text. Any set $m_k = \{m_i : m_i \leftrightarrow m_j$, for all i, j$\}$ of compatible observables (two observables m_i, m_j are compatible, $m_i \leftrightarrow m_j$, if and only if the corresponding operators M_i, M_j commute, that is, if and only if $[M_i, M_j] = \emptyset$, where $\emptyset$ is the null operator) will be said to determine an experimental context C_k. This convention is motivated intuitively by the fact that, in principle, compatible observables are co-measurable that is, their values can be simultaneously determined by one (possibly very complicated) experimental arrangement. One way to express the basic claim of Bohr's complementarity interpretation is as the claim that where quantum mechanical observables are concerned the C_k are the only physically realizable experimental contexts. A context C_k will be said to be a maximal experimental context if and only if there exist no observables $m_i \notin m_k$ such that $m_k \cup \{m_i\}$ is again a set of compatible observables. A context which is not maximal permits of a number of different extensions through the addition to its determining set m_k of one or more additional observables m_j, such that $m_j \leftrightarrow m_i$ for all $m_i \in m_k$.

We will say that a state W_k is appropriate to the context C_k if and only if W_k can be expressed as a countable, convex combination of mutually orthogonal one-dimensional projection operators corresponding to those rays of the Hilbert space of the systems in question which contain simultaneous eigenvectors of the operators M_i corresponding to the observables $m_i \in m_k$. In other words, the states appropriate to