.31-46; Plut. *Alex.* 60; for Indian losses see: Arr. *Anab.* 5.18.2; Diod. Sic. 17.89.1-2; for Macedonian losses see: Arr. *Anab.* 5.18.3; Diod. Sic. 17.89.3

¹⁰⁴ For example see: Tarn, W.W. (1930), *Hellenistic Military and Naval Developments*, Cambridge, Cambridge University Press, 61; Warry, *Warfare*, 71; English, *Army of Alexander*, 121; Pietrykowski, J. (2009), 'In the School of Alexander: Armies and Tactics in the Age of the Successors', *AncWar* 3.2, 21; Conversely, Devine ('Demythologizing the Battle of the Granicus', 265) suggests that the encounters at both the Granicus and Hydaspes were only small scale battles which were 'from a tactical stand point, simple and straightforward'. How such a claim can be made for a battle such as the Hydaspes, which involved thousands of men on both sides, was the first major engagement where Alexander faced a large contingent of elephants, and was, according to many of the ancient accounts, the hardest and bloodiest of any of Alexander's engagements, is not explained.

¹⁰⁵ For example see: Fuller, *Generalship of Alexander*, 48; Gabriel, R. (2010), *Philip II of Macedonia – Greater than Alexander*, Washington, Potomac, 65, 69; Pietrykowski, 'In the School of Alexander' 24; How, W.W. (1923), 'Arms, Tactics and Strategy in the Persian Wars', *JHS* 43.2, 119; Warry, *Warfare*, 104; Anson, E.M. (2010), 'The Introduction of the Sarisa in Macedonian Warfare', *AncSoc* 40, 65; Cawkwell, G. (1978), *Philip of Macedon*, London, Faber and Faber, 155, 158; Featherstone, *Warriors and Warfare*, 59; Skarmintzos, S. (2008), 'Phalanx versus Legion: Greco-Roman Conflict in the Hellenistic Era', *AncWar* 2.2, , 30; Bosworth, *Conquest and Empire*, 266; Snodgrass, A.M. (1999), *Arms and Armour of the Greeks*, Baltimore, Johns Hopkins University Press, 115; Cummings, L.V. (1940), *Alexander the Great*, Boston, Riverside Press, 208; Tarn, *Military and Naval Developments*, 1, 11, 26; English (*Field Campaigns of Alexander*, 140; *Army of Alexander*, 22-23, 36) is one of the few who argues against the hammer and anvil analogy and states that the pike-phalanx was the strike weapon of Hellenistic warfare, rather than it being a defensive platform, and that the lengthy *sarissa* was similarly an offensive weapon rather than a defensive one.

each of these confrontations Alexander's base tactics were to advance the pike-phalanx to pin the opposing line in place (the 'anvil') while the right wing cavalry charged ahead to either knock out or nullify the enemy's left wing so that it could then turn inwards to deliver the decisive blow against the enemy centre from the side (the 'hammer').

The pike-phalanx was able to pin the opposing formation in place through the use of the main offensive weapon of the phalangite – and possibly the signature weapon of the entire age – the lengthy *sarissa*. At twelve *cubits* (or 5.76m) in length in the time of Alexander, the *sarissa* enabled any warrior wielding it to engage an opponent at a distance which was greater than the total reach of that opponent; who was generally armed with a much shorter weapon such as a spear, sword or axe. Furthermore, due to the length of the *sarissa* and the interval of the phalanx, the weapons held by the members of the first five ranks of the phalanx projected ahead of the line creating a serried row of pike-points.¹⁰⁶ So long as the integrity of the formation was maintained, the pike-phalanx was almost unbeatable when confronted head-on.¹⁰⁷

Due to the weight of the *sarissa* (approximately 5kg in the time of Alexander) the weapon was wielded in both hands and little offensive actions (in terms of thrusting) could be carried out. However, the essence of Hellenistic warfare was not to employ the pike-phalanx as a lumbering wall of stabbing pikes. Rather the purpose of the pike-phalanx was to advance against an enemy and use the length of the *sarissa* to immobilise that enemy. This was accomplished by simply pressing the tip of the weapon into the shield of an opponent to keep him at bay and incapable of further action.¹⁰⁸ Once held in this position, it was then up to more mobile troops such as cavalry and skirmishers (and sometime even unengaged infantry) to sweep around the wings of the immobilized enemy formation and attack it from the side. Such tactics can be seen in use in many of the major battles of the Hellenistic Age.¹⁰⁹

In all four of Alexander's major battles his tactics follow this standard principle of the hammer and anvil – hold the enemy centre in place with the advancing pike-phalanx, immobilize part of the enemy's left wing with skirmishers or other missile troops, and swing around to deliver a right hook with the Companion cavalry (see Figures 1-4).

¹⁰⁶ Arr. *Tact* 12.3; Ael. *Tact. Tact* 13.3; Asclep. *Tact* 5.1; Polyb. 18.29-30

¹⁰⁷ Many ancient writers refer to the invincible nature of a well maintained pike-phalanx. For example see: *Excerpta Polyaei*, 18.4; Livy, 44.41; Plut. *Alex.* 33; Plut. *Aem.* 19

¹⁰⁸ Plutarch (*Aem.* 19) states that this is exactly what the Macedonians did in their clash against the legions of Rome at Pydna in 168BC; following the defeat at Issus, Darius increased the length of the swords and lances used by the Persians as he considered that the Macedonians held a distinct advantage with the reach of their weapons (Diod. Sic. 17.53.1). This shows that Macedonian success was, in part, due to the length of the *sarissa*.

¹⁰⁹ For examples of the employment of the hammer and anvil tactic in battles of the Hellenistic Age other than Alexander's see: Chaeronea (338BC): Diod. Sic. 16.86; Plut. *Pel.* 18; Plut. *Alex.* 9; Polyaeus, *Strat.* 4.2.2; Paracacene (317BC): Diod. Sic. 19.27-32; Gabiene (316BC): Diod. Sic. 19.39-43; Gaza (312BC): Diod. Sic. 19.80-85; Ipsus (301BC): Diod. Sic. 20.113-21.2; Plut. *Dem.* 28-29; Heraclea (280BC): Plut. *Pyrr.* 16-17; Asculum (279BC): Plut. *Pyrr.* 21; Dion. Hal. 20.1-3; Raphia (217BC): Polyb. 5.63-65, 5.79-86; Mantinea (207BC): Polyb. 11.11-18; Plut. *Phil.* 10; Magnesia (190BC): Livy, 37.39-44; App. *Syr.* 30-36

There is a clear reason why Alexander's cavalry charge was always directed against the opponent's left wing. In the warfare of the ancient world shields were normally carried in the left hand while weapons were carried in the right. Once their left wing cavalry had been routed or otherwise nullified, any enemy pinned in place in the centre by the pike-phalanx was left with two choices: turn to face Alexander's charging Companions, or continue to face the pike-phalanx. However, either choice left the opponent in a no-win situation. If the enemy chose to turn to face Alexander, then they would be forced to expose their right, unshielded, side to the lowered pikes of the advancing phalanx. If, on the other hand, the enemy chose to continue facing the pike-phalanx, then Alexander's charging cavalry would simply ride them down from their left. Once the protection of the Persian/Indian left wing cavalry was removed, any formation remaining in the enemy centre really had only two choices: flight or death. Had Alexander chose to attack with his cavalry from the left on the other hand, the enemy could turn to meet them and still present their shields to the advancing phalanx and so be able to resist this attack better. Alexander never did so and always attacked in a way that made the enemy vulnerable no matter which direction, or which threat, he chose to face.

However, this tactic was not an innovation of Alexander's, but rather that of his father, Philip II. In his engagement against the forces of the Illyrian King, Bardylis, in 358BC, Philip adopted an oblique formation with his right wing advanced as he noticed that the enemy front was strong but its sides were weak and it was against the enemy's left flank that Philip directed his main attack.¹¹⁰ At Chaeronea in 338BC, Philip also deployed with his right wing advanced. Then, using a series of feints to draw the enemy left wing forward onto less favourable ground, Philip put the enemy left to flight while their centre was pinned in place.¹¹¹ The actions of Philip at both of these engagements bear strong parallels to the later actions of his son – parallels which are too close to be pure coincidence.

If there was nothing original in Alexander's tactics (being that he used the same base tactic as had been used by his father), and if he follows the fundamentally same tactic in every battle (pin the enemy centre, right hook with cavalry), can Alexander really be described as an innovative tactician? This is where the scale of focus comes into play. Looking at the broader tactical picture can only result in a negative answer in regards to innovation. Clearly Alexander had learnt what worked, and what worked well with the troops under his command, and he continued to use the same method of attack to brilliant effect. However, the true tactical genius of Alexander becomes visible when the focus of the examination of his tactics is narrowed to look at all of the things that Alexander employed and undertook in order to ensure that every major battle he fought was set up in a way that would allow him to use the base tactics which he knew would secure victory. The best way to compartmentalise this narrower field of tactical investigation is to use the criteria for a successful tactician as set down by earlier military theorists and examiners like Fuller.

¹¹⁰ Diod. Sic. 16.4.6; Frontin. *Str.* 2.3.2; for an examination of this confrontation see: Hammond, 'Philip and Bardylis', 1-9; Philip himself had probably adopted and adapted the tactic that had been used by the Thebans at the battle of Leuctra in 317BC which had also employed the use of an oblique line. See: Plut. *Pelop.* 23; Xen. *Hell.* 6.4.12; Polyaeus, *Strat.* 2.3.15; *Excerpta Polyaei*, 14.7

¹¹¹ Plut. *Pel.* 18; Polyaeus, *Strat.* 4.2.2; Diod. Sic. 16.86.1-6

Alexander and the maintenance of the aim or objective

Alexander never lost sight (at least in the first half of the campaign) of the larger strategic goal of conquering the Persian Empire. His policy of first denying the Persian fleet safe harbours along the Mediterranean coast by capturing cities like Halicarnassus, Tyre and Gaza went a long way to ensuring that the campaign would be one based upon a clash of land armies, an area of warfare he was all too familiar with, rather than with fleets of ships. On several occasions Darius sent messages to Alexander offering him terms and concessions. Yet Alexander always refused such offers in the light of his broader goal – the conquest of Persia in revenge of the Persian invasion of Macedonia and Greece a century and a half earlier.¹¹² In battle Alexander also never lost sight of the ultimate aim of any engagement – to obtain victory – either through the annihilation or submission of the enemy.¹¹³ Alexander never fought a defensive engagement and always sought to fight in an offensive capacity. At both Issus and Gaugamela, Alexander is said to have been pleased that the Persian king and such a large part of his army were present as it would then allow him to settle matters in one decisive encounter.¹¹⁴

Alexander and the Use of Security

In all four engagements Alexander initially deployed his troops in a strong and secure position. At Granicus the front of his line was somewhat protected against unexpected enemy attacks by the river running along his front (the Persians thought essentially the same thing). At Issus his formation was not only protected by the river frontage but by the sea on his left and hilly terrain on his right. At Gaugamela, with no natural features to provide protection, the Macedonian army was deployed with strong rearguard wings, a rear line of reserves guarding the baggage, and a second line of the phalanx, all of which created a hollow trapezoid shape to secure against possible encirclement. At the Hydaspes, little is said of the influence of natural features such as the river in Alexander's initial deployment. However, his ability to move his Companion cavalry to the right (i.e. towards the river) suggest that this encounter was fought at some distance from the water's edge. Porus is said to have advanced on Alexander. This is the only time in the four main engagements where Alexander was not able to adequately prepare his position after observing a static enemy formation opposite him for a considerable period of time and there are no pre-battle conferences with officers where the grander tactical plan is outlined as there was at Granicus, Issus and Gaugamela. This may account for the lack of reinforcement on both of the wings of the Macedonian line in this battle and for the much more basic arrangement of the various contingents of troops compared to their deployment in earlier engagements. However, even at the Hydaspes with seemingly less time for preparation, Alexander still deployed his troops in accordance with the pre-conceived battle plan of employing his standard hammer and anvil tactic and after his infantry had been adequately rested.

¹¹² For example see: Arr. *Anab.* 2.14.1-9; 2.25.1-3

¹¹³ Clausewitz (*On War*, 1.2, 1.4) states that the ultimate object of war is to get an enemy to submit to one's will by securing victory over them and imposing conditions of submission on them which are more attractive than any other alternative, such as continued resistance.

¹¹⁴ Issus: Arr. *Anab.* 2.7.3-9; Gaugamela: Arr. *Anab.* 3.10.1-4; Diod. Sic. 17.56.3; Plut. *Alex.* 32

All of these secure formations allowed Alexander to view the enemy arrangements (even if only for a short time at the Hydaspes), judge their potential strengths, weaknesses and probable avenues of attack, and to make last minute alterations to his own deployments once the enemy's disposition had been sufficiently observed. At Issus, for example, Alexander moved cavalry from his right wing to reinforce his left in order to counter the massed Persian cavalry opposing him there. Similarly, at the Hydaspes Alexander used the security of his position to move Coenus' cavalry from his left flank to his right as part of his broader battle plan to exploit the weakness in the Indian line which he was sure his oblique advance as part of the hammer and anvil tactic was to create.

Alexander and the Use of Mobility

The expert use of the varying grades of mobility of the different types of troops at his disposal to create a co-ordinated, multi-directional, assault on an enemy position is perhaps Alexander's greatest ability as a battlefield tactician and his greatest accomplishment as a battlefield commander. Alexander clearly understood the different speeds at which the various contingents of his army could operate at effectively and this enabled him to formulate plans which not only dictated the tempo of the engagement as a whole but to also create and exploit gaps in the enemy line that these various movements would create. The phalanx, for example, would have been able to advance in relative security, but somewhat slowly compared to more mobile troops, behind their wall of extended pikes while skirmishers engaged any enemy on the left of their line and while Alexander and his cavalry moved obliquely to the right. The use of skirmishers and cavalry to engage the enemy centre-left ensured that this part of the line was held in place – unable to advance against the pike-phalanx (thus partially disrupting the enemy line should the rest of it advance into action) – and meant that enemy troops from this quarter could not be sent to reinforce any contingent shadowing Alexander's oblique movements or to fill in any gap that would be created from the shadowing move. The co-ordination of these three elements – lumbering but secure pike-phalanx in the centre, engagement of the enemy left, and oblique advance to the right to create a gap in the enemy line – were the three essential elements to the hammer and anvil tactic.

Timing was also essential in the successful implementation of the hammer and anvil tactic. If the flanking attack was committed too early, before the pike-phalanx was able to pin the opposing formation in place, the enemy could simply turn to meet this threat with little risk. On the other hand, if the flanking attack was delayed or committed late, the pike-phalanx had to be able to hold the enemy in position long enough, without being encircled or over-run, for the flanking units to arrive. The critical nature of timing explains why many of Alexander's flanking movements initially move obliquely to the right. Not only did this action create many of the gaps that his flanking units were able to later exploit, but it also provided the pike-units in the centre the necessary time to advance into contact and pin the opposing centre in place.¹¹⁵

¹¹⁵ The essence of timing is probably another tactical trait that Alexander had learnt from his father. At Chaeronea, the feigned retreat of Philip's advanced right wing allowed him to draw the Athenian left wing forward, rout it with a counter-attack, and also provided enough time for the rest of the phalanx, which had been deployed obliquely to the left-rear of Philip's position, to advance and pin the opposing line in place.

Luckily for Alexander, he fought against different commanders in most of his four main engagements who were thus unable to learn from prior defeats. Even the one opponent he did face twice, Darius, tried to mitigate the circumstances of his defeat at Issus by fighting on an open plain at Gaugamela which was better suited to his larger army and where all his troops could potentially be brought to bear. Yet even here Darius deployed his infantry in two lines in his centre rather than creating one long one which would easily outflank the smaller Macedonian formation. This suggests that Darius had learnt from his defeat at Issus and had recognised that an encircling move by Alexander and his cavalry, following the same tactic that Alexander had used at Issus, was a distinct possibility. Fear of encirclement also explains why Darius sent his own left wing cavalry to shadow Alexander's oblique move – possible encirclement had to be countered, but the cavalry could not charge into any gap in the Macedonians line (in effect using Alexander's own tactics against him) as Alexander's use of missile troops to engage the enemy centre-left and his positioning of skirmishers in a refused line to the right-rear, meant that there was no gap to easily exploit. The same could not be said of the Persian line which, once the left wing cavalry moved off, had the flank of the infantry line exposed. It is Alexander's brilliance at manipulating the situation to create opportunities to employ his standard tactics, and the failure of Darius' nerve, which saw the Persian king undone for a second time.

Alexander and the Use of Offensive Power

The strong, secure and co-ordinated method of deployment adopted by Alexander at all four of his main battles added to the offensive power of the army as a whole. With the wings of his formations protected by either mobile troops and/or natural features, Alexander's slower pike-phalanx was able to advance in relative safety towards the enemy in order to undertake their primary function – to pin the enemy centre in place. While this could be seen as mainly a defensive operation on the part of the pike-phalanx, it was a vital to ensure that the main offensive thrust – the flanking attack of the right wing cavalry – could be executed effectively and in a timely manner.

Alexander and Economy of Force

The key to economising the offensive power of an army is to employ it in such a way that the individual combatants do not rapidly tire while still effectively engaging the enemy. For the members of Alexander's pike-phalanx, the very nature of their equipment and how it was used in part dictated the economy of their actions. Due to the weight of the *sarissa* it is difficult to undertake a lot of offensive thrusting actions without quickly becoming fatigued. This accounts for why the phalanx's primary function was to simply pin the enemy centre in place rather than engage them in a battle of attrition. By having the members of the first five ranks lower their weapons and present them ahead of the line, the formation could advance in the surety that any opponent who charged against them would either be held back by the length of the weapons or would simply impale themselves with the momentum of their own charge. Once the enemy line was held back, all the members of the phalanx had to do was simply keep their pikes lowered and pressed into the shields of those facing them, and keep their formation together, until any flanking move arrived to attack the enemy from the sides. This lack of offensive action by the pike-phalanx meant that its members could undertake such actions with very little stress placed on the muscles of the arms.

Furthermore, the shield carried by the pikeman was supported by both a central armband (through which the left forearm was inserted) and a shoulder strap which ran across the body to sit on the right shoulder. The small diameter of the shield (64cm) allowed the left hand to extend beyond the rim of the shield to help carry the lengthy pike. Importantly, as the shoulder strap was connected to the shield, and the shield mounted on the arm, this also meant that the shoulder strap bore some of the weight of the *sarissa* as well. This allowed the pikeman to carry his primary weapon in the lowered position required of his main action almost indefinitely.

Alexander's use of skirmishers and/or mounted archers to pin the left flank of the enemy centre in place also demonstrates the use of economy of force. By employing missile troops to engage the enemy from a distance, that section of the enemy line (regardless of whether they were infantry, cavalry or chariots) would suffer casualties without being able to respond in kind unless they moved against the troops firing at them. At the Granicus the Persians directly engaged these missile troops inflicting severe casualties. Similarly at Gaugamela, both sides were required to commit more and more troops to actions fought in front of the left of the Persian infantry line. Despite these setbacks, these engagements still had the desired effect of keeping the left of the Persian line occupied while Alexander's cavalry moved to the right. The presence of other units in the Macedonian line which protected these missile troops, such as contingents of cavalry, other skirmishers or the *hypaspists* – all of which were stationed either beside or behind the missile troops on the right of the line at all four of Alexander's battles – any enemy contingent could also not move in force against the attacking missile troops without risking being surrounded by these supporting units. Additionally, having only some units advance against the missile troops would disrupt the integrity of the enemy line. Nor could these units move to shadow Alexander's oblique advance of the right wing cavalry without running the risk of being attacked from behind. Thus the left of the enemy formation was placed in a position where they had no options other than to retreat, advance into an action which they could not win, or hold their ground and suffer casualties.

Alexander's oblique advances with the Companion cavalry also demonstrate an understanding of principles of economy of force. None of these movements are recorded as being undertaken at a charge. Rather the cavalry contingents only advance in a specific direction, presumably at a brisk trot rather than a full gallop. This would have had a number of advantages. By moving slowly, Alexander ensured that his movements could be observed so that the enemy would be forced to send troops to mirror his movements. This is the very essence of the hammer and anvil tactic, without a commitment by the enemy to send troops to shadow the oblique advance, the manoeuvre may not succeed in creating the gap that Alexander meant to exploit and so the initial advance had to be observed by the enemy. Secondly, moving at a slower pace gave the pike-phalanx the required time to advance and pin the enemy line in place before the flanking charge of the cavalry could be made. Finally, the horses of the units making the oblique advance would be warmed up, but not exhausted, prior to the eventual charge into any gap that formed in the opposing line.

Finally, the defensive actions on the left wing of the Macedonian line at battles such as Issus and Gaugamela are also the use of economy of force. By not moving to engage as the centre and right wings of the line did, fighting a defensive action on the left both maintained unit cohesion in this sector and kept troops rested while the opposing side was forced to advance into action. Unit cohesion and lack of any level of fatigue was crucial in encounters where the Macedonian left was heavily outnumbered as occurred at Issus. Thus the movements of every unit of the Macedonian army in all of these encounters was something of a co-ordinated 'dance in unison' with each contingent operating in a specific way so that all elements of the army functioned within the principle of economising their offensive power.

Alexander and Concentration of Force

Consistently directing his primary attack at what he perceived to be a crucial point in the enemy line is the other of Alexander's great attributes as a battlefield tactician. Through the use of his oblique advances of his right wing cavalry, Alexander ensured that a gap was created where he could strike hardest at the point where he believed that the decisive blow to disrupt the enemy could be struck. In many of the battles – Granicus, Issus and Gaugamela – this point was considered to be the location of the senior commander (or one of the senior commanders in the case of Granicus). As if to confirm the success of such a conclusion, in all these of these battles the Persian army began to waver and break as soon as their commander had either been slain or had turned in flight. The concentration of the most offensive action at a key point in the line is another aspect of Hellenistic tactics that Alexander would have learnt from his father – and so is not something original to Alexander's tactical decision making, but is merely part of his operational repertoire. What was considered the key point in the enemy formation, however, differed in its implementation between Alexander and his father. In 358BC, for example, Philip directed his attacks against what he perceived to be the weakest point in the enemy formation in his battle against Bardylis.¹¹⁶ At Chaeronea in 338BC, Philip commenced actions against the Athenian left with his advanced right wing while the strongest part of the enemy line, the position of the Theban Sacred Band, was opposite the Macedonian left.¹¹⁷ Philip may have modelled his stratagem on that used by the Thebans at the battle of Leuctra in 371BC – in which the Thebans directed their attack at what they considered the strongest point in the enemy line, the position of the Spartan king, Cleombrotus.¹¹⁸ Philip, however, seems to have altered this principle to strike at the weakest point in an enemy line rather than the strongest.

Initially, Alexander seems to have followed the same principles as his father. When fighting the Taulantians in 335BC, Alexander also directed his attacks against the point in the enemy formation 'where they were likely to make the greatest onslaught on the enemy at his weakest point'.¹¹⁹ During his campaign in Asia, on the other hand, Alexander's concentration of force more closely follows the Theban model with his attacks directed at opposing commanders – with only the method of delivery (using cavalry rather than infantry) being the main difference. The successful delivery of a concerted attack at a key point in an enemy's position is also reliant upon many of the other factors which were vital to the hammer

¹¹⁶ Diod. Sic. 16.4.5-6; Frontin. *Str.* 2.3.2; see also: Just. *Epit.* 7.6.7

¹¹⁷ Plut. *Pel.* 18; see also: Diod. Sic. 16.86.1-6

¹¹⁸ Plut. *Pelop.* 23; Xen. *Hell.* 6.4.12; Polyaeus, *Strat.* 2.3.15; *Excerpta Polyaei*, 14.7

¹¹⁹ Arr. *Anab.* 1.6.10

and anvil tactic such as timing. Alexander's successful use of such a tactic on four separate occasions can only be considered a demonstration of the abilities of an astute tactical commander.

Alexander and Surprise

Alexander's greatest use of surprise was not in attacking an enemy without warning. Rather it was through manipulating the circumstances of the battlefield to place an opponent in a position where he could not win. Such a principle applied not only in separate sectors of the battlefield, or even the actions of individual contingents (such as his use of missile troops to hold the enemy left, his oblique advance of his left wing cavalry to create exploitable gaps in the enemy line, or the use of the pike-phalanx to pin the enemy centre), but also to an engagement as a whole. His deployment of Craterus with part of his army on the far bank of the Hydaspes, with orders to cross only once the main engagement had begun, meant that no matter which force Porus turned his army to face, he would be attacked from behind by the other unless he intentionally split his forces and chose to fight on two fronts with two numerically weakened forces. Thus on both a sector level and a battlefield level, Alexander used the elements of his army to either remove or nullify parts of the enemy army, to move his own troops into a position where they could be used to the best effect, and to create the opportunities required to ensure he gain victory – opportunities that the enemy was almost powerless to prevent.

Alexander as a Tactician

By examining how Alexander's battlefield tactics across his four major set-piece battles comply with the principles set down by military theorists and commentators like Fuller, a more comprehensive picture of Alexander's abilities as a battlefield commander emerges (table 1).

Criteria	Granicus	Issus	Gaugamela	Hydaspes
Maintenance of aim or Objective	Yes	Yes	Yes	Yes
Security	Yes	Yes	Yes	Yes
Mobility	Yes	Yes	Yes	Yes
Offensive Power	Yes	Yes	Yes	Yes
Economy of Force	Yes	Yes	Yes	Yes
Concentration of Force	Yes	Yes	Yes	Yes
Surprise	Yes	Yes	Yes	Yes

Table 1: A comparison of Alexander's four major battles to Fuller's criteria of the tactical arts.

The results of the application of the analytic criteria suggest that Alexander was a masterful tactician with a clear understanding of the finer details of what would make his larger base tactic succeed. Whether elements of these tactics were inventions of Alexander's or something he had learnt from his father or elsewhere is irrelevant. The important part of the tactical art is how they are applied on the battlefield – not whether they are simply known or from whom they are learnt. Similarly, whether it is considered less innovative that Alexan-

der used the same base tactic time and again, or whether the slight variances in his deployment and implementation of the hammer and anvil tactic can be considered ground breaking, are fundamentally redundant arguments. The proof of tactical ability on the battlefield is measured in the results as well as how they are achieved. This is Alexander's true genius as a commander – not only knowing what works, and what works well for the troops at his disposal, but also possessing the ability to adapt the use of these troops in such a way as to create the perfect environment and opportunities for the base tactics to be utilized to their fullest measure. As Warry states; Alexander used a standard tactic throughout his campaign but that tactic was 'implemented with astonishing versatility, improvisation and resource as time and place required'.¹²⁰ This clear knowledge of the abilities of his army and how best to employ them is what allowed Alexander to remain undefeated in any major battle and truly deserving of the title 'the Great'.

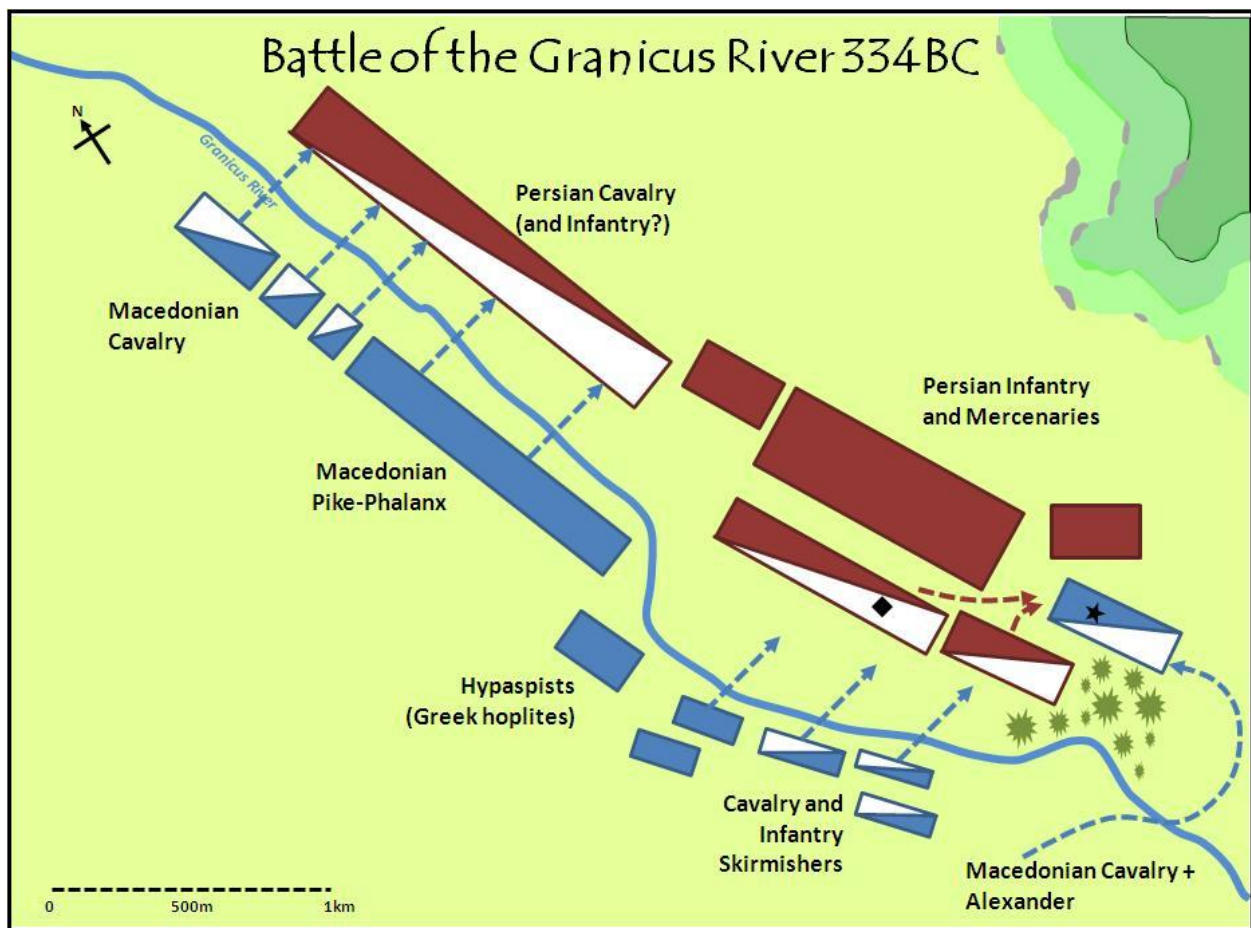


Figure 1: Overview map of the battle of Granicus

¹²⁰ Warry, *Alexander 334-323BC*, 20

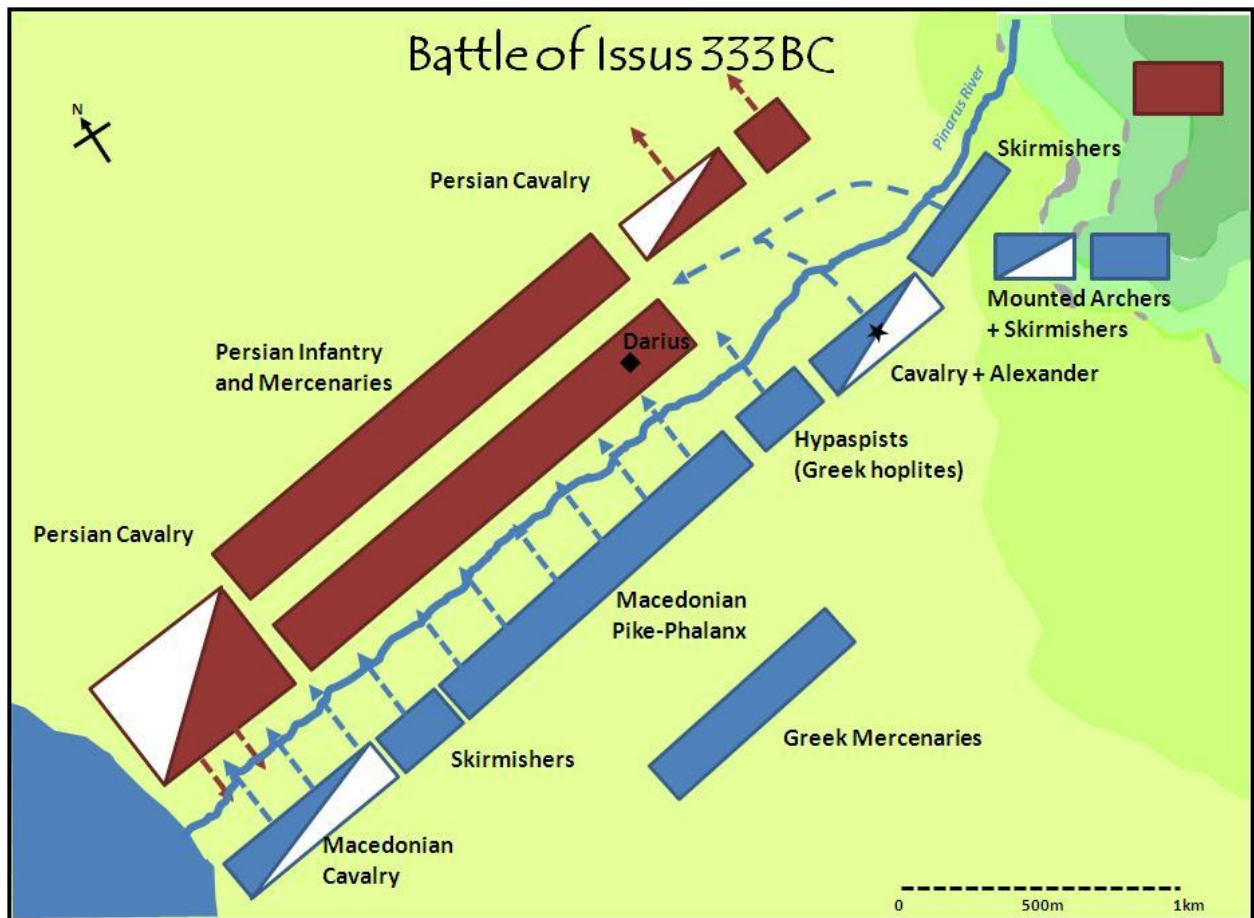


Figure 2: Overview map of the battle of Issus

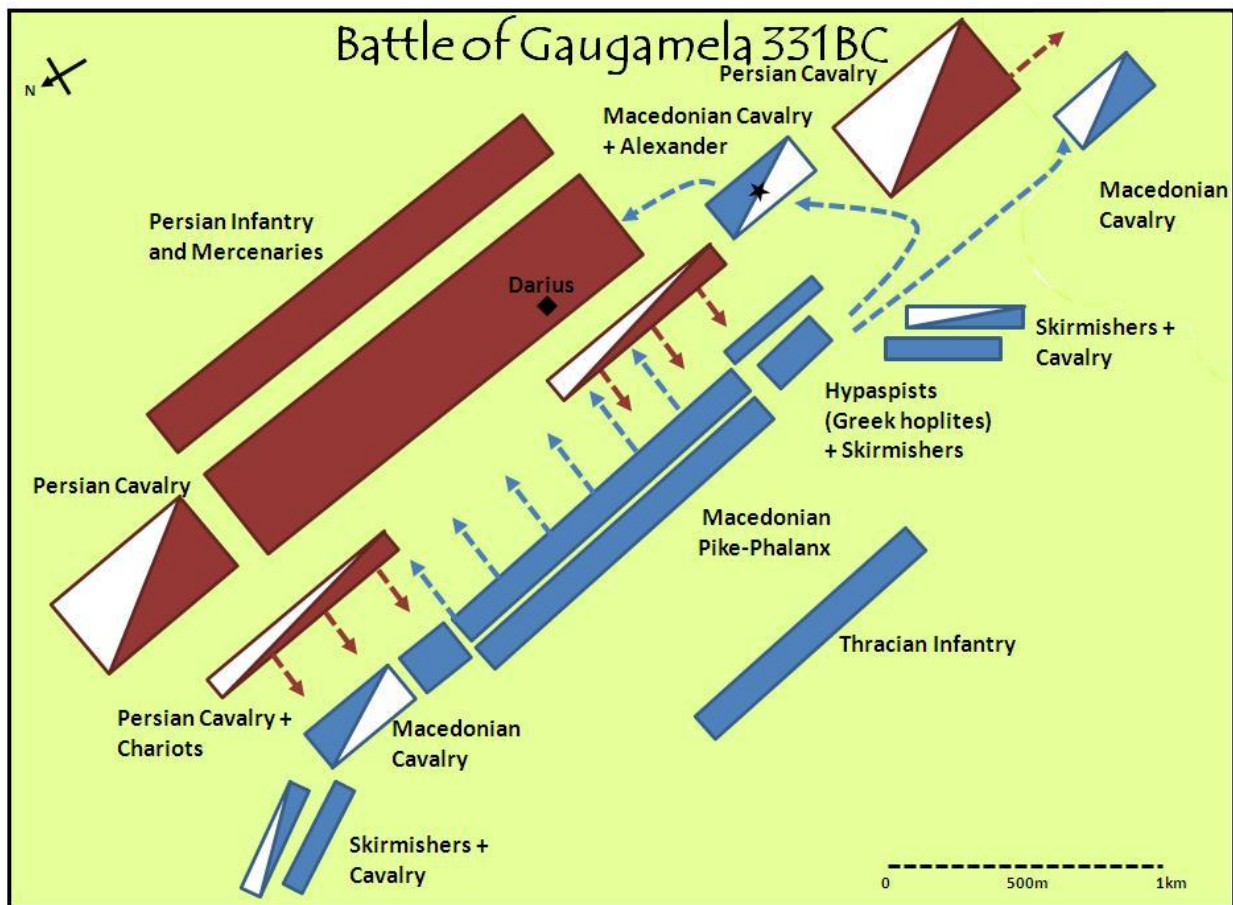


Figure 3: Overview map of the battle of Gaugamela

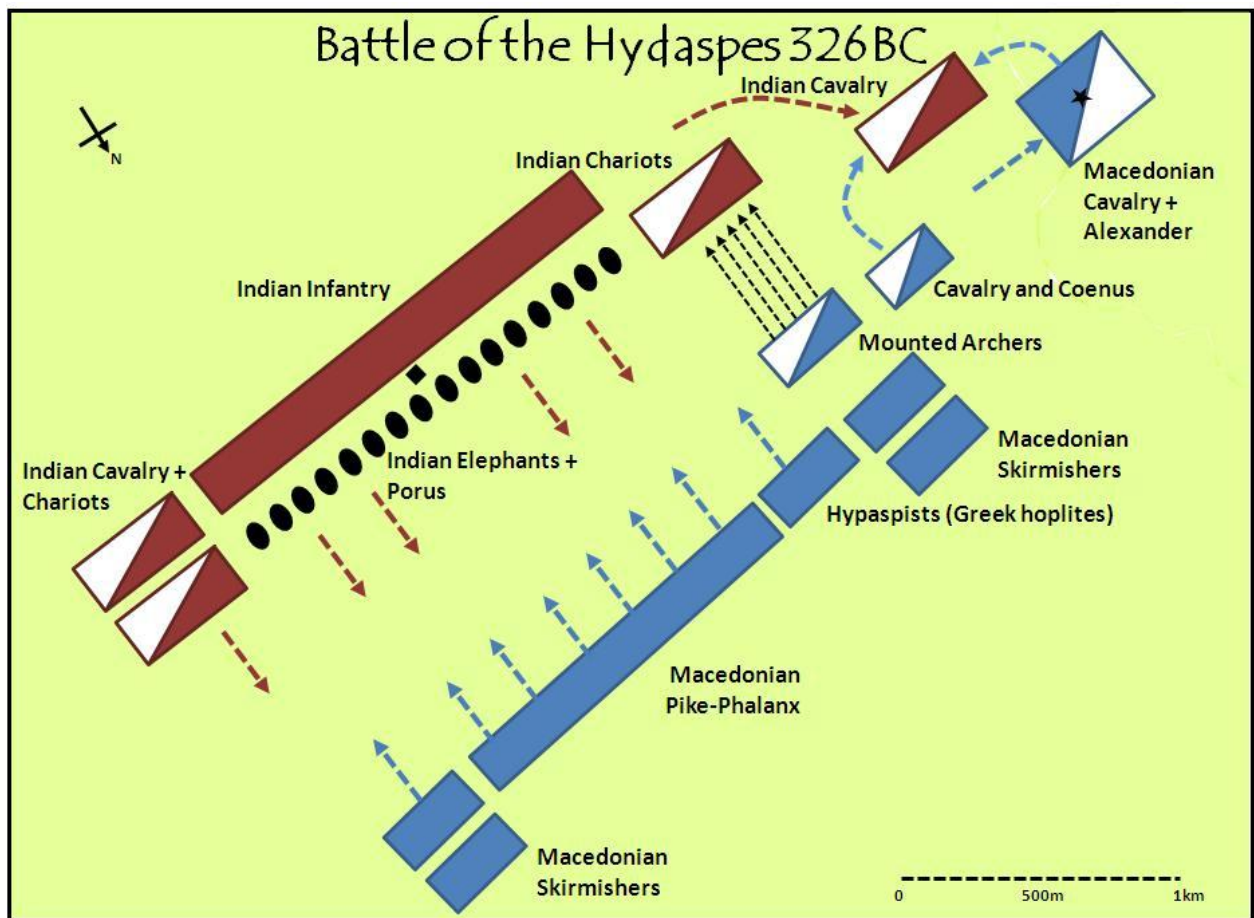


Figure 4: Overview map of the battle of the Hydaspes