

University of London physicist David Bohm has suggested that Alain Aspect's findings of non-locality imply that objective reality does not exist, that despite its apparent solidity the universe is at heart a phantasm, a gigantic and splendidly detailed hologram.

To understand why Bohm makes this startling assertion, one must first understand a little about holograms. A hologram is a three-dimensional photograph made with the aid of a laser. To make a hologram, the object to be photographed is first bathed in the light of a laser beam. Then a second laser beam is bounced off the reflected light of the first and the resulting interference pattern (the area where the two laser beams commingle) is captured on film. When the film is developed, it looks like a meaningless swirl of light and dark lines. But as soon as the developed film is illuminated by another laser beam, a three-dimensional image of the original object appears. The three-dimensionality of such images is not the only remarkable characteristic of holograms. If a hologram of a rose is cut in half and then illuminated by a laser, each half will still be found to contain the entire image of the rose. Indeed, even if the halves are divided again, each snippet of film will always be found to contain a smaller but intact version of the original image. Unlike normal photographs, every part of a hologram contains all the information possessed by the whole.

The "whole in every part" nature of a hologram provides us with an entirely new way of understanding organization and order. For most of its history, Western science has labored under the bias that the best way to understand a physical phenomenon, whether a frog or an atom, is to dissect it and study its respective parts.

See Michael Talbot's book *The Holographic Universe* First Printing 1991