Review of: "Further comments on ‘Is the moon there if nobody looks? Bell inequalities and physical reality’"

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Potential competing interests: No potential competing interests to declare.

This paper is the latest in a series of exchanges between the author, Richard Gill (sometimes with co-author P. J. Lambare) and Marian Kupczynski in which the former has (correctly, in my view) criticised proposals by the latter which are claimed to show that experimental results of Bell-type experiments can be “explained in a locally causal way” even though they do not satisfy the Bell/CHSH inequalities. In the paper under review Gill shows that Kupszynski’s condition for the results to be “explained in a locally causal way” is satisfied by all possible sets of results; Kupczynski’s concept of “locally causal” is therefore vacuous.

Some minor corrections need to be made; these do not affect the validity of Gill’s demonstration.

Gill correctly points out that Kupczynski’s notation is confused: he has variables λ_1, λ_2, λ_x and λ_y where x and y can take the values 1 or 2. These are supposed to be six different variables, but since x and y stand for 1 or 2 they are denoted by only two different symbols λ_1 and λ_2. Gill (who prefers ab to xy, a preference that I share) seeks to resolve this ambiguity by writing, for example λ_{a|a=1}, but this is still not satisfactory; in this expression a is a bound index, and λa|a=1 means the same as λ_{b|b=1}. I think it would be better to label the last four variables by λ^A_x and λ^B_y (x, y = 1, 2).

Gill’s definition of p_{ab} contains the unnecessary clause “zero on all other points of this set”, unnecessary because there are no other points of this set.

This paper by Gill contains a number of other comments on Kupczynksi’s papers, but the important content is the demonstration that Kupczynski’s concept of “locally causal” is vacuous and not subject to experimental test.