

The sky as a social field

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Abstract. Like other features of the surrounding world, objects and events perceived in the sky were used to mediate between humans and specific meanings acquired in relation to them. Celestial bodies were often believed to act like human agents. In this way the skies became part of the social field of human beings—a heterogeneous space in which all important types of relationships could happen. For this reason, the study of the role celestial lore and skywatching played in human populations is a task appropriate to cultural astronomers rather than to astrophysicists or historians of science.

Keywords. cultural astronomy, social field, theory of practice, Bourdieu

1. Introduction

The sky is an aspect of the physical universe which is universally perceived by all humans, although comprehended and structured in different ways. Over the millennia all human populations have lived under the celestial vault and have considered the sky to be a part of the milieu in which they dwelled. Through their daily activities and engagements with their environment, they ascribed values and significance to the sky, transforming physical space into a conceptualization full of meaning. Observable patterns found among the positions of astronomical objects and the empty spaces between them, as well as within the recurrent motions of astronomical objects, served to embody fundamental organizing principles defining the form and structure of people’s activities. Celestial bodies and phenomena were mentioned in myths and songs, depicted in art, and manipulated as meaningful symbols in rituals and beliefs. For that reason it is possible to say that the sky represents the way in which human populations defined themselves and their surrounding world. Concepts of the sky are culturally specific because the principles generating celestial knowledge are not situated in the disinterested world of modern astronomers, but remain embedded in the social world of skywatchers.

It is natural to attempt to describe non-Western types of celestial lore in terms of modern theoretical astronomy, as we need to render them in relation to our modern understanding of the universe. The problem is that of translation: in order to adequately evaluate non-Western celestial lore we need to describe it in terms that are understandable to us. Thus we tend to assume that astronomically significant phenomena such as solstices or lunistics were targets for architectural alignments or that concepts such as equinoxes or planetary conjunctions were employed to explain what happened in the skies. As a result of this approach, the analytical procedure is predetermined by a set of astronomically delineated concepts, and we see how individuals, groups, and social institutions behave within the bounds of astronomically delineated parameters. However, this is only one side of the story. Prior to the adoption of the astronomical construct of the sky, conceived as a physical space separated from the daily affairs of human life and interpreted in rational, consistent and self-contained terms, there was a widespread belief in the conceptual unity of the world according to which people defined themselves in part

through their daily engagements with their celestial surroundings (Iwaniszewski 2011). Because coherent collective representations of the sky only arose in the light of their implicit relationships with the diverse spheres of social life, they cannot be singled out and treated as non-modern equivalents of Western models of reality. Native celestial lore should also be rendered in terms of non-Western practitioners: stargazers and skywatchers rather than astronomers. So, why should the astronomical knowledge of non-Western people be exclusively evaluated in terms of modern astronomical theory?

2. The structure of the sky

Like many other environmental features (mountains, caves, rivers, forests, etc.), the sky has been used as a major symbol all over the world. The ideas and attitudes concerning the skies tend to reflect major social concerns. Patterns perceived in the sky usually refer to collective representations of social relationships which act as mnemonic devices going back to mythical times when the present way of life was created. The objects that are manifested in the sky often reveal the ways the people present social life to themselves. Important celestial bodies are perceived as animate entities and their motions in the sky are described in terms of social relations (Iwaniszewski 2009, 2010). Human societies often people their skies with supernaturals, ancestors or mythological heroes to whom they become related through family ties, mythological narratives, political alliances or power relationships.

Though separated from humans, the celestial vault is perceived as a type of resource that provides meaningful patterns suitable for conducting life on earth. The sky is often conceived to be above the earth, or above the world inhabited by humans. Sometimes the sky is conceived as a flat unspecified plane above the earth; sometimes it is perceived as something that is rounded. Terms usually designate the sky as a 'covering' or 'vault' (Buck 1971: 52) encompassing the idea of a series of different worlds layered on top of each other or the conceptual division of the world into three layers: the upperworld, the middle world inhabited by humans, and the underworld. Nevertheless, the sky and the earth are likely to form part of a conceptual continuum and the phenomena perceived in the sky are usually related to other events on the earth.

In view of the fact that all human activities occur under the skies, the existence of a social system necessitates some degree of celestial organization. Ideas and attitudes concerning the skies tend to reflect social concerns. The fact that human societies inhabit the earth, 'under the sky' and 'above the underworld', distinguishes them from all other beings, either the spiritual entities or the ancestors who are believed to live in other domains (see Brague 2003: 10–11). In contrast to human societies, the sky is considered a realm of the dead (distant ancestors, mythical heroes).

Since the sky is black at night, red in the morning and evening, and blue or grey during the day, it is natural that it provides powerful metaphors that carry social and cultural meanings. A red light perceived in the sky at dawn and dusk is like fire, a blue sky on a fine day is reminiscent of the color of the sea ('heavenly waters'), and a black night sky resembles the complete darkness inside a cave. Based on such or similar elements the sky is perceived as being constituted of features that are indicative of fundamental distinctions such as black/white, daylight/darkness, other world/this world, dead/living, top/bottom and the like. The order perceived in the sky often inspires people to produce systems of classification, epistemologies, cosmographies and worldview structures. As the sky remains inaccessible to humans, it is often opposed to the earth. The dualistic opposition between the sky and earth is usually inscribed within the dualistic logic of binary oppositions which serves as a means to maintain order with respect to cultural

classifications of the world. According to this logic, the sky and earth are conceived as distinct spaces generating inverse values. For example, while the earth is populated by mortal humans, the sky may be conceived as an abode of immortal nonhumans (supernatural beings or ancestors). Qualitative distinctions of this type may be endlessly permuted on all kinds of grounds. The sky-and-earth distinction may serve to produce chains of binary oppositions all based upon the same top-and-bottom dichotomy. Distinguishing between what is located above and below is a fundamental element of cultural classifications and is used to produce the ranking of categories. This leads to a series of dichotomies such as high status–low status, sacred–secular, otherworld–this world, etc. The inferiors are on the earth and the superiors are in the skies.

The capacity of the sky to carry meanings is also defined by the movements of the celestial bodies that produce patterns of repetition and recurrence. The east-west axis that defines the pathway of the celestial bodies is movable, as it continuously shifts between the solstice extremes. The north-south axis is fixed, providing a natural baseline to which the whole world may be anchored. Since the space inhabited by humans is usually organized in patterned sets so as to provide information on social categories such as ethnicity, rank, status, and gender, the complex grid based on both axes is useful in providing the necessary context for mapping social space. In sum, together with other environmental features the structured and meaningful sky frames people's interpretations of events around them.

In order to avoid any possible misunderstanding, it should be emphasized that the structured sky is not simply a backdrop for the daily activities of human populations—the social and political device designed to produce informed (=socialized) actors—but refers rather to how specific heavenly bodies and celestial phenomena become incorporated into larger worlds of human action, meaning and understanding. The structured and ordered sky has the ability to convey meanings but also to direct or constrain human activities.

3. A social field approach

Mediation by the sky is best articulated by a 'social field' approach. As one of the key concepts of Pierre Bourdieu's social theory, a social field is defined as "a system of positions structured internally in terms of power relationships" (Bourdieu 1998a, 1998b). Fields are spaces of social play, or structured social arenas in which people struggle in pursuit of desirable goals. In explaining his social theory, Bourdieu often describes social agents (individuals, groups, social institutions and the like) as possessing certain resources (called capitals) that receive different values depending on within which of social fields they are acting (economic, politic, educational, academic, cultural, etc.). Fields are constructed in such a way that acting individuals or acting groups are distributed in it according to their positions (Bourdieu 1998b: 30). Different fields are variously structured. The position of each agent in the field depends on his/her capital and habitus (systems of durable, transposable dispositions, structured structures predisposed to function as structuring structures, Bourdieu 1977: 72). Individuals, groups or institutions who try to distinguish themselves from others, acquire capital which may be useful or valuable on the arena. Since each of social fields is structured by dispositions and lifestyles of their users, the social space becomes homological to the system of social hierarchy. Individuals, groups or things are divided into levels of importance within fields they are acting. Thus, spatial distances between individuals or groups are equivalent to social distances between them (Bourdieu 1998b: 30). A social field constitutes a set of historically developed and objective relations between positions associated with different forms of capital.

Following Bourdieu (1991: 91–111; 1977: 143–158) it may be argued (Iwaniszewski 2007) that the structure of the social field, which is determined by the principles of differentiation generated by habitus, is also homological to the structure of the lifeworld because they both depend on the same culturally-specific classifications and the same rules or patterns with which all interpretations of social reality are made. The principles of differentiation are determined by already existing structuring principles which are taken as doxic or taken-for-granted principles used to describe the lifeworld. They are expressed by sets of pairs forming fundamental oppositions. In other words, the positions within each social field are differentiated but are also differentiating. Social fields are generated by the same categories derived from the logic of binary oppositions as all other cultural taxonomies and systems of classification.

Material objects, landscape features, celestial and meteorological phenomena, animals, plants and human agents, acquire meaning only when they are perceived as classifiable. However, it would be misleading to define objects, phenomena and processes only in terms of classificatory schemes: it is equally important to define the types of relationship between them. Isolated items possess no significance; their meanings are constructed only when they are perceived and classified in relation to others. For example, items can be perceived and classified as similar/different, continuous/discontinuous, momentary/durable, significant/insignificant, etc. in a process which is relational and contextual. The qualities attributed to objects and events operate as markers of a discursive practice. Where human beings, material objects, landscape features, celestial and meteorological phenomena, animals, and plants come into relations with humans, they appear to act within the structured spaces of positions and relationships, called fields. Acting individuals are recognized as the subjects who occupy positions differentiated in relation to others. “Representations that agents make of their own position, and the position of others in the social field, depend on the system of principles of perception and appreciation” (Bourdieu 1991: 234).

4. The sky as a social field

I have described above the application of the principle of paired oppositions to the sky. When applied to the sky the concepts of duality may entail such binary oppositions as up/down, sky/earth, zenith/nadir, north-as-up/south-as-down, north-as-cold/south-as-hot, etc. In addition, movements perceived in the sky may be described in terms of binary oppositions such as going up/going down, opening-closing, turning left-turning right, etc.

The sky also provides various features (asterisms, twinkling stars, nebulae, dark clouds, shooting stars, comets, eclipses, conjunctions, stellar configurations, the Milky Way, etc.) to which selected cultural meanings may easily be anchored. Like all other landscape features (mountains, rock cliffs, caves, springs, waterfalls, rivers, lakes, deserts, forests, etc.) the traits perceived in the sky make up a set of meaningful configurations. But the meaningful ordering of the sky is not only a static cosmographical arrangement of meaningful configurations; it also involves a dynamic progression of movements of heavenly bodies, each of them taking place in culturally defined segments of the sky. So when people look up at the sky, they see celestial bodies moving across the skies, entering and leaving particular spaces, moving leftward, rightward or being stationary, arriving in front of or behind, disappearing or re-appearing again, culminating or lowering, and so on. The movements of celestial bodies take place at different times and in different localities in the sky. Moreover, since the motion of celestial bodies is predictable, so the sequence in which such movements occur displays a definite order. As the celestial vault

is often divided into a complex grid of segments (either in the form of layered units or of apportioned horizontal directions), the movements of the celestial bodies become easily understandable; they are always explained in terms of their relationship either to the differentiated spaces or to the positions of other bodies. In the same manner, the motion of the celestial vault provides patterns that can be easily comprehended.

Operating within the logic of everyday life, celestial bodies are frequently treated as living (=animate) persons. This marks a difference from the Western world, where persons are always human beings (Ingold 2000: 91). Perceived as animate beings, the sun and the moon are believed to act like humans. They are conceived as 'living subjects' engaged in constant dialogues with human beings, or as possessing particular forms of communication skills. Furthermore, as animate entities they are often conceived as closely related to the human race through genealogical connections, for which reason they are often addressed through kinship terms such as 'father' and 'mother'. However, since the two luminaries are not equally animated, they are not active to the same degree; their potential as agents is culturally constrained, or context-dependent.

Embedded in the heavens, both luminaries are perceived as moving across the structured space of the celestial vault. They both constantly change their locations in the sky, displaying variable spatial interrelationships between themselves and in relation to other celestial bodies. The heavens are ordered by a structure defined by cardinal (and/or mid-cardinal) points revolving around the vertical axis. In addition, the sky rotates around the immobile earth. However, cardinal directions and the vertical axis are not abstract dimensions but often regarded as mythical-symbolic residences of animate entities. According to Tuan (1978: 9–10): "the structure thus imposed is not simply a reference system suited to the needs for orientation; it is primarily an effort to find value and meaning in the world and to locate them at definite places". For example, in Babylonian celestial divination the sky was divided into four quadrants correlating the cardinal points with winds and countries (Rochberg-Halton 1984: 126, 128–129). The quadrants of the moon were observed during its eclipses and correlated with the four lands of the inhabited world (Akkad = north, Elam = south, Subartu = east, and Amurru = west; compare Rochberg-Halton 1984: 127). Later changes in the nomenclature for the quadrants observed in the history of Babylonian celestial divination reflect shifts in the political situation of the region. Furthermore, all celestial bodies were arranged in three groups called 'paths' designated by the names of Anu, Enlil and Ea, three great gods of the Mesopotamian pantheon (e.g. Rochberg 2004: 7–8).

The sun and the moon perceived as animate luminaries are often related to other celestial bodies through kinship ties (cf. Lévi-Strauss 1979: 203–211). For example, in the Americas, the Morning Star is often considered either as the son or the brother of the Sun (cf. Iwaniszewski 2005). Sometimes celestial bodies are believed to be able to communicate with humans, for example, the Eastern Timbira of Brazil maintain that the Pleiades announce the time for clearing the gardens at the onset of the rainy season (Hornborg 2001: 132). The progression of celestial bodies in the sky is interpreted in terms of the human progression from one social status to another. Heliacal risings and settings, stationary positions of the superior planets, solstices and lunistics are best interpreted through the theory of rites of transition (rites de passage). Thus, the celestial bodies, in behaving like human beings, act according to the same principles of symbolic logic as do human subjects.

From the perspective of cultural astronomy, then, the abstract and universal sky of modern astronomers becomes a social arena where the movements of celestial bodies, their positions in the sky, and their configurations with respect to each other obey the laws of symbolic logic rather than the laws of universal gravitation. Animate celestial beings

maintain diverse relationships with other animate things and entities: plants, animals, artifacts, meteorological phenomena and human beings. We should thus conceive the sky as a type of a social field, shaped or configured by the relationships between humans and non-humans. This 'social sky' is not something that exists objectively outside the human lifeworld, but should be understood as something that is always socially constructed. The sky as a social field is an objective product of human culture and is located in the domain of Popper's (2010) Third World.

What may be particularly important for cultural astronomy here is the fact that the image of the structured sky provides the context necessary for meaningful or discursive human action. Drawing on Paul Ricoeur's theory of interpretation (2003) I propose that the image of the structured and ordered sky constitutes the frame of reference which creates the arena for discursive practices. Ceremonial rituals and daily activities are arranged in accordance to the motions of the sky and individual actors utilize astronomical objects and phenomena to define their positions within diverse social fields. It is worth noting that 'referring' as indicating is already grounded in the logic of the constitution of habitus. Indicating as a reference is a way in which both the generative principles of action and 'acting' objects become ontologically concrete. The kind of reference we receive in 'acting-in-the-field' is a type of ontologico-categorical attribute of the action as action.

5. Conclusions

Like any other kind of cultural knowledge, celestial lore is embedded in people's structural relationships to their worlds: in their customary practices (habitus), in their taken-for-granted (doxic) actions and beliefs, in their connections to other peoples, in their structured spaces of positions (fields), and so on (Iwaniszewski 2009, 2010). Explanations of what is perceived in the sky (like other explanations of the lifeworld) depend on culturally specific classifications which usually stem from ready-made (doxic) interpretative frameworks (see López Austin 2005). Those frameworks rely on the unquestionable acceptance of the rules or patterns with which all interpretations of social reality are made. This implies that drawing on taxonomies built upon observations of similarities and differences in the perceived qualities of different categories of their lifeworld (celestial objects, meteorological phenomena, landscape features, animals, plants, people, material objects, etc.) non-Western skywatchers customarily seek to equate the recurrent patterns of the heavens with natural and cultural events on earth. Meaningful patterns in the sky are constructed using long-term structural relationships embedded in the apparently changeless lifeworld, i.e. in the principles of symbolic logic known as a '(cultural) hard core' (López Austin 2005). The meanings, either read from the sky or projected upon the sky, are constructed in relation to the cultural ordering of the world through individual practices and intentions while at the same time validating or testing the 'hard core' rules. Furthermore, it is important to distinguish between the ways humans understand their world based on long term, ready-made, objective, 'hard core' structural logic and the meanings which were reproduced in the practices of the concrete people who are in pursuit of their own goals. In emphasizing this, I am arguing against the idea that a given social or cultural system possesses only a single celestial knowledge or a unique representation of the sky; instead I am advocating an approach capable of highlighting the multiplicity of celestial interpretations observed within the same society.

The objective of research in cultural astronomy is not to study the sky in itself, but to study the practical construction of the heavens by, as well as the use of the heavens for, human life on earth. The heavenly environment is a research field through which we can study human societies rather than the mysteries of the universe.

As a scientific discipline cultural astronomy needs to produce facts and theories. Facts observed by cultural astronomers belong to the domain of the social sciences, that is, to the realm of Karl Popper's (2010) Third World. Cultural facts serve to objectively analyze social realities, despite the fact they are historically restricted.

On the other hand, all celestial phenomena studied by astronomers belong to the category of natural (astronomical) facts located within the domain of Popper's (2010) First World. The double nature of celestial bodies/astronomical objects affects our notions ascribing agency to the sky (Iwaniszewski 2011). As natural facts, astronomical objects are separated from the domain of human everyday activities and are conceived as behaving in accordance to physical laws. Certainly they do not display human-like behavior. Observers detached from what is going on in the sky become passive witnesses of what is already predicted by mechanistic laws.

Natural facts can easily be projected forward and backward, which makes it possible to reconstruct the skies in distant places and epochs. On the other hand, social facts are spatially and temporarily bounded and socially and culturally determined. Thus, the discovery of a comet by Edmund Halley does not imply that the comet bearing his name started to exist in the second half of the 17th century. While the physical existence of a comet belongs to the domain of natural facts, the discovery of its periodicity belongs to the category of social facts. While we can perform backward calculations to identify the years when the comet was visible, we clearly cannot assume that ancient skywatchers knew that what they were seeing in the sky was Halley's comet.

This seems a very trivial example, yet we evidently have problems with Hipparchus' discovery of precession. Any research that investigates architectural orientation patterns over hundreds of years could detect evidence of the effect of precession as a result of the continuous use of the same stellar alignments, but (despite many such claims in the literature) this cannot be interpreted as proof of knowledge of this phenomenon amongst ancient societies. Rather, it should be viewed as a collateral effect of the practice of aligning structures towards the same astronomical event over hundreds of years. The slow drift of the vernal point along the ecliptic called 'the precession of the equinoxes' belongs to the category of natural facts; but the knowledge of precession belongs to the category of social facts.

Cultural astronomy studies the dual nature of astronomical objects/celestial bodies. The sky-as-a-social-field approach I have sketched here is another attempt to transcend the methodological dichotomy that separates nature from culture. Of course, there is no unique solution to this problem and I have described other theoretical possibilities elsewhere (Iwaniszewski 2009, 2010, 2011).

In this paper I have tried to emphasize that the polar divisions of the social field are organized by the same principles and homologies as those that organize the whole lifeworld. The universal conceptualization of celestial bodies as animate entities who themselves perform human-like actions allows us to study their movements in ontological terms rather than through Western epistemologies. The essential point for cultural astronomy here is that any attempt to equate natural facts with social facts is futile. Instead of we should rely on Western epistemology together with non-Western ontology.

Recent developments in theoretical archaeology, drawing on earlier anthropological proposals such as 'naturalism' (Descola 1996), 'relational epistemology' (Bird-David 1999), 'dwelling ontology' (Ingold 2000), 'Amerindian perspectivism' (Viveiros de Castro 1998), 'ecosemiotics' (Hornborg 2001), and 'actor-network theory' (Latour 2008), offer new solutions to the problem of treating celestial bodies as animate entities (see Henare *et al.* 2007; van Binsbergen & Geschiere 2005).

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