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Clark's intellectual Sudoku

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For many years, Greg Clark was mainly known amongst economic historians for two things – his devasting book reviews are as witty as they are insightful. He also invented a signature recipe for academic articles. Start with a fresh puzzle. Chop some theory and carefully knead into puzzle. Gently squeeze some data and mix well. Garnish with a racy dressing of Cambridge-honed essay-writing skills, while stirring the pot. Then, turn up the heat and watch how the puzzle slowly mushrooms into an ever larger paradox. Wrap into some mystery and serve as is.

Given these two proclivities, news that Greg Clark was writing a book caused a bit of a stir. There were those who expected that the right to review the book would be auctioned off on Ebay, with high bids by Graham Snooks and the friends of Walt Rostow. Others predicted that a book by Greg would turn into a mega-mystery maze manuscript – one out of which the author himself could not possibly emerge with proofs in hand.

As it turns out, the book hit the bookshelves quite quickly. What started out as lecture notes (which Greg Clark lent me when I was a struggling visiting professor, trying to prepare my first course on European economic history) has turned into a handsome 420-page tome – just big enough not to be suspected of being pop scholarship, and still small enough to be taken down to the beach or onto the next interminable flight. It is the latest contribution in the distinguished Princeton University Press economic history series, edited by Joel Mokyr. Instead of having to outbid each other for the right to review the book, there are actually opportunities to offer one's views galore. After the *New York Times* correspondent Nicolas Warde discovered the book and wrote about it with the eye-catching headline 'In dusty archives, a theory of affluence', a staggering number of reviews have appeared. From the *Atlantic Monthly* to the *Economist* and the *Süddeutsche Zeitung*, journalists, economic historians and economists have dissected the book's merits. It clearly touched a nerve. For months, the blogosphere has been alive with commentary, criticism and rebuttal. Works with such wide appeal only come along once a decade or so. Not since Jared Diamond's *Guns, Germs and Steel* has a single book on economic history been discussed so vigorously, by so many.

The argument highlighted by Warde and pursued subsequently by other reviewers is the most provocative one in the book – the idea that the Industrial Revolution was all about the patient, non-violent and civilized rich outbreeding their impulsive, impatient and poor brethren. Clark applies this idea with remarkable consistency. For example, in his analysis of low labour productivity in nineteenth-century India, he concludes:

> differences in labor productivity must stem from differences in the quality of labor in production across societies, differences that stem largely from the local social environment . . . labor problems were at the root of India's failure to industrialize under British rule in 1657–1947 and under independent Indian governments. The socially induced lethargy that afflicted Indian labor may have extended throughout the society. . .

In Clark's model, norms are principally transmitted from parents to children. A standard set of 'bourgeois values', such as patience leading to saving and capital accumulation, produces economic success. The reason why these norms only become prevalent in European societies is that the European rich produced more surviving children than the poor. The same was not true in Asia.

Greg Clark may have had the idea first in an unpublished seminar presentation from 1989, as he explains in a footnote. The fact is that Galor and Moav still made it into print first, in an influential and widely cited *Quarterly Journal of Economics* article in 2002. It is part of the influential 'unified growth' approach that tries to offer a single theory explaining the transition from Malthusian stagnation to self-sustaining growth. Galor and Moav argue that an upward drift in the quality of human populations was critical for the transition from 'Malthus to Solow'. Greg builds on this work, but his treatment of Galor and Moav will not earn him a reputation for generosity towards the scholars on whose shoulders he stands. Relative to the conceptual work of Galor and Moav, Clark mainly adds some fragmentary and probably unrepresentative evidence (based on joint work with Gillian Hamilton). The dataset on parts of England, 1585–1638, has a large number of observations and is expertly analysed. Yet to base grandiose claims about differences in reproductive success around the globe on such a slender empirical basis is similar to writing a history of the universe based on some scattered observations from 1930s rural Shropshire.

There are many problems with the argument, bold as it is. It is hard to understand why Clark does not try harder to compare like with like – the European rich with the Asian rich. Instead, he compares the European rich with Chinese and Japanese noblemen. The nobility in England and other parts of Europe was not particularly successful in reproducing. It is highly doubtful that, if the data fairy granted us one wish and gave us perfectly comparable data (on, say, reproduction rates at the same percentile of the wealth distribution in Asia and Europe), the results would support Clarke's hypothesis. The Chinese rich often had concubines, in part with the aim of producing as many sons as possible. Simple arithmetic suggests that any polygamous society (in which taking another wife is tied to wealth) should have produced a much steeper fertility gradient by wealth than Europe did.

The book's most provocative hypothesis is also its least convincing. In part, it seems like an afterthought that allows Clarke to tie together the disparate strands in this book, ranging from Indian cotton mills to the incomes of English labourers. How do we know, for example, that there must have been something wrong with the cultural norms of nineteenth-century India? Clark's argument works by process of elimination. It can't have been machinery – the spinning machines were English. Nor can it have been management – that was English, too. Hence there is no alternative but social norm and cultural attitudes.

This logic ignores the possibility that poor levels of nutrition could have contributed to the low productivity of Indian workers. Nutrition was poor, as evidenced by very low stature. Tending spinning machines requires manual dexterity. In modern-day data, children who are deprived of protein show markedly lower hand–eye coordination and cognitive development. The fact that it took twice as many Indians to man the English machines as it did back in Manchester may have something to do with impediments like this. Recent research on early childhood development shows that imperfect nutrition may have life-long consequences for a child's cognitive development. Given how short and evidently malnourished Chinese and Indian populations were, it is surprising that this possibility is not even discussed in the book.

Similarly, recent work on appropriate technologies argues that just because machinery is the same around the globe, we shouldn't expect the same level of output (Basu and Weil 1998; Acemoglu and Zilibotti 2001). This also undercuts the logic of 'no alternatives left' that Clark employs to argue the case in favour of social norms as the ultimate determinant of poor productivity. Finally, as some reviewers have already pointed out, there is little to suggest that transmission of behaviour from parent to child (genetically or through education) needs to be decisive. Given how slow and costly child-rearing is, there should be important opportunities for alternative mechanisms to accomplish what the author attributes to outbreeding. While the evidence marshalled by Clark is suggestive, I am ultimately unconvinced that cultural and social norms have to be blamed for the failure of non-European countries to develop.

What has also not received the attention it deserves is Clark's characterization of the history of living standards. He claims nothing less than that living standards in 1800 in England were no better than on the plains of Africa millennia before. There was no material progress in the history of mankind until 200 years ago:

> It is common to assume that the huge changes in the technology available to people, and in the organizational complexity of societies, between our ancestors of the savannah and Industrial Revolution England, must have improved material life even before modern economic growth began. *But in this chapter I show that the logic of the natural*

Table 1. *Consumer durables in Essex pauper inventories*

Item	% of households owning the item
Chairs	95
Chest of drawers	32
Mahogany furniture	5
Looking-glass	27
Clocks/watches	20
Pictures/prints	10
Candlesticks	49
Poker	12
Tea-related items	46

economy implies that the material living standards of the average person in the agrarian economies of 1800 was, if anything, worse than for our remote ancestors. [my italics]

This argument must be wrong. Clark's point springs from the economic logic of the pre-industrial world. Since technological advances eventually lead to larger populations, living standards cannot improve. He explicitly exempts the consumption of the upper crust from this view. What pins down the equilibrium in the Malthusian world are the living standards for ordinary citizens. Nobody doubts that for those outside the Jane Austen set, life could be tough. Yet the claim that Englishmen and bushmen had similar living standards is not convincingly demonstrated by any data. Table 1 gives a summary of the kind of goods that the elderly English poor owned in the eighteenth century.

The data in Table 1 are from pauper inventories compiled by King (1997). The poor could apply for income support in exchange for leaving their possessions in their will to the parish. By definition, the group of individuals to whom the data in Table 1 refer is not rich. Yet 95 per cent of them had chairs, half owned candlesticks and a fifth had a clock or watch. As Landes (2000) points out, watches and clocks were so expensive that even by the middle of the twentieth century, they were widely considered luxury items. Their ancestors on the African savannah (with whom Clark compares the living standards of the English poor) would undoubtedly have marvelled at these possessions and would have thought them the pinnacle of luxury.

A brief look at consumption patterns amongst the English poor in the 1790s adds weight to this criticism. The data come from one of the earliest budget surveys, inspired by the plight of the farm labourers reeling from poor harvests during the Napoleonic Wars. Even within this disadvantaged group, there was money left for tea and coffee, for sugar and treacle. Fuel and light – not a commodity on the savannahs – attracted 5 per cent of all spending. Drink (almost all alcoholic) accounted for 10 per cent. The fact that half of the Essex paupers had 'tea-related items' also shows how far down the

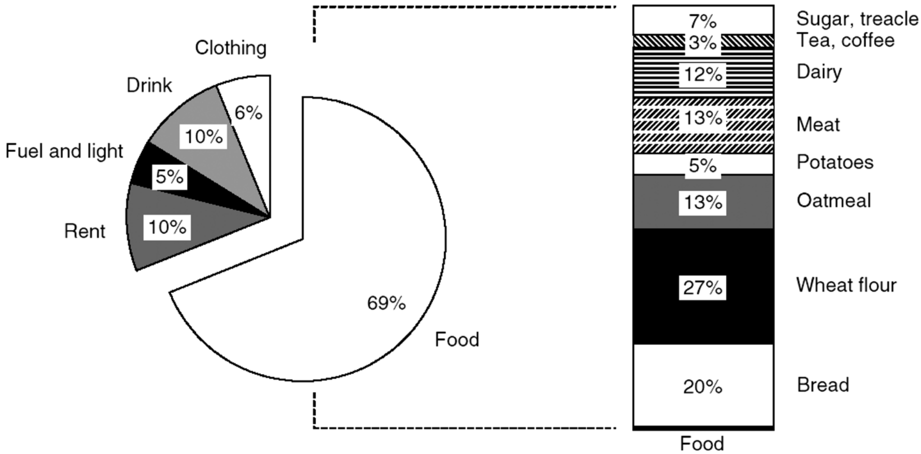

Figure 1. *Composition of working-class expenditure, 1788–92*

Source: Voth (2003).

social hierarchy new forms of consumption had penetrated. If variety is the spice of life, having access to tobacco, alcohol and stimulants such as tea should be highly valuable. Economic historians may not do a great job at incorporating the value of variety in measures of real wages – but this is a case of mismeasurement, and not of stagnation.

Nor is Clark's logic compelling when he decides to ignore the consumption of the upper classes. Their incomes and wealth may have towered over those of the rest of the population. Does this mean we should ignore them? Population growth could have been determined by how the bottom 80 per cent fared – but Clark's argument about the importance of the rich outbreeding the poor suggests that we want to emphasize the rich even in terms of aggregate demographic behaviour. Equally, the productivity of everyone underpinned the palaces and churches, plays and concerts, paintings and sculptures. The fact that productive capacity was there to be allocated to such pursuits, rather than ending up in the pockets of peasants, should not lead us to conclude that living standards in general went unchanged for millennia.

Undoubtedly, high mortality rates underpinned high European real wages. In an economy with a factor of production in fixed supply – land – population pressure is bad for incomes, and high mortality does much to reduce this pressure. However, the book seems at times confused about the difference between welfare and real wages that is introduced by this. Higher death rates may raise incomes; few would argue that they increase well-being. Other work examining similar mechanisms, such as Alwyn Young's (2005) paper on the 'Gift of the dying' (about Aids in Africa), is much clearer about these ambiguities.

This reviewer struggled equally with the revisionist claims in the section on fertility. Clark tells us that the 'old hat' view of Europeans limiting fertility through late marriage is wrong. Fertility rates in Asia were similarly low as a result of female infanticide, and much lower than the speed limit set by the Hutterites. This is different from what Malthus thought of China in particular, and comes from the work of Lee and Wang (2001). Malthus believed famines and epidemics reduced population pressure resulting from unrelenting reproductive behaviour. Yet the fact that fertility rates in Europe and Asia were similar is oversold. Only towards the end of a long chapter is the reader told that, since Europeans were much richer, they produced fewer children at any given income level. This restores what we always knew about European exceptionalism. Real wages on the continent (west of a line from St Petersburg to Trieste) were high mainly because of the much stricter fertility control as a result of the European marriage pattern. Amidst the revisionist claims, one could have almost missed that the fact European population stagnated during the early modern period. At the same time, it surged in India and China.

To sum up, this book is unique. It is bold, insightful, funny and erudite. More than any other academic work I have reviewed, it reflects its author's personality. *A Farewell to Alms* is always clever, sometimes mischievously so. It also contains a remarkable mixture of narrative styles and rhetorical techniques, using everything from the charts and tables one expects to complaints about UC Davis salaries, pictures of American teens munching Big Macs, images of Indian and English cotton workers, and a *New Yorker* cartoon (the latter is enlisted to make fun of institutional economics). The writing is elegant and concise, the literature surveyed vast. Crucially, the book succeeds brilliantly in focusing attention on what economic historians can contribute to the big picture – from where did the sudden wave of economic and social change emerge that has swept all before it in the last 200 years? I am not sure that the new Big Thing in this book – differential reproductive success – will stand the test of time. Nonetheless, Greg Clark has provided a remarkably coherent and comprehensive narrative that ties together his earlier work spanning a vast array of periods, themes and countries. As intellectual Sudokus go, it represents an impressive feat.

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Explaining the industrial transition: a non-Malthusian perspective

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The large-scale structure of world economic history exhibits three steady states punctuated by two phase transitions. The first transition arrived with the domestication of plants and animals; the second with the invention of engines capable of converting thermal to mechanical energy for applications in mining, manufacturing, and transportation. Yet, although both transitions led to increases in the absolute size of the economy, they affected the standard of living differently. Whereas the Industrial Revolution resulted in sustained growth in real per capita income for more than two centuries, over nine millennia the Agricultural Revolution spent itself in population growth that left per capita income insignificantly higher, and possibly lower than the level prevailing under hunting and gathering. This pattern raises three fundamental questions in economic history: why did the first great technological transition produce secular stasis in living standards? Why has the second yielded both steady growth in population and rising living standards? What triggered the transition from the stationary agricultural state to the progressive industrial state?

A Farewell to Alms treats these questions in a novel synthesis of classical economics and historical sociology that explains the Industrial Transition as the indirect consequence of the earlier agricultural state. The principle of diminishing returns and Malthusian demographic dynamics supply