

Abstract Submitted
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**The Conceptual Foundation of a Practical Experiment to Obtain
Distinct Which-Way and Non-Which-Way Distributions at a Distance
Using Delayed Choice and Without Correlating Measurement Results on
Entangled Entities**

DOUGLAS SNYDER, None — For a pair of entangled signal idler photons, one may “lose” the idler photon that carries which-way information and provides which-way information to the entangled signal photon before the signal photon is detected, thereby losing the entanglement. Over a number of runs, the result is an overall non-ww distribution of the signal photons. If instead the idler photon is not lost, the idler photon continues to supply ww information to the signal photon and over a number of runs the result is an overall ww distribution of the signal photons. These different overall distributions of signal photons do not depend on correlating detections of the entangled paired signal idler photons. The experiment allows for a delayed choice on the idler photons to determine the distribution of distant signal photons (either overall ww or overall not ww) without having to make correlations between signal and idler photon detections.

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None

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