mathematically

Having formulated the ideas of information and
correlation for probability distributions, we turn to the
field of quantum mechanics. In this chapter, we
assume that physical states of physical systems
are represented by points in a Hilbert space, and that
the time evolution of the state of an isolated system
is governed by a linear wave equation.

A feature of great importance to our interpretation is that the
state functions lead to well-known meaning to

It is well known that state functions led to
distributions over eigenvalues of Hermitian operators
(square roots of expansion coefficients of state in terms
of the basis consisting of eigenvectors of the operator) which
were interpreted as probability distributions,

have the mathematical properties of probability distributions
(non-negative and normalized). The standard interpretation of
quantum mechanics regards these distributions as
actually giving the probabilities that the various eigenvalues
of the operator will be observed, when a measurement
is performed by the operator is performed.

A feature of great importance to our interpretation is the fact that state functions of a composite
system lead to joint distributions over subsystem
quantities, rather than independent subsystem
distributions -- i.e., the quantities in different subsystems
may be correlated with one another. The first section
of this chapter is accordingly devoted to the development