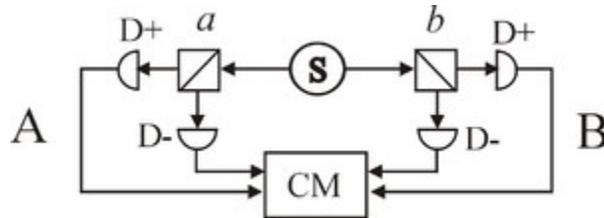# CHSH Bell Tests

by Miles Mathis

In previous papers I have shown the flaws in superposition, entanglement, and square polarizer experiments. Here I will extend that analysis to include the CHSH Bell tests, also called the CHSH Inequality.

When I say I have shown the flaws in these previous experiments, I do not mean I have shown some theoretical or experimental problems, such as loopholes or operational flaws. I have not claimed to have found that hidden variables are still *possible*. No, I have assigned the **actual variables** to the photons, then run them through the machines, showing how they match the results without quantum mechanical assumptions of entanglement. This falsifies entanglement and the current theory in the most direct way possible. I have proved the reality of the particles and qualities by direct demonstration.

What this means is that all the various proofs and tests of entanglement and superposition have been nothing more than strawmen proofs and tests. The proofs and tests began by assuming that x would happen if entanglement were true, and that y would happen if hidden variables were true, then showed that x was true (or nearer true than y). However, the assumption that y would happen without entanglement was never proved, demonstrated, or even indicated. It was always only a pathetic strawmen, propped up by fakers. In this whole circus, John Bell played the part of the ignorant dupe, perhaps on purpose. He may have been a shill, I don't know and don't care. All I know is that his agreement to these initial assumptions was a magnificent blunder, which I cannot account for in the normal ways. In other words, he can't possibly have been stupid enough to mess up simple math in that way, so I assume he did it to throw the game to the other side. He is either the physics equivalent of Wrong-way Corrigan or of Chick Gandil.

The CHSH (Clauser, Horne, Shimony, Holt) tests are just slightly more complex photon routes than the routes I looked at in my second paper on superposition. The early tests were one-channel tests, but the more complex two-channel test is diagrammed above. The math is done only on the "simultaneous detections" of any of the four sub-channels. In other words, any of the arrows going into CM may trigger a simultaneous detection. We can have [A1, B1], [A1, B2], [A2, B1], [A2, B2]. We are then given the equation:

C = [A1, B1] - [A1, B2] + [A2, B1] + [A2, B2]

If C>2, we are supposed to have proof of entanglement and disproof of hidden variables.

Could that be any sloppier or any more pushed? **You should ask yourself, why not have two minus terms and two plus terms, and say that if C>0, we have entanglement?**

That is the cheat right there.

The reason is that even this simple math is pushed in hamhanded ways, in plain sight. To see how, we have to study the operation a bit closer. The "simultaneous detection" must have a built-in margin of error, since there is no such thing as simultaneous. That is assuming infinite precision, and there is no such thing as infinite precision, either in quantum mechanics or in normal mechanics. So the box CM has to be **tuned** to allow some tiny Δt to be defined as simultaneous, and the Δt just above that as not simultaneous. We aren't told what that tuning is. Regardless, this skews the entire experiment, and I don't know who thought this was the best way to test anything. Actually, it is the worst of all possible ways to test this or any other theory. There are a nearly infinite number of ways to test entanglement without requiring "simultaneous detections," so I assume this way was chosen because the physicists *knew* it was the best way to fudge the results.

You see, because Δt is not instantaneous, it means that all four "simultaneous" detections are guaranteed to be overcounted. The operation guarantees that each of the four coincidences is greater than 1. So if you have three plus terms and one minus term, you are guaranteed to find a result over 2. Just think about it. If the margin of error is .01, say, then you have:

C = 1.01 + 1.01 + 1.01 – 1.01 = 2.02

Proof of entanglement, right? No, proof of equation finessing.

It took me all of about ten minutes to figure this one out, and I didn't even have to give my photons spins and put them through the device. I saw the cheat just from looking at the math. They claim that their experiments are getting more precise and sophisticated, but the only thing getting more sophisticated is the misdirection. They give their experiments more and more channels and more and more sophisticated polarizers, and more and more complex particles (like Josephson phase qubits), but this is all just to get your attention off that bold cheat in the math. Like a shell game player, they have to keep your eyes off the ball.

The detection loophole and other loopholes also act as misdirection, since they get you looking in the wrong place for errors. In law, this is called leading the witness. In politics, it is called playing both sides. The mainstream people who sell these Bell tests have tried to create a path for doubters, even telling you where and how you might doubt. They say something like, "We admit that doubt can creep in at point A and B, and we can understand our opposition looking closely there." They then assure you that they have done everything possible to answer your doubts. But since there was never any real problem at point A or point B, you have been misled. Since the problem is at point C, you will have missed it.

That was enough to destroy all the CHSH Bell tests, but I also want to draw your attention to another

hamhanded cheat. They keep your eyes on what classical physics would predict here—the number 2—and off what quantum physics predicts here—the number $2\sqrt{2} = 2.828$. They normally hide the results of these tests from you, telling you only that entanglement has been strongly indicated. But if you look for numbers, you don't find them. Wikipedia, for instance, has blurbs on all the early CHSH experiments, but no numbers. Did they find 2.000001 or 2.8279999? Without serious digging, you won't discover it. The early tests actually found small deviations, on the order of 2.07. Stronger violations in the area of 2.25 have been found since then, but the experiments have to be made more complicated to get higher numbers. The simpler the experiment, the closer to 2 it gets.

But the point is, if you put all the Bell tests since 1972 in a pile, and average them, you get nothing even close to 2.83. Even with all the awful pushes we have seen, getting worse every year, the average is still very much closer to 2 than to 2.83. So you may ask yourself this: how can classical physics predict 2 and quantum physics predict 2.83, and a result of 2.07 is still read as vindication of quantum physics? According to my math, the result is 3% off the classical expectation and 27% off the quantum expectation. Also according to my math, 3 is smaller than 27. Even at 2.25, we are at 11% and 20%. Still not even close. The classical expectation is much better.

Therefore, we have no indication of entanglement at all, and never have. For these Bell tests to convince *me* of entanglement, I would need two plus terms and two minus terms in the math. Then I would need a series of results that converged on the actual quantum prediction, with some logical margin of error. That is real science. What we have had since 1972 is just cheesy and amateurish propaganda, that even Karl Rove would be embarrassed to author.

Which leads to another question you can ask yourself: "What does it mean that we have had 40 years of media coverage trumpeting entanglement, 40 years of Bell tests claiming to disprove Bell's inequality, Bell himself caving, and no one arguing for sense in all that time?" How is it possible that such a bald mathematical cheat has been sitting in the open for 40 years, and no one has spotted it? Did Bell really fail to spot it? Is that believable?

The further I go down the rabbit hole, the more I am convinced that physics—like Modern art—is purposeful nonsense. Is it nonsense created by the government, to keep us confused? Is it nonsense created by aliens, to keep our technology stunted? Is it nonsense created by the gods, to test our intelligence? Or is it just nonsense created by human beings who have no sense? Could be a mixture of all four, as far as I know, or none of the above. I have to admit it is entertaining, seeing through it. But it doesn't make the rabbit hole very cosy. With the other rabbits showing so many signs of myxomatosis, one tends to expect a roof collapse at any moment.