

Chapter 10

Arrows, Aiming and Divination: Astrology as a Stochastic Art

Dorian Gieseler Greenbaum

‘The right art’, cried the Master, ‘is purposeless, aimless!

The more obstinately you try to learn how to shoot the arrow for the sake of hitting the goal, the less you will succeed in the one and the further the other will recede.

What stands in your way is that you have a much too wilful will.

You think that what you do not do yourself does not happen.’

(Eugen Herrigel)¹

Unlike the modern connotation of stochastic processes, which deal with randomness and probability in many different fields, my focus in this chapter concerns the ancient definition of stochastic and its use in ancient science and divination. The word ‘stochastic’ comes from a Greek word (στοχάζομαι) meaning to ‘aim at’, ‘conjecture’ or ‘guess’. It was used both for aiming at a target and, by extension of this primary meaning, for guessing or conjecturing. The image of aiming at a target is also used metaphorically in antiquity to describe certain ancient practices, and to highlight the use of conjecture and interpretation in those practices.

The ancient concept of *stochasmos* moves down two different paths: one that leads to ‘science’ (that is, ‘stochastic’ arts which aim towards and eventually approach our modern concept of science) and the other that leads to divination (described as an art of conjecture in antiquity).

The art of aiming can also be connected to the concept of metaphor and its role in divination. Since my main interest is in divination and, particularly, the intersection of astrology with divination, this chapter will also explore how metaphor might be used to explain what diviners, and astrologers as diviners, do.

Thus the aim of this chapter is to see, first, whether we can call astrology a stochastic art and, second, whether it is in a ‘scientific’ or in a ‘divinatory’ way that we should view this ‘stochasticism’. Lastly, we shall think about the connection of the stochastic concept with metaphors, poetry and divination, and how this may be relevant to astrological practice. My target audience for this chapter is not primarily astrologers (though they may be interested in my thoughts on how

¹ Eugen Herrigel, *Zen in the Art of Archery*, trans. R.F.C. Hull (New York: Random House, 1953, repr. 1999), p. 31. I am indebted to Garry Phillipson for alerting me to this most apt quotation.

astrologers do what they do), but rather those readers who have not considered that astrological perspectives and methods of interpretation have any value. I am offering an approach to astrology that takes it out of the realm of the literal and into a different, but no less present, reality: a reality that includes the metaphorical as a valid way of looking at the world.

Precise Prediction and Astrology

How is it possible to make astrological prediction precise and consistent? The ability to forecast correctly is a concern of both astrologers and their critics. Astrologers desire ways to make their art more accurate, while critics use its inconsistency in an attempt to invalidate it. For millennia, astrologers used the following or similar justifications for failure in astrological prediction:

- The technique used by the astrologer did not properly reflect a physical mechanism.
- The doctrine or technique was applied incorrectly.
- The practitioner's knowledge and skill were inferior.

In touting their own, superior systems, astrologers frequently resorted to denigrating their colleagues and blaming their inaccurate forecasts on the reasons outlined above, especially the last.² Those faulty skills, and not the art itself, are to blame if the predicted outcome does not occur.³ Such a justification is demonstrated in the description Cicero's brother, Quintus, gives in *De divinatione* about the efficacy of divination by signs: 'ea quibus bene percepta sunt, ii non saepe falluntur; male coniecta maleque interpretata falsa sunt non rerum vitio, sed interpretum inscientia' ['Those who properly perceive are rarely deceived. The falsehood of bad conjectures and bad interpretations is due, not to any fault in the world, but to the scientific ignorance of the interpreters'].⁴

² Among other examples, see Vettius Valens, *Anthologiarum libri novem*, ed. David Pingree (Leipzig: B.G. Teubner, 1986) [hereafter *Anthology*], III, 9.1–6; IV, 11.1–5; V, 8.113–117; Julius Firmicus Maternus, *Matheseos libri VIII*, ed. Wilhelm Kroll, Franz Skutsch and Konrat Ziegler, 2 vols (Leipzig: B.G. Teubner, 1897–1913) [hereafter *Mathesis*], I, 3.6.

³ Claudius Ptolemy, *Ἀποτελεσματικά*, ed. Wolfgang Hübner, *Opera quae exstant omnia*, vol. III 1 (Stuttgart and Leipzig: B.G. Teubner, 1998) [hereafter *Tetrabiblos*], I.2, 12–13 (as cited in Joanna Komorowska, 'Astrology, Ptolemy and technai stochastikai', *MHNH* 9 (2009): 129–40). I am grateful to Komorowska for her previous research on this topic, though my approach is different from hers.

⁴ Cicero, *De divinatione*, I, lii.118 = SVF 2.1210; trans. A.A. Long and David Sedley, *The Hellenistic Philosophers*, 2 vols (Cambridge and New York: Cambridge University Press, 1987), vol. 1, 42E, p. 261; vol. 2, 42E, p. 261.

In antiquity, scientific ignorance, especially of the workings of the physical world, was a particular concern for Ptolemy, who supposed that if he could find rational, physical explanations for astrological doctrines and their effects, he would be contributing to an increase in accurate prediction. Ptolemy, who considered astrology to be stochastic, saw similarities between the art of astrology and the art of medicine: he may have been the first to compare astrology to the practice of medicine in which, like the physician, the astrologer applies his skill and proper technique to predict an outcome. The physician's goal is also to use her skill to provide the proper remedy to heal the patient, while the astrologer's equivalent goal is to provide astrological remedies, for instance in the form of katararchic charts.⁵ Like the art of medicine, Ptolemy says, astrology cannot predict successfully every time, because of factors beyond the control of the astrologer and astrology. These include things like (the ancient equivalents of) genetics and environmental factors.⁶

However, in contrast to Ptolemy's attempt to find natural rules governing astrological practice, astrological techniques were more often purported to be revealed wisdom (for example in the writings of Vettius Valens).⁷ The divinatory origins of astrology are corroborated by such perceptions of its ancient doctrines.

A general set of rules for interpretation arises from this acquisition of revealed wisdom. Divination's rules are based on the medium through which the divination is made (whether flights of birds, the fissures in livers, the casting of lots or the patterns in the heavens). The Stoics too describe divination as rule-based (theoretical as opposed to practical), as Arius Didymus relates: 'Εἶναι δὲ τὴν μαντικήν φασιν ἐπιστήμην θεωρητικὴν σημείων τῶν ἀπὸ θεῶν ἢ δαιμόνων πρὸς ἀνθρώπινον βίον συντεινόντων. Ὁμοίως δὲ καὶ τὰ εἶδη τῆς μαντικῆς' ['They say that the prophetic art is a rule-based knowledge of signs from the gods or *daimones* which apply to human life. They say the same about the forms of the prophetic art'].⁸ These rules become a jumping-off point, not necessarily consistently applied in all cases, from which the diviner uses his interpretive skill to predict an outcome. Thus the astrologer may interpret the symbolism differently in each *particular* case, even though following a general set of rules. Different rules can be applied in different

⁵ One use of 'katararchic' astrology is to find the best possible moment astrologically for beginning a ritual or other event, in order to secure the best outcome for that event.

⁶ Ptolemy, *Tetrabiblos* I, 2.17–19; Valens, *Anthology*, IV, 16 talks about the Sun and Moon causing different changes under similar astrological conditions but different natural ones.

⁷ For example, *Anthology* IV, 11.7; V, 6.16; VI, 1.7.

⁸ Arius Didymus, *Epitome of Stoic Ethics*, ed. and trans. Arthur J. Pomeroy, *Texts and Translations* 44, *Graeco-Roman Series* 14 (Atlanta: Society of Biblical Literature, 1999), 5b12, pp. 24–7. Pomeroy translation slightly modified.

cases; for example, Saturn might be used to represent the father in the interpretation of one chart, but the Lot of the Father may signify the father in another.⁹

Ancient astrologers were aware of the distinction between the general and the particular. Vettius Valens, for example, describes the Ascendant and angles from it as ‘universal’ and ‘cosmic centrepins’, while the Lot of Fortune and angles from it are ‘genethliological’ (that is, natal, unique to that person).¹⁰ Ancient astrology offers several ways of dealing with the two categories:

1. It explains mass disasters both naturally and astrologically (both Ptolemy and Valens do this).¹¹
2. It uses different techniques to take both the general and the particular into account (as in the Valens example above, where lots become a way to account for particular outcomes).
3. It approaches each chart as a unique portrait/prophecy, tailored by time, space and interpretation as a particular ‘take’ matching (changing) symbol to circumstances (see the use of aphorisms as guides, not axioms, below).

Astrology differs in some respects from other forms of divination, in that its medium is the planets and stars in the sky, whose movements can be measured and consistently predicted (unlike, for instance, the casting of lots, which change each time they are thrown). Also, once a chart is written down, it becomes a stable and enduring record of a fleeting moment, whereas once the flock of birds has passed, or the liver cools, the divination ends. Because it is based on the physical representation of the universe, people like Ptolemy theorized a mechanism of physical causation; if such is the case, then astrology becomes a proto-science. As a science, it should be susceptible to predictable results. However, like medicine, its results are not consistently correct, so it therefore has a commonality with that and other disciplines, like rhetoric, which depend on the practitioner’s experience, skill and creative interpretation in a unique situation.

⁹ Astrological lots are considered to be sensitive predictive points in a chart. They are usually calculated by taking the arc between two planetary positions in a chart and projecting that arc from a third point (often the Ascendant, the zodiacal degree where the ecliptic and eastern horizon intersect).

¹⁰ Valens, *Anthology* II, 18.6 (p. 76.18–20 Pingree): ‘ὀφίστανται γὰρ τινες μυστικῶς τὸν μὲν καθολικὸν ὥροσκόπον καὶ τὰ τοῦτου τετράγωνα κοσμικὰ κέντρα, τὸν δὲ κλῆρον καὶ τὰ τοῦτου τετράγωνα γενεθλιαλογικὰ κέντρα’ [‘Some have mysteriously laid down the universal Hour–marker [i.e. Ascendant] and its squares [points directly opposite and perpendicular] as the cosmic centrepins [*kentra*, modern ‘angles’], but the Lot and its squares as the genethliological centrepins’]. All astrological translations are my own unless otherwise specified.

¹¹ See, for example, Ptolemy, *Tetrabiblos* I, 1–3; Valens, *Anthology* VII, 6.127ff. Furthermore, one could say that the two categories of mundane astrology (called universal or general by the ancients) and natal astrology are an attempt to deal with this issue on a broad scale.

In *De divinatione* (I, xiv.24), Cicero's brother Quintus tells us that divination is allied with other arts which depend on 'conjecture and deduction' (*quae coniectura continentur et sunt opinabiles*) such as medicine, navigation, military strategy and statecraft. It grows into an art capable of a certain level of prediction through experience 'derived from everlasting eternity' (*ab omni aeternitate repetita*) (I, xiv. 25).¹² The same signs over time are shown to have consistent results (though this does not necessarily prove physical causation).

The words 'conjecture' and 'consistency' bring us to the first aim of this chapter, which is to look at what a 'stochastic' (or 'conjectural') art is, and to see whether we can apply it to astrology, as Ptolemy suggested.¹³ We shall examine this word (with its variations), and what it represents in Greek culture, in relation to astrology and its practices. In doing so, we shall take up ideas about aiming (including the target, the goal and the ability of the aimer) and conjecture. These will be applied to astrology in particular, and compared with other disciplines usually described in antiquity as 'stochastic', such as medicine and rhetoric. We shall also look at the philosophical interpretations of this word, especially those of the Stoics (for whom it was an important concept). In the Greek of the late Hellenistic period, a word for a diviner was not only *mantis*, but also *stochastēs*.¹⁴

Targets and Goals

The first definition of the verb *στοχάζομαι* (*stochazomai*) in the Greek lexicon is 'aim' or 'shoot at'.¹⁵ These primary meanings pertain to the literal shooting of arrows at a target, but the term was adopted and applied in both Aristotelian and Stoic philosophy.

In particular, both of these philosophic strands widely use the metaphor of an archer aiming at a target. Aristotle, in the *Nicomachean Ethics*, states that 'every art' aims at some good, and aiming at that objective helps us, like the archer, to

¹² Both quotations from Marcus Tullius Cicero, in *De senectute. De amicitia. De divinatione*, trans. W.A. Falconer (Cambridge, MA: Harvard University Press, 1923, repr. 2001), pp. 250–53. The last cited quotation is my translation.

¹³ The relevant Ptolemaic text is his *Ἀποτελεσματικά*, commonly known as the *Tetrabiblos*, especially Book I.

¹⁴ The earliest usage of *stochastēs* appears to be in the Greek translation of *Isaiah*, with a date probably in the 2nd century BCE. It is then mostly used in commentaries on this passage by theological writers. In *Isaiah* it is paired with the word *prophetēs*. (For the dating of the Septuagint translation of *Isaiah*, see I.L. Seeligmann, *The Septuagint Version of Isaiah: A Discussion of its Problems* (Leiden: E.J. Brill, 1948), p. 91: 'the middle of the second century *ante* would be the most likely date to assign also to this chapter (ch. 23) of the translation'.)

¹⁵ Henry George Liddell, Robert Scott and Henry Stuart Jones, *A Greek–English Lexicon*, 9th edn (Oxford: Clarendon Press, 1996), s.v.

hit the target (1094a). In the *Rhetoric* (1360b 4–7), he uses the same metaphor: ‘Σχεδὸν δὲ καὶ ἰδίᾳ ἐκάστῳ καὶ κοινῇ πᾶσι σκοπὸς τις ἔστιν οὗ στοχαζόμενοι καὶ αἰροῦνται καὶ φεύγουσιν· καὶ τοῦτ’ ἐστὶν ἐν κεφαλαίῳ εἰπεῖν ἢ τ’ εὐδαιμονία καὶ τὰ μέρη αὐτῆς’ [‘Nearly everyone has a kind of target, both privately for each person and in common, in aiming at which they make their choices and avoidances, and this is, in brief, happiness and its parts’].¹⁶ Later, ‘conjecture’ (*stochasmos*) was described as the first task a rhetorician undertakes, determining facts from signs and suspicions: ‘Ὡν στοχασμὸς τὸ πρότερον· ὑπάρχει δ’ οὗτος, ἄναξ, / ἔλεγχος οὐσιοποιὸς ἐκ φανεροῦ σημείου / ἢ τῆς περὶ τὸ πρόσωπον ἀκριβοῦς ὑποψίας’ [‘The first of these is conjecture: this is, master, an examination that establishes what is the case from a clear sign, or from particular suspicions about a person’].¹⁷

Other philosophers use the archer metaphor to explain the attainment of virtue. Thus, in Cicero’s *De finibus*, 3.22:

... primum error tollendus est ne quis sequi existimet, ut duo sint ultima bonorum. Etenim, si cui propositum sit conliniare hastam aliquo aut sagittam, sicut nos ultimum in bonis dicimus, sic illi facere omnia quae possit ut conliniet. Huic in eius modi similitudine omnia sint facienda, ut conliniet. Et tamen, ut omnia faciat quo propositum adsequatur, sit hoc quasi ultimum quale nos summum in vita bonum dicimus, illud autem, ut feriat, quasi seligendum, not expetendum.

... [one must at the outset remove the mistake of supposing that there are two final goods. For if a man’s object were to aim a spear or an arrow straight at something, his doing everything in his power to aim it straight would correspond to our doctrine of the final good. On that kind of analogy, this man must do everything to aim straight. And yet his doing everything to attain his object would be his end, so to speak, analogous to what we are calling the final good in life, whereas his striking the target would be something ‘to-be-selected’, as it were, not ‘to-be-desired’].¹⁸

Antipater, a Stoic commentator, also used the example of an archer shooting at a target to articulate the difference between Stoic targets and goals about obtaining happiness. It is generally interpreted to mean that an archer can still succeed by

¹⁶ Trans. Julia Annas, *The Morality of Happiness* (New York and Oxford: Oxford University Press, 1993), p. 364.

¹⁷ Michael Psellos, *Synopsis of Rhetoric (Poem 7)*, trans. Jeffrey Walker (2006), at <https://webpace.utexas.edu/jw2893/www/PsellosSynopsisRhetoricWebtext.pdf> (accessed 13 January 2010), Poem 7.32–4.

¹⁸ Trans. Long and Sedley, *Hellenistic Philosophers*, vol. 1, p. 403; Latin, vol. 2, pp. 397–8.

shooting skilfully, even if he does not hit the target.¹⁹ Julia Annas points out that this depiction of archery is just a metaphor, and that archery in itself is not a stochastic art²⁰ (which claims that target and goal are different). Be that as it may, the archery metaphor is widely used to illustrate the difference for the Stoics between target and goal, and thus becomes almost a commonplace for the definition of a stochastic art.

The Stoics are looking for the attainment of happiness (*eudaimonia*). They make a distinction between *aiming* for happiness and *being* happy, and this is the distinction between a *skopos* and a *telos*; as Annas indicates, the *telos* involves *doing* or *obtaining* something (actions expressed by verbs); the *skopos* the thing *done* or *obtained*, expressed as a noun.²¹

The Greek words for target and goal also illustrate their differences. The word often translated as ‘target’ is *skopos*, literally the mark, or the thing aimed at; the goal (*telos*) (famous as Aristotle’s ‘final’ cause, for which something is done), is literally the end, the completion. As Arius Didymus says about the relationship between *skopos* and *telos*, ‘Καὶ ἔστι σκοπὸς μὲν, τὸ προκείμενον εἰς τὸ τυχεῖν, οἷον ἄσπις τοξόταις τέλος δέ, τοῦ προκειμένου τευξίς’ [‘A *skopos* is a target to be hit, like a shield for archers; a *telos* is the hitting of the target’].²² Applied to medicine, Galen says that the stochastic nature of the art is such that the target is doing what is humanly possible to cure the patient, but the goal is the actual cure.²³ Since the art is stochastic, there is no shame and no failure in failing to achieve the goal.

Can we apply these conceptions to astrology? On a literal level, *skopos* and *telos* (and related forms) are common in the ancient astrological vocabulary. The astrologer is often advised to ‘mark’ a particular point or position of a planet (from which an interpretation will be made); the moment of birth, translated into a corresponding position in the sky, is even called the *Hōroskopos*, the ‘Hour-marker’; and the outcomes forecast by the interpreting astrologer are called ‘*apotelesmatika*’, derived from the root ‘*telos*’. From this perspective the goal is

¹⁹ F.H. Sandbach, *The Stoics*, 2nd edn (London: Hackett, 1975, repr. Indianapolis, IN, 1994), p. 57. Gisela Striker, ‘Antipater, or the Art of Living’, in Malcolm Schofield and Gisela Striker (eds), *The Norms of Nature: Studies in Hellenistic Ethics* (Cambridge: Cambridge University Press, 1986), p. 192, interprets thus: ‘it is simply meant to say that the archer is not concerned with hitting the mark, but only with shooting skilfully’. Brad Inwood, citing Roswitha Alpers-Gölz, points out that Antipater reshaped the difference between *skopos* and *telos*, which previously distinguished between ‘the happy life ... as a physical object ... and the attainment and living of that life’ (see Brad Inwood, ‘Goal and Target in Stoicism’, *Journal of Philosophy* 83/10 (1986): 547–56, at 551, n. 9).

²⁰ Annas, *Morality of Happiness*, p. 402.

²¹ *Ibid.*, p. 34.

²² Arius Didymus 47.8–10, quoted in Annas, *Morality of Happiness*, p. 34.

²³ Paraphrased from M. Frede, in discussion following the paper of Véronique Boudon, ‘Art, science et conjecture chez Galien’, in Jonathan Barnes and Jacques Jouanna (eds), *Galien et la philosophie, Entretiens sur l’antiquité classique*, Tome XLIX (Geneva: Hardt, 2003), p. 300.

the outcome, which one aims at by ‘marking’ the positions of the stars and then interpreting them in line with the goal.

On a broader, philosophical level, we can look at the *skopos* and *telos* of astrology in two ways. The ancient position, I think, would be analogous to that of the target and goal in medicine: the goal (*telos*) is the correct prediction and the target (*skopos*) is doing whatever humanly possible to aid the client by achieving the correct prediction. If astrology is a stochastic art like medicine, then as long as the astrologer does everything in his power to achieve a correct prediction, it is no failure not to achieve it.

The other way of looking at this issue is by inverting the ancient position on what the target and goal is.²⁴ The *target* is the correct prediction, and the *goal* is aiding the client in life decisions to the best of the astrologer’s ability, taking into account the conjectural nature of the art. This position could be described as pragmatic, and an ontological change from the ancient view.²⁵ In adopting this view, we can examine it in the light of Aristotle’s four causes. Astrologically:

- the material cause is the stars, planets and celestial phenomena
- the formal cause is the patterns formed by the above
- the efficient cause is the correct prediction
- the final cause is the aiding of the client.

Let us think about the target in archery. Materially, it is the cloth, the stuffing and the paint used to make the target (astrologically the stars, planets and celestial phenomena). Formally, it is the actual object of the stuffed, cloth-wrapped circle with lines and a bull’s eye drawn on it (astrologically the astrological patterns). But the target is also the means by which the goal is achieved, and so we could also call it the efficient cause. Therefore, if the target is the efficient cause, and correct prediction in astrology is the target, then prediction is the efficient cause. It is just something to be hit until one invests it with meaning (the final cause). Helping the client with life decisions is the goal, the final cause. Even if the target, the correct prediction, is not achieved, the goal, helping the client, can still be achieved.

Accepting this other approach does not mean that astrology, with its goal and target reversed from medicine’s, should no longer be considered a stochastic art, because it still depends on informed conjecture and the judgement and skill of the practitioner, and it can still be practised successfully even if the goal is not achieved.

In medicine, a cure is not always achieved, but improvement is aimed at. Because medicine is widely acknowledged and accepted as a stochastic art, it is not required that ‘perfection’ be achieved for the art or the practitioner to be successful. The practice is ‘perfect’ (that is, complete), even if the cure does

²⁴ I am grateful for the insights and feedback of Marcia Butchart in this section.

²⁵ My thanks to Guido Giglioni for discussing these points with me, and helping me to clarify my positions.

not occur. In another archery analogy, the Stoic Panaetius discusses aiming at different virtues and describes the target as possessing rings of different colours – different shooters, with different goals, may aim at different rings – but all hit the target.²⁶ We could think of astrologers as being like the different shooters who aim at the target, but achieve, with their astrology, different ends based on which of the (metaphorical) colours they hit.

However, some paradoxes involved in marksmanship must be considered and applied to astrological practice. First, the shooter does not aim precisely at the middle of the target in order to hit the bull's eye, but must take into account the trajectory of the arrow and the speed of its flight, the distance from the target, the flatness of the terrain one is shooting on and so on. So we could say the aim is true when the aim is not true. In astrology, it is the apparent, not the 'real', on which the interpretation is based. Astrological rules are based on our human perceptions of a geocentric universe, which of course is not scientifically true. For example, in both astronomy and astrology, the 'conjunction' of a planet with the sun does not actually occur in the heavens, as the two bodies, in reality, are millions of miles from each other. From our earth-bound perspective, we only see what 'appears' to be a conjunction, and even that is not visible to us at the exact moment when sun and planet join, because the brightness of the sun swallows up our sight of it. We can only know that the conjunction has happened after the planet has moved far enough away from the sun to be visible (this is true *phasis* versus visible or apparent *phasis*). (This very example may show that astrology is founded on, and moves in, a figurative (metaphorical), not literal, space.)

Second, there is a psychological component to consider, involving a mental stance which must be taken in shooting for a bull's eye. This involves skill and desire in proper proportions. Here I shall use an example from the sport of baseball: when trying to get a home run in baseball, there is a certain detachment, or *not* trying to get a home run, that is necessary to hit a home run. We saw this in the USA during the summer of 2007, when the baseball player Alex Rodriguez, famous for his prowess in hitting home runs, went ten days between his 499th home run and his 500th.²⁷ During that period, the press kept the pressure on by reporting each

²⁶ Panaetius, fr. 109 (part) in Stobaeus, 2.63, 25–64, 12; quoted in Long and Sedley, *Hellenistic Philosophers*, 63G, vol. 1 (trans.), p. 396; vol. 2 (original), p. 392. 'ὁμοιον γὰρ ἔλεγεν εἶναι ὁ Παναίτιος τὸ συμβαῖνον ἐπὶ τῶν ἀρετῶν, ὡς εἰ πολλοῖς διαφόρους τοῖς χρώμασιν· εἴθ' ἕκαστος μὲν στοχάζοιτο τοῦ τυχεῖν τοῦ σκοποῦ, ἦδη δ' ὁ μὲν διὰ τοῦ πατάξαι εἰς τὴν λευκὴν εἰ τύχοι γραμμὴν, ὁ δὲ διὰ τοῦ εἰς τὴν μέλαινην, ἄλλος <δὲ> διὰ τοῦ εἰς ἄλλο τι χρῶμα γραμμῆς' ['Panaetius said what happens in respect of the virtues is similar to a single target set up for many archers, which contains within itself lines of different colours. In that case each archer would aim to hit the target, but one would do so, if he were successful, through striking into the white line, and another through striking into the black line, and another through doing so into a line of different colour'].

²⁷ Though Rodriguez had similar stretches of time between hitting home runs when the record was not an issue, in 2007 he usually hit a home run an average of every four or

failed attempt at breaking the record.²⁸ Thus, in addition to hitting home runs in general, Rodriguez also had to think about specifically hitting *the 500th home run*. Perhaps the more he thought about ‘hitting the 500th home run’ the less he was able to do it; only by letting ‘hitting the home run’ go could he hit the home run. He acknowledged as much when he said on 28 July 2007 (three days after hitting his 499th home run), ‘They’re [the pitchers] being extra careful, and I’m kind of playing into their hands a little bit. There’s not much I can do with the pitches I’m swinging at. Basically, I’ve just got to get a good pitch to hit and *try not to do too much*.’²⁹ This is an example of what Herrigel meant in the quotation beginning this chapter, also expressed poetically by the Daoist Chuang Tzu:

When an archer is shooting for nothing
He has all his skill.

If he shoots for a brass buckle
He is already nervous.

If he shoots for a prize of gold
He goes blind
Or sees two targets –
He is out of his mind!

His skill has not changed. But the prize
Divides him. He cares.
He thinks more of winning
Than of shooting –
And the need to win
Drains him of power³⁰

five days (one home run per 10.8 at bats). See the Major League Baseball website statistics on Alex Rodriguez at http://newyork.yankees.mlb.com/team/player_career.jsp?player_id=121347&y=2007 (accessed 3 January 2010).

²⁸ See the game summaries for this period at http://mlb.mlb.com/news/wrap.jsp?ymd=20070726&content_id=2112071&vkey=wrapup2005&fext=.jsp&team=away (insert the relevant date in the url to see subsequent days until 4 August 2007, when Rodriguez hit the 500th home run). See also <http://bats.blogs.nytimes.com/2007/07/31/alex-rodriguez-0-for-1/> (both sites accessed 13 January 2010).

²⁹ Quoted by Tyler Kepner, ‘Stuck on 499, It’s Just Like Old Times for A-Rod’, ‘Bats’ blog, *New York Times*, 29 July 2007, online at <http://bats.blogs.nytimes.com/2007/07/29/stuck-on-499-its-just-like-old-times-for-a-rod/> (accessed 13 January 2010); my emphasis.

³⁰ Chuang Tzu, *The Way of Chuang Tzu*, compiled by Thomas Merton (New York: New Directions, 1969), p. 107. Again I am grateful to Garry Phillipson for giving me this quotation. For more astrological discussion on this topic, see Garry Phillipson, *Astrology in the Year Zero* (London: Flare, 2000), pp. 191–2. See also Garry Phillipson, *Tales from*

If an astrologer goes into a consultation aiming (metaphorically) to ‘hit a home run’, in almost all cases what occurs is a mediocre reading; he fails to hit the target. This is true not only of astrology but of any art involving skill and desire. We shall return to these ideas at the end of this chapter, when we talk about metaphor, aiming and divination.

Stochastic Arts vs. Productive Arts

The stochastic arts involve learning technique (or ‘rules’), being able to apply those rules based on an intuition guided by experience and taking into account that particular situations will require a particular, not general, application of technique. As James Allen puts it,

Thus, if they were to succeed at their art, stochastic artists needed to do more than acquire a mastery of the formal precepts of their art; they also needed to develop a sensitivity to the peculiar features of particular situations, a sense of the opportune moment (ὁ καιρός) which enabled them to undertake the right procedures, at the right time, in the right way (cf. *Phaedr.* 272a). Since this ability cannot be incorporated into the formal precepts of an art, it has to be built up by practice and hands-on experience (Isoc. *Antid.* 15, 184; cf. Aristotle, *EN* 1104a 3–10).³¹

Alexander of Aphrodisias, in his commentary on Aristotle’s *Topics*, distinguishes stochastic arts from ‘productive’ arts like building, weaving or any of the technical crafts. Katerina Ierodiakonou has nicely demonstrated these distinctions.³² In examining Ptolemy’s assertion that astrology is a stochastic art, I shall apply the distinctions between stochastic and productive arts to astrology. We shall see that astrology has more in common with stochastic arts, but historically (other than by Ptolemy) often appears to be judged as a productive art. In Table 1 I duplicate Ierodiakonou’s definitions (taken from Alexander). Let us look at these more closely.

Babel, especially the section entitled ‘A Quest for Quality #3: Self-Concern’, online at http://www.astrozero.co.uk/articles/tales_from_babel.htm (accessed 13 January 2010).

³¹ James Allen, ‘Failure and Expertise in the Ancient Conception of an Art’, in Tamara Horowitz and Allen I. Janis (eds), *Scientific Failure* (Lanham, MD: Rowman and Littlefield, 1994), pp. 81–108, at p. 88.

³² Katerina Ierodiakonou, ‘Alexander of Aphrodisias on Medicine as a Stochastic Art’, in Philip J. van der Eijk, H.F.J. Horstmannshoff and P.H. Schrijvers (eds), *Ancient Medicine in Its Socio-cultural Context* (Amsterdam: Rodopi, 1995), pp. 473–85, at p. 474.

Table 1 Astrology as a Stochastic or Productive Art³³

Stochastic art	Astrology		Productive art
1 Proceeds in a systematic, but not fully determined manner	Yes		1 Proceeds in a fixed manner
2 Its function is to aim at doing everything possible to achieve its end	Yes		2 Its function is to aim at reaching its end
3 Its success is not to be judged by the final outcome		Yes	3 Its success is evaluated by the end product
4 Its failure is due to the nature of the art itself, which is such that its objects are also influenced by external factors	Yes	Yes	4 Its failure is due solely to the practitioner's faulty performance

- Number 1: A stochastic art proceeds in a systematic, but not fully determined manner.

Astrology creates a set of rules that are followed in general, but not uniformly applied in every case. So we cannot say that astrology, or good astrology, proceeds in a fixed manner, like productive arts where a sequence of steps is precisely followed in order to achieve a successful outcome. Ierodiakonou reminds us that Alexander calls medicine a stochastic art in that the rules for a cure apply ‘for the most part’ and follow syllogistic reasoning.³⁴ Astrology’s rules, as well, bring success ‘only for the most part’³⁵ and in this way may be said to be contingent:

³³ Definitions taken from *ibid.*
³⁴ *Ibid.*, p. 480. Astrology’s rules are also logical and rational within their symbolism, whatever one might want to say about their causal properties. The rationality of divination (especially including astrology) is discussed in R.J. Hankinson, ‘Stoicism, Science and Divination’, *Apeiron* 21/2 (1998): 123–60. See also Daryn Lehoux, ‘Tomorrow’s News Today: Astrology, Fate and the Way Out’, *Representations* 95 (2006): 105–22.
³⁵ Alexander of Aphrodisias, *On Aristotle’s Prior Analytics 1.1–7*, trans. Jonathan Barnes, Susanne Bobzien, Kevin Flannery, S.J. and Katerina Ierodiakonou (Ithaca: Cornell University Press, 1991), 39.17–40.5; see especially p. 98, n. 61: ‘The rules or general principles of an art guarantee success in the sense that if you apply them correctly you will

they can be modified according to the particular situation and the judgement of the astrologer. Thus in this definition astrology follows the stochastic, not the productive, model. In supporting Ptolemy's argument that astrology is stochastic, Joanna Komorowska interprets this statement from the Ptolemaic viewpoint, that the rules do not always bring success because a complete and certain system for the successful practice of astrology had not yet been attained, and therefore that system is not completely defined.³⁶ But, as Allen points out,³⁷ success must also depend on what amounts to proper interpretation of a particular situation based on experience and judgement.

- Numbers 2 and 3: A stochastic art's function is to aim at doing everything possible to achieve its end –AND– a stochastic art's success is not to be judged by the final outcome.

It could be said that astrology's end must be a successful prediction (or character delineation), and often even its practitioners act as if this is the case. If the prediction does not come true, then astrology fails. But this treats astrology solely as a productive art. The building of a house is judged to be successful if the house is well constructed, all the steps necessary in the building of the house have been followed and the house meets standards of habitability; if these criteria are not present, the house is not considered to have been successfully finished. By contrast, in medicine, healing is not always possible, but generally medicine is not blamed when the patient is not cured: the disease may be beyond present methods of healing, circumstances beyond medicine's control may be contributing factors and so on. This aligns with the stochastic principle of 'doing everything possible to achieve its end'.

When astrology is treated like a productive art, it is judged by the success of what is assumed to be the end product: the correct prediction. As a productive art, success would be consistently achievable by following the right procedure (Number 1, 'proceeding in a fixed manner'), and its results could be judged by those standards. Because of astrology's symbiotic relationship with astronomy, both ancients and moderns may fall into the trap of considering astrology as an exact science.³⁸ However, a competent astrologer may do everything 'right'

achieve your end. An art is conjectural if it can only guarantee success *for the most part*'; emphasis in original.

³⁶ Komorowska, 'Astrology'.

³⁷ See note 31.

³⁸ For example, astrology and its relationship with astronomy is included in O. Neugebauer, *The Exact Sciences in Antiquity*, 2nd edn (New York: Dover, 1957, repr. 1969). If astrology fails to be 'exact', it becomes labelled a 'pseudo-science', with all the pejorative connotation that word can muster. For discussions of the history of astrology as pseudo-science, with more sympathetic approaches, see Hankinson, 'Stoicism, Science and Divination', pp. 123–4; Tamsyn S. Barton, *Power and Knowledge: Astrology, Physiognomics,*

in judging the chart, but not make a correct prediction. Or, the astrologer may satisfactorily answer the questions of the client, but not predict something else about which the client did not ask.³⁹ If we think of astrology as a productive art, then we may fault the astrologer for not predicting something as obvious as a pregnancy. Failure is not an option in a productive art.

However, if astrology is stochastic, then the failure to predict correctly does not mean *ipso facto* that the practitioner is incompetent. Uncertainty within the art itself brings interpretation into play; in astrological interpretation, there is a unique interplay between astrologer and client which involves a dance between the needs of the client and the intuition and skill of the astrologer. If the client asks for a tango, it is not the astrologer's job to provide a waltz. Furthermore, as we have discussed above, is the goal really just that of correct prediction? We have compared the ancient goal and target in astrology to that of medicine: goal as cure (prediction) and target as help. But the inversion of these as outlined above (in my discussion of targets and goals) may be more fruitful philosophically for understanding the underpinnings of astrological theory and practice. It may even be that the adherence to the former position through the ages by both sceptics and practitioners has led in part to the consideration of astrology purely as a 'science' (and eventually as 'pseudo-science') which must ultimately be more like a productive art than a stochastic one.⁴⁰ It is a misinterpretation, I suggest, of what astrology is.

If astrology is inherently stochastic – if the astrologer is not just 'following directions' – then failure to hit the target is not failure of the art itself. (And every practising astrologer has experienced the mystery of having greatly aided a client, while a prediction went wide of the mark.) Uncertainty is built in (the conjecture), and the aim is, though risking failure, to use that uncertainty to create a freedom to act outside the boundaries of the rules. The stochastic art practitioner, by her interpretation, creates a solution that takes into account both the unique circumstances of the situation and the creative application of the 'rules'.

and Medicine under the Roman Empire (Ann Arbor: University of Michigan Press, 1994, repr. 2002), pp. 15–17, 175; also Liba Taub's discussion of Barton, in her review of *Power and Knowledge: 'Review: The Rehabilitation of Wretched Subjects'*, *Early Science and Medicine* 2/1 (1997): 74–87, at 82–3, 86–7.

³⁹ An astrologer remarked to me recently that a client, giving feedback about her consultation, had reported her satisfaction about astrological advice on her business prospects (which she had asked for); but she wondered why the astrologer had failed to predict her pregnancy!

⁴⁰ The view of astrology as a science carried into the Arabic era: for example, see Charles Burnett, 'The Certitude of Astrology: The Scientific Methodology of al-Qabīṣī and abū Ma'shar', *Early Science and Medicine* 7/3 (2002): 198–213. The importance of the Arabic viewpoint on the later development of medieval and Renaissance astrology was such that the paradigm of astrology as a science has been maintained even into the modern era.

- Number 4: The failure of a stochastic art is due to the nature of the art itself, which is such that its objects are also influenced by external factors.

Ptolemy specifically claims that outcomes are influenced by more than astrological factors. This follows the stochastic art model. But often the blame for an incorrect prediction is laid not on factors outside of astrology's purview, but on the astrologer/practitioner (and especially by other astrologers). This follows the productive art model, which blames failure on the practitioner's faulty performance. While few would take issue with suing an incompetent carpenter for a failed building, in a stochastic art the lines are less clearly drawn (witness the high incidence of medical malpractice suits whose outcomes favour the medical defendants). If rhetoric fails to persuade, one does not sue the speechwriter.

The problem is that astrology seems to have more in common with the accepted precepts of a stochastic art, but is often judged as a productive art. This instantly damages its credibility, because it is expected to live up to standards impossible to achieve by its own natural limitations. When astrologers blame the practitioner's competence they reinforce this position.⁴¹ Valens hurts the cause of astrologers when he claims that faulty predictions are to be blamed on the incompetence of other astrologers, and not on ascribing to astrology a function of which it is not capable. Ptolemy here is correct when he says that outcomes cannot be predicted by astrological methods alone, because some things are beyond the influence of the stars. Yet he does not consider (or ignores) the divinatory aspects of astrology; he has concentrated on the 'productive' and physically causal side (for example the planet Mars 'makes' soldiers) and relinquished the 'semantic' and 'symbolic' side (the seventh house 'signifies' marriage).⁴² The 'physically' caused trumps

⁴¹ This is not to say that it does not matter whether the astrologer is competent. But solely using the competence of the astrologer to judge the success of the art does not take into account other reasons for its failure, or the stochastic nature of astrology. Furthermore, the competence of the astrologer depends on more than merely following the rules without exercising her own judgement.

⁴² I do not mean to imply that Ptolemy is the only one to use words of physical causation about astrological technique. All the Hellenistic astrological writing uses words like 'make' or 'produce' to describe astrological configurations which 'bring about' certain effects. In fact, the verbs *semainō* and *poieō* seem often to be used interchangeably in astrological texts. Without doing an intensive study on the frequency and context of these verbs, I can only suggest that, in the manuals designed to teach astrology, the writers were not necessarily paying attention to the way in which they were using the verbs that conveyed the outcomes of various astrological figures; they were simply correlating those heavenly figures with their possible counterparts on earth. It remained for philosophical writers like Plotinus to take up the questions of 'making' versus 'signifying', and to nudge astrology back to its religious and divinatory roots. (For a discussion of these issues in Plotinus, see Marilyn Lawrence, 'Who Thought the Stars are Causes? The Astrological Doctrine Criticized by Plotinus', in John F. Finamore and Robert M. Berchman (eds), *Metaphysical Patterns in Platonism* (New Orleans: University Press of the South, 2007), pp. 17–33.)

‘significance’. Ptolemy has also sacrificed the final cause (the *telos*) for the efficient cause (the *skopos*).⁴³

We must also consider the fact that the interpretation itself can be aligned, ambidextrously, with both external and internal factors. External, because the astrologer – who brings her own judgement to the astrological configuration – is herself the outside variable in the astrological interpretation. Internal, because the interpretation is intrinsic to the practice of astrology. Interpretation is the crucial factor in a stochastic art. A productive art may be successfully practised by strictly following the rules without the necessity of personal interpretation.⁴⁴ But a stochastic art cannot be practised without interpretation of the undetermined and external factors involved, and the consideration of the unique (particular) case. Thus, even though astrology has some features of a productive art it cannot, in the end, be practised without the freedom allowed by a stochastic art.

These theories on the nature of astrology as stochastic or productive can be substantiated in the works of ancient astrologers themselves. How did ancient astrologers consider the exercise of their art? Can we discover evidence of ‘productive’ or, especially for our purposes, ‘stochastic’ practices among them? Surviving astrological manuals, aside from Ptolemy’s, contain few attempts by astrologers to categorize their art, but examining the way they describe what they do and how they do it yields a surprising amount of evidence.

Astrology, Aiming and Conjecture

Most surviving astrological texts are concerned with practical techniques, not philosophical reflections. Nevertheless, these technical manuals can provide some illumination on whether, philosophically, Hellenistic astrologers viewed their art as stochastic or productive (even if they do not use those particular words). Since one of the purposes of a technical manual is to present techniques that give consistently correct results, one might expect that hard and fast rules, without any chance for deviation, would be the order of the day. There is, however, due emphasis on the importance of judgement, as well as other kinds of ‘stochastic’ practices. I shall give examples from four astrologers (Valens, Hephaestio, Ptolemy and Manilius) which demonstrate the subtlety of their thought about what astrology is and how it should be practised.

Vettius Valens and his Target

Valens, as a practising astrologer, is generally more concerned with passing along technique to his readers than with addressing the philosophical foundations of

⁴³ Thanks to Geoffrey Cornelius (private communication) for suggesting this.

⁴⁴ I do not mean to imply that interpretation can never be used in a productive art.

astrology. He uses ‘stochastic’ words only once in the *Anthology* proper,⁴⁵ and once in an appendix to the *Anthology*,⁴⁶ without any philosophical sense. However, on a number of occasions he gives glimpses of his philosophical positions. I want to examine a particular passage in Book IV, Chapter 11, whose ostensible topic is the technique of profections (a predictive technique). Within this chapter, however, Valens shares how he came to find astrology and how he employs it in his personal life. He also uses the target and goal analogy. Here is the passage, separated into three sections for ease of commentary.

Valens tells us he was searching for correct guidance in astrology (IV, 11.7):

καὶ δὴ πολὺν μὲν χρόνον ἀνιαρῶς διήγομεν, καὶ ἐπιλύπως τὰς μεταβολὰς τῶν τόπων ποιούμενοι, τοῖς περὶ τὰ τοιαῦτα ἐσπουδακόσι συμμίσγοντες, διάπειραν ἐλαμβάνομεν, μέχρις οὗ τὸ δαιμόνιον βουληθὲν διὰ τινος προνοίας τὴν παράδοσιν ἔν τινι τόπῳ πεποιήται διὰ τινος φιλομαθοῦς ἀνδρός.

[And at that point, we spent much time wretchedly, and while we were sadly moving from place to place, associating with those who have seriously studied such things, we kept on experimenting, until the wished-for *daimonion*, through a certain providence (*pronoia*), made the transmission in a certain place through a certain man who loved learning.]⁴⁷

Because of his *daimōn* and Providence, Valens was able to find the right astrology teacher for himself. Here the acquisition of the knowledge came about because of a divine intervention. As in prophecy,⁴⁸ the signs from the *daimones* point Valens to the human teacher of wisdom. He continues, using the target and goal analogy (IV, 11.8):

ἀρχὴν οὖν λαβόμενοι καὶ πολὺν πόνον εἰσενεγκάμενοι κατελαβόμεθα τοῦ σκοποῦ ὃν καὶ ἐκτησάμεθα ἐπεισενεγκάμενοι καὶ αὐτοὶ πολλὰς δυνάμεων εὐχρηστίας.

[And so making a start and applying much effort, we *seized on a target which we got for ourselves* when we brought to bear many advantages rendered from these productive agencies.]⁴⁹

⁴⁵ VIII, 3.2, p. 284.11 Pingree.

⁴⁶ Appendix 16, p. 426.7 Pingree.

⁴⁷ Valens, *Anthology*, p. 163.13–17 Pingree.

⁴⁸ See the quotation from Arius Didymus, 5b12 above.

⁴⁹ Valens, *Anthology*, p. 163.17–19 Pingree; my emphasis.

Here Valens says that he was able to realize his goal, that is, hit the target (*skopos*) of being a good astrologer, and a good teacher of astrology, by using the very astrology (the ‘productive agencies’) that he has so arduously learned. Valens goes on, after articulating his goal, to say that by practice and experience he was able to ‘discern a holy and immortal theory’ in astrology, using the verb *krinein*⁵⁰ (IV, 11.9–10):

ἐκ γὰρ τῆς καθημερινῆς τριβῆς καὶ πολυάνδρου συμβολῆς καὶ τῆς τῶν παθῶν αὐτοψίας ἱερὰν μὲν καὶ ἀθάνατον τὴν θεωρίαν ἐκρίναμεν, ἄφθονον δὲ τὴν μετάδοσιν ποιησόμεθα .. γὰρ ἄνευθεν οὐδὲν οὔτε ἐστὶν οὔτε ἔσται· ἀρχὴν γὰρ καὶ τέλος ἔχει προγινωσκόμενον.

[For from daily practice, meeting with many people and seeing what happens with our own eyes, we discerned (*krinō*) a holy and immortal theory, and we will share it unbegrudgingly ... For without this nothing either is or will be; for what is foreknown has a beginning and an end.]⁵¹

Here is astrology, the stochastic art, invoked as a goal (a stochastic word) and wrapped up in the cloak of divination and daimonic visitation, leading to the articulation of a technique of the art as a ‘holy and immortal theory’. The craft shows its divinatory links, the technique melded with dependence on the will of the gods, via the aid of the *daimōn*, to share their knowledge. The goal is realized through personal practice, through hands-on application that leads to the theory – not the other way around, with theory informing practice. With the last sentence in this section, we have the sense that Valens is no longer talking just about a particular astrological technique,⁵² but about the art of astrology itself.

Hephaestio and Conjecture

Certain passages in Hephaestio suggest that he may have taken for granted the status of astrology as a stochastic art. This position makes sense because Hephaestio frequently quotes Ptolemy, the purveyor of astrology as stochastic; also, Hephaestio was writing in the early fifth century, subsequent to any discussions on productive versus stochastic arts that may have occurred concerning astrology in the second century. In almost the first sentence of his work, Hephaestio brings up the distinction of whether astrology works through signs or causes ‘or something

⁵⁰ Manilius (see below) uses the same verb (in its Latin form, *cernere*) in his poem *Astronomica* (5.293–94). It is clear that the astrologer’s judgement is crucial to astrological practice.

⁵¹ Valens, p. 163.19–22, 23–4 Pingree.

⁵² The topic of discussion was ostensibly predictions (a predictive technique).

else'.⁵³ (It appears that for the most part he bears the same opinion as Ptolemy about its causality.) We have seen in rhetoric a correlation of *stochasmos* with being able to establish situations by interpreting signs.⁵⁴

Further on in the preface, he makes a distinct bid for considering astrology as a stochastic art, and also clearly correlates it to medicine:

ὥσπερ δὲ οἶμαι καὶ ἐπ' αὐτοῦ τοῦ προγνωστικοῦ, καὶ εἰ μὴ διὰ παντὸς γοῦν ἄπταιστον ἦν, τὸ γοῦν δυνατόν αὐτοῦ μεγίστης σπουδῆς ἄξιον κατεφαίνετο, τὸν αὐτὸν οἶμαι τρόπον καὶ ἐπὶ τοῦ φυλακτικοῦ, καὶ εἰ μὴ πάντων ἐστὶ θεραπευτικόν, ἀλλὰ τό γε ἐπ' ἐνίων, κἂν ὀλιγάκις μικρὰ ἦ, ἀγαπᾶν καὶ ἀσπάζεσθαι χρή. τούτοις δὲ ὡς ἔοικε συνεγνωκότες οἱ παλαιοὶ Αἰγύπτιοι οὕτως ἔχουσι συνῆψαν πανταχῇ τῷ δι' ἀστρονομίας προγνωστικῶ τὴν ἰατρικὴν διὰ τῶν καλουμένων παρ' αὐτοῖς ἰατρομαθηματικῶν συντάξεων ἐξ ὧν προσφόρως ἐκάστω τὰ βοηθήματα προσφέρουσιν.

[But just as I think about prognostication itself, that even if it is not in all circumstances infallible the possibility of it at least is plainly worthy of the greatest attention, in the same way I think of it also as protective; and if it is not therapeutic for all things, but at least for some, even if it may be seldom and in a small way, it is [still] necessary to regard and greet it with affection. The ancient Egyptians, so it seems, agreeing with these things, have thus wholly joined medicine to prognostication by astronomy through their so-called iatromathematical systems, from which they convey remedies in a way suitable to each person.]⁵⁵

This is akin to Ptolemy's position (as we shall soon see). Even though he does not use the stochastic buzz words here, earlier in the preface Hephaestio has called astrology an 'inquiry and knowledge based on contingency'.⁵⁶ It is plain that he

⁵³ Hephaestio, *Apotelesmaticorum libri tres*, ed. David Pingree, 2 vols (Leipzig: B.G. Teubner, 1973), I, Preface.1, p. 1.7–8 Pingree, 'περὶ τῶν ἄστρον ἥτοι σημαινόντων ἢ ποιούντων ἢ καὶ ἐτέρω τρόπῳ'.

⁵⁴ See above, note 17, the quotation from Michael Psellos about conjecture being the ability to determine a case from a 'clear sign'.

⁵⁵ Hephaestio, *Apotelesmaticorum libri tres*, I, Preface.7–8, vol. 1, pp. 2.28–3.10 Pingree.

⁵⁶ Hephaestio, *Apotelesmaticorum libri tres*, I, Preface.2, vol. 1, p. 1.12–13 Pingree, 'τὴν κατὰ τὸ ἐνδεχόμενον ἐπίσκεψίν τε καὶ γνῶσιν'. This is similar, but slightly altered, from Ptolemy's statement in *Tetrabiblos* I, 1.2. The statement echoes remarks made by Alexander of Aphrodisias, *Analyticorum priorum librum I commentarium*, ed. Maximilian Wallies (Berlin: Georg Reimer, 1883), p. 39.27–40.5: 'περὶ δὴ μόνου ποιεῖται τὸν λόγον τοῦ ἐνδεχομένου καὶ δυνατοῦ τοῦ ὡς ἐπὶ τὸ πλεῖστον καὶ τοῦ πεφυκότος τε καὶ κατὰ φύσιν, ὃ καὶ αὐτὸ ὡς ἐπὶ τὸ πλεῖστόν ἐστιν, ἐπειδὴ ἐκ τῶν τοιούτων καὶ δείκνυται τινα τῶν κατὰ

thinks of it in the same way as medicine, an art of possibilities that is worthy of practice even though it is not consistent. Notice here that he also makes a distinction between general rules and particular therapies even, perhaps, putting the emphasis on astrology (rather than medicine) for a remedy uniquely suited to a patient.

When Hephaestio moves on to astrological technique, we see occasional use of *stochazomai* merely meaning ‘to conjecture’ without any special overt philosophical meaning. But one particular passage sheds additional light on the way he views astrology as stochastic. It appears in his third book, on katarchic astrology, which might be significant in itself, as that branch of astrology is arguably the most divinatory in nature. The passage comes in the middle of interpretations of various astrological configurations for katarchic charts, and is followed immediately by more interpretations. Between the two, however, there is an astonishing statement on the nature of astrology, and about the role of the astrologer as interpreter:

Καὶ οὗτοι μὲν οἱ στοχασμοὶ ἔκ τε τῶν ἀστέρων καὶ ἐκ τῶν ζῳδίων ἔστωσαν εὐρίσκεσθαι, ἀλλ’ οὐ δεῖ πάντα τὰ σημεῖα ἀνελλιπῶς ἐφ’ ἐκάστου εὐρίσκεσθαι νομίζειν ἀλλ’ ὅσα ἐνδέχεται ἐντέχνως ἐπεξίεναι ἔκ τε τῶν συσχηματιζομένων ἀστέρων συνεπικρίνειν τὸν στοχασμόν. ἐὰν δὲ τῷ σημαίνοντι τὸν κλέπτην ἀστέρι ἀγαθοποιὸς μαρτυρῇ ἐλεύθερος ἔσται ὁ κλέπτης, ἐὰν δὲ κακοποιὸς δοῦλος ἢ πένης ἢ μισθωτός. ἐὰν δὲ Ἀφροδίτῃ σημαίνη τὸν κλέπτην αἰτία τῆς κλοπῆς ἔσται γυνή, ἐὰν δὲ Ἑρμῆς παῖς, ἐὰν δὲ Ἄρης ἀκμαῖος, ἐὰν δὲ Ζεὺς μεσῆλιξ, ἐὰν δὲ Κρόνος γέρων.

[And let these conjectures from the stars and from the zodiac signs be found, but one must not believe that all the meanings for each have been found without fail; but one may also proceed in such matters by skilfully using the art to help judge the conjecture from the configurations of the stars. *[The aphorisms continue]* If a benefic witnesses the star which signifies the thief, the thief will be a free man; but if a malefic, a slave, a

φύσιν γινομένων, καὶ εἰσὶ τινες τέχνηαι περὶ τὸ οὕτως ἐνδεχόμενον, ὡς αἱ στοχαστικαὶ· λαβὼν γὰρ ὁ ἰατρός τὸν οὕτως νοσοῦντα ὡς ἐπὶ τὸ πλεῖστον ὑπὸ πλήθους ἐνοχλεῖσθαι καὶ τὸν ὑπὸ τοῦ πλήθους ἐνοχλούμενον ὡς ἐπὶ τὸ πλεῖστον διὰ φλεβοτομίας θεραπεύεσθαι συνάγει τὸν οὕτως νοσοῦντα ἐνδέχεσθαι ὑπὸ φλεβοτομίας θεραπευθῆναι, ὁ λαβὼν χρῆται τῇ φλεβοτομίᾳ. διὸ καὶ ἔστιν ἐν συλλογιστικῇ χρεῖα’ [‘Thus he deals only with the kind of contingency and possibility which holds for the most part and which is by nature or according to nature (which itself holds for the most part). For some natural events are indeed proved on such a basis, and there are some arts concerned with what is in this way contingent – for instance, the conjectural arts [*stochastikai*]. A doctor assumes that someone who is ill in such-and-such a way is for the most part unwell from surfeit, and that someone who is unwell from surfeit is for the most part cured by venesection; and he deduces that it is contingent that someone who is ill in this way will be cured by venesection. Taking this to be so, he performs a venesection. For this reason, there is syllogistic utility in these things’]. Trans. Barnes, Bobzien, Flannery and Ierodiakonou in *Alexander of Aphrodisias, On Aristotle’s Prior Analytics 1.1–7*, p. 98.

poor man or hired servant. If Aphrodite signifies the thief, a woman will be responsible for the theft, but if Hermes a child, if Ares a person in the prime of life, if Zeus middle-aged, if Kronos old.]⁵⁷

We see here the highest use of stochastic technique to arrive at a correct outcome. Like the physician, the astrologer uses his *personal judgement and experience* to make the prediction. Like Valens and Manilius (see below), the Theban astrologer uses a form of the verb *krinein* (here *sunepikrinein*, ‘help judge’). Hephaestio is telling us that aphorisms are not definitive. He is telling us that we must use our own skill and judgement to create an interpretation suited to the symbolism of the astrological factors, but to make it particular to the situation. He is countering one of the most common objections to astrology by both modern and ancient critics, that aphorisms seemingly *are* definitive. Here is evidence that ancient astrologers did not think of aphorisms in that way at all. Aphorisms were merely examples of the symbolism, not hard and fast descriptions of astrological outcomes. The astrologer hits the target by using his *own* skill at interpretation to discern the answer suited to the unique situation, at the right and opportune (kairotic) moment.

Ptolemy and Astrology as a Stochastic Art

Of all the Hellenistic astrologers, Ptolemy is certainly the most interested in deriving a philosophical foundation for astrology, in addition to understanding why it works. It is clear that he likes the medical model as an analogy for astrology and that, by his lights, astrology generally aligns well with the stochastic model.

First, Ptolemy points out the natural influences of the Sun, Moon and stars on the earth (I, 2.1–6). These clear physical connections lead him to the second part of his argument (I, 2.7), that farmers and herders observe natural conditions, and from these make conjectures (*stochazontai*) about the fertility of their crops and herds; and that obvious configurations of the Sun, Moon and stars signify general events on earth. From this, Ptolemy says, comprehensive study of the heavens can lead, in many cases, to successful conjectures – aiming well (*eustochōs*), based on physical data and educated guesses (I, 2.10): ‘ικανον δὲ πρὸς τοιαῦτα ὄντα φυσικῶς ἅμα καὶ εὐστόχως ἐκ τῆς συγκρίσεως πάντων τὸ ἴδιον τῆς ποιότητος διαλαβεῖν’ [‘competent, in regard to all such things, to grasp, both from natural [indications] and by aiming well, the specific characteristic quality from the commixture of them all’].⁵⁸ This fits the definition of a stochastic art, especially in Stoic terms.

⁵⁷ Hephaestio, *Apotelesmaticorum libri tres*, III, 45.10–15, vol. 1, p. 315.10–19 Pingree. Regarding the aphorisms, here and in general: they show the *de facto* metaphorical status of planets in astrological interpretation. The attributes of the planet translate into an earthly equivalent (here Aphrodite = woman, Hermes = child and so on). Such passages are ubiquitous in astrological writing.

⁵⁸ Ptolemy, *Tetrabiblos* I, 2.10, pp. 8.133–9.135 Hübner.

And Ptolemy seems to acknowledge the importance of the unique situation ('the specific characteristic quality') and an accordingly unique interpretation.

Ptolemy goes on to give the arguments that we have seen laid out by Alexander of Aphrodisias in his differentiation between stochastic and productive arts:

- that the art itself is difficult to pin down precisely (astrology is many-sided and only able to be estimated: *polumerēs* [I, 2.12] and *eikastikos* [I, 2.15])
- that its practitioners are not skilled enough (I, 2.12–13)
- that heavenly configurations are scarcely repeated in exactly the same way, and so cannot lead to exact prediction (I, 2.15–16)
- that environmental factors are also causes (I, 2.17–19).

It is for these reasons, he says, that astrology should be considered in the same way that we consider navigation and medicine. And in this concluding paragraph of the chapter (I, 2.20), he says that these systems, which cannot be fully comprehended, still must be embraced as one embraces what can be understood of divine things; in addition, he uses words that recall archery: *diamartanomai*, entirely miss the mark (the word is used of spears missing their target) and *estochasmenōs*, hitting the mark: 'προσήκον ἂν εἶη μήτε, ἐπειδὴ διαμαρτάνεσθαι ποτε τὴν τοιαύτην πρόγνωσιν ἐνδέχεται, καὶ τὸ πᾶν αὐτῆς ἀναιρεῖν ... μήτ' αὖ πάλιν πάντα ἡμῖν ἀνθρωπίνως καὶ ἐστοχασμένως αἰτεῖν παρ' αὐτῆς' ['it would not be fitting, although it is possible for such foreknowledge to miss the mark entirely, to do away with all of it ... nor, in turn, would it be fitting for us, as humans who aim but do not always hit the mark, to demand all things from it'].⁵⁹

In a remarkable passage in Book III, 2, in the middle of a chapter on conception and birth, Ptolemy again uses strikingly Stoic terminology and applies the archery metaphor to the way astrology should be apprehended:

τὰς δὲ πραγματείας αὐτάς, δι' ὧν ἕκαστα τῶν εἰδῶν κατὰ τὸν ἐπιβλητικὸν τρόπον συννοῶνται, καὶ τὰς κατὰ τὸ ἰδιότροπον καὶ ὀλοσχερὲς τῶν ἀστέρων πρὸς ἕκαστα ποιητικὰς δυνάμεις, ὡς ἔνι μάλιστα, παρακολουθητικῶς τε ἅμα καὶ ἐπιτετημένως κατὰ τὸν φυσικὸν στοχασμὸν ἐκθυσόμεθα, τοὺς μὲν τοῦ περιέχοντος τόπους, πρὸς οὓς ἕκαστα θεωρεῖται τῶν ἀνθρωπίνων συμπτωμάτων (καθάπερ σκοπὸν οὗ δεῖ καταστοχάζεσθαι) προϋποτιθέμενοι, τὰς δὲ τῶν τοῖς τόποις κατ' ἐπικράτησιν συνοικειουμένων σωμάτων ποιητικὰς δυνάμεις (ὥσπερ ἀφέσεις βελῶν) κατὰ τὸ ὀλοσχερέστερον ἐφαρμόζοντες, τὸ δὲ ἐκ τῆς συγκράσεως τῆς ἐκ πλειόνων φύσεων περὶ τὸ ὑποκείμενον εἶδος συναγόμενον ἀποτέλεσμα καταλιπόντες, (ὥσπερ εὐστόχῳ τοξότη) τῷ τοῦ διασκεπτομένου λογισμῷ...

⁵⁹ Ibid., p. 13.208–10, 213–14 Hübner. This is similar to Hephaestio's remarks at *Apotelesmaticorum libri tres*, I, Preface.7–8.

[We shall lay out the systematic treatments themselves, as much as possible, and at the same time both consciously and succinctly in accordance with natural conjecture, through which each of the forms is seen together in direct apprehension [i.e. intuition], and the productive powers according to the unique and general characteristics of the stars in relation to each. Preliminary to this we shall lay out the places of the surrounding [heavenly] atmosphere, in relation to which each of the human events is beheld (*just as if it were a target at which one must aim*), and adapting in a general way the productive powers for the places according to their predomination over bodies affiliated to them (just like *the releasing of arrows* [in a general direction]). But we shall leave the outcome reconciled from the commixture of many natures to the underlying form – just as to *a well-aiming archer* – to the calculation of the one who has thoroughly examined the situation.]⁶⁰

Here, using the archery metaphor, Ptolemy stresses the stochastic method, taking what can be apprehended in a general way from the physical world, and applying it with the intuition of the stochastic practitioner, who relies on skill and experience to make a correct judgement. The physical configurations of the stars are aligned to human events – the events are the target aimed at by the arrows of astrological technique – and the astrologer, the ‘well-aiming archer’, provides the skill to hit the target. It is worth remarking that the astrological ‘arrows’ that are ‘released’ – have a counterpart in an actual astrological technique called ‘releasing’, described by Ptolemy later in Book III. This may not be a coincidence.

By treating astrology as a stochastic art, Ptolemy aligns it with medicine and paradoxically helps to cement its trajectory as a proto-science.⁶¹ Some ‘stochastic’ arts, like medicine and navigation, can become, through refinement of theory and innovation in technique, more like ‘productive’ arts such as carpentry, as their results become more consistent and replicable.⁶² The productive arts, though,

⁶⁰ Ptolemy, *Tetrabiblos* III, 2.6, pp. 171.99–172.112 Hübner; my emphasis.

⁶¹ I say paradoxically because there is a stochastic component in divination as well (as we saw in the quotation of Quintus Cicero above), but identifying a practice as stochastic historically appears to lead it in the opposite direction from divination, towards science.

⁶² It seems that modern scholarship has, for the most part, been ready to follow in the footsteps of Ptolemy by forging a strong bond between the ‘productive’ function of astronomy and the ‘stochastic’ function of astrology. By focusing on the treatment of ancient astronomy and astrology as one discipline, modern scholars therefore emphasize it as an ‘exact science’ (see note 38 on exact science). This has been helpful in creating a respectable milieu for the study of ancient astrology, but along with that advantage, it has done a disservice to astrology in terms of what astrology actually is and what it can do.

are more like modern crafts, while it is the stochastic arts that contribute to the establishment of the modern sciences.⁶³

But something stochastic, by its very nature, must involve a certain amount of conjecture, of aiming for but not always hitting, the target; must contain a bent towards metaphor that allows, even requires, spontaneous creativity. The interpretive component, and therefore the interpreter, is also essential. But there are two spurs towards the use of interpretation in stochastic arts, only one of which we have discussed so far. In the next part of this chapter, we turn from interpretation as a product of experience and judgement to another kind of creative interpretation using intuition, symbol and metaphor. This kind of interpretation arises from the association of the stochastic with the divinatory model: (divine) signs interpreted. It is an especially useful way to look at astrological practice. Our last example of stochastic components in astrological writings, Manilius' *Astronomica*, demonstrates this use of metaphor in astrological practice.

Stochastic Arts and Divination

Φέρε δὴ οὖν ἐπὶ τὸν διὰ τέχνης ἀνθρωπίνης ἐπιτελούμενον τρόπον μετέλθωμεν, ὅστις στοχασμοῦ καὶ οἰήσεως πλείονος εἴληχε. λέγεις δὲ καὶ περὶ τούτου τοιαῦτα· οἱ δὲ ἤδη καὶ διὰ σπλάγχνων καὶ δι' ὀρνίθων καὶ δι' ἀστέρων τέχνην συνεστήσαντο τῆς θήρας τοῦ μέλλοντος.

[Come then, let us turn to the mode of divination accomplished by human skill, which partakes largely of guessing and supposition. About this you say the following: 'some have already established a technique for pursuing the future by means of entrails, birds and stars.']⁶⁴

Manilius, Archery and Metaphor

As a poet, Manilius makes metaphorical allusions for astrological interpretation. Wolfgang Hübner has pointed out, in his interesting article on tropical points of the

⁶³ In antiquity, stochastic *technai* like medicine, navigation and agriculture are also considered to be *epistēmai*, 'kinds of knowledge' or 'sciences'; subsequently, in modern iterations these ancient practices have become sciences (in the way we understand science today). By contrast, shoemaking and weaving did not evolve into modern sciences. Even productive arts like sculpture or carpentry, while they can be clearly artistic, are not sciences.

⁶⁴ Porphyry, *Lettera ad Anebo*, ed. A.R. Sodano (Naples: L'arte tipografica, 1958), II, 2g (= Iamblichus, *De mysteriis* III.15 [135]). Translation in Iamblichus, *On The Mysteries*, trans. and comm. Emma C. Clarke, John M. Dillon and Jackson P. Hershbell, *Writings from the Greco-Roman World* 4 (Atlanta: Society of Biblical Literature, 2003), p. 157.

zodiac and *paranatellonta* in Manilius,⁶⁵ that there is ample imagery and metaphor concerning the shooting of arrows, judgement, aiming and the practice of astrology in the Roman author's astrological poem. In Hübner's examples of correlations between the cardinal points and stars co-rising with them, we see that co-rising with the cardinal points (important points in astrological technique) are a number of stars and constellations that have to do with arrows and shooting. Moreover, Hübner suggests a connection between the 'stochastic' nature of archery and that of both medicine and astrology.⁶⁶

The archery metaphor is thus as usefully applied to the practice of astrology as to the practice of Stoic ethics. I shall point out some of the intersections here between the 'stochastic' words used by Manilius and the references he makes to archery, archers and hunters, following Hübner's exegesis.

Archery and hunting images are particularly strong with the equinoctial signs, Aries and Libra. Julius Firmicus Maternus tells us (*Mathesis*, II, 10.3) that the very word 'Κρίός' (Aries in Greek) is derived from κρίνειν, the Greek word which means 'judge' or 'discern', from which the Latin *cernere* is also derived. It also has a medical meaning, 'to come to a point of crisis' (from which the word 'crisis' itself comes; the medical *krisis* is the moment of judging the course of the disease).⁶⁷ Right away the first sign of the zodiac is associated with judging and discernment, exactly what an archer must do as she prepares to shoot; and what an astrologer must do as well. At about 10 degrees of Aries (roughly the sidereal vernal point when Manilius wrote), according to the poet, Orion the hunter co-rises, the first association with hunting to the tropical points.

Turning now to the sign opposite to Aries, Libra, Hübner reminds us⁶⁸ that its name arises from the verb 'librare', which means 'to balance'. It is used to describe the balancing of a missile like a spear or a javelin. Sagitta, the arrow, co-rises with the 8th degree of Libra⁶⁹ (again, close to the sidereal autumnal equinox), and Manilius recalls Aries by introducing it to us with the verb *cernere*: 'sed parte octava surgentem cerne Sagittam/Chelarum' (5.293–4). He goes on to mention hurling javelins and shooting arrows and missiles (5.294–7). As well as literally producing archers, Manilius adduces metaphorical associations for those born under these conditions with the triumph of Greece over Troy, as well as the parent who saves his child from harm by shooting an attacking serpent.

⁶⁵ Wolfgang Hübner, 'The Tropical Points of the Zodiacal Year and the *Paranatellonta* in Manilius' *Astronomica*, *Culture and Cosmos* 11/1 and 2 (2007): 87–110. This paper was originally given at a workshop on ancient astrology held at the Warburg Institute, London in February 2007.

⁶⁶ Ibid., p. 90: 'Archers used a "stochastic" art ... this was applied – in a figurative sense – to the art of doctors and astrologers as well.'

⁶⁷ Hübner (ibid.) also speaks of these associations.

⁶⁸ Ibid., p. 89.

⁶⁹ As Hübner notes (ibid.), according to Hipparchus the arrow actually rises with Sagittarius, but we shall continue with Manilius' metaphorical system here.

Here the Roman poet also mentions Teucer, the renowned archer from Homer, but in this astrological context one cannot help thinking also of Teucer of Babylon, the astrologer who, Hübner states, is a source for both Manilius and Firmicus.⁷⁰ Teucer the astrologer was known, among other things, for his writings on the co-risings of the fixed stars.⁷¹ Teucer himself tells us that a constellation called the ‘Three Shooting Heroes’ (οἱ Τρεῖς Ἡρώες οἱ καὶ Βαλλισταί, *Tres Heroes qui vocantur Ballistae*) co-rises with 16–18 degrees of Libra.⁷² Teucer explains that those born when the 16th degree is rising will be, among other things, physicians and astrologers!⁷³ Thus the sign of the autumnal equinox contains more associations with arrows and shooting, including Manilius’ metaphorical connection between the archer Teucer and the astrologer Teucer.

Note that when these hunting and arrow constellations co-rise with the equinoctial points, they are also approximately culminating and anti-culminating with respect to the solstitial points, and thus remain connected to all four cardinal signs. For instance, when Libra rises and Cancer culminates, we see the arrow, and then the three heroes, rising while Orion, the hunter, culminates.

Even these few examples demonstrate the direct application of metaphorical technique to the interpretation of astrological patterns, even including the particular metaphor of the arrow aiming at the target as a metaphor for astrology itself. With his use of the archery metaphor, Manilius thus emphasizes the stochastic nature of astrology as an art of aiming. Let us now turn to the idea of metaphor itself as a component of interpretation, for divination in general and astrology in particular.

Metaphor, Aiming and Divination

The way Manilius uses metaphor leads us to ask: Is metaphor a medium through which astrology can – even must – work? We normally associate metaphor with poetry and creative prose, but the way in which metaphor is created may say

⁷⁰ Ibid., p. 91.

⁷¹ These can be found, excerpted by Rhetorius, in *Catalogus Codicum Astrologorum Graecorum* [hereafter *CCAG*], vol. VII, ed. Franz Boll (Brussels: Henri Lamertin, 1908), pp. 192–213; see also the *Liber Hermetis*, ch. 25, in Simonetta Feraboli (ed.), *Hermetis Trismegisti: De triginta sex decanis*, Hermes Latinus IV/1 (Corpus Christianorum) (Turnhout, Belgium: Brepols, 1994).

⁷² As cited in Hübner, ‘Tropical Points’, p. 92 and n. 21; see also *CCAG* VII, p. 204.14, ‘οἱ λεγόμενοι Βαλλισταί’ ‘the so-called shooters’. The Latin version is in Feraboli, *Hermetis Trismegisti*, ch. 25.17, p. 111.40–42. An English translation can be found in *Liber Hermetis*, trans. Robert Zoller (Salisbury, Queensland: Spica, 1998), ch. 25, ‘On the Fixed Stars and Degrees of Libra’, p. 37.

⁷³ Feraboli, *Hermetis Trismegisti*, ch. 25.18, p. 111.44–45; *Liber Hermetis* (Zoller), ch. 25, p. 37. Has Teucer thus made an oblique connection between medicine and astrology as stochastic arts?

something about the way we practise astrology. Interpreters of divinatory signs and and interpreters of poetry were functionally linked by Cicero in *De divinatione* I, xviii.34 (end): ‘Quorum omnium interpretes, ut grammatici poetarum, proxime ad eorum quos interpretantur divinationem videntur accedere’ [‘The interpreters of all these signs, like the commentators who are interpreters of the poets, seem to come very near to the divine foresight of the gods whose wills they interpret’].⁷⁴

Metaphor is already at work in the way that omens are interpreted, using physical-world events (such as the burning of a temple) or actions in dreams (a statue running blood) to predict events in the future (in these cases, the conquest of Asia by Alexander and the cruelty of Phalaris).⁷⁵ In astrology, the interpretation of celestial appearances shows evidence of a metaphorical outlook as well.⁷⁶ Though Aristotle does not endorse the use of metaphor or metaphorical expressions in all cases,⁷⁷ he does find it useful in philosophy, where someone who hits the mark (εὔστοχος) can realize the similarity between things that are apart.⁷⁸ It is equally valid in poetry, he says, where the poet’s skill can be measured by his use of metaphor and his ability to find resemblances between things dissimilar on their face.⁷⁹

Through metaphor in poetry, the artist strives to make the topic of her poem more meaningful by a specific form of analogy that melds two things. The image is carried from one thing to another; the literal meaning of metaphor is to carry across, transfer or translate. Metaphor does not use the comparison of simile (something is *like* something else); it makes a transference which brings two things together into one thing (Aristotle defines the difference between simile and metaphor in *Rhetoric* III, 1406b20, using the Homeric simile ‘Achilles springs like a lion’ and making the metaphor of Achilles called ‘the lion [who] springs’).⁸⁰

⁷⁴ Trans. (slightly modified) Peter Struck, *The Birth of the Symbol: Ancient Readers at the Limits of Their Texts* (Princeton and Oxford: Princeton University Press, 2004), p. 169.

⁷⁵ These descriptions appear in *De divinatione* I. xxiii.

⁷⁶ As with other kinds of omens, the correlation between astrological and terrestrial circumstances can be almost literal in nature, and can also be coupled with mythological symbolism. The way in which astrological components are aligned symbolically with terrestrial concerns (for example Sun = king, Saturn = old man, Mercury = child or thief) encourages this metaphorical approach. (For the *de facto* metaphor in astrology, see the section above on Hephaistio and n. 57.)

⁷⁷ For instance, he says ‘one should not use metaphors or metaphorical expressions in definitions’ in *Posterior Analytics* 97b37–8, quoted in G.E.R. Lloyd, *The Revolutions of Wisdom: Studies in the Claims and Practice of Ancient Greek Science* (Berkeley: University of California Press, 1987), p. 185.

⁷⁸ *Rhet.* III, 1412a11 ff., quoted in Lloyd, *Revolutions of Wisdom*, p. 185, n. 47.

⁷⁹ See Aristotle, *Poetics* 1459a5 ff. as cited in Lloyd, *Revolutions of Wisdom*, p. 185 and n. 47.

⁸⁰ See the discussion of metaphor and simile in Aristotle in Paul Ricoeur, *The Rule of Metaphor*, trans. Robert Czerny, with Kathleen McLaughlin and John Costello, S.J. (Toronto, Buffalo and London: University of Toronto Press, 1977, repr. 2008), pp. 24–7; see also Patrick Curry’s discussion of Ricoeur and metaphor in Chapter 7 of this volume.

The French scholar Jackie Pigeaud has examined this concept of metaphor,⁸¹ and here I shall explore some of his arguments in relation to what they can tell us about astrology. First, he makes some intriguing connections between metaphor and familiarity (*oikeiōsis*): whether a sign of a good metaphor is that it shows a real familiar likeness between the objects linked by it:

Metaphor therefore actualises a landscape with two objects, and a spectator who observes, judges, appreciates whether the similar is really similar; who acknowledges whether, finally, there is a real family likeness (Greek: *oikeiōsis*), between the objects that metaphor links together. The spectator may be the author of the metaphor himself, or the reader. We may even think that there are, so to speak, quiet metaphors, waiting eternally for somebody to wake them up, for his own pleasure.⁸²

For ‘author and reader’ we substitute, in our iteration, ‘astrologer and client’. The ‘quiet metaphor’ of the last sentence evokes the idea of the symbolism lying quiescent in the chart until the questions posed by the client or astrologer bring its metaphorical power into consciousness.⁸³ It takes both the astrologer, working with astrological symbolism, and the client, whose life it is, to see the appropriateness of the metaphor. The concept of *oikeiōsis* Pigeaud mentions can correlate to the way astrology generally works by finding familiarity between a terrestrial event and a heavenly pattern. More specifically, the concept of familiarity extends to astrological technique: the coordinated system of relationships between planets and zodiac signs is even called *oikeiōsis* by Ptolemy.⁸⁴

Familiarity is an important component of metaphor, but so is the idea of conveying together two things that may be literally or figuratively distant from one another (Ricoeur reminds us that ‘to transfer is to ap-proximate, to suppress distance’).⁸⁵ Pigeaud also brings up the power of a good metaphor to connect two things that one might normally see as remote from each other.⁸⁶ In doing so, he

⁸¹ Using Aristotle’s *Poetics* and *On Divination through Dreams*; see Jackie Pigeaud, “‘To Shape into One’: Aristotle’s *Poetics* and the Poet as Melancholic” (Public Lecture, Warburg Institute, London, 10 May 2006). I am using a transcript of this lecture. I thank Professor Pigeaud for permission to quote his work.

⁸² *Ibid.*, pp. 9–10.

⁸³ See Dorian Gieseler Greenbaum, ‘Rising to the Occasion: Appearance, Emergence, Light and Divination in Hellenistic Astrology’, in Angela Voss and Jean Hinson Lall (eds), *The Imaginal Cosmos: Astrology, Divination and the Sacred* (Canterbury: University of Kent, 2007), pp. 9–24, esp. p. 20.

⁸⁴ See *Tetrabiblos* I, 12–23.

⁸⁵ Ricoeur, *Rule of Metaphor*, p. 194.

⁸⁶ Pigeaud, “‘To Shape into One’”, p. 11. See also the discussion in Ricoeur, *Rule of Metaphor*, pp. 194–5.

analyses a passage from Aristotle's *On Divination through Dreams* (464a–b), which again utilizes the archer analogy:

οἱ δὲ μελαγχολικοὶ διὰ τὸ σφοδρόν, ὥσπερ βάλλοντες πόρρωθεν, εὖστοχοὶ εἰσιν, καὶ διὰ τὸ μετα- (464b) βλητικὸν ταχὺ τὸ ἐχόμενον φαντάζεται αὐτοῖς· ὥσπερ γὰρ τὰ Φιλαινίδος ποιήματα καὶ οἱ ἐμμανεῖς ἐχόμενα τοῦ ὁμοίου λέγουσι καὶ διανοοῦνται, οἷον Ἀφροδίτην φροδίτην, καὶ οὕτω συνείρουσιν εἰς τὸ πρόσω. ἔτι δὲ διὰ τὴν σφοδρότητα οὐκ ἐκκρούεται αὐτῶν ἡ κίνησις ὑφ' ἑτέρας κινήσεως.

[Melancholics, because of their intensity, as those who shoot from afar, are those who make good shots. And because of their ability to change quickly, the contiguous appears to them; for just as the poems of Philaigides and the insane say and have the contiguous of the similar in mind, such as Aphrodite (phrodite), so they go on stringing things together. And moreover, because of their intensity, their movement is not distracted by another movement.]⁸⁷

Pigeaud points out the ability of the good metaphorist to be unaffected by distance, or even by aiming⁸⁸ (is aiming, in fact, a distraction?). He particularly notices that the mark itself is not even mentioned in this passage, from which he makes this brilliant observation: 'It is necessary to think that this mark exists; but it is only revealed as soon as the arrow hits it, and, hitting it, reveals it as a mark, as *the* mark. We must even say: *as the good mark*.'⁸⁹

There are two important points here: the immateriality of distance to accurate shooting, and the revelation of a mark only when it is hit. The poet, like the melancholic, has the ability to change so quickly, and to move without being distracted, that she can make metaphorical connections without regard to space or time. The metaphor revealing a mark that wasn't even seen shows the poetic genius.⁹⁰ We can apply these concepts to divination in general and astrology in

⁸⁷ Aristotle, *On Divination through Dreams*, 464a–b. My translation partially following Pigeaud, "To Shape into One", p. 12. My main difference with Pigeaud here is that he translates the Greek *sphodros* as 'strength', whereas I follow Philip van der Eijk's translation of *sphodrotēs* as 'intensity' (see Philip van der Eijk, 'Aristotle on Melancholy', *Medicine and Philosophy in Classical Antiquity: Doctors and Philosophers on Nature, Soul, Health and Disease* (Cambridge: Cambridge University Press, 2005), pp. 139–68, at p. 144). We should remember that (the Aristotelian, but probably not by Aristotle) *Problems XXX, I* says that poets are melancholic (van der Eijk discusses this treatise, including its authorship, in the article just cited). I thank Peter Pormann for alerting me to van der Eijk's work.

⁸⁸ Pigeaud, "To Shape into One", p. 13.

⁸⁹ Ibid., p. 12; emphasis in original. See also his analysis on p. 14.

⁹⁰ Pigeaud (ibid., p. 17) reminds us of Schopenhauer's remark, 'Talent is the shooter who hits a mark that other people cannot hit; genius is the shooter who hits a mark that other

particular, and to the ability of the astrologer to make ‘hits’ even when she does not know that this will happen. We are drawn back to the idea of aiming without aiming which we discussed earlier in this chapter, to the ability to make the hit only when we are not focused on making the hit.

Pigeaud sees this as bound up with the ability to move quickly and, with that ability, to see an image that makes contiguous two things that may not be, two things that are sequent but not consequent.⁹¹ The poet and the diviner/astrologer are themselves the change that creates the metaphor. Put another way, the poet is the link between the two things that create the metaphor. Because of her ability to move quickly, to be ‘metabletic’, able to be transported,⁹² she is able to transport (*metaphorein*). In this, time and space are both immaterial; the poet (and diviner/astrologer) is able to put contiguous and similar instantly together, no matter what their actual (chronological or spatial) distance. They grasp the future in an image linked with the present. Pigeaud quotes the modern poet Torquato Tasso, who comments on this Aristotelian passage: ‘I have grasped the quarry before I have got the beast in my hands; and it seems to me that I anticipate, from a long distance, the similar and the consequent; and by dint of making images and dreams ... in the way of an archer who shoots all day long, perhaps I shall hit the mark of my thoughts.’⁹³

Conclusions

We have covered a lot of ground in this chapter. We have introduced the idea of astrology as a stochastic art, and given some of the history of the concept of stochastic arts in antiquity. We have defined the word ‘stochastic’ and the connection of stochastic arts with targets and goals. We have talked about stochastic arts versus productive arts, and outlined some of the arts most commonly referred to as stochastic, namely medicine, navigation and rhetoric. We have speculated on what astrological targets and goals might be. We have looked at astrology in relation to the aims of productive and stochastic arts to see where it falls along that continuum. We have looked at the writings of the Hellenistic astrologers for evidence of stochastic methods. Finally, we have examined metaphor and its connection with aiming and divination, particularly in regard to astrology. Throughout, our connecting thread has been the metaphor of the archer, which has kept appearing in each of the areas we have explored.

The stochastic concept, the art of conjecturing through signs, has its first associations with divination, as Quintus Cicero tells us. But with Ptolemy and those who follow him, the stochastic seems to lead to science, and it is that association which becomes firmly cemented in the scientific model. It has been

people cannot even see.’

⁹¹ Ibid., p. 14.

⁹² I am following Pigeaud’s argument here, *ibid.*, pp. 14–17.

⁹³ Ibid., pp. 16–17.

the aim of this chapter, however, to show that it is useful, even necessary, to think of the stochastic in astrology as harking back not only to ancient science (and leading to modern science), but also to its association with divination and the aleatory function. From this association with the symbolic and metaphorical in divination, we find new ways of looking at astrology as an art that uses metaphor and symbolism in its own interpretations.

Euripides said that ‘the best diviner is the one who guesses well’ (‘μάντις δ’ ἄριστος ὅστις εἰκάζει καλῶς’).⁹⁴ Here, the word ‘guess’ is *eikazō*: approximate, estimate, literally ‘make like’; this is the word Ptolemy uses to describe astrology, and which fits the definition of a stochastic art. Our examination of metaphor shows the importance of likeness and similarity; in astrology we find the concept of *oikeiōsis* linking astrological components. All of these aid in our ‘guessing’.

Yet there are additional qualifications that improve the ‘guessing’. As Plutarch tells us in *De defectu oraculorum* (432c–d), the best of seers is the one who guesses well because he is intelligent, and also able to receive ‘impressions and presentiments’ (‘φαντασιῶν ... καὶ προαισθήσεων’), and ‘inconsequently grasps at the future when it is farthest withdrawn from the present’ (‘ἀσυλλογίστως ἄπτεται τοῦ μέλλοντος, ὅταν ἐκστῇ μάλιστα τοῦ παρόντος’) – able to do this, Plutarch says, by having an ability ‘by temperament and disposition’ to ‘change (*metabolē*), which we call inspiration’ (*enthousiasmos*) (‘ἐξίσταται δὲ κράσει καὶ διαθέσει τοῦ σώματος ἐν μεταβολῇ γιγνομένου, ἣν ἐνθουσιασμὸν καλοῦμεν’).⁹⁵ This is akin to the ability of the creator of metaphor, who herself, as ‘metablastic’, becomes the link between two things. This is the astrologer as well who, as the prophet-interpreter of the heavenly pattern, links heaven and earth and brings them into contact by his own ‘move’ of interpretation.

⁹⁴ Euripides, fr. 973 Nauck, quoted in Plutarch, *De defectu oraculorum*, trans. Frank Cole Babbitt, in *Moralia*, vol. V (Cambridge, MA: Harvard University Press, 1936, repr. 2003), 432c; also quoted and discussed in Plutarch, *De Pythiae oraculis*, trans. Frank Cole Babbitt, in *Moralia*, vol. V (Cambridge, MA: Cambridge University Press, 1936, repr. 2003), 399a; see also Cicero, *De divinatione* II, 4.12.

⁹⁵ *De def.* 432d, trans. Frank Cole Babbitt, in Plutarch, *Moralia* V, p. 469. ‘φαντασιῶν ... καὶ προαισθήσεων, ἀσυλλογίστως ἄπτεται τοῦ μέλλοντος, ὅταν ἐκστῇ μάλιστα τοῦ παρόντος. ἐξίσταται δὲ κράσει καὶ διαθέσει τοῦ σώματος ἐν μεταβολῇ γιγνομένου, ἣν ἐνθουσιασμὸν καλοῦμεν.’ Note that *metabolē* is a variation on the same word (*metablētikos*) that Pigeaud considered important for the poet.

Divination

Perspectives for a New Millennium

Edited by

PATRICK CURRY

ASHGATE