

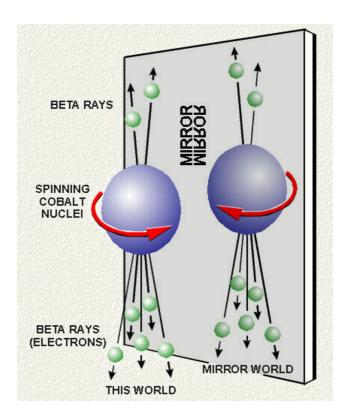
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symmetry laws

1957 Nobel Laureates Chen Ning YANG, Tsung-Dao LEE

for their penetrating investigation of the so-called parity laws which has led to important discoveries regarding the elementary particles.



"One of the symmetry principles, the symmetry between the left and the right, is as old as human civilization. The question whether Nature exhibits such symmetry was debated at length by philosophers of the pasts. Of course, in daily life, left and right are quite distinct from each other. Our hearts, for example, are on our left sides. The language that people use both in the orient and the occident, carries even a connotation that right is good and left is evil. However, the laws of physics have always shown complete symmetry between the left and the right, the asymmetry in daily life being attributed to the accidental asymmetry of the environment, or initial conditions in organic life. To illustrate the point, we mention that if there existed a mirror-image man with his heart on his right side, his internal organs reversed compared to ours, and in fact his body molecules, for example sugar molecules, the mirror image of ours, and if he ate the mirror image of the food that we eat, then according to the laws of physics, he should function as well as we do."

CHEN NING YANG, The law of parity conservation and other symmetry laws of physics, *Nobel Lecture, December 11, 1957*

(http://nobelprize.org/nobel_prizes/physics/laureates/1957/yang-lecture.pdf) http://physics.nist.gov/GenInt/Parity/cover.html