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Walk on Part of Quantum Entanglement

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Abstract
When a system is in a "superposition" of more than one state, it exhibits quantum entanglement. Two distinct locations in space are entangled in a particular type of superposition. The coin example shows two results superimposed in one location.The idea of quantum entanglement was first put forth by Albert Einstein, Podolsky, and Rosen (EPR) in the 1920s, and it was later developed by Bell in 1964. This phenomena is explained by the premise that if you measure the qualities of one particle, then another particle will have its own distinct attributes tied to the first particle as well.

Key Word : Subatomic particles, molecules, Bell's Theorem, Demonstration

Introduction
One advantage of quantum mechanics and entanglement is its intrinsic randomness. It enables you to deal with two problems. It can be set up to guarantee randomization and does so. They are both significant. We all know that the numbers in a lottery should be random, but if they had been around for a while, someone might have produced a copy of them and would then be able to predict which number will be called next.

Quantum Entanglement
Krister Shalm, a physicist at the National Institute of Standards and Technology (NIST) in Boulder, Colorado, was the study's principal investigator. Shalm and his coworkers employed specialised metal strips that were superconducting, or having no electrical resistance, after being chilled to cryogenic temperatures. Scientists can observe how a photon strikes the metal and briefly transforms it back into a regular electrical conductor. The researchers were able to use this technique to determine whether or not the measurements they made of one photon in an entangled pair had any impact on the other photon. The findings, which were reported in the journal Physical Review Letters, provided solid support for Bell's Theorem.

Conclusion
This work has useful uses in addition to demonstrating Bell's Theorem. According to NASA experts, the "superconducting nanowire single-photon detectors" (SNSPDs) employed in that experiment may be applied to cryptography and deep-space communications. Some of this communication capability was demonstrated by NASA's Lunar Atmosphere Dust and Environment Explorer (LADEE) mission, which orbited the moon from October 2013 to April 2014. LADEE's Lunar Laser Communication Demonstration made use of both spacecraft-based and ground-based SNSPD-like receivers. According to NASA experts, the experiment suggested that it would be possible to create sensitive laser communications arrays that would allow for the upload and download of far more data to distant space probes.

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Conflicts of Interest
Authors in this review article have no conflicts of interest.
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