the outcomes for Einstein's "hidden variables" and Bohr's "influences" are different.

In each of our four Alice-and-Bob experiments, twin-state fotons with identical, but random, polarizations are emitted in opposite directions from a source between Alice and Bob. Since twin-state fotons fly apart from each other at the speed of light, nothing physical can get from one experimenter to the other in the time between the fotons arriving at their respective polarizers. Therefore, what happens to one of our fotons at one polarizer cannot affect its twin at the other polarizer. This is our separability assumption.

As in the EPR case, Alice and Bob identify fotons as being twins by their simultaneous arrival times and keep track of whether their Path 1 or Path 2 detector recorded each foton.

Experiment I

In this first experiment, as in the original EPR experiment, Alice and Bob each have their polarizer axes aligned vertically. They record a "1" every time their Path 1 detector records a foton and a "2" every time their Path 2 detector records one. They each end up with a string of random 1s and 2s.

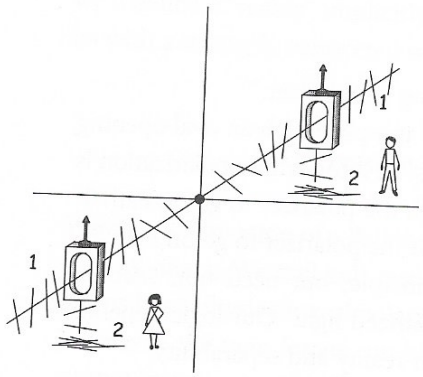

Figure 13.3 Experiment I: Polarizers are aligned, and Alice's and Bob's data are identical

After recording a large number of fotons, Alice and Bob come together and compare their results. They find their data streams identical. Bob's foton took the same path at his polarizer as its twin did at Alice's. This confirms that simultaneously arriving fotons are twins.

Alice and Bob expected this perfect matching. A pair of twin-state fotons indeed *had* identical polarization. In this model with reality the fotons were *created* with identical polarizations. (In quantum theory, on