

Polkinghorne Questions

Chapter 5

1. What, in particular, does Einstein not like about quantum theory?
2. At the top of page 79, Polkinghorne says that Einstein's fellow physicists interpreted things differently. In class, we talked about three different kinds of theories. In an *open-variables theory*, all of the physical quantities that we expect a particle to have have definite values, whether or not we measure them. This is the situation in classical physics. In a *hidden-variables theory*, all of the physical quantities that we expect a particle to have have definite values, but for some reason we may not be able to know all of them. For some reason, these variables are hidden. In a *no-variables theory*, some or all of the physical quantities for a particle do not even have definite values. Which of these three kinds of theories is Einstein using? Which of these three kinds of theories are his fellow physicists using?
3. What did John Bell do?
4. What did Alain Aspect do?