Adams - Abstract

Among the first propositions one encounters in physics is the definition of 'work' as mechanically transferred energy. Energy is the capacity to perform work. Performance emerges as the quotient of work and time. These definitions, which also appear in economic discourses of productivity, represent an extension of Newton’s mechanical variables (force and change in momentum) by thermodynamic principles. The ‘natural philosophical’ concept of the commutability of all forces is often cited in the History of Science as an important background to the development of the law of conservation of energy (from 1840 onwards). This presentation reverses the perspective and analyses the Romantic reception of the early scientific and technical discourses surrounding the term ‘work’, which, among other things, led to Leibniz’ principle of vis viva (living force) being (re)defined as ‘work’ (in 1829). The primary focus is on the debates concerning the comparability of human beings and machines within the context of the study of thermal engines (so-called 'heat machines’), and on ‘work’ as the unifying principle of a large number of physical and biological processes.