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The Industrial Revolution and the Industrious Revolution

JAN DE VRIES

The Industrial Revolution as a historical concept has many shortcomings. A new concept—the “industrious revolution”—is proposed to place the Industrial Revolution in a broader historical setting. The industrious revolution was a process of household-based resource reallocation that increased both the supply of marketed commodities and labor and the demand for market-supplied goods. The industrious revolution was a household-level change with important demand-side features that preceded the Industrial Revolution, a supply-side phenomenon. It has implications for nineteenth- and twentieth-century economic history.

History is full of historiographical landmarks: elaborate, ideal constructions that give structure and coherence to our historical narratives and define the significant research questions. In western history such concepts as the Reformation and the French Revolution, or the scientific revolution and the Enlightenment, quickly come to mind as examples. They are all, to be sure, based on things that really happened, but have come to lead a life of their own. By far the most important such monument in economic history is the Industrial Revolution—the British Industrial Revolution. Its importance is such that our understanding of it affects the economic history of distant places and times—which is my justification for discussing it here, even though I study a society more than 100 miles from Britain’s shores. I will go further and assert that the standing of our discipline owes much to the power of our concepts of the Industrial Revolution to speak to the imaginations of a broad public. If we were not known to be the interpreters of this phenomenon, our many other virtues and beneficial ministrations would not easily compensate for the loss. Small wonder that we have so assiduously guarded and nurtured this valuable asset through the years—that even John Clapham (who didn’t much use the term, seeking in his own way to “de-revolutionize” it) had to acknowl-

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edge that this thrice-squeezed orange still had an astonishing amount of juice left in it.¹

In western history more generally, the only concept that has the historiographical importance to justify comparison with the Industrial Revolution in economic history is the Renaissance. It claims to mark the onset of modern history and to define its abiding characteristics, just as the Industrial Revolution marks the onset of industrial society and defines the key mechanisms of its progress.

But listen to the opening words of the Presidential Address given to the American Historical Association by my Berkeley colleague, William Bouwsma, 15 years ago.²

I should like to discuss a remarkable historiographical event—an event so recent that it may have escaped general notice, yet of considerable importance both for historians and for the larger culture of which we are a part. This event is the collapse of the traditional dramatic organization of Western history. We have long depended upon it, as inhabitants of the modern world, to put the present into some distant temporal perspective and, as professional historians pursuing our particular investigations, to provide us with some sense of how the various fields of history are related to each other as parts of a larger whole.

The collapse Bouwsma spoke of was the evaporation of the substance of the Renaissance as a concept, pulling out the central pillar holding up the dramatic organization of western history. “The venerable Renaissance label,” he said later, “has become little more than an administrative convenience, a kind of blanket under which we huddle together. . . .”³ A thrice-squeezed orange, and nothing more.

Our cherished Industrial Revolution now faces this same fate. As Patrick O’Brien writes in the opening paragraph of the new *Festschrift* for Max Hartwell, “The Industrial Revolution is once again under attack as a ‘misnomer,’ a ‘myth’ (in both the vulgar and cultural senses of that term), and dismissed as one among a ‘spurious list of revolutions.’”⁴ These challenges are not accompanied by an abandonment of scholarly inquiry in the topic; the list of books, essays, and articles published in just the past few years is in fact extraordinarily large.⁵ But it is clear from all these works that the verities of the past generation are crumbled, and the focus of debate has shifted from the details of an established agenda to the agenda itself.

Why this malaise? The proximate cause of the current crisis seems clear enough: it is the revisionist macroeconomic research, leading to a sharp downward revision of the rate of growth of the British economy

¹ Clapham, “Transference of the Worst of Industry,” p. 195.

² Bouwsma, “The Renaissance,” p. 1.

³ *Ibid.*, p. 3.

⁴ O’Brien, “Introduction: Modern Conceptions,” p. 1.

⁵ Among the recent works on the Industrial Revolution, see Mokyr, ed., *The British Industrial Revolution*; Hudson, *The Industrial Revolution*; Berg and Hudson, “Rehabilitating the Industrial Revolution”; Cannadine, “The Past and the Present.”

during the Industrial Revolution, that has been carried out by Peter Lindert and Jeffrey Williamson, Knick Harley, and Nick Crafts.⁶ Yet, unless I have badly misread their work, none of these scholars was engaged in a nihilistic project intended to leave us huddled under a blanket with nothing but thrice-squeezed oranges to sustain us. These are solid citizens with more than a touch of positivist faith. They were interested in cleansing the temple of the "false god of the take off," not in pulling down the pillars.

If their estimates of slower eighteenth-century growth and, by implication, a larger prerevolution industrial output in Britain have loosened the tongues and set in motion the pens of a hoard of disbelievers, it is because their important work stimulated new interpretations of a growing body of research on the economic history of periods before and after, and regions outside the classic British Industrial Revolution. It is as though the pruning of a tree allowed saplings long stunted by the shadows to flourish for the first time.

The implications of these ideas—not so much new as newly emboldened to speak to audiences newly receptive to hear—go well beyond those of the revised growth measurements by themselves. This became clear to me five years ago while attending the economic history meetings held annually in Prato, Italy.⁷ This was to be the twentieth anniversary meeting of this "Club Med" for economic historians, so the organizers announced the theme to be a retrospective on the accomplishments of those two decades in the fields of agrarian history, demographic history, urban history, and the quantitative study of production in Early Modern times.

In desperate brevity those accomplishments include the following. Already 20 years ago the received wisdom that an *agricultural revolution* and the Industrial Revolution were simultaneous events gave ground to the plausible claims that a growth of agricultural output warranting the title "agricultural revolution" occurred in the century preceding the beginning of the Industrial Revolution. Since then quite a large number of agricultural revolutions have been proclaimed. This profusion is confusing, but one thing is now certain: the picture of a stable world of traditional peasants stirred to new action by post-1750 improving landlords and parliamentary enclosures is lost forever.⁸

Perhaps the simplest way to summarize the achievements of *demo-*

⁶ Lindert and Williamson, "Revising England's Social Tables"; "Reinterpreting England's Social Tables"; Harley, "British Industrialization Before 1841"; Crafts, *British Economic Growth*; Jackson, "Rates of Industrial Growth"; Crafts and Harley, "Output Growth."

⁷ Istituto Internazionale di Storia Economica "Francesco Datini," *Ventesima Settimana di Studio: Metodi Risultati e Prospettive della Storia Economica Secc. XIII-XVIII* (Prato, 19-23 April 1988).

⁸ Notable contributions to this literature include Slicher van Bath, *Agrarian History*; Jones, ed., *Agriculture and Economic Growth*; Thirsk, ed., *Agrarian History*; Clark, "Productivity Growth"; Kussmaul, *A General View*.

graphic history in this period is to note that no one can draw the sweeping curves of fertility and mortality decline that constitute the nineteenth-twentieth century demographic transition without pausing to note that the putative starting point of those curves, representing pretransition traditionalism, was nothing of the sort. The operations of the European marriage pattern, the high- and low-pressure demographic regimes, the minuet called dilatory homeostasis, the almost accidental uncovering of ubiquitous migration flows—all of these achievements of historical demography and yet others in the related realm of household structure have endowed early modern Europe with an important history of fertility and mortality change. It was hardly a “motionless history,” even though the great enforcer—the positive checks of Malthus holding society in thrall—was not entirely absent.⁹

In early modern *urban history* we have in recent years abandoned the notion that Europe's cities, their medieval vigor dissipated, faced the unenviable choice of stagnation or syncophantism until modern industry lifted them from their torpor to inaugurate modern urbanization. I hope it is now clear that Europe's urban network, connecting its many cities in systems of commercial interaction, was an achievement of the early modern period, establishing a framework for regional economic development in which industrial growth could occur, rather than being itself a product of that industrialization.¹⁰

Finally, the past 25 years has seen the development of a new history of *industrialization before industrialization*, to borrow a memorably awkward German book title. It is true, some scholars found the late Franklin Mendels' definition of “protoindustrialization” to be a concept too many, but few will deny the value of the debate around that term in exposing the submerged portion of the iceberg of prefactory industrial production, submerged in a mainly rural sea of by-employments, seasonal work, and child and female labor.¹¹

As I sat at the final *tavolo rondo* session of those Prato meetings, which was held in nearby Florence, the acknowledged birthplace of the Renaissance, I could not help thinking of a parallel between the scholarly achievements there being chronicled and an earlier academic movement. The claim of the Renaissance to form the origins of modern

⁹ Notable monuments in a vast literature include Henry, *Anciennes familles Genevoises*; Laslett, *The World We Have Lost*; Hajnal, “European Marriage Patterns”; Flinn, *European Demographic System*; Wrigley and Schofield, *Population History*; Dupâquier, Cabourdin, LePetit, et al., eds., *Histoire*.

¹⁰ See Bairoch, *De Jéricho à Mexico*; Hohenberg and Lees, *Making of Urban Europe*; De Vries, *European Urbanization*; Wrigley, “A simple model.”

¹¹ Kriedte, Medick, and Schlumbohm, eds., *Industrialisierung*; Coleman, “Proto-Industrialization”; Mendels, “Proto-industrialization”; Mendels and Deyon, “Programme”; Mendels, “Agriculture and Peasant Industry”; Mendels, “Des industries rurales”; Medick, “Proto-industrial Family Economy”; Levine, *Family Formation*; Berg, Hudson, and Sonenscher, eds., *Manufacture in Town and Country*.

western history via its rebirth of ancient learning held within it the secondary claim that the preceding epoch had been an age of darkness, a benighted era of ignorance and barbarism. This had always rankled among medievalists, who early in this century began to mount a concerted effort to assert the *medieval* origins of the modern world and the secondary significance of the Renaissance, a cultural phenomenon blown all out of proportion by the genius for self advertisement of its foremost exponents. (The Renaissance is one of the few historiographical monuments to have been named at the time by its own chief advocates.) This movement of disgruntled scholars is known to historians as the "Revolt of the Medievalists," and it seemed to me that the scholarly enterprise being reviewed at that Prato meeting, an enterprise in which I have played a part these past 25 years, constituted a "Revolt of the Early Modernists."¹²

With this difference. The medievalists aimed to dethrone the Renaissance, formed a movement of scholars committed to doing so—and failed. The merits of their historical arguments had to do battle with a determined resistance stiffened by powerful contemporary needs in the 1920s and 30s to uphold the Renaissance vision of a modern world founded on a rational, secular, progressivist culture and bearing the seed of modern democracy. Renaissance studies emerged from this struggle stronger than ever, experiencing a rebirth, so to speak, in the generation after World War II. The real crisis came not so much from these historical challenges as from the impact of contemporary experience on historiography. As Bouwsma puts it, "Since we are baffled by the modern world, we are hardly in a position to argue for the relevance to it, at least in the traditional way, of the Renaissance. . . . The collapse of the idea of progress has profoundly subverted our sense of the direction of history."¹³

The Revolt of the Early Modernists, if you will entertain this conceit for a moment longer, has been a very different movement from that of the medievalists. This was no movement of angry scholars eager to drag the Industrial Revolution down from its pedestal. It wasn't a movement at all. Its participants shared, and share, I believe, an eagerness to remove the vestiges of crude modernization theory, with its traditional-modern dualism and its linear historical models, but repeated acts of kicking open already unlatched doors is not the stuff of high drama. Thus, the agenda of early modern economic history is relatively benign with respect to the concept of the Industrial Revolution; we come not to bury it but to improve it. And yet, the Industrial Revolution is now a concept on the defensive.

This crisis exists because the challenge from behind, as it were, is

¹² An account of the "Revolt of the Medievalists" is available in Ferguson, *The Renaissance*, pp. 329–85.

¹³ Bouwsma, "The Renaissance," p. 5.

joined by a challenge derived from contemporary experience. If the early modernists criticize the concept's lack of historical depth (the story doesn't begin in the Lancashire of 1760), contemporary experience causes us to worry about its lack of breadth (how much of contemporary industrial development can claim the classic Industrial Revolution as its lineal ancestor?).

As I have already said, we come not to bury the Industrial Revolution. We have come to provide it with a . . . helpmate, a companion concept that I believe can help in the formulation of a sharpened definition of the Industrial Revolution while also serving to illuminate important changes in economic behavior (that go well beyond the epoch of the Industrial Revolution itself) that speak to an interest in the past borne of contemporary experience but about which the Industrial Revolution concept is either silent or misleading.

First, our task is to incorporate the multistranded findings of Early Modern economic history to the Industrial Revolution. If it was a more gradual phenomenon in its aggregate measurements than had been thought earlier, what were the salient features of that long-preceding or preparatory era? If the "plant of industry" breaking through the "cake of custom" no longer evokes the right image, what does?¹⁴

More importantly, our task is to confront what must rank as the most confusing aspect of Industrial Revolution historiography, giving rise to endless scholarly debate and undermining efforts to communicate the concept to a broader public. I refer not only to the "standard of living debate," but to the larger issues of the relationship of the Industrial Revolution to Europe's material culture (the social dimension) and the role of demand in the Industrial Revolution (the technical dimension).

The literature as it stands reveals a veritable conundrum. As I have described this literature in some detail elsewhere,¹⁵ allow me to summarize it here with the bald statement that efforts to calculate real wages, whether in England or other western countries, have rarely yielded much evidence for increased purchasing power, and in the core period of the Industrial Revolution, at least until 1820, they usually show deterioration.¹⁶ Yet, the accumulating evidence from the material world, based on probate inventory studies and direct consumption measurements, reveals an ever-multiplying world of goods, a richly varied and expanding material culture, with origins going back to the

¹⁴ The metaphor was immortalized by Cameron, who deployed it in his *France and the Economic Development of Europe*, p. 5, to such effect that it eventually found a place in the column fillers of the *New Yorker* (old style).

¹⁵ De Vries, "Purchasing Power and the World of Goods."

¹⁶ Surveys of this literature include Braudel and Spooner, "Prices in Europe"; Söderberg, "Real Wage Trends"; Phelps Brown and Hopkins, *A Perspective*. On England see Lindert and Williamson, "English Workers' Living Standards"; Crafts, "English Workers' Real Wages."

seventeenth century and exhibiting a social range extending far down the social hierarchy.

Efforts made over the years to explore the possibilities of demand-initiated economic development during the Industrial Revolution have invariably been beaten back by the exposure of logical and theoretical inconsistency. No one is better at that than Joel Mokyr, and at the end of his article "Demand vs. Supply in the Industrial Revolution," he stepped back, as it were, from his work of demolition and, while wiping the muck of faulty reasoning from his hands, concluded with the words "The . . . notion that supply and demand were somehow symmetric in the industrialization process is unfounded. The determination of 'when,' 'where,' and 'how fast' are to be sought first and foremost in supply, not demand-related processes."¹⁷

But, the conundrum remained; indeed, the evidence for it grew considerably since the lines just quoted were written.¹⁸ And the interest in a demand-side appreciation of early industrialization, beaten back in economic history, emerged again among social historians, among whom sightings of a "consumer revolution" gained credence,¹⁹ and has now found a comfortable home among cultural historians, where the triumph of the will of the consumer can overcome any scarcity, where budget constraints don't exist (and where love never dies).²⁰

Which brings me to my proposal. The twin challenges seem to call for a renewed attention to the economic history of the household or the family unit. The insights of the early modern revisionists play themselves out, nearly all of them, in the context of the household unit. And the solution to the conundrum of the falling purchasing power of labor and increased material possessions is to be found, I am convinced, in the behavior of the household as well.

Consumer demand grew, even in the face of contrary real wage trends, and the productive achievements of industry and agriculture in the century before the Industrial Revolution could occur because of reallocations of the productive resources of households. In England, but in fact through much of Northwestern Europe and Colonial America, a broad range of households made decisions that increased *both* the supply of marketed commodities and labor *and* the demand for goods offered in the marketplace. This combination of changes in household behavior constituted an "industrious revolution." Driven by a combi-

¹⁷ Mokyr, "Demand vs. Supply," p. 110.

¹⁸ Important recent works based on probate inventory studies include Wijsenbeek-Olthuis, *Achter de gevels van Delft*; Weatherill, *Consumer Behavior*; Earle, *Making of the English Middle Class*; Main and Main, "Economic Growth"; Carr and Walsh, "Standard of Living"; Shammass, *Pre-Industrial Consumer*.

¹⁹ A convenient introduction to this literature is McKendrick, Brewer, and Plumb, eds., *Birth of a Consumer Society*.

²⁰ Serving as an entrée to this literature are many of the essays in Brewer and Porter, eds., *Consumption*. See also Campbell, *The Romantic Ethic*.

nation of commercial incentives (changes in relative prices, reduced transaction costs) and changes in tastes, this "industrious revolution" emanating to a substantial degree from the aspirations of the family, preceded and prepared the way for the Industrial Revolution. This industrious revolution, a change in household behavior with important demand-side features, began in advance of the Industrial Revolution, a fundamentally supply-side phenomenon.

The household is a unit of coresidence and reproduction, of production and labor power, of consumption and distribution among its members, and of transmission across generations. At the heart of the concept of an industrious revolution is the interaction of these functions and of decision making within the household concerning the optimal allocation of time and other resources of its members. Here I adapt Gary Becker's "Theory of the Allocation of Time" to my purposes, proposing that a household purchases market-supplied goods subject to a resource constraint of money income, and combines these goods with the labor and other resources of the household to produce what Becker called "Z," the more basic commodities that directly enter the household's utility function.²¹ The purchased goods (x) should be thought of as ranging from items requiring very little household labor before they are transformed to the consumable Z commodities (say tea), to those (say sheep) that require extensive household labor before the transformation (to clothing) is complete. Correspondingly, the Z commodities should be thought of as items of utility, many if not all of which can be satisfied in a variety of ways—through purchased goods requiring little labor or through essentially home-produced goods and services (clothing could be produced from home-grown fiber, from a store-bought length of cloth, or ready-made from a tailor—the domestic "value-added" diminishing with each example).

If this is granted, then changes in tastes (chiefly affecting the desired

²¹ Becker, "Theory of the Allocation of Time." Becker introduced Z to stand for "the more basic commodities that directly enter [household] utility functions" (p. 495). Thus,

$$Z_i = f_i(x_i, T_i)$$

where x_i is a vector of market goods and T_i a vector of time inputs used in producing the i th commodity. Linder, in *The Harried Leisure Class*, deploys a similar concept with what he terms "consumption goods," by which "we mean the definite end products that are combined with time in an attempt to create material or spiritual well-being" (p. 5). Note, however, that Becker is concerned with household time that enters into the *production* of the final consumption commodities, whereas Linder's focus is on the time needed for the *consumption* of the acquired goods, what he calls "consumption time."

Becker's concept of "Z commodities" is also prone to misinterpretation because it has entered the literature of development economics and economic history as "Z goods" with two definitions, neither of which is consistent with Becker's original formulation. In Hymer and Resnick, "A Model of an Agrarian Economy," and De Vries, *The Dutch Rural Economy*, Z goods are treated as home-produced goods intended for home use. They are regarded as a substitute for market-purchased goods. In Mokyr, *Industrialization in the Low Countries*, Z goods are introduced as home-produced goods intended for sale; they are synonymous with "protoindustrial" activity.

composition of Z commodities) and supply-side changes affecting relative prices (chiefly influencing the choice of technique to achieve a given Z commodity) will jointly determine the demand for market-supplied goods. And, within the household economy, this demand will shape the disposition of the household's potential productive resources (chiefly time) between home production of Z and income-generating production of marketed commodities and the offer of labor. When the demand for leisure (defined as time devoted to neither income-generating nor consumption-preparing activity) is added to the equation, we have what I believe is a way of formulating the household economy that is sufficiently general to comprehend the proverbial preindustrial peasant household characterized by substantial self-sufficiency, and the modern household, often thought to be simply a unit of consumption.²²

In this framework the industrious revolution, for which evidence can be found from the mid-seventeenth century into the early nineteenth, consisted of two transformations: the reduction of leisure time as the marginal utility of money income rose, and the reallocation of labor from goods and services for direct consumption to marketed goods—that is, a new strategy for the maximization of household utility. We see it among peasant households concentrating their labor in marketed food production, in cottar households directing underemployed labor to protoindustrial production, in the more extensive market-oriented labor of women and children, and finally, in the pace or intensity of work.²³

²² In his "Theory of the Allocation of Time" Becker presented the household as a unit that maximizes utility subject to two constraints, one on the expenditures for market-supplied goods (x_i), the other on the allocation of time (T_i). The goods constraint is

$$\sum_1^m p_i x_i = I = V + T_w \bar{w}$$

where p_i gives the unit prices of market goods, V is other, nonearned income, T_w is a measure of time devoted to money-income-producing work, and \bar{w} gives the earnings per unit of T_w . The time constraint is

$$\sum_1^m T_i = T_c = T - T_w$$

where T_c is the total time spent on the home preparation of Z commodities, and T is the total time available. It follows from the presence of T_w in both equations that time can be converted into goods, and, in view of the alternative strategies available to secure Z (the variable x -intensity of Z), goods can also be converted, so to speak, into time. The historical interest in this model focuses on the emergence of the conditions in which the elasticities of substitution between time and goods increase (where households can in fact readily convert time into goods at the margin), and where the market offers goods (x) at prices that induce reallocations of household time toward T_w .

Note, finally, that Becker's treatment of the time constraint, as it stands, is inadequate for our purposes. The household does not face only the single allocational decision described above, between T_c and T_w . In addition, it must allocate time between leisure and these two types of productive activity. (In Linder's terms, yet another time category, consumption time, must be added to the equation, making for a very complex calculus indeed.)

²³ For historical examples of "industrious" behavior see De Vries, "Purchasing Power and the World of Goods," pp. 108–14.

Now, a vast body of opinion held both by contemporaries and by modern historians contradicts the very possibility of an industrious revolution such as I have described. Among eighteenth-century observers no end of colorful denunciations of the sloth, fecklessness, and irresponsibility of working people can be assembled.²⁴ They stress the limited, and base, wants of the working population and the necessity of low wages to secure an elastic supply of labor. Such commentary is not usually the product of disinterested observation of actual behavior. It functioned as part of an ideology that defined the working population's otherness and incapacity for self-governance. In addition, of course, it had the practical benefit, as the "utility of poverty doctrine," of justifying low wages. It is ironic that many historians who regard themselves as champions of the common man appropriate these claims. What had served the original tellers as a trope to justify the subordination of the lesser orders because of their lack of self-control and weak spirit of improvement came to be used by "moral economy" advocates as evidence of the precapitalist natural innocence of common folk.

Thus, the human raw material for a modern capitalist economy could be described by Sidney Pollard as "Men who were non-accumulative, non-acquisitive, accustomed to work for subsistence, not for maximization of income, [who] had to be made obedient to the cash stimulus, and obedient in such a way as to react precisely to the stimuli provided."²⁵ The factory master not only had to train his workers, he had to train his consumers at the same time, for nothing came harder than regular and intense labor, which required in E. P. Thompson's words "the supervision of labour; fines; bells and clocks; money incentives; preachings and schooling; the suppression of fairs and sports."²⁶

There exists another body of literature consisting primarily of novels, diaries, and essays that evokes a rather different image. From Samuel Pepys through Daniel Defoe to Arthur Young, the concern with material culture in the broadest sense is intense, if not compulsive. Indeed, Defoe might well qualify as the chronicler of the industrious revolution, so frequently does he describe manufacturing counties where "you see the wheel going almost at every door, the wool and the yarn hanging up at every window, the looms, the winders, the combers, the carders, the dyers, the dressers, all busy; and the very children, as well as women constantly employed.

As is the labour so is the living; for where the poor are full of work, they are never empty of wages; they eat while the others starve, and have a tolerable plenty."²⁷

²⁴ The views of contemporaries are amply aired in Furniss, *Position of Labour*, chap 6; Mathias, "Leisure and Wages"; Coleman, "Labour in the English Economy."

²⁵ Pollard, *Genesis*, p. 106.

²⁶ Thompson, "Time, Work, Discipline," p. 90.

²⁷ Quoted in Rule, *Experience of Labour*, p. 11.

This “tolerable plenty” that filled Defoe with admiration, translated to “luxury” for many other observers, and the bitter debate waged over its pros and cons is itself a sign that target incomes and subsistence norms no longer ruled—for the essayists and poets who waxed eloquent on this theme could hardly have been tilting at wholly fictional windmills.

The starting point of this debate might be set at the publication of the poem “Fable of the Bees” by the Dutch immigrant to England, Bernard de Mandeville. Its first version, published in 1705, immediately created a scandal with its argument that the private vices of society—pride, vanity, envy—accounted for the public benefits of industry and prosperity.²⁸

“Thus every Part was full of Vice,
Yet the whole Mass a Paradise. . . .”

It did not take long for the point to be made by writers less intent on scandal and publicity than Mandeville, that incentive goods and market access would unleash a beneficial industriousness. It became a hallmark of the Scottish Enlightenment, from Hume through Steuart to Smith, all of whom found occasion to argue, in effect, that the new demand patterns were in place, so that the carrot rather than the stick would suffice to elicit greater effort. “Furnish him [the laborer] with the manufactures and commodities and he will do it [toil to produce a marketable surplus] himself,” wrote Hume.²⁹ Steuart was more blunt: workers had once been forced to work out of poverty or coercion but “Men are forced to labour now because they are slaves to their own wants.”³⁰

Not everyone was charmed by this prospect. One could cite the poems of Alexander Pope and Oliver Goldsmith, both dubious of the supposed benefits to be gained by redefining ancient vices as new civic virtues.³¹ And who can say they were entirely wrong? The “industrious

²⁸ Mandeville, *Fable of the Bees*.

²⁹ Quoted in Coats, “Changing Attitudes,” p. 40.

³⁰ Steuart, *An Inquiry*, p. 67. For discussions of the intellectual transition represented by the thought of Mandeville, Hume, Steuart, and others, see Hirschman, *Passions and the Interests*; Appleby, *Economic Thought*; Laqueur, “Sex and Desire.”

³¹ Alexander Pope saw clearly that justifications of luxury—the satisfaction of unbridled material desires—could not be distinguished from justifying lust—the satisfaction of unbridled sexual desires. Both flew in the face of all the moral appeals to asceticism with which his century had been filled. In “Epistle to Bathurst” he penned these lines:

What Nature wants (a phrase I much distrust)
Extends to Luxury, extends to Lust:
And if we count among the Needs of Life
Another's toil, why not another's Wife?

As for Goldsmith, one need only turn to his most famous poem, “The Deserted Village.”

O luxury! Thou curst by Heaven's decree,
How ill exchanged are things like these for thee!
How do thy potions with insidious joy
Diffuse their pleasures only to destroy!

revolution'' has an appealing ring to it. To quote an 1802 description of Cornish miners who had found by-employments to fill the hours and seasons between stints in the mines:³²

Instead of being as before, idle, careless, indolent, envious, dissatisfied and disaffected, the fruits of their former depraved, helpless and wretched condition, they become careful and thrifty both of their money and time, and soon begin to imbibe fresh notions respecting themselves and others and are happily found to be better fathers, better husbands and more respected members of the community than they had ever been before.

But the industrious revolution is not altogether an admirable thing. The intensification of work and suppression of leisure was associated with the (self) exploitation of family members—wives and children, the neglect of what we now call human capital formation (literacy rates stagnated in the eighteenth century), and greater recourse to binge drinking and binge leisure (the famous ''Saint Monday'' was no ancient practice of precapitalist ''moral'' workmen, it appears to have emerged after 1780).³³ Finally, and more speculatively, the new pressures and possibilities to which the industrious household economy were exposed made courtship and marriage a process of less settled rules, giving rise to a great wave of illegitimacy and child abandonment in the period 1750 to 1820.³⁴ The social ills of the industrious revolution were not the same as earlier times, but they were disturbing, nonetheless.

I have by no means exhausted the objections to the industrious revolution as a characterization of behavior and motivation; but I will now turn to another category of objection, one that focuses on the very

Kingdoms by thee, to sickly greatness grown,
Boast of a florid vigour not their own.
At every draught more large and large they grow,
A bloated mass of rank unwieldy woe;
Till sapped their strength, and every part unsound,
Down, down they sink, and spread a ruin round.

For discussions of these sentiments see Vichert, ''Theory of Conspicuous Consumption.''

³² Quoted in Rule, *Experience of Labour*, p 18.

³³ On the stagnation and possible deterioration of literacy attainments in England see Schofield, ''Dimensions of Illiteracy''; Mitch, ''Role of Human Capital.'' On ''Saint Monday'' see Rybczynski, *Waiting for the Weekend*, p. 116; Reid, ''Decline of Saint Monday.''

³⁴ Illegitimate births as a percentage of all births in England: 1670–80s, 1.5 percent; 1750s, 3.0 percent; 1810, 6.0 percent. Over the same interval prenuptial pregnancies rise from approximately 15 percent to 30 to 40 percent of all first pregnancies. The illegitimacy rate rose faster than these gross percentages suggest, for the average marriage age was declining. Thus, the ''at risk'' population for illegitimate birth was declining, whereas the incidence of such births was rising. See Laslett, *Family Life*, p. 115, fig. 3.2; Laslett, ''Comparing Illegitimacy''; Delasselle, ''Les Enfants abandonnés,'' p. 189. Everywhere the incidence of infant abandonment began to decline in the period 1820 to 1850, and in most countries the illegitimacy rate was also in decline by mid-century. In England it stood at 4 percent of all births in 1900. For the decline of illegitimacy see Kok, ''The Moral Nation''; Shorter, Knodel, and van der Walle, ''The Decline of Non-Marital Fertility in Europe''; Söderberg, Jonsson, and Persson, *A Stagnating Metropolis*, pp. 154–62. The new pressures placed on the rural household were first described in a classic ethnology that remains highly relevant: Braun, *Industrialisierung und Volksleben*.

concept of the household economy. The last point about social pathologies already foreshadows what is at issue here: Is it valid to treat the household as an economic unit akin to a firm? In Becker's original time-allocation article he cited approvingly Alex Cairncross's analogy of the household with "a small factory."³⁵ But, if this is so, who is its "owner"? The household's members are differentiated by relationship, sex, and age, and the interests of these individuals in the operation of the household were rarely identical.

In his recent study of a Württemberg peasant community experiencing an "industrious revolution" in the century after 1750, David Sabean objects to a substantialist concept of the household that treats it as a total unity.³⁶ The household is permeable, being the locus of complex alliances and reciprocities with external agents; it is fit into hierarchical dependencies; and internally it consists of an alliance between husband and wife and implicit contracts between parents and children. Thus, to be historically useful, the economics of the household must capture the differences in household organization among classes and over time.

If the household's permeability yields to utter porosity, and if the internal decision making is the product of naked struggle among self-interested individuals, then, indeed, we had best abandon this project altogether. But even household realists such as Sabean do not go that far, although they may be skeptical of Paul Samuelson's influential approach to the problem of group utility maximization that treats the household as a "realm of altruism" (where each family member includes the utility of the other members—as defined by that member—in his or her own utility function).³⁷ Still, this approach has the virtue of focusing attention on a process of negotiation among persons with an affective as well as a material stake in a joint enterprise. It allows for change in the relations among family members without dissolving the essential integrity of the household as an economic unit.

When the notion of the household as a small factory or a patriarchal monolith requiring no internal examination is abandoned, the historical evolution of this unit becomes a proper object of study. And here, the industrious revolution seems to have brought with it two important innovations: the first, foreshadowed in my litany of growing social ills of the eighteenth century, was a growing permeability, the result of the greater labor force participation of household members, whereby economic alliances with outsiders became more important, leading to greater individuation, default of implicit contract, and a shift of demand away from capital-forming consumption (an inelegant term) toward the consumption of nondurables. The second was an augmentation of the

³⁵ Becker, "A Theory of the Allocation of Time," p. 496; Cairncross, "Economic Schizophrenia."

³⁶ Sabean, *Property, Production, and Family*, p. 98.

³⁷ Samuelson, "Social Indifference Curves."

decision-making centrality of the wife.³⁸ A shift from relative self-sufficiency toward market-oriented production by all or most household members necessarily involves a reduction of typically female-supplied home-produced goods and their replacement by commercially produced goods. At the same time, the wife was likely to become an autonomous earner. Neil McKendrick put this in patronizing terms calculated to offend men and women alike:³⁹

When a man's wages went up in the eighteenth century the first beneficial effects might be expected to occur in the brewing industry, and in the commercialization of sport and leisure . . . gambling, boxing, horse racing and the like. When a woman's wages went up the first commercial effects would be expected in the clothing industries and those industries which provided consumer goods for the home. Her increased earnings released her desire to compete with her social superiors—a desire pent up for centuries or at least restricted to a very occasional excess.

The industrious revolution was no sudden thing. Even less than the Industrial Revolution does it warrant that overused yet seemingly indispensable moniker. Perhaps one should speak of the industrious disposition. The concept is not intended simply as a means of injecting the role of demand into the story of early economic growth. Rather, it is a means by which attention can be shifted from the site of new technologies to the site of new supplies of labor, of new aspirations, and of new forms of behavior in which the special contribution of the Industrial Revolution inserted itself.

The industrious revolution was no sudden thing, but neither was it eternal. The tool kit of middle-level generalizations I have assembled to study its emergence allows us also to study its demise—or better its replacement by another mode of household negotiation with the larger economy. The breadwinner-homemaker household, sometimes known as capitalist patriarchy, emerged in the first half of the nineteenth century in the most advanced sectors but became a widespread household norm in the century after 1850. Its defining feature is the withdrawal of wives and children from the paid labor force and the ideal of an adult male wage sufficient to support the household (the ideology of the family wage).⁴⁰ As a despairing critic of this regime put it, "By the

³⁸ A weakness of the current literature is its reliance on an article of faith that "capitalism" or "industrialization" acts to oppress women within the family. An interesting examination of the internal distribution of household resources, but one hobbled by this dogma, is Nicholas and Oxley, "The Living Standards of Women."

³⁹ McKendrick, "Home Demand and Economic Growth," pp. 199–200. His general point is developed further by Berg, *Age of Manufactures*, pp. 169–72.

⁴⁰ The household type I refer to here as "breadwinner-homemaker" goes by a variety of labels, each reflecting basic preconceptions about its essential character. It is analyzed from various perspectives in Secombe, "Patriarchy Stabilized"; Scott and Tilly, "Women's Work"; Anderson, *Family Structure*.

First World War, this conception had become a pervasive and fervently held proletarian ideal throughout the developed capitalist world."⁴¹

It may seem ironic, certainly counterintuitive, that households living in the throes of industrialization, in the hectic drive to industrial maturity, should at the margin shift demand away from market goods. Nor is it obvious why laborers supposedly cured of the backward-bending labor-supply-curve ailment should now withdraw labor from the market as real wages rose. Central to an explanation is a shift in the preference schedule that gave shape to household demand patterns and simultaneously determined the household's supply of paid labor. This gradually shifted in favor of Beckerian *Z* commodities, whose production required larger inputs of household time. As real earnings rose in the second half of the nineteenth century (the timing varied by social class and country), a new set of *Z* commodities associated with hygiene and nutrition, the health and education of children, and the achievement of new standards of domesticity and comfort in the home came to appear superior to the available range of market-provided goods and services. Their acquisition could not occur with market-supplied goods; there were no real *substitutes* for intensive home labor. These forms of ultimate consumption did generate a demand for *complementary* market-supplied goods—one thinks of housing, plumbing, furniture, cooking stoves and utensils—but the defining feature of the new demand pattern was that its achievement required the substantial withdrawal from the paid labor force of wives and children, a strategy made possible by rising adult male wages.⁴²

Of course, it was not achieved by everyone. Many households remained too poor to act on this strategy and must have resented the imposition of compulsory schooling and the new models of female propriety. No more than the industrious household was the breadwinner-homemaker household universal. I offer both as ideal types, defining, as it were, the central tendencies of their age.⁴³

⁴¹ Seccombe, "Patriarchy Stabilized," p. 54.

⁴² It is also true that the withdrawal of child and female labor tended to drive adult male wages up. Seccombe seeks to explain this process as driven by "an increasingly conservative labour movement . . . [which] reacted in a narrow exclusionist fashion to the very real threat which the mass employment of women as cheap labour represented . . ." (p. 55). This tragic misstep of organized labor led to the stabilization of patriarchy in the nineteenth century and, what is perhaps worse, the alienation of feminism from Marxism in the twentieth. Missing from Seccombe's scenario is a credible motivation for a policy pursued over several generations in a wide variety of countries. His suggestion that it all occurred in reaction to the defeat of Chartism is not quite up to the task.

⁴³ The breadwinner-homemaker household has recently come to be known as the "Ozzie and Harriet family," a label I would like to protest. I watched "Ozzie and Harriet" and recall clearly that Ozzie had no known means of support. He was always home and his work never mentioned. He did, however, send his two sons out to work for a living while they were still teenagers—with disastrous consequences for poor Ricky. My modest proposal is that people with an interest in preemptively rendering contemptuous this form of household call it the "Lucy and Desi" family. Except for one memorable day when she worked on a cream pie assembly line, Lucy stayed home,

This new household production pattern had profound consequences for the entire economy. The production system became more capital intensive and more exclusively oriented to the requirements of full-time male workers;⁴⁴ the structure of market demand came to focus increasingly on family-consumed rather than individually consumed goods; the goals of reproduction came, in the inelegant terms of the economist, to focus increasingly on quality—the endowment of children with human capital—and less on quantity.⁴⁵ Indeed, I would go so far as to claim that it was more through the household productive system than the larger formal economy that the major achievements of industrial society—lower morbidity and mortality, better nutrition and higher educational levels, greater domestic comfort—were achieved. None of these “goods” could be bought off the shelf.

This household regime—the Lucy and Desi family—is now history. We are told every day that it no longer defines more than a small percentage of households in this country and not much more in most European countries. Since the 1960s we have embarked on a second industrious revolution. It is defined first and foremost by the unprecedented rise of married women’s participation in the paid labor force (in the United States, from about 14 percent in 1940 to 60 percent in 1990), but a second important feature is the growth of teenage labor force participation rates (rising even as school attendance rises as well).⁴⁶ It is further defined by a cessation in the long-term decline in weekly hours in full-time employment and, apparently, the rise of second jobs.⁴⁷

The second industrious revolution differs from the first in that the household is rarely the site of production for the market, certainly not by all household members jointly, but in other respects it is reminiscent

even incorporating the birth of her child into the program, while Desi went to work every day at the Copacabana night club. A traditional family if there ever was one.

⁴⁴ Berg, *Age of Manufactures*, p. 160.

⁴⁵ Becker, *A Treatise*.

⁴⁶ U.S. labor force participation rates of 16- to 19-year-olds has risen from 45 percent in 1960 to 1965, to 55 percent in the period 1980 to 1989. Schor, *Overworked American*, fig. 2.2, p. 26. Data on married women’s labor force participation rates from Brown, “Consumption Norms,” and Schor, p. 25.

⁴⁷ On this topic a large popular literature now exists: Schor, *Overworked American*; Cross, *Time and Money*; Cowan, *More Work*; Hunnicutt, *Work Without End*. This literature seeks to make two general points: that people now lead hectic, work-filled lives, belying modern technology’s promise of greater leisure, and that people are now steeped in a hedonistic materialism in which work and production are devalued in favor of play and consumption. These two not altogether compatible arguments are linked by their common dependence on the baleful effects of advertising in the service of an overripe capitalism. On this more general characteristic of advanced capitalism, see Bell, *Cultural Contradictions*; Lasch, *Culture of Narcissism*; Horowitz, *Mortality of Spending*; Fox and Lears, eds., *Culture of Consumption*. In Europe, the focus of popular attention has been less on the failure of hours to fall (for they have fallen more than in North America), but on the rise of illegal labor—employment for which no social security taxes are paid and employment among the recipients of disability and unemployment benefits. Recent Dutch studies are summarized in Hagenaaars and Wunderink-van Veen, *Soo gewonne soo veteert*, pp. 125–30.

of its eighteenth-century predecessor. It occurs in an environment of stagnant or declining individual real wages and salaries; it is characterized by a rise in demand for market-supplied goods that minimize the addition of domestic "value added" (chiefly time) before ultimate consumption; demand has shifted from family-consumed durables toward individualized consumption.

I have suggested that what makes the Industrial Revolution a concept of diminished stature today is the spreading sense that the course of modern industry, whether in mature economies or developing ones, may not be directly shaped by, thus historically connected to, the First Industrial Revolution. But by my reading the industrious revolution of history is once again *au courant*. The Beckerian household economy framework in which I analyzed the earlier epochs of household economy seems to serve well here too, except that allowance for permeability and strains on the household must now be much greater than before. Indeed, permeability is in danger of yielding to utter porosity as the household of the second industrious revolution releases its last remaining labor reserves to the market and yields its last practical functions to market- (and government-) supplied services. What remains is then useless for transmission of assets, capricious and undependable in the distribution of consumption goods, and too unstable to effectively perform the reproduction function.⁴⁸

This brings me to my conclusion. After the manner of stories I once read to my children, I offer two; the reader is free to choose.

1. One interpretation of the new industrious household—one to which I give assent in my pessimistic moments—is that the absorption into the market economy of the last remaining substance of the household represents a final frontier of capitalism, that it demonstrates the truth of Schumpeter's famous observation about the bourgeois family: "The capitalist order rests on props made of extra-capitalist material [and] derives its energy from extra-capitalist patterns of behavior which at the same time it is bound to destroy."⁴⁹

2. But when I muster my courage to try to be half as good a social scientist as Schumpeter was, I have to acknowledge that his statement is tainted by the linear-modernist concept of historical change that so

⁴⁸ The sociologist David Popenoe describes this process with the term "family deinstitutionalization": "A trend for familism as a cultural value to weaken, for the family to lose functions, and for family units to become smaller, more unstable, with a shorter life span, and less cohesive." "This breeds disinvestment in the family, as rational actors direct time, money and effort to individual investments." Popenoe, *Disturbing the Nest*, p. 214. In terms of Gary Becker's "Theory of the Allocation of Time" (see notes 21 and 22), the "industrious" household is what he called the "full income" position, "obtained by devoting all the time and other resources of a household to earning income, with no regard for consumption" (pp. 497–98). The final phrase in this statement is, of course, unrealistic, but might be restated as "with a systematic preference for market goods that minimize home labor inputs, with a minimum of redistribution within the household, and with a minimum of human capital formation in children."

⁴⁹ Schumpeter, *Capitalism*, p. 162.

much deserves critical scrutiny. The concept I have sketched here holds out the historically grounded prospect of new, yet unanticipated developments in the household economy. If permeability has not yielded irrevocably to porosity, aspirations for new Z goods can again change its character—this time, one might hope, in ways that avoid the rigid gender-based division of labor of the past, but, one might also hope, with demand patterns that once again foster the human potential of the household's members.

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