
This article contains one of the few careful and logically explicit discussions of the concept of complementarity in quantum mechanics. From a mathematical standpoint it is elementary, but it is written in a clear and detailed way that strongly recommends it. The number of distinctions introduced and the full definition of complementarity itself would occupy too much space to reproduce here. We may illustrate the ideas by just using the familiar case of position and momentum. It is true in classical physics that every macro-object has at a given time both a position with high accuracy and a momentum with high accuracy, but this assertion is false for a micro-object. This pair of assertions (one for macro-object and one for micro-object) generates a paradoxical situation, not a logical paradox but what we may term a physically paradoxical situation. What are complementary then are two *phenomenon* sentences about position and momentum, one of which refers to an experimental arrangement in which position is observed and the other an experimental arrangement in which momentum is observed. What is important is that the phenomenon sentences that stand in complementary relation to each other include reference to specific experimental arrangements. The essential condition is that the experimental arrangements be in an appropriate sense mutually exclusive.

If the authors are correct in their general account of complementarity, and the reviewer believes that they are, the apparatus that they introduce, including description of experimental arrangements, shows how difficult it will be to give a complete account of complementarity within a fully axiomatized formulation of quantum mechanics. Such an axiomatic account would seem to be the next step to go beyond the analysis given in the present article.

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