CHINESE EIGHT SIGNS PREDICTION

Ontology, Knowledge, and Computation

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Abstract: How do ontological assumptions in divination shape the structure of the techniques and the way practitioners understand their capacity to know about human fate? In eight signs divination—a birthdate-based method used to predict the fate of an individual—human lives are said to be determined by Heaven, an infallible and impersonal force that regulates everything in the cosmos through the expansionary flow of correlative cosmology and *qi* transformations. Such ontological assumptions correspond to epistemological operations as can be seen in the concrete working of eight signs divination in Taiwan. Eight signs prediction relies on classificatory and reductive mathematical procedures—involving congruence and combinatorial calculations—to logically unfold a deterministic and cyclical cosmos.

Keywords: China, combinatorics, congruence, cosmology, divination, eight signs, fate-calculation, Taiwan

Drawing on this special issue's discussion of the relationship between the ontology and epistemology of divination, this article explores how ontological assumptions in divination shape the structure of practitioners' techniques and the way they understand their capacity to know human fate and build a discourse about it. In line with William Matthews's definition in the introduction, 'ontology' is understood here as a "conception of the fundamental categories of beings." As the purpose of divination is primarily to acquire knowledge about the world, the focus of practitioners is less on the ontological assumptions themselves—for instance, the different fundamental categories (humans, spirits, cosmic forces); their characteristics, and how they relate to each other—and more on how these ontological assumptions can translate into knowledge about the world and about human fate in particular. However,

while ontological conceptions shape the epistemology of divination, knowledge categories also inform, in turn, how people know about ontological categories. Conceiving explicit fundamental categories of beings does not mean knowing all their possible implications, for example, in distributing agency in the world. The difficulties that divination practitioners face when interpreting spirits' discourses (see Swancutt, this issue) or implementing sophisticated methods to decipher the cosmos (as in *Yijing*-based divination) show that it is rather the opposite. Such uncertainty and complexity raise various questions, such as the limits and even the very possibility of human knowledge about the world, the difficulty of communicating with other kinds of beings, limited cognitive ability to embrace the multiple variations of the cosmos, and potential discrepancies between expert and common understandings.

To explore the implications of ontological assumptions in divinatory practices, I put theoretical questions about the empirical obstacles and cognitive limits faced by divination practitioners in dialogue with ethnographic material on a Chinese fate-calculation technique known as 'eight signs' (*bazi*). Because they imply computation processes and/or the manipulation of some randomizing device, fate-calculation techniques in China are usually classified as 'mechanical divination'. The Chinese terms *suanming shu* (fate-figuring, fate-reckoning technique) or *shushu* (numbers and techniques) can be translated as divinatory 'arts', as they imply human-made technical knowledge. These methods derive knowledge about fate from a methodical and codified examination of the natural order and of its laws as defined by Chinese correlative cosmology. They differ from inspired divination, which implies explicit efforts to communicate with divinities or ancestors through specific mental states such as visions or possession. Following the focus of this issue on "forms of ontology" (Matthews, introduction), I refer in this article to two distinctions that do not overlap—between methods (mechanical or inspired) and underlying ontologies (calculatory or agentive). Thus, in the Chinese context, whereas fate-calculation is mechanical (method) and calculatory (underlying ontology), temple divination, which involves throwing a pair of wooden crescent-shaped blocks in front of a deity's altar, is mechanical and agentive, as the fall of the blocks is said to be caused by the deity.

Eight signs (*bazi*) horoscopy—a birthdate-based method that aims at predicting the fate of an individual—is one of the most widespread fate-prediction techniques in the Chinese world (including China, Taiwan, Singapore, and the Chinese diaspora). This method is based on a general conception of fate—that it is given by Heaven and depends on one's birthdate—and on the postulate of a cyclical cosmic dynamic whose regularity makes future events predictable. However, because of the multiplicity of parameters involved in this dynamic, its deciphering requires elaborate fate-calculation techniques. While its origins can be traced back at least to the Han dynasty (206 BC–AD 220), the technique

flourished starting in the Tang (618–907) and continuing through the Song (960–1279) dynasties. It developed into a sophisticated scholarly system of knowledge with complex sets of concepts and theories, reference works, and competing trends and schools (Chao 1946). A major occupation of the Confucian scholar-bureaucrats in Imperial China (Smith 1991), this knowledge lost its institutional foundations after the Revolution of 1911 when it was condemned as ‘superstition’. In the 1980s, the reform era in Mainland China and the lifting of martial law in Taiwan opened the way to a revival of mantic practices. They have now developed into a wide range of business activities and networks of knowledge transmission involving hundreds of thousands of professional and amateur practitioners.

My knowledge of this method and its practice draws from extensive fieldwork among practitioners of eight signs prediction and their clients between 2008 and 2013 in the Taipei region in Taiwan, and in Beijing and Kaifeng (Henan province) in Mainland China. Since then, I have worked with practitioners during regular field trips to Taipei. The last one in October 2019 was specifically dedicated to gathering new ethnographic material on the ontological assumptions of eight signs divination.

Core ontological assumptions implicit in eight signs divination refer to Heaven—the distant and overarching cosmic force that regulates and determines every human and non-human thing on earth—and to *qi*—the energy-substance that constitutes the cosmos in a constant flow of transformation according to the dual *yin* and *yang* and Five Phases principles. As different modalities of a unique *qi* principle, *yin*, *yang*, and the Five Phases (metal, wood, water, fire, and earth) interact in various combinations to produce all natural phenomena. In eight signs prediction, human destiny is said to be set by Heaven at birth when a person enters the cosmic flow and further develops according to the regular cosmological order of Chinese correlative cosmology. According to correlative cosmology, years, months, days, and two-hour periods are correlated with the Five Phases, which interact with each other through cycles of production and destruction. In eight signs horoscopy, a diviner builds the horoscope of a client by computing the salient correlates of the client’s date and time of birth. Based on the Five Phases principles, the diviner analyzes the interactions between the different components of the horoscope to assess auspicious and inauspicious time periods, places, and relationships.

Matthews (2017) characterizes Chinese ontology as ‘homological’ to emphasize that all phenomena are considered to be the product of a common substance stemming from a single origin (*qi*). Epistemologically, this implies that resemblances between different phenomena are understood as indicating a common underlying principle. This stands in opposition to an analogical mode of identification, which, as described by Philippe Descola (2013), is characterized by the discontinuity of physicality and interiority. Whereas in analogism

similarities are considered to be imposed by an observer, with knowledge being built through juxtaposition, in homologism similarities are understood as shared constitutive characteristics deriving from a common origin. Thus, when assessing the fate of a particular individual, a major concern for diviners is to understand and analyze the differentiation process through which one single principle transforms into myriad things. To meet this challenge, horoscopic systems such as eight signs horoscopy rely on sophisticated taxonomies and categories of knowledge of various natures and scales in order to discriminate between cases. Based on an analysis of technical operations, I explore how ontological conceptions about a deterministic Heaven and the differentiation process of one principle into a myriad of individuals shape practitioners' discourse on fate and on the predictive power of eight signs horoscopy. I examine how practitioners inquire about similarities and differences between individuals, how they deal with them, and the kind of discourses they build around them.

When building taxonomies of fate, practitioners are confronted with many questions: How many birthdates are there? What do people born at the same time have in common? How many categories are needed and can be handled when building a discourse on individual fates? When answering these questions, do practitioners, as well as non-specialists, all agree on a common interpretation? As developed by Matthews (introduction, 2021), ontology is not something that can (really help) explain how divination works but rather something that practitioners need to explain, work out, and elucidate when crafting divinatory discourses. Such ontological elaborations take place when discussing technical controversies among specialists who consider fate-calculation as an ever-changing field of knowledge, during consultations when answering clients' questions, or when facing skepticism and accusations of superstition.

Exploring how ontological assumptions correspond to epistemological operations, I focus on the kind of calculations that 'calculatory divination' refers to and on their role in building knowledge about fate. The epistemological workings of eight signs prediction can be seen concretely through the game-like structure of the horoscope computations and the mathematical operations—in particular congruence and combinatorial calculations—that are used to build knowledge categories and overcome cognitive limitation.

Thus, the example of eight signs divination shows how epistemological questions about how knowledge on human fate is possible are shaped by ontological assumptions concerning the nature of human fate. However, while ontological categories impact knowledge categories, knowledge categories, in turn, inform how people know about ontological categories. Thus, we have a 'chicken and egg' question (see also Swancutt, this issue): divinatory techniques rely on pre-existing ontological categories to create knowledge about fate, yet through their operations of classification, the same divinatory techniques also build humans' experience of ontological categories.

The Epistemology of Eight Signs Divination

Among the many schools of horoscopy that thrived during the revival of mantic arts starting in the 1980s, the following developments draw from the theories and discourses of the Modern School of horoscopy in Taiwan, which represents the most widely acknowledged trend among practitioners and clients. Mainly drawing on long-term fieldwork with a practitioner from Taipei, Ruli Jushi (1945–), my data derive from discussions with him, observations of consultations and teaching sessions, and analyses of his books, writings, and teaching materials. His views reflect the line of a reputed practitioner, Liaowu Jushi (1947–), who is considered the founding father of the Modern School of horoscopy in Taiwan.

While practitioners usually do not elaborate extensively on the ontological premises of horoscopy—such as which entity exactly determines fate in general—they provide very articulate discourses regarding its epistemology, that is, on how to gain knowledge about an individual's fate. The epistemology underlying eight signs horoscopy contains experimental, probabilistic, and religious elements, although the last aspect might be denied by practitioners. We can observe these three elements in a statement of Ruli Jushi about the origins of horoscopy: “Over hundreds and thousands of years, the founding fathers of horoscopy have come to notice [experimental, based on observation] that most people who were born at the same time [probabilistic] had similar fates or life-courses [as fixed by Heaven]; they have tried to codify this knowledge to give access to Heaven's will [religious].” Horoscopy is based on a cumulative form of knowledge grounded in concrete practice that is still taking place today. Diviners keep a record of all the horoscopes they calculate so that they can note afterward if their predictions did or did not come true and improve their interpretation accordingly.

Horoscopy relies on observation, the development of a rational theory, and its verification in experimentation: “Observations accumulated by our elders made it possible to identify and classify [*leibie*] different kinds of fate. The interpretation of the horoscope is therefore a product of statistics that makes it possible to model [*suzao*] the moral qualities, the value system, the way of thinking and behaving that will dominate a person's life” (Ruli Jushi 2003: 160). Observations of similarities and differences in life development among people depending on their birthdate are the basis for defining categories of fate. Framing his discourse in the vocabulary of probability, Ruli Jushi explains that these categories are based on statistics: “Eight signs divination is a man-made advanced statistic, so it is based on the compilation of categories according to various criteria which determine various profiles of fate” (*ibid.*). Practitioners build a discourse on a particular individual's fate by linking it to a statistical category. Consequently, the nature of divinatory truth is not divine and absolute

but human and statistical. This fact is very often acknowledged by practitioners: they may be wrong in 10 or 20 percent of cases, but when a great number of horoscopes is considered, divinatory analysis reflects reality accurately. Despite a broad consensus on the experimental basis of eight signs prediction, many other aspects are subject to interpretation, uncertainty, and disagreement. For instance, practitioners in Taipei gave widely different answers when I asked whether non-humans also have eight signs. Faced with contradictory assertions from various informants and sources—with some claiming that only humans have eight signs and others asserting that animals, organizations, and buildings also do—I had no reason to privilege one understanding over another and limited my research to the computation and interpretation of human fates.

While such divergences point at the variability of reflective explanations of the cosmos in Chinese divination, practitioners all agree on the specificities of different techniques. Contrary to fate-calculation, *Yijing*-based divination aims at answering punctual questions regarding any kind of beings and things. Whereas in fate-calculation, a single configuration (such as the birthdate-based eight signs) is said to encompass the whole life of an individual, *Yijing*-based divination derives knowledge from analysis of a punctual situation that involves all the elements—human and non-human—constitutive of that situation.

Cosmic Agent and Game-Like Divination

Although eight signs practitioners are not interested in discussing the ontological fundamentals of their practice, they do share some core assumptions about the kind of beings or authorities presiding over human fates. Sociologist C. K. Yang (1967) describes the belief in fate as a major component of ‘diffuse religion’ in China.¹ When asked, horoscopy practitioners refer explicitly to Heaven (*Tian*) as the impersonal entity presiding over cosmic order, but they are generally reluctant to elaborate further on the ontological and cosmological characteristics of Heaven. In general, horoscopy theories do not bother about the causes or origins of human determinism; rather, they focus on what such determinism means in the life of an individual. This contrasts with practitioners of *Yijing*-based divination, such as six lines prediction (see Matthews, this issue), who rely extensively on the original cosmic principle *qi* to explain the structure and dynamic of the cosmos. In opposition to the conception of a uniform ‘deep ontology’ (Holbraad and Pedersen 2017), such variation within the Chinese context shows how divergent analyses can cohabitate within a single—although multi-form—tradition. The absence of uniform and standardized ontological assumptions among the specialists (let alone clients) of one singular divination system can warn against over-reliance on ontology as an analytical means to study divination (Zeitlyn, this issue).

However, in the case of Chinese fate-calculation, ontology-oriented concepts such as calculatory divination are relevant for understanding the discursive and technical processes through which a divinatory truth or diagnosis is built. In calculatory divination, the mechanical order of the cosmos cannot yield false results, and mistakes are, as Matthews puts it in the introduction, “the preserve of the diviner.” Through their probabilistic understanding, eight signs diviners explicitly acknowledge the fallibility of humans when deciphering the cosmos, recognizing that they may be wrong in some cases. Their understanding in terms of statistical probabilities is the epistemological manifestation of ontological assumptions about an infallible source of cosmic order.

There is also a close link between the conception of an infallible and superior entity such as Heaven and the game-like structure of calculatory divination. This structure refers to the physical manipulation of objects (such as drawing coins in six lines prediction) or the abstract manipulation of symbols (such as computing a horoscope, as we shall see below). Such manipulations create a framework separate from ordinary reality, which presupposes an external entity—Heaven—from which the result of the drawing or computing (the good or bad configuration) is expected to have an auspicious or inauspicious effect in reality, that is, outside the framework of the horoscope (Hamayon 2016). In other words, the very action of manipulating objects or symbols and expecting a result (i.e., a particular configuration) conjures up an agent that is held responsible for the configuration obtained. Along the lines of the chicken and egg question, which comes first—explicit assumptions about Heaven or human-made selections? Heaven is equally held responsible for the horoscope as made present by and experienced through human-made computations of the horoscope itself. In this sense, human understanding of the cosmos takes the concrete form of configurations of manipulated objects or symbols.

Another characteristic of the game-like structure of calculatory divination is that the configurations are produced through mechanical combinatorial procedures involving random mechanisms. The combination of mechanical computation and contingency forms the operational basis of the ‘ostensive detachment’ of practitioners of divination described by Pascal Boyer (2020). When performing computations, Chinese specialists of horoscopy, physiognomy, geomancy, or *Yijing*-based divination make it clear that they do not personally interfere with the result. This shows that in calculatory divination, humans can have access to an impersonal and infallible agent such as Heaven through similarly impersonal and infallible (i.e., mathematical) ways that exclude the idiosyncrasy of the diviner. The moral personality and technical skills of the diviner affect only the probabilistic degree of accuracy that can be reached during the consultation. The 10 to 20 percent margin of error acknowledged by practitioners originates in computational errors or an incorrect interpretation of the configuration by the diviner.

The game-like structure of calculatory divination shows that practitioners rely on the manipulation of objects or symbols in order to access Heaven's workings. I will now explore how the mathematical properties attached to these manipulations concretely build taxonomies of fates.

Birthdates and Congruence

If horoscopy assumes that Heaven has fixed a determined life-course for everybody at birth, it also implies that life-courses differ from one another. How can humans know about these differences? How do horoscopy specialists proceed to discriminate between individuals and build differential discourses on human fates? The successive steps in the construction of the horoscope show how practitioners concretely classify individuals into different categories of fate. As mentioned, eight signs prediction allows them to analyze the fate/life span of a person based on her/his birthdate. Although there is a distant idea that heavenly bodies (stars and planets) influence human destiny, Chinese horoscopy utilizes the Chinese calendar system and the cosmological doctrine of *yin*, *yang*, and the Five Phases. Classified as calendar horoscopy rather than astrology, it is based on the construction and interpretation of a birth chart using the calendar components of the birthdate, rather than the positions of stellar bodies at the time of birth.

The first step in the construction of the birth chart consists in converting the four components of the petitioner's birthdate, which is usually given by the client according to the Gregorian calendar (or the Republican calendar starting in 1911 in Taiwan), into the Chinese traditional luni-solar calendar² and the sexagenary cycle. The sexagenary cycle is a cyclic representation of time based on the combination of two series, the ten heavenly stems—*jia*, *yi*, *bing*, *ding*, *wu*, *ji*, *geng*, *xin*, *ren*, *gui*—and the 12 earthly branches—*zi*, *chou*, *yin*, *mao*, *chen*, *si*, *wu*, *wei*, *shen*, *you*, *xu*, *hai*. The first element of the first series is associated with the first element of the second series, starting with the stem-branch pair *jiazi*₁, then *yichou*₂, *bingyin*₃, and so forth. Given the discrepancy of two elements between the two series, six series of 10 are required to reach the first element *jiazi*₁ again and start a new cycle. Each unit of time (year, month, day, hour) of the birthdate is expressed by a stem-branch pair, and these pairs constitute the eight signs that name this technique. In practice, diviners look up these signs in a 'perpetual calendar' (*wannianli*) that lists correspondences between Gregorian dates, luni-solar dates, and sexagenary cycles.

This date conversion is a basic operation common to many practices based on Chinese cosmology. Both practitioners and their clients consider it a well-known, quick, and almost insignificant step. However, I would like to show how this conversion constitutes a first operation of classification. Intuitively, it can be understood as a transition from a potentially infinite number of birthdates

(hours, days, and months are cyclical in the Gregorian calendar, but the number of possible birth years is infinite) to a finite number of birthdates (in the sexagenary cycle, the number of birth years is limited to 60). In Chinese calendar science, this operation marks the passage from a linear conception of time to a cyclical one, which corresponds to two different aspects of the Chinese calendar: the ‘deep structure’ (relating to a common origin, the ‘era’, which refers to linear time in a way similar to the Gregorian calendar) and the ‘surface structure’ (the sexagenary cycle) (Martzloff 2009). The passage from the deep structure to the surface structure is made through ‘modulo’ 60 reductions. Modular reduction refers to mathematical congruence, an arithmetic notion that establishes equivalences between certain numbers in modular or cyclical contexts. Congruence operations are defined by three elements: the number, the module, and the remainder. For example, 18 and 23 are said to be ‘congruent modulo five’—noted $18 \equiv 23 \pmod{5}$ —because their division by five gives the same remainder of three. In everyday life, we are familiar with the modulo 12 clock notation where 14:00 can also be referred as two o’clock. As the congruence operation makes some numbers equivalent to others, it divides numbers into categories or ‘classes of numbers’. The module or divisor determines the number of categories. In the eight signs method, the congruence properties of the birthdate conversion make this operation a classification process.

Scholars focusing on the ethnomathematics of divination have shown how mechanical divination in various cultures involves modular counting-out processes (of objects, numbers, words) in a cyclic structure (Ascher 2002; Chemillier et al. 2007) that produce remainders as a final result (Homola 2018). Struck by these similarities, Marcia Ascher (2002: 5) has proposed a general definition of divination centered on counting-out procedures: a decision-making process using a random mechanism that involves the manipulation of objects and generates a finite set of distinct results. In mechanical divination, the mathematical properties of congruence contribute to a twofold cognitive and social process of decision making: categorizing reality into a finite repertoire of cases or situations—the set of mantic configurations as a repository of patterns—and selecting an appropriate response for action through pattern recognition (Feuchtwang, this issue). This process defines statutory categories to assess situations, such as the 64 hexagrams in *Yijing*-based divination, 256 mantic configurations in Ifá divination and Caroline Islands knot-divination (Ascher 2002), and 65,536 tables in Sikidy divination (Chemillier et al. 2007). Through processes of counting-out and reduction in cyclical structures, mantic configurations are built as norms of fate/situation analysis and decision making.

In terms of ontology, the birthdate conversion in eight signs horoscopy highlights one aspect of the calculation that calculatory divination refers to. Congruence computations are instrumental in defining and constructing a cosmic index as a reference framework from which knowledge of the cosmos can be

derived. In this sense, the cyclical nature of the cosmos is a decisive characteristic that has a direct influence on the epistemology of predictive practices. It enables the mathematical (as opposed to a subjective man-made) definition of indexical referents as knowledge categories.

A well-known component of Chinese folklore in China and across the world, the Chinese zodiac provides a striking example of congruence phenomena as a classification process, while raising the question of scale variations in knowledge categories. One major feature of congruence is that the choice of the divisor or module defines the range of values taken by the remainder and, consequently, the number of categories. This allows choosing different scales of classification (or ranges of mantic configurations) that, in turn, determine different levels of complexity in fate analysis. As mentioned, the combination of stems and branches in the Chinese calendar defines a 60-year cycle. This cycle corresponds to the level of complexity reached by professional eight signs diviners who take into account the variety of the 60 birth years in their analysis. However, a shorter cycle, relying on the parameter of the 12 branches alone, defines a shorter cycle of 12 years. This cycle determines the well-known Chinese zodiacal signs, with each of the 12 branches corresponding to one of the twelve animals. The Chinese zodiac provides a typology of people who fall into one of the 12 categories according to their birth year. In comparison with eight signs divination, the Chinese zodiac constitutes a simplified classification of birthdates. It can be easily handled and memorized, which can explain its success among the general public. Professional diviners scorn such simplification, which, according to them, cannot account for the complexity of reality. As Ruli Jushi (2003) puts it: “It is nonsense to derive someone’s fate from his/her zodiacal sign; how could every twelfth person possibly have the same fate?” If zodiac signs are not considered an appropriate category to explore the nature of human fate, how do eight signs practitioners assess and process the right scale of knowledge?

Combinatorics and Categories of Fate

If the first step in the horoscope computation—the date conversion—implies a categorization of birthdates, further computations process categories of birthdates into categories of fates. After the eight signs have been determined, the second step consists in dividing the client’s life span into (usually eight) ten-year periods, called ‘great fate’ (*dayun*), each of which corresponds to a stem-branch pair. The first ten-year period does not automatically start at birth and is calculated according to the client’s birthday and gender, determining, for instance, that a young girl will ‘enter fate’ (*shangyun*) at seven years of age. A consequent interpretation is that a child does not own a personal fate until he/she enters his/her first fate period. We can derive that, from a cosmological

perspective, very young people have an undetermined status, which makes them vulnerable to evil influences and in need of special care and protection. Although children own eight signs, they have not yet entered the cosmic flow, which makes knowledge about their fate impossible. When asked about what seems to be, at first, a technical sophistication, Ruli Jushi explained that the ancients designed it to account for the frequent death of infants in older times. Thus, the high mortality rate among infants was not attributed to Heaven but to evil spirits. This discrepancy between the time of birth and the time of ‘entering fate’ is also the basis for a ritual called ‘correcting fate’ (*gaiyun*) (Berthier 1987). Combining agentive and calculatory divination to cope with both evil spirits and the Heavenly cosmic order, it involves re-enacting and changing the time when a person enters fate so that his/her entire subsequent life can be changed in hopes of a better fate.

The horoscope’s eight signs and ‘great fate’ are technical translations of the general concept of fate. In modern Chinese, fate is called *mingyun* and is composed of two elements. *Ming* (command, allotment) is the fixed part of fate. Determined at birth, it is represented by the eight signs in the horoscope. It gives a person her identity and corresponds to deep constants that pertain to her whole life, such as her character or intellectual ability. It also determines a person’s life span. The second element, *yun*, which is represented by the ‘great fate’ ten-year periods, means movement, fortune, and luck, and stands for the moving part of fate. While it is also determined at birth, it is moving in the sense that it represents the good or bad configurations that arise when the *ming* is confronted with changing external circumstances, such as time, space, and social interactions. Thus, positive or negative conjunctions of *ming* and *yun* account for alternating periods of success and failure in human existence. Eight signs divination helps identify these conjunctions, making the most of positive ones and compensating for negative ones. Because the calendar and Chinese cosmological concepts follow cyclical rules, once the entry point of a person’s fate is known, the subsequent evolutions of fate can be derived mechanically.³ The intrinsic stable order of the cosmos is reflected in the construction of the horoscope through a mechanical process, which explains why this step can also be performed through computer software.

After calculating the ‘great fate’ periods, reading the horoscope consists in analyzing the relationships between the different stems and branches that compose it. To help assess and discriminate between many possible outcomes, horoscopy theories define three main types of horoscope configurations (*geju*)—common, special, and unopposed—according to the types and numbers of relationships between the stems and branches in the horoscope. Each stem and branch is correlated with one of the Five Phases that form the basis for assessing the relationship. Compared with the classification of birthdates mentioned earlier, this step relies on another kind of calculation to define categories

of fates. It does not feature congruence operations but rather combinatorial computations, which comprehensively relate a limited number of parameters according to fixed rules. The Five Phases (metal, wood, water, fire, and earth) relate to each other according to two sequences known as ‘production’ and ‘conquest’.⁴ These rules determine five possible dyadic relationships between the phases: the two phases are identical; one phase produces the other; one phase conquers the other; one phase is produced by the other; or one phase is conquered by the other. Further combined with a *yin/yang* distinction, the computation determines 10 possible relationships between the stems and branches. For instance, a horoscope displaying at least one relationship labeled ‘is conquered by’ is categorized as a ‘special configuration’. This configuration denotes a high potential that can develop into either success or failure. Along with congruence, combinatorics appears as one of the mathematical operations that calculatory divination implements to decipher a deterministic cosmos.

Eight signs configurations define typologies of fate in which people are classified depending on their birthdates and which, in turn, define taxonomies of personal characters and areas of success and failure. Because ‘common’ configurations are defined by default, horoscope configurations are meant to account for all cases. The three main configurations also divide into sub-categories to further distinguish between cases. This classification process is reflected in the technical vocabulary used in theoretical works and during consultations: configuration (*geju*), category (*leibie*), type (*leixing*), discriminate (*panbie*). One of the major contributions of the Modern School of horoscopy was to establish standard rules of interpretation to provide an organized and systematized body of knowledge. Whereas previous theories multiplied categories of horoscopes, the Modern School followed logical rules to subsume particular cases under general categories and build a logical hierarchy of categories of fate.

Same Horoscope, Same Fate?

In the procedure described above, categories of birthdates are determined through calendrical congruence operations and then aggregated into categories of fate through combinatorial operations. What does it mean to belong to a given category? Is there a connection between people who share the same category of fate, or between people who share horoscopes beyond time (i.e., across cycles)? What about people who have the same eight signs as Confucius or Mao Zedong? I confronted horoscopy practitioners with these questions and recorded their reactions and explanations. This included discussions with my main informant, Ruli Jushi, and with a group of diviners from Taipei who, at some point in their training, had all been students of Xiaoxiang Jushi, the late

master of physiognomy. Because they were proficient in a variety of mantic techniques and came from various backgrounds and lines of transmission, I was able to collect a wide range of opinions.

The practitioners all referred to a major issue that has been raised by generations of horoscopy specialists: the limited number of horoscopes means that many people share the same horoscope. Practitioners from all times have reflected on how to evaluate the total number of horoscopes (i.e., the number of all possible birthdates in the sexagenary cycle) and how to account for people who share the same horoscope. This theoretical question of horoscope duplication is known among specialists as the *gongpan* (common horoscope) issue. For instance, Song scholar Wen Tianxiang (1236–1283) counted 518,400 possibilities of horoscopic combinations (Wen 1967).⁵ Considering an average birth every (double) hour and distributing the current living population over one hundred years, he estimated that only 4/6 possible horoscope combinations would appear.⁶ With a population estimate between 14 and 18 million, there would be between around 32 and 42 people in the ‘state’ (*zhou*) with the same combination, which led him to conclude the existence of horoscopic duplicates.

More recently, Ruli Jushi (2003) calculated 254,880 horoscope configurations: 60 (years) x 12 (months) x 29.5 (average number of days in a month) x 12 (hours). In Taiwan, populated by 23 million people, one person has on average the same horoscope as 90 other persons ($23,000,000/254,880 = 90.23$). When I questioned Ruli Jushi precisely on this calculation, he provided another result after a few days of reflection. Because the cycle fully repeats over 120 years and not over 60 years, he explained, there are $254,880 \times 2 = 509,760$ combinations, meaning that an average of 45 people in Taiwan share the same horoscope.⁷

Calculating the number of eight signs combinations is indeed far from an easy task, and I have found no consensus among specialists. Andrea Bréard (2012) has shown how, in the history of mathematics in China, divination constituted an impetus and a paradigmatic model of combinatorial problems (i.e., determining the number of combinations, permutations, and possible outcomes of drawings). Moreover, the calculations described above are theoretical computations that do not take into account the irregularities of the traditional calendar such as leap months and alternating between 29- and 30-day months. Bréard estimates that calculating the exact number of combinations would require a modular arithmetic model including diophantine equations (pers. comm.). Moreover, even though the number of combinations can be known, it is very difficult to identify when identical combinations return in different cycles because of the irregularity of the calendar.

By calculating eight signs combinations, Wen Tianxiang in the thirteenth century and Ruli Jushi in the twenty-first century strove to confront the theoretical model with reality and to assess its degree of accuracy. When doing so, Wen and my very diverse informants reached a rare unanimity that is key to

our ontological and epistemological concerns: they all agree that although some people in a society share the same horoscope, their fate is never identical. To account for shared horoscopes, the Modern School of horoscopy has developed the theory of the ‘great and small environments’, which is largely accepted among specialists and the general public in Taiwan. Inspired by the early skeptical approach of Han philosopher Wang Chong (27–97?) and first enunciated by Liaowu Jushi, this theory emphasizes the importance of the external environment while setting limits to the predictive power of fate analysis. According to this theory, three major factors influence a person’s fate. The first is the ‘great environment’ (*da huanjing*), which refers to the country in which the person was born: its culture, political system, and level of economic and social development. The second factor is the ‘small environment’ (*xiao huanjing*), which represents the environment in which the person was born: the social status of the family, the level of education, the influence of friends and teachers, and so forth. The third factor relates to the good and bad aspects of the horoscope: the temperament and aspirations of the person as expressed in the *ming* and the vicissitudes of the *yun*. Thus, two people born at the same time will have very different fates if one was born into a poor peasant family in Central Taiwan and the other into a family of the Taipei upper middle class. Practitioners insist that, in the practical context of the consultation, no interpretation is ever identical to another. Even if two clients have the same horoscope, the great and small environments are also taken into account in the analysis and lead to different interpretations.

Scales and Cognitive Limitation

While practitioners develop explicit discourses to account for the uniqueness of everyone’s fate, their views are not unproblematic when considering the probabilistic epistemological basis of eight signs divination. As Ruli Jushi explained earlier: “The founding fathers of horoscopy have come to notice that most people who were born at the same time had similar fates or life-courses.” However, it seems that shared horoscopes are viewed by specialists as a challenge rather than an experimental foundation, and also allow for opponents to critique horoscopes as superstitions. How can one explain that people who have the same horoscope obviously do not have the exact same fate? Practitioners underline that the main purpose of eight signs divination—in opposition with its probabilistic foundation—is to explain differences rather than similarities. Why do people who are perceived to share some common ground (former classmates, brothers and sisters, colleagues) have divergent fates? How can it be explained that among two artist friends only one meets with success? The difficulty of identifying when identical calendar combinations return may also explain why practitioners do not seem to care about shared horoscopes across 60-year cycles,

for it is very rare to find two identical horoscopes of people who were not born at the same time. Although horoscopy scholars have always been interested in analyzing the fate of historical characters (Yuan Shushan 1940), studies focusing on a comparison of shared horoscopes across time never developed.

Practitioners and horoscopic theorists seem to struggle between two opposite tendencies: to find similarities within a range of differences (probabilistic discourse) or to explain differences within similarities (discourse on shared horoscopes). An underlying question is whether the limited number of horoscopes means a limited variety of fates, or whether it is a last resort that imperfectly accounts for the unlimited variety of human lives. I interpret this tension as a struggle to reconcile ontological assumptions—a conception of cosmic forces that determine human lives in specific (correlative) ways—and practical epistemological concerns—how one can know about human lives, given how they are determined. From an ontological perspective, a single principle—*qi*—develops into ‘10,000 things’ (a conventional phrase to designate the diversity of things in the world as various expressions of the same *qi*) by virtue of the generative dynamic of Chinese correlative cosmology. A few cosmic laws combined with a few parameters develop exponentially into myriad configurations that account for the specificity of individuals’ lives (Stafford 2009: 118). From an epistemological perspective, practitioners are confronted with a great number of human lives and have developed experimental ways to make sense of them. Reversing the centripetal and expansionary ontological dynamic of the cosmos, the epistemology of eight signs divination features centrifugal movements based on mathematical reduction. First, congruence properties allow for reducing a myriad of human birthdates to around 500,000 configurations. However, even if the number of horoscopes is limited, their variety is such that it is impossible to have a single interpretation for each of them: the set of mantric configurations still exceeds human cognitive capacities. Thus, a second step involving combinatorics scales down the number of horoscope configurations to a dozen categories. These are the knowledge categories that form the basis of practitioners’ elaborations on individual fates.

When explaining their findings, practitioners are clear about the limitation of eight signs divination as a human and artificial knowledge. This is manifested, for instance, in the complementarity between various fate-prediction techniques as expressed by Zhang Zhirong, a specialist in eight signs divination and physiognomy from the group of Taipei practitioners introduced above: “Fate-prediction is not omnipotent. You will not know 100 percent. If human beings really have a destiny, I do not think that eight signs can represent everything of a person. In fact, it is affected by more factors. For example, eight signs accounts for 30 percent of a person’s destiny, personality for 30 percent, *fengshui* for 30 percent, and there are many other factors, such as ‘name studies’. But in fact, complete fate-prediction is impossible” (pers. comm.).

Among other empirical observations, shared horoscopes further point at the limited explanatory power of horoscope configurations as knowledge categories. To cope with such limitation, practitioners developed the theory of the great and small environments. Although the great and small environments are part of the cosmos at large, they cannot be read in horoscopes and can be known only through interaction with clients. As Ruli Jushi expressed it: “Although many people were born at the same time as Mao Zedong, there is only one Mao Zedong.” Thus, a final re-diversification movement takes place at the level of practice during the interpretation process, coming full circle with the initial myriad of *qi* configurations.

The tension between expansion and reduction movements raises the question of scale and cognition in predictive practices. The example of eight signs divination shows that calculatory predictive techniques must reach a pivotal point in their scale of representation and analysis of the cosmos. Some diversity is necessary to account for the diversity of beings. Relying solely on the 12 zodiac signs to build a discourse on a person’s fate is oversimplified. Thus, practitioners oppose the contingent practical use of divination by the Chinese public, showing that practitioners and clients may have different views (Zeitlyn, this issue). The 500,000 or so horoscopes represent a far richer basis for structuring the world, but they also exceed the limit of human cognition, thus requiring subsuming particular cases into broader categories.

In China and elsewhere, a constant response of predictive practices to such epistemological challenges is to vary the scale and perspective of analysis. As noted by Matthews (2017: 282), “replication of structures and processes across scales is a function of homologous configurations of cosmic principles,” which allows practitioners to use various sets of mantic configurations as complementary classifications. Thus, in Chinese calculatory divination, sets of mantic figures range from 64 in *Yijing*-based divination, 720 in *liuren* horoscopy, and 4,096 in six lines prediction to more than 500,000 in eight signs horoscopy. The combinatorial nature of these techniques means that each of them, regardless of the scale, encompasses the cosmic order as a whole. As shown earlier, the ability of calculatory divination to change scale is closely linked to the congruence properties of technical operations. The scale of analysis—that is, the set of configurations—is defined by the type of computation and the number of computed objects or symbols.

Conclusion

How do ontological premises and conceptions about the cosmos affect the way that humans can or cannot know about it? The case of eight signs divination shows that ontological discourses about a distant and deterministic Heaven

shape both practitioners' epistemological discourses on humans' empirical and imperfect knowledge of the cosmos and the underlying game-like structure of the technique. Human lives are determined by Heaven, an infallible and deterministic force that regulates everyone's position and movement in the cosmos through the expansionary flow of correlative cosmology and *qi* transformations. In such an ontological context—with its characteristics of determinacy, circularity, and expansion—predictive practices operate through congruence and mathematical reduction. Eight signs divination is a type of what we call calculatory divination in this special issue: cosmic data (e.g., the birthdates of individuals) are processed through mathematical operations that have specific classificatory properties.

Faced with myriad possible birthdates, eight signs horoscopy first defines a finite set of possible horoscopes through game-like manipulations of cosmological symbols involving congruence properties. The number of possible horoscopes, which still exceeds human cognitive abilities, is further scaled down into categories of fate through combinatorial operations. This second step implies the ability of humans not only to classify human fates, but to know about them and be able to build a discourse on a given individual. Predictive practices circumvent humans' limited ability to grasp the diversity of the cosmos and interpret it by limiting the framework of reference of cosmic configurations (to 64, 720, or 500,000) and by placing categories in broader groups. The notion of framework of reference is key to understanding the ability of Chinese calculatory divination to know about the cosmos. Various predictive techniques build various frameworks of reference, but because the cosmos is one and whole, a single configuration set through any of these techniques can still be interpreted as one unique configuration of *qi*. One particular divinatory configuration shows the cosmic configuration when it was computed, be it associated with one of the 64 hexagrams or with one of the 509,760 eight signs configurations.

Although the cosmos is one and whole, human knowledge is fragmented along various sets of mantic configurations. The cosmos can therefore be known through the combination of various techniques that all follow the same deterministic (i.e., mathematical) logics set by the fundamental ontological characteristics of the cosmos. The fact that there is no fixed scale of analysis also shows how a given cosmic configuration has no concrete definition outside divinatory configurations. Mantic configurations are the expression, at a human cognitive level, of ontological assumptions about a cosmos that cannot be known otherwise.

While humans are continuously affected by the ever-changing flow of *qi*, the only way for them to name these configurations of *qi* and to know about their particulars is through divination. Divinatory configurations not only materialize cosmic configurations, but also shape the form that the cosmos takes for human understanding, be it six lines piled on each other in a hexagram configuration

or four columns of two signs in an eight signs configuration. In this sense, the ontology and epistemology of predictive practices are closely intertwined, and it seems legitimate to assert that predictive practices shape ontological classifications through the process of knowing about them. Thus, ontological assumptions and knowledge tools are not distinguished in colloquial language: ‘having good eight signs’ is used as a synonym for ‘having a good fate’.

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Notes

1. Yang (1967) distinguishes Chinese ‘diffuse religion’, whose ancestral and deities’ cults are performed by families and members of local communities, from ‘institutionalized religions’ such as Confucianism, Buddhism, and Taoism, whose clergy is separated from believers. Because divinatory practices were labeled as superstitions at the beginning of the twentieth century, in opposition to state-sanctioned religions, many practitioners deny any connection between religion and horoscopy and instead refer to science or psychology as a legitimizing knowledge category.
2. The traditional Chinese calendar is a combination of a solar calendar and a lunar calendar that are synchronized episodically through the addition of a leap lunar month. The 12 lunar months are numbered from 1 to 12 and the

days from 1 to 29 or 30. The hours, which are double compared to ours, are numbered from 1 to 12.

3. The issue of determinism in the Chinese conception of fate has been much debated (Harrell 1987; Sangren 2012). Although various theoretical schools have developed over time, the general opinion is that fate can be slightly changed through a combination of moral efforts and adaptation based on knowledge derived from fate-calculation.
4. In the production sequence, metal produces water, water produces wood, wood produces fire, fire produces earth, and earth produces metal. In the conquest sequence, metal conquers wood, wood conquers earth, earth conquers water, water conquers fire, and fire conquers metal.
5. The figure is reached by multiplying 60 (years) by 12 (months) by 60 (days) by 12 (hours). According to Andrea Bréard (pers. comm.), Wen Tianxiang should have used 30 for the number of days since in a given month there are only 30 possible combinations of the sexagenary cycle for a day. Wen adds that the 518,400 possibilities are distributed over a period of 120 years because the same combination is repeated every 120 years and not every 60 years, although his reasons for thinking so are not clear. I thank Andrea Bréard for sharing her insight into these complex issues.
6. According to Bréard, it is difficult to understand how he came to this result because $100/120 = 5/6 = 0.8333$.
7. Interestingly, while doing different calculations (both inaccurate, according to Bréard), Wen Tianxiang and Ruli Jushi end with similar results—around 500,000 possible horoscopes.

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