

## THE NUMBERS GAME

# 2

**It's literally at the heart of the human.**

Two legs, two eyes, two lungs: like the majority of animals, “Homo sapiens” possesses a symmetry that separates the body into two parts, right and left. According to biologist Vigan Geodakian, evolution has over time generated organisms that are less and less symmetrical. Gravity initially defined an up/down axis in animals with radial symmetry. Then, sensory organs and the brain moved up front to improve motility. This disappearance of symmetries continued, as evidenced in humans and dolphins by the differentiation of the right and left hemispheres of the brain. Nonetheless, a symmetrical body is considered a sign of beauty, probably because it's an indicator of good health.

Our chromosomes come in pairs, a must for sexual reproduction in which the offspring receives half of its genes from each parent. The DNA that makes up each chromosome itself looks like a ladder made up of two linked strands. When it unwinds, it sets expression in motion, copying the genes encoded on one of its branches.

Two is the only even prime number and, in pairs, shows its even temper when subjected to arithmetic manipulations:  $2+2=2 \times 2=2^2$ . Mastered by the Chinese in the third century BC, the binary system was developed in Europe by Leibniz in the 17th century. In our computers and other “digital” devices, information is expressed in base two, with bits that can have either the value 0 or 1. All dual systems (on/off, top/bottom, empty/full...) can encode a bit. We had to wait until 1941 for the first binary machine, the Z3 computer invented by the German Konrad Zuse.

The book of Genesis begins in Hebrew with the letter Beth, which corresponds to the number 2 and symbolizes perhaps the ultimate duality: even though God created the World, He's not part of it; Creator and Creation are forever separated. The dichotomy is the simplest of all classifications. And there are only two types of people: those who divide people into two categories, and everyone else. DANIEL SARAGA