the other hand, where polarization is *observer* created, the matching must be explained by an "influence" instantaneously exerted on a photon by the observation of its remote twin.)

Experiment II

This is the same as Experiment I, except this time Alice rotates her polarizer by a small angle we'll call Θ (the Greek letter theta). Bob keeps his polarizer axis vertical.

Both experimenters take the same kind of data once more. The polarization of fotons is unaffected by Alice's choice of a new polarizer axis. Therefore, some fotons that *would have* gone through Alice's polarizer on her Path 1, had she not rotated it, now go on her Path 2, and vice versa. By our separability assumption, Bob's fotons are unaffected by Alice's polarizer rotation, or by which path their twins took at Alice's polarizer.

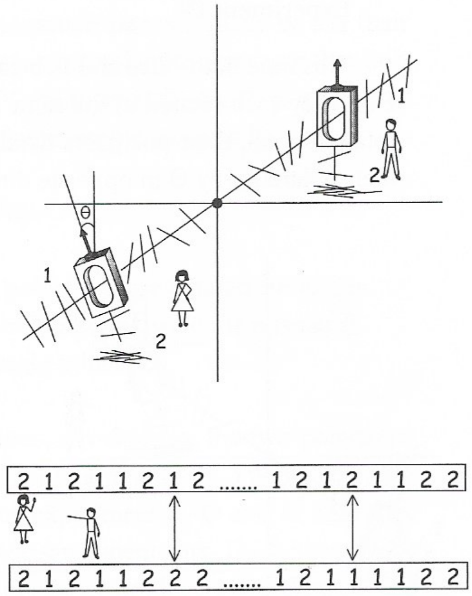

Figure 13.4 Experiment II: Alice's polarizer is rotated, causing mismatches

Alice and Bob, coming together this time to compare their random data streams, find some mismatches. Mismatches occur, for example, when some of Alice's fotons, which would have gone on her Path 1 had she not rotated her polarizer, went on her Path 2. But their twins at Bob's polarizer still went on his Path 1. The percentage of mismatches would be small for small Θ. Let's say that Alice changed what would have happened for 5% of her fotons. She thus caused a mismatch rate of 5%.

Experiment III

This is exactly the same as Experiment II, except that Bob rotates his polarizer by the angle Θ, while Alice returns hers to the vertical. Since the situations are symmetrical, the mismatch rate again would be 5%,