

# Editor's Introduction

Given that Philippine historiography has seldom focused on ethnomathematics, the article by the late Ricardo Manapat makes a very important contribution by providing an overview of mathematical ideas prior to the Spanish conquest in the late sixteenth century. It starts from the premise that abstract mathematical ideas are embedded in indigenous practices, such as the geometric and algebraic principles one could find in traditional weaving, gong music, and kinship patterns of the Kankana-ey. Manapat mines the Spanish chronicles to find evidence of the “impressive demonstration of geometric thinking” (297) in the preconquest age, as manifested for instance in shipbuilding technology. Manapat surveys three broad areas: time reckoning, weights and measures, and numeration. The ancient islanders, concerned about the meaning of seasonal changes, employed a lunar cosmology to guide their agricultural cycle and regulate political and business transactions. A system of weights and measures prevailed to guide the commerce of both minute as well as hefty objects. But it was in the ancient Tagalog system of counting that Manapat, relying mainly on the work of Pedro Serrano Laktaw, discerns a complex mathematical system that required three different mental processes. In his assessment: “This was an enumeration system which was complete, as it could express any number it desired; mathematically and grammatically consistent, as mathematical patterns and grammatical structure strictly followed rules; efficient, since it made full and efficient use of repeating patterns; and aesthetically impressive because of its level of sophistication” (331).

Manapat's celebration of preconquest mathematics hews to the tradition of *ilustrados* like José Rizal, who sought to excavate the past for clues on precolonial glories that could provide a basis for cultural pride and national identity, especially amid taunts by the Spanish concerning the paucity of the native's intellect. In fact Manapat begins his essay by arguing against the denigrating observations made by Spaniards such as Fray Gaspar de San Agustin. Nationalist sentiment is patent in Manapat's assertion that the ancient Philippines could not be dismissed as nonmathematical.

Under Spanish rule critical transformations occurred. For instance, the precolonial *taòn* and *tuig*, which denoted harvest or a periodic event, came

to designate the year in the Western calendar. However, as Damon L. Woods argues, changes in the counting and marking of time did not occur in linear fashion: the foreign did not simply displace the indigenous. Woods relies on Tomas Pinpin's *Librong pagaaralan nang manga Tagalog nang uicang Castila* (1610), which he contends was written from an animist's worldview, despite formal conversion to Catholicism. Like Manapat, Woods explains the intricacies of the preconquest Tagalog system of counting—while adverting to its similarity to Old Norse. Woods indicates that the ancient Tagalog system had no digits (beclouding place values) and that Pinpin wanted his fellow Tagalog to learn this symbolic system. While Manapat follows Spanish sources in saying that the preconquest Tagalog did not have the notion of the hour, Woods uses Pinpin to describe a conceptual scheme that divided the day and night into segments. Woods asserts that the Tagalog deliberately adapted the Spanish system to survive in a changing world. In due course the Tagalog, going beyond what Pinpin had to teach, evolved a hybrid system.

Mark Dizon also deals with an aspect of precolonial culture: the practice of *maguinoo*, a term conventionally understood as referring to a social category or rank but which Dizon shows was used to refer to the forming of fictive kinship ties. Based on eighteenth-century missionary accounts from the Caraballo Mountains, Dizon argues that friendship sufficed to establish bonds of siblingship. Rather than the indigenous adapting to the Spanish as in reckoning time, the Spanish adapted to the indigenous by investing in *maguinoo* to advance their missionary goals. Among the natives, Dizon contends that baptismal rites and the physical relocation of old converts to mission settlements expanded social networks and met elite interests, suggesting conversion for social ends. But conversion posed a dilemma to those who wanted to maintain kinship ties with unbaptized ancestors in hell. In practice fluidity characterized relations between Catholics and animists, as Dizon avers, and elements of animism coexisted in the life of a convert such as Pinpin, as Woods asserts.

In a research note, Francis A. Gealogo demonstrates the usefulness of data on baptisms, burials, and marriages found in the *Planes de almas*, available at the Archdiocesan Archives of Manila, in studying the demographic history of four districts outside Intramuros in the nineteenth century. His study highlights the contribution of quantitative data analysis to historical studies.

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