

Invariance of Causality (Cause-and-effect relationship)

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We all know that the direct cause and effect relationship between two events is invariant with respect to the temporal or spatial location of the events. In fact, physics is based around it. But, is there any objective proof save for the unit probability of such invariance accounted for by statistical observation in the past?

For instance, sitting here on the surface of planet earth, If I let go of a ball, I'm more likely to assume that the ball would go down instead of going up. Some would be very certain that the ball would go down. This is merely because of the unit probability, as observed in the past, of the occurrence of such an effect given the same initial conditions. Of course, we have the universal law of gravitation to assert to us that the ball would go towards the center of the earth. But, this assertion by our law cannot guarantee that the ball would indeed go down because the law itself is an generalization attempt made by us to take advantage of the observed unfailing nature of this causal invariance. Objectively speaking, the law is nothing but a tool of convenience that has not failed till now.

Imagine this, if the sun is to disappear suddenly and completely from spacetime, should it be of any surprise to us? In fact, what guarantees the continued existence of the sun in the first place? The law of conservation of matter? What guarantees the validity of such a law? There are no courts of physical law in the universe where we can argue over the disappearance of the sun or the lack of enforcement of the law that such an event defies. we'll just have to do with it and modify our laws to accomodate this new "quirk" (i.e. if we're to survive that long without the sun).

So, in essence, the only thing that has the capacity to objectively guarantee that the ball would indeed go down when I let go of it the next time is the ball going down when I let go of it the next time.

Think about this...the next time you press the key with the letter 'P'

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printed on it, is there really any guarantee that it will be the letter 'p' that will appear on your screen and not any martian symbol?

The only proof that the next time you strike the key, p will appear on the screen is the effect itself.

Laws of physics are designed around this *assumed* invariance of causality with respect to temporal and spatial location of the event. There is nothing we can do if this baseless assumption is to falter.

Regards.

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