

Abstract Submitted
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Entanglement Disproved JEFFREY BOYD, Waterbury Hospital —
The double slit and Innsbruck experiments are thought to be the premier experiments establishing the need for the idea of “non-locality” in quantum mechanics. In the Innsbruck experiments it is said that two photons at a distance are “entangled” without there being any means of communication between them. But the interpretation of these experiments are based on the incorrect idea of wave particle duality. According to the Theory of Elementary Waves (TEW) waves are independent of particles. Waves are ubiquitous in nature. In the Innsbruck experiments two waves traveling at the speed of light in opposite directions impinge on the photon source from the two fiberoptic cables. The waves pass through the source. Wave interference is spread over a wide distance: from one polarizer to the other. This stimulates the emission of a photon pair such that, when detected at a polarizer at angle θ_1 and another polarizer at angle θ_2 , the probability density is $\sin^2(\theta_1 - \theta_2)$. This is true for any θ_1 and θ_2 , and it doesn't matter when the polarizers are rotated. Thus local wave interference accounts for the experimental results, without any need for the exotic theory of “entanglement.” See <http://Elwave.org>

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