

The ethics of prediction

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The ability to predict might appear to be an unambiguous good, especially in the ancient world where, we are told, people were constantly at the mercy of natural forces. Furthermore, the ability to predict was also linked to the development of Greek *techne* and science, which, at least in the positivist history of science, is always represented in the most positive terms. By prediction I mean a wide variety of attempts to predict events in the lives of individuals, families and polities, as well as attempts to predict natural or cosmological events and anomalies, often for political purposes. I begin reviewing some contemporary debates about the virtues of prediction. Next I ask whether and in what form the ethics of prediction was an issue in Chinese and Greek antiquity. I then focus on two contexts: defenses of medical and military prognostication and debates about divination.

1. The ethics of prediction

At present the status of prediction is controversial in several areas of medical ethics and public policy. A comprehensive review is beyond the scope of the present discussion, but let me mention a few areas of controversy. (1) Does prediction ultimately benefit its ostensible beneficiary? (2) Can prediction result in public harm even if it is accurate? (3) Can prediction shade into a level of control that is in some sense excessive or unnatural?

1.1. Does prediction benefit its beneficiary?

There are many situations in which it is not clear that prediction about our individual wellbeing benefits its beneficiary. A few examples:

- (a) Situations in which we cannot intervene. Do we wish to know that we are doomed to die of a certain disease if it is one we can do nothing to

prevent?¹ By contrast, in the cases of ailments in whose course we can intervene, a great deal of effort is put in to ensuring that we have the proper diagnostic lab tests and in convincing us to regulate our diet, habits, exercise, etc.

- (b) Knowledge is power. Will harm befall us if predictions about us (accurate or otherwise) fall into hands not of our choice, for example those of employers or insurance companies? This concern has been an obstacle to genetic screening, or even AIDS testing.
- (c) Error. A different set of ethical problems arise in cases where a prediction turns out to be empirically wrong, and may harm us directly or indirectly. Consider the recent case of Mr. John Brandrick of Cornwall, age 62, who was initially diagnosed with advanced pancreatic cancer. Given a short time to live, he quit his job and sold his house and possessions in order to enjoy fully the last time allotted to him. The diagnosis was later modified to pancreatitis, which would not affect his life expectancy. But he had effectively squandered all his provisions for his future, having been informed by authoritative opinion that he had none.²

1.2. Can prediction result in excessive control?

No one would reasonably object to our attempting to counter-balance genetic “weak points” by preventative regimes that offset out individual vulnerabilities to heart disease, diabetes, etc., but attempts to alter our genetic makeup are another story. As new technologies increase the range of genetic screening available or even alter our children’s genetic makeup, new debates arise about what level of intervention into nature is proper for humans to exercise. *Should* we manage the genetics of our unborn children by selecting for gender, intelligence, predisposition to psychiatric ailments? There is widespread, though not universal approval of prenatal screening (potentially followed by abortion) for Down’s syndrome or life threatening congenital ailments. Other procedures are more controversial.

1 E.g. Rita Kielstein, “Clinical and Clinical-Ethical Aspects of Genetic Prediction: The Case: Hereditary Kidney Disorders,” *Jahrbuch fur Recht und Ethik* 4 (1996): 81–91; Stephen Robertson and Julian Savulescu, “Is There a Case in Favour of Predictive Genetic Testing in Young Children?” *Bioethics* 15.1 (February 2001): 26–49; Lainie Friedman Ross, “The Ethics of Type 1 Diabetes Prediction and Prevention Research,” *Theoretical Medicine and Bioethics* 24.2 (2003): 177–197; D. Wilkinson, “Is It in the Best Interests of an Intellectually Disabled Infant to Die?” *Journal of Medical Ethics* 32.8 (August 2006): 454–459.

2 BBC online, 7 May 2007, http://news.bbc.co.uk/2/hi/uk_news/england/cornwall/6615351.stm.

Using ultrasound to select for gender is now illegal in some countries. Broad genetic screening for medical risk factors is controversial.³

1.3. Prediction and public welfare

Predictions that involve public policy present different problems than predictions about individual health or wellbeing. There are significant social implications for prediction of such events as earthquakes, population growth, global warming, and other ecological disasters. For example, earthquake prediction, accurate and otherwise, has social consequences for the areas of land-use control, building codes, and potential social and economic costs.⁴ Global warming has international implications beyond the control (or political will or legislative ability) of any one country.

How, if at all, did the reflective thinkers of ancient Greece and China address the ethics of prediction? Was it considered a topic that required explanation or justification? What types of situation did they attempt to predict, and were there perceived ethical issues?

One cannot over-generalize topics for prediction over long time spans due to changing methods, institutional, social and political settings, and changing consultants and technical experts. But an overview of types of events that were subjects of prediction might look something like this:

1. religious issues: the goodwill of gods, heroes or ancestors, especially toward ruling houses.
2. military matters, especially victory or defeat.
3. weather prediction for civil (agriculture, floods, etc., arguably an ethical duty) or military purposes.
4. medical prognostication. Whether a sick person would live or die, and the related question of whether a (presumably healthy) individual was destined to be long- or short-lived.
5. family matters, especially predictions about marriages and children, but also questions about potential choice of occupation, place of residence, and short term matters such as business, journeys, etc.

3 For example see Walter Glannon, "Key Concepts: Endophenotypes," *Philosophy, Psychiatry, and Psychology* 10.3 (September 2003): 277–284; Walter Glannon, "Neuroethics, Bioethics 20.1 (February 2006): 37–52; R. Henderson, N. Keiding "Individual Survival Time Prediction Using Statistical Models," *Journal of Medical Ethics* 31.12 (December 2005): 703–706.

4 William Ascher, "Scientific Information and Uncertainty: Challenges for the Use of Science in Policymaking," *Science and Engineering Ethics* 10.3 (July 2004): 437–455; Berel Lang, "Earthquake Prediction: Testing the Ground," *Environmental Ethics* 5 (Spring 1983): 3–20; Ayhan Sol and Halil Turan, "The Ethics of Earthquake Prediction," *Science and Engineering Ethics* 10.4 (October 2004): 655–666.

6. fate prediction of various kinds, including the fortunes of individuals, families and polities.

Discussions of the justification, desirability or ethical status of prediction are hard come by.

2. Defenses of prediction

Defenses of prediction appear in the ancient world in both theory and practice, but they are not widespread. Perhaps the most explicit is the defense of the possibility of military prediction in the Sunzi military strategy manual, the *Sunzi bingfa*. Other arguments for prediction in the form of medical prognostication also appear in –5th century Greek and –2nd century Chinese texts. In the Greek world, they appear in several Hippocratic texts which explicitly argue for the importance and value of medical prognostication. In the Chinese contexts, a very different apologia for medical prognostication appears in the defense of the Han physician Chunyu Yi in the 105th chapter of the *Shiji*. These contrast, in surprising ways, with the current status of medical prognostication.

2.1. Predicting victory or defeat

Sunzi's Art of War, famous for its formulation that “warfare is the art of deception,” presents military and political ethics that are closely linked to Daoist ideas of change and efficacy. The *Sunzi* presents the martial skills of the strategist-general in abstract form. The genre of *bingfa* or military manuals covered both strategy and tactics. The Militarists (*bing jia*) were listed as a school in early bibliographic classifications. These texts indicate both the presence of a military philosophy and the increasingly intellectual character of warfare. The existence of a military philosophy, transmitted in texts, makes war an act of mind, insofar as its principles can be formulated and taught.⁵

5 Such principles also appear in the *Sun Bin bingfa* 孙臆兵法 (ed. Zhang Zhenze 張震澤, Beijing: Zhonghua, 1984), the *Wei Liaozhi* 尉繚子 (*Weiliaozi jiaozhu* 尉繚子校注 Sibū congkan ed.), the *Wuzi* 吳子 (Zhuzi jicheng ed.), the *Liu Tao* 六韜 (*Taigong liutao zhibie* 太公六韜真解, Sibū congkan ed.), and the *Sima Fa* 司馬法 (Taipei: Shangwu, 1975). In addition, several *bingfa* texts have been excavated from Western Han graves at Yinqueshan in Shandong, including versions of the *Sun Bin bingfa*, *Sun Wu bingfa*, *Liu Tao*, and *Weiliaozi*. These texts suggest new evidence for the authorship of the *Sunzi*, and its traditional attribution to Sun Wu. See *Yinqueshan Hanmu zhujian* 銀雀山漢墓竹簡, ed. Yinqueshan Hanmu zhujian zhengli xiaozu 銀雀山漢墓竹簡整理小組 (Beijing: Wenwu, 1985, Reprint 1989); Wu Jiulong 吳九龍, ed., *Yinqueshan Hanjian shiwen* 銀雀山漢簡釋文 (Beijing: Wenwu, 1985); Rao Zongyi 饒宗頤, “Tan Yinqueshan jian ‘Tiandi Bafeng Wuxing Kezhu Wuyin zhi ju’” 談銀雀山簡 “天地八風五行客主五音之居,” *Jianbo yanjiu* 1 (1993): 113–19; Robin D.S. Yates, “An Introduction to and a Partial Reconstruction of the Yin Yang Texts from Yinqueshan: Notes on their Significance in Relation to Huang Lao Daoism,” *Early China* 19 (1994): 75–144; and Li Ling 李零, *Zhongguo fangshu xukao* 中國方術續考 (Beijing: Renmin Zhongguo chubanshe, 2000), pp. 395–415.

As a work of martial philosophy, the *Sunzi* emphasized the importance of war to the state, its intellectual character, the importance of the strategic abilities, and finally, the undesirability of warfare and the need to minimize conflict and conserve energy. It presents a philosophy of warfare that emphasized the abilities of the general, as both distinct and independent from those of the ruler. It also formulates a number of principles of both strategy and tactics. Most important for the purposes of this discussion is the claim that it is possible to accurately predict victory and defeat. As a result, the intellectual skills of the strategist-general can save a state from disastrous military action.

The *Sunzi bingfa* begins with the statement of a philosophical view of warfare: that the art of war is of vital importance to the survival of any state, and as a field of inquiry, must not be neglected.⁶ The *Sunzi* next stresses the intellectual character of warfare, specifically the claim that war was subject to knowledge – analysis and calculation. Along with the claim that victory arises from moral and intellectual faculties, rather than pure physical strength, these views formed the basis for a new calculus of power, which emphasized the role and skills of the general, rather than the number and forcefulness of his troops.

Calculation was based on the assessment of five fundamental factors which govern warfare, including arithmetical calculation to tally the relative strengths of the two sides. The text argues that the art of war is governed by five constant factors that can be used to predict victory or defeat.

夫未戰而廟算勝者，得算多也；未戰而廟算不勝者，得算少也；多算勝，少算不勝，而況於無算乎？吾以此觀之，勝負見矣。

It is by scoring many points (*suan*) that one wins a war before the event in a rehearsal in the temple; it is by scoring few points that one loses a war before the event in a rehearsal in the temple. The side which scores many points will win; the side which scores few points will not win, let alone the side which scores no points at all. When I make observations on the basis of this, the outcome of a war becomes apparent.⁷

The five factors are: *dao*, Heaven, Earth, the general, and *fa* or laws, methods and procedures. *Dao* causes the people to be in harmony, at one with, their leader. Heaven is described as yin and yang, cold and warm, timeliness in governance. The Earth factor is concerned with whether distances are easy or difficult of access, open or constricted, or leading to life or death. The general is a crucial factor. To be victorious, he must possess the five qualities

⁶ *Sunzi bingfa* 孫子兵法 (Zhuzi jicheng ed.), 1.1.

⁷ *Sunzi bingfa* 1.19–20; tr. Lau 332.

of: wisdom, trustworthiness, benevolence, courage, and strictness. Finally, the category of *fa* includes the proper ranking of both army and officers, the maintenance of roads, and the control of costs.

The *Sunzi* claims that these five factors form a basis for accurate assessment of military situations and the prediction of victory and defeat in war. The text asks: which sovereign has the *dao*; which general has ability; where do heaven and earth promise success; where is discipline most rigorously enforced; which army is more forceful; which side has the best training; and which side enforces rewards and punishments most consistently?

The *Sunzi* repeatedly stresses that prediction is itself a means to victory:

凡此五者，將莫不聞，知之者勝，不知者不勝。

These five should be known to every general. He who knows them will conquer; he who does not will not.⁸

2.2. Hippocratic texts

Several Hippocratic texts give explicit defenses of medical prognostication. *Articulations* admonishes the physician to forewarn (*katamanteusasthai*) patients in cases where a shoulder dislocation may return.⁹ Additional evidence comes from *Epidemics*. Hippocratic physicians above all avoided doing harm to their patients. As the *Oath* specifies:

Διαιτήμασί τε χρήσομαι ἐπ' ὠφελείῃ καμνόντων κατὰ δύναμιν καὶ κρίσιν ἐμὴν, ἐπὶ δηλήσει δὲ καὶ ἀδικίῃ εἴρξαι.

I will direct the regimens for my patients to their advantage according to my ability and my judgment, and I will abstain from all evil and all injustice.¹⁰

An important aspect of avoiding doing harm was careful attention to the timing of predictions, especially predictions of a crisis, because the wrong action, or the right action at the wrong time, could be destructive. Many cases in the *Epidemics* stress the importance of the correct timing of medical intervention. For example, *Epidemics* 3, case 8 recounts a case of a man with a high fever, in which the physician performed a venesection on the eighth day of the illness. The text reports that his pain was relieved, that his fever went down on the eleventh day, he began to expectorate on the seventeenth day; he had a minor crisis on the twentieth day, and a general crisis on the thirty-fourth day.¹¹

⁸ *Sunzi bingfa* 1.8.

⁹ ἰητροῦ μὴν ἔστι καταμαντεύσασθαι τῶν τοιούτων. Hippoc. *Articulations* 9.3–4.

¹⁰ Hippoc. *Lex*, Littré IV 630–631.

¹¹ Littré III 56–57.

In this sense, correct prediction was an active ethical element of the physician's practice. But a very different defense of prognostication is given in the eponymous text *Prognosis* (Prognôstikon), which begins:

It seems to be highly desirable that a physician should pay much attention to prognosis. If he is able to tell his patients when he visits them not only about their past and present symptoms, but also to tell them what is going to happen, as well as to fill in the details they have omitted, he will increase his reputation as a medical practitioner and people will have no qualms in putting themselves under his care. Moreover, he will the better be able to effect a cure if he can foretell, from the present symptoms, the future course of the disease.¹²

The text adds that it is impossible to cure all patients, so it is important to have a thorough acquaintance with the future course of different diseases.

In this way one may become a good physician and justly win high fame. In the case of patients who were going to survive, he would be able to safeguard them the better from complications by having a longer time to take precautions. By realizing and announcing beforehand which patients were going to die, he would absolve himself from any blame.¹³

Prognosis stresses the importance of prognosis because it improves the prospects for cure, but also because it adds to the reputation of the physician. The text stresses that not all patients can be cured, and that the effective physician must be able to distinguish those who could be. *Prognosis* stresses the course of disease cannot be predicted from its beginnings. In addition to detailed knowledge of signs, physician must consider epidemic and climactic factors.¹⁴ The argument here is that prognosis: (1) adds to the reputation of the physician, and (2) improves his ability to effect a cure (since not all patients can be cured), and (3) removes the physician from blame. These pragmatic issues are only indirectly concerned with the ethical status of prediction.

As Martha Nussbaum has pointed out, *techne* was closely associated with practical wisdom (*phronêsis*), forethought, planning, and prediction. Given the resources of *techne*, why should anyone subject herself to the vagaries of chance or *tuche*?¹⁵ *Techne* is the deliberate application of human intelligence

12 Prognôstikon 1, Littré II 110–111, trans. trans. J. Chadwick and W.N. Mann in *Hippocratic Writings*, ed. G.E.R. Lloyd (New York: Penguin, 1983), p. 170.

13 Prognôstikon 1, Littré II 112–113, trans. Chadwick and Mann, p. 170.

14 Other accounts of *techne* occur in two texts from the earlier parts of the Hippocratic corpus: *On Ancient Medicine* (Peri arkhaiês iêtrikês, Littré I 570–637) and *On the Art* (Peri Technês, Littré VI 2–26), both probably dating to the late fifth century.

15 Martha Nussbaum, *The Fragility of Goodness* (Cambridge and New York: Cambridge University Press, 1986), pp. 95–96, cf. Democritus B197.

to control of the world, nature, or circumstance, and the person who possesses it has resources with which to confront chance and contingency.¹⁶

It is also worth noting that Hippocratic prognosis differed from iatromancy in its emphasis on physical signs and critical days.¹⁷ Nonetheless, there were distinct similarities between the language of prognosis and the language of iatromancy, since Hippocratic physicians also used dreams for diagnosis. *On Regimen 4*, a text on dreams, provided both a theoretic basis and detailed instructions for dream interpretation.

In the cases of such dreams as are divine and presage good or of bad fortune, to poleis or to private individuals, those who know how to judge them have a precise art (*akribê technê*). But in cases where the soul presages disease of the body – surfeit, depletion, excess of something natural or change to something unaccustomed – those who judge these things sometimes get it right but sometimes miss the mark.¹⁸

On Regimen 4 indicates the medical significance of a wide range of dreams. It prescribes in terms of diet, exercise, and purges, and uses a microcosm-macrocosm perspective in correlating signs in the heavens (revealed in dreams) to corresponding elements of and conditions of the body. It uses a different kind of prognostication than *Prognosis*. It focuses on the signs that occur in dreams, and provides an explanation for their diagnostic power. Its prescriptions always include prayer, with the signs revealed in dream determining which gods should receive prayer.

In summary different Hippocratic texts give different methods and explanations of the power of prognosis. None seriously question its desirability, and some specifically link it with the activity of the gods. The explicit justification for prognosis is pragmatic.

16 Another defense of *technê* (rather than prediction per se, but prediction is closely linked with *technê*) appears in Aristotle's account of the *technai* in *Metaphysics* 1.1. Aristotle describes the *technai* in terms of four aspects: universality, teachability, precision and concern with explanation, again closely linked to the goals of prediction and control. See Nussbaum, p. 96 and D.S. Hutchinson, "Doctrines of the Mean and the Debate Concerning Skills in Fourth Century, Medicine, Rhetoric and Ethics," in R.J. Hankinson (ed.), *Method, Medicine and Metaphysics: Studies in the Philosophy of Ancient Science* (Edmonton: Academic Printing and Publishing, 1988).

17 E.g. facial appearance, both awake and asleep, the condition of eyes, lips, posture and manner of reclining, and such signs as sores, hand gestures, breathing (rapid, relaxed, etc.), fits and sweating, and swellings or edema, cold, and the appearance of excreta. The significance of symptoms was dependent on critical days. Symptoms such as sweating or fever could be good signs on critical days, but bad signs at other times. Other factors that affected the significant of symptoms included the age of the patient. The crisis times for most diseases were at 4-day intervals for 20 days, especially on days 7, 11, 14, 17 and 20.

18 Hippoc. *Regimen* 4.87, Littré VI 640–642.

2.3. The defense of Chunyu Yi

An indirect defense of prediction appears in the twenty-five medical cases contained in the biography of the Han physician Chunyu 淳于意 Yi in *Shiji* 105. Sima Qian structures this biography around a defining incident in Chunyu's life: charges brought against him to the Han throne, his reprieve through the memorial of his daughter Ti Ying 緹縈 and his subsequent memorial on the merits of his medical practices and prognostic ability.¹⁹ In the memorial he claimed the ability to predict accurately which illnesses were fatal and which curable.

少而喜醫方術。高后八年。更受師同郡元里公乘陽慶。慶年七十餘。無子。使意盡去其故方。更悉以禁方予之。傳黃帝扁鵲之脈書。五色診病。知人生死，決嫌疑，定可治

Since his youth, he delighted in drug-therapy medicine. In the eighth year of Empress Gao he changed [masters] and received the teachings of Master Yangqing of Yuanli. Qing was over seventy years old and had no sons. He made Yi completely let go his old formulas, and handed his own secret formulas to him. He transmitted the vessel books of Huang Di and Bian Que, and examined ailments by means of the five colors. He understood who would live or die, was decisive about dubious cases, and certain about what could be cured.²⁰

No explicit notion of precision is specified, and Chunyu acknowledges that his prognosis is not perfect.²¹ Nonetheless, the force of his rhetoric is to claim that, in the treatment and diagnosis of disease, he is able “to use pulse diagnosis to distinguish between life and death with infallible results” (診病 決死生，有驗，精良).²² This claim justifies his withholding treatment in certain cases, and represents pulse diagnosis as a technique that separates him from potentially competing physicians.

The account of the cases follows a flexible formula, which includes an identification of the patient Chunyu was summoned to examine and a description of his use of pulse diagnosis. This includes the name of the disorder, its symptoms, and Chunyu's treatment method. Most important for the present purposes, each case includes a prognosis, followed by an account of the actual outcome of the illness. In most cases the prognosis was correct and the outcome was a verification. Finally, there is a statement

19 This incident is dated to 167 B.C.E., during the reign of Han Wen Di (r.180–157 B.C.E.). The biography consists of arguments by Ti Ying, by Chunyu Yi, and by Sima Qian. Ti Ying's argument against mutilating punishments persuades Xiao Wen, not only to release her father, but to change the law. They are repeated verbatim at *Lienüzhuan* 列女傳 (Sibu beiyao ed.) 6.16.

20 *Shiji* 史記 (Beijing: Zhonghua shuju, 1959) 105:2796

21 *Shiji* 105:2817.

22 *Shiji* 105:2796.

of the cause of the illness, usually including references to yin-yang vessel theory.

For example, Chunyu's prognosis techniques led him to a different diagnosis than other physicians:

眾醫皆以為蹇入中，而刺之。臣意診之，曰：「湧疝也，令人不得前後溲。」循曰：「不得前後溲三日矣。」臣意飲以火齊湯，一飲得前後溲，再飲大溲，三飲而疾愈。病得之內。

All the doctors took his malady to be convulsions that had penetrated into the interior and had treated him with acupuncture needles. I examined him and said: "This is a gushing accumulation; it makes him unable to urinate or defecate." Xun said: "I have not urinated or defecated for three days." I gave him a decoction of *huo qi* to drink. After drinking it once, he urinated, the second time, he defecated, the third time, the illness was cured. The illness developed in the interior.²³

More serious were cases in which prognostication led Chunyu to refuse to treat a patient with a fatal illness. For example, Chunyu is consulted by another physician, who had fallen ill and had treated himself. Chunyu disagreed with his colleague's self-treatment, and warns that he will die in a hundred days, but did not attempt to treat the man.²⁴

At the time he compiled the *Twenty-five Cases*, Chunyu was exonerated of legal culpability and freed from both prison and the threat of mutilating punishment. Ti Ying's defense saved his life, but it did not address the justice of the charges brought against him. Her argument never touched on *why* he had refused to treat patients. He simply chose not to treat people he believed he could not help. Chunyu justifies his conduct by claims for the accuracy of his predictions. The rhetorical force of the formula by which he describes his cases is to show: (1) that his decisions to intervene or not, depended on the ability to predict success or failure; (2) that he was successful in all cases in which he predicted success, and intervened; (3) that his predictions were accurate in all cases where he refused to intervene. The patient died; (4) that all his predictions were accurate (as of the time of the compilation); and (5) that he was more astute in both prediction and treatment than "other physicians" (He frequently distinguishes his own diagnoses and predictions from theirs.)

In summary, although Chunyu Yi does not present an explicit justification for medical prognosis, his legal and moral defense in the *Twenty-five Cases* is entirely based on the notion of accurate prediction as his main claim for skill and competence as a physician.

23 Case 3, *Shiji* 105:2799.

24 Case 22, *Shiji* 105:2810–11.

2.4. Contemporary debates on medical prognostication

Pragmatic defenses of prognosis in both Chinese and Greek antiquity contrast with a reluctance to engage in prognosis by contemporary physicians. In one “thick description” of bioethical decision making, Nicholas Christakis, a professor of medicine and sociology at the University of Chicago, has argued that, despite the expectations of their patients, many contemporary physicians do not prognosticate. As he describes it, “patients expect physicians to prognosticate in a fashion that is simultaneously – yet impossibly – honest, accurate, and optimistic.”²⁵ But as a result, physicians find themselves in complex and ambivalent social roles, which make prognostication troubling, stressful, and even “dreadful,” especially prognostications about the end of life. One strategy they employ to resolve these difficulties is a thoroughgoing avoidance of prognostication.²⁶ To make matters worse, he argues, despite its centrality and importance, “prognosis is virtually absent from medical education, medical texts, medical research and patient care.”²⁷ Nor is this avoidance accidental nor incidental, “for there are powerful norms in the medical profession militating against both the development and the communication of prognoses. Physicians are socialized to avoid prognostication.”²⁸ Physicians, he argues, avoid prognostication for several reasons, including its objective difficulty, the consequences of error and emotional difficulty for both patient and physician, and the existence of a complementary relationship between therapy and prognosis in both theory and practice: if therapy is available, prognosis tends to be avoided. Physicians also associate prognostication with death, and with their own belief in the notion of the self-fulfilling prophecy. Christakis argues that the avoidance of prognostication has important implications for bioethical decision making, and that prognostication is an important and deeply moral aspect of the physician’s social role.

Although prediction in the form of medical prognostication was explained and justified in very different ways in China and Greece, it was clearly viewed as part of the function, and perhaps even the moral duty, of a physician. By contrast, contemporary physicians, who have a far greater array of predictive techniques at their disposal, tend to avoid and fear it.

25 Nicholas A. Christakis “Prognostication and Bioethics,” *Daedalus* 128.4 (Fall 1999): 197–214. See also Christakis, Nicholas A. *Death Foretold: Prophecy and Prognosis in Medical Care* (Chicago: University of Chicago Press, 1999).

26 Christakis, *Daedalus* p. 197 and 199.

27 Christakis, *Daedalus* 128.4 p. 198.

28 Christakis, *Daedalus* 128.4, p. 198. He focuses on two aspects of prognostication: foreseeing and foretelling. Foreseeing is the physician’s inward and cognitive estimate of a the path of a patient’s illness, foretelling the communication of this at estimate to the patient.

3. Debates about divination

In practice prediction overlapped with the practice of divination, but with important differences. I use the term divination in the most inclusive sense to refer to all activities seeking to find the meaning of hidden events in the past, present, or future, and regardless of whether divinatory signs are understood as direct or indirect communications by a divine entity.

As a mode of prediction, divination has typically been regarded as primitive superstition or as a pseudoscience to be disparaged and debunked. A range of studies over the past two decades have focused on important sociological and epistemological dimensions of divination, both in antiquity and in the present. This recent scholarship has underscored the rationality of divination, the pervasive influence of divinatory thinking, its complex social history, its role in the development of other hermeneutic traditions, and its place in an archaeology of knowledge. Divination can be viewed as a set of coherent reasonable technologies for predicting (and potentially controlling) the future, and as a set of social practices whose importance extended far beyond telling the future. Prediction was not its only function, or possibly even its major one. Other important goals of divination were the creation of social consensus and the diffusion of responsibility and blame. These concerns did not revolve around the accuracy of prediction.

3.1. Tacit acceptance or approval

The “default” position in both traditions was the approval and practice of divination, including by those we are accustomed to think of as “philosophers.”

3.1.1. Chinese “Masters” texts

In a Chinese context, there is extensive evidence of contact and active competition between diviners and the “Masters” whose textual lineages form the corpus of Warring States philosophy. Teaching for pay in a master-disciple relationship was one of several livelihoods made possible by literacy and textual or specialist expertise. Others were employment by a state, family or community or self-employment as a “freelance” diviners in the marketplace. As court, military and technical specialists with expertise in astronomy, mathematics medicine and ritual, diviners also gained their livelihoods and authority through the mastery and exegesis of texts and archives. This competition involved career choice, patronage, students and the status of genres and modes of knowledge. Discourse on divination was a part of this intellectual milieu. But the approval of it comes for very different reasons in different cases.

Within this discourse, the major “Confucian” theorists come out as defenders of divination, albeit with some reservations. Confucius famously recommended a respectful distance from “ghosts and spirits” (*Analects* 6.22), but repeats a saying (13.22) that only a person with constancy can be a *wu* 巫 spirit medium or physician. The picture of his views becomes more nuanced if we look at texts outside the canon of the Confucian exegetes, from both the received tradition and texts excavated from tombs. In the Mawangdui text titled “Essentials” (Yao), Confucius compares his own goals with those of astrologers and *wu*: the virtue he seeks is superior to the “turtle and milfoil divinations of incantators and *wu*” (祝巫卜筮).²⁹ Although these passages seem to argue that cultivating virtue (*de*) is superior to divination, other texts such as the *Lüshi chunqiu* describe Confucius himself performing divination and discussing it with his students.³⁰

The case becomes more complex with Mencius, who at several points describes a person’s virtue or inner nature as manifesting in the body. At 2A2 he describes *qi* as filling the body and commanded by the will (*zhi* 志). He recommends nourishing it with genuineness (*zhen* 真) and keeping it from harm. He describes its concentration or dispersal as a function of morality, and born of accumulated righteousness (*ji yi* 集義).³¹ At 7A21 he describes the four virtues of the *junzi* (*ren, yi, li and zhi*) as rooted in the heartmind, and visible in the body in the harmony of the countenance and in the appearance of the back and limbs. When benevolence, righteousness, propriety and wisdom are rooted in the mind, they produce a glossy color that is visible in the face and limbs.

But if virtue is visible in the body, it is also logically possible to “read” it, and Mencius effectively defends the practice of physiognomy:

存乎人者，莫良於眸子。眸子不能掩其惡。胸中正，則眸子瞭焉；胸中不正，則眸子眊焉。聽其言也，觀其眸子，人焉廋哉？

In examining others, nothing is more effective than the pupils. The pupils cannot conceal evil. If that within the chest is upright (*zheng*), the pupils are clear and bright; if it is not, they are clouded. If you listen to their words and examine their pupils, how can people hide anything? (4A15)³²

29 Chen Songchang 陳松長 and Liao Mingchun 廖名春, “Boshu ‘Ersanzi wen,’ ‘Yi zhi yi,’ ‘Yao’ shiwen” 帛書二子問易之義，要釋文, *Daojia wenhua yanjiu* 3 (1993): 424–435, p. 435.

30 *Lüshi chunqiu jiaoshi* 呂氏春秋校釋 (ed. Chen Qiyong 陳奇猷, Shanghai: Xuelin chubanshe, 1984), 22.4, “Yi xing,” p. 1505 (cf. Knoblock, p. 577).

31 Mencius 2A2, especially lines 12 and 15–17. For *qi* as virtue manifested in the body and visible in the eyes, see Mark Csikszentmihalyi, *Material Virtue: Ethics and the Body in Early China* (Leiden: Brill, 2004).

32 Mencius 4A15.

The Han iconoclast Wang Chong in fact attacks Mencius as a physiognomist who “physiognomized people by their pupils,” on the grounds that clarity or cloudiness of the eyes is determined at birth and does not depend on character.³³

Divination was also an important area of disagreement between Confucius and his earliest critics, the Mohists. Both the *Analects* and the Mohist Canon include accounts of debates in which the “Master” (Confucius and Mozi, respectively) gets the better of a *wu* spirit medium. Confucius discusses political reform with the *wu* Maqi 巫馬旗, who cannot grasp his ideas.³⁴ Mozi and the *wu* Mazi 馬子 debate the relative value of the knowledge of contemporary innovators, the sage kings of antiquity, and ghosts and spirits (accessed by divination).³⁵ The Mohists also regarded divination as an effective component of defensive military strategy. Generals were advised to employ *wu* and diviners, but keep their results and methods strictly secret from the army.³⁶

Other political texts such as the *Guanzi* (late 4c) also recommend divination. The text’s eponymous sage advises his patron Duke Huan of Qi to “scrutinize the portents of Heaven and observe the results of divination.”³⁷ Another passage tries to explain the efficacy of divination through the powers of the tortoise.³⁸ Finally, the *Guanzi* recommends divination on the pragmatic grounds that diviners and technical experts could protect a ruler from the effects of changing conditions, confusion and recklessness. (The text even specifies how much they should be paid.)³⁹

The point of these examples is that these various thinkers considered divination normal and acceptable, even if at times they chose to distance themselves from diviners. In addition to generally positive attitudes toward divination, virtually all Chinese philosophers argued about the nature of *ming* 命 or destiny (discussed below). They disagreed about the nature of

33 *Lunheng jiaoshi* 論衡校釋 (Beijing: Zhonghua shuju, 1990) 3, “Ben xing” 13, pp. 135 (Forke 1.385). For eye physiognomy in the *Taipingjing* see Csikszentmihalyi 2004.

34 *Lüshi chunqiu* 21.2, “Cha xian,” p. 1441 (cf. Knoblock 553).

35 Mozi 墨子 (Xinbian zhuzi jicheng, Taipei: Zhonghua, 1987), bk. 11, ch. 46, p. 385, tr. Mei, 212. Other arguments address: (1) whether moral action depends on human or divine aid; (2) the relative merits of the sage kings of antiquity and innovators of their own time; and (3) the Mohist doctrine of affection for all (*jian ai* 兼愛) Mozi, Book 11, Ch. 46, pp. 392–98, tr. Mei, pp. 215–20.

36 Mozi, Ch. 68, pp. 7–8

37 *Guanzi* (Sibu beiyao ed.) 12/35, “Chi mi,” p. 601, tr. Rickett 2.335.

38 It “lives in water and is opened by fire, so it can foretell the myriad things and establish what will bring about good fortune and disaster.” *Guanzi* 14/39, “Shui di,” p. 677, cf. Rickett 2.104–5.

39 *Guanzi* 22/75, “Shan quan shu,” p. 1053 (Rickett 2.401–2) and 12/35, “Chi mi,” p. 601 (Rickett 2.335).

ming and what to do about it, but all considered it part of the landscape. Indeed, it has been argued that early Chinese understandings of wisdom revolved around understanding *ming*. Yet these two debates were separate.

3.1.2. Presocratics

Greek mantic discourse recognized that knowledge of the future somehow implied its preexistence. Tension between belief in the efficacy of divination and belief in inexorable fate first appears in Homer. The problem of the poets was to reconcile divination (which sought to “change” the future) with belief in the plan of Zeus. The philosophers had an opposite problem: to theorize divination in ways that reconciled traditional religion with new theories of nature, cause and so forth.

Most philosophers before Socrates (c.469–399) either affirmed some kind of belief in divination, or held beliefs compatible with it, including Thales,⁴⁰ Anaximander, Anaximenes, and Anaxagoras, whose *nous* can be converted into attentive Providence. Democritus based his notions of prediction on laws of mechanical movement of atoms in space. Yet even he believed in the possibility of presentiment of future events because he considered the universe to be ordered by divine will according to providence.⁴¹

The two major presocratic critics of divination were Xenophanes and Heraclitus. Xenophanes repudiated divination in its entirety, attacking the immorality of the Homeric gods (frs. 11 and 12) and the anthropomorphism of Greek religion (fr. 14–16). The god postulated by Xenophanes would have no motive to provide divinatory knowledge to humans, nor would humans understand it. Heraclitus criticized the religious conventions of his day in order to advance new notions of flux and the union of opposites. He rejected technical divination, oneirology, and ritual purifications after murder. But he did not reject fate or divination. He accepted the inspired divination of the Sibyl and Pythia (fr. 92), and asserted that the Delphic oracle offers signs to humankind, and: “neither speaks nor hides, but signifies” (*oute legei oute kruptei alla sêmeinei*, fr. 93).

Other presocratics may have been diviners. Diogenes (8.32) reports that Pythagoras instructed his students to “honor every kind of divination” (*mantiken pasan timan*); and (8.21) that he was called “Pyth-agoras” because he outdid the Pyth-ia in the truth of his public pronouncements (*agora*). The “Purifications” of Empedocles begins with a claim to be in high

40 Plut., *Conv. sept. sap.* 3.2. All fragments are from Diehls-Kranz unless otherwise indicated.

41 Cic. *Div.* 1.5. Divine beings (*eidola*) could reveal the future to humans by appearing and speaking, and could project visible and audible images, perceptible in dreams during (DK Fr. 166; Plut. *Quaest. conv.* 735a–b.)

demand everywhere, to: “some seeking mantic arts, others seeking healing oracular speech for all kinds of diseases” (fr. 112).

But perhaps the most interesting Greek philosopher for the present discussion is the Platonic Socrates, the apocryphal creator of so much of Greek philosophy. Did Socrates believe in divination? The question is not trivial, because it becomes an important element in the trial that led to his death. The moral status of Socrates’ philosophic activities is a central point in his trial, and his claim that these pursuits are grounded in divination is central to his defense. He describes the oracle to Chaerephon (that no man is wiser than Socrates) as the source of his philosophical mission, and repeatedly affirms his trust in his *daimonion* to warn him against error (*Apol.* 20e, 22c, 31d, 40a–b).

Commentators typically disregard this trust in divination as a source of truth, and the implication that Socrates’ moral and philosophical convictions are religious in origin. But, as Brickhouse and Smith have argued, the *daimonion* provides him with certainty that he must serve the god by practicing philosophy in Athens, but not about anything else, including the nature of virtue (which must be understood from the elenchus). This leaves Socrates in the position of being certain that his philosophical activities are virtuous but unable to offer a logos to explain their virtue.⁴² So in recommending the mantic arts he was not advocating laziness or shortcuts because he did not consider divine knowledge a substitute for human knowledge.

And Socrates did recommend them, as attested by two of his students: Plato and Xenophon. In addition to his own defense, he urged his friends to trust themselves in cases where the results were certain, but to consult the Pythia in uncertain ones, for example his advice to Xenophon on whether to join the expedition of Cyrus (*Xen. Anab.* 3.1).⁴³

Socrates thus brought divination into the purview of philosophy; and Plato (–428 to –347) and his successors continued that approach.

Plato enjoins the city to consult the oracle on religious and moral issues (*Rep* 427b; *Laws* 738b–d).⁴⁴ He also linked divination to the benevolent activity of the gods, describing *mantike* as the first of four kinds of divine madness (*Phaed.* 244a–e). It is the madness of priestesses possessed by Apollo, who provide great benefits to others when mad, and none when sane (244b). The observation of birds (*ornithon*) and signs (*semeion*) are

42 Thomas C. Brickhouse and Smith Nicholas D. Smith, “The Paradox of Socratic Ignorance in Plato’s Apology,” *History of Philosophy Quarterly* 1 (1984): 125–131.

43 Xenophon goes to Delphi, but asks the wrong question: not whether to go, but to which god to sacrifice for success on the expedition. Socrates rebuked Xenophon, but advises him to obey the oracle’s advice and go.

44 *Plat. Laws* 738b–d.

as inferior to it as is human sanity to divine madness, which purifies and inspires (244c–e). Similar arguments appear in the *Timaeus* (71b–e).

3.2. Critiques (Epistemological and Ethical)

Critiques of divination are especially interesting insofar as they reflect the results of self-conscious reflection and have very specific targets. In both China and Greece, debates about divination arose relatively late, in China with the growth of a specifically Confucian philosophy in the late Warring States and in Greece with the efforts of –3c Stoics to address arguments of Aristotle and his later contemporaries. Some critiques are strikingly Chinese, others peculiarly Greek. Some are common to both, but used for different reasons and in different ways. Some are epistemological claims that divination is an inferior, inconsistent, or ineffective mode of knowledge. Others are ethical, and attack both individual practitioners and the ethics of divination itself. Some arguments used to attack and defend divination are strikingly Chinese, others peculiarly Greek, and some common to both, although used for different reasons and in different ways. Whereas positive statements about divination tend to be general, critiques tend to have specific targets.

Epistemological critiques of divination argue that it is an inferior, inconsistent, or ineffective mode of knowledge. Ethical attacks focus on both individual practitioners and the ethics of divination itself. In both China and Greece organized schools made claims to a universal knowledge beyond the limitations of technical specialists.

3.2.1. Chinese critiques

The most significant Chinese critique of divination is the Daoist claim that only knowledge of *dao* provides understanding of the future; divination is an inferior practice and an inferior mode of knowledge. The *Zhuangzi* and *Guanzi* contrast the equanimity of the sage with the frenetic manipulations of the diviner, and recommend meditation and “inward training.” As the *Zhuangzi* puts it: “Can you embrace the One? Can you not lose it? Can you understand good and ill auspice without tortoise or yarrow? (能無卜筮而知吉凶乎!) Can you stop? Can you let it go?”⁴⁵ The *Guanzi* tells us how: “Concentrate your qi like a Spirit, and the myriad things will be inside your hand. Can you concentrate; can you make it one?”⁴⁶ The force of

45 *Zhuangzi jishi* 莊子集釋 (ed. Guo Qingfan 郭藩藩, Beijing: Zhonghua shuju, 1961), 23, p. 785.

46 *Guanzi* 16/49, “Neiye,” p. 5a (cf. Rickett 2.50–51) and 13/37, “Xinshu xia,” p. 6a (cf. Rickett 2.60).

these statements is to contrast the equanimity of the sage with the frenetic manipulations of the diviner.⁴⁷

Confucian polemics against divinatory *techne* are ethical. *Zuozhuan* accounts stress the superiority of prediction based on moral character over the results of divination. For Confucians, moral character became a precondition for divination and the *Yi* was transformed from a technical manual into a Confucian classic for universal moral guidance that, according to Xunzi, supplanted divination.

Xunzi attacks divination on specifically ethical grounds (while affirming its value as part of state ritual). In “Against Physiognomy” (非相) he argues that: physiognomizing people’s forms is inferior to speaking of their heartminds (相形不如論心).⁴⁸ Poor physiognomy does not deter someone with correct values, and good physiognomy cannot take the place of incorrect values. (He attempts to ground this claim empirically with accounts of the poor physiognomy of a list of sages and rulers that even includes Confucius.) What makes us human is the act of making distinctions; this does not depend on physiognomy, which is determined at birth.⁴⁹ A different ethical strain in the *Huainanzi* associates divination with deceit and deception.⁵⁰

A very different attack on divination comes from militarist texts, which explicitly position their own methods of prediction against divination. Traditional methods of tortoise and yarrow divination were part of the Zhou aristocratic military order that was replaced by new forms of military command during the Warring States period. That transition led to a new art of generalship and new philosophies of martiality. As in the case of medicine, the transition was not clear-cut, and there is evidence of competition and coexistence between two competing approaches to military prediction, and the relations of authority and persuasion that were also part of military decision making.

Late Warring States military strategy manuals attacked the use of battlefield divination. The *Sunzi* rejects military prognostication and directs the general to proscribe discussion of omens.⁵¹ The *Wei Liaozi* attacks the use of prognostications based on the techniques of “Punishment and

47 Another *Guanzi* passage praises a sage, who: “does not use sun and moon, but his affairs are accomplished by them. does not divine by tortoise or yarrow, but skillfully predicts good and ill auspice.” 不日不月，而事以從。不卜不筮，而謹知吉凶。 *Guanzi* 13/38, “Bai xin,” p. 10a (cf. Rickett 2.89).

48 *Xunzi yinde* 荀子引得 (Shanghai: Guji, 1986), 5/2, cf. Dubs p. 72.

49 *Xunzi* 5/25, cf. Dubs p. 80.

50 *Huainanzi* (Sibu beiyao ed.) 8: 1b and 6: 9bff. A similar account in the *Yantielun* (ca. –60) contrasts the search for auspicious days with the ethical orientation of the sages of the ancient past. See *Yantielun* 鹽鐵論 (Tianjin: Tianjin Guji, 1983), “San bu zu,” 29.204.

51 *Sunzi bingfa* 11.195 (trans. Ames 1993, p. 158).

Virtue” (*xingde*) and “Heavenly Offices” (*tianguan*) to determine the time and method of battle.⁵² Yet these explicit proscriptions suggest that such techniques were in widespread use.

Other passages in strategy manuals suggest the ongoing use of divination, even if the new strategist-generals rejected the older methods of the warrior aristocracy. For example, the *Simafa* lists the factors that determine victory or defeat as Heaven, materiel, and moral excellence. However, it relies on auspicious tortoise divination to define the “Heaven” factor: “when the time and day of battle are fixed and the tortoise shows victory” (*gui sheng* 龜勝).⁵³ When the *Liutao* describes King Wen receiving a strategy text from Taigong, the story begins with King Wen using divination to decide whether to go hunting.⁵⁴ A chapter in this text on the “legs and arms” of a commander includes three astronomical officials (*tianwen* 天文) who clearly practice divination. Their responsibilities include stars, calendrics, observing winds and qi, predicting auspicious days and times, looking into signs, weather phenomena, anomalies, and thus understanding “the mind of Heaven.” Another chapter describes the procedure for appointing a general, including a tortoise divination by the *Taishi* to determine an auspicious day.⁵⁵

3.2.2. Greek Arguments

The positive Greek consensus on divination always coexisted with ad hominem attacks against individual practitioners. But divination itself became an object of heated debate in Hellenistic Greece because of its key role in new arguments about fate, causality, necessity, determinism and their ethical implications, both for Stoic advocates of divination and for their Epicurean and skeptical critics. That debate, as in China, had both epistemological and ethic ramifications, but for very different reasons.

The most significant epistemological element in the Hellenistic debates was skepticism, both asserted and denied. Another type of critique was

52 See Ralph D. Sawyer, trans., *The Seven Military Classics of Ancient China*. Boulder: Westview Press, 1993), p. 242 and Robin D. S. Yates, “The History of Military Divination in China,” *East Asian Science Technology and Medicine* 24 (2005): 15–43. For recent scholarship on Mawangdui texts on *xingde* divination see Marc Kalinowski, “The Xingde Texts from Mawangdui,” *Early China* 23–24: (1998–1999): 125–202; Chen Songchang 陳松長, *Mawangdui boshu xingde yanjiu lungao* 馬王堆帛書《刑德》研究論稿 (Taipei: Taiwan guji chubanshe, 2001); and Gu Tiefu 顧鐵符, “Mawangdui boshu ‘T’ianwen qixiang zazhan neirong jianshu” 馬王堆帛書天文氣象雜占內 容簡述 *Wenwu* 1978.2, pp. 1–4, trans. Donald Harper, “A Summary of the Contents of the Ma-wang-tui Silk-scroll book ‘Assorted Astronomical and Meteorological Prognostications.” *Chinese Studies in Archeology* 1.1 (1979): 56–74.

53 凡戰，有天，有財，有善 *Simafa* 3.58 (trans. Sawyer 1993, p. 134).

54 *Taigong liutao* 1: 1a.

55 *Taigong liutao* 3: 9b and 3: 11a (trans Sawyer 1993, pp. 60–61 an 64).

purely empirical: do oracles work? Empirical arguments figure unevenly in Greek debates, and it is noteworthy that recorded comments and tests of the reliability of oracles come from foreigners; Greeks seemed to consider such tests both unnecessary and impious.⁵⁶ Most famous is the “test” oracle of Croesus as reported in Herodotus. The two other figures reported to comment on the accuracy of oracles are also non-Greeks: Amasis and Xerxes).⁵⁷

From Plato to Aristotle there is a sudden and brutal transition. Aristotle rejects exterior or inductive divination and relies on dreams and physiological explanations. As Bouché-Leclercq puts it, Plato tried to absorb science in revelation; Aristotle sought to absorb revelation in science.⁵⁸ Chrysippus and the Stoic defenders of divination claimed empirical efficacy but denied any causal link between the “signs” of divination and their signifiers. Causal explanation would make divination a science like any other; it would lose its privileged metaphysical status as a hermeneutic for divine knowledge and agency.

Aristotle was the first to raise the possibility that a deterministic destiny precludes moral choice, and ethical debates about divination were driven Hellenistic debates on determinism, moral responsibility, and, by implication autonomy. Efforts to reconcile determinism and responsibility (what we moderns call “soft determinism”) become a major issue in Stoic attempts to refute the deterministic implications of the Master Argument, the Lazy Argument, and other attacks on Stoic determinism, from Epicurus to Plutarch.

These arguments about divination and fate were part of a broad debate about modality, modal logic, determinism, ethics and agency that preoccupied many of the Hellenistic philosophers. The ethical problem of human responsibility for events foretold by gods first appear in Homer, but pre-fifth century texts do not emphasize these difficulties.⁵⁹ It was Aristotle

56 For the test oracle of Croesus, see Hdt. 1.46–55. The two other figures reported to comment on the accuracy of oracles were Amasis (Hdt. 2.174) and Xerxes and Mardonius (Hdt. 8.133–36).

57 The Egyptian ruler Amasis based his patronage of oracles on his own perception of their accuracy. Before becoming king, he had sometimes resorted to theft, and been brought before oracles by his accusers. Sometimes the oracles found him guilty and sometimes they acquitted him. When he became king, he neglected the altars of the oracles who had acquitted him (which he knew to be worthless), and considered infallible and patronized the ones who had found him guilty (Hdt. 2.174). After Xerxes’ defeat at the battle of Salamis, Mardonius sent an envoy to all the oracles and “charged him to go to all the oracles and test them (Hdt. 8.133–36). Herodotus not know the exact question asked.

58 Auguste Bouché-Leclercq, *Histoire de la divination dans l’antiquité*. (4 vols. Paris, 1879–82, rpt. New York: Arno Press, 1975), 1.57.

59 For example, the mechanistic atomism of Democritus raises issues of human responsibility for a modern reader, but not, apparently, for Democritus. Plato touches on the relation of destiny and human choice in Republic 10, but destiny and determinism are not a central issue.

who made choice central to notions of human responsibility. Determinism threatens human choice and human freedom, and Aristotle was the first to suggest that determinism precludes morality and agency, which were central to his concept of the good life. Aristotle treated cause as a matter of explanation, and did not connect the notions of cause and necessity. He viewed events not as chains of cause and effect but as ripples from a stone in a pond. He thus denied that all events are determined by necessary chains of causation. He held that some events result from chance rather than necessity, but his treatment of chance and coincidence did not rule out determinism. His primary interest was in the problem of explanation (the possibility that there are chance events with no scientific explanation), without recourse to indeterminism.⁶⁰ Hellenistic debates about determinism and freedom began as reactions to Aristotle's incomplete analysis of causation, determinism and responsibility. The question of whether the future can be known is logically distinct from the question of whether the universe is deterministic, but in antiquity arguments about fate and prediction were considered related, perhaps because individual fate was so often the object of prediction. (I follow Sorabji's definition of determinism as the view that whatever happens has all along been necessary in the sense of fixed or inevitable. His definition uses necessity, rather than causation, and does not deny moral responsibility, as do "hard" determinists. Chrysippus was a "soft" determinist or compatibilist in that he asserted both determinism and moral responsibility. Causal determinism is the idea that every event is necessitated by antecedent events and conditions.⁶¹)

But there was general agreement that for a future event to be knowable, it must in some sense be caused. The Stoics treated prediction under the rubric of divination and used divination to argue theories of fate. Their account of prediction and divination was part of an integrated systematic theory that included ethics, theology and metaphysics. These debates begin with Chrysippus, the third head of the Stoic school, who attempted to use logic to "prove" that "all things happen according to fate."⁶² He begins with the earlier consensus on divination, which seems to have been a standard Stoic

60 Arist. *Met.* 1027a20–b14. For a detailed account of these see Richard Sorabji, *Necessity, Cause, and Blame* (Ithaca NY: Cornell University Press, 1980).

61 See Sorabji 1980, ix. Other useful discussions of these complex issues in Hellenistic philosophy are provided by R.J. Hankinson, *Cause and Explanation in Ancient Greek Thought* (Oxford: Clarendon Press, 1998), pp. 232–33 and Susanne Bobzien, *Determinism and Freedom in Stoic Philosophy* (Oxford: Clarendon Press, 1998), pp. 87–96.

62 τὰ πάντα καθ' ἐμαρμένην γίνεται (Diog. Laert. *Vit.* 7.149); Fato omnia fiunt (Cic. *Fat.* 20), cf. Diogenianus in Eus. *Praep. ev.* 6.8.1, 2 and 6. Diogenes also ascribes the fate principle to Zeno, Boethus and Posidonius. For its importance to Stoic ontology and physics see Bobzien 1998, pp. 56–58.

argument for a fate principle. He devised a “syllogism” to prove that the gods exist and reveal the future: “If there are gods and they do not declare the future to mortals, then either they do not love humans, or they do not know the future, or they think that knowledge of the future will not benefit humanity, or they think it against their own majesty to presignify to mortals what the future will be, or they themselves are not able to determine it.”⁶³ Chrysippus tried to develop new accounts of possibility and necessity that were consistent with both moral responsibility and the Stoic “fate principle.” He described his modal theory as a “proof,” but also makes or implies empirical claims for divination. Posidonius attempted to theorize divination by *sumpatheia*, divine providence, and claims that nature gives signs of future events, which unfold over time in the manner of a cable unwinding. Epicurean critics argued that chance, rather than fate, controlled events, and skeptics refused to acknowledge any role for providence. Plutarch defended inspired divination and the reputation of the Delphic oracle, but attacked Chrysippus for contradictions between his theories of possibility and fate. In Plutarch’s own theory of moral agency, fate mixed and intertwined with chance. In this and other middle Platonic views, moral choice is not fated, but fate affects the consequences of moral choice. These arguments, Stoic notions of co-fated events, and notions of events contrary to fate attempted to solve the moral dilemma by incrementally ramifying the concept of fate to soften its deterministic edges. They are reminiscent of some of the antifatalist arguments of the Han philosopher Wang Chong, who, also introduced new categorizations of fate and placed a new emphasis on the role of chance in human events.

4. Philosophical debates on self, agency, prediction and fate

Finally I turn to philosophical debates about prediction, including the question of whether prediction implies determinism, and its relation to notions of individual agency and responsibility.

Debates on the nature of self, agency and fate are central to both the Chinese and Greek philosophical traditions. They tend to be phrased in terms of questions of fatalism, predestination and determinism or in terms of moral agency. By contrast, social practices of divination and prediction encoded the creation of “life plans” (in the Taylorian sense). Divination is

63 Each is refuted; thus if the gods do not reveal the future it can only mean that there are no gods. Chrysippus gives this demonstration to us, proving each one by way of the other. For he wants to prove that “everything happens in accordance with fate” from “divination exists,” and he cannot prove that “divination exists” by any other means than by assuming that “everything happens in accordance with fate. Cic. *Div.* 2.101 (cf. 1.10).

not normally considered in this debate, save as a concomitant to questions of fate etc. In both Greece and China, divination did become an object of philosophical debate, but usually within the framework of fatalism, determinism, etc., for which it had important implications. But debates on divination, fate, agency and responsibility had important implications for Chinese views of personal and moral autonomy (as they did for Greek, but there are significant differences between Chinese and Greek divinatory discourse).

Some tacit notion of personal autonomy is a precondition for any aspiration to affect the future through divination. Prediction of events quickly shades into control of events. There is a fine line between a query about the future (“Will there be disasters over the next ten days?”) and a request (“May there be none!”). Divination began as a negotiation with gods and spirits, in which some active agent must be doing the negotiating (or even, as Michael Puett has recently argued, attempting to supplant divine powers through self-cultivation). The more naturalistic view of divination that eventually developed in both Greece and China also presupposes an active agent. Techniques to predict the future and optimize one’s own prospects presuppose an active agent with life plans to be optimized in Charles Taylor’s sense of the term “respondent.”⁶⁴

And for that active agent, Greek or Chinese, new techniques were powerful tools.

4.1. Greek arguments on divination and fate

Debates on divination, fate, agency and responsibility had important implications for Chinese and Greek views of personal and moral autonomy. This is an area of significant difference between Chinese and Greek divinatory discourse.

Greek argument about fate, as we have seen from the critiques of divination above, turned on problems of causation and responsibility. Divination, fate and determinism were all objects of Chinese philosophical debate, but Chinese discussions of divination were quite distinct from treatments of fate, fatalism and determinism, or in turn for arguments about moral agency. Debates about divination typically pitted Masters text specialists against

64 Taylor’s “respondent” has moral status through a sense of self, a point of view, notions of the past and future, and capacities for holding values, making choices, and adopting “life-plans.” See Charles Taylor, “The Concept of a Person,” in *Human Agency and Language: Philosophical Papers*, volume 1. (Cambridge: Cambridge University Press, 1985), pp. 97–105 and Charles Taylor, *Sources of the Self: the Making of the Modern Identity* (Cambridge: Harvard University Press, 1989).

practitioners of technical arts, whereas debates about *ming* (fate or destiny) were a much more internal affair. Masters texts debated whether there was such a thing, what it was, whether it was predetermined, predictable, moral or mechanical in operation, and whether it was subject to human or divine intervention. (Both texts and later commentaries associated particular attitudes toward *ming* with particular schools, for example, understanding *ming*(知命) with Confucius, opposing it (非命) with the Mohists, etc. Confucian authors made the issue of *ming* central by defining an understanding of *ming* a prerequisite for self-cultivation, and few questions took precedence over debates about the role of fate in human life.

4.2. Chinese arguments

Most Chinese accounts of divination do not pursue questions of determinism and causality. An exception is the “Discourse on Heaven,” in which Xunzi argues that prayer and divination do not cause their objects, and important decisions should not be based on divination. Prayers for rain do not cause rain; prayer and divination do not cause good fortune.⁶⁵ By contrast, determinism appears as a matter of philosophical debate in Warring States and subsequent debates about *ming*. Determinist positions included the idea that *ming* is fixed (*ming ding*) and that mechanical and predictable regularities determine fate (*ming yun*). Mohist critiques of Confucius included charges of fatalism or determinism (*fei ming*), but the two are not clearly distinguished. It is generally unproductive to ask why a certain development did not occur, in this case why Warring States discussions of divination did not lead to a more abstract consideration of causality. Part of the difficulty may have been the wide semantic field of the word *ming* itself. By Han times, its range of meanings included (among others) fate, predestination, causal connections, and manifestations of Heaven’s will, and events beyond human control.⁶⁶ The problem of fate reemerges as an important issue in Han philosophical debates, prominently (for Han Confucians) the idea that kings received mandate of heaven.⁶⁷

65 *Xunzi* 17/38–39, cf. Dubs 288. Xunzi’s student Han Fei also argues that prayer does not cause good fortune (*Hanfeizi* 19/50, Xian xue, pp. 1102–3, tr. Liao 2.308), but neither pursues the issue of causality at any length.

66 For twelve distinct meanings of the term see Michael Nylan, *The Canon of Supreme Mystery: A Translation with Commentary of the Tai Hsüan Ching* (Albany: State University of New York Press, 1993), p. 35.

67 *Diwang shu tianming* 帝王受天命. Especially in the *Taixuanjing* 太玄經 of Yang Xiong 揚雄 and the *Lunheng* of Wang Chong 王充. See Nylan 1993 and Michael Nylan, “Han Classicists Writing in Dialogue About Their Own Tradition,” *Philosophy East & West* 47.2 (Apr., 1997): pp. 133–188.

In recent years, our understanding of early Chinese views of divination, fate and agency has been transformed by new evidence from excavated texts that prominently include divination manuals, presumably used by the occupants of the tombs in which they were found. The excavated texts address topics more typically associated with the history of science, such as medico-religious techniques for health and longevity, and methods to understand and control the future (personal and political) through divination. Such texts fall below the radar of “Confucian” discussions of political agency and political autonomy in the *Analects*,” Mencius, etc.

During the Warring States period, the loci of divination broadened from the king to elites to the populace as a whole. It also proliferated from a few dominant forms (tortoise and yarrow) to a wide range of techniques and sub-techniques. Chinese texts classify these as what has been called *shushu* 數術 culture or “Numbers and Techniques.”⁶⁸ There are many examples of the use of this kind of technical expertise in both ritual and private contexts. Divination texts have been excavated from many Chinese sites over last thirty years or so. For example (1) accounts of divination and sacrifices to gods and ancestors (Baoshan, Wangshan, Tianxingguan); (2) “books of days” that allowed users to predict (in)auspicious days and times for a wide variety of activities (Jiudian, Shuihudi, Mawangdui); and astrocalendric tables and instruments. When we turn to the tombs of actual government administrators and high officials, what they chose to have buried with them was not (for the most part) the arguments of the Confucian classics, but these technical works on longevity and divination.

In summary, the Chinese and Greek debates about prediction and divination have very different flavors. Both disparaged their “inferior knowledge,” couching their arguments in the very different metaphysics of early Daoism and Platonism. Greek counterarguments were significantly and self-consciously skeptical, whereas skepticism is not a central argument in Chinese debates about divination. Ethics (social and religious), by contrast, was a significant factor in both Chinese and Greek debates, but in culturally very particular ways. Some Chinese ethical critiques considered divination a manifestation of acquisitiveness and inauthenticity; others rejected it as inferior to prediction based on moral character. Greek ethical debates focus on divination as a concomitant of determinism, and the perceived conflict between the key value of moral choice and the determinism implied in certain accounts of necessity and causality. The extremely elaborate and quasi-logical debate that ensued is peculiarly Greek, and goes hand in hand

68 See Marc Kalinowski, “Technical Traditions in Ancient China and Shushu Culture in Chinese Religion,” in *Religion and Chinese Society. Volume 1: Ancient and Medieval*, ed. John Lagerwey (Hong Kong: Chinese University Press, 2004), pp. 223–248.

with other features of Greek debate: proof, apodeixis, and quasi-legal modes of argumentation.

Despite these profound differences there are some similarities. Both traditions broadly held that valid and authentic divination: (1) is fundamentally the same as textual interpretation (in other words, that it is hermeneutic), (2) that it is a “right” reading of the text of the cosmos, or nature (in other words, that it is “correct” semiosis, however understood), and (3) that it arises from the sagacity, wisdom, insight, or more broadly the “virtue” of the diviner understood in terms that combine religious and philosophical values and perspectives.

5. Conclusions

It is apparent throughout that both Chinese and Greek justifications of medical and military prediction are embedded in authority claims by the technical experts who practised these arts. Nonetheless, we cannot dismiss their arguments as “mere rhetoric.” Their justifications of prediction were phrased primarily in pragmatic terms, but that is not to say that they had no ethical dimension. According to the *Sunzi*, the ethical status of a state and its general were predictors of victory. The descriptions of prognostication in Hippocratic texts and the case records of Chunyu Yi stress pragmatic considerations, but elsewhere we find glimpses of the ethical requirements of their arts: in the Hippocratic oath and in brief references to Chunyu’s long process of education. (He eventually becomes the student of a teacher who has no sons, who agrees to take him on, but who requires him to give up his previous methods.)

Debates about divination proceed along different lines. The distinguish between valid and authentic divination and its opposites. Nor were their accounts of divinatory hermeneutics value neutral. A “right” reading of the text of the cosmos, or of nature arises in some sense from the sagacity or virtue of the diviner.

In summary, I think we can argue that for the Greek and Chinese advocates of prediction, it was never understood to be value-neutral, and these attitudes contrast strongly with contemporary debates about prediction, which often struggle to reconcile normative and purely descriptive aspects of prediction.