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The Inheritance of Gregory Clark

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Part 10 of 13:
“The Inheritance of Gregory
Clark”

(Table of contents, and Chps. 23-25 from:)

*Bourgeois Dignity and Liberty:
Why Economics
Can't Explain
the Modern World*

[Vol. 2 of The Bourgeois Era]

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To Readers: The argument is, I fancy, complete, but some details in footnotes and references, and occasionally matters of routine calculation in the main body, need to be cleaned up.

Abstract: An extreme materialist hypothesis explaining the Industrial Revolution would be simply genetic. Gregory Clark asserts such a theory of sociobiological inheritance in his *Farewell to Alms* (2007). Rich people proliferated in England, Clark argues, and by a social

Darwinian struggle the poor and incompetent died out, leaving a master race of Englishmen with the bourgeois values to conquer the world. Clark will have no truck with ideas as causes, adopting a materialist (and as he believes is implied by materialism a quantitative) theory of truth. His method, that is, follows Marx in historical materialism, as many scholars did 1890 to 1980. But he does not follow through on his promise to show his argument quantitatively. The argument fails, on many grounds. For one thing, non-English people succeeded, as for instance the Chinese now are succeeding. And such people have always done fine in a bourgeois country. For another, Clark does not show that his inheritance mechanism has the quantitative oomph to change people generally into bourgeois, nor does he show that bourgeois habits of working hard mattered, or that bourgeois values caused innovation. What made for success in 1500 is not obviously the same as what made for innovation in 1800. And in the modern world of literacy such values are not transmitted down families, but across families. Literal inheritance anyway dissipates in reversion to the mean. What mattered in modern economic growth was not a doubtfully measured change in the inherited abilities of English people. What mattered was a radical change 1600-1776, "measurable" in every play and pamphlet, in what English people wanted, paid for, revalued.

Contents

Acknowledgments

- 1: The Industrial Revolution was a Great Tide.
- 2: The Tide Came from a New Dignity and a New Liberty for the Ordinary Bourgeoisie and Its Innovations.
- 3: Many Other Plausible Stories Don't Work Very Well.
- 4: The Correct Story Praises "Capitalism."
- 5: Modern Growth was a Factor of at Least Sixteen.
- 6: Increasing Scope, Not Pot-of-Pleasure "Happiness," is What Mattered.
- 7: And the Poor Won.
- 8: Britain Led,
- 9: But Britain's, and Europe's, Lead was an Episode,
- 10: And Followers Could Leap Over Stages.
- 11: It Didn't Happen Because of Thrift,
- 12: Nor Because of a Rise of Greed or of a Protestant Ethic,
- 13: Nor Because of Original Accumulation.
- 14: Transport or Other Domestic Reshufflings Didn't Cause It,
- 15: Nor Geography, nor Natural Resources,
- 16: Not Even Coal.

- 17: Foreign Trade was Not the Cause, Though World Prices were a Context,
- 18: And the Logic of Trade-as-an-Engine is Dubious,
- 19: And Even the Dynamic Effects of Trade were Small.
- 20: The Effects on Europe of the Slave Trade and British Imperialism were Smaller Still,
- 21: And Other Imperialisms, External or Internal, Were Equally Profitless.
- 22: It was Not the Sheer Quickening of Commerce.
- 23: Eugenic Materialism Doesn't Work,**
- 24: Neo-Darwinism Doesn't Compute,**
- 25: And Inheritance Fades.**
- 26: Institutions Cannot be Viewed Merely as Incentive-Providing Constraints,
- 27: Nor Did The Glorious Revolution Initiate Private Property,
- 28: And So the Chronology of Property and Incentives has been Mismeasured,
- 29: And Anyway the Entire Absence of Property is not Relevant to the Place or Period.
- 30: The Cause was Not Science,
- 31: But Bourgeois Dignity and Liberty Entwined with the Enlightenment.
- 32: It was Not Allocation, but Language.
- 33: Dignity and Liberty for Ordinary People, in Short, were the Greatest Externalities.
- 34: They Warrant Not Political or Environmental Pessimism, but an Amiable Optimism.

Works Cited

Chapter 23: Eugenic Materialism Doesn't Work

An extreme materialist hypothesis explaining the Industrial Revolution would be simply genetic. Its crudest form, as I have noted, would be sheer British racism. Few historical scientists nowadays believe such a notion straightforwardly (though it is worth noting that in 1910 a great many scientists, and some of the best, most assuredly did). But a pretty close approximation of crude British racism has been asserted recently by the economic historian Gregory Clark, an old friend of mine, in his modestly sub-entitled "Brief Economic History of the World," *A Farewell to Alms* (2007). The argument goes like this:

For England. . . . 1250-1800. . . . the richest men had twice as many surviving children as the poorest. . . . The superabundant children of the rich had to. . . move down. . . . Craftsmen's sons became laborers, merchant's sons petty traders, large landholder's sons smallholders. . . . Patience, hard work, innovation, innovativeness, education . . . were thus spread biologically throughout the population. . . . The embedding of bourgeois values into the culture [in] China and Japan did not move as rapidly because . . . their upper social strata were only modestly more fecund. . . . Thus there was not the same cascade of children from the educated classes down the social scale. . . . England's advantage lay in the rapid cultural, and potentially also genetic, diffusion of the values of the economically successful through society.¹

1

Clark 2007, pp. 7-8, 11, 271.

The means of (re)production determine the superstructure. Social existence determines consciousness. Rich people proliferated, and by a social Darwinian struggle the poor and incompetent died out, leaving a master race of Englishmen with the consciousness to conquer the world.

Certainly it is a bold hypothesis, and was bold when first articulated by social Darwinists such as Charles Davenport and Francis Galton in the century before last. Clark defends it energetically, if narrowly. In fact, if the hypothesis were true it would fit smoothly with my own argument that a rhetorical change made the modern world. Clark says that “there must have been informal, self-reinforcing social norms in all preindustrial societies that discouraged innovation.”² Precisely: the norms of anti-bourgeois aristocrats and clerics did discourage innovation, until the Venetians temporarily and on a local scale, the Dutch temporarily and on a wider scale, and at last the English and Scots permanently and on a world scale repealed the norms.

In one-and-a-half pages towards the middle of the book Clark deals briskly with the numerous alternatives to his own materialist hypothesis: “Social historians may invoke the Protestant Reformation, . . . intellectual historians the Scientific Revolution. . . or the Enlightenment. . . . But a problem with these invocations of movers from outside the economic realm is that they merely push the problem back one step.”³ That’s a good point, always a good point. But it is symmetrical—a material and

2 Clark 2007, p. 165.

3 Clark 2007, p. 183-184, from which subsequent quotations come.

economic immediate cause (a high birth rate among the rich, for example; or the invention of a steam engine with separate condenser) can have an ideal and rhetorical ultimate cause (an ideology of glorifying the family line, for example; or imagined experiments with heating and cooling the cylinder). Clark's own, and sole, case that he offers of pushing an ideal explanation back to the material is to ask why "after more than a thousand years of entrenched Catholic dogma" – set aside that such a view of Christian medieval theology might be a trifle lacking in nuance, and derivative in fact from crude anti-Catholic propaganda since Hume and Voltaire or indeed since Luther himself – "an obscure German preacher [was] able to effect such a profound change in the way ordinary people conceived religious beliefs?"

But Clark, like doubting Pilate, does not stay for an answer. He readily admits in the same passage that "ideologies may transform the economic attitudes of societies." Yet he has no scientific interest in the causes of ideologies, unless they fit his notion of the material (that is, familial) inheritance of acquired characteristics ("and perhaps even the genes," says Clark). He has not reflected on the history of the Reformation, or on the Scientific Revolution, or on the Enlightenment, or on the Bourgeois Revaluation. So to get rid of pesky rhetorical factors he reaches at once in the passage for a Materialist Lemma: "But ideologies are themselves the expression of fundamental attitudes in part derived from the economic sphere."

Only the phrase "in part," a fleeting tribute to intellectual balance, keeps his sentence from being orthodox historical materialism. As a pair of historical materialists put it in 1848: "Man's ideas, views and conceptions, in one word, man's consciousness,

changes with every change in the conditions of his material existence, in his social relations and in his social life. What else does the history of ideas prove, than that intellectual production changes its character in proportion as material production is changed?"⁴ Or as Marx by himself wrote eleven years later, "It is not the consciousness of men that determines their existence, but, on the contrary, their social existence determines their consciousness."⁵ Or as Engels wrote another eighteen years later, "the final causes of all social changes and political revolutions are to be sought, not in men's brains, not in man's better insight into eternal truth and justice, but in changes in the modes of production and exchange. They are to be sought, not in the *philosophy*, but in the *economics* of each particular epoch."⁶

In this respect, Clark implies, we social scientists are all Marxists. Ideas are merely "the expression of fundamental attitudes in part derived from the economic sphere." He's right in his implied history of the social sciences: most social scientists 1890-1980 were indeed instinctive historical materialists. But the intellectually temperate phrase "in part" in Clark's sentence is not cashed. Rather, the check is written out and then absentmindedly torn up before our eyes. "There is, however," Clark declares in the next sentence, "no need to invoke such a *deus ex machine*" as a change in rhetoric. His own Chapter 6 fully explains on materialist grounds, with its

4 Marx and Engels 1848 (1988), p. 73.

5 Marx 1859, p. 43.

6 Engels 1877-1878, Part III, Chp. 2, "Socialism: Theoretical."

own unexplained deus (high breeding rates among the rich, even in circumstances of periodic plague), “the forces leading to a more patient, less violent, harder-working, more literate, and more thoughtful society,” namely, the bourgeois society that he and I join in admiring. In Clark’s book, that’s the end of ideology. An historian of the Dutch Republic, Anne McCants, similarly claims on slender evidence that a compassionate motivation for transfers from the Dutch wealthy to the poor is “unlikely” and “can be neither modeled nor rationally explained.” Long before her Hugh Trevor Roper had advanced a similar axiom, that “in politics [prudence-only political ambition] is naturally by far the most potent” cause, as indeed Engel still earlier had claimed that “interests, requirements, and demands of the various classes were concealed behind a religious screen.”⁷

Such evidence-poor side-remarks evince the historical rhetoric prevalent 1890-1980 – what Michael Novak calls “the materialist assumptions and prejudices of the twentieth century” – that a human’s consciousness changes with every change in the conditions of her material existence, *and only with such changes*.⁸ Thus Durkheim in *The Elementary Forms of Religious Life* in 1912 argued that ritual, not doctrine, was the heart of religion, because ritual performed the latent function of unifying a society. After all, what else does the history of ideas prove? It proves that ideas don’t matter, and that unifying a society must be the point of religion – not all that nonsense about, say, a god

7 Quoted in Stark 2003, p. 61.

8 Novak 2007, p. 232.

who died. Look at the history of stoicism or Protestantism or the abolition of slavery, or the history of Christianity or mathematics or the liberations of the 1960s. All of them, you see, were motivated largely, probably exclusively, by material causes. Material interest. Money. Profit. The birthrate. Surely.

John Milton wrote truly to the contrary that books “are as lively, and as vigorously productive, as those fabulous dragon's teeth; and being sown up and down, may chance to spring up armed men.”⁹ The Levellers of the 1640s, writes their historian David Wootton, “did not envisage a commercial society of the sort that was actually dominant in early Stuart England, a society of chartered companies and great capitalists; they hoped rather to establish a nation of shopkeepers.” All their other proposals took centuries to establish, in what Wootton calls an “extraordinary paradigm shift, which marks the birth of modern political theory” – manhood suffrage, a written constitution, non self-incrimination (freedom from waterboarding, one might say), right to counsel, liberty of religion, liberty of speech.¹⁰ But remarkably in England a definite if small move towards liberty of internal trade, for poor people as well as rich, a nation of shopkeepers, actually came to pass as early as in the old age of the last surviving Leveller of the 1640s.

Clark, who admits that such rhetoric may transform economic attitudes, would nonetheless wisely urge us to push the problem back one more step: why the rhetorical

⁹ Milton 1644 (1985), p. *** in Patrides collect upstairs

¹⁰ Wootton 1992, p. 183. ***This has to be wrong, unless it's in his Penguin anthology: “83” correct? It's available on Questia.

change? A very good point, I repeat, always a good point. It would imply, *if we were committed to historical materialism*, that some cause for the rhetoric must be sought in the means of production or reproduction. Under the Materialist Postulate a rhetoric *never* changes independent of economics or demography – certainly not by causes within rhetoric itself such as the invention of the novel or the logic of Pascal-Nicole-Bayle in theology; not even by such causes as the political settlement in England of 1689 or the obsession with Protestant egalitarianism of all believers in Holland and Scotland from the mid-sixteenth century or the ordinary man’s involvement in politics in Holland, England, and Scotland 1585 to 1660 or the chances of war, some of them mere effective words (“I had rather have a plain russet-coated captain that knows what he fights for, and loves what he knows,” wrote Cromwell in 1643, “than that which you call a gentleman and is nothing else”), that left the New Model Army in possession of the English king and his country in 1645. Any non-economic and merely rhetorical change, the materialists believe without thinking about it very much, is always to be derived from the economic/demographic sphere, where we have hard if dubious numbers and marxoid theories. Intellectual production changes its character in proportion as material production is changed.

It is been a long time since even the Marxists depended on such a Materialist Postulate. The Italian Communist theorist Antonio Gramsci, for example – whom Michael Walzer describes as “a rare bird in the twentieth century, an *innocent* communist” – spoke of such “economism” as an error.¹¹ While in prison in Fascist Italy

11 Walzer 1988, p. 81. I would add Eric Hobsbawm, which then makes two.

during the 1930s he wrote that “the claim (presented as an essential postulate of historical materialism) that every fluctuation of politics and ideology can be presented and expounded as an immediate expression of the structure, must be contested in theory as primitive infantilism.” Marxism, he contended, “is itself a superstructure, . . . the terrain on which determinate social groups [for example, the proletariat] become conscious of their own social being.” The base and superstructure form a “historical bloc,” quite different from the imaginings of bourgeois theorists of economism, in that the bloc is not *mere* theorizing but fulfills the dialectic of history. He claimed plausibly that in detailed political writings, such as *The Eighteenth Brumaire of Louis Bonaparte*, Marx himself was cautious in using the Materialist Postulate, and gave room for accident and “internal necessities of an organizational character” and the difficulty of identifying just what is at a particular moment the base or the structure that is supposed to be limiting thought.¹² Gramsci himself is chiefly important in the history of European socialism for denying that materialism does all the work. The bourgeoisie survived, he said, because its intellectuals had done their job, and made capitalism seem ordinary. Gramsci’s very career, and especially the career of his writings after his death – the forebears of the anti-Stalinist Euro-Communism, as Walzer notes – illustrates the importance of ideas.¹³

12 Forgacs, ed. 2000, pp. 196-198 (Selections from the Prison Notebooks, 407-409; Selections from Cultural Writings, Q10, II para. 41.xii).

13 Walzer 1988, p. 81.

And certainly Lenin, who established in 1902 the Bolshevik line against an “economism” such as that of Karl Kautsky, believed that ideas inflamed the working class to action. He asked, What is to Be Done, and answered: do *not* wait for the material conditions of the workers to cause the workers to attain spontaneously the idea of revolution. On the contrary, “Class political consciousness can be brought to the workers *only from without*, that is only from outside the economic struggle. . . . the social democrats [by which he meant at the time the revolutionary socialists like himself] must *go among all classes of the population*; they must dispatch units of their army [of ideas, observe,] *in all directions*.”¹⁴ “A social-democrat must concern himself . . . with an organization of revolutionaries capable of guiding the *entire* proletarian struggle for emancipation.”¹⁵ Guide, not follow. Likewise Gramsci (says Walzer) was “a Leninist of the cultural struggle,” urging the clergy to teach the proletariat.¹⁶

* * * *

Clark is a fine economic and historical scientist, and in his book produces much numerical evidence about various assertions with which other economic and historical scientists agree. But it is crucial to distinguish the good arguments from the bad, in case some outsider to historical science should think that the good economic/quantitative

14 Lenin1902 (1988), pp. 143-144, his italics.

15 Lenin 1902 (1988), p. 179.

16 Walzer 1988, p. 83.

arguments in the book do anything much to support the bad vulgar-Marxist/eugenic arguments. They don't. The linguist Geoffrey Sampson makes a point similar to mine about Clark's book in his devastating rebuttal of Stephen Pinker's theories of linguistic "nativism": "I should say to start with that I am far from wanting to contradict every point that Pinker [or in our case Clark] makes in his book. Quite a lot . . . has little or nothing to do with the nativism issue [or the eugenic theory of bourgeois virtues] and is not at all controversial, at least not among people versed in the findings. . . . It is possible to read *The Language Instinct* [or *A Farewell to Alms*] as a general survey."¹⁷ Just so in Clark's case—a survey, at any rate, of what the numbers, if not the social and literary texts, might be viewed as saying. It is a narrow but exceptionally well done survey.

Much of the Clark's book, in other words, is uncontroversially excellent, a review for outsiders of the quantitative side of what economic historians have learned since, say, Karl Polanyi in 1944. We all, we economic historians nowadays, agree that down to the seventeenth or eighteenth century England was trapped in a Malthusian logic, as the world has been since the caves. There was no rapid innovation, though China for example had slowly acquired quite an impressive panoply. Lacking an ongoing explosion of innovations, if you got more mouths to feed, then sooner rather than later you would get less bread per mouth. In consequence the life of man was nasty, poor, brutish, and short.¹⁸ We all, we economic historians whom Clark is summarizing and illustrating with handsome numbers, agree that the escape from the Malthusian trap is

17 Sampson 2005, p.110.

the most important event in world history. And we agree on the magnitude of the escape: in the teeth of gigantic increases in population “the richest modern economies are now [very conservatively measured, not taking account of better quality] ten to twenty times wealthier than the 1800 average.”¹⁹ We agree that innovation, not capital accumulation, was the cause of The Great Fact—and have to keep reminding our colleagues in economics of this. We agree that the Fact happened first in Holland and then in England and Scotland. We agree that in China and especially in Japan there were some signs around 1600 that it might happen there, and some of us think that Qing and Tokugawa tyranny and inegalitarianism and scorning of merchants stopped it. We agree that since 1848 the rewards to labor have increased, and the rewards to capital and land have fallen, contrary to the predictions of the classical economists, whether bourgeois or Marxist. We agree that so sudden was the innovation that it permitted high income that led to a *fall* in birth rates, as for example in a once-impoverished and once-over-populated Italy. We agree that the poor of the world have been the largest beneficiaries of the escape from the Malthusian trap. We agree that trade unions and protectionism had nothing to do with the escape. We agree, in other words, on a great many historical findings from 1944 to the present that will strike the

18 The agricultural historian George Grantham, however, has some telling criticisms of Clark’s simple Malthusian model on which Clark bets so much—see the discussion in Grantham 2007 for example of the problem with using wages in threshing, whose apparently straightforwardness conceals variation in other conditions of work.

19 Clark 2007, p. 2.

average enthusiast for Karl Polanyi or Louis Althusser or Naomi Klein, not to speak of Malthus and Marx, as bizarre and counterintuitive.

What other historical scientists do *not* agree with, however, is Clark's only distinctive argument, picked up by him recently from the writings of certain economic theorists, reviving in the style of Stephen Pinker a eugenic hypothesis – that English people became by virtue of the rate of breeding of their rich folk a race of *Übermenchen* living in an *Übergemeinschaft*. (Clark attempts to distance himself from the cruder and still-popular sorts of twentieth-century eugenics, but the attempt fails: it's eugenics all right, the sort that has haunted right-wing politics from Francis Galton in the late nineteenth century to the search for the Gay Gene in the early twenty-first.) One of the few historical scientists with whom Clark agrees on the matter is David Landes, whom he commends briefly for being "correct in observing that the Europeans had a culture more conducive to economic growth" – though Landes thinks the superior culture had more ancient genetic sources than the breeding rates of late medieval families.²⁰ But they are both cultural chauvinists, Clark of England and Landes of Western and especially Northern Europe.

There are a lot of criticisms to be made of this distinctive part of Clark's book. The century-old eugenic hypothesis of Karl Pearson and Charles Davenport is that civic virtue is inherited, which is Clark's theme. The hypothesis has so many points against

20 Clark 2007, p. 11.

it – some made long ago about Pearson’s and Davenport’s work, some particular to Clark – that it is going have to be abandoned.²¹

For one thing, non-European places have grown and exhibited civic virtue, after the example of Holland and England and Scotland. As the Nobel economist Robert Solow wrote in one of the flood of scathing reviews of Clark’s book by economists and economic historians:

Clark's pessimism about closing the gap between the successful and less successful economies may derive from the belief that nothing much can change unless and until the mercantile and industrial virtues seep down into a large part of the population, as he thinks they did in preindustrial England. That could be a long wait. If that is his basic belief, it would seem to be roundly contradicted by the extraordinary sustained growth of China and, a bit more recently, India. Embarrassingly for Clark, both of those success stories seem to have been set off by institutional changes, in particular moves away from centralized control and toward an open-market economy.²²

Not the commercial virtues *inherited* by people but the virtues *praised* by people is what’s required. China repealed its laws against making money and India started admiring entrepreneurs, and both were off to the races.²³ And of course similar races

21 On Davenport, the American leader of the eugenics movement, see for example Witkowski and Inglis, eds. 2008.

22 Solow 2007

23 See Adhia 2009.

started off in the rest of Europe very quickly after England led the way. How did economic growth come so rapidly to the Rhineland and Wallonia, a few decades after England? The west of Germany and the south of the Lowlands were nothing like the tranquil lands that Clark thinks make for a bourgeois *Volk*. On the contrary, the strip from Flanders south to Lombardy was the cockpit of Europe for a millennium, the Western Front in the Great War, the “Habsburg Road,” the tiny and continually warring states and sub-states of the “Lotharian axis” (as the military historian Geoffrey Parker calls it, after Charlemagne’s grandson, who briefly governed it). Yet within a century of England’s stirring, and despite the disturbances of the Napoleonic Wars, whose climactic battle was again fought in Wallonia, the Lotharian axis from Mons to Milan was an industrial hive.

For another, the *non*-Europeans, those non-English *Untermenschen* such as Bengalis or Jamaicans, became well-to-do when they decamped to places in which bourgeois values were accorded dignity and liberty. Their success seems to have had little to do with inherited values, rather in the way that the younger sons of English gentry in the eighteenth century prospered when apprenticed as merchants in Bristol and London. Clark shows no interest in American economic history, which is the main instance of success of people with peasant genes in a bourgeois-honoring land. Italian Americans whose ancestors with fifth-grade educations followi9ng the plow in Calabria become in a generation among the best-educated national sub-groups of their new country. Nor to look at it from the other side is he interested in the numerous diasporas of Chinese or Armenians or whomever who enriched themselves away from the

imperial oppression or aristocratic chaos of their homelands. Cypriots move to London and in a generation become successful businesspeople. Parsis move from Pakistan and in a generation become doctors and professors. And Clark shows no interest in his native Scotland (though he is in fact of Irish descent), which did have a very early Industrial Revolution, yet as recently as the century before it had nothing like England's "extraordinary stability" from which bourgeois values are supposed to flow. (Partly of course the instability of Scotland resulted from centuries of invasions and other fishing in troubled waters by the stability-enjoying English.) And like the overseas Chinese or the immigrants to America, the Scots after 1707 journeyed south to become the economists and engineers and farm managers for England and its Empire. Nor does Clark show interest in my own cousins in Ireland, who when they crossed the Irish Sea to staff the cotton and wool mills he has investigated in past decades with such empirical imagination became rapidly the good workers who couldn't of course ever arise from such a turbulent and non-bourgeois and demographically unsound place as John Bull's troublesome Other Island, which in most parts did *not* have an Industrial Revolution.

Chapter 24:

Neo-Darwinism Doesn't Compute

But the main failure of Clark's eugenic hypothesis in Clark's hands, by Clark's own intellectual ideology, is its non-quantitative character. A book filled with ingenious calculations (hundreds upon hundreds of them exhibiting Clark's historical imagination – the scientific virtue of asking questions and seeing your way to answering them) does not calculate enough. It doesn't ask or answer the crucial *quantitative* historical questions, even though Clark insists dogmatically that the only valid evidence for a hypothesis is quantitative.

The argument of the book can be diagrammed like this, as four states 1, 2, 3, 4 linked by three causal and transforming causal arrows A, B, C. Notice the bold, large-type entries:

The Clark Hypothesis:

Rich People are Better, and Drive Out the Poor

1 A 2 B 3 C **4**

Rich Breed → Rich People's → More Patience, → **Enrichment**

More Values Spread Work, Innovation **of All**

The two large and bolded states at the ends, **1** and especially **4**, are the ones that get satisfying amounts of empirical attention. Still, even the arguments about state **1**, Rich Breed More, have quite a few problems. For example, the bourgeois breeding rich whom Clark is talking about lived of course in cities, which were death traps until the late nineteenth century, and especially for the poor, casting doubt on his supposition that the heirs of rich burghers would survive to cascade down the social hierarchy. The heirs were mostly dead, and their places were made up with symbolic heirs adopted from whatever likely nephew or journeyman from the countryside presented himself. Such is the plot of a hundred European plays and novels and operas, as for example those about Dick Whittington (c. 1355-1423) of Gloucester, thrice Lord Mayor of London. As Goldstone noted in his comments in a session about Clark's book at the November, 2007 meetings of the Social Science History Association, "if the brightest merchants are drawn to London. . . . [it is] fine [if] they have more kids. But if their kids drift down the social ladder, they die. So [Clark's genetic embourgeoisification effect has] to peter out after a generation. There's no way it can accumulate once you take the urban death rate into account."²⁴ The economic historian Timothy Guinnane has declared a propos of Clark's comparisons that anyway the demographic rates in the European *countryside* in early times, to be compared with those of burghers, are never going to be accurately calculable.²⁵ But in the early eighteenth century life expectancy at

24 Goldstone 2007b.

25 Guinnane 2009.

birth in England and Wales as a whole was 38.5 years. In London, grotesquely large as a share of British population even by the standard of Paris as a share of French population, it was 18.5 years. The gap disfavoring urban life increased steadily as one moved from the Wiltshire countryside to Bristol to the Great Wen of London.²⁶

On state 4, the Enrichment of All, his quantitative evidence is better, if entirely conventional. The numbers concerning state 4, about which, to repeat, we post-Polanyi economic historians all agree and on which all of us have worked and of which it is most important that we persuade non-economic intellectuals, is nailed. Good for Clark.

Yet Clark insists throughout on hammering on exclusively quantitative nails. So he skimps state 3, More Patience, Work, Innovation and especially state 2, Rich People's Values Spread. Clark, who believes that if you cannot measure, then your knowledge is meager and unsatisfactory, is not comfortable with literary and other "ego-document" sources, as German historians call them nowadays. And so he does not realize that written sources can themselves be counted – and in any case that part of the empirical evidence is what people say. That Jesus is said to have said "render unto Caesar" is part of the empirical evidence about early Christianity's relationship to the state. That Luther said "one prince, one faith" is similar evidence in the Reformation. The consequence of Clark's aversion to words is that he does not have much to say about how one would know that "informal, self-reinforcing social norms" of rich people had spread. Therefore about State 2 his work is notably thin.

26 Ó Gráda 2007, p. 350.

State 3 gets more attention, sometimes of a quantitative sort. Clark follows Mokyr and others, as I do, in emphasizing the applied innovation in cotton and iron and so forth, and uses the template of a table I devised a long time ago to show that the applied innovation in England 1780-1860 was in fact apparent beyond such heroic industries.²⁷ That's good.

The rest is not so good. What is notably missing in Clark's argument are calculations justifying the causal links *A, B, C* between the states *1, 2, 3, 4*. It's a big, big problem. Consider link *C*, that between the state of having More Patience, Work, Innovation and the state of the Enrichment of All. Clark notes that in countries with ill-disciplined labor forces, such as India, the employer doesn't get as much output as in England, because the non-bourgeois values of the Indian workers and the employers do not inspire enough work. (One wonders, though, if Clark has seen Peter Seller's portrayal of an English shop-steward in *I'm All Right, Jack* [1959]: "We do not and cannot accept the principle that incompetence justifies dismissal," declares Sellars. "That is victimization."). But the "as much" and "not . . . enough" are nothing like the 20 to 30 times gap of real income per head between poor India and rich England nowadays that he claims to be explaining. True, Rodolfo Manuelli and Ananth Seshadri have argued somewhat plausibly, in line with dogma from the (usually empirically vacuous) claims of growth theory, that quite large gaps can be explained by a small difference in efficiency (strictly speaking, what economists call "total factor productivity"). The small difference is supposed to make for greater returns to

27

The table is Clark p.233; and mine is in McCloskey 1981 and Harley 1983.

education and training, and still greater accumulations of human capital in rich countries.²⁸ Maybe. The trouble is that their model implies that a small change in the ethical evaluation of education at *any time* would have had the same strong effects, which it did not for instance in early Modern Europe. Shakespeare's and Molière's contemporaries benefited from a much improved system of education in England and France, as the historian George Huppert has shown, and the merchant academies in both countries were vigorous among the Protestants. Yet an industrial revolution didn't occur – or occurred with a mysterious 200-year lag. Be that as it may, the point here is that Clark doesn't make such an argument – he doesn't attend to the links. Mind the gap. Clark has not. Clark has failed to show *how much* Enrichment depends on Work, state 4 on state 3. "Magnitudes matter here," as Clark declared in a review of Avner Greif's book in the year his own book came out, "and the proofs wielded by [Clark] are not geared to magnitudes."²⁹ He hasn't done a calculation on the size of link C. He hasn't asked about the oomph of the link. And so he has no answer.

Clark has long noted the fact of South Asian employees working less.³⁰ His argument is similar to that of the historian of Holland, Jan de Vries, who has beautifully documented an "industrious revolution" of more application to work in first the Dutch and then the English lands during the seventeenth and eighteenth centuries (confirmed

28 Manuelli and Seshadri 2005.

29 Clark 2007c, p. 731.

30 Clark 1987.

in the imaginative work of Hans-Joachim Voth). Clark now claims that the greater industriousness in England came from distressed bourgeois pushed down into the working class, an implausible story on its face, for which indeed he offers little evidence. De Vries' more plausible story is that, as David Hume put it, "Everything in the world is purchased with labor; and our passions are the only cause of labor" – that is, greater variety of goods, for which de Vries offers a book full of evidence, tempted early modern Dutch and English people to work 303 days per year in the eighteenth century as against only 255 days in the sixteenth century.³¹ As Anne Goldgar notes in her book deflating the myths about the tulip mania in the 1630s, the Dutch at the time viewed "the flower trade. . . as a trade in a new product, one of many new products that had been flooding the country for the previous forty and more years."³² The pretty well-off early-modern person said to himself: "I must have some of those tulips, that sugar, that tobacco, that porcelain," in the same way that nowadays you must have the latest cell phone or blue jeans or high speed internet hookup. De Vries cites a finding from colonial Massachusetts that inventories at death in the 1640s had *no* chairs (merely stools and benches) but in the 1790s had on average *sixteen* chairs, and these often elegant items purchased from England or from skilled colonial craftsmen imitating English designs, such that of the Windsor chair.³³ Wages were not leaping up in the

31 De Vries 2008a, p. 14; and de Vries 2008b for the full story. Compare Voth 1998, 2001, 2003. The Hume quotation, which de Vries gives, is from Hume's essay "On Commerce," first published in 1741.

32 Goldgar 2007, p. 224.

33 De Vries 2008a, note 35.

seventeenth and eighteenth centuries as they did in the late nineteenth. Instead the people were laboring more at the same wages to satisfy their passion for flowers and tobacco, oil paintings and brass castings, for Delft china and for delicate and doubtfully-inheritable Windsor chairs. But de Vries does not claim that a 19 percent increase of industriousness, 255 days of work each year rising to 303 days, can explain a 2100 percent difference between Indian and English incomes nowadays, or a 600 percent difference in 1800, or a 100 percent rise from 1700 to 1860 in British income per person, or a rise since the year 1800 of 1500 percent. Clark does make such a claim.

Working harder is a fine thing, in other words, and is an important characteristic of the modern world. In 1998 Hans-Joachim Voth brilliantly used records of mentions of witnesses to alleged crimes to show that early in the eighteenth century on “Saint-Monday” people were standing around watching the human comedy rather than working.³⁴ But he concludes nonetheless that the work week was similar to that in poor countries now, and “[E. P.] Thompson’s image of a ‘merry old England’ where hours were short and work highly irregular is probably incorrect.”³⁵ Harried young lawyers in Manhattan working 70 hours a week can reflect ruefully that their factory-hand great-great grandparent got along on 60 hours a week, their peasant forebears on 40, and their hunter-gatherer deep ancestors on a mere 19 hours.³⁶ If British workers had

³⁴ Voth 1998.

³⁵ Voth 2003, p. 256.

³⁶ Hill and Hurtado 2003, p. 11.

carried on with their pre-industrial Saint-Mondays and drunk-at-work habits their bourgeois employers would have had to hire more of them to do the same work, paying each one less. British and Dutch incomes per head 1700-1800 would probably have fallen some as population increased, rather than as they did staying level (against what were soon to be called Malthusian expectations). The bourgeois men would have faced a servant problem of the sort that dominated the domestic duties of their wives, always in the business of hiring new workers to replace the ones recently dismissed for insolence or immorality or drunkenness.³⁷ But the bourgeois passion for innovation would not have been affected. Inventing a dying process that in the 1790s substituted chlorine for sunshine, sharply decreasing the real cost of pure white linens, once a product exclusively for the rich, would still have been a fine and profitable thing, even if it took 19 percent more badly disciplined workers to make it.

Nor does Clark do a calculation on link *B*, to show that state 3 depended mightily on state 2, that, say, that applied innovation depended on the spread of bourgeois values. It's deucedly hard to do. I agree with Clark that the link was important, yet I can't think of ways to quantify it with the usual economic and demographic statistics. I have had to rely instead on the metaphysically unsatisfactory but enormously rich and ubiquitous *qualitative* evidence which the other students of applied innovation such as Mokyr and Jacobs and Goldstone have exploited and which Clark spurns. Given his

37 Vickery 1998, pp. 135-146, as for example p. 135, "hardly a week went by when a mistress might not be reeling from a servant's flight," as one can also see in realist novels that mention such matters, such as Fielding's *Tom Jones*.

methodological rule of number, Clark is not to blame that even his admirable if strictly quantitative historical imagination is stymied by the question of *how much* bourgeois values acted to increase applied innovation. Still, his methodological stridency about number – having myself been strident about such matters in my youth, I am familiar with the temptation – does make it a trifle embarrassing that he doesn't mention that for link *B* he has failed to provide any numbers at all. We old fools like Jack Goldstone or Deirdre McCloskey or George Grantham or Richard Easterlin or Claudia Goldin – who listen to what people at the time were saying about *B* or similar links between the quantitative and the qualitative – get a certain grumpy satisfaction that Clark is thus hoist by his own methodological petard.³⁸

In light of Clark's methodological convictions, though, the most embarrassing broken link is *A*, between "Rich Breed More" and "Rich People's Values Spread." As the economic historian Robert Margo wrote in another of the numerous vexed reviews by other historical scientists that the book has evoked, "even if I believe the data to be trustworthy, how do I know I am observing a causal link between 'good' behaviors (for example, patience) that, in the best of circumstances (and these are far from the best) are barely, if at all, observable to the econometrician? What, precisely, are the mechanisms that allow good behaviors to be transmitted across generations? Don't institutions of one type or other play a role?"³⁹ Nowhere in a book that trumpets calculation as the

³⁸ Compare Easterlin 2004, pp. 21-31.

³⁹ Margo 2008.

Only Real Science does Clark *calculate* what higher breeding rates could have accomplished by way of rhetorical change, or talk about the new institutions, such as grammar schools. It could easily be done, at any rate under Clark's mechanical assumption about how the social construction of values works, and is not even a matter as Margo assumes of econometric fit. It is a matter of simulation.

Clark assumes that the children of rich people are by their richness the carriers of the sort of bourgeois values that made for an Industrial Revolution. I would say on the contrary that a rapid change around 1700 in attitudes *towards* the bourgeoisie mattered much more. But in any case Clark's argument depends on a strange characterization of the medieval or early modern relatively rich. A rich bourgeois of London in 1400 or 1600 depended on special protection for his wool-trading monopoly. Dick Whittington was *appointed* to his first of three terms as Mayor of London by Richard II, because the King was in Whittington's debt. One is not surprised to find the secretary of the Society of Merchant Adventurers, John Wheeler, writing in 1601 against "dispersed, straggling, and promiscuous trades," that is, interlopers who threatened the state-sponsored monopoly of the Merchant Adventurers.⁴⁰ The younger sons of such a merchant might well take away the lesson, repeated by protectionists left and right down to the present, that it is a good idea for the state to control everything it can, and quite a bad thing to let people make the deals they wish to make without a state supervisor appointed by the country club or by populist politicians. And likewise a Brave Sir Botany who had *stolen* his riches, say, or was a successful state bureaucrat who had received his riches

⁴⁰ Wheeler *A Treatise on Commerce* (1601), p. 73, quoted in Barbalet 2008, p. 79.

from Henry VIII dissolving the monasteries, say, would not automatically, one would think, transmit sober, hard-working, market-respecting bourgeois values to younger sons.

Around 1700, Peter Earle has found, about a quarter of the London middling sort he sampled at their deaths were sons of literal gentlemen, as one can judge from their adolescent contracts of indentures to drapers and merchants and bankers.⁴¹ Bourgeois values were not going to be spread down the social order mechanically when the boys in fact started out from the idle class of landowners and knights of the shire – yet such boys became many of the merchants of London in the eighteenth century. If the boys prospered in the upper reaches of bourgeois London it was because they had learned their trades (getting into the trades with expensive apprenticeships), and were encouraged to practice the trades of overseas merchants or domestic bankers in a society according dignity and liberty to middleclass folk, not because they had inherited bourgeois values by being bourgeois sons.

Of course, the gentry and even the aristocracy of England, it is often claimed, tended to bourgeois values and behaviors that would have disqualified a Frenchman from the nobility. The same John Wheeler in 1601 praises merchandising as “an honorable estate” (a claim that would, however, have raised a laugh in many circles of Elizabethan England) “which may be practiced by both commoners and nobles . . .

41 Earle 1989, pp. 86-87. Earle handily defeats Lawrence Stone’s counterclaim that the “gentlemen” fathers were themselves urban “men of limited means,” as Stone wrote, who “did not dream of swaggering about with a sword at their sides.”

without any derogation to their nobilities."⁴² Not in France or Spain. But an embourgeoisifying change in values among the gentry, making the social origin of merchants or workers irrelevant, would be the opposite of Clark's materialist argument. In the other direction a society that greatly admired aristocratic or Christian virtues could corrupt even a Medici banker into thinking of himself as quite the lord and yet also a godly son of the Church. Likewise nowadays an extravagant admiration for the neo-aristocratic values of the clerisy – she learned them at the University of Iowa – corrupts a bourgeois daughter into scorning her father's selling of insurance or running of a furniture factory.

42 Quoted in Barbalet 2008, p. 79.

Chapter 25:

And Inheritance Fades

Clark is deeply charmed by neo-Darwinian theories applied to society. He believes that the bourgeois-behaving unit of meaning, a “meme” as some of the theorists call it, spreads strictly from parents to children, like eye color. But the biological metaphor here is inapt. From the sixteenth-century on it gets inapter and inapter. As the economist Benjamin Friedman remarked in still another hostile review of Clark’s book, “If the traits to which Clark assigns primary importance in bringing about the Industrial Revolution are acquired traits, rather than inherited ones, there are many non-Darwinian mechanisms by which a society can impart them, ranging from schools and churches to legal institutions and informal social practices.”⁴³ European publishing, for example, became cheap and less censored, especially in Holland. The historian Lawrence Stone spoke of an “educational revolution” 1540 to 1640, during which for example in 1612-1614 nearly half of 204 men committing capital crimes in Middlesex escaped the hangman by showing their literacy, the “benefit of clergy,” as the medieval custom was called.⁴⁴ In citing Stone the historical sociologist Jack Barbalet observes “the most literate of social groups were merchants and businessmen.”⁴⁵ It had

43 Friedman 2007.

44 Stone 1964, pp. 42-43.

45 Barbalet, p. 86.

always been so: after all, writing itself springs from accounting. A businessman was known proverbially for ink-stained fingers, and was portrayed in the new oil paintings of Holland and England as writing, writing, writing – with the counting of money left to his wife. The middle-class women whom Jan Vermeer painted in his small output are commonly reading. The grammar schools spread (thus William Shakespeare in the sixteenth century, son of a glover). So did the universities (thus Immanuel Kant in the eighteenth century, son of a saddler). High schools for young merchants proliferated. If solidly bourgeois behavior makes people rich you would think it would spread thus by imitation, *across families*, as from Defoe's *Essay Upon Projects* (1697), which Benjamin Franklin cited as an influence, or from the hundreds of handbooks for youths in business from the sixteenth century on.

The research biologist and professor of theology Alistair McGrath notes that recent work on genome sequencing has shown that the very simplest forms of life do trade genes contemporaneously, and do not merely transmit them from mother cell to daughter cell. And so of course at the other end of complexity do human beings in their cultures, such as those inhabiting seventeenth century Europe. "If Darwinism is about copying the instructions," writes McGrath, "Lamarckism is about copying the product. . . . It would seem that Lamarck, rather than Darwin, offers the better account of *cultural* evolution."⁴⁶ Or as Nicolas Wade puts it, "organisms may acquire genes through

46 McGrath 2007, p. 127, his italics deleted and mine supplied; p.41 on genome sequencing; compare Collins 2007, pp. 89-90

borrowing as well as inheritance; bacteria, for instance.”⁴⁷ Or as Joel Mokyr noted in a comment on Clark’s book, “we don’t just learn from our parents . . . [but] horizontally from other people, from peers, from masters in apprentice or servant relationships.”⁴⁸

To put it another way, the metaphor of the *tree* of life that Clark unreflectively applies to human culture is not apt. It should give way in such cases to a *network* of life. Languages are like that, sometimes. Among Australian Aborigines the mixing of peoples was such that “the family tree model of genetic relationship seems to be totally inappropriate. . . . There was much more diffusion from language to language . . . than is usually the case.”⁴⁹ Good products like wealth-producing behavior would spread in a greatly widened network of culture after the invention of printing, the Protestant Reformation, the fall of tyrants with 800-year old names. As some biologist recently put it in a survey of the experimental transfer of 246,045 genes to *E. coli*, “the phylogeny of [a primitive but extremely widespread form of] life seems better represented by a network than a tree.”⁵⁰ If this is true of prokaryotes and eukaryotes, all the more is it

47 Wade 2006, p. 215.

48 Mokyr 2007b.

49 Lyovin 1997, p. 257.

50 McInerney and Pisani 2007, p. 1391; and Sorek et al. 2007 on which their article is based. Compare Wade 2006, p. 215: “organisms may acquire genes through borrowing as well as inheritance; bacteria, for instance.” Or the economist Herbert Gintis (2008, p. 5): “Similarly, alternative splicing, nuclear and messenger RNA editing, cellular protein modification and genomic imprinting, which are quite common quite undermine the standard view of the insular gene producing a single protein, and support the notion of genes having variable boundaries and having strongly context-dependent effects.” Dagan et al. in Proceedings of the National Academy of Sciences 105 (2008) found that fully 80 percent of 181 prokaryotes had had some borrowing. The reporter for Science remarked that “well-defined phylogenetic trees . . . become rather less clearly delineated when

true of Parisians and Bostonians. People themselves could move, steadily easier in the eighteenth and nineteenth centuries. And more importantly, they could read, steadily better (silent reading is often said to be a modern accomplishment; though it has recently been argued that it was in fact commonplace in ancient times among the few literates⁵¹). Newspapers were invented in Europe and its offshoots in the late seventeenth century. Ben Franklin's older brother James started printing the cheeky *New England Courant* in Boston in 1721, which became at once an irritant to the British administration and the Puritan ayatollahs, and a model for more than his immediate family of printers. And so the ideas of bourgeois dignity and liberty could move. The memes moved more and more freely across families – and more and more and more – right down to our own worldwide echo-chamber of ideas.

But leave aside the actual, empirical stories of how values are made. Clark's lack of curiosity about the exact content of bourgeois values (value which he and I join in admiring) leaves him with a mechanical version of neo-Darwinism in explaining how values get transmitted. Suppose his model is correct. Then a scientist of Clark's quantitative imagination would have found it trivial to calculate, mechanically, what the higher rates of breeding would yield in bourgeois-minded but lower class people in the next generation. He didn't.

looked at over very long time periods" (Science 321 [8 Aug. 2008], p. 747). And in humans in the modern world the "long" period would be a couple of generations.

51 Johnson 2000.

The underlying problem is that Clark wants to tell a very long-run story, because in the style of growth theory in recent economics he has ambitions for its endogeneity, which is to say its historical materialism. He wants bourgeois values and the modern world to arise with slow-chapped pow'r out of a thousand years of English history. No *dei ex machinis*, thank you very much—by which he means short-run and therefore contemptible events in the realm of mere ideas such as the birth of English political liberty or the Protestant Reformation or the Scientific Revolution or the Bourgeois Revaluation.

The problem is that his long-run ambition does not fit his eugenic machinery. His mechanical model of the transmission of values works too quickly, on a scale not of ten centuries or so but of a century or so. Then it dissipates. Regression to the mean alone would limit the effect of bourgeois values pushed down the social scale in a family to a few generations. After all, we say “clogs to clogs” in merely three. As Francis Galton put it in making a similar calculation—Galton in 1901 got a good deal further in the calculation than Clark did in 2007—high inherited height or intelligence or bourgeois virtue dissipates strongly in children and more in grandchildren, “owing to the combination of ancestral influences—which are generally mediocre—with the purely parental ones.”⁵² The fact accounts for the curious vocabulary in statistics of “regression” for the fitting of a curve to a scatter of points. Galton himself was part of Darwin’s family, first notable in Erasmus Darwin, who was Charles Darwin’s and Francis Galton’s joint grandfather. The family has continued to prosper down to the

52 Galton 1901, p. 15.

present, by careful selection of marriage partners. But how many such amazing families are there – one thinks of the Bachs and the Polanyis – as against hundreds of families that yield one genius and then regress to the mean? The evolutionary logic puts paid to Clark’s long-run story. As the economist Samuel Bowles put it in a hostile review of the book in *Science*:

if $h^2 = 0.26$ the correlation across 4 generations (great grandfather-great grandson) is 0.032. If we estimate h^2 from the observed intergenerational correlation of traits (r) as above, then the correlation of a genetically transmitted trait across n generations is just $r/2^{n-2}$. Thus the statistical association across generations becomes vanishingly small over the course of a single century, whether the trait is culturally or genetically transmitted.⁵³

Clark describes his central Chapter 6 as identifying “strong selective processes.”⁵⁴

That’s the problem: they are *too* strong for a slow story, as Bowles points out. So Clark’s own argument, were it true, would turn out to be one of the despised *dei ex machinis* that work on a scale of decades or a few generations or a century at most. If he had followed his rule of number and had tried to calculate the oomph of link A, Rich Breed More causing Rich People’s Values Spread, he would have caught the scientific oversight before announcing his finding to the world.

Consider for example one of the bourgeois values we can measure, and Clark does, again with his usual quantitative insight, literacy. Male literacy in England, Clark

⁵³ Bowles 2007.

⁵⁴ Clark 2007, p. 183.

argues, was roughly in the Middle Ages the share of monks in the male population – thus the legal rule in pleading against a felony. Illiterate monks were not unknown, but rare (though among the secular clergy illiteracy was perhaps more common). Male literacy in England rose to perhaps 30 percent in 1580 and to 60 percent by the time national statistics start to be possible in the 1750s, comparable to Japan.

But think about it. If you are the parent of four children, and can read, what is the transition probability that all four of your children will read? It is extremely high, especially if you are the mother of the brood, at any rate in a society that for some reason values literacy. It is the value placed on literacy by the society, not sheer inheritance, that determines its transmittal. Thus in families today “going to college” is extremely inheritable, but in one generation. When it happens, it happens quickly, and permanently – and in Clark’s argument it must begin at once the regression to the mean of values that would apply if genetics, not surrounding social values, were explaining it. My father was the first in his family to go to university. All his three children did, both of my two did, and doubtless my two grandchildren will, too. Every one of the five children of my father’s brother did, and their children so far mostly have. Similarly looking back: unlike my Irish ancestors, my Norwegian ancestors on the Hardanger Fjord, according to records collected by the literate Norwegians (I can show them to you), were reading by the late sixteenth century, and never stopped. Why? Because of inheritance? No: clearly, they started and continued to read because of the surrounding social values attributable to the Protestant Reformation, a literal Deus, to which Clark in his book explaining modern Europe allots eight words. No religion, please: we’re

demographic historical materialists. The impoverished Norwegians of rural Dimelsvik (no bourgeois virtues inherited there) learned to read, quickly. The habit in the first place spread across families. And once in a family it stayed there, not reverting to the mean, unlike biological inheritance. The inheritance within families is too quick and the “inheritance” across families too strong and the lack of regression to the mean too obvious for Clark’s intended story of a stately development over centuries of an English genetic *Überlegenheit*.

Clark becomes very cross when challenged on his materialism. Compare Marx in 1846 on Proudhon, whose writings he describes as “Hegelian trash. . . it is not history, it is not profane history – history of mankind, but sacred history – history of ideas.”⁵⁵ Clark replied to my claim that he exhibits, as he put it, an “aversion to literary sources”:

absolutely, because they are highly unreliable. What people say, what their explicit ideology is, often differs dramatically from how they behave. Doing economic history through analysis of written materials such as laws, political tracts, etc. is an invitation to error. Deirdre’s invitation to us to come wallow in the cultural mud is the guarantee that we will continue to go round in circles in economic history forever. Better to say something and be wrong than to say things that are just not subject to empirical test.⁵⁶

Clark has said something subject to empirical test, and it is wrong. So much is clear.

55 Marx 1846.

56 Clark 2007b, p.

But he is also wrong to dismiss “wallowing in the cultural mud,” the lived life, the analyzed text, the salient image. Such a naïvely behaviorist and positivist ideology throws away half the evidence, much of it more decisive than a questionable “sample” of birth rates from East Anglia. (Jan de Vries noted of Clark’s book, “had this book been written by an historian its subtitle might have been: Some Findings from Suffolk Testators, 1620-1638.”⁵⁷) An historian cannot do his science well on numbers alone. Indeed, as econometricians like Charles Manski point out, and as Stephen Ziliak and I have emphasized, the identification of what is salient in the numbers never inheres in the numbers themselves. “Identification problems cannot be solved,” Manski writes, “by gathering more of the same kind of data.” They “can be alleviated only by invoking stronger assumption [based, say, on the lived life] or by initiating new sampling processes that yield different kinds of data [in, say, the analyzed text and the salient image].”⁵⁸ Or the economic historian Thomas Ashton said long ago, surely we will make more progress if we walk on both legs, numerical and verbal.⁵⁹ Clark is so hostile to the literary and philosophical side of his culture that he insists on hopping along, underidentified, on one leg.

So Clark’s socio-neo-Darwinianism which he picked up recently from articles on growth theory by some economic theorists has little to recommend it as history

⁵⁷ De Vries 2008, p. 1181.

⁵⁸ Manski 2008, p. 4. Ziliak and McCloskey 2008.

⁵⁹ Cite Ashton *** get in Nedge collection upstairs

applicable to the past millennium.⁶⁰ The problem typifies modern growth theory in economics. It is mostly theory, and scant history; mostly mathematics, and scant measurement.⁶¹ In a word, it is unscientific. The theorists who inspired Clark, though, were more reasonable than he is in using their argument. The argument, they wrote, “suggests that the time period between the Neolithic Revolution and the Industrial Revolution [some 10,000 years] is sufficient for significant [biological] evolutionary changes.”⁶² That seems possible – lactose and alcohol tolerance, for example, do seem to have been evolved in such a range of years. After all, people whose ancestors did not milk animals now get sick from milk. But Clark proposes to apply the argument instead to the few centuries of what he characterizes as English peace (a “peace” covering the War of the Roses, the turbulent Tudors, the revolution-provoking Stuarts, the long century of struggle with France after 1692) – and strangely not to the 265 years of domestic and foreign peace in Tokugawa Japan (interrupted by scattered peasant revolts, easily put down⁶³). Consider the numerous very long episodes of peace in China away from the frontiers, which according to Clark’s model should have resulted in a massive embourgeoisification of the place. The average length of the thirteen “principal unified states” in the table of Chinese dynasties from the First Emperor in

60 Galor and Moav 2002.

61 Guinnane 2009 is devastating on these points.

62 Galor and Moav 2002, p. 1181.

63 Vlastos 1986.

221 B.C.E. until the Last in 1911 is 168 years. The three longest of the thirteen were all in the last (potentially innovative) millennium: the Song at 319 years, the Ming at 276, and the (final and in fact reactionary) Qing at 266.⁶⁴ The long dynasties were not without [Revolts of the Three Feudatories](#) or extremely bloody Taiping Rebellions. But on the whole they make the allegedly long “peace” of England look disturbed, and they make the condition of Europe generally (a geographical area and population comparable at the time to China’s) look positively chaotic.

The theorists, in the very footnote that inspired Clark (“the original hypothesis that sparked this study” as Clark writes in a paper with Hamilton), claim that “The theory is perfectly applicable for either social or genetic transmission of traits. [A] cultural transmission is likely to be more rapid.”⁶⁵ More rapid indeed. The theory of inheritance collapses, as I said, if “inheritance” happens across families, rapidly, as it did in a literate age, and as indeed it often did even along illiterate folk knapping arrow heads from a flint core. Humans talk to each other, and they imitate even if they don’t talk. Neither Clark nor his theorists recognize that the sixteenth through nineteenth centuries in Europe saw changes in attitudes towards innovation that had little to do with returns to human capital – chiefly because most innovations were copied by precisely that cross-family inheritance, encouraged by the printing press and the new egalitarianism, and yielded little benefit to their inventors. Access to knowledge is

⁶⁴ Winchester 2008, pp. 279-280.

⁶⁵ Clark and Hamilton 2006, p. 707; Galor and Moav 2002, p. 1180n4.

crucial, the historian Philip Hoffman points out. ***Where is this citation? In Mokyr? The change was not genetic (as Clark argues) or psychological (as Weber argued) but sociological and political. Literacy, printing, a free press, and free conversation make technology available. It became, as we now say, open source. Long ago the economic historian Robert Allen made the point.⁶⁶ More recently the economic historian Paul David has theorized the development by the early eighteenth century of open source science.⁶⁷ But science was merely one of numerous cases: printed music was another, journalism after the 1690s still another (one of its origins being the open printing of daily prices on exchanges, information formerly traded by letter among merchants as secret and proprietary). Open source software is not inherited biologically from one's parents but socially from one's geeky and voluble friends.

An early version of Clark's hypothesis may be examined in Galton's Huxley Lecture to the Anthropological Institute in 1901, "The Possible Improvement of the Human Breed Under Existing Conditions of Law and Sentiment":

The number and variety aptitudes, especially in dogs, is truly remarkable. . . . So it is with the various natural qualities that go towards the making of civic worth in man (p. 3). . . . The brains of the nation lie in the higher of our classes (p. 11). . . . Dr. Farr, the eminent statistician, endeavored to estimate the money worth of an average baby born to the wife of an Essex laborer. . . . Dr. Farr, with accomplished actuarial skill, capitalized the value at the child's birth . . . [It] was

⁶⁶ Allen 2006, p. 3, referring to Allen 1983.

⁶⁷ David 2008.

found to be £5. On a similar principle the worth of an X-class baby would be reckoned in thousands of pounds. . . . They found great industries, establish vast undertakings, and amass large fortunes for themselves. Others, whether they be rich or poor, are the guides and light of the nation (pp. 11-12). . . . Many who are familiar with the habits of [the lowest class] do not hesitate to say that it would be an economy and a great benefit if all habitual criminals were . . . peremptorily denied opportunities for producing offspring (p. 20). . . . The possibility of improving the race of a national depends on the power of increasing its best stock (p. 24).⁶⁸

In 1901 eugenic reasoning such as Galton's was fresh and new and plausible. It was still influential after the Great War. It yielded then in places like Norway, Sweden, and the United States programs of compulsory sterilization which survived even their methodical application in Germany, 1933-1945, coming to an end only during the 1970s – by then three generations of imbecilic if scientific social policy were enough.

But recently the eugenic idea has revived, as in the works of Steven Pinker and now Gregory Clark, greeted with enthusiasm by science journalists with a short historical memory and a weak grasp of social ethics. It introduces into the modern debate between status and contract a third possibility, genes. The eugenic reasoning declares that people are not what the society says they are (their status) or what they are able to arrange by persuading each other (their contract). People are what they were born to be, biologically speaking, like cocker spaniels. And then we can move to

68 Galton 1901

prenatal screening, for a gay gene, say. Uncritical worshippers of a politically partisan and just-so-story-admiring Science dote on such an argument. It is neat. It is formalizable. It is calculable (though, to repeat, Clark has not done the calculations that Galton pioneered). But it is scientifically wrong.

And for the historical question at hand it anyway doesn't make a lot of sense. Beyond the difficulties already mentioned, Clark's distinctive argument depends on measures of aptitudes that are, like height, influenced by more than inheritance and, unlike height, have no natural units invariant to social values. What made for riches in 1600 had little to do with what made for riches in 2000. A graceful way with sonnets and a good leg for bowing low to Gloriana are not similar to a Harvard MBA and a knack for computers. What mattered in modern economic growth was not a doubtfully measured change in the inherited abilities of English people. What mattered was a radical change 1600-1776, "measurable" in every play and pamphlet, in what English people wanted, paid for, revalued.

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