

SUMMARIES OF LECTURES in ECO 303Y1:
the Economic History of Modern Europe, to 1914
for the Academic Year: 2012 - 2013

II. Week no. 2: Lecture no. 3: on 19 September 2012:

Technology, the ‘Scientific Revolution’, Religion, Education, and Social Attitudes during the British Industrial Revolution (1760 - 1830)

(1) **Technological innovations are the key and essence of the modern Industrial Revolution:** not that such innovations were not found in the past, but that they occurred with a rapidity and interconnectedness – so that one innovation necessitated another – that the vastly increased profitable productivity at an unprecedented rate.

a) **entrepreneurship:** note the importance distinction between invention and innovations: their profitable application in the economy

b) **innovations did not consist merely of labour saving machines,** but of changes in the organization of production, in agriculture, commerce, and finance, as well as in industry, that achieved these goals

c) **the crucial role of population growth and a consequent Malthusian threat:** that forced or inspired innovations to economy on land and resources, as well as labour.

d) **the nature of innovation:** was it merely a ‘random walk’, of chance, of stochastic processes, depending on certain successful inventors, innovators, and entrepreneurs: or was the Industrial Revolution a case of Toynbee’s thesis of ‘challenge and response’, as in the cases of responses to growing population pressures on land and resources? But challenges do not always elicit the proper responses – forcing us to ask why 18th century Britain was more successful in responding to such challenges than other countries

2) **The ‘Scientific Revolution’, of ca. 1660 - 1760, leading into the Industrial Revolution:** the era of Isaac Newton and Robert Boyle (see the lecture notes)

a) **Royal Society, founded in 1660:** with the explicit objective of applying science and scientific experimentation to industry and the material progress of society: no other similar academy of sciences to be found elsewhere in 17th century Europe

b) **the debate about whether the Industrial Revolution in fact depended upon scientific knowledge:** the modern consensus is that it did, especially knowledge of physics and chemistry

c) **If the Royal Society ultimately did not produce many such concrete results,** it at least inculcated the social attitudes that scientific experimentation could lead to material progress and industrial growth; and 18th century England did have a society with better and more practical scientific knowledge than other European societies.

d) **The Lunar Society of Birmingham:** founded in 1764, at the outset of the Industrial Revolution: set up to revivify and achieve the former objectives of the Royal Society. Among its many members are to found

most of the leading scientists and industrial entrepreneur of the Industrial Revolution: including James Watt and Matthew Boulton.

3) **Religion and Society in the Industrial Revolution:** the peculiar role of the Dissenters:

a) **Protestant Sects who refused to ‘conform’ to the established Church of England (Anglican Protestant)**, who thus ‘dissented’ from the state church, many of whom were Calvinists: Independents or Congregationalist, Presbyterian (adherents of the Calvinist Church of Scotland), Baptists, Unitarians; and later the Quakers (1667) and Methodists (1795).

b) **The earlier Calvinists had played a major role in the English Civil War (1642 - 1651):** between Parliament and the Crown, between ‘Puritans’ and the established church, and gained the upper hand in the republic that Cromwell established (the Commonwealth and Protectorate, 1649 - 1659).

c) **Restoration of the Monarchy in 1660 (after Cromwell’s death in 1658, and overthrow of his son Richard):**

i) **Charles II and the monarchist majority:** set about to remove all Republicans and Calvinist from local and national power, in any form

ii) **Corporation (1661) and Test Acts (1673):** excluded all Dissenters and Catholics from any form of local municipal or national office, from any branch of government and the armed forces, any royal offices, etc. ; i.e., total exclusion of anyone who refused to take oaths and sign pledges to conform with the Established Church of England (upholding its 39 Articles, taking communion, etc), and renounce Catholicism.

iii) **That included not only all Protestant Dissenters but also Roman Catholics:** (to 1829)

iv) **Glorious Revolution of 1688-89:** overthrown of James II (younger brother of James II), replaced by James’ daughter Mary and her husband, the Dutch Calvinist prince William of Orange

v) **Edict of Toleration of 1689:** at William’s insistence (as a Calvinist): to permit Dissenters (but not Unitarians and Catholics) full freedom of religion, though they all remained subject to the Corporation & Test Acts: thus a half-way status between toleration and discrimination.

d) **Social and Economic Significance of the Dissenters:** though they comprised only about 5% - 7% of the population of England and Wales, they accounted for over half of the known entrepreneurs and scientists of the Industrial Revolution era (to the 1830s)

e) **Explanations for the social and economic significance of Dissenters:**

i) **Their minority status:** exclusion from normal avenues of wealth, power and prestige forced them to devote their talents and energies in the world of business or commercial agriculture: and to excel, to prove their worth to themselves and to society

ii) **The Weber-Tawny Thesis on Protestantism (Calvinism) and Capitalism:**

(1) Predestination and ‘election’:

1. that God is omnipotent, and human beings are utterly helpless in achieving salvation without God’s ‘election’:
2. that, ultimately, success became the sign or symbol of God’s favour, of his ‘election’ to Paradise, as explained in the second feature

(2) The Calling: that everyone’s duty to glorify God is achieved by excelling in one’s ‘Calling’ – any honorable way of life, including business. The sign of business success is profit maximization, which came

to serve as the sign or indication of one's 'election' to eternal Salvation with God: profits as the 'bottom line'
 (3) 'Worldly Asceticism': i.e.. to live almost like monks, but in the real world.

3. that one should always live simply and frugally without ever manifesting the fruits of business success
4. that profits, instead of being consumed ('conspicuous consumption') should be reinvested in the business enterprise (including agriculture), to expand and increase the profitability of that enterprise, further to glorify God (see: Predestination)

iii) **Education:** the successful role of the Dissenting Academies and Scottish Presbyterian universities

5. Dissenters were denied all access to established schools and universities, all run or dominated by the Church: and hence were forced to set up their own schools
6. Dissenting Academies: emphasized mathematics, physical sciences, accounting, engineering, English, etc. at the expense of theology, Latin and Greek (Classics), philosophy, which were the foundations of traditional English education
7. that business-oriented curriculum may reflect the interests of the urban middle classes who predominated amongst the Dissenters; but also clearly provided an education better designed to ensure success in the business world.

But you will gain more by reading the lecture in full, in PDF or Word.