Review of: "Why Bell's experiment is meaningless"

Wolfgang Sturm

Potential competing interests: No potential competing interests to declare.

Hello Dr. Geurdes,

I appreciate your criticism of Bell. Only one detail is unclear to me:

In the Alice laboratory there is an analyzer with an angle setting "a". During a measurement, “a” is kept constant. This analyzer is hit by quanta with random angles "qa".

In Bob's laboratory there is a similar analyzer set at angle "b". It is hit by quanta with the angle "qb".

The quantum entanglement of the source causes a constant angular difference of 90° between "qa" and "qb". To put it simply: "qb = qa - 90"

The outputs of Alice's and Bob's analyzers are differentially compared with an electronic device. The relevant angle difference can be denoted by “x” and is calculated “x = (a + pa) - (b + pb)”. This results in "x = a - b + 90° = constant".

This elimination of random quanta angles is one key trick. The more measurements you make, the smaller the quantum randomness appears.

To determine the S value, four measurements with different “a” and “b” are carried out. “x” remains constant during each measurement. I put it all together in this small program:

```
#R (V4.3.2): CHSH

run = function(a,b) {                              # correlation measurement
    E = 0; for(s in 1:100) {                       # shots
      qa = runif(1, min=0, max=rad(360))           # random quantum angle for alice
      qb = qa - rad(90)                            # and the angle for bob
      x = (a + qa) - (b + qb)                      # difference angle
      E = E + cos(x)**2 - sin(x)**2
    }; return(E/s)
}
rad = function(p) return(p * pi / 180)             # useful

a = rad(0); b = rad(22.5); c = rad(45)             # Main: Alice, Bob, const
run(a,b) + run(a+c,b) - run(a,b+c) + run(a+c,b+c) # four runs to calc S=-2.8
```

Due to the constancy of "x", in my opinion there is neither a disturbed monotonicity nor a resulting negative probability.

Nevertheless, I completely agree with you about the core message of the paper. Bell's experiment is an interferometer and therefore irrelevant.

Best regards,

Wolfgang