"Milky Way Astronomies": Proposing a Framework for Cultural Comparison

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The Milky Way is a feature of the night sky that has had cosmological significance in many cultures around the world at different times. Many works, especially in South America and Australia (e.g. Reichel-Dolmatoff 1978; Urton 1981a, 2016 [1987]; Hugh-Jones 1982; Giménez Benítez *et al*. 2002; López and Giménez Benítez 2008; Roberts 2015), have drawn attention to the fact that in some cultures the bright band of our galaxy has a structural role; others (e.g. Urton 1981b; Cairns and Yidumduma Harney 2003; López and Giménez Benítez 2008; Fuller *et al*. 2014; Leaman and Hamacher 2019) have pointed out the importance of the "dark constellations" outlined against its bright background. Some researchers (e.g. Urton 1981b, 2016 [1987]; Clarke 2007–2008; Norris and Hamacher 2009; López and Altman 2021) have revealed regional similarities in reference to this bright region, and others (e.g. Gullberg *et al*. 2020) have analysed the world occurrence of these so-called "dark constellations".

In this contribution, based on the experience of all these previous works, I want to go one step further, proposing a general framework for a more fruitful comparison. Comparison is a necessary tool in social sciences, but it is also a complex phase of research work. Cultural astronomy is not an exception. On the one hand, the comparison of isolated features, without context, has been recurrent. This is a big problem, since if culture is a system, despite how open and dynamic it may be, its elements do not make sense on their own. Consequently, the comparison of isolated features alone results in the identification of superficial similarities that lack methodological fruitfulness. However, comparison driven by implicit assumptions such as evolutionary theories of culture or diffusionist theories, assumed as *a priori* truths – and not as hypotheses – have led to the construction of "conjectural history" (Evans-Pritchard 1962 [1950], 14, citing Dugald Stewart). Also, it is necessary not only to compare systems and features in context, and to pay attention to similarities and differences (Eliade 1959). Another crucial point is the necessity of accounting for the non-homogeneous and dynamic nature of any cultural

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system. Every cultural system has an internal diachrony that is constitutive (Sahlins 1985, xv–xvi). Often, though, our characterisations of the astronomy of a human group assumes a monographic form that tends to make internal variations and their continuous processes of change disappear. Also, we often present the various groups that we study as clear, closed and self-defined units, whereas they are actually in continuous and diverse exchange with other human groups, and these relationships are constitutive of what each group is (Barth 1987; Cardoso de Oliveira 2007).

One way to build fruitful comparisons is the approach known as "middle-range theory" or "grounded theory", originally proposed by the sociologist Robert K. Merton (1949). This refers to theories about the social world that, instead of starting from general *a priori* abstractions about social life or the development of cultures, begin from empirical data to build a series of empirical regularities. The purpose of such theories is not to provide global explanations, but they are more general than working hypotheses about a specific culture or the simple comparison of some specific isolated cases. They are sustained in concrete empirical cases and are articulated in the form of contrastable hypotheses. Middle-range theories are constructed by forming networks of linked theories.

Taking all this into account, I propose considering the broad spectrum of features related to this bright band and its dark spots in their relations and connections. Seen in this way it is possible to make a "middle-range" model, that I propose to call "Milky Way astronomies". This would characterise some astronomies in the world, in which an articulated set of features linked to our galaxy has a key role.

A "Milky Way astronomy" could be defined by the central and structural role of this sky feature as a major organising axis of the night sky and cosmology. That role would be expressed in a series of concurrent and connected elements (many of them studied as separated features in previous works):

- the importance of the movement of the bright band of our galaxy (both throughout the day and throughout the year), in many cases articulated with the Sun and with asterisms in the opposite regions of Scorpius and that of Orion/Pleiades (the relation of the points where the Sun's path goes across the Milky Way with these regions is important for this three-fold bond);
- the role of our galaxy in the partition of the terrestrial and celestial space and of the annual cycle;
- the use of a multiple symbology, many of the symbols being associated with axial metaphors (tree, stair, pole, etc.) and dynamic metaphors (river, path, whirlwind, etc.);
- the importance of "dark asterisms" inside the Milky Way;
- the special relevance of "bright asterisms" placed in the vicinity of the Milky Way "band";
- the connection of our galaxy with the rainbow, the water and serpents;
- the relation with a large celestial animal (rhea/emu, cane rat, llama, etc.) associated with a productive activity (hunting, herding);
- the role of the Milky Way as connector in spatial and narrative terms.

In some sense "Milky Way astronomies" as a theoretical construct may seem similar to "tropical astronomy" (Aveni 1981). However, they are not the same type of model. The "tropical astronomy" model entails an intertropical latitude as a condition of possibility, whereas the "Milky Way astronomies" model does not postulate an equivalent geographical location as a condition of possibility; although some authors have suggested that the dark spots of the Milky Way as seen from the Southern Hemisphere are more conspicuous, I do not think that it is possible – with the current state of our knowledge – to postulate a causal relationship between the location in the Southern Hemisphere of a human group and its development of a "Milky Way astronomy".

I understand "Milky Way astronomies" as a polythetic class (Needham 1975). In other words, the class indicates that its members have an "air of affinity" without presupposing a "common origin" or "essence". There is no "class archetype"; the class can be thought of as an associative sequence where one element shares some features with another, which in turn shares certain features (not necessarily the same) with the next. No trait necessarily appears in all, nor is there any specific trait whose possession is sufficient to ensure membership. It is enough to possess a "large" but indefinite number of characteristics, each of which is shared by a "large" but indefinite number of other members. This type of class is frequent in the daily conformation of categories, and "genealogical" classes are an example of polythetic classes. "Milky Way astronomies" can serve as a heuristic tool that allows us to delve into the meaning of each of these systems and their logic, studying in a systematic way not only the similarities between them but also the differences. Following the approach proposed by Peel (2015, 123) for polythetic classifications, the class "Milky Way astronomies" can be understood as containing a set of more or less probable potentialities, but these cannot be valued except in their concrete realisations. In this way, for example, comparing the concrete realisations in a similar social context of "Milky Way astronomies" and of other similarly conceived classes of "astronomies" (such as "ecliptical" or "equatorial") would allow the researcher to identify specific factors of each one of these classes of "astronomies". Another possibility would be to compare the characteristics of different "Milky Way astronomies" in their relations with the respective social and productive structures of each group. Conducting systematic comparisons of this kind could allow us to have better possibilities of understanding the links between all these systems, and their meanings.

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