

Ricardian “comparative advantage” is illusory

John Duffield

Copyright: John Duffield, 2010

You may post comments on this paper at

<http://rwer.wordpress.com/2010/09/27/rwer-issue-54-john-duffield/>

Editor’s Note: Mathematical symbols used in this paper have necessitated putting it in a different typeface.

Part 1

The doctrine of “comparative advantage” attributed to David Ricardo remains a staple in the apologetics of corporate globalization: If international trade only benefits rich and poor countries alike, its opponents are summarily indicted for plain misanthropy. In the nearly two centuries since its appearance, the Ricardian doctrine has been criticized by both Right and Left of the politico-economic spectrum, but critical consensus still awaits a definitive refutation of Comparative Advantage on its own terms. This essay presents just such a refutation.¹

Ricardo’s paradigm case² for Comparative Advantage is analytic, deriving from a model of the world economy consisting of two originally closed systems (autarkies), each producing the same two commodities (here, food and clothing) as the other. Commodities of the same description are qualitatively identical, so that advances (or declines) in productivity are manifested only quantitatively. A simple labor theory of value provides the *numéraire* for each closed system, such that the original intrasystemic exchange ratio of F (food) and C (clothing) for each system is set by the quantity of simple labor (labor undifferentiated by skill or productivity) required for the production of the respective commodities. Equivalent-value exchange is the intrasystemic rule. Intersystemic labor migration is prohibited, as is the intersystemic migration of know-how (skill); while intrasystemic labor mobility is assumed to be a completely free option, such that the producers of either commodity may switch to the production of the other commodity—thus, the “specialization” advocated by Ricardo—without encountering barriers to entry, such as training, transportation costs, monopoly, etc. Although Comparative Advantage turns upon intersystemic differences in productivity, whereby the commodity-exchange ratio (“relative cost” of F and C) differs from one system to the other, technology per se is not quantified in the Ricardian problematic, which modern texts present as a single-factor model that turns upon labor cost per unit of output. At this level of abstraction, the productivity differentials that animate Comparative Advantage inhere in the laborers themselves and thus are equivalent to skill differentials.

From the above problematic modern texts deduce that intersystemic trade is economically beneficial to all concerned (and harmful to none) if, and only if, the laborers of each system specialize in the production of that commodity for which the “relative cost,” given in the commodity-exchange ratios of the respective closed systems, is more favorable. In the example detailed below, the laborers of system I should specialize in F because F costs half as much as C in system I, given the original (closed system) commodity-exchange ratio ($1 F = 1/2 C$); while F costs three-fourths as much as C in system II, given system II’s autarky exchange ratio ($1/3 F = 1/4 C$, i.e., $1 F = 3/4 C$). The “comparative advantage” of system I is

thus in the production of F. (The “=” sign stands for “equals” or “exchanges for.” Under Ricardo’s labor theory of value “exchanges for” signifies equality of labor content only if the exchange transpires within either closed system; intersystemic exchange in accordance with Comparative Advantage proceeds by the calculation of mutual benefit described below.) By the same token the laborers of system II should specialize in the production of C, since C in their (closed) system costs four-thirds as much as F ($1 C = 4/3 F$), while in system I C costs twice as much as F ($1 C = 2 F$). System II’s comparative advantage is thus in C. It will advantage the laborers of system I, specializing in F, if they can trade for C at a rate better than the $1 F = 1/2 C$ that would obtain in their system absent specialization. Thus they will require a trading rate of $1 F > 1/2 C$ (“>” for “greater than” or “is worth more than”; “<” for “less than” or “is worth less than”). It will advantage the laborers of system II, specializing in C, if they can trade for F at a rate better than their closed-system rate of $1 C = 4/3 F$; i.e., their required trading rate will be $1 C > 4/3 F$, which is equivalent to $1 F < 3/4 C$. Collating the requirements, intersystemic trade will benefit all concerned in the trading range given by $(1/2 C < 1 F = nC < 3/4 C)$. Within this range the rate coefficient n is undetermined; let it be arbitrarily set at $1 F = 2/3 C$. Then by trading for C the laborers of system I will enjoy the equivalent of a 33 1/3% increase in the C-productivity of their F over their closed-system rate ($[2/3 C - 1/2 C] \div 1/2 C = 1/3 = 33\ 1/3\%$). To the extent that they trade for C instead of producing it, their real income increases by 33 1/3%. (Their F-productivity per se is seen as unchanged. The overall increase in real income will depend on system I’s current-income shares of F and C, a parameter that is independently assigned.) By the same token, trading for F at $1 C = 3/2 F$ ($\equiv 1 F = 2/3 C$; the symbol “ \equiv ” for “equivalent to”) brings to the laborers of system II the equivalent of a 12 1/2% increase in the F-productivity of their C over their closed-system rate ($[3/2 F - 4/3 F] \div 4/3 F = 1/8 = 12\ 1/2\%$). Their real income increases by 12 1/2% to the extent that they trade for F instead of producing it. (Their C-productivity per se is seen as unchanged; the overall increase in system II’s real income will depend on the current-income shares of F and C.)

Ricardian Problematic

Where “→” or “←” means “produces,” “xhr” means “x hours of labor,” “p F” for “p units of commodity F,” “q C” for “q units of commodity C,” while “p” and “q” designate real numbers, it is given that

system II 1 hr → 1/3 F = 1/4 C ← 1 hr

system I 1 hr → 1 F = 1/2 C ← 1 hr

		Labor productivity or skill (1hr→)		Labor cost per unit	
		F	C	F	C
system II	1/3 F	1/4 C	system II	3 hr	4 hr
system I	1 F	1/2 C	system I	1 hr	2 hr

In the above, system I enjoys an “absolute advantage” in the production of both F and C, since its laborers are trebly productive or skilled in F, and doubly productive or skilled in C, compared to the laborers of system II. The absolute advantage of system I is therefore uneven, i.e., I is *more* absolutely advantaged in F than in C. In consequence, system I’s *comparative* advantage is only in the production of F, which is relatively cheaper within I (@ 1 F = 1/2 C) than within system II (@ 1 F = 3/4 C). It follows that the absolutely disadvantaged system II enjoys a comparative advantage in the production of C, which costs 4/3 F within II as opposed to 2 F within system I. Then, with I specializing in F and II in C, trade at the rate of 1 F = 2/3 C yields mutual advantage from the ultimately unequal labor exchange,

(system I) 1 hr → 1 F = 2/3 C ← 2 2/3 hr (@ 1/4 C/hr) (system II)

Here 1 F and 2/3 C are worth the same on the international market (each serving as the *numéraire* for the other, while the *numéraire* is reflexive for the price relation), notwithstanding their unequal labor contents, i.e., unequal values. Trade is mutually advantageous because the 1 F that system II obtains for 2 2/3 hr of labor would cost it 3 hr absent specialization; hence system II reaps the equivalent of a 12 1/2% increase in its real F-productivity ([3 hr – 2 2/3 hr] ÷ 2 2/3 hr = 1/8 = 12 1/2%). Trade is likewise advantageous for system I because the 2/3 C obtained by trade for 1 hr of labor (→1F) would have cost it 4/3 hr absent specialization (i.e., 2/3 C = 4/3 hr @ 1/2 C/hr); hence system I enjoys the equivalent of a 33 1/3% increase in its real C productivity ([4/3 hr – 1 hr] ÷ 1 hr = 1/3 = 33 1/3%). The uneven development of intrasystemic productivity—in the above, system I is *more* absolutely advantaged in F than in C—is a necessary condition of Comparative Advantage. But since inequality of absolute advantage is infinitely more likely than equality even in a two-commodity model (for any one rate of absolute advantage there is an infinity of differing rates) the Ricardian problematic is assured of universal applicability.

The elegant simplicity of the above proof of the mutually beneficial character of free trade cannot be gainsaid. *A closer inspection, however, reveals that Comparative Advantage harbors self-contradictions that have hitherto passed without notice.* A brief logical exercise demonstrates the *reductio ad absurdum* most concisely.

SYMBOLS: “ \supset ” for “implies” or “if . . . then.” “ \bullet ” for “and.” “ \neq ” for “not equal to.” “ \sim ” for “not.” Again, “ \rightarrow ” or “ \leftarrow ” for “produces,” where the relata are labor hours and units of a specific commodity; “ \equiv ” for “equivalent to.” The subscripts “I,” “II” and “S” denote discrete economic systems.

TERMINOLOGY: Where “n” denotes a specified real number, “nhr X_S labor” for “n hours of labor applied to the production of commodity X in system S.” Here, $X = F$ or C , where “F” denotes food and “C” clothing. “ rc_S ” for “the intrasystemic commodity-exchange ratio, or relative cost, specified for the two products of system S.” “ $ca_{I,II}$ ” for “comparative (or relative) advantage in one product for system I and in a different product for system II, both commodities being originally produced in both systems.” By definition, $ca_{I,II} \equiv (rc_I \bullet rc_{II}) \bullet (rc_I \neq rc_{II})$. “ le_S ” for “the intrasystemic labor-exchange ratio specified for rc_S .” E.g., “1 hr F_{II} labor = 1 hr C_{II} labor” denotes le_{II} because for rc_{II} ($1/3 F = 1/4 C$), $1 \text{ hr } F_{II} \text{ labor} \rightarrow 1/3 F = 1/4 C \leftarrow 1 \text{ hr } C_{II} \text{ labor}$. “ $le_{X_{I,II}}$ ” for “the implied intersystemic labor-exchange ratio associated with commodity X by virtue of the productivity differential for X obtaining between systems I and II.” E.g., “1 hr C_{II} labor = $1/2$ hr C_I labor” denotes $le_{C_{I,II}}$ because $1 \text{ hr } C_{II} \text{ labor} \rightarrow 1/4 C \leftarrow 1/2 \text{ hr } C_I \text{ labor}$; the “ $=$ ” here denotes equality and not any actual exchange. Unless otherwise derived, all values are those given in the Ricardian Problematic. An aside to the logical cognoscenti: The following is an informal proof, all of whose substantive expressions signify descriptions (as in, “the square root of nine”) unless otherwise indicated by the logical context; in which case the expressions signify propositional assertion (as in, “there is the square root of nine”). For example, in the definition of “comparative advantage” symbolized above, as also in line 1 of the proof, the first “ \bullet ” connects propositional assertions while the “ \neq ” connects the same symbols, but as descriptions; the second “ \bullet ” connects the resultant compound proposition. Again as indicated by the logical context, the parenthetical expression “(1 F = 3/4 C)” serves as a description in line 4 of the proof, “ $rc_{II} = (1 F = 3/4 C)$,” which is a propositional assertion that identifies the rc of system II. Lines 12, 18, and 27 are similarly qualified. But line 11 of the proof, consisting entirely of the proposition “1 F = 3/4 C,” asserts the equality of the labor contents of 1 F and 3/4 C, per the previous two lines of proof. Line 26 is similarly qualified.³

GIVEN: (system II) 1 hr F_{II} labor \rightarrow $1/3 F = 1/4 C \leftarrow$ 1 hr C_{II} labor
 (system I) 1 hr F_I labor \rightarrow $1 F = 1/2 C \leftarrow$ 1 hr C_I labor

TO PROVE: $ca_{I,II} \supset \sim ca_{I,II}$

1. $ca_{I,II} \supset (rc_I \bullet rc_{II}) \bullet (rc_I \neq rc_{II})$	def. $ca_{I,II}$
2. $ca_{I,II}$	premised
3. rc_{II}	1, 2 m. ponens, simp.
4. $rc_{II} = (1 F = 3/4 C)$	3, given
5. 1 hr F_{II} labor = 1 hr C_{II} labor	le_{II} , given
6. 1 hr C_{II} labor = $1/2$ hr C_I labor	$le_{C_{I,II}}$, given
7. 1 hr F_{II} labor = $1/3$ hr F_I labor	$le_{F_{I,II}}$, given
8. 1 hr C_{II} labor = $1/3$ hr F_I labor	5, 7, trans.
9. 1 hr C_I labor = $2/3$ hr F_I labor	6, 8, trans.
10. $1/2 C = 2/3 F$	9, \rightarrow_I , \leftarrow_I , given
11. $1 F = 3/4 C$	10
12. $rc_I = (1 F = 3/4 C)$	11, def. rc_S
13. $rc_{II} = rc_I$	4, 12, trans.
14. $\sim ca_{I,II}$	13, 1, m. tollens
15. $ca_{I,II} \supset \sim ca_{I,II}$	2-14, c.p., Q.E.D.
16. $ca_{I,II}$	premised
17. rc_I	16, m. ponens, simp.
18. $rc_I = (1 F = 1/2 C)$	17, given
19. 1 hr F_I labor = 1 hr C_I labor	le_I , given
20. 1 hr F_I labor = 3 hr F_{II} labor	$le_{F_{I,II}}$, given
21. 1 hr C_I labor = 2 hr C_{II} labor	$le_{C_{I,II}}$, given
22. 1 hr F_I labor = 2 hr C_{II} labor	19, 21, trans.
23. 3 hr F_{II} labor = 2 hr C_{II} labor	20, 22, trans.
24. 1 hr F_{II} labor = $2/3$ hr C_{II} labor	23
25. $1/3 F = 1/6 C$	24, \rightarrow_{II} , \leftarrow_{II} , given
26. $1 F = 1/2 C$	25
27. $rc_{II} = (1 F = 1/2 C)$	26, def. rc_S
28. $rc_I = rc_{II}$	18, 27, trans.
29. $\sim ca_{I,II}$	28, 1, m. tollens
30. $ca_{I,II} \supset \sim ca_{I,II}$	16-29, c.p., Q.E.D.

By way of explication: The first half of the proof (lines 1-15) states that if the F-laborer of system I is three times as productive as the F-laborer of system II, and if the C-laborer of system I is twice as productive as the C-laborer of system II; but the C-laborer of system II is equally productive as the F-laborer of system II, then it follows by substitution that the F-laborer of system I is $3/2$ as productive as the C-laborer of system I. I.e., one hour of the former's labor is worth $3/2$ hr of the latter's labor. This conclusion assumes that the "learning curves" of the F- and C-laborers of system I are identical and linear, such that however the different productivities or skills are acquired, the value difference per unit of productivity change is the same for both classes of labor. At the given rate of output per hour for the two laborers, the derived commodity-exchange ratio within system I will be $1 F = 3/4$

C; exactly that given for system II. The difference in relative costs between the systems has vanished, and therewith comparative advantage.

By way of explication: The second half of the proof (lines 16-30) states that if the C-laborer of system II is one-half as productive as the C-laborer of system I, and if the F-laborer of system II is one-third as productive as the F-laborer of system I; but the F-laborer of system I is equally productive as the C-laborer of system I, then it follows by substitution that the C-laborer of system II is $3/2$ as productive as the F-laborer of system II. One hour of the former's labor is worth $3/2$ hr of the latter's labor. This conclusion assumes that the value difference per unit of productivity change is the same for both classes of labor in system II. At the given rate of output per hour for the two laborers, the derived commodity-exchange ratio within system II will be $1 F = 1/2 C$; exactly that given for system I. The difference in relative costs between the two systems has vanished, and therewith comparative advantage.

The textbook case for Comparative Advantage purports to justify *international* (intersystemic) specialization, but the above elenchus establishes that *intrasystemic* specialization is already at work in the textbook argument; and that it is only by virtue of nonrecognition of same that the modern Ricardian makes a case for Comparative Advantage. The contradictions exposed in the elenchus only make explicit the tacit contradiction at work in the received model: On the one hand, Comparative Advantage obtains only if intrasystemic productivity/skill levels are *uneven*—as in the above example, system I is *more* absolutely advantaged in the production of F than C. On the other hand, just this uneven development must be forgotten because its recognition, via quantification of intrasystemic productivity/skill levels, exactly cancels the intersystemic mutual benefit claimed by Comparative Advantage.

The proof takes the given commodity-exchange ratio (and so the relative cost ratio) of one system as template or standard, then derives the labor-exchange ratio (and so the relative cost ratio) of the other system. In this manner the intrasystemic productivity/skill level of the latter system is quantified. In the first half of the proof (lines 1-15), system II is the template; in the second half (lines 16-30), system I. The proof in effect calculates a price index—therewith a productivity measure—for the derived system, using the template system as “base year.” Of course, the “years” (system I, II) here are contemporaneous. In every case—i.e., irrespective of the commodity-exchange ratio (relative cost ratio) of the template system—the calculation will replicate for the derived system the same commodity-exchange ratio given in the template. This should come as no surprise: A (Paasche) price index asks, What would today's quantity of goods (here, quantity of use-values in one system) cost or be worth yesterday, i.e., in the “base year” (here, in terms of another system taken as template)? (This sum is then divided into “today's” expenditure to provide the “deflator.”) But “cost or be worth” here means exactly “in terms of yesterday's relative value relationships,” i.e., in terms of the template system's prices. So if “yesterday” (i.e., in the template system) 1 unit of F cost or exchanged for $3/4$ unit of C, the calculation of a price index puts “today's” (the derived system) quantity of use values into *that* relationship ($1 F = 3/4 C$). *That* relationship, moreover, will be replicated *whether or not* the derived system exhibits uneven productivity differentials vis-à-vis the template system (i.e., whether or not the given intersystemic labor-

exchange ratios are the same for all commodities). In every case a measure of the real income of the derived system is calculated.

The modern case for Comparative Advantage is therefore fatally undone by the dilemma: If the real intrasystemic productivity differential of the derived system is recognized (i.e., recognized *in* that system), the intersystemic relative cost differential upon which Comparative Advantage relies vanishes. But if the aforesaid real productivity differential is *not* recognized—e.g., if lines 9-11 of the proof are peremptorily denied in order to claim that $1/2 C$ is the real, not merely the nominal, worth of 1 hr of F-labor (a “logical” edition of the *price control* that economics associates with monopoly or governmental fiat)—then the mutual benefit upon which Comparative Advantage relies vanishes. I.e., one class of labor would be deprived of recompense commensurate with its labor: It would be disadvantaged. Either alternative undoes the doctrine of Comparative Advantage.

The above reveals that the mutual advantage purportedly divided up between systems I and II in fact consists in the uncompensated real income of the more skilled laborers of whichever system is subject to a productivity calculation in terms of the other system given as a template. The neoclassical case for Comparative Advantage is thereby exposed as a shell game in which labor’s unacknowledged wherewithal is flashed to onlookers in order to entice their assent to a free trade regime. When system II is taken as template, the more advanced laborers (the F-laborers) of system I are disadvantaged if the relative cost ratio in system I is the $1 F = 1/2 C$ maintained by the modern Ricardian (as in lines 1-15 of the above proof). But if the real (derived) productivity level of I *is* recognized intrasystemically (thus, $1 F = 3/4 C$), the *advantage* that would be required for I’s specialization in F ($1 F > 3/4 C$) would be exactly contrary to the *advantage* required for II’s specialization in C ($1 C > 4/3 F, \equiv 1 F < 3/4 C$) at its *given* productivity level (where $1 C = 4/3 F$). When system I is the template, the more advanced (or less unproductive by comparison with system I) laborers of system II (the C-laborers) are disadvantaged if the relative cost ratio in system II is the $1 F = 3/4 C$ maintained by the modern Ricardian (as in lines 16-30 of the above proof). But if the real (derived) productivity level of II *is* recognized intrasystemically (thus, $1 C = 2 F$), the *advantage* that would be required for II’s specialization in C ($1 C > 2 F$) would be exactly contrary to the *advantage* required for I’s specialization in F ($1 F > 1/2 C, \equiv 1 C < 2 F$) at its *given* productivity level (where $1 F = 1/2 C$). Instead of mutual advantage, a zero-sum game is therefore exhibited. The real bearings of Ricardian free trade therefore resonate ironically with the intraclass antipathy historically associated with the “labor aristocracy.”

The above *elenchus contra* Ricardian Comparative Advantage does not require reliance upon a labor theory of value. Modern price indices are relative-value calculations in terms of the regnant fiat currency as *numéraire*. This methodology, and therewith the relevant lines of the above proof *contra* Comparative Advantage, may be replicated for the Ricardian two-commodity problematic if the commodities of one system alternate as *numéraire* for each other while the other system serves as template or “base year” for the commodity-exchange ratio derived for the first system; which ratio turns out to equal that given for the second or template system, *pace* the textbook model. Reversing this procedure derives the commodity-exchange ratio of the erstwhile template system, again *pace* the

textbook model. If system I is first regarded as producing only use-values of C that are priced in terms of F as *numéraire*, while system II serves as template, the equivalent of the Paasche price index, $P_I Q_I \div P_{II} Q_{II}$, may be calculated. P_I is the F-price of 1 C in system I, given as 2 F. P_{II} is the F-price of 1 C in system II, given as $4/3$ F. Q_I is the quantity of C produced per hour in system I, given as $1/2$ C. The calculation then is $(2 \text{ F/C} \cdot 1/2 \text{ C/hr}) \div (4/3 \text{ F/C} \cdot 1/2 \text{ C/hr}) = 1 \text{ F/hr} \div 2/3 \text{ F/hr} = 3/2$, a pure number, the equivalent of the Paasche “deflator.” The real income per hour of the C-laborer of system I, who produces $1/2$ C/hr, is therefore (nominal income/hr \div deflator) = $1 \text{ F/hr} \div 3/2 = 2/3 \text{ F/hr}$. But $(1/2 \text{ C/hr} = 2/3 \text{ F/hr}) \equiv (1 \text{ C} = 4/3 \text{ F}) \equiv (1 \text{ F} = 3/4 \text{ C})$, thus affirming lines 11-14 of the proof, therewith the *reductio ad absurdum* (line 15). The same result is obtained if system I is now regarded as producing only use-values of F that are priced in C as *numéraire*, with system II again serving as template. In this case P_I is the C-price of 1 F in system I, given as $1/2$ C. P_{II} is the C-price of 1 F in system II, given as $3/4$ C. Q_I is the quantity of F produced per hour in system I, given as 1 F. The calculation reveals the equivalent “deflator” as $2/3$: $(1/2 \text{ C/F} \cdot 1 \text{ F/hr}) \div (3/4 \text{ C/F} \cdot 1 \text{ F/hr}) = 1/2 \text{ C/hr} \div 3/4 \text{ C/hr} = 2/3$. The real income per hour of the F-laborer of system I, who produces 1 F/hr, is therefore (nominal income/hr \div deflator) = $1/2 \text{ C/hr} \div 2/3 = 3/4 \text{ C/hr}$. Then $(1 \text{ F/hr} = 3/4 \text{ C/hr}) \equiv (1 \text{ F} = 3/4 \text{ C})$, again affirming lines 11-14 of the proof and the *reductio* of line 15.

Reversing this procedure takes system I as the template or “base year” and replicates lines 26-29, 30, of the proof by alternately treating F and C as *numéraire* for system II. Thus $P_{II} Q_{II} \div P_I Q_I$ is calculated. First using F as *numéraire*, i.e., regarding system II as producing only use-values of C that are priced in terms of F, we are given that $P_{II} = 4/3 \text{ F/C}$, $P_I = 2 \text{ F/C}$, and Q_{II} is $1/4 \text{ C/hr}$. The equivalent “deflator” is $2/3$: $(4/3 \text{ F/C} \cdot 1/4 \text{ C/hr}) \div (2 \text{ F/C} \cdot 1/4 \text{ C/hr}) = 1/3 \text{ F/hr} \div 1/2 \text{ F/hr} = 2/3$. The real income per hour of the C-laborer of system II, who produces $1/4 \text{ C/hr}$, is therefore (nominal income/hr \div deflator) = $1/3 \text{ F/hr} \div 2/3 = 1/2 \text{ F/hr}$. Thus $(1/4 \text{ C/hr} = 1/2 \text{ F/hr}) \equiv (1/4 \text{ C} = 1/2 \text{ F}) \equiv (1 \text{ C} = 2 \text{ F}) \equiv (1 \text{ F} = 1/2 \text{ C})$, affirming lines 26-29 of the proof, therewith the *reductio ad absurdum* of line 30. Then C is used as *numéraire* for a system II producing only use-values of F, with system I again serving as template. Q_{II} is now $1/3 \text{ F/hr}$, P_{II} is $3/4 \text{ C/F}$ and P_I is $1/2 \text{ C/F}$. Then $P_{II} Q_{II} \div P_I Q_I$ is $(3/4 \text{ C/F} \cdot 1/3 \text{ F/hr}) \div (1/2 \text{ C/F} \cdot 1/3 \text{ F/hr}) = 1/4 \text{ C/hr} \div 1/6 \text{ C/hr} = 3/2$, the equivalent “deflator.” The real income per hour of the F-laborer of system II, who produces $1/3 \text{ F/hr}$, is therefore (nominal income/hr \div deflator) = $1/4 \text{ C/hr} \div 3/2 = 1/6 \text{ C/hr}$. But $(1/3 \text{ F/hr} = 1/6 \text{ C/hr}) \equiv (1 \text{ F} = 1/2 \text{ C})$, again affirming lines 26-29, 30, of the proof.

The consilience of measurements—price indices (above) and the intrasystemic productivity differentials derived in the elenchus (lines 9 and 24)—owes to the implicit identity of the measures brought to bear in the Ricardian Problematic. The proponents of Comparative Advantage are unaware that in juxtaposing two erstwhile closed systems, containing only identical commodities and different labor times, they are positing a measure for each system in the other. (The isolated autochthon does not learn that his kind is different until visited by the missionary.) A price index measures the relative value of money, while in the above the commodities of each system alternate as money. A productivity index measures the relative value of commodity-specific labor, i.e., the physical output per labor hour expended in production. In stating the “absolute advantage(s)” of either system, the closed

systems are opened to intersystemic comparison of commodity-specific labor; but since the same labors also actually exchange with one another within each system, the measurement of the former determines the latter. I.e., an intrasystemic productivity index of commodity-*differentiated* (F and C) labor is derived. This last inference is methodologically equivalent to the employment of alternate commodities as *numéraire* in deriving the “deflators” of the price-index calculation. And when productivity differentials are equivalent to skill differentials—as in the single-factor (labor) model presented in modern texts—a skilled-unskilled labor-exchange differential is likewise derived for each system in alternation. The price indices therefore express as the result of an apparently external comparison what the productivity indices express as the common content (human labor) of two systems at different levels of development. When the derived intrasystemic skill differentials are taken into account, the “relative costs” (“given” commodity-exchange ratios) upon which Comparative Advantage relies are revealed as but nominal expressions of relative value.

Part 2

At this juncture it is appropriate to remark a profound distinction between the modern textbook presentation of Comparative Advantage and Ricardo’s own sketch of same in chapter 7 of *The Principles of Political Economy and Taxation*: The textbook version is a single-factor (labor) model, so that productivity differentials are equivalent to skill differentials, inviting the elenchus spelled out above. But Ricardo’s presentation is squarely if narrowly premised upon the capital-labor relation: International specialization concomitant to free trade cheapens the necessaries of life and therefore augments the rate of profit, assuming that the real wage (*qua* socially necessary minimum quantity of means of subsistence) is constant.⁴ Ricardo’s reliance upon the capital-labor relation, moreover, renders plausible what is incredible in the neoclassical globalizer’s version of Comparative Advantage, *viz.*, the assumption that labor is equally unskilled in both systems subject to free trade (i.e., the assumption that intrasystemic labor mobility is perfectly free in both). For it is precisely the capital-labor relation that historically develops profitability by virtue of the systematic divorce between the skill of the laborer and the productivity of capital; such that the atomization of the labor process denudes the laborer of skill to the precise extent that skill is monopolized by the functioning capitalist (today, the corporation). Thus the Taylor System takes the palm as capital’s paradigm for the division of labor.⁵

For Ricardo, therefore, productivity differentials are *not* equivalent to skilled-unskilled labor differentials. Attribution of the former to capital, however, only amplifies the failure of the mutual advantage that is the main purchase of Comparative Advantage in its modern rendition. (In Ricardo’s presentation the assumption that real wages are static *prima facie* impeaches the halcyon case for free trade.) Key here is Ricardo’s explicit recognition that his case for free trade rests upon the suspension of equivalent-value exchange in intersystemic trade.⁶ Thus are reconstituted the exchange premia (trade-equivalent productivity increases) upon which the modern version of Comparative Advantage turns, save that in Ricardo these premia are from the start appropriated by capital via cheaper wage goods, augmenting profit. Although Ricardo does not specify precise values for the capital-labor relation premised in the two countries adduced in his discussion, such values may be

interpolated by relying upon his doctrine of static real wages. In terms of the textbook values elaborated above (p. 3),

$$\text{(system I)} \quad 1 \text{ hr } F_I \text{ labor} \rightarrow 1 \text{ F} = 2/3 \text{ C} \leftarrow 2 \frac{2}{3} \text{ hr } C_{II} \text{ labor (@ } 1/4 \text{ C/hr)} \quad \text{(system II)}$$

let the F-laborers of system I continue to consume at the real rate of 1 F/hr (= 1/2 C/hr), while the C-laborers of II continue at 1/4 C/hr (= 1/3 F/hr). The 33 1/3% trade-equivalent increase in real C-productivity achieved by system I—since the 2/3 C obtained from one hour of labor (= 1 F) would otherwise cost it 4/3 hr (i.e., 2/3 C = 4/3 hr @ 1/2 C/hr)—then accrues to the capitalists of system I; while the 12 1/2% trade-equivalent increase in real F-productivity achieved by system II—since the 1 F obtained for 2 2/3 hr of labor would otherwise cost it 3 hr (i.e., 1 F = 3 hr @ 1/3 F/hr)—accrues to the capitalists of system II. Thus mutual advantage dissipates in unilateral class advantage; while profits in the more productive country (I) are augmented more than those of the less productive (II).

The appropriation of the exchange premia by the capitalists may be spelled out in terms of the process designated by Ricardo (cheaper wage goods, augmenting profit). For system I, the price of C in terms of F drops 25% (from 2 F to 3/2 F); in consequence, the wage value of one hour of labor expended for the consumption of C drops 25% to 3/4 hr. Per 1 hr F_I labor \rightarrow 1 F = 2/3 C (the trading rate), this 3/4 hr purchases 1/2 C (i.e., 3/4 hr · 2/3 C/hr = 1/2 C), thus maintaining the laborer's real wage at the 1/2 C/hr that obtained pre-trade. With respect to the wage segment trading for C, the capitalist of system I reaps a surplus profit (exchange premium) of 33 1/3% on the value of the wage (3/4 hr) paid for the 1 hr (= 1 F) of output obtained ([1 hr – 3/4 hr] ÷ 3/4 hr = 1/3 = 33 1/3%). The overall decrease in the value of I's wages depends on the product mix of C and F in the laborer's consumption. (The equivalent productivity of F proper, hence the wage value of labor expended for the consumption of F, is unaffected by the exchange-rate premium, and the F_I laborer's real wage in terms of F remains 1 F/hr.) If, say, the value is evenly divided, the overall decrease in the value of the wage in I is 1/8 or 12 1/2%. For system II, the price of F in terms of C drops 1/9 or 11.1% (from 3/4 C to 2/3 C : [3/4 C – 2/3 C] ÷ 3/4 C = 1/9); in consequence, the wage value of one hour of labor expended for the consumption of F drops 1/9 to 8/9 hr. Per 1 hr C_{II} labor \rightarrow 1/4 C = 3/8 F (\equiv 4 hr C_{II} labor \rightarrow 1 C = 3/2 F, the trading rate), this 8/9 hr purchases 1/3 F (i.e., 8/9 hr · 3/8 F/hr = 1/3 F), thus maintaining the C_{II} laborer's real wage at the 1/3 F/hr that obtained pre-trade. With respect to the wage segment trading for F, the capitalist of system II reaps a surplus profit (exchange premium) of 12 1/2% on the value of the wage (8/9 hr) paid for the 1 hr of output obtained ([1 hr – 8/9 hr] ÷ 8/9 hr = 1/8 = 12 1/2%). The overall decrease in the value of II's wages depends on the product mix of C and F in the laborer's consumption. (The equivalent productivity of C proper, hence the wage value of labor expended for the consumption of C, is unaffected by the exchange rate premium, and the C_{II} laborer's real wage in terms of C remains 1/4 C/hr.) If, say, the value is evenly divided, the overall decrease in the value of the wage in II is 1/18 or 5.6%.

The interpretation here offered evokes comparison with Ricardo's doctrine of differential rent, wherein the landlord monopolizes the fruits of the differential productivity of agricultural land, regarded as intrinsic. In the doctrine of international trade, the intersystemic

productivity differential is maintained by the prohibition of capital and labor migration, i.e., by monopoly. Comparative Advantage in the hands of its honorary founder is then tantamount to a policy prescription for the international maximization of the fruits of monopoly; obliquely confirmed in a counterfactual in which Ricardo singles out the capitalists of the absolutely disadvantaged economy as beneficiaries of a hypothetical removal of the prohibition against international factor migration.⁷ But the exchange premia appropriated by capital in the trade case do not rely upon actual present production at the more inefficient level of productivity in either system (analogous to the least productive lands of the rent doctrine, where present production must occur)—i.e., the added real income accruing to the masters of international commerce is deduced as any real income is deduced, viz., by a virtual contrast with what the quantity of use-values in point would “otherwise” cost. Virtual advantage then becomes actual in the surplus profits reaped via Ricardo’s juxtaposition of cheaper wage goods and a static real wage, as spelled out above.

Part 3

The unconvinced partisan of the modern textbook presentation of Comparative Advantage may protest that the elenchus above offered cannot be cogent since it posits an infinity of derived measures of intrasystemic productivity/skill differentials, each a function of the productivity/skill differential of the *other* system given as template or reference frame. Surely there must be but one true productivity/skill differential, accessible to direct observation, for any given economic system! --The naiveté of Cartesian univocity is historically compelling⁸, but demanding a direct and univocal reading of a system’s productivity/skill/real income is as futile as demanding a universal “now” in protest against Einstein’s theory of the relativity of simultaneity, which declares that the question, Are these two events simultaneous or not? has no univocal answer; but depends entirely upon the choice of the reference frame in whose terms the question of simultaneity is resolved. Economic time, no less than physical time, is demonstrably subject to expansion or contraction, as when the same value in exchange is manifested in greater or fewer labor hours, depending on the skill differential of the laborers party to the exchange. In the economic problematic of productivity the only value relationships directly observed are *nominal*; their *real* bearings in every case require that a second system—whether in the shape of the “same” system at an earlier time or an altogether different system—be adduced, as in the fabled “index-number problem” of national income accounting.⁹ The Ricardian therefore has no basis for assigning his “given” skilled-unskilled labor differentials *in real terms* for either of his systems in isolation, i.e., *qua* closed systems. If it is protested that observed (the Ricardian’s “given”) labor hours cannot be merely nominal, it need only be recalled that Ricardo’s labor theory of value casts labor hours as *numéraire* (money) and that as such the labor hour is as susceptible to the disparity between nominal and real value as is any other *numéraire*, whether currency or gold. This complication is mutely conceded in the intersystemic skilled (system I)—unskilled (system II) labor disparity that is the upshot of Comparative Advantage itself, where (nominal) 1 hr F_I labor exchanges for (nominal) 2 2/3 hr of C_{II} labor; while the mutual benefits alleged therefrom require omission of any consideration of the real intrasystemic skill differentials demonstrably at work (above, pp. 3, 6).

The last-named complication poses a difficulty unique to labor theories of value generically: Any labor theory of value claims that labor time is the criterion of value in exchange, but as soon as skilled labor is recognized the theory must concede that some labor hours are more valuable than others. The labor-hour *numéraire* is thus exposed as an ambiguous oracle, requiring further interpretation. John Stuart Mill encountered an analogous difficulty in the field of moral philosophy when he first declared Pleasure to be the criterion of value but went on to claim that no amount of pig-pleasure could equal the pleasure of a Socrates; a qualification inaccessible to the labor theory of value, where the correlates of pig-pleasure (unskilled labor) and Socratic pleasure (skilled labor) exchange on an equivalent-value footing. (Modern utility theory is untroubled by either scruple.¹⁰) The skilled-unskilled labor differential evidently recurs to the issue of productivity, since the producer of any given use-value becomes more productive as his skill improves. Within the confines of any closed system, however, such a productivity/skill differential can be determined only with reference to an *identical* use-value, as when, e.g., skilled laborer A produces twice as much use-value U per hour as unskilled laborer B. But identical use-values are not the typical relata of contemporaneous commodity exchange, which equates values of disparate use-values; as is also typically the case in the commodity exchange that mediates skilled-unskilled labor exchange. It is precisely this problematic that the textbook model's configuration poses intrasystemically in the implied exchange ratios that obtain between the F- and C-laborers *within* either of the two systems. In order to determine whether or not the F-laborers of system I are equally skilled as the C-laborers of the same system, recourse must be had to a second system, whereby alone productivity indices may be constructed for each class of laborer; i.e., recourse must be had to the "absolute advantage" of each class of labor, determined by comparison with the second system taken as template or reference frame. Thus (above, p. 5) it was observed that the F-laborers of system I were trebly productive as the F-laborers of II; while I's C-laborers were only doubly productive as II's C-laborers. The next inference—which the Ricardian does not draw—relies upon the skilled-unskilled labor differential of system II, which the Ricardian again (as with system I) presumes to be nonexistent. (I.e., it is presumed that the F- and C-laborers of system II are equally skilled.) Only then can system I's skilled-unskilled labor differential, and therewith its real commodity-exchange ratio, be derived, as in lines 5-9, 10-12 of the elenchus. Any labor theory of value must regard the ratios *derived* for system I as definitive, hence as "observables" in the latter-day scientific acceptance, a theory-specific concept.¹¹

The above procedure—deriving the real skilled-unskilled labor-exchange differential for one system by relying upon the corresponding ratios of another system adduced as template or reference frame—seems to invite both arbitrariness (in the choice of reference frame) and an infinite regress (in the labor differential assigned to the template or reference system). But the choice of reference frame is no more arbitrary in economics than in physics, where the appropriate reference frame is a function of the boundary conditions of the problematic at issue. In the problematic of Comparative Advantage, the boundaries are national and the appeal is to the politics of the economic systems under consideration: The policy of free trade and international specialization should be adopted because it is in the best interests of each nation. The argumentation proceeds under an unexamined premise comprising the external comparison of static economic systems, which procedure has above

been shown to be either logically absurd (the textbook model) or class-biased (the Ricardian original). Mutual advantage is exposed as illusory in either alternative. The proper perspective, however, already implicit in the appeal to polity, is reflexive; i.e., the proper template or reference frame for each system is not that arbitrarily imposed by an external system but rather that afforded by each system's own evolution. Skilled-unskilled labor differentials would then be calculated for each system with respect to its own development, such that past editions of each system would provide the template; "chaining" these together would provide a "time series" (statistical sequence), as in the methodology of the national income accountant.¹² Nor is this choice of perspective merely discursive: Under the working hypothesis that skill is positively correlated to scientific advancement, (1) the more valuable (because more skilled) laborer of the derived system should presuppose a greater scientific basis than his less valuable contemporaries; and (2) the reflexive template sequence should exhibit a closer correlation with its own rate of scientific advance than with that of any independent, externally imposed system. Thereby falsifiability is doubly affirmed for the choice of reference frame and concomitant observables. (Again: The calculation of the observables assumes that productivity inheres in the laborer, hence is equivalent to skill, as in the textbook model of Comparative Advantage; and that the differential economic valuation of the "learning curves" of the different classes of laborer is uniform in the derived system, as stipulated above in the explication of the elenchus.)

The specter of question-begging via an infinite regress in the choice of reference frames is eliminated if an evolutionary perspective is frankly postulated, such that the point of departure for labor differentiation ultimately traces to an ur-laborer equally unskilled in all of his primitive tasks: In The Beginning, we are all generalists. This postulate is falsifiable with respect to the history, and pre-history, of the division of labor. If it is then hypothesized that this jack-of-all-trades (the ur-laborer) develops his skills unevenly—again, falsifiable—the procedure pursued in the above elenchus logically follows (as in line 5 of the proof, for deriving system I's figures; line 19, for system II's); while the "time's arrow" of the evolutionary perspective determines the sequential alternation of derived and reference systems. In this manner an economic uniformitarianism would be hypothesized, and template systems *without* labor parity (of skill levels) could be developed without question-begging. It is pertinent to note that the observables developed by the above route, although attaining to scientific status (falsifiability), reckon as only *explananda* in the economic problematic under consideration; the *explanans*, i.e., *how* skilled labor becomes more *valuable* than unskilled *and yet* exhibits equivalent-value exchange with the latter under the aegis of a labor theory of value, is another investigation altogether.

A further complication, unbroached in Ricardo's problematic, resides in the circumstance that labor evolves not only with respect to grade (skill) but use-value, such that entirely new use-values are produced while old use-values fall into disuse. I.e., the jack-of-all-trades develops a qualitatively new trade; commodity-exchange ratios come and go. Is the new trade skilled or unskilled with respect to extant trades? Here it may be hypothesized that in every case the new trade bears a generic identity with some previous trade in the same economic system, since all tasks are ultimately a function of human need, itself an index of cultural evolution. An index of skill may thereby be formulated. E.g., a Board Certified M.D. specializing in oncology is presumably capable of producing use-values (such as

formulating chemotherapy) beyond the ken of the General Practitioner. But both classes of laborers are generic healers, or life-prolongers, and a generic skill/productivity index may be derived under the claim that the specialist can perform Galen's art more efficiently than the nonspecialist. I.e., the resort is to intensive magnitude, such that the specialist is regarded as being a healer to a greater degree than the nonspecialist. Economic valuation of the different laborers would then recur to the assessment of the "learning curves" whence the skill differential derived. Thus the evolution of skill may depict a vast "branching bush" à la Charles Darwin.

Once the skilled-unskilled labor differentials for each system, therewith the real commodity-exchange ratios, are put in their proper perspectives, the issue of free trade then devolves upon the polity of each country. Ever since Ricardo, the route traveled has been a profit-oriented regime frankly premised upon the arrested development of externally colligated systems.¹³ While Ricardo openly proclaimed the class orientation of his policy, modern proponents of Comparative Advantage assure the universal beneficence of free trade by enshrining a textbook model of a noncapitalist (single-factor) economy that nowhere exists and, as demonstrated above, is logically unsatisfactory. Thus progress in academic economics. But demonstration of the failure of Comparative Advantage as advertised is no brief for autarky. Beyond the imperatives of class and nation there remain to be explored possibilities of global cooperation unimagined by Ricardo and unimaginable to his modern successors. Such possibilities, however, are themselves a question of political evolution. Specifically, until the lesser agents in capital's economic drama learn to speak to each other, and for themselves, in a manner that broadcasts civic virtue, the regnant economic policy of the twenty-first century will be but a jaded epilogue to the narrative of the twentieth, whose principal theme was the abject failure of all attempts to break with the ways of capital. As in the biblical story of Babel, the tyranny of the sacred is premised upon the incapacities of the profane. And as in the tale of the contradiction between polity and productivity related by the ancient democrat Protagoras, the cooperation of the many must supersede the calculation of the few if society is to evolve into a life worth more than just earning a living:

having no art of government, they evil intreated one another . . . Zeus feared that the entire race would be exterminated, and so he sent Hermes to them, bearing reverence [*aidos*, respect] and justice [*dike*, human law] to be the ordering principles of cities and the bonds of friendship and conciliation. Hermes asked Zeus how he should impart justice and reverence among men—Should he distribute them as the arts are distributed; that is to say, to a favored few only, one skilled individual having enough of medicine or of any other art for many unskilled ones? 'Shall this be the manner . . . or shall I give them to all?' 'To all,' said Zeus; '. . . for cities cannot exist, if a few only share in the virtues, as in the arts.'¹⁴

Endnotes

¹ "In the theory of international trade Ricardo stated explicitly for the first time the law of comparative advantage . . . The law of comparative advantage survives as an important part of the theory of international trade today." Graham Bannock, R.E. Baxter and Evan Davis, *The Penguin Dictionary of Economics*, 7th ed. (London: Penguin, 2003), "Ricardo, David," pp. 336-7. "Ricardo

may not have been the first economist to advance the concept of comparative advantage. Another Englishman, Colonel Robert Torrens, included a brief, very rough formulation of the law of comparative advantage in one paragraph in 'An Essay on the External Corn Trade' (1815), but Ricardo's treatment of the topic is more explicit and influential . . . historians of economic thought consider it more likely that Ricardo arrived at his conclusions independently." Morgan Rose, "A Brief History of the Concept of Comparative Advantage," <http://www.econlib.org/library/Columns/Teachers/comparative.html>. "There is no body of economic theory that has achieved greater professional acceptance than David Ricardo's theory of comparative advantage and the modern emendations of Ricardo's 'law.' Criticisms of comparative advantage and its extensions from a theoretical perspective have not resulted in any substantial weakening of the overall strength of this body of theory nor of its corollary, a free trade regime." James M. Cypher and James L. Dietz, "Static and Dynamic Comparative Advantage," <http://www.highbeam.com/doc/1G1-20970221.html>. (Article orig. in *Journal of Economic Issues*, June 1, 1998.) "At the deepest level, opposition to comparative advantage—like opposition to the theory of evolution—reflects the aversion of many intellectuals to an essentially mathematical way of understanding the world. Both comparative advantage and natural selection are ideas grounded, at base, in mathematical models" Paul Krugman, "Ricardo's Difficult Idea," <http://web.mit.edu/krugman/www/ricardo.htm>. "Nobel laureate Paul Samuelson (1969) was once challenged by the mathematician Stanislaw Ulam to 'name me one proposition in all of the social sciences which is both true and non-trivial.' It was several years later than [sic] he thought of the correct response: comparative advantage. 'That it is logically true need not be argued before a mathematician; that it is not trivial is attested by the thousands of important and intelligent men who have never been able to grasp the doctrine for themselves or to believe it after it was explained to them.'" Paul A. Samuelson, http://www.wto.org/english/res_e/reser_e/cadv_e.htm (citing P.A. Samuelson, "The Way of an Economist," in P.A. Samuelson, ed., *International Economic Relations: Proceedings of the Third Congress of the International Economic Association*, London: Macmillan, 1969, pp. 1-11).

² Ricardo's doctrine is sketched in ch. 7 of his *The Principles of Political Economy and Taxation*, 1817; rev. 3d ed., 1821. He died in 1823. Ricardo's doctrine is specifically addressed in section II of this essay. The principal problematic utilized in this essay is the modern textbook case for Comparative Advantage as spelled out by Paul A. Samuelson and William D. Nordhaus, *Economics*, 14th ed. (New York: McGraw-Hill, 1992), pp. 663-5. *The Penguin Dictionary of Economics* (Bannock et al., op. cit., pp. 336-7) offers a modern explication that utilizes Ricardo's original commodities (wine and clothing) and productivity figures, although the latter are couched in terms of man-hours instead of Ricardo's man-years.

³ The proof's treatment of description and propositional assertion is an abbreviation of the procedure laid out in J.M. Bochenski, *A Precip of Mathematical Logic*, O. Bird, tr. (Dordrecht: D. Reidel, 1959), pp. 53-4. Another authority marks "informal proof" as "passing from the neat, precise domain of formal logic, where there is a rule for everything, to the more complicated, less precise world of ordinary mathematics and the empirical sciences": "In an informal proof enough of the argument is stated to permit anyone conversant with the subject to follow the line of thought with a relatively high degree of clarity and ease. It is presumably intuitively transparent how to fill in the logical lacunae of the proof. In many respects the standards of intelligibility for informal proofs are similar to those for informal conversation Analogously, in giving an informal proof, we try to cover the essential, unfamiliar, unobvious steps and omit the trivial and routine inferences." Patrick Suppes, *Introduction to Logic* (Princeton, N.J.: D. Van Nostrand, 1957), p. 122.

⁴ "It has been my endeavour to show throughout this work that the rate of profits can never be increased but by a fall in wages, and that there can be no permanent fall of wages but in consequence of a fall of the necessaries on which wages are expended. If, therefore, by the extension of foreign trade, or by improvements in machinery, the food and necessaries of the labourer can be brought to market, at a reduced price, profits will rise The natural price of labour is that price which is necessary to enable the labourers, one with another, to subsist and to perpetuate their race, without either increase or diminution The power of the labourer to support himself, and the family which may necessary to keep up the number of labourers, does not depend on the quantity of money which he may receive for wages, but on the quantity of food, necessaries, and conveniences become essential to him from habit which that money will purchase." David Ricardo, *The Principles of Political Economy and Taxation*, rev. 3d ed. (N.Y.: Dover, 2004), pp. 80, 52. Orig. pub. 1821.

⁵ “. . . increases in employee productivity are *not* matched by increases in employees’ real wages and benefits, with the fruits of increased productivity diverted elsewhere—to shareholders, senior managers, and CEOs [*sic*]. The link between higher productivity and higher real wages and benefits breaks down when technology is used in ways that deskill [*sic*] most workers, undermine their security in the workplace, and leave them vulnerable to employers possessed of overwhelming power . . . the New Taylorism [the “vision of the corporation as machine, renewing the values of the machine age for the new century”] . . . should . . . be opposed on the grounds that it subjects employees to a degree of monitoring and control that, outside the workplace, would be considered demeaning and a gross violation of privacy.” Simon Head, *The New Ruthless Economy, Work and Power in the Digital Age* (Oxford: Oxford Univ. Press, 2003), pp. 188, 169, 185. Orig. emph. “Capital is that part of the wealth of a country which is employed in production and consists of food, clothing, tools, raw materials, machinery, etc., necessary to give effect to labour.” Ricardo, op. cit., p. 53.

⁶ “The quantity of wine which she [Portugal] shall give in exchange for the cloth of England is not determined by the respective quantities of labour devoted to the production of each, as it would be if both commodities were manufactured in England, or both in Portugal.” Ricardo, op. cit., p. 82.

⁷ In Ricardo’s example, Portugal has an absolute advantage in the production of both wine and cloth, and a relative (comparative) advantage in wine: “. . . if capital freely flowed towards those countries where it could be most profitably employed . . . It would undoubtedly be advantageous to the capitalists of England, and to the consumers in both countries, that under such circumstances the wine and the cloth should both be made in Portugal . . .” Ricardo, op. cit., p. 83. Ricardo’s affirmation of the counterfactual’s benefit to the consumers in Portugal but not to the capitalists invites a charge of inconsistency, since the consumers would pay the same for the two commodities as the capitalists. But Ricardo’s argumentation is frequently elliptical, and he probably was counting upon the cheapness of English manufactures generally to offset the increase in the price of cloth that Portuguese consumers (and capitalists) would face if the prohibition against international factor mobility were lifted.

⁸ “. . . there being but one truth for each thing, anyone who finds it knows as much as one can know about that thing . . .” René Descartes, *Discourse on the Method for Rightly Conducting One’s Reason and for Seeking Truth in the Sciences*, D.A. Cress, tr. (Indianapolis, Ind.: Hackett, 1980), II, p. 11.

⁹ Where “base-weighted” refers to “prices and quantities purchased in the base year 1,” while “current-weighted” refers to the figures for the same types of commodities in “the current year 2”: “The retail prices index, for example, could equally rationally . . . be calculated as a *base-weighted* or a *current-weighted* index, but the two types of index do not necessarily give the same answer.” Bannock et al., op. cit., “index-number problem,” p. 183. Orig. emph.

¹⁰ “As no single measure of utility exists . . . it is by their choices of combinations of available commodities that consumers reveal what it is that generates utility for them. Economists ignore possible circularities in the concept and rarely argue about what consumers enjoy, taking it as a matter of psychological fact.” Bannock et al., op. cit., “utility,” p. 395.

¹¹ “The quantum theorists regard ultra-violet light as observable. Yet ultra-violet light is invisible. When we speak of ultra-violet light as observable, what we really mean is that certain observable occurrences (e.g., those affecting a photographic plate) are attributed to the presence of ultra-violet light. But this conclusion is manifestly inferential But when inference forms a characteristic feature of some sophisticated theory, the magnitudes which are observable in principle according to that theory may cease to be so when, at some subsequent date, the theory is rejected.” A. d’Abro, *The Rise of the New Physics*, 2d ed., 2 vols. (N.Y.: Dover, 1951), vol. 1, pp. 88-9.

¹² J. Steven Landefeld and Robert P. Parker, “BEA’s Chain Indexes, Time Series and Measures of Long-Term Economic Growth,” *Survey of Current Business* 77, May 1997, pp. 58-68.

¹³ Even from the standpoint of the presumptive *summum bonum* (profitability in the bourgeois nation-state), history has not seconded academe’s tender regard for Comparative Advantage inasmuch

as parvenu capitalist powers have typically eschewed free trade as inimical to their own profitability. Thus either Comparative Advantage does not deliver maximum profitability as advertised or else maximum profitability is not, after all, the principal determinant of capitalist behavior. Cf. Ha-Joon Chang, *Bad Samaritans, The Myth of Free Trade and the Secret History of Capitalism* (New York: Bloomsbury Press, 2008), pp. 56-64.

¹⁴ Plato, *Protagoras*, B. Jowett, tr., *Great Books of The Western World* (Chicago: Encyclopedia Britannica, 1952), vol. 7, 322, pp.44-5.

SUGGESTED CITATION:

John Duffield, "Ricardian "comparative advantage" is illusory", *real-world economics review*, issue no. 54, 27 September 2010, pp. 62-78, <http://www.paecon.net/PAERreview/issue54/Duffield54.pdf>

You may read and post comments on this paper at

<http://rwer.wordpress.com/2010/09/27/rwer-issue-54-john-duffield/>