One afternoon, I walked from Maras to Misminay with an old man with whom I had become well acquainted. Midway along our walk, we stopped for a few minutes and sat down in a ditch to shelter ourselves from the cold wind. The inevitable bottle of trago was produced, and the wind became warmer. He asked how my work on astronomy was going, and I told him that I still felt completely ignorant. I then asked him if he thought that I would ever understand the sky and the stars. He thought for a minute, and indicating the land around us with a wide sweep of his arm, he asked me if I understood the land and the community yet. When I said that I did not, he drained another cup of trago and asked how, then, could I possibly hope to understand the sky.


### 14.1 The Etic Approach

In the first part of this book I invited you to join me on an informal trip around the world to look at some of the monuments that best represent the astronomical knowledge that people have had over the course of history. I also tried whenever possible to present only factual information and, when it was impossible to avoid interpreting those facts, to at least do so in a light-handed, even skeptical way. The reason was explained in the previous chapter: I think we are too laden with schemas, too accustomed to attributing meaning to words that are *a priori* empty and filling them with content that comes exclusively from *our* way of thinking.

However, the moment has come to try to understand a little more about the motivations that drove so many peoples of the past to build such splendid astronomically anchored structures, even to plan entire cities on the basis of “cosmographic” principles.

In talking about humans, and therefore about human thought and knowledge—religious, astronomical, technological—we are faced with two apparently irreconcilable approaches (Murray 2000) that we can call the
rigorous method (or etic approach) and the humanistic method (emic approach).

The rigorous method treats a monument or group of monuments like a lab sample to be analyzed: one approaches the site as if landing on Mars, with measuring instruments, maps, and computers, taking data from 300 megalithic tombs or 50 Nascan geoglyphs, plugging them into a computer, and then publishing the results. But by doing this we are imposing our own mental framework on the evidence. In fact, we are using the king of all schemas, that venerable old mainstay known as the scientific method to which we scientists are attached like chicks to a hen, the one that allows us to make predictions on the basis of models, to elaborate models on the basis of data, and to sneer at inanities such as flying tables, pranotherapy, and the “memory of water.” For example, a table cannot fly powered by thought. If it seems to be flying, it is a trick. Physical actions never occur from a distance but are always mediated by particles, such as photons, that is, light. The brain does not emit particles, and so the table cannot fly; the scientific method tells us so, in an unequivocal way.

In this same way, the rigorous approach can give formidable results in archaeoastronomy; we need only think of the case of the orientation of the Maltese temples discussed in Chapter 3, which had been an enigma until Klaus Albrecht meticulously diagrammed alignments of the altar stones to the left of each structure’s entrance, thereby demonstrating their solstitial alignment.

However, if we go to Cusco to measure the alignments of the ceque system there (Chapter 10), and then compare them with a series of important astronomical events visible to the naked eye, applying to this the “rigorous” method, we will discover that the astronomically significant directions appear to be lost in a tangle of others that are not significant at all, and we will therefore confidently conclude that the ceque system had nothing to do with astronomy—thus missing completely the profundity of Incan thought.

The solution to the fascinating problem of interpreting the ceque lines and their symbolic content must take into account all the available sources: colonial accounts (ambiguous and untrustworthy though they may be), excavations in the field, and ethnological investigations such as that of Gary Urton, who found many aspects of the Incan vision of the skies living on in the indigenous population of Misminay. The scientific method must therefore be mediated by and integrated with the human component. This does not mean renouncing rigor. If tables do not fly, then neither do the 300-ton stone blocks of Sacsahuaman. Whatever the solution to the question of how the blocks were put in place, a problem that has by no means been