

Crossing the Disciplinary Boundaries of Physics (Bohr-100 Centennial Celebrations)

Contribution ID: 17

Type: **not specified**

Christian Bohr and Niels Bohr —physics and biology

Monday, August 7, 2023 2:00 PM (25 minutes)

Christian Bohr was an eminent and successful professor of physiology at the University of Copenhagen. At the time when Georg Brandes trailblazed the Modern Breakthrough in literature opening Danish inward-looking mentality to European culture, Christian Bohr contributed crucially to elevate Danish medical science from its secluded, provincial state to a field to be reckoned with on the international scene. Being an innovative instrument maker who made it his trademark to employ chemical and physical methods in physiology, Christian Bohr's pioneering research epitomized interdisciplinarity between biology, physics, and chemistry. He was nominated twice for the Nobel Prize in physiology, and he firmly institutionalized experimental physiology in Denmark.

It springs to mind drawing a parallel to his son Niels Bohr, who a few decades later introduced and institutionalized modern physics in Denmark and even propelled Copenhagen into one of this discipline's undisputed international centers. I will suggest that The Physiological Institute, where Niels Bohr spent his childhood and early youth, in some sense served as role model for his later Institute for Theoretical Physics.

Employing methods of physics and chemistry in physiology made Christian Bohr ponder epistemological problems concerning the dichotomy between exact physical, empirical description and teleological explanation of processes in living organisms, and he discussed these issues with his philosophically inclined son. When Niels Bohr introduced the concept of complementarity in 1927 as a kind of new logic that could accommodate the rival particle/wave descriptions in atomic physics, he tried to elucidate the new situation in microphysics with an analogy to the epistemological situation in biology and psychology.

Presenter: JACOBSEN, Anja Skaar (University of Copenhagen)

Session Classification: Session 3