Library

Ian Gordon Simmons
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10,000 BC to AD 2000
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The theme of the impact of the human species and its economic activities on the environment is a central topic in environmental history. Since this impact depends, directly or indirectly, on the energy exploited by men in order to modify matter, either in its form or location, a focus on energy is an appropriate perspective for the environmental historian who sets out to reconstruct long-term trends. In his recent book, Ian Gordon Simmons utilizes "human access to energy sources as a periodisation device" (p. xi). The history of mankind over the last 12,000 years can be divided into five epochs, which correspond quite closely to distinct stages in energy consumption.

According to the data the author provides at the beginning of the book (p. 11), the levels of energy consumed – expressed in calories per capita per day - throughout the history of mankind are the following:

– gatherer-hunters	5,000
– dryland agriculture	12,000
– advanced agriculture	25,000
– industrial (with fossil fuels)	77,000
– post-industrial (with electricity)	230,000

In Europe, per capita energy consumption per day was around 140-150,000 calories in 2000, and hence lower than Simmons' estimate for post-industrial societies. Indeed, the epoch we live in is not yet post-industrial. Simmons defines it as "full industrialisation", a stage when the per capita per day level of energy consumption is 120,000 calories (p. 118). If energy is a measure of working capability, and work, in economic terms, is a measure of the influence or impact of human beings on their environment, the trend to increasing energy consumption is a measure of the increasing influence of the human species on the world it inhabits.

To summarize the changes brought about by recent industrialization and modern growth, Simmons reconstructs the energy consumed by mankind from 50,000 years B.C. until today (Table 1.1, p. 10). The resulting statistics is impressive. The energy consumed in the 250 years from 1750 to 2002 (1,007 10^{18} Joules) is equal to half the energy consumed from 50,000 B.C. to 1750 (1,909 10^{18} Joules); i.e., in the previous 51,750 years. In other terms: from 1750 to 2002, that is in 0.5 percent of the time elapsed from 50,000 B.C. to the present day, human beings have utilized one-third of all the energy consumed in 52 millennia, and have thus changed the face of the planet on which they live. Yet, this result underestimates both global and recent energy consumption by humans.

More significant statistics can be obtained by adopting a different chronology, while maintaining the same realistic estimations of energy consumption made by Simmons (and many others) for the different stages of human history. Demographers have estimated that since the origins of mankind, some 5 million years ago, about 100 billion human beings have existed. Approximately 6-7 percent of the estimated total number of human beings from the origin of the species to the present day is alive today and about 20 percent of all mankind has lived within the last three centuries. Let us now assume that:

– the life span of the 80 billion human beings who lived on this earth from the beginning until 1700 was on average 20 years (assuming high mortality in the first few years after birth) and consumption per capita was 6,000 Calories per day.

– the life expectancy of the world population over the last 3 centuries has been 40 years on average and its daily energy consumption 40,000 Calories.

According to these reasonable assumptions, 20 billion human beings have lived their lives within 0.006 percent of the 5 million years during which the species has existed, and have consumed 3 to 5 times more energy than that consumed by the previous 80 billion who lived during the remaining 99,994 percent. This statistics is much more impressive than the one Simmons draws up using a different method but similar estimates of energy consumption in past societies. Different assumptions regarding the number of our ancestors and energy consumption per capita in past societies will yield different results, but not such as to substantially change the picture as regards the dramatic proportions of the recent growth in energy consumption. Whatever the exact quantitative terms, we are looking at a drastic change brought about by so-called modern growth in the metabolism between human societies and the environment in which they live and work.

This study by Ian Gordon Simmons – Professor Emeritus of Geography at the University of Durham – is the third of a trilogy devoted to the long period from 10,000 BC to 2000 AD. The first in the series dealt with Great Britain (2001), the second with the Moorlands of England and Wales (2003). The scope of the third and last work is more ambitious, as it embraces all the environmental history of the world over a period of 12,000 years. When dealing with such a vast topic, it is essential to have a clear line to follow or a well-defined methodological perspective in order to maintain consistency in dealing with the various issues involved. From the beginning, however, the author stresses his lack of "methodological ambitions" (p. x). The main purpose of the book is "to chronicle and explain the strength of the interactions between the human and non-human worlds in terms of their mutual effects and the creation of hybrid forms" (p. xiii): in other terms, the interactions between humans and the environment since the end of the last ice age.

After an introductory chapter ("Resonances"), Simmons examines the following different human forms of interaction with nature: gatherer-hunters (Chap. 2), pre-industrial agriculture (Chap. 3), the age of industrialization (Chap. 4), and the post-industrial era (Chap. 5) with its "emerging themes" (Chap. 6). A useful glossary concludes the book.

The purpose of the author is to guide the reader through the epochs of human history. Simmons focuses on the "manipulation of the environments" (p. 35) by gatherer-hunters; the rising impact of the "solar-powered" pre-industrial agricultures; the dramatic change

brought about by the rise of the "industrious world" of coal-based economies; and the "post-industrial era" and the "emerging themes" of our world.

While his approach to the issue of energy is stimulating and the topic of great interest, the author adds very little to what the scholar of the environment already knows, and does not facilitate the approach to such an important theme for the non-expert reader, to whom the book is especially addressed. The back-cover blurb suggests that the book would be useful reading for "courses which deal with environmental history"; its style, however, is that of a conversation rather than of an essay with a clear and linear approach, which would be far more useful for such courses. At the start of each chapter is a picture that the author extensively comments upon. The picture's connection with the topic discussed in the same chapter, however, is tenuous, and this does not help to make the work any more readable. It should also be noted that the author often digresses to discuss particulars at such length that the reader may lose sight of the main theme, viz., the analysis of world-scale energy exploitation over 12 millennia.