

Einstein–Podolsky–Rosen (EPR) as not a paradox but a weakened theorem

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We assume Meth8/VL4 with the designated *proof* value of \top tautology.

LET + Or; - Not Or; & And, ", "; # necessity, for all; % possibility, for one or some;
 (%p>#p) 1; ((%p>#p)-(%p>#p)) derived value 0.

Definition	Axiom	Symbol	Name	Meaning	2-tuple	Binary ordinal
1	$p=p$	T	tautology	proof	11	3
2	$p@p$	F	contradiction	absurdum	00	0
3	$\%p>\#p$	N	non-contingency	truthity	01	1
4	$\%p<\#p$	C	contingency	falsity	10	2

See: en.wikipedia.org/wiki/EPR_paradox; and from vixra.org/pdf/1804.0335v1.pdf :

$$(|0\rangle, |0\rangle) + (|1\rangle, |1\rangle) = (|0\rangle, |1\rangle) + (|1\rangle, |0\rangle) = (|0\rangle + |1\rangle, |0\rangle + |1\rangle) \quad (1.1)$$

We weaken Eq. 1.1 by reassigning the equivalency connective to the implication connective in the same order of literals.

$$(|0\rangle, |0\rangle) + (|1\rangle, |1\rangle) > (|0\rangle, |1\rangle) + (|1\rangle, |0\rangle) > (|0\rangle + |1\rangle, |0\rangle + |1\rangle) \quad (2.1)$$

We ignore the bra-ket designation as irrelevant to the instant binary argument.

$$\begin{aligned} & (((((\%p>\#p)-(\%p>\#p))\&((\%p>\#p)-(\%p>\#p))) + ((\%p>\#p)\&(\%p>\#p))) > \\ & \quad ((((\%p>\#p)-(\%p>\#p))\&(\%p>\#p)) + ((\%p>\#p)\&((\%p>\#p)-(\%p>\#p)))) > \\ & \quad ((((\%p>\#p)-(\%p>\#p))+(\%p>\#p)) \& (((\%p>\#p)-(\%p>\#p))+(\%p>\#p))) ; \\ & \quad \quad \quad \text{TTTT TTTT TTTT TTTT} \end{aligned} \quad (2.2)$$

Eq. 2.2 as rendered is tautologous. This confirms a modified thesis of the captioned paper, that EPR is not a paradox and is resolved as an implication theorem.