

Chapter 19: Technological Advances and Economics in the Global Age: 19-2b Revolution in the Sciences: The New Physics  
Book Title: The Earth and Its Peoples: A Global History 7th Edition Update, AP® Edition  
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## 19-2b Revolution in the Sciences: The New Physics

The word *progress*, as much associated with extending “modern civilization” to the non-Western world as with technological developments such as railroads and undersea cables, had been a hallmark of most nineteenth-century Euro-American ideologies. After 1900 the word *science* increasingly took its place as a signifier of Western self-esteem. At the end of the nineteenth century, a revolution in physics undermined the old certainties about nature that had already been shaken by Darwinism. Physicists discovered that atoms, the building blocks of matter, are not indivisible, but consist of far smaller subatomic particles. In 1900 German physicist [Max Planck](#) ([German physicist who developed quantum theory and was awarded the Nobel Prize for physics in 1918. \(p. 566\)](#)) (1858–1947) found that atoms emit or absorb energy in discrete amounts called *quanta*. Few people understood these findings at the time, much less [Albert Einstein](#) ([German physicist who developed the theory of relativity, which states that time, space, and mass are relative to each other and not fixed. \(p. 566\)](#))'s (1879–1955) pronouncement in 1916 that time, space, energy, and mass are not fixed but are relative to one another. But scientific discovery, punctuated by prestigious Nobel prizes that began to be awarded in 1901, excited pride and wonder in nations that contributed to such advances.

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