

Common Themes in Ruskin and Galton:

“Mythologizing the world by physiognomizing it”

Sandra J. Peart
Economics Department
Baldwin-Wallace College
Berea OH 44017
Speart@bw.edu

David M. Levy
Center for Study of Public Choice
George Mason University
Fairfax VA 22030
DavidMLevy@aol.com

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The information which an ordinary traveler brings back from a foreign country, as the result of the evidence of his senses, is almost always such as exactly confirms the opinions with which he set out. He has had eyes and ears for such things only as he expected to see. J S Mill *Logic*

Introduction

The title announces a challenge. Other than the fact that they spent much of their life on earth in the same part of the world, along with a few million others residents of England, just what do John Ruskin and Francis Galton have in common? A search in Karl Pearson's magisterial 1912-1930 *Life, Labours and Letters of Francis Galton* turns up precisely one reference to Ruskin. Here it is from a letter of 1873

I have often thought of procuring a really artistically made and coloured globe and once had much correspondence about it. Ruskin wrote a very good letter (1930, p. 461)

In fact, as we shall endeavor to demonstrate, Ruskin and Galton had much in common. What concerns us flows from their belief in the natural differences among humans. As the co-foundation of the "science" of eugenics, Galton's assent to a hierarchical view of the human is well-known. Ruskin also accepted such a position, although this is perhaps less well-known (Levy 2001, Levy-Pearl 2001/2002). Here is a characteristic passage from his attack on J S Mill's economics:

.. if there be any one point insisted on throughout my works more frequently than another, that one point is the impossibility of Equality. My continual aim has been to show the eternal superiority of some men to others, sometimes even of man to all others; and to show also the advisability of appointing such persons or person to guide, to lead, or on occasion even to compel and subdue, their inferiors according to their own better knowledge and wiser will. My principles of Political Economy were all involved in a single phrase spoken three years ago at Manchester: "Soldiers of the Ploughshare as well as Soldiers of the Sword": and they were all summed in a single sentence in the last volume of *Modern Painters*—"Government and co-operation are in all things the Laws of Life; Anarchy and competition the Laws of Death. (Ruskin 1905, 17:74-5)

The immediate question which a hierarchicalist worldview raises is how to distinguish the better from the worse? *Ex post* it is easy enough to tell a plausible story about winners and losers, but if a theorist wants to use this insight in social policy, s/he needs to make this distinction operational *ex ante*. One obvious way by which people are distinguished is that they look different. Since anthropologists in the mid-nineteenth century focused on physical differences – and the purported inferiority of race that was associated with some such differences (Peart-Levy 2003)– it is, perhaps, not surprising that physical traits would figure prominently in the analysis of mental traits by Ruskin or Galton.

We are assured by Pearson that a belief that people who look different are in fact different was the starting point of some of Galton's most creative technical work, the composite photograph:

We have seen in the preceding chapter how Galton supposed composite portraiture to be connected fundamentally with psychological inquiry, Galton developed composite photography in his search for a method of ascertaining whether physiognomy is an index to the mind, i.e., whether facial characteristics are correlated with mental traits. (1924, p. 285)

As a recent elaborate description of composite photography is available on line (Squieres 2001), we offer as example the frontispiece of the first edition (1883) of the *Inquiries into Human Faculty and Its Development*.

Here Galton presented the composites of medals of Alexander the Great, of sisters, of family members, of officers and privates of Royal Engineers, of tubercular patients, of two different criminal types – by which Galton means only type of crime committed – of

consumptive and non-consumptive cases.

We shall defend the claim that what Galton produced, in the one instance of composite photography which both he and Pearson judged successful, was a work of art in the sense described by E. H. Gombrich. Gombrich wrote that artists “Mythologize the world by physiognomizing it.” (quoted in Curtis 1997, p. 28). The artist’s rendition of the human face is supposed to convey the character of the subject’s soul, its place in the natural hierarchy. Galton insisted that the composite photographs of Jews, laid bare the acquisitive and calculating soul of the Jew.

The commonality of Galton and Ruskin is now perhaps more obvious. And indeed we shall argue that both attempted to recover character from physiognomy and neither would be thwarted by such a flimsy consideration as lack of evidence. The principle we employ is well-explained by J S Mill:

The information which an ordinary traveler brings back from a foreign country, as the result of the evidence of his senses, is almost always such as exactly confirms the opinions with which he set out. He has had eyes and ears for such things only as he expected to see. (1900, p. 542)¹

We see no reason other than unexamined hierarchicalism to suppose, at the outset, that Mill’s ordinary traveler differs in preferences from a scientist engaging in a voyage of discovery. This

¹Mill may be reacting here to much the anthropological “science” at this time, which consisted of travelers’ reports or observations upon their return home. One such, by the influential anthropologist who figured prominently in discussions of negro inferiority, James Hunt, held that negroes used their big toes as thumbs (Levy 2001).

is so even when the scientists have the names of Francis Galton² and Karl Pearson.

Ruskin On Physiognomy in *Punch*

We have elsewhere advanced the claim that the *Punch* caricatures of the Irish Fenian illustrate the “chemical” political economy which Ruskin defends (Peart-Levy 2002). In *Punch’s* view the renunciation of hierarchy can transform an individual. It is therefore not surprising that Ruskin has important things to say in his November 1883 lecture on *Punch* and its artists, “The Fireside: John Leech and John Tenniel.”

What makes the *Punch* illustrators so interesting, Ruskin says, is that unlike the artists he discussed in previous lectures, their subjects are not restricted to the sophisticated upper classes. Instead, the *Punch* illustrations constitute a “class entirely beneath these,” to which “considerations of general education compel our reference” and for which “our consideration of art-methods to which the conditions of cheapness, and rapidity of multiplication, are absolutely essential.” (1907a, p. 350)

Ruskin pauses to explicate his transformation thesis with respect to material

To my mind, there is no more beautiful proof of benevolent design in the creation of the earth, than the exact adaptation of its materials to the art-power of man. The plasticity and constancy under fire of clay; the ductility and fusibility of gold and iron; the consistent softness of marble; and the fibrous toughness of wood, are in each material carried to the exact degree which renders them provocative of skill by

²In a different context, we have strong evidence of Galton’s objectivity. At age 85 he found technical reasons to believe that majoritarian decision-making had desirable properties. And he called attention to this “unexpected” result with great clarity, choosing to title the first of a pair of articles “*Vox Populi*” explicitly challenging his Carlylean assertions. See Galton 1907b and 1907c. Levy-Peart (2002c) reprint the articles and call attention to Pearson’s judgment that Galton chose to publish these results in *Nature* to maximize their contemporary (policy?) impact.

their resistance, and full of reward for it by their compliance: so that the delight ... enjoyment of the workman managing a substance so pliable to his will ... (1907a, p. 351)

The thesis of the transformability of the natural world might resonate with those who endorsed Ruskin's criticism of market economies in which people are taken as fixed ends and not as material to be remade:

This is Mr. Ruskin's condemnation of our modern social condition; that we manufacture every thing except men. "We blanch cotton, strengthen steel, and refine sugar, and shape pottery; but to brighten, to strengthen, to refine, or to form a single living spirit, never enters into our estimate of advantages." Lewin in (Ruskin 1893, 4).

Ruskin turns to the topic of the lecture and considers what the *Punch* artists drew

Gradually the kind and vivid genius of John Leech, capable in its brightness of finding jest in everything, but capable in its tenderness and illumined with its loving wit the entire scope of English social scene; the graver power of Tenniel brought a steady tone and law or morality into the licence of political contention ... (1907a, p. 359)

He describes how art represents *Punch's* politics:

He is a polite Whig, with a sentimental respect for the Crown, and a practical respect for property. ... from his heart adores Mr. Gladstone; steadily, but not virulently, caricatures Mr. D'Israeli; violently and virulently, castigates assault upon property, in any kind, and holds up for the general idea of perfection, to be aimed at by all the children of heaven and earth, the British Hunting Squire, the British Colonel and the British sailor. (1907a, p. 360).

We pause to note that for Ruskin only the conservative PM is caricatured. Ruskin discusses the illustrations of daily life by Töpffer

... his power is never so marvellously exerted as in depicting a group of roguish guides, shameless beggars, or hopeless cretins.

Nevertheless, with these and such other materials as our European masters of physiognomy have furnished in the portraiture of their names, I can see my way to the

arrangement of a very curious series of illustrations of character, if only I could also see my way to some place wherein to exhibit them. (1907a, p. 363)

Then he proposes that the study of the masters' drawings of people's faces can supplement perhaps even replace, physical anthropology in the search for the primitive among us:

I find myself grievously in want of such a grammar of the laws of harmony in the human form and face as may be consistent with whatever accurate knowledge of the elder races may have been obtained by recent anthropology, and at the same time authoritative in the statement of the effect on human expression, of the various mental states and passions. And it seems to me that by arranging in groups capable of easy comparison, the examples of similar expression given by the masters who work we have been reviewing, we may advance further such a science of physiognomy as will be morally useful than by any quantity of measuring savage crania:

Since such a gallery is a long way off, for the moment we can employ collections of heads from

Punch:

and if, therefore, among the rudimentary series in the art schools you find, before I can get the new explanatory catalogues printed, some more or less systematic groups of heads collected out of *Punch*, you must not think that I am doing this merely for your amusement, or that such examples are beneath the dignity of academical instruction. (1907a, p. 364)

The point of such a collection of heads from *Punch* is to inform us as to whether a subject is in need of transformation, or not:

My own belief is that the difference between the features of a good and a bad servant, of a churl and a gentleman, is a much more useful and interesting subject of inquiry than the gradations of snub nose or flat forehead which became extinct with the Dodo, or the insertions of muscle and articulations of joint which are common to the flesh of all humanity. (1907a, pp. 364-65)

For Ruskin, therefore, the *Punch* caricatures serve as a guide to human hierarchy.

The Persistence of a Story in the Model; or Eugenics & the Jews

To explain how the preferences of the modeler influence the outcome reported, we have distinguished at a formal level between a story (an anecdote) and a model (Levy-Peart 2002a). An anecdote or a story is a subset of the data employed in a model. A story, even one which is not a model, can direct the modeler to look for explanatory variables or to maintain that things which look the same are really different or vice versa. And a desire for the story to hold can lead the modeler to select among possible models which best fits his desires. To see how the eugenics modelers let the stories drive their results, we need to find a group which was selected in the stories as being importantly different and which was then modeled as different by statistical methods. The stories are about transformation (Peart-Levy 2002). And of course eugenics is nothing but transformation.

In the stories told by the chemical political economists – as John Ruskin referred to his approach – we know of three groups that were targeted as denying the possibility of transformation. Economists of the Smith-Mill stripe who held with abstract economic man as a modeling device. Christian evangelicals were a particular interesting target because although they accepted the possibility of transformation, that possibility comes only from God who is outside the world (Levy-Peart 2002b). But neither British economists nor British evangelicals were subjects of eugenics modeling.

There is a name, however, which is applied to the evangelicals – and by extension to

the economists – throughout the 19th century: “Pharisee.” As the ancient Pharisees were those with whom Jesus most disagreed, and accused of being hypocrites, early nineteenth century use of the term is a synonym for “cant.” (Levy-Peart 2002b). Here, the difference between the *OED* and *Webster’s Third International* is worthy of note. The *OED* defines “pharisee” as hypocritical: “One of an ancient Jewish sect distinguished by their strict observance of the traditional and written law, and by their pretensions to superior sanctity.”³

The word turns into more than an accusation of a personal disconnect between professions of belief and behavior, in the poem which opens Charles Kingsley’s *Water-Babies*. *Water-Babies*, we have argued elsewhere, is perhaps the most successful of all the transformational stories (Peart-Levy 2002). Suppressed after the first 200 copies of the *Water-Babies* were printed, the poem is the marker of the two “states” of the first edition of *Water-Babies* (Macleod 1986, p. 40):

L’ENVOI

Hence, unbelieving Sadduces,
And less believing Pharisees,
With dull conventionalities;
And leave a country muse at ease
To play at leap-frog, if she please,

³ Compare the *OED* on “sadducee”: “A member of one of the three ‘sects’ (the others being the Pharisees and Essenes) into which the Jews were divided in the time of Christ. According to the New Testament and Josephus, they denied the resurrection of the dead, the existence of angels and spirits, and the obligation of the unwritten law alleged by the Pharisees to have been handed down by tradition from Moses.” Only *Webster’s* tells one what the Pharisees actually professed, i.e., “immortality of the soul, the resurrection of the body, future retribution, and a coming Messiah.”

With children and realities. (August 1862, p. 273)

Kingsley explains the point of this jib when in his “Limits of Exact Science as Applied to History” which prefaces his *Romans and Teutons* Cambridge lectures

I know no modern nation, moreover, which illustrates so forcibly as China the great historic law which the Hebrew Prophets proclaim; and that is this:—That as the prosperity of a national is the correlative of their morals, so are their morals the correlative of their theology. As a people behaves, so it thrives; as it believes, so it behaves. Such as his Gods are, such will man be; down to that lowest point which too many of the Chinese seem to have reached, where, having no Gods, he himself becomes no man; but (as I hear you see him at the Australian diggings) abhorred for his foul crimes even by the scum of Europe. (1864, p. xlvii)

If Jews do not believe in transformation in this world, then they are untransformable.

This was not a new thought for Kingsley. In *Alton Locke*, the widely studied “novel” attacking the materialism of industrial capitalism, the exemplars of heartless economic materialism have the names “Levi and Aaron.” (Levy 2001).

A decade before the *Wealth of Nations* saw print, Adam Smith renounced the doctrine of “national characters” in service to what we have described as an attempt to find the center of anecdotal evidence. It is therefore unsurprising that at the beginning of their careers as eugenicists, co-founders of that “science” W.R. Greg and Galton, each attacked the population theory put forward by Smith’s disciple T. R. Malthus for ignoring the racial element. The point at issue is Malthus’s controversial recommendation that instead of urging people to early marriage, as a remedy for fornication, people be urged to delay marriage until

they might reasonably be expected to support their family.⁴ Galton and Greg argued that the prudential restraint to marriage which Malthus supported would have a dis-eugenic effect upon the race. The prudent, by delaying marriage, would be out-bred by the imprudent.⁵

Galton's 1865 "Hereditary Talent and Character" announces his adherence to the doctrine of national characters:

Still more strongly marked than these are the typical features and characters of different races of men. The Mongolians, Jews, Negroes, Gypsies, and American Indians; severally propagate their kinds; and each differs in character and intellect, as well as in colour and shape, from the races form a class of instances worthy of close investigation, in which peculiarities of character are invariably transmitted from the parents to the offspring. (1865, p. 320).

The generating mechanism Galton posits for racial hierarchy is a conjunction of the argument which Thomas Carlyle advanced in his quarrel with the economists (Levy 2001; Levy-Pearl

⁴There are two controversial interpretative issues in the text. First, there is the homogeneity of Malthusian-Smithian population theory and second there is an implication that Malthus's doctrine has a moral radicalism about it. Both readings are urged in Levy (1978 & 1999) and Hollander (1997).

⁵"The check to over-population mainly advocated by Malthus is a prudential delay in the time of marriage; but the practice of such a doctrine would assuredly be limited, and if limited it would be most prejudicial to the race, as I have pointed out in *Hereditary Genius*, but may be permitted to do so again. The doctrine would only be followed by the prudent and self-denying. Those whose race we especially want to have, would leave few descendants, while those whose race we especially want to be quit of, would crowd the vacant space with their progeny ... The practical application of the doctrine of deferred marriage would therefore lead indirectly to most mischievous results, that were overlooked owing to the neglect considerations bearing on race." Galton (1907a, p. 207)

"Malthus's 'prudential check' rarely operates upon the lowest classes; the poorer they are, usually, the faster do they multiply; certainly the more reckless they are in reference to multiplication. It is the middle classes, those who form the energetic, reliable, improving element of the population, those who wish to rise and do not choose to risk, those in a word who constitute the true strength and dignity of nations, – it is those who abstain from marriage or postpone it. [Footnote omitted quoting Galton's *Hereditary Genius*] Thus the imprudent, the desperate, – those whose standard is low, those who have no hope, no ambition, no self-denial ... to the disadvantage or the exclusion of the prudent, the resolute, the striving and the self-restrained." Greg (1875, p. 129).

2001/2002) – labor makes us fully human – with the principle of natural selection:

The most notable quality that the requirements of civilization have hitherto bred in us. Living as we do in a rigorous climate and on a naturally barren soil, is the instinct of continuous steady labour. This is alone possessed by civilized races, and it is possessed in a far greater degree by the feeblest individuals among them than by the most able-bodied savages. ... men who are born with wild and irregular dispositions, even though they contain much that is truly noble, are alien to the spirit of a civilized country, and they and their breed are eliminated from it by the law of selection. (1865, p. 325)

Wallace's 1864 demonstration that the principle of natural selection is arrested in humans due to sympathy, called into question Galton's merging of Carlyle and Darwin.⁶ Undaunted, beginning in 1869, Galton took up the task of showing how human policy might replace natural selection. This is how he introduces his *Inquiries into Human Faculties*:

Since the publication of my work on *Hereditary Genius* in 1869, I have written numerous memoirs ... They may have appeared desultory when read in the order in which they appeared, but as they had an underlying connection it seems worth while to bring their substance together in logical sequence ... My general object has been to take note of the varied hereditary faculties of different men, and of the great differences in different families and races, to learn how far history may have shown the practicability of supplanting inefficient human stock by better strains, and to consider

⁶This might explain why Peart-Levy 2003 find an affinity of the 1865 Galton position with James Hunt's racial doctrine that Negroes are a less-developed race with zero variance. This is something it seems in which Galton wanted to believe. One of the uses of his finger print data was to test for the uniformity doctrine. He finds reason to believe in the uniformity of Negroes even though his statistical results says otherwise: "The impressions from Negroes betray the general clumsiness of their fingers, but their patterns are not, so far as I can find, different from those of others, they are not simpler as judged either by their contours or by the number of origins, embranchments, islands, and enclosures contained in them. Still, whether it be from pure fancy on my part, or from the way in which they were printed, or from some real peculiarity, the general aspect of the Negro print strikes me as characteristic. The width of the ridges seems more uniform, their intervals more regular, and their courses more parallel than with us. In short, they give an idea of great simplicity, due to causes that I have not yet succeeded in submitting to the test of measurement." Galton (1892, pp. 195-96).

whether it might not be our duty to do so by such efforts as may be reasonable, thus exerting ourselves to further the ends of evolution more rapidly and less distress than if events were left to their own course. (1907a, p. 3)

Galton and the Jews. Here is how composite photography is to be employed for the principle of human selection:

This face and the qualities it connotes probably gives a clue to the direction in which the stock of the English race might most easily be improved. It is the essential notion of a race that there should be most ideal typical form from which the individuals may deviate in all directions, but about which they chiefly cluster. The easiest direction in which a race can be improved is towards that central type, because nothing new has to be sought out. It is only necessary to encourage as far as practicable the breed of those who conform most nearly to the central type, and to restrain as far as may be the breed of those who deviate widely from it. Now there can hardly be a more appropriate method of discovering the central physiognomical type of any race or group than that of composite portraiture. (1907a, p. 10)

The reader is struck by the fact that Galton talks only about conformity and deviation without regard to sign. One expects that he will attempt to locate “degenerate families” of criminals for genetic segregation (Carlson 2001). Perhaps this is a verbal slip because Galton goes on to explain his failure to recognize the race of criminals by the composite:

I have made numerous composites of various groups of convicts, which are interesting negatively rather than positively. They produce faces of a mean description, with no villainy written on them. The individual faces are villainous enough, but they are villainous in different ways, and when they are combined together, the individual peculiarities disappear, and the common humanity of a low type is all that is left. (1907a, p. 11)

Galton’s composite photography had one great success. Here is Karl Pearson retrospective judgment on the composite of Jewish boys, in which a model has become “a great

work of art”:

There is little doubt that Galton’s Jewish types formed a landmark in composite photography, and its success was, I think, almost entirely due to (a) increased facility in the process, and (b) to the fact that his composites were based of physiognomically like constituents. In the case of criminality and phthisis he has based his composites on mentally and pathologically differentiated components, and had expected to find mental and pathological characters highly correlated with the facial. His negative results were undoubtedly of value, but they cannot appeal to the man in the street like his positive success with the Jewish type. We all know the Jewish boy and Galton’s portraiture brings him before us in a way that only a great work of art could equal—scarce excel, for the artist would only idealise from one model. (1924, p. 293).

The Jewish composite photographs are discussed in two articles, Galton 1885 and Jacobs 1885. Galton is convinced that he has captured the Jewish acquisitive soul:

They were children of poor parents, dirty little fellows individually, but wonderfully beautiful, as I think, in these composites. The features that struck me the most, as I drove through the adjacent Jewish quarter, was the cold scanning gaze of man, woman, and child, and this was no less conspicuous among the schoolboys. There was no sign of diffidence in any of their looks, nor of surprise at the unwonted intrusion. I felt, rightly or wrongly, that every one of them was coolly appraising me at market value, without the slightest interest of any other kind. (1885, p. 243)

The subjectivity of this procedure is revealed by Galton’s co-experimentalist Jacobs:

I fail to see any of the cold calculation which Mr. Galton seems to have noticed in the boys at any of composites A, B, and C. There is something more like the dreamer and thinker than the merchant in A. In fact, on my showing this to an eminent painter of my acquaintance, he exclaimed, “I imagine that is how Spinoza looked when a lad,” a piece of artistic insight which is remarkably confirmed by the portraits of the philosopher, though the artist had never seen me. The cold and somewhat hard look in composite D, however, is more confirmatory of Mr. Galton’s impression. It is noteworthy that this is seen in a composite of young fellows between 17 and 20, who have had to fight a hard battle of life even by that early age. (1885, p. 268).

What Jacobs says is actually dangerous for eugenicists. If Jacobs were right that the

Jewish boys have had a harder life than their Christian countrymen, the Carlylean commonplace suggests that Christians are in trouble. The Jewish soil is less fertile and the climate more hostile. Is why Pearson dissents? We are warned by Pearson – “ ... many will criticise, and I think rightly criticise the analysis Mr. Jacobs gives of the ‘Jewishness’ in this portraits ...” (1924, p. 293). This is, we suspect, *not* how natural selection is supposed to work.

Pearson and the Jews. The first article in the first issue of *Annals of Eugenics* is part one of “The Problem of Alien Immigration into Great Britain Illustrated by an Examination of Russian and Polish Jewish Children.” As the authors are Karl Pearson and Margaret Moul we have the ability to see how their modeling of Jewish immigrants compares with Pearson’s well-known methods of moments.⁷ If – to pick the most obvious hypothetical – we were to observe Pearson-Moul employing maximum likelihood methods or t-tests⁸ we would suspect that Pearson was buying a conclusion at the price of statistical principles.

Here is the motivation which Pearson-Moul provide for the extraordinarily laborious

⁷“Before Student’s time [and the t-test], every analysis of data that considered ‘what might have been’ resembled a long staircase from the near foreground to the misty heights. One began by calculating a primary statistic, a number that indicated quite directly what the data seemed to say about the point at issue. The primary statistic might, for instance, have been a sample mean. Then one faced the question of ‘How different might its value have been?’ and calculated a secondary statistic, a number that indicated quite directly how variable (or perhaps how stable and invariable) the primary statistic seemed to be. The secondary statistic might have been an estimate of the standard deviation of such a sample mean. After this step, one again needed to face the question of ‘How much different?’ ... In principle, one should have gone on to a tertiary statistic ... then to a quaternary statistic.” Mosteller & Tukey (1977, p 2).

⁸“Student calculated some numerical aspects of the distribution of *t*. ... R. A. Fisher (1925) verified Student’s guess 17 years later. This approach cut off the misty staircase after the third step–indeed almost after the second step.” Mosteller & Tukey (1977, p. 3). Pearson (1936) will be quoted below.

exercise: the eugenic-economics of densely-settled countries. Pearson-Moul begin by retelling the story of climate and race suitability. The inherent inferiority of the Negro – unsuitable even for Africa! – is too obvious to need evidence.

It is perfectly idle to talk in these matters either of pride of race or of the common humanity of all mankind. The reasons that can be given for admitting orientals as permanent immigrants into a densely populated occidental country apply equally to the admission of occidentals into oriental countries. When it comes to settling or resettling a sparsely peopled country, then it is possible to find out whether the individual is a real humanitarian or not, according as he thinks only of his own race, or of the actual suitability of other races, as judged by their culture and their adaptation for the proposed environment. From this standpoint it is probable that the Japanese would be far more valuable than men of Nordic race in many of the Pacific islands, and that the Hindoo and still more the Chinaman might, to the great advantage of the general world progress, replace the negro in many districts of Africa. (1925, pp. 6-7)

Now Pearson-Moul turn to the matter at hand, reviewing most helpfully the contending stories which would justify alternative policies. There is the human homogeneity story and the story of alien beliefs of a hyper-competitive sort:

In the years preceding the Great War, the question of indiscriminate immigration – especially that of the Polish and Russian Jews into the East End of London, and the poorer quarters other large towns in Great Britain – had become a very vital one. It was asserted on the one hand that the immigrants were a useful class of hard workers fully up to the level of the English workman in physique and intelligence, and on the other hand these immigrants were painted in lurid colours as weaklings, persons with a low standard of life and of cleanliness, *under-bidding native workers in sweated trades and spreading anarchic doctrines*, so that the continued inflow of this population was leading not only to economic distress, but to a spread of doctrines incompatible with the stability of our social and political systems. (1925, p. 7) [emphasis added]

Into the fray of competitive stories, told by those with personal interests, comes a need for

disinterested modelers:

It was very obvious to the onlooker that whatever might be the real facts of the situation, those facts were not available for the calm discussion of the case. The partizans of cheap labour and the partizans of monopolistic trade-unionism were both undoubtedly acting from personal and party inspirations, and there was no one whose business it was really to find the true answer to the question of whether Great Britain could assimilate to its national profit this mass of new and untested material. (1925, p. 7)

Pearson-Moul will then explain in detail why immigration is the central matter in eugenics policy and remind the reader that stories are not models:

The whole problem of immigration is fundamental for the rational teaching of national eugenics. What purpose would there be in endeavouring to legislate for a superior breed of men, if at any moment it could be swamped by the influx of immigrants of an inferior race, hastening to profit by the higher civilisation of an improved humanity? To the eugenist permission for indiscriminate immigration is and must be destructive of all true progress. ... No sane man, however, doubts that at various periods of English history our nation has been markedly strengthened by foreign immigration. The Huguenots ... the Dutch ... that of the Germans of 1848 – many of whom were indeed of Jewish extraction. But these special cases do not prove the general desirability of free immigration ... (1925, p. 7)

Now to work. The first issue is testing whether Jewish children were as clean or as well dressed as Gentile children. Their results on cleanliness were challenged in the *Journal of the Royal Statistical Society* on the basis of centralized anecdotes – “does not accord with the common view held by social workers and school teachers who labour among Jewish children.”

(F.S. 1926, pp. 148-49). Consider the clothing conclusion:

It is clear that the alien Jewish children are far below the average of the Gentile children's being indeed below the Gentiles of the poorer districts. They are only in excess of the “Ragged School,” although well in excess of this. There seems some

ground for the statement frequently made that they undersell natives in the labour market because they have a lower standard of life. (1925, p. 49).

The sequence of the testing will be important. They examine personal hygiene and clothing before intelligence. Let us think about Pearson-Moul found. Assuming that they held income constant across groups – which they attempted to the best of their very considerable ability, although this was questioned (F.S. 1926, p. 149) – then presumably they have detected a difference in cultural expenditure patterns. So Jewish parents are spending less than non-Jewish parents on their children’s clothing. Pearson and Moul’s silence on where the income is going is suggestive.⁹

From expenditure on clothing, Pearson-Moul impute a racial failing for which intelligence might compensate. Jews have to prove they are *superior* to gain admission:

The Americans have learnt from experience how unwise it is to admit an untested and motley stream of immigrants even into a land of vacant spaces; it is far more urgent to restrict immigration in the case of a crowded country. There should always be room in a country for the highest type of immigrants, for men who, with superior intelligence or with superior physique, will readily mingle with its stock and strengthen the vitality. But for men with no special ability– above all for such men as religion, social habits, or language keep as a caste apart, there should be no place. They will not be absorbed by, and at the same time strengthen the existing population, they will develop into a parsitic race*, [*A striking instance of such a race is that of the gypsies, who without any thought were allowed to enter the country, and who being there serve no useful and profitable national purpose.] a position neither tending to the welfare of their host, nor wholesome for themselves.

⁹ If the answer is additional “savings” or “education” then we see how Pearson-Moul could get the same policy, the desirability of exclusion, out of the opposite statistical finding. If counter-factually Jewish families spent more on their children’s clothing and thereby saved less than their Christian neighbors then the inference of “imprudence” would also justify their exclusion.

We hold therefore that the problem of admission of an alien Jewish population into Great Britain turns essentially on the answer that may be given to the question: Is their average intelligence so markedly superior to the native Gentile, that it compensates for their physique and habits certainly not being above (probably a good deal below) the average of the characters here? (1925, pp. 124-25)

Pearson-Moul find little difference between intelligence of Jewish boys and their Christian peers but significant difference between Jewish boys and girls. Their concluding remarks are

An examination of this table shows us once that the Jewish girls have less intelligence than the Gentile girls in any type of Council school. The comparison of the Gentile and the Jewish boys is less clear cut ... What is definitely clear, however, is that our own Jewish boys do not form from the standpoint of intelligence a group markedly superior to our natives. But that is the sole condition under which we are prepared to admit that immigration. ... Taken on the average, and regarding both sexes, this alien Jewish population is somewhat inferior physically and mentally to the native population. (1925, p. 126)

So, we find no difference between Jewish and Christian boys but a difference between the girls. We then pool by gender and impute a racial difference! From expenditures patterns, we have imputed a barrier which only racial superiority could overcome.

This is a fairly mundane instance of the expert witness in action. There is a however a rather dramatic example of the length to which Pearson is willing to go to buy his conclusion. The Pearson-Moul analysis, not surprisingly, has been in terms of the average. What about the occasional extremely capable Jew, a Spinoza or an Einstein, which Pearson and Moul explicitly consider (Holmes 1926, p. 233)

we know and admit that some of the children of these alien Jews from the academic

standpoint have done brilliantly, whether they have the staying powers of the native race is another question.* [*A member of an eastern race said to the senior author of this paper recently: 'It puzzles me when I see how late in life you English can work; all I have to do, must be done before I am fifty.']*] No breeder of cattle, however, would purchase an entire herd because he anticipated finding one or two fine specimens included in it; still less would he do it, if his byres and pastures were already full. (Pearson and Moul, 1925, p. 127)

What's wrong with discarding outliers, perhaps to make one's decision on the basis of the sample median? Don't outliers complicate maximum likelihood estimation and t-tests?

What's wrong with this is easy to see if we take Pearson's method of moments seriously as Pearson tended to do.¹⁰ To ask about the reliability of the estimate of the first moment (the mean) one estimated the second moment (the variance). To ask about the reliability of the estimate of the second moment one looks at estimates of the higher moments. Pearson and Moul have told us that the information which is critical to the estimation of the third and fourth moment of the distribution of Jewish characteristics is not important when they, *as a matter of principle*, disregard the exceptional Jew. When Karl Pearson throws away outliers asymmetrically, we know something is bending his statistical decisions and turning a model

¹⁰ Here is how Pearson begins his blistering attack on maximum likelihood estimation in principle, and Fisher in particular. Pearson quotes Fisher (first) giving an personal insult and (second) explicating the methods of moments in opposition to maximum likelihood estimation: "*Wasting your time fitting curves by moments, eh?*"

"Perhaps the most extended use of the criterion of consistency has been developed by Pearson in the 'Method of Moments.' In this method which is without question of great practical utility, different forms of frequency curves are fitted by calculating as many moments of the sample as there are parameters to be evaluated. The parameters chosen are those of an infinite population of the specified type having the same moments as those calculated from the sample ... Moreover for that class of distribution to which the method can be applied, it has not been shown except in the case of the normal curve, that the best [sic! KP] values will be obtained by the methods of moments ..."(Pearson 1937, p. 34)

into a story.¹¹

Conclusion

We close with a conjecture that the theme common to Ruskin and Galton – physiognomy as an index to natural hierarchy – reveals their acceptance of some of the cruder aspects of phrenology.¹² Phrenology emphasizes the fixity of human natures whereas both Ruskin and Galton in their own way emphasized the malleability of the human.

We begin with Galton. That he was stimulated by phrenology is obvious from Pearson's account.¹³ What is perhaps more important than where Galton began his research is what he wanted to believe. What too is well known from Pearson's account is Galton's desire to believe in the positive correlation between the physicality of a man and his intellect. Here is Pearson's report where he first quotes Galton:

“I think most of my readers would be surprised at the statures and physical frames of the heroes of history, who fill my pages, if they could be assembled together in a hall. I would undertake to pick out of any group of them, even out of that of the Divines, an ‘eleven’ who should compete in any physical feats whatever, against similar

¹¹ We focus on testing. The lack of curiosity about the distribution is perhaps even more odd. A Pearson family of distributions is defined by the first four moments.

¹²The emphasis which phrenologists placed on local brain functions is of course not at issue here.

¹³“Galton's interest in phrenology was a precursor of his later system of head-measurements.” Pearson (1914, p. 157). Galton's 1841 letter to his father talking about his encounter with a phrenologist is at Pearson (1914, pp. 156-57). A letter of 1906 is totally dismissive: “The localization in quite modern times of the functions of brain lends so far as I am aware no corroboration whatever, but quite the reverse, to the divisions of the phrenologist. Why capable observers should have come to such strange conclusions has to be accounted for—most easily on the supposition of unconscious bias in collecting data.” (Pearson 1930, p. 577).

selections from groups of twice or thrice their number, taken at haphazard from equally well-fed classes.” Pearson (1924, p. 94)

Then Pearson comments in the text:¹⁴

Perhaps Galton laid too great stress on the high wranglers and classics of his own day who had been ‘varsity blue’; or again on the big-headed men on the front benches at the Royal Society meetings in the early ‘seventies.’ Pearson (1924, p. 94)

He then adds the following note:

He was very unhappy about the low correlations I found between intelligence and size of head, and would cite against me those ‘front benches’; it was one of the few instances I noticed when impressions seemed to have more weight with him than measurements. It is possible, however, that between his day and mine science changed its recruiting fields, and ‘eminence’ became less common. Pearson (1924, p. 94).

The relationship between head size, phrenologically adjusted, and intellect is the fixed point in phrenological doctrine.¹⁵ We quote a passage from the British authority, George Combe, in which Mill’s principle that believing is seeing could not be better illustrated:

Here we have a representative of the skull of Dr Spurzheim, and of the skull of a native of New Holland; both taken from casts in the collection of the Phrenological Society. The difference in the forehead is very conspicuous. If the part of the brain lying in that region have any function connected with intellect, and if size be a measure of power, the two beings should form a strong contrast of power and weakness in that

¹⁴Pearson himself was not immune to this sort of argument, e.g., Pearson (1924, p. 91): “Galton illustrates this by a case in which trained Highlanders challenged all England to compete with them in their games of strength. They were beaten in the foot-race by a youth, a pure Cockney, and clerk to a London banker. Perhaps I may be permitted to cite another illustration from an occurrence at varsity sports over 40 years ago. The high jump had been won by a highly trained athlete, and the rod had been replaced at the last half inch he had failed to surmount; a non-combatant, a somewhat sedentary mathematician in every day costume, stepped again from among the spectators, leapt the rod to the astonishment of the onlookers, and disappeared again into the crowd.”

¹⁵Without the “phrenological adjustment” falsification is all-too-easy, e.g., Stone 1829.

department. And, accordingly, the case is so. Dr Spurzheim has left in his phrenological works a durable record of moral and intellectual greatness; while Sir Walter Scott describes the other as follows:—"The natives of New Hollander are, even at present, in the very lowest scale of humanity, and ignorant of every art which can add comfort or decency to human life. ... use no clothes, construct no cabins or huts, and are ignorant even of the manner of chasing animals, or catching fish, unless such of the latter as are left by the tide, or which are found on the rocks; they feed upon the most disgusting substances, snakes, worms, maggots, and whatever trash falls their way. They know, indeed, how to kindle a fire; in that respect only they have stepped beyond the deepest ignorance to which man be subjected: but they have not learned how to boil water. (1853, pp. 56-57)

What phrenology provides is an alternative to economic accounts of human behavior without the bother of the causal arguments. We quote Combe again, here as he quotes another anti-economist of note:

Cæteris paribus, temperament seems to affect equally every part of the body ... This principle is practically recognized by William Cobbett, who, whatever may be his merits or demerits as a politician, is certainly a shrewd observer and describer of real life. In his Letter of a Lover, he discusses the question, 'Who is to tell whether a girl will make an industrious woman? ... Why, it is very difficult,' he answers: 'There are, however, certain outward signs, which if attended to with care, will serve as pretty sure guises. And, first, if you find the tongue *lazy*, you may be nearly certain that the hands and feet are the same ... (1853, p. 52)

By what is unlikely to be a coincidence, Ruskin comments on Combe's doctrines as reported in a letter of April 7, 1867 in *Time and Tide*.¹⁶ We shall read the letter carefully.

Ruskin begins with a dissent

107. I have been waiting these three days to know what you would say to my last

¹⁶We were led to George Combe via the Fraser Collection of the University of Liverpool. We have found before (Levy 2001, Levy-Peart 2001/2002, Levy-Peart 2002b) that Fraser and his *Cope's Tobacco Plant* offer a truly remarkable window from which to view the late 19th century debates.

questions; and now you send me two pamphlets of Combe's to read! I never read anything in spring-time (except the Ai, Ai, on the "sanguine flower inscribed with woe"); and, besides, if, as I gather from your letter, Combe thinks that among well-educated boys there would be a percentage constitutionally included to be cobblers, or looking forward with unction to establishment in the oil and tallow line, or fretting themselves for a flunkey's uniform, nothing that he could say would make agree with him. (1905, 17:405)

Ruskin agrees with Combe's facts of human difference but denies they are fixed:

I know, as well as he does, the unconquerable differences in the clay of the human creature: and I know that, in the outset, whatever system of education you adopted, a large number of children could be made nothing of, and would necessarily fall out of the ranks, and supply candidates enough for degradation to common mechanical businesses: but this enormous difference in bodily and mental capacity has been mainly brought about by difference in occupations, and by direct maltreatments; (1905, 17:405)

If the letter stopped here, one might plausibly read Ruskin as an adherent of Adam Smith's view of all human difference results from incentives, history and luck, but Ruskin continues:

and in a few generations, if the poor were cared for, their marriages looked after, and sanitary law enforced, a beautiful type of face and form, and a high intelligence, would become all but universal, in a climate like this of England. Even as it is, the marvel is always to men, how the race resists, at least in its childhood, influences of ill-regulated birth, poisoned food, poisoned air, and soul neglect. I often see faces of children, as I walk through the black district of St. Giles's (lying, as it does, just between my own house and the British Museum) which, through all their pale and corrupt misery, recall the old "Non Angli," and recall it, not by their beauty, but by their sweetness of expression, even though signed already with trace and cloud of the coming life,—a life so bitter that it would make the curse of the 137th Psalm true upon our modern Babylon, though we were to read it thus, "Happy shall *thy children* be, if one take and dasheth them against the st ones." (1905, 17:405-06)

Ruskin's social policy it seems is to transform the human to something rather more pleasing. With better regulated marriages and births, the faces of the poor of England might

become beautiful and intelligent. Physiognomy is now endogenous

Our prediction is that wherever in the 19th and 20th century one finds workers in eugenics, one finds admirers of John Ruskin. What is eugenics other than making the “human clay” endogenous? As instance, consider this tribute, delivered in the year of Ruskin’s death, in which Pearson worries over the fate of empire. This tribute emphasizes how odd it is that Pearson would later disregard the exceptional Jew for immigration policy:

Where are the younger civil servants to replace our dying pro-consuls, and to whom the nation can commit with a feeling of security and confidence the future problems of South Africa? Where are the new writers to whom the nation listens as it did to Carlyle, Ruskin, and Browning? or for whose books it eagerly waits as for those of Thackeray and George? Where are the leaders of science who will make the epoch that Darwin and Huxley made in biology or Faraday and Clerk Maxwell in physics? (1901, p. 56)

Here is Pearson’s tribute to the exceptional non-Jew:

There may be a steady average ability, but where is the fire of genius, the spirit of enthusiasm, where creates the leader of men either in thought or action? Alas! It is difficult to see any light on the horizon predicting the dawn of an intellectual renaissance, or heralding social and political reforms such as carried the nation through the difficult fifty years of the middle of this century. Possibly our strong may have got into the wrong places. ... but I must confess to feeling sometimes that an actual dearth is upon us. And if this should be so, then the unchangeable law of heredity shows us only too clearly the source: we have multiplied from the inferior, and not from the superior stocks. (1901, pp. 56-57)

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