

Keller, Olivier, *Préhistoire de la Géométrie: Premiers éléments d'enquête, premières conclusions.* (Science et Techniques en Perspective, Vol. 33.) 98 +[16] pp., figs., bibl. Nantes: Université de Nantes, 1995. (Paper.)
Published in *Isis* 87 (1996), 713-714.

Chapter 1 of this publication starts from the Sulvasūtras as an example of geometry embedded in “primitive wisdom,” “a general attitude that permeates every activity and which, in the first approximation [...] supposes that the symbol controls the object, that a thing only exists when it is named, that the possession of a symbol for the object allows to act on it [...]” (p. 3), and uses the ritual character of altar construction – reenactment of the Creation – to explain some characteristic features. It sees Plato’s *Timaeus* as an intermediate stage between such geometrical “wisdom” and Euclid, and the admittedly lay mathematics of China and Babylonia as refinements produced by “sadistic” school teachers.

Chapter 2 describes the shapes of Lower and Middle Palaeolithic stone artefacts. Chapter 3 does the same for the European Upper Palaeolithic, and looks at painting and decorations here and among Australian aboriginals. Chapter 4 examines what is seen as “geometric speculation” in “primitive peasant and herdsman cultures” exemplified by the African Bambaras and Dogons and the Mayas. It is stated that this speculative symbolism alone, not technological uses, constitutes the basis for the rise of Greek geometry.

The book contains some well-formulated points, e.g., that ethnographic comparison shows how treacherous the step from artefact to interpretation may be. But on the whole, the argument seems erratic. Its core is an extremely simplified evolutionarism where, e.g., Mesolithic hunters and gatherers, Mayan civilization, and modern African tribal peasants are taken to represent the same “period” of primitivism. Occasionally the author complains that he has been unable to get hold of certain publications (is Université de Lyons really unable to procure copies from *Isis* from the 1930s?); but on the whole he argues as if the – often general, too often somewhat dated – expositions on which he builds contain everything known. It may have seemed true in 1965 that the oldest incisions in stone belong to the Aurignacian (p. 42), but anybody with minimal interest in such matters should know that things had changed before 1980. Similarly, an author who were less confident that Neugebauer and Thureau-Dangin remain the ultimate authorities on Mesopotamian mathematics might have discovered that substantial analyses of fourth- and third-millennium developments exist (refuting Keller’s ideas about a Sulvasūtra-like beginning), and that the geometric interpretation of Babylonian “algebra,” advanced here simply because it is “perfectly possible” and done by al-Khwārizmī (p. 18), is already well-established in philological detail (published also in French).

Worse is perhaps a muddled concept and arbitrary delimitation of “geometry”: Australian aboriginals’ maps and Marshack’s Palaeolithic meander patterns go unmentioned; the conclusion tells that, *for reasons the author does not know*, “the primitive symbols are, essentially geometric symbols” (p. 73). The reasons are simple: Only

drawings – not, e.g., myths, ochre meaning “blood,” or totem animals – are counted as “symbols”; and every drawing is seen as composed of geometric elements.

P. 72 refers to the nexus between “the organisation of human space, conceptions of the universe and conceptions of society among the primitives.” On pp. 67f, however, conceptions of the universe are considered primary and independent: if only the Sioux had believed the universe to be square, and the Dogon had believed it round, tepees would have been square, and the Dogon plain would have been tessellated into circular fields (thus the gist of the argument).

The use of primary material is often inattentive. Careful reading of the *Popol Vuh* would have revealed that this reconstruction from early Christian times of a lost Mayan document already misunderstands essential aspects of Mayan religion (human sacrifice). A bit of counting would have revealed numerical irregularities that exclude a numerological interpretation of a Danish Mesolithic dot pattern.

At best, the text is seen as a discussion paper, from which an interesting book may emerge after some years’ supplementary work and, not least, reflection.

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Addendum, November 2007: The more mature book hoped for in the final paragraph has now appeared:

Olivier Keller, *La Figure et le monde: Une archéologie de la géométrie. Peuples paysans sans écriture et premières civilisations*. Paris: Vuibert, 2006.