

# **Bohr: Complementarity and Correspondence**

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Abstract:

Exchanges with Einstein during the 1920s contributed to Bohr's development of the concepts of complementarity and correspondence in the late 1920s and 1930s. Both were based on the existence of the quantum of action  $h$ : It led to the symbolic role of the photon concept in describing one complementary aspect of electromagnetic phenomena: energy and momentum exchanges with ponderable matter. And it also led to the symbolic role of the wave function in describing one complementary aspect of the behavior of electrons: interference phenomena. But, in accord with his interpretation of the correspondence principle, Bohr still denied equal status to the wave and particle pictures. Based on their respective classical limits, he stressed that the wave picture is really only applicable to electromagnetic phenomena, and the particle picture only to the electron. Curiously enough, Einstein agreed.