Bell’s inequalities: Walking through doorways and don’t count your chickens...

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Abstract

Examination of the violation of Bell’s inequalities. The how, why and what Bell’s inequalities require and therefore must sometimes be violated in a universe where things happen rather than just exist. Identifying that what happens via a process is not the same as what is predicted just using prior existent traits. What are the implications for locality, realism and spacetime.

Bell’s inequalities: Walking through doorways and don’t count your chickens...

Are you or are you not a gets though doorway A person?

At the end of a straight pathway there is a doorway. It is fixed into a circular wall panel that can be rotated. This presents different amounts of ease/difficulty going through. Vertical is easiest followed by near vertical. Horizontal is impossible. As it is a slot too high off the ground height to get into. Your athleticism limited. Close to horizontal is most difficult but may be manageable, only just.

You do not know in advance what orientation A will be in. Lets say you are blindfolded and only discover doorway As orientation on reaching it. The doorway is vertical, you walk through with ease.

A friend with the same build and athleticism has walked along the straight path in the opposite direction. The pair of you began your journeys back to back. Your blindfolded friend comes to a doorway and goes through. Luckily for the friend this doorway too is vertical. This test is repeated and every time you both walk through with ease without any communication between you.

Next the doorway is rotated 90 degrees. Now on reaching the doorway neither of you can get through. Not being supremely athletic.

Then just one of the doors is returned to vertical. One will now walk through with ease and one be stopped by the door obstacle. Still without any communication.

The situation has gone from always correlated i.e. both pass, to always correlated neither pass, to always uncorrelated, one does pass and one does not.
The ease or difficulty of the doorway entrance is always because of the orientation encountered. There does not need to be communication telling each friend what the other has found.

The challenge continues with different combinations of angles. One door vertical and one door at 45 degrees allows one friend to pass with ease and the other faced with an obstacle between easy and difficult that can be successfully passed 50% of the time. (neither of you are very bendy.) When passed there is said to be correlation because the vertical doorway was also passed. 50% of the time there will be failure to get through the 45 degree doorway. That is said to be no correlation or anti-correlation because the vertical doorway *was* entered. Again no communication is needed to get this result. Each person is just taking on the situation they individually face.
More combinations of angles are tested. Small difference of angle gives high likelihood both will pass, if one does giving correlation. Close to but not exactly 90 degree separation there is high likelihood one will pass and the other won't but not perfect correlation.

If we were talking about photons or photon carriers they can have orientation too. The pair is matched at creation. They can be created as having opposite characteristics (anti-correlated pair) or the same (correlated/ singlet state). There is a symmetry that is retained even over great separation. That being a consequence of the individuals retaining their own identities.

The doorway experiment will be conducted again but this time in outer-space. You can approach the doorway from different orientations because now the pathway can be rotated around the circular wall in which the door is located and you have heavy magnetic boots sticking you to the pathway so that you don't fall but are able to walk along it. You tackle the door obstacle as you find it from your own

orientation of approach. Your friend does the same. You do not communicate. The results show the same statistical pattern as the previous earthbound tests.

Bell's inequalities are about states of being. The question are you a person who will go through door A doesn't really make sense, when we think about what has just been described. Blindfolded and told nothing you can not claim to be someone who will go through or someone who will not. It depends upon how the scenario unfolds. This may be slightly inconvenient for spacetime in which everything is said to exist; Past, present and future. If the outcome already exists, what it was to enable that outcome already exists too. That is not the case if the material future is unwritten (i.e. doesn't exist), the outcome is becoming and fits what happens, when it happens and not before.

Will you go through A? I don't know. A' s orientation compared to my own until I get to A is unknown. That will decide if I go through or not. Will communication from a friend help with getting through the door. No. Getting through is up to me and the obstacle as it is presented.

Bell's inequalities being met demand that passing or not passing are prior existent traits. An example of such traits is often something like has or has not; hat, gloves and glasses. Goes through door A, goes through door B, goes through door C are not prior existent traits. They have to come into being. They are happenings not fixed existence. A comparison is with a basketball can be made. For a standard sized ball, colour, decoration and whether autographed are prior existent traits. Does or does not go through the basketball hoop when thrown on a particular occasion is not a trait of the ball that exists prior to the throw being taken. (unless you want to argue that it does exist as a part of spacetime ahead of the present being experienced. I think that is wrong) Does or does not go through the basketball hoop is the result of the particular relations of ball hoop and player and process happening at the time.

Having gone once through the hoop it can not be said to be in a goes through hoop state. The passing through only applies to that one particular try.

We are really talking about photon particles or photon carriers meeting the complex asymmetrical chemical structure of a polarizer. The relation between them that is established decides if it passes or not. Does this really *demand* a quantum mechanical explanation? Or can we have a world where not everything is decided and knowable before it happens. Without the need for faster than light communication or lack of local realism.

If something has to be relinquished I don't think it should be locality. As communication is playing no role in outcomes obtained.) and I don't think it should be material reality, actualized existence. Existence is unitary whereas different observers can disagree about the location of observation products seen. Each making their own product using the sensory input obtained at their location. Measurement produces observation products, whereby something can be known. It can't actualize (make actual) the existent thing measured. For this reason realism should be retained, meaning things are real prior to measurement. But additionally *things happen, there are processes* affecting outcomes. Preventing the complete categorization of objects into will and won't groups.

Spacetime as the background for where physics happens is wrong. Spacetime just is, its not happening. Happening is problematic for the model. Spacetime should be reserved for observation products. Whereas material happening has a metaphysical background of sequential change happening altering the pattern of existence at Uni-temporal Now. (All that exists currently at the same and only time).

To demonstrate that this is how the real material world is. This does not just apply to esoteric photons and polarizers or abstract doorway thought experiments,

Don’t count your chickens before they’re hatched. You might reason that number of eggs equals number of chickens expected. However firstly not all eggs are necessarily fertilized. Also chick embryos can die in their shells for example because of overheating. These are 2 definite won’t hatch groups. Healthy chicks given a healthy egg environment should hatch. Though some external misfortune such as a visiting predator may intervene. So they are still not 100% certain. Further more, and more interesting is that live chicks can die in their shells at hatching. For example because the eggs have become too dry and as a result the egg membrane has become too tough to break out from. These live chicks have the potential to break out and live and potential to die trying. Making them maybe chickens. So there are won’t hatch eggs, group No, and will likely, given no unforeseen external circumstances, will hatch eggs, group Yes. That could be used for a basic estimate. Not taking into account that there are maybe chickens. In reality hatching is a *process* and like birth is not certain. Health of chick and health of egg environment come together to decide if hatching is successful or not, at the hatching time.