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Freedom Versus Coercion in Industrial Ecology: A Reply to Boons

Pierre Desrochers¹

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One of the signal advances made by this many-sided century has been in invention and industry. In no way has this progress been more vividly shown than in its conquest of waste. Nature, despite her marvellous prodigality, when closely studied, is seen to waste nothing, to use and to re-use all things in unending cycles of activity. At the miraculous feeding of the five thousand, when loaves and fishes were multiplied without sting, it was commanded that the people should gather up the fragments that remained, that nothing be lost. This lesson, carried out by Science as an instructive lesson in economy, contains most interesting instances.

—William George Jordan (“Wonders of the World’s Waste,”
The Ladies’ Home Journal, October 1897, page 8)

“Industrial ecology” (IE) is an emerging interdisciplinary perspective whose proponents have been based by and large in business and engineering schools. Industrial ecologists adopt a systems approach to study material flows between firms and industries and seek ways to reduce their effects on natural systems. Common among the pioneers of IE was a belief that the institutional constraints of market economies were not conducive to the development of “loop closing,” that is, the development of by-product recycling linkages between firms operating in

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different lines of work. One of their early goals was to devise various public policy measures to correct this alleged market failure (Ayres and Ayres 2002).

Coming from a different academic background, I had independently developed an interest in the history of loop closing and had reached the opposite conclusion on the subject before coming across the IE literature in the late 1990s. I submitted my alternative take on the issue to the *Journal of Industrial Ecology* and its editors accepted two articles by me. I followed up with additional papers in different outlets exploring other dimensions of the subject (Desrochers 2000; 2002a; 2002b; 2002c; 2004; 2005). In recent years I have explored the history of by-product development in the coal gas, iron making (slag), and synthetic dyes industries (Desrochers 2008b and 2009a), the source material available to document past loop closing (Desrochers 2007; Desrochers and Lam 2007), antecedents to the so-called “Porter Hypothesis” (Desrochers 2008a), the work of Peter Lund Simmonds and Lyon Playfair in promoting by-product development in Victorian England (Desrochers 2009b; 2011) and the history of industrial symbiosis (i.e., geographically localized loop closing) in economic and geographical thought (Desrochers and Leppälä, 2010).

In his “History’s Lessons: A Critical Assessment of the Desrochers Papers,” Frank Boons² (2008) criticizes several of my papers published during the years 2000 to 2005. Boons challenges my two main conclusions, namely: 1) loop closing was widespread before 1900; 2) it was overwhelmingly the result of free-market interactions. Boons also criticizes me for failing to incorporate structural, cultural, and political considerations. My conclusions are “overly simple,” my policy prescriptions “naïve,” and my case on behalf of the “market as the preferred coordinating structure to stimulate interfirm recycling” untenable (Boons 2008, 148-149). This reply will revisit my two main points and engage Boons’s arguments, evidence, and interpretations. I also treat the related work of business historian Christine Meisner Rosen. A draft of the present reply was submitted to the journal in which Boons’s critique of me appeared, the *Journal of Industrial Ecology*, but was rejected after being peer reviewed.

On the Use and Abuse of Historical Sources

The most important sources for the claims made in the papers treated by Boons include Peter Lund Simmonds (1862; 1876), who researched by-product development and loop closing for decades and created a major exhibit on the subject (Desrochers 2009b; 2011); Charles Lipsett (1963), the founder and director

2. Boons’s webpage is at <http://www.eur.nl/fsw/staff/homepages/boons/> ([link](#)).

of a publishing house devoted to the waste trades; John B. C. Kershaw (1928) and Theodor Koller (1918), respectively a chemical engineer and a chemist with years of practical experience in various industries; and Paul Razous (1937/1921; 1905), a French engineer who worked for several years as a governmental safety inspector. These sources, however, represent only a small fraction of the material used in my early papers. For instance, in Desrochers (2000), I referred to specialized monographs on animal by-products, waste tomato seeds and skins, waste oranges, waste liquid residues for metallurgical operations, residues from paper manufacturing operations, and fish, wood, silk, brewery, cotton, and cement waste, among others. Like Perry (1908)—another source I quoted occasionally—these and other authors argued along the lines that “the commercial spirit of [the] age has developed wonderful genius for utilizing waste products” (71); that “the greatest source of wealth, in these days of great riches, has been acquired largely through the wise use of that which men term *waste*. In all departments of life men have studied how to utilize to the utmost the refuse and remnants that follow in the wake of legitimate enterprise” (12-13); and that “Men are more and more patterning after the Maker and turning everything into a source of wealth. It is a law of nature and the closer that we keep to this law the wiser and wealthier we grow” (28).

Boons’s critique, however, is essentially limited to my use of general overviews and omits specialized monographs. His most important point is that their authors do not support my contention that loop closing was widespread before 1900. Instead, they

describe technological possibilities for material recovery (inventions) and—for some of these—their commercial exploitation by at least one firm at some point in time. The authors do not go into the question of how widespread the application is in a certain country. And in many cases, these authors show that there are more waste streams to be addressed and discuss innovations that await commercial exploitation. In short, although technological possibilities are described, they do not constitute proof of widespread practice. (Boons 2008, 150-151)

Boons is right that several potential opportunities were raised by Simmonds and others, but all of them also specifically observed that countless problematic residuals had been converted into profitable by-products (as illustrated in, among other writings, my subsection “Turn-of-the-Century Assessments of Closed Loops” in Desrochers 2000). Furthermore, the publishing rationale for devoting much attention to the former rather than the latter was rather straightforward. As one anonymous reviewer of Koller’s first (German) edition observed:

The utilisation of waste products has been for years a favorite subject with technologists... The appearance of a work like the present [Koller] is therefore quite in accordance with the spirit of the age, especially as there prevail very crude notions as to what may and what may not be profitably extracted from refuse. The author has attempted to select from a superfluity of materials only such processes as the practical man may apply with advantage—a task which he recognizes as difficult. Such a work, to be really valuable, should contain nothing but what will readily approve itself on a working scale, and nothing which is already thoroughly familiar to manufacturers and technologists. (Anonymous 1880, 33)

The editors of the American trade journal *The Manufacturer and Builder* (1884, 98) made similar points in their discussion of Simmonds's work when they pointed out that finding a profitable use for the waste of industries opens "a rich field... to the enterprising inventors," that the Danish-born journalist's contribution was the "most instructive book for the ambitious technologist and... man of practice to read," and that it contained "a hundred suggestions, with latent possibilities of rich reward, to inspire his zeal." In short, the authors of these broad overviews had no incentives to delve into relatively well-known practices or to document the detail of their economic impact, especially at a time when reliable economic data were scarce or non-existent. Discussing potentially profitable opportunities, however, increased the marketability of their work. Despite the fact that they do not always provide in-depth coverage of the most common and successful by-product recovery practices of their time, these books remain the best general treatments available on the subject and, along with other contemporary documents, provide much more evidence as to the widespread nature of the practice than Boons is willing to admit.

My stance finds support in the recent work of O'Brien (2008, 6) who apparently rediscovered this material without prior knowledge of my work and similarly concludes that "although waste is usually construed as the curse of profit and innovation, the fact is that uncountable wastes have entered, and continue to enter, into industrial production." Indeed, "some of these wastes have been so central to the social and industrial development of modern societies that it is impossible to imagine what the world today might look like without them" (idem). O'Brien (2008, xiii) observes that there is much material on the issue, and that he was left "with such vast heaps of research papers, media stories, social science and engineering books that the small study in my house looks more like a landfill site than a place of scholarly activity."

Since 2000, when I published my first papers on the topic, new technologies have made searching old sources much easier. Indeed, I have located much additional evidence to back up my earlier assessments.³ That said, “rigorous” quantification of the type favoured by engineers and economic historians remains an impossible goal when dealing with by-product linkages, a point acknowledged in 1902 by no less an authority than the Chief Statistician for Manufactures of the U.S. Census, in the preface to a bulletin on *The Utilization of Wastes and By-Products*: “[I]t is impossible to measure statistically the addition of wealth of the country created by turning to some useful purposes the residues and by-products which were formerly thrown away or left to rot.” He added that “the volume thus preserved and turned to some useful account must be enormous” (Kittredge 1902, 1).

Additional quotes from Victorian Britons of which I was unaware when I published my early papers can further illustrate, *contra* Boons (2008, 151), how prevalent was this view. In the table that follows I have limited myself to sources now freely available online, with one exception (Cornish 1892).

Table 1: Some Victorian Assessments on the Scale and Scope of By-Product Development.

The valuable discoveries in chemistry which have been made of late years, and their extensive application to the useful arts, have originated a variety of trades more or less curious in their character, but exceedingly important in their social effect. The active industry of many thousands of the population is at this moment employed in a manner unheard of fifty years ago; and it is gratifying to think that this employment is afforded, to a large extent, by the converting of commodities long regarded as worthless into articles of great commercial value and importance. *The trades thus originating, though of a unique and singular character, are not popularly known, if known at all, beyond the narrow limits of their immediate connection.* (Anonymous 1851, 310, my emphasis)

At the present time period, commerce is making such demands for increased supplies of various substances, that scientific men are carefully studying the residue of every manufacture, and the special qualities of each new product. (Anonymous 1863, 254)

3. For links to some of this material see Desrochers and Lam (2007) and the references listed at the end of this paper.

DESROCHERS

The progress of our great chemical manufactures during the last ten years... appears chiefly to have been directed towards the utilisation of waste substances. (Crookes 1863, 58)

One of the blessings of modern science presents itself in the form of economy, frugality, utilisation. Things which were formerly thrown away as waste are now applied to man's purposes, to an extent far beyond our general supposition. (Anonymous 1869, 807)

With the perpetual growth of civilisation and industry comes an equal increase in the amount of waste products caused by each new manufacture. Every industrial process has naturally among its resultant numerous products besides that one to obtain which it is carried on. To utilise such by-products has been a frequent object of modern invention. Such efforts, when successful, may be considered as accumulating so much pure gain, by turning a useless and, therefore, cumbersome, or even a noxious product, into a valuable and useful material. Manufacturers have learnt that there are very few things that are really waste, while, thanks to the investigations of science, the list of really waste substances is daily diminishing. Perhaps it would not be difficult to frame a list of industries of which the by-products have become of nearly equal importance with the main process, and it is certainly true of very many of our principal manufacturing processes that they could hardly be carried on but for the commercial value of products once stigmatised as waste. (Anonymous 1873, 11).

The utilisation of waste products is a subject which ought to possess a special interest for a manufacturing nation like ourselves. The phrase itself is indeed something like a standing reproach, as it expresses a fact—patent to all observers—that many possible sources of national wealth are allowed to pollute the air we breathe and the water we drink, or to accumulate in unsightly heaps, because we do not know how to make them available for any useful purpose. Day by day, however, this reproach diminishes, as patient ingenuity discovers the means of rescuing from the category of waste products materials which may be available for various industrial processes, and while much remains to be done, it is encouraging to note how much had already been effected. (Anonymous 1876, 57)

Numerous substances which were formerly thrown away, destroyed, or neglected, are now utilized... A long list of instances of this class might

be adduced if it were necessary, some of them of very great importance. (Gore 1882, 151-152)

“Waste nothing,” is the key-note of our material industry. Just as the farmer turns even the weeds to account, as a manure for the fields which they encumbered, so in all things we must utilize “refuse,” and see that everything is of use, if we take it to the right place and put it to its right use. (Platt 1883, 336)

It is a matter of history in Europe that in some instances what were originally regarded as waste products have become, if not the principal objects of manufacture, at least those upon which the success of the undertaking, from a commercial point of view, depends. (Rennie 1887, 233)

A leading feature of the Victorian epoch has been the utilisation of waste materials and by-products. (Anonymous 1887, 299)

A full account of the various inventions by which the utilization of the bye-products has been brought about would fill a volume, and does in fact actually fill many volumes of technical literature. (Cornish 1892, 209)

As I illustrated in my early and more recent papers, similar comments can be found in all rapidly industrializing market economies at the time, and most knowledgeable writers credited market institutions (the profit motive and property rights) for this outcome. I cannot fully restate my arguments and supporting evidence, but will now clarify and bolster my main points.

Free Enterprise, Governmental Planning and Intervention, and Loop-Closing

Boons’s second goal is to challenge my assessment of the effect of market institutions on the development of loop closing. He criticizes me on at least four counts: 1) I allegedly failed to define and explain the workings of a “free market” satisfactorily; 2) much evidence presented by Simmonds (1862; 1876) is from polities that cannot be considered market economies; 3) Talbot (1920) and Rosen (2007) allegedly demonstrate significant market failures and the need and capability

for governmental interventions to generate more loop closing; 4) markets are social constructions in which structure, politics, and culture play a larger roles.

Free markets and loop closing

My view of market economies is the one traditionally espoused by thinkers of the (European) liberal tradition.⁴ Markets are defined by voluntary exchanges within the context of a price system (and its attendant profits and losses) and the protection of private property rights. In this context, the action of one person is limited by the property rights of another. As a result of both the price system and private property rights, market institutions have long ensured that wealth creation proceeds in a way that is much more sustainable than is generally understood.

Sustainable wealth creation has been fostered in several ways. First, the profit motive has long enticed creative businesspeople and their employees to wage war on the waste of costly resources, a view endorsed by Karl Marx and others, as discussed in my papers. Indeed, in more recent years I have come across the work of many nineteenth- and twentieth-century analysts who held similar views. For example, the author of the most successful American economic textbook of the first half of the nineteenth century stressed the importance of consuming “every utility possessed by any substance,” that “all the fragments and remnants should be, so far as possible, employed to some valuable purpose,” and that “all the values must be consumed in the most profitable manner” (Wayland 1837, 421-423). Writing less than three decades later, the American environmentalist George Perkins Marsh (1864, 37) observed in his classic *Man and Nature* that the “utilization—or, as the Germans more happily call it, the *Verwerthung*, the *bevorthing*—of waste from metallurgical, chemical and manufacturing establishments, is among the most important results of the application of science to industrial purposes.” These “incidental products” of laboratories and factories, Marsh added, “often become more valuable than those for the preparation of which they were erected.” Johannes Rudolf Wagner (1877, 3), the author of the influential German *Handbook of Chemical Technology*, similarly emphasized that the “ideal of a chemical manufactory is that there should be no real waste products at all, but only chief or main, and by-products. The better, therefore, the waste products are applied to good and advantageous use, the more nearly the manufactory will approach the ideal, and the larger will be the profit.”

4. This perspective is labeled classical liberalism in the American context. Anderson and Leal (2001) is an influential work on environmental issues written from this perspective, but does not discuss industrial by-product development in much detail.

Second, in a market system private property rights are protected by the rule of law. That protection helped to ensure that substantial and unreasonable interferences with the use and enjoyment of private property resulting from neighboring manufacturing activities could be tackled effectively by individuals whose health and property suffered from such operations. In the Anglo-Saxon world, recourse for abnormally dangerous conditions and activities could be had through common law doctrines of negligence, trespass, nuisance, and strict liability. The system allowed private parties to recover monetary damages for harm caused and even in some cases to gain an injunction that could ultimately result in a polluter's obligation to shut down its operation until emissions had been addressed. Liability considerations in a market economy have long stimulated innovative behaviour and the development of "win-win" innovations (Desrochers 2008a). As such, some loop-closing developments in market economies were partly motivated, *contra* Boons, by "ecological and human health effects" (Boons 2008, 153).

Of course, despite positive long-term trends, significant polluting emissions could be observed at particular locations, for the development of practical and profitable solutions often took much effort, resources and *time*. As one anonymous contributor to *The Warehousemen and Drapers' Trade Journal* observed in 1876:

Much, however, as society in general may be interested in the economical use of the materials for manufacture... it has a still greater concern in the matter from a sanitary point of view. A few years ago, the oily and soapy liquors of our woollen factories were universally allowed to run to waste. The streams and canals in the neighbourhood of the works became in consequence intolerably filthy and offensive... The fatty acids, which would have combined with earthy salts in the water 'to form insoluble soaps and slimy scum which give off unpleasant odours and injurious gases,' have been precipitated from the factory liquor by a simple chemical process, and are thus not only prevented from becoming a direct and all but unbearable nuisance—which is the most important result for society at large—but are actually changed into a source of profit for the manufacturer. (Anonymous 1876, 57)

This pattern of outcome was also obvious to an 1886 encyclopedia contributor:

In many branches of manufacture, especially in the earlier days of their existence, certain portions of the materials used have been cast aside as 'waste,' that designation implying that such portions were available for no useful purpose. As time had advanced, first in one branch, and then in another, this 'waste' material has been experimented upon with a view to

finding some profitable use for it; and in most instances the experiments have had a more or less satisfactory result. (Anonymous 1886, 464)

Although this should go without saying, specific problems at one point in time do not constitute a refutation of the long-run benefits of market-generated loop closing.

Loop closing in non-market economies

Boons suggests that my case is not helped by the presence of some loop-closing activities in non-market economies, such as Russia, Japan and Hawaii at the time of Simmonds's (1862; 1876) writings.⁵ Yet, it is their absence that would be truly astonishing, for human ingenuity predates the development of market institutions. Forms of loop closing or waste reuse can be observed in all human societies—indeed, I provided a number of Neolithic illustrations to this effect in Desrochers (2000). My argument has always been that market institutions were better than other real-world alternatives in rewarding risk-taking and in giving economic actors strong incentives to challenge the status quo. They were thus essential for rapid, large-scale, and sustained progress in such matters, but this is not to say that creative people in less favourable social environments did not sometimes find valuable uses for waste materials. In other words, the level of success achieved by the inhabitants of Victorian England cannot be dissociated from the institutional regime under which they lived. Burdened with extensive governmentalization and restrictions of all kinds, the same individuals would not have achieved similar results.

Government intervention, public planning, and loop closing

Mercantile activities have been denigrated by countless intellectuals since at least Plato. The profit motive is denounced as encouraging selfishness and avarice and as rewarding polluting emissions in order to reduce production costs. Some version of this vision obviously underlies both Boons's case against my papers and the two main sources he uses to support his argument, Talbot (1920) and Rosen (2007).

5. Of course, in practice all economic/social systems exhibit varying degrees of freedom and coercion. To my knowledge, the use of currency was widespread in Russia and Japan at the time, while whalers and traders had long integrated Pacific islands into the world economy.

Frederick Ambrose Talbot

Beginning in the late nineteenth century, a perspective emerged suggesting that market economies were inherently wasteful. To give one illustration, Edward Bellamy's (1888, 157) fictional *Looking Backward: 2000-1887* denounced the "four great wastes" of the market system: "first, waste by mistaken undertakings; second, the waste from the competition and mutual hostility of those engaged in industry; third, the waste by periodical gluts and crises, with the consequent interruptions of industry; fourth, the waste from idle capital and labor, at all times." In Bellamy's and later writers' view, the economic revolution associated with industrialization both enabled and required a revolution in social organization. He and they wanted to insulate powerful technocrats from traditional market signals of profits and losses so that they would, through a top-down public planning process, re-orient production for use rather than profits. This vision was taken up by an increasing number of economists, industrial engineers, "scientific management" consultants, and conservationists.

Most authors who shared this "wasteful production" critique of free enterprise, however, had literally nothing to say on by-product development. Two exceptions are Henry J. Spooner's (1918) *Wealth from Waste* and Stuart Chase's (1926) *The Tragedy of Waste*. Writing on the heels of various World War I national planning efforts, both authors had special praise for German planning measures.⁶ As I have argued elsewhere, the collapse of centrally planned economies has discredited their case. Building on insights of liberal economists such as Friedrich Hayek, I traced the failure of governmentalization in general, and centrally planned measures to close the loop on industrial residuals in particular, to three main causes: 1) the lack of individual incentives; 2) the misallocation of resources due to the absence or distortion of the price system; and 3) the inability of central planners to tap into the local knowledge and know-how possessed by people (Desrochers 2004; Desrochers and Ikeda 2003).

Frederick A. Talbot's (1920) *Millions from Waste* is best read as a reflection of the intellectual climate rather than as an accurate account of industrial behavior and results of contemporary planning initiatives. A prolific popular writer on topics such as the history of the Canadian railway, steamships, airplanes, and the movie and oil industries, Talbot completed only one book on waste products and aimed it not at industrialists but at the "uninitiated reader," although he also hoped that his contribution "may prove of certain service to those who are fully alive to the potentialities of refuse of every description" (5).

6. I discuss the work of these authors and their comments on German wartime planning in Desrochers and Ikeda (2003), a piece not referenced in Boons's essay.

Talbot made some valid points that I did not hesitate to use despite misgivings about other aspects of his analysis. For example, his observations on the recurring pattern in the “utilitarian conjugation of waste” through which “waste—by-product—staple... constitutes the brief evolution of more than one of the world’s leading lines of trading” (13-14); the fact that “to relate all the fortunes which have been amassed from the commercialization of what was once rejected and valueless would require a volume” (17-18); and that typical German industrial behavior toward residuals was to view them as “so much raw material for another line of endeavor” on which one “at once sets to work to attempt to discover some use” (19).

Talbot, however, also engaged in some speculative historical and economic interpretations that were influenced by the wartime planning and “wasteful production” literatures. It is these passages that Boons uses to challenge my claims on the benefits of market institutions. For example, he quotes Talbot as stating that “the British race is generally assailed as being woefully improvident and remiss in the profitable exploitation of waste” (149), a statement that I do not consider credible in light of the numerous quotations already provided here and elsewhere (Desrochers 2009a; 2009b; 2011). Like several British commentators at the time, Talbot deplored both the failure of British dye-stuff manufacturers (whose main input were light oils derived from coal tar, a residual of coal gas production) to protect their original lead against German competitors⁷ and British industrialists’ apparent incapacity to develop several of their inventions into commercially successful products.

Talbot’s critique of British dye-stuff manufacturers prompts Boons (151) to ask “if Britain is the exemplary free market, then why could this be so?” And yet, as Kealey (2008, 224) observes, the British chemical industry grew faster between 1881 and 1911 than any other industry in the country except for public utilities. What actually happened at the time was that the German chemical industry grew faster than any other on earth. Despite greater government involvement and some significant successes, however, German GDP per capita in 1914 and 1939 still represented only approximately 75% of the British one, a share similar to what it was in the early nineteenth century (Kealey 2008, 218-219).

In short, free-market policies do not imply that an economy will outperform its more *dirigiste* competitors in every industry (especially those that benefit from extraordinary government support), but rather that it will typically be more prosperous overall.⁸

7. I discuss this historical episode in more detail in Desrochers (2008b).

8. For a more detailed discussion and several empirical facts on this issue, see the economic freedom projects headed by the Heritage Foundation ([link](#)) and the Fraser Institute ([link](#)).

Boons also mentions approvingly Talbot's stance on the benefits of recovering local waste in order to reduce foreign purchases, along with his fear that resurging post-war international trade "might bring the country back to its old habit" (151). I take Talbot's position on this issue to be a reflection of wartime propaganda which singled out allegedly successful initiatives in this respect in both the UK and Germany. Interestingly, however, he was much more circumspect in the latter case than Spooner (1918) and Chase (1926), inasmuch as he admitted that some German recovery initiatives "were grossly misrepresented and exaggerated" (Talbot 1920, 76).

That was also the main conclusion of a more detailed survey on the *Uses of Waste Materials* published a few years later under the aegis of the International Institute of Agriculture of Rome (Bruttini 1923).⁹ The objective of this work was to document the wartime legislative, administrative, and technical measures taken in various countries to encourage "the collection and conversion by manufacturing processes of waste material in view of their utilisation as food or feedingstuffs, in the manufacture of fertilisers... etc." (vii). Not surprisingly, the author devoted most of his efforts on the German case and found that virtually none of these practices proved superior to pre-War alternatives.¹⁰ The following quotation critical of the German war food policy and rationing by a member of the Reichstag and Prussian Diet is illustrative:

Even in the Central Committee of the Reichstag we have had to listen to an address delivered by an official of the Imperial Ministry for the Interior... which would have realised the wildest dreams of the agrarians. The orator brought home to us the fact that by drying lees, grinding straw, weeds, carcasses, fish, by working up food refuse, etc. we should be able, even during the war, and better still afterwards, to fill the gaps in our forage reserves. But the songster then became mute. A member of the Committee having asked Dr. HELFERICH whether this new branch of production was remunerative, the latter... had to reply "that the manufacture of the said substitutes is so costly that the question is bound to arise whether once the war is over, their preparation should be continued; the highly vaunted drying of lees, especially, is so costly, that in certain exceptional cases they might perhaps be used as a feed for sick animals, but never for livestock as a whole... The importance of the

9. The International Institute of Agriculture was dissolved and its functions and assets transferred to the Food and Agriculture Organization of the United Nations in 1946.

10. Durr (2006) reaches a somewhat similar conclusion in his analysis of World War II American recycling campaigns.

utilisation of table refuse and that of wild plants (e.g., thistles) has been greatly exaggerated...

Many draught animals in towns and in the country have died from inanition, the official ration given them being quite insufficient to sustain them. The situation was somewhat ameliorated when establishments for treating straw were set up, which gave good results everywhere..." (Bruttini 1923, 36-37)

In other words, much evidence suggests that the termination of numerous wartime recovery efforts was a vindication of the greater efficiency and economic value of pre-war trading activities. Furthermore, the fact that Talbot thought he had identified allegedly better ways of conducting business than practices that had actually survived competitive pressures should be met with skepticism, for he obviously lacked the in-depth knowledge of practitioners and was unlikely to know about all the trade-offs involved in his various suggestions.

In the end, while Talbot has interesting things to say, a portion of his analysis reflects the increasingly dominant mistaken perspectives of his time and cannot be used as evidence that governmental planning is a more desirable way to coordinate inter-firm recovery linkages.

Christine Meisner Rosen¹¹

In her recent work, business historian Christine Meisner Rosen (2007, 340) writes that the most innovative American meatpackers found "profit in the wastes that their contemporaries were throwing away," but strongly emphasizes that "sanitary regulation, pollution litigation and public protest" played a crucial role in the modernization of the industry. Boons uses this article to champion the idea that, above and beyond the protection offered by private property rights, increasing the number and scope of governmental interventions can induce short-sighted producers to devote more effort to the development of "win-win" innovations.

Yet, while it is true that Rosen argues that political interventions were needed to bring about loop closing, Boons is apparently unaware of her remarkable departure from her earlier writings in which she argued that loop closing was almost nowhere to be observed in the industrial age and that early twentieth-century engineers dealt with industrial pollution "primarily through the development and installation of end-of-pipe pollution-abatement and treatment technologies" (Rosen 2003, 329). For instance, Rosen (1997, 126) wrote that "[m]aterials used in manufacturing flow from the biosphere into the production

11. Rosen's webpage is at <http://facultybio.haas.berkeley.edu/faculty-list/rosen-christine> ([link](#)).

process and back into the biosphere in the form of air and water pollution and solid waste. From there they are rarely returned to the production process. Humans have done little to recycle the materials used in the industrial world..." In spite of these revisions, Rosen still argues against the role of markets in encouraging loop closing.

As I have detailed elsewhere (Desrochers 2008a), regulations and litigation have long triggered some by-product development in a broad range of industries. The idea that they were more important than the profit motive, as Rosen and Boons argue, implies that industrialists who daily watched wasted inputs go down drains, out smokestacks, or into waste bins were systematically unalert to the lucrative opportunities they represented, while less knowledgeable and less motivated outsiders knew better. Rosen (2007, 308) suggests that most American meatpackers "were intensely disinterested... in turning their wastes into valuable products and of doing anything beyond what they were already doing to abate their stenches." This is highly unlikely, based on both theory and evidence. While it might be the case that most individuals, whatever their line of work, are resistant to change once they are set in their ways, the fact that such behavior impairs profitability and even survival of any firm in a competitive economy has also long been understood by business people and researchers alike.

Rosen's argumentation is incompatible with much available evidence. First, by-product development was occurring on a large scale in a wide range of industries that were not targeted to the same extent by public health officials and regulators. Second, relatively sophisticated loop-closing operations existed in the American meatpacking industry long before her study period (1865-1880). To give one example, Wayland (1837, 423) describes New England industrial linkages where soap, candle, glue and "neat's [bovine] foot oil" operations were connected to larger slaughterhouses, the refuse of which was used to fatten a substantial number of hogs, insuring in the process that "every part of the slaughtered animal is profitably consumed." Third, similar arrangements could be observed in contemporary locations where manufacturers did not benefit from the presence of American regulators and public health officials. Indeed, according to Simmonds (1876, 40):

In all civilised and densely-populated countries, of the animals used for the food of man, it may be said that nothing is wasted, every part that is not eaten being turned to some useful purpose; the refuse fat is converted into tallow or soap, the greater portion of the skin is made into leather, and the scraps, with the hoofs, feet, and membranes, converted into glue, the horns made into various useful articles, and the bones produce phosphorus and manure.

Lastly, another problem in Rosen's and Boons's perspective is their view of electoral politics, especially their belief that American municipal governments during the heydays of machine politics were following the dictates of public-minded health officials. Not only is it unlikely that the health officials were in charge, it is also possible that the reluctance of businessmen to submit to the regulations singled out by Rosen was an attempt to avoid coming under the direct control of political figures such as "Boss Tweed." And even if saint-like reformers spearheaded public health initiatives, the powers of health officials might have been appropriated in time by individuals of lesser purity who might have then used various means to extract bribes, such as controlling both the access and the size of operations in state-run abattoirs.¹²

Another problem with Rosen's and Boons's "public interest" perspective is that, as Adam Smith never tired of telling us, well established industrialists are fond of using the political process to serve their own interests. They may have influenced new regulations to make it more difficult for small firms to compete with larger operations. Well established businesspersons have always had two ways to increase or maintain their market shares. The first is to compete by voluntary means. The second is to use the political process to enact restrictions of various sorts in order to suppress or hinder competition. Much evidence suggests less charitable motives behind the advent of early environmental regulations, such as rent-seeking opportunities and the trampling of private property rights by the enactment of statutory laws that in effect legalized pollution (Meiners and Morriss 2000; Brubaker 1995; 2007).

Boons's "complex" analysis and prescription

Boons's own historical perspective on loop-closing development borrows from the business history and economic sociology literatures in an attempt to incorporate structural, political and cultural considerations. Some of his arguments are interesting, while others display his own inadequate historical knowledge and understanding of the case for free enterprise. For example, he argues that the "market mechanism can be seen in some cases to assist in bringing about recycling practices, but in other cases it contributes to their abandonment. Thus simple conclusions cannot be drawn." (156) He does not realize it, but the process he describes reflects one of the most beneficial aspects of markets, the process of "creative destruction" and its constant tendency to redirect resources from good

12. My view of electoral politics has been shaped and is much closer to the work of, among others, Buchanan and Tullock (1999/1962) or Mitchell and Simmons (1994), than to any "public interest" perspective on the issue.

to better uses. Improvements are delivered to the vast majority of consumers, and producers are impelled to use resources more efficiently and creatively.

Contrary to Boons's charge, my argument for leaving decision-making to free enterprise is not simplistic at all. It actually entails a much more complex approach than the most detailed five-year plan. What the Smith-Hayek stance implies is that millions of individuals with very different perspectives and expertise should be allowed to tackle, within the bounds of commutative justice, the problems they face.

By contrast, the incentive structure in which government bureaucrats and elected officials operate is inherently less conducive to innovation and efficient reallocation because they are rarely held accountable for their inertia or bad decisions. As an early British critic of socialism observed, "functionaries are under a chronic temptation to keep on standing upon old paths. They habitually defend the machinery and the methods to which they have got accustomed, and treat with coolness all proposals of reform or improvement" (Robertson 1891, 58). Similarly, politicians are under constant pressures to defend the status quo and bail out poorly run operations. Their decisions to use other people's money to save wealth-destroying jobs in favored industries necessitate that other jobs in other industries will be lost. The more governmentalized production becomes, the less efficient and creative the economy becomes.

Ultimately, it seems clear that the available historical evidence supports my basic dichotomy between free-enterprise and politico-bureaucratic decision-making processes, along with their recurring patterns of outcome.

Conclusion

Like most sustainable development theorists, Boons discounts the notion that free enterprise might be capable of directing individuals towards both economic and environmental progress. He states as much when he argues that the "minimalist approach" to the IE metaphor (which is limited to closing the loop on industrial waste) "cannot serve as a basis to develop policy prescriptions for a field in which the central concern is not the economic viability of closing loop but rather the reduced ecological impacts that results from it." What ultimately matters, he says, "is not so much the quantity of instances in which material recovery is practiced but their quality: the extent to which the loops of a system are closed and harmful effects are prevented. This makes the modern concept of IE fundamentally different." (153)

The primary result of market institutions is improved standards of living. It cannot be denied, of course, that some (sometimes significant) environmental

damage has resulted from specific market activities. It seems obvious, however, that many individuals were and are still willing to make that trade-off, and that, over time, the environmental track record of market economies is superior to that of any real-world alternative in which government intervention brings its heavy hand to issues of IE.

Looking at a more recent time period, and in particular and in the economic and environmental divergence between market and centrally-planned economies in the second half of the twentieth century, Bernstam (1990) argues that changes in the amount of wastefully used resources, rather than increased production and consumption levels, ultimately determine the relationship between economic growth and pollution. In other words, when the growth in output exceeds the growth in resource input required, material wealth will increase while pollution levels decline. On the other hand, a poorer economy that uses a smaller amount of resources less efficiently will experience greater environmental damage.¹³ It is my hope that a more open-minded reading of my work will help sustainable development theorists come around to this view.

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Freedom Versus Coercion in Industrial Ecology: Mind the Gap!

Frank Boons¹

[LINK TO ABSTRACT](#)

Mr. Turnbull had predicted evil consequences, ...and was now doing the best in his power to bring about the verification of his own prophecies.

—Anthony Trollope (*Phineas Finn*, Chapter 25,
as quoted in Popper 1963)

Pierre Desrochers' article in this issue provides an extensive reply to my assessment of his early work on the utilization of by-products in the nineteenth century (Boons 2008a, hereafter referred to as "my critique"). I value the opportunity to engage in a debate about this topic, especially in a journal with a broader economic focus. Understanding the ways in which firms deal with the by-products of their production activities is crucial for understanding processes of innovation as well as improving insight into the ecological impact of economic activities, themes that are both at the core of economics.² Embedding this understanding in long-term economic development is valuable because it links the interactions of economic actors to macro-economic change. Such change is deemed necessary by many analysts of modern societies that are concerned with issues such as climate change and resource scarcity.

Understanding why clusters of by-product exchanges emerge and persist over time requires a careful collection and analysis of empirical data, a task that

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2. Although not every economist will place the study of ecological impact at the core of economics, when such impacts are seen in terms of relative efficiency of production processes I am quite sure they will concur.

is especially demanding when historical records are used. Historical sources never fulfill the requirements that one would satisfy when collecting data in the present. Part of my criticism of what I called *the Desrochers papers* dealt with what I felt to be a lack of care in dealing with such sources. In addition, through misrepresenting several key concepts in the analysis, conclusions were drawn that I felt to be simplistic.

I am sorry to say that in his reply to my critique, such simplicity again rears its head. In fact, all the points I raise below can be summarized into one sentence: Reality is more nuanced than represented by Desrochers. In this contribution I will try not to repeat my earlier critique. Instead, I add to points already made, and include some recent insights from the field to which Desrochers has pointed his arrows. My points are:

1. By-product use is a concept that needs to be carefully defined. If we adopt the definition of Desrochers, then the whole economy is rife with by-product use. For industrial ecology, the interest in by-product exchange is associated with its potential to reduce ecological impact, and therefore not all by-product use is equally relevant. A critique on how industrial ecologists conceptualize the coordination of such exchanges must work from the definition they use.
2. Industrial ecology (or sustainability science) is not one coherent set of ideas put forward by a group of scientists in full consensus. As in any scientific field, issues central to the field are hotly debated. The extent to which by-product exchanges are facilitated by the market mechanism is one of these issues. By pretending the field to be of one mind, Desrochers ignores such debates. This makes it difficult for him to see where he could contribute.
3. Governance in economic systems is complex and cannot be adequately represented by using a simple dichotomy between the free market and government, as Desrochers consistently does. Moreover, care needs to be taken to look at such governance in its temporal context.

Before I move on to these points, I feel the need to dwell for a moment on a central principle of the scientific method: falsification. Put briefly, it states that the best way to test a hypothesis is to search for evidence that forces one to reject it (Popper 1963). My motivation for writing an assessment of Desrochers' work was not that I disliked his conclusions. Although he implies as much, I am not out to prove that government is essential to solve the world's problems. If there is anything I believe in it would be 'context dependency', so I am highly suspicious of any conclusion unconditionally in favor of either the market, planning or another

'real world alternative' as a way of coordinating economic activities. What moved me in the first place was the apparent lack of attention for counter-evidence, even when it was readily available in sources used by Desrochers.

According to Desrochers, by-product exchanges are a product of autonomous economic agents searching for innovative solutions, unhampered by governments that restrict their creativity. An important conclusion consistently drawn by Desrochers is that free markets are essential for the widespread occurrence of by-product exchange, as they provide a necessary context. This is clear from the following quotations: "Whether contemporary or historical, all cases of interfirm recycling linkages were primarily the result of entrepreneurial actions triggered by cost calculations" (Desrochers 2002, 62), and "all successful, documented cases of industrial symbiosis to this day have been self-organizing" (Desrochers 2004, 1099). The repeated use of the word "all" indicates that the free market is considered by Desrochers to be a necessary condition for by-product exchanges to occur. To provide a solid foundation under this conclusion it is not enough to provide examples of free market societies where by-product exchanges occur. A strategy of falsification calls for sensitivity to evidence of situations where by-product exchanges occur *in the absence of* free-market conditions. I found it striking that the sources used by Desrochers provided such counter-evidence (i.e., nineteenth-century societies lacking free markets as defined by Desrochers, yet displaying examples of by-product use). What was even more surprising: this evidence was simply disregarded. Such selective use of sources again appears in his 2012 reply. Veiled in an advice to the reader ("*Millions from Waste* is best read as ..." (88)), Desrochers takes what he can use from Talbot's *Millions from Waste*, but dismisses observations by Talbot on the contribution that governments have made and could make.³

The scientific strategy of falsification also provides a solution to a problem otherwise facing Desrochers: no matter how much evidence he brings to the table that reveals by-product use in free-market societies, it does not prove that other societies have not displayed such exchanges in a similar frequency. In contrast, examples of societies that lack the characteristics of a free market where by-product exchanges occur provide compelling evidence that his hypothesis is incorrect.⁴ This is why such counter-evidence in his own sources cannot be easily dismissed, as Desrochers again does in his reply.

3. I will not dissect the argument dealing with this; my 2008 critique has detailed references to the relevant sections in Talbot (1920, full text available at www.archive.org ([link](#))).

4. Thus, falsification is efficient. In that sense, the fact that Desrochers blames me for considering only part of his sources is beside the point. If I find in his sources (or elsewhere) *one* example that conflicts with his hypothesis, that suffices.

His counterargument is to attribute such examples to generic human ingenuity.⁵ But to remain consistent, this means that the free market is not a necessary condition for by-product use, and the hypothesis should be rejected. If the hypothesis is retained in the face of this evidence, the conclusion must be that the free market is not a necessary condition, but a much weaker condition. Indeed, in his reply Desrochers now states that his hypothesis is that market institutions are “better” than other real life alternative coordination mechanisms (2012, 87). Further research should then focus on what are additional, or alternative, conditions. As I will show below, looking at more complex constellations of conditions that produce by-product exchanges is exactly where the field of industrial ecology is currently heading.

Defining by-product exchange

Up till now I have used concepts in the way proposed by Desrochers in order to do justice to his formulation of the hypothesis. This does not mean I agree with his definitions. In fact, a central point in my critique concerns the conceptualization of by-product exchanges. In order for his attack on industrial ecologists to make sense at all, the way in which such exchanges are defined needs to match the definition as used in the field of industrial ecology.⁶ This definition includes three important elements:

- A by-product of the production process of one firm, previously unused, is used as an input for a production process of another firm. Thus, by-product exchange refers to a newly established relationship where a substance or flow crosses the boundary between two or more firms. It thus differs from loop closing and by-product development in general, which may take place in the same firm;
- By-product exchanges occur in regionally bounded clusters. Rather than being a bilateral phenomenon, they are considered as regional networks of exchange, often referred to as *industrial symbiosis*;

5. In addition to such ad hoc arguments, Desrochers uses faulty reasoning. One example is the immunizing argument about his sources being silent about the diffusion of by-product exchanges (2012, 80-81). This can be summarized as: “The fact that authors did not describe the widespread diffusion of by-product exchanges indicates that they were widespread.” If this is true, then his sources become completely unreliable as evidence: When they describe A, this is evidence that A occurred; if they do not describe A, it is also evidence that A occurred.

6. This discussion might give the impression that the field of industrial ecology deals mainly with by-product exchanges. In fact, it deals with much more. For a recent overview see Lifset and Boons (2012).

- The exchange is considered, at least by the researcher, because of its potential to reduce the ecological impact of the firms involved.

Desrochers uses various labels for his research subject throughout his work; in his article in this issue he refers to it as loop closing and by-product development. As I indicated in my critique, his definition differs from the one used by industrial ecologists (Boons 2008a, 152-153). Loop-closing and by-product development indicate the economically viable use of by-products within and across the firm's boundary, and at least some of his historical examples occur within firms, or are silent about whether an organizational boundary is crossed. His definition is thus broader in the sense that it refers to any use of waste (also within a firm's boundary). Also, Desrochers does not address that by-product exchange, and its development over time, is conceptualized by industrial ecologists in terms of the emergence of larger regional industrial clusters that engage in such exchanges.⁷ Indeed, the iconic example of industrial symbiosis is a set of exchanges that evolved in Kalundborg, Denmark. While broadening the concept in one direction, Desrochers' definition is stricter in the sense that it only considers loop closing that is economical. As a result of this definition, his research subject is ubiquitous in economies. In fact, it defines exactly that which constitutes an economic system, i.e., the exchange of scarce goods among social individuals. At the same time, it has lost most of its relevance as a separate research subject for industrial ecologists.

As a result of his specific conceptualization, ecological impact remains obscure and thus his reply to a major point of my critique comes almost as an afterthought. Desrochers gives two arguments regarding ecological impact. One is provided halfway in the article (86-87), and frames pollution as a temporal distortion from the market equilibrium. The second argument appears in the concluding remarks, where ecological impact is framed as the result of deliberate weighing of values in a process of collective choice. The latter point simply states that people will make trade-offs, and whatever comes out of that is acceptable without further discussion. This disregards a whole literature that deals with the fact that social life is a little bit more complicated, and can only be understood if that complexity is taken into account.⁸ I devoted the second half of my critique to sketching a conceptual framework to do so, which I will not repeat here.

The temporal distortion argument is interesting because it brings in a dimension I hinted at elsewhere (Boons and Howard-Grenville 2009), and that I now think should be more central in the analysis of industrial ecology. This concerns the

7. In his later work Desrochers has started to analyse such larger regional clusters. There he refers explicitly to *industrial symbiosis*.

8. Public choice theorists have encountered many problems in developing a market perspective on collective decision-making.

dynamic aspect of exchanges among firms (Boons et al. 2011). Desrochers states that ecological impacts in terms of unused by-products are temporal problems, because it takes time to find ways of utilizing waste streams. In itself, this argumentation is incomplete; I am curious what he has to say about the waste that results from nuclear energy production. How long do we have to wait for human ingenuity to find an economical use for that?

I fully agree that the temporal dimension needs to be taken into account in the analysis of by-product exchange, but not in the way suggested by Desrochers. He assumes an equilibrium, and negative effects are construed as temporal distortions of that situation. Given the emphasis he places on innovation, this is awkward. If I build on Desrochers' assumptions, I envision an economy where human ingenuity leads to a continuous stream of innovations at the level of individual entrepreneurs. Some of these provide solutions to existing by-products, while others create new by-products.⁹ Thus, at the macro-level it is incorrect to assume an equilibrium; instead, we have a complex system where exchanges are continuously evolving. In such a system, a certain system state (such as an equilibrium where negative ecological impacts are absent) cannot be assumed; it must be empirically assessed. Such an empirical assessment would need to look at:

- The way in which exchanges evolve over time, i.e., what by-product exchanges are realized and to what extent they continue to exist over a longer time period (either as long-term relationships or as repeated market exchanges among pools of suppliers and customers);
- The way in which by-product exchanges are widespread through an economy; and
- The extent to which such by-product exchanges result in decreased ecological impact.

In my opinion, such an empirical assessment will bring us a better understanding of the way in which by-product exchanges emerge, evolve, and disappear in an economic system. However, this kind of analysis is not provided by Desrochers.

Industrial ecology is an evolving field where concepts and hypotheses compete

My second point concerns industrial ecology as a scientific field. In his conclusion, Desrochers states that “Like most sustainable development theorists,

9. Given the laws of thermodynamics, any use (i.e., transformation) of existing by-products will also result in new by-products.

Boons discounts the notion that free enterprise might be capable of directing individuals towards both economic and environmental progress.” (94). He ends his conclusion with an indiscriminate call to all sustainable development theorists to be more open-minded. This lumping together of scholars into a huge category is again an act of simplification. I will not begin to discuss the diversity of “sustainable development theorists”; I am not sure where Desrochers draws the boundary here. I can say something about the field of industrial ecology though, and the alleged preference of its members (being part of the larger population of sustainable development theorists) for relying on governments for coordinating economic activities.¹⁰

In the field of industrial ecology, as in any living scientific field, full agreement over any conclusion is unlikely. Even in the conceptualization of Thomas Kuhn, where scientific disciplines come to a paradigmatic stage in which a coherent set of ideas guides the activities of scientists, there is room for anomalies, disputes, etc. In my experience, scientific fields evolve gradually, with concepts, methods and evidence competing (Toulmin 1972). Ignoring this reality by putting up a straw man (i.e., the sustainable development theorist) may be an effective rhetorical strategy, but I doubt if it is helpful in advancing the historical analysis of by-product exchange.

Within the field of industrial ecology, by-product exchange is studied under the label of industrial symbiosis. A recent special issue of the *Journal of Industrial Ecology* on industrial symbiosis deals with many aspects of this phenomenon, including the question of coordination mechanisms. Paquin and Howard-Grenville (2012) discuss how symbiotic networks in the United Kingdom evolved over an eight-year period. These networks were facilitated by NISP, a private initiative supported by government. This program and its role in facilitating by-product exchanges show that the dichotomy between market and government is a false one. NISP shows how private initiative and governmental support complement each other in making regional markets for waste products more transparent. Paquin and Howard-Grenville also find that, over time, this leads to more advanced, innovative exchanges.

Based on several research articles, Shi et al. (2012) provide an overview of the efforts of the Chinese government to develop eco-industrial parks as part of its national effort to become a Circular Economy. Such parks are regional clusters of symbiotic exchanges. The Chinese experience also reveals that by-product exchange has different shapes depending on local institutional contexts. The

10. The International Society of Industrial Ecology, founded in 2001, is an association with global membership; at the 2011 biannual conference over 500 participants presented their work. I am sure they do not all fit into the mould fabricated by Desrochers.

Circular Economy is an encompassing concept building on Asian principles, and symbiotic exchanges are one of the forms through which the Chinese government seeks to diminish the ecological impact of its rapid economic development. Likewise, in South Korea the government has engaged with the National Centre for Cleaner Production in implementing a series of five-year plans to build up an infrastructure of industrial parks that facilitate symbiotic exchanges (Park et al. 2008).

Each of these developments shows how governmental agents take an active role in establishing regional networks of symbiotic exchanges. They all provide counter-evidence to the strong version of Desrochers' hypothesis and the conclusion he consistently draws about the superiority of the free market. In order to test the weaker version of his hypothesis, these "real-world alternatives" to the free market need to be empirically assessed rather than dismissed at face value, lumped together into a category labeled "coercion."

Desrochers is right in stating that in the early days of the field, there was an assumption that industrial symbiosis required something additional to the market mechanism. This assumption was based on the case studies of regional symbiotic clusters then available (Boons et al. 2011). With increased availability of data this assumption can now be put to the test. In an analysis of a dataset of 233 symbiosis projects, Boons and Spekkink (2012) find that a social infrastructure as a complement to the market mechanism is not a necessary condition for industrial symbiosis. This finding leads to a further refining of the concept of by-product exchanges. When such exchanges involve standardized commodities of little strategic interest to firms, the market mechanism suffices. If exchanges involve more strategic resources and specific investments, additional conditions (i.e., social infrastructure) need to be fulfilled. The government may play a role in bringing about these conditions.

In all, the results of current research reveal that the coordination problem for industrial symbiosis is more complex than a dichotomous choice with only one right answer. Moreover, researchers in the field of industrial ecology have always had the market mechanism as one important option in their conceptual frames. In fact, from my perspective it is curious to see Desrochers hitting so hard on the field of industrial ecology for its alleged reliance on government. Actually, industrial ecology can be seen as one of the research fields dealing with sustainability where people are sensitive to the idea that interacting firms within a market context can to some extent move towards sustainability, and that planning is not the only way (Costa and Ferrão 2010).

Governance beyond a simple dichotomy

A third important simplification takes place by narrowing the contest among coordination mechanisms down to two alternatives: the free market against government. The former is defined in the reply by Desrochers; the definition of the latter can be built up by collecting the adjectives and examples throughout his work: it amounts to something like a coercive socialist planning bureaucracy making five-year plans. This imagery, and the argumentation against it, is clearly inspired by the work of Hayek.¹¹ However, the insight that the market is an efficient mechanism when information is distributed among a large group of autonomous economic actors does not prevent a positive role for governmental agencies in economies. While interesting as a philosophical and theoretical argument, Hayek's conclusions cannot be applied without further specification to any topic.

In my work on industrial symbiosis, I have found that first of all, not all governmental involvement in stimulating by-product exchanges is of the five-year plan, coercive, socialist kind.¹² Governmental agencies have different tools at their disposal, ranging from experimental projects to setting standards to inducing private firms to pick up opportunities earlier ignored. Secondly, such instruments are not often used as an alternative to the market; they are used in conjunction with the market mechanism, or even seek to institute a market where none formerly operated (see the example of NISP above). I have shown the delicate interplay between different forms of governmental action and the activities of firms in my longitudinal analysis of industrial symbiosis in the Rotterdam harbor area (Boons 2008b).

Being sensitive to the precise ways in which governmental agencies influence firms and the operation of markets is especially relevant when dealing with historical evidence. In the second half of the nineteenth century, government was not in any way like the caricature sketched by Desrochers. Instead, it was in full development, and local pollution served as one of the issues around which governmental rule setting and enforcement at the local and national level crystallized. And moving to the situation from the 1990s onwards, the governments that industrial ecologists are referring to are hardly comparable with socialist planning regimes. In the Western world, many politicians and civil servants have embraced liberal

11. For a link between Hayek's critique of socialism and the ecological embeddedness of economies, see the work of O'Neill (2002, 2004).

12. It is interesting that in the one article where Desrochers deals explicitly with societies that lack a free market (Desrochers and Ikeda 2003), his examples are not taken from the nineteenth century but are instead socialist economies of the kind that Hayek criticized.

principles, bringing the market mechanism to fields previously considered to be in the public domain. At the same time, several of the societies where by-product exchanges are rapidly developing are Asian economies that depart in some way from the free-market ideal type. In my view, these constitute evidence for developing insight into the topic Desrochers claims to be interested in: the way in which by-product exchanges can be brought about.

To conclude, I am not impressed by the additional evidence provided by Desrochers in his reply to my critique. What I have tried to show is that the field he is attacking has developed substantially since he launched his first attacks, and it continues to be engaged in a process of deepening our insight into the ways in which symbiotic exchanges can be brought about. In my estimate, careful consideration of evidence in current societies will provide more material for developing our understanding than will searching for more material that verifies a simplistic argument pitting freedom against coercion.

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Fact Versus Conjecture in the History of Industrial Waste Utilization

Christine Meisner Rosen¹

[LINK TO ABSTRACT](#)

Pierre Desrochers attacks my work on waste utilization in the nineteenth-century American slaughtering, meatpacking, and animal waste processing industries in his reply to the critique of his work that Frank Boons published in 2008 in the *Journal of Industrial Ecology*. Desrochers charges that, like his main target, Frank Boons, my research is deeply flawed because I do not agree with him that market forces compelled nineteenth- and early twentieth-century manufacturers to recycle, voluntarily, the vast majority of their wastes. I welcome the opportunity to respond to his criticism of my work and to discuss—with him, Boons, and the readers of this journal—the challenges of uncovering and analyzing the complexities of waste utilization by industry in the late nineteenth and early twentieth centuries.

Desrochers' criticism of my contribution to this discussion focuses on my article "The Role of Pollution Regulation and Litigation in the Development of the U.S. Meatpacking Industry, 1865-1880" (Rosen 2007). Boons uses my findings to bolster his argument that Desrochers over-estimates the importance of market forces in causing manufacturers to utilize their wastes, while under-estimating the role of the state. Boons' argument goes to the heart of what we both find problematic about Desrochers' work on this subject. So does Desrochers' response (2012).

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Desrochers begins his critique of my article with a non sequitur. He complains that my discussion of waste utilization in the meat, meatpacking, and animal waste processing industry is a “remarkable departure” from an article I published ten years earlier (Rosen 1997), in which, he claims, that I declared “that loop closing was almost nowhere to be observed in the industrial age” (Desrochers 2012, 91). Besides ignoring how an open-minded scholar’s thinking can evolve over time as she learns new things (usually considered a good thing), this is a misreading of what I said in that earlier piece. The article, “Industrial Ecology and the Greening of Business History” (Rosen 1997), was an agenda-setting think piece that I gave at a 1996 conference on “The Future of Business History.” The conference was convened to consider strategies for overcoming the limits of the firm-centric Chandlerian paradigm then dominant in the business history field. My purpose was not only to urge business historians to study the history of the harmful impacts of industrial development and society’s efforts to mitigate them, but also to exhort them to conduct research into the history of the many complicated ways in which business managers dealt with these impacts. I emphasized that such research tasks included uncovering and explaining the positive as well as the negative ways they managed their waste streams. Drawing on my research on the role of reform-minded business leaders in the history of pollution regulation movements (Rosen 1995) and related matters, I argued that business historians needed to recognize that “[b]usinessmen not only resisted reformers’ efforts to regulate pollution, ignored public complaints about pollution, covered up the toxic risks associated with chemicals used in their manufacturing processes, and fought law suits for as long as they could, but also experimented voluntarily with abatement technologies, *recycled wastes in many creative ways*, and spearheaded smoke control movements and other environmental reform movements.” I added that business historians “have an obligation to investigate the wide variety of often *conflicting* responses business managers made to the environmental problems their firms generated and to put these activities in the broader context both of the evolution of the firm and the evolution of the natural environment” (Rosen 1997, 131; italics added).

I said much the same thing in another agenda-setting article (Rosen and Sellers 1999), in which my co-author Christopher Sellers and I urged historians to (among other things) start studying how nineteenth- and early twentieth-century manufacturers abated their pollution as well as how they ignored it and/or resisted efforts to force them to abate it. As Sellers and I put it, business historians have an obligation to investigate the roles that business managers and institutions played in “directing the flow of energy, materials, and wastes, through all the stages of production and consumption in the earth’s industrial system,” including the ways in which they (as well as consumers) have “*shunt[ed] them back into the production and consumption loop by reprocessing and reusing them*” (590; italics added).

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In contrast to these pieces, the 2007 article that Desrochers targets for most of his criticism is a substantive historical study, based largely on original research. It grew out of the research I am conducting for the book I am writing on the history of the American struggle with industrial pollution between 1840 and 1900. It explains how pollution regulations enacted by urban sanitary reformers in New York City during the 1860s and Chicago during the 1870s served as an important driver behind the meatpacking industry's adoption of improvements in waste utilization and pollution abatement.

As the article makes clear, a wide range of trades made use of slaughterhouse waste long before the 1860s and 70s, including the rendering, soap, candle, glue, and bone boiling industries. What it also shows, however, is that despite their utilization of this waste, all of these industries discharged a great deal of additional, non-utilized waste into the environment. This waste was much feared at the time because it emitted extremely noxious stenches that were believed to contribute to the miasmas that were then assumed to play a role in the spread of yellow fever, cholera, and other epidemic diseases. This pollution resulted from the decay of organic material located not only inside the slaughterhouses, rendering establishments, and soap, glue and bone boiling factories of the day, but also in the gutters into which these businesses discharged a great deal of blood and other liquid and semi-liquid wastes. The noxious stenches of decay also emanated from the overflowing barrels of liquid, solid and semi-solid slaughterhouse waste sitting in the streets, often for many days at a time, awaiting collection and transport to the businesses that would process them into fat, soap, glue, and other useful products, as well as from the barrels of unusable waste placed in the street by slaughterhouses and renderers, glue manufacturers and other animal waste processors awaiting collection by the offal haulers charged with the responsibility of disposing them (Rosen 2007, 298-301, 314-317, 322-325).

The article examines the regulatory movements that sanitary and civic reformers mounted to protect the people of New York and Chicago from what they perceived to be a serious threat to public health. The reformers mobilized to obtain the power they needed to impose technology-based pollution abatement regulation on the slaughtering, packing, and animal waste processing industries. The article describes how this regulation stimulated the modernization of the meatpacking industry, including the promotion of more vertical integration and tighter geographical co-location of slaughtering and animal waste processing, the development of larger, more mechanized independent businesses that focused on processing animal wastes, the movement of many of these dirty businesses out of the older, most densely settled, central parts of New York City and Chicago to more distant locations, the development of new ways of utilizing waste more efficiently, and improvements in stench abatement technologies. The article also

provides an analysis of the role that the New Jersey Chancery court played in shutting down a large packing house that was causing exceptionally noxious pollution problems and discusses how this ruling led to the establishment of a much better designed packing plant in a different New Jersey town that processed waste materials in much cleaner ways (Rosen 2007, 301-330).

In dismissing the validity of my research, Desrochers denigrates the legitimacy of the documentary sources that I use to describe not only the wide array of stench problems the meat industry was generating and the failure of many butchers, packers, and animal waste processors to take steps to abate these problems by improving their waste utilization methods, but also the impact the regulations and the New Jersey court decisions had on waste utilization and stench abatement. Yet Desrochers provides no counter-evidence to disprove any of my findings. He simply asserts that they are “incompatible with much available evidence” and “highly unlikely, based both on theory and evidence” (Desrochers 2012, 92). To bolster this claim, he points to a couple of additional examples of early waste reuse in the meat industry (92). None of these examples, however, impeach the credibility of my findings about the pollution problems associated with slaughtering and animal waste processing and the role that regulation played in forcing the industry to improve the extent and methods by which it utilized the wastes that were responsible for its stench. His cases are simply additional, early examples of waste reuse in the meat industry.

The “theory” on which he bases his claim that my findings are “unlikely” is also flawed. Desrochers assumes that in the supposedly *laissez faire*, regulation-free markets of nineteenth- and early twentieth-century Britain and the U.S., economic self-interest would compel profit-maximizing manufacturers to search for ways to derive economic gain from their wastes and that “over time, wasteful firms would be driven out of business or forced to adapt by their more innovative competitors who created wealth out of industrial waste” (Desrochers 2002, 1047). Ergo, waste utilization, already common in the 1860s and 70s according to his sources, must naturally have become very widespread “in virtually all industries” (Desrochers 2009, 5).

Leaving aside the question of whether pollution regulation was actually as non-existent in this period as Desrochers assumes (a point my article challenges), the problem is that his simple, cost-benefit, logic-of-the-free-market model fails to take into account the high costs of developing, procuring, and installing technologies for separating the materials in factory waste streams and processing them to get them into forms where they could be used as feedstocks for new manufacturing processes. His free-market logic also fails to take into account the low, sometimes practically non-existent, cost of discharging industrial waste into the air and water and depositing it on land in the 1800s and early 1900s. Waste

utilization was far from an inevitably profitable free lunch. While rational cost-benefit analysis clearly led some manufacturers to engage in some kinds waste utilization, in other cases it led rational, profit-maximizing manufacturers to choose the opposite course: waste discharge and pollution, even when technologies for utilizing waste were available, which they often were not. The evidence of this is in the industrial waste that polluted rivers and streams and the factory smoke and toxic fumes that polluted the air (Kirkwood 1876; Barber 1884; Whipple 1908, 153-169; Colten 1985; Hurley 1994; Travis 2002; Stradling 1999; Thorsheim 2006; Maysilles 2011; Tarr 2002).

The fact that industrial air and water pollution emissions are what economists call externalities further undermines Desrochers' contention that the free markets of nineteenth- and early twentieth-century Britain and the U.S. produced extensive, welfare-maximizing amounts of industrial waste utilization. As economists well understand, externalities are market imperfections that prevent prices from capturing accurate information about the cost of production by distributing costs away from the parties to a market exchange (in this case, manufacturers considering the purchase of equipment to separate and convert wastes to useful products) to bystanders, in this case the people, wildlife, and the natural world harmed by exposure their waste discharges. By distorting prices, externalities screw up allocative efficiency, preventing the market's so-called "invisible hand" from producing optimal, welfare maximizing outcomes (Pindyck and Rubinfeld 1989, 617-646).

Desrochers' tendency to let conjecture get in the way of the facts is also evident in the other fault he finds with my article. Complaining that I do not understand the true nature of electoral politics in mid nineteenth-century cities, he argues that the regulations could not have had the impact I argued they did, because, he asserts, the meat packers and other businessmen affected by the pollution regulations I described would have wanted "to avoid coming under the direct control of political figures such as 'Boss Tweed.'" In an attempt to further trivialize the regulations' impact, Desrochers also suggests that "even if saint-like reformers spearheaded public health initiatives, the powers of health officials might have been appropriated in time by individuals of lesser purity who might have then used various means to extract bribes, such as controlling both the access and the size of operations in state-run abattoirs." (Desrochers 2012, 93)

In addition to being pure speculation on Desrochers' part, these contentions are factually wrong. As the article makes clear, the reformers wielded their regulatory power as successfully as they did in large part because they succeeded in embedding the regulations in policies that reduced their cities' political machines' corrupt and incompetent control over public health administration. The New York Metropolitan Board of Health was a state agency created by the New York State

legislature at the behest of the reformers (after years of lobbying) who were as anti-machine as they were pro-sanitary reform. The legislature endowed the new Board with path-breaking independence from Tammany Hall as well as with important new regulatory powers to help them to fight the epidemic diseases ravaging the city. The Governor appointed leading sanitary reformers to leadership positions on the Board, and they in turn appointed a professional staff of physicians to carry out their sanitary regulations. The institution of the Chicago regulations followed years of struggle that led to the enactment of a new municipal charter and other good-government reforms (Rosen 2007).

Equally important, the regulations enacted in New York City and Chicago discussed in this article did not produce even one “state-run” abattoir. Instead, they stimulated the construction of more, large, privately owned pork- and beef-packing plants. To abate stench, these privately owned packing plants not only were generally fitted out with more and better waste processing and stench abatement equipment than the ones they replaced, but also were more vertically integrated, bringing more kinds of animal waste process into close proximity and tighter coordination with the slaughtering of animals to reduce the opportunity for slaughterhouse waste to decay and stink while awaiting processing into useful products. American sanitarians often called the best-designed and equipped of these businesses “abattoirs,” in homage to the large, compulsory, government-operated slaughterhouses instituted in France by sanitary reformers there. They did so, however, to distinguish them from more conventional packing plants, not because they were compulsory or government-owned or -operated. The sanitary abattoir constructed in Harsimus, New Jersey, was also privately owned and operated, as the article plainly states, by a subsidiary of the Pennsylvania Railroad Company (Rosen 2007).

In short, Desrochers’ criticism of this article is characterized by some of the very problems that Boons called out in his critique of Desrochers’ work in his JIE piece (Boons 2008). Desrochers either dismisses the legitimacy of the parts of the historical record that do not fit his preconceptions—doing so on the bases of plausible-sounding but historically incorrect conjecture or ill-conceived reasoning supposedly based in economic theory—or he ignores those parts of the historical record altogether. Let me be clear: Like Boons, I believe Desrochers has made a significant contribution by bringing to light a number of important historical documents that draw attention to the existence of techniques that businesses in a range of industries developed to utilize their wastes long before modern industrial ecologists began discussing the importance of moving our modern industrial system toward more environmentally sustainable, closed-loop production. To my knowledge, he was the first scholar to publish a peer reviewed article on the history of a topic that is not only very central to the field of industrial ecology, but also

interesting to business and environmental historians (Desrochers 2000).² The problem with his work as a whole is that he has over-generalized from these sources, extrapolating conclusions about the extent and causation of industrial waste use that are overly simplistic—and that, as his critique of my work indicates, he tends to ignore or dismiss evidence that conflicts, rather than figuring out how to integrate it into his own thinking so as to deepen his analysis.

As Boons pointed out in his JIE article, several of Desrochers' own sources recognized that waste re-use was far from universal in Great Britain, despite its free market. This includes Simmonds, the title of whose 1862 book, "Waste Products and Undeveloped Substances; or *Hints for Enterprise in Neglected Fields*" (Boons' emphasis) is a clear sign that Simmonds was concerned about this failing, as well as Talbot (1919) who discussed British reluctance to profit from the exploitation of waste in the chemical and slaughterhouse industries. It also includes Kershaw (1928) who discussed how waste utilization boomed in Britain during World War I only to fall off drastically after the war ended (Boons 2008, 149-152). Desrochers tries to diminish the significance of Boons' analysis of Talbot's writings by discussing the most appropriate way to interpret Talbot's treatment of German waste utilization during World War I, concluding that Talbot's discussion of the role of the state reflected the "increasingly dominant mistaken perspectives of his time and cannot be used as evidence that governmental planning is a more desirable way to coordinate inter-firm recovery linkages" (Desrochers 2012, 91). However, he fails to respond to the substance of Boons' criticism: that Talbot expressed concern about the failure of many British manufacturers to maximize profit by installing the state-of-the-art waste recovery technologies in use elsewhere. And he does not even attempt to respond to Boons' observations regarding Simmons and Kershaw.

Like Talbot and Kershaw, American commentators in this period often expressed concern about American manufacturers' lack of interest in exploiting what Francis Hall called the "MONEY IN THE JUNK PILE" (Hall 1919, 327; capitalization in original). C. B. Auel, for example, started a 1917 article on the subject in *Industrial Management* by observing: "It is a fact that in manufacturing industries, more especially among the smaller ones, considerable quantities of materials of one kind and another find their premature way to the scrap pile" (Auel 1917, 75). In a 1919 article in the same journal, H. E. Howe suggested some of the reasons companies were not utilizing these wastes. These included "industries so prosperous, so well established that they can ignore wastes," businesses that refused to "employ competent chemists and engineers to show the way," as well as managers

2. Indeed, I would have cited this piece in my early agenda-setting articles had I been aware of it, but it was not published till long after they were written.

who “look upon waste utilization as a new field so far from their experience that they dare not enter.” Significantly, from the viewpoint of Desrochers’ insistence on the role of the market’s invisible hand, Howe included economic factors in his list of barriers: “Many wastes do not occur in sufficient quantity at any one spot to make their use possible, or the cost of collection and storage defeats the project” (Howe 1919, 93). In his 1919 article in *Chemical and Metallurgical Engineering*, Hall suggested yet another reason manufacturers did not reuse their wastes, also economic in nature: “At all times, in America particular, the general slogan has been ‘production,’ ‘get out the product.’ With works’ executives, superintendents, foremen and leaders all constantly absorbed in getting greater production, it is not strange that the humble but highly profitable task of utilizing any accruing wastes to the same degree of efficiency should be neglected” (Hall 1919, 326).

In conclusion, I want to emphasize the complexity of this issue. As the evidence Boons and I have uncovered suggest, historians still have a great deal to learn about the history of industrial waste reuse. To do justice to this important subject, we will need to investigate the barriers that discouraged manufacturers from using their wastes, as well as the full range of drivers stimulating and encouraging them to do so, including regulatory and other public policies, as well as economic self-interest. As Hall’s and Howe’s comments regarding the barriers indicate, the cultural and personal beliefs of managers also influenced management decisions regarding waste utilization. Historians need to examine their impacts as well. We should investigate the interactions and tensions between these factors, rather than getting hung up arguing which were more important. They were all important. And perhaps most important, as Sellers and I pointed out over ten years ago, we need to “be sensitive to the fact that individual managers at different companies typically exhibited a range of attitudes toward environmental issues. Management attitudes and practices also varied across different industries. We need to try to understand the reasons for these differences as well analyze their consequences—for the development of business, as well as the evolution of the natural world” (Rosen and Sellers 1999, 593).

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Race, Ethnicity, and Baseball Card Prices: A Replication, Correction, and Extension of Hewitt, Muñoz, Oliver, and Regoli

David W. Findlay¹ and John M. Santos²

[LINK TO ABSTRACT](#)



Since Pascal and Rapping's (1972) seminal article, scholars have given much attention to racial and ethnic discrimination in professional sports. Because high-quality performance statistics are so accessible, professional sports is a great area for testing discrimination. Following Becker (1971), scholars consider discrimination by other players (employee discrimination), owners (employer discrimination), and fans (customer discrimination). Kahn (1991a, 2000) has provided excellent reviews of the literature on discrimination in professional sports.

Our paper investigates whether consumers in the secondary market for baseball cards³ are willing to pay more for cards of

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2. Robert Morris University, Chicago, IL 60605. We thank two anonymous referees for helpful comments and suggestions.

3. All cards pictured are among those used in the analysis. The authors would like to thank The Topps Company for its assistance. Images of Topps baseball cards used courtesy of The Topps Company, Inc. For more information about The Topps Company, please see their website at www.topps.com.

players of a particular race or ethnicity, holding performance and card availability constant. The issue is important. Becker and others have argued that discrimination based on racial or ethnic preferences by employers is unlikely to persist in the long-run in competitive markets as the discriminating employers face higher production costs than non-discriminating employers. Customer discrimination, however, can potentially persist under competitive conditions as employers are able to pass along the higher costs to customers willing to pay a premium to indulge their racial or ethnic preferences. Kahn (1991b) has demonstrated that customer discrimination, under certain conditions, can cause persistent wage differentials in competitive markets.

The results of prior empirical studies of the baseball card market and discrimination are mixed. Evidence that black or Hispanic players with equivalent performance statistics hold lower card prices is found by Nardinelli and Simon (1990), Andersen and La Croix (1991), Gabriel, Johnson, and Stanton (1999), and Fort and Gill (2000). In contrast, evidence that race and ethnicity have little effect on card prices is found by Gabriel, Johnson, and Stanton (1995) and McGarrity, Palmer, and Poitras (1999). Scahill (2005) obtains evidence of both racial and ethnic discrimination in the baseball card market, but he notes that the negative effects of player race and ethnicity on card prices disappear in the more recent years of his sample.



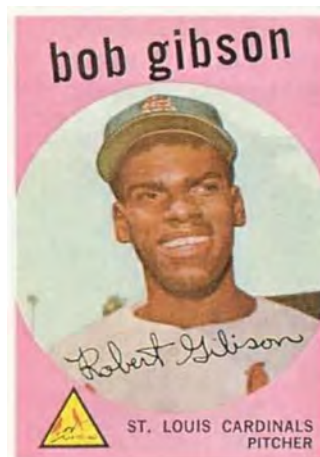
We add to this literature by correcting, replicating, and extending the approach of another paper, which we introduce in the next section. Our paper offers baseball lovers the chance to mix the pleasures of empirical economics with references to great heroes of the game. To readers generally, it offers improved results on the question of whether race or ethnicity affects how much card buyers are willing to pay to own the card of the hero.

Summary of Hewitt, Muñoz, Oliver, and Regoli (2005)

Hewitt, Muñoz, Oliver, and Regoli (2005) examine the effects of the race of the baseball player on the price of his rookie card. In creating their sample of players, Hewitt, Muñoz, Oliver, and Regoli (hereafter HMOR) include only those

players who were elected to the National Baseball Hall of Fame prior to 2004. As Jackie Robinson broke the race barrier in 1947, HMOR exclude players whose rookie cards were issued prior to 1948; they also exclude five Hispanic players. The result is a sample of 51 players where blacks account for 2 of the 19 pitchers and 16 of the 32 hitters.⁴

The dependent variable in their study is the price of each player's rookie card as reported in the April 2003 issue of *Beckett Baseball Card Monthly*.⁵ HMOR hypothesize that card prices may be affected by player performance, card availability, and player race. HMOR (415) use the statistic Total Baseball Ranking (TBR) as their measure of player performance, and they report that their data source is the 2001 issue of *Total Baseball* (Thorn, Palmer, and Gershman 2001). For pitchers, Total Baseball Ranking equals the pitcher's Total Pitcher Index (TPI). For hitters, Total Baseball Ranking equals the hitter's Total Player Rating (TPR). Leaving the details aside,⁶ we highlight only that the TPI data for a pitcher and the TPR data for a hitter are reported in Thorn, Palmer, and Gershman (2001) by season and by career.⁷ HMOR use the career totals.



Throughout our paper, even in our extensions, we keep to the parsimonious spirit of the model specified by HMOR—the model is parsimonious in that it uses for each player a single performance statistic. In this sense we follow HMOR and do not investigate disaggregated measures of player performance.

HMOR (416) also hypothesize that the “value [price] of a baseball card is affected by how scarce or rare it is.” The authors use data obtained from the April 2003 Professional Sports Authenticator (PSA) Population Report to measure

4. See HMOR (2005) for a detailed discussion of the criteria.

5. The April 2003 issue reports two prices for each card, a LO price and a HI price. A comparison of the data reported in HMOR with that found in *Beckett* (2003) reveals that HMOR use the HI price data as their dependent variable.

6. Thorn, Palmer, and Gershman (2001, 2501) define the Total Pitcher Index as “the sum of a pitcher's Pitching Runs—expressed as Ranking Runs, employing the same formula used to compute Relief Ranking Runs—Batting Runs (in the AL since 1973, zero), and Fielding Runs, all divided by the Runs per Win factor for that year (generally around 10, historically in the 9-11 range).” They define the Total Player Rating as “the sum of a player's Adjusted Batting Runs, Fielding Runs, and Base Stealing Runs, minus his positional adjustment, all divided by the Runs per Win factor for that year (generally around 10, historically in the 9-11 range)” (2501). For an even more detailed discussion of the construction of TPI and TPR, see Thorn, Palmer, and Gershman (2001).

7. The career value of a pitcher's TPI is simply the sum of the pitcher's yearly TPI statistics over the course of his career. The career value of a hitter's TPR is calculated similarly.

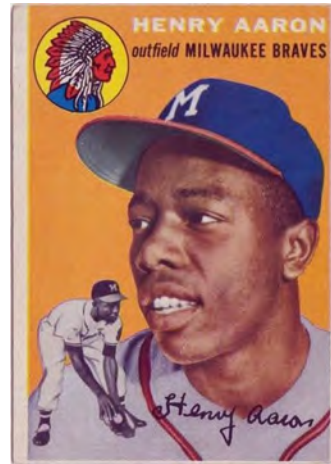
card availability. Professional Sports Authenticator (psacard.com) provides information about card prices and documents the number and quality of the cards that it evaluates. HMOR (416) “constructed a measure of availability based on how many rookie cards of each player in near mint or better condition were reported [by PSA] to exist.”⁸

HMOR hypothesize that player race may affect rookie card prices. A race dummy variable is constructed where Black equals one if a player was black and equals zero otherwise. As HMOR omitted the five Hispanic players from their sample, the reference group in their study is white players.

HMOR estimate two specifications of a baseball card price equation to determine whether player race affects the card prices of the 51 rookie cards. They find that card prices are higher for those players with greater career performance. The results also indicate that increases in card availability cause reductions in card prices. After controlling for their measures of player performance and card availability, HMOR find that player race has no statistically significant effect on card prices in either of their specifications and suggest (419) “the possibility that Black superstars or sports heroes are seen on the same plane as Whites. To put it differently, on some level, the evaluation of the performance of Black [Hall of Fame] members transcends racial consideration.”

The Sources and Errors of HMOR’s Data

Our Table 1 includes all information reported in HMOR’s Table 1 and additional data in the final three columns. We applaud HMOR for reporting their data as it facilitates replication of their results. The first column in Table 1 lists the 51 players, Hank Aaron to Robin Yount. The second column includes the year of the card, the manufacturer (Bowman, Fleer Update, Leaf, and Topps), and card number. The third column includes the April 2003 HI price reported in *Beckett* (2003). The fourth column gives the PSA availability data as reported by HMOR. The fifth column includes the Total Pitcher Index or Total Player Rating reported by HMOR.



8. PSA reports the number of times it has evaluated each card for each quality category. These data are updated as PSA evaluates additional cards.

RACE, ETHNICITY, AND BASEBALL CARD PRICES

TABLE 1.

Name	Card	Price	Availability	HMOR Performance	TB (2001) Performance	Difference in %	Difference in Rank
Aaron, Hank	1954 T #128	1500	164	90.1	89.1	1.1	0
Banks, Ernie	1954 T #94	800	121	24.9	26.9	-7.4	-4
Bench, Johnny	1968 T #247	125	239	30.2	25.6	18	5
Berra, Yogi	1948 B #6	450	70	34.8	37.4	-7	-4
Brett, George	1975 T #228	80	1042	43.9	40	9.8	4
Brock, Lou	1962 T #387	125	111	2	10.5	-81	-1
Campanella, Roy	1949 B #84	700	90	22.2	22.5	-1.3	-2
Carlton, Steve	1965 T #477	150	114	35.6	33.7	5.6	6
Carter, Gary	1975 T #620	15	74	30.1	30.1	0	-3
Drysdale, Don	1957 T #18	225	83	34.7	34.6	0.3	0
Fingers, Rollie	1969 T #597	40	109	22.5	22.5	0	0
Fisk, Carlton	1972 T #79	50	96	33.4	24.9	34.1	13
Ford, Whitey	1951 B #1	1400	35	39.2	39.2	0	2
Gibson, Bob	1959 T #514	200	84	46.3	43.7	5.9	4
Hunter, Jim	1965 T #526	80	136	6.9	6	15	1
Jackson, Reggie	1969 T #260	250	252	44	42.2	4.3	3
Jenkins, Fergie	1966 T #254	70	146	32.1	29.8	7.7	3
Kaline, Al	1954 T #201	600	119	45.9	45.2	1.5	1
Killebrew, Harmon	1955 T #124	250	159	32.8	27.3	20.1	6
Kiner, Ralph	1948 B #3	150	48	27	25.9	4.2	-1
Koufax, Sandy	1955 T #123	800	179	20	20.5	-2.4	0
Lemon, Bob	1949 B #238	200	13	35.2	38.4	-8.3	-4
Mantle, Mickey	1951 B #253	8500	53	77.4	77.4	0	0
Mathews, Eddie	1952 T #407	8000	15	52.2	52.2	0	0
Mays, Willie	1951 B #305	3000	56	95.9	95.9	0	0
McCovey, Willie	1960 T #316	125	64	38.1	37.3	2.1	4
Morgan, Joe	1965 T #16	60	29	63.9	54.8	16.6	0
Murray, Eddie	1978 T #36	80	1313	34.1	34.1	0	0
Musial, Stan	1948 B #36	800	49	70.1	71.5	-2	-1
Niekro, Phil	1964 T #541	80	37	38	33.8	12.4	9
Palmer, Jim	1966 T #126	100	200	36.4	34.9	4.3	2
Perry, Gaylord	1962 T #199	80 (85)	93	36.8	34.9	5.4	4
Puckett, Kirby	1984 F #93	100	1416	32.3	32.3	0	-1
Roberts, Robin	1949 B #46	250	39	25.9	25.9	0	-1
Robinson, Brooks	1957 T #328	350	214	23.3	20.1	15.9	4
Robinson, Frank	1957 T #35	200	162	71	67.6	5	1
Robinson, Jackie	1949 L #79	1500 (1100)	81	33.3	32	4.1	2
Ryan, Nolan	1968 T #177	600	398	14.2	20.7	-31.4	-3
Schmidt, Mike	1973 T #615	150	361	77.9	79.6	-2.1	0
Seaver, Tom	1967 T #581	500	264	51.2	48.7	5.1	1
Smith, Ozzie	1979 T #116	80	796	42.4	42.4	0	-1
Snider, Duke	1949 B #226	900	55	24.3	24.1	0.8	0
Spahn, Warren	1948 B #18	300	43	43.1	50.2	-14.1	-6
Stargell, Willie	1963 T #553	125	85	31.6	31.6	0	-1
Sutton, Don	1966 T #288	50	45	13.7	13.2	3.8	0
Wilhelm, Hoyt	1952 T #392	750	38	29.2	40.8	-28.4	-21
Williams, Billy	1961 T #141	60	215	30.1	30.1	0	-3
Winfield, Dave	1974 T #456	40	699	36.9	36.9	0	3
Wynn, Early	1949 B #110	125	59	18.2	17.1	6.4	1
Yastrzemski, Carl	1960 T #148	150	280	46.1	46.7	-1.3	0
Yount, Robin	1975 T #223	50	853	31.4	46	-31.7	-22

Notes: [a] B, F, L, and T refer to Bowman, Fleer Update, Leaf, and Topps cards, respectively. [b] We give the correct prices for Perry and J. Robinson (80 and 1500) and include in parentheses the incorrect price data reported in HMOR for those players (85 and 1100). [c] *Difference in %* is the percentage point difference between the HMOR performance data and the *Total Baseball* (2001) performance data. [d] *Difference in Rank* measures the extent to which the player's relative performance ranking changes when performance data reported in HMOR are used.

A casual inspection of the performance data reported by HMOR for pitchers indicates that TPI ranges from a high of 51.2 for Tom Seaver to a low of 6.9 for Jim Hunter. For hitters, the TPR ranges from a high of 95.9 for Willie Mays to a low of 2.0 for Lou Brock. We offer these casual observations because, when we first read the HMOR article in early 2010, it was the low performance value for Lou Brock that caught our eye. Brock is the only hitter in HMOR's table whose TPR statistic is less than 20; Roy Campanella has the next highest TPR statistic, 22.2.

Despite our initial ignorance about the TPI and TPR statistics, we decided to compare Brock's TPR figure reported by HMOR with that found in Thorn, Palmer, and Gershman (2001)—the same source of performance data reportedly used by HMOR.⁹ Little did we know at the time that this would start a process where we would discover a large number of discrepancies and puzzles. We immediately discovered that Brock's career TPR, as found in HMOR's data source, equals 10.5 and not 2.0 as HMOR reported. We then decided to obtain the performance data for the remaining 50 players using the same source as HMOR.¹⁰ For all 51 players in the sample, we consulted every section of the data source (as outlined in footnote 10) to record and to verify the performance data. In so doing, we discovered numerous differences between the data found in HMOR and those in Thorn, Palmer, and Gershman (2001): 38 of the 51 performance data observations in HMOR differ from those found in the 2001 edition of *Total Baseball*—HMOR's reported data source. In other words, nearly 75 percent of the performance data observations used by HMOR were apparently incorrect. We include in column 6 in Table 1 (see *TB (2001) Performance*) the correct performance data as found in the 2001 edition of *Total Baseball*.¹¹



We constructed two additional variables in Table 1 to measure the magnitude of these performance data errors. The seventh column (*Difference in %*) includes the percentage point difference between the HMOR performance data and the

9. See pages 415, 416, and 425 in HMOR where HMOR discuss their performance data source.

10. The TPI data can be obtained in Thorn, Palmer, and Gershman (2001) by examining each pitcher's career statistics in the Pitcher Register section (pp. 1307-1957) or on the following pages: (1) p. 2317; (2) pp. 2317-2318; (3) pp. 2319-2320; and (4) pp. 2320-2321. The TPR data can be obtained from the same source by examining each hitter's career statistics in the Player Register section (pp. 553-1306) or on the following pages: (1) pp. 2303-2304; (2) pp. 2304-2305; (3) pp. 2319-2320; and (4) pp. 2320-2321.

11. We did discover one discrepancy in the 2001 issue of *Total Baseball* for pitcher Bob Lemon. His Total Baseball Ranking is reported to be 37.9 (see p. 2320) while his Total Pitcher Index is reported to be 38.4 (see pages 1587, 2317, and 2318). We use his TPI value of 38.4 in our paper.

performance data reported in *Total Baseball*. These errors range, in absolute value, from 1.1% for Hank Aaron to 81.0% for Lou Brock. The mean absolute value of these data errors measured in percentage terms is 11.3%. We also obtained a performance ranking of all 51 players using the HMOR data and the data we obtained from *Total Baseball* (2001). The last column (*Difference in Rank*) reports the extent to which each player's ranking changes when the data from HMOR are used. For example, the rankings of Carlton Fisk, Hoyt Wilhelm, and Robin Yount change rather dramatically.

Given the data discrepancies between HMOR and *Total Baseball* (2001), we decided to check the remaining data reported by HMOR. To verify the accuracy of the price data, we cross-referenced the card information reported by HMOR with the price data found in *Beckett* (2003), the same data source used by HMOR. We discovered two price data errors: (1) Gaylord Perry's 1962 Topps rookie card price is \$80 (not \$85); and (2) Jackie Robinson's 1949 Leaf rookie card price is \$1500 (not \$1100).¹² We then attempted to check the availability data. To do so, we contacted PSA and learned that they do not archive the data nor keep old issues of their Population Report; therefore, it is impossible to verify the accuracy of the availability data reported in HMOR.¹³

Our discovery of the data errors made us wonder whether HMOR's results are affected by these errors. Could the effects of race change? This is not a matter of mere curiosity for it speaks to the issue of racial discrimination.



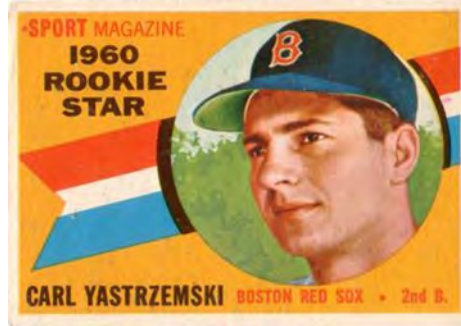
In addition, we were perplexed by HMOR's explicit decision to remove Hispanic players from their sample. That decision causes an already small sample to be nearly 10 percent smaller than it otherwise would be. Second, the removal could potentially impact the estimated effects of race on card prices. Finally, by removing Hispanics from the sample, the authors could not examine the effects of player ethnicity on card prices. The latter implication was the most perplexing to us given that one would think that researchers examining customer discrimination would include a group of players, in this case Hispanic players, for whom such dis-

12. We discuss in more detail below what we eventually learned about the price data error for Jackie Robinson's rookie card.

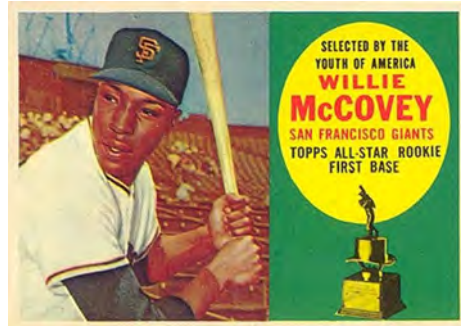
13. While not data errors, we also discovered several card information errors in HMOR. Johnny Bench's card number is 247 (not 447). Steve Carlton's rookie card was issued in 1965 (not 1975). Al Kaline's card number is 201 (not 210). And finally, Willie Mays' card number is 305 (not 395).

crimination has already been found to exist in several previous studies of the baseball card market.

At this point in 2010, we believed that the errors were simply the result of transcription errors. We decided to write a paper that corrects, replicates, and extends the analysis of HMOR. The obvious outlet for this paper was the *Journal of Sport & Social Issues*, the same journal that published HMOR's 2005 paper. We completed the paper during the summer of 2011 and submitted it to the *Journal of Sport & Social Issues* on September 1, 2011. On September 20, 2011, we received an email from the Editor in Chief of the journal informing us that "Unfortunately, at this time, this article is not a good fit with the journal and I have decided against sending it out for review."¹⁴



We immediately submitted the paper to *Econ Journal Watch*, and an editor there subsequently asked us to investigate the data errors in more detail. As we investigated, we recalled that HMOR cite Bill Deane's essay, "Awards and Honors"; the Deane essay was published in the 1989 issue of *Total Baseball*. We never imagined that HMOR would have used different editions of *Total Baseball* as their source of the performance data. During our initial investigation of the TBR data, we learned that *Total Baseball* revises the TBR statistics over time (see pages 539-542 of the 2001 edition). One, therefore, cannot pool or "mix" TBR data from different editions.



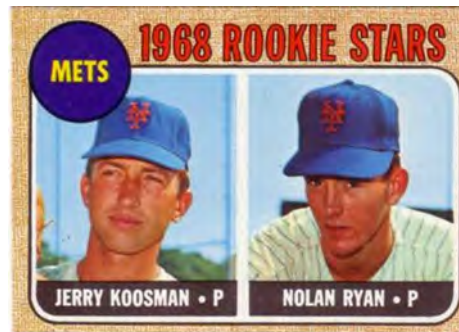
Without any other explanation for the data errors, we decided to obtain the performance data for all 51 players from the only other edition of *Total Baseball* cited by HMOR.¹⁵ We discovered the following. The TBR values for only 13 players

14. We have had our papers rejected for publication in the past and anticipate that future papers will be rejected for publication as well. However, we were surprised and a bit perplexed that a paper that documents such a large number of data errors, in addition to exploring a number of extensions, of a previously published article in the same journal would not even be sent out for review.

15. We also obtained the 1991 and 1995 editions of *Total Baseball* to determine if HMOR may have relied on these other editions for their performance data. None of the TBR observations reported in HMOR equals the values found in these two editions of *Total Baseball*.

in HMOR's sample are equal to the values found in *Total Baseball* (2001). The TBR values for 38 players are equal to the values found in *Total Baseball* (1989).¹⁶ For two of the players in the sample (George Brett and Frank Robinson), the TBR values used by HMOR are not equal to any of the values published in the 1989, 1991, 1995, and 2001 editions of *Total Baseball*. We believe that these two errors are transcription errors because the values used by HMOR are closest to the values reported in *Total Baseball* (1989). We thus discovered that HMOR used two different sources for their performance data and, therefore, pooled performance data that are revised over time.

There is an additional implication from HMOR's use of the 1989 issue of *Total Baseball*. By obtaining data from this earlier source, HMOR have performance data only through the 1988 season. There are ten players in their sample whose careers continued *after* 1988. Of these ten players, HMOR use the 1989 issue for five of them, namely, George Brett (who retired in 1993), Carlton Fisk (1993), Nolan Ryan (1993), Mike Schmidt (1989), and Robin Yount (1993). For these five players, career performance is incomplete in the data that HMOR used to estimate their price equations.



Also, the Jackie Robinson rookie card in HMOR is the 1949 Leaf card (#79). HMOR list the price of that card as \$1100. We discovered that Jackie Robinson had another rookie card issued in 1949 by Bowman (#50). As reported in *Beckett* (2003), the price of the Leaf card is \$1500 and the price the Bowman card is \$1100. We believe that HMOR incorrectly used the Bowman price rather than the Leaf price.¹⁷

16. As it turns out, the career total TBR observations for two players in the sample (Willie Stargell and Robin Roberts) are the same in the 1989 and 2001 editions of *Total Baseball*. It is a coincidence that the career totals for Stargell and Roberts are identical across the two editions because their annual observations are not equal in the two editions of *Total Baseball*. This, of course, implies that the revised calculations used to construct the more recent TBR values caused the career total TBR statistics to change for the other 49 players in the sample.

17. The incorrect use of the Bowman price has a potentially additional implication for their results. HMOR also obtain availability data for each card in their sample. It is possible that HMOR included in their study the availability data for the Leaf card rather than the availability data for the Bowman card. As noted previously, because PSA does not archive the data, we could not determine whether HMOR used the availability data for Jackie Robinson's Leaf or Bowman card.

A Replication and Correction of HMOR

We estimate the same two specifications of HMOR’s price equation:

- (1) $\text{Price} = a_0 + a_1\text{Availability} + a_2\text{Performance} + a_3\text{Black}$
- (2) $\text{Price} = b_0 + b_1\text{Availability} + b_2\text{Performance} + b_3\text{Black} + b_4\text{Black*Performance}$

where Price is the natural log of the rookie card price; Availability is the natural log of the card availability obtained from PSA; Performance is the TPI/TPR for pitchers/hitters, respectively; and Black is a dummy variable equal to one if the player is black and zero otherwise. For equation (1), any effect of race on card prices is assumed to be independent of player performance. For equation (2), the inclusion of the interaction term, Black*Performance, allows for any race effects to vary by player performance. We estimate the equations first using the data reported by HMOR and then using the corrected data reported in Table 1.

We are able to replicate HMOR’s results when we use the data reported by HMOR. This is a result in and of itself given, as noted by Winfree (2010, 48), the “difficulties in replicating results in sports economics.” Winfree further explains “that there can be many roadblocks to replicating the results of any empirical study” (ibid.). We again applaud HMOR for removing one of those roadblocks by reporting their data. Furthermore, had HMOR never reported their data, we likely would not have discovered their data and measurement errors.

When using the correct performance and price data, none of the estimated coefficients on the race variables, Black or Black*Performance, is statistically significant. Our results, using the correct data, imply that player race has no effect on card prices—a result consistent with that originally reported by HMOR.

Using least squares regression to find the equation of best fit, we obtain the following estimate of equation (1) when we use the correct data reported in Table 1¹⁸:

$$(3) \text{ Price} = 6.265 - 0.411\text{Availability} + 0.030\text{Performance} - 0.098\text{Black} \quad R^2 = 0.30$$

(7.43) (2.60) (3.44) (0.27)

We show in the supplement to this paper [\[link\]](#) that the estimated coefficient for the Black dummy variable is not statistically significant even at the 0.10 level. Specifically, the p-value for the t-statistic on the estimated coefficient on the Black

18. We include in parentheses the absolute value of the corresponding t-statistic for each estimated coefficient.

dummy variable in equation (3) indicates that one could only conclude that the Black coefficient is significantly less than 0 at a .393 significance level. Thus we find a lack of evidence that a player's race adversely affects the price of his rookie card, holding constant the effects of player performance and card availability. Although our results indicate that player race has no statistically significant effect on baseball card prices, we are mindful of Ziliak and McCloskey (2004, 334) who note that "statistical significance, to put it shortly, is neither necessary nor sufficient for a finding to be *economically* important." The estimated coefficient on the Black dummy variable indicates that the price of a black player's rookie card, all else fixed, is 9.3% lower than that of an otherwise identical white player.¹⁹

We also examined whether our results were affected by the inclusion of Jackie Robinson in the HMOR sample. Jackie Robinson was an epic figure who transcends baseball. Furthermore, unlike the vast majority of the players in the sample, he started his professional career in the Negro Baseball League. And finally, as we discussed in footnote 17, HMOR's incorrect use of Jackie Robinson's Bowman rookie card price may have resulted in HMOR incorrectly using the availability data for the Leaf card rather than the availability data for the Bowman card. All of our previous results are basically the same after we remove Jackie Robinson from the sample. Specifically, the size and significance of all parameters are nearly identical to those obtained when Jackie Robinson is included in the sample.

The negative and significant estimated coefficient on card availability in equation (3) indicates, as expected, that increases in card availability lower the selling price of a player's rookie card. Of particular interest to economists is the magnitude of the estimated coefficient on availability. Since both Availability and Price are measured in log form, we can interpret our numerical estimate of the Availability coefficient as implying that a 1 percent reduction in card availability raises card prices by about 0.41 percent or, equivalently, that a 10 percent reduction in card availability raises card selling price by approximately 4.1 percent. The positive and significant estimated coefficient on Performance indicates, not surprisingly, that the baseball cards of players with higher career performance levels sell for a higher price in the secondary market.

At the end of equation (3), we report a well-known sample statistic, R^2 , which measures the percent of the sample variation in the dependent variable explained by an estimated equation. When we re-estimate HMOR's equation (1) after cor-

19. As noted by Halvorsen and Palmquist (1980), the appropriate interpretation of the coefficient of a dummy variable in a semilogarithmic regression equation can be calculated as $100(e^{\beta_d} - 1)$ where β_d represents the estimated coefficient of the dummy variable.

recting their reported 2003 data, our corrections raise the percent of variation in card prices explained by HMOR's basic model from 27 percent to 30 percent.²⁰

Extensions of HMOR

HMOR's basic model explains only 30 percent of the observed variation in rookie card prices using correct data. We sought a model of card prices that explains or predicts a greater percent.

Matching Price and Card Quality

HMOR state (416) that they use prices listed in *Beckett* (2003) that are "in near mint or mint condition."²¹ A related issue is HMOR's use of the availability data reported by Professional Sports Authenticator. HMOR note (416) that their "measure of availability [is] based on how many rookie cards of each player in near mint or better condition were reported to exist." However, we discovered that PSA determines the authenticity and quality of cards submitted. That is, PSA will grade (i.e., categorize) cards, for example, as excellent, near mint, near mint-mint, mint, and gem mint—each of which will receive the corresponding numerical score of 6, 7, 8, 9, and 10. Thus, the availability data used by HMOR represent the total number of cards rated by PSA as near mint or better. Their availability variable, therefore, is the sum of or, equivalently, an aggregate measure of all PSA-rated cards that are near mint, near mint-mint, mint, and gem mint.

Upon further investigation, we discovered that PSA also reports price data for cards with different grades. As noted in PSA's *Sports Market Report* (2003, 36), PSA's prices "represent average dealer selling prices for PSA-graded cards. [...] The prices that appear in Sports Market Report are for sportscards that have been graded and sold, [...]." The average selling prices listed by PSA, therefore,



20. When we re-estimated equation (1) using the data reported by HMOR, we were able to replicate their results and, therefore, obtained the same value of the R^2 statistic.

21. As we discovered, however, the prices they use are the HI prices reported by *Beckett*. To obtain prices of near mint or mint condition cards, one would have to use the "Price Guide Percentage by Grade" table found on p. 15 of the April 2003 issue to adjust the HI prices by quality. It is also important to note that these price guide percentages do vary over time.

correspond to cards that the rating company evaluates to be a specific quality (e.g., mint) and, therefore, do *not* represent an average price of, say, near mint or better cards. This information implies that the choice of the price data depends crucially on the type of PSA availability data one uses or creates. And given that different prices exist for different quality cards, the question naturally arises as to the extent to which the choice of price data series affects any model's ability to explain card prices.²²

At this point, we realized that HMOR do not investigate what is the appropriate price series for the aggregate card quality category they create. Additionally, by restricting their analysis to cards of this aggregate quality category, neither do they explore whether the magnitude of the availability effect on card prices varies by card quality. Since PSA does not archive availability data, we are unable to retrieve card availability by specific card quality for the 2003 data used by HMOR. However, for 2010, we obtained availability and card quality data in real-time (April 2010) from PSA. This allows us to explore the relationship between card availability and card prices across specific card quality categories.

2003 Data: Which Price Series Does HMOR's Availability Measure Best Explain?

Table 2 displays the percent of variation in rookie card prices explained by alternative specifications of the card price equation for the corrected 2003 data and for our update using 2010 data.²³ The first two rows show the percent of card prices explained by HMOR's basic model when we use HMOR's data and when we use the correct data, respectively. Row 3 shows the gains in percent of variation of card prices explained when we consider alternative price series and card availability pairings beyond HMOR's pairing (*Beckett* HI-PSA7 Plus).²⁴ Specifically, in columns 2, 3, and 4 for Alternate Model 1, we match for the 2003 data HMOR's availability measure with three different PSA price series. Judged by the percent of sample variation in card prices explained, HMOR's availability measure explains all three PSA price series better than the *Beckett* price series chosen by the authors. Additionally, as we show in the supplement to this article, the statistical significance

22. While one could argue that the PSA data serve as a proxy for the quantities of each card that exist in the secondary market for baseball cards, we must note the following. It is possible that the *same* card has been submitted to PSA by, say, five different individuals. PSA would then report a 5 for that card even though the same card has been submitted five different times.

23. As we discussed earlier in the paper, the percent of variation in rookie baseball card prices explained by each model specification is measured by the well-known sample statistic, R^2 (also called the multiple coefficient of determination).

24. PSA7 Plus equals the number of cards rated near mint or better.

of the availability effect on card prices also increases when any of the three PSA price series are matched with HMOR’s availability measure.

TABLE 2. Percent of Baseball Card Prices Explained

Price Series	<i>Beckett</i>	PSA7	PSA8	PSA9	<i>Beckett</i>	<i>Beckett</i>	PSA8	PSA9	
Year of Data	2003	2003	2003	2003	2010	2010	2010	2010	
Availability Measure	# of Cards Rated PSA7 or Higher	# of Cards Rated PSA7 or Higher	# of Cards Rated PSA7 or Higher	# of Cards Rated PSA7 or Higher	# of Cards Rated PSA7 or Higher	# of Cards Rated PSA8	# of Cards Rated PSA8	# of Cards Rated PSA9	
Source of Availability Data	HMOR	HMOR	HMOR	HMOR	PSA	PSA	PSA	PSA	
Row/Model	Column	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Replication of HMOR with HMOR Data [without Hispanics]	27%								
(2) HMOR Model with Corrected Data [without Hispanics]	30%								
(3) Alternate Model 1: Different Price and Availability Variables and Career Total Performance [without Hispanics]		37%	38%	33%	49%	52%	66%	69%	
(4) Alternate Model 2: Different Price and Availability Variables and Career Total Performance [with Hispanics]					49%	53%	66%	69%	
(5) Alternate Model 3: Different Price and Availability Variables and Per Season Performance [without Hispanics]	36%	40%	43%	34%	50%	53%	64%	68%	
(6) Alternate Model 4: Different Price and Availability Variables and Per Season Performance [with Hispanics]					50%	53%	64%	68%	
Notes: [a] <i>Beckett</i> equals the <i>Beckett</i> HI price. [b] PSA7 equals near mint. [c] PSA8 equals near mint-mint. [d] PSA9 equals mint. [e] To be precise, this table reports the percent of the variation in the natural log of baseball rookie card prices explained by each model as measured by the unadjusted multiple coefficient of determination (i.e., the R ² statistic).									

2010 Data: Which Price Series-Card Availability Pairing Best Explains Card Prices?

Until this point, we have used HMOR’s aggregate measure of card availability. For the 2010 data, we are able to create card availability categories, both by aggregated card quality levels (a la HMOR) and for disaggregated card

quality levels. We take advantage of our availability data set to estimate separate card price equations for different categories of card quality and to determine which price-availability pairing best explains variations in rookie card prices. We find that HMOR's price equation with their aggregate availability category explains 49 percent of the variation in 2010 rookie card prices as compared to 30 percent for the corrected 2003 data, indicating that HMOR's model fits the 2010 data better than the 2003 data. However, when we disaggregate card availability by specific card quality and match to the corresponding quality-specific PSA price series, the percent of rookie card prices explained rises sharply; see columns (7) and (8) for Alternate Model 1 in Table 2.

What Is the Responsiveness of Card Prices to Changes in Card Availability?

Our estimate of the magnitude of the effect of availability varies across the different card quality categories reported in Table 2.²⁵ For the 2003 availability data reported by HMOR, we find that a 10 percent reduction in availability of cards rated near mint or higher causes a 4.1 percent increase in card price when we measure price with the *Beckett* price series used by HMOR. In contrast, for the 2010 data, we find that when we appropriately match the aggregated or disaggregated PSA availability measure to the corresponding PSA price series, we can predict that a 10 percent reduction in availability in the secondary market causes about a 9 to 10 percent increase in market price.

The Curious Omission of Hispanics: Does Ethnicity Matter?

HMOR did not explore whether their important finding on race extended to Hispanic ethnicity in the matter of Luis Aparicio, Rod Carew, Roberto Clemente, Juan Marichal, and Tony Perez. For the 2010 data for which we have access to availability data, we added Aparicio, Carew, Clemente, Marichal, and Perez to our sample, raising the sample size of players from 51 to 56. We then created an additional dummy variable that equals one if the observed player is

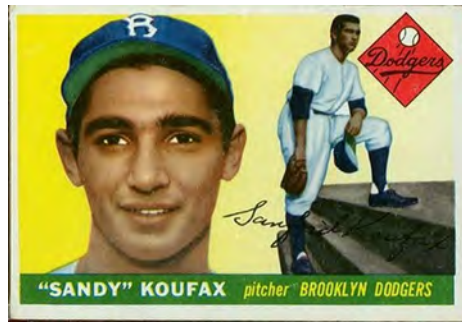


25. In the supplement to this article, we report and discuss the estimated equations behind the results in Table 2.

Hispanic and equals zero otherwise. The reference group in our sample is white players. As indicated in columns 5, 6, 7, and 8 for Alternate Models 1 and 2, the percent of variation in card prices explained is not greatly affected one way or the other when we add the five Hispanic players. Moreover, as the regression results we report in the supplement to this article show, we find very little change in the size or significance of the effects of player performance and card availability on card prices. Additionally, race remains statistically insignificant in all equations. Finally, we also find that there is no statistically significant effect of ethnicity on card prices. In general, our corrections and extensions show that neither race nor ethnicity has a statistically significant effect on card prices, and that the findings are robust to alternative pairings of price and availability measures.

Lifetime Player Performance: Career Totals or Average Per Season?

Our analysis to this point is based on the performance statistic used by HMOR, the *sum* of each player's TPI or TPR over the course of the player's career. An issue arises as to whether the underlying demand for these cards depends on how efficiently the player achieved his career totals. Jim Palmer and Gaylord Perry both have the same career TPI (34.9), but Palmer did it in 19 seasons while Perry did it in 22. In fact, Don Drysdale accumulated a slightly lower TPI (34.6) in just 14 seasons. Johnny Bench and Carlton Fisk had similar TPR statistics (25.6 and 24.9, respectively) with different career lengths—17 seasons for Bench and 24 seasons for Fisk. And finally, Kirby Puckett's career TPR statistic (32.3) was only slightly higher than Willie Stargell's (31.6). However, Puckett played in 9 fewer seasons than Stargell (12 versus 21). To examine this issue, we introduce a per season performance measure, either pitcher's TPI per season (TPI/seasons played) or hitter's TPR per season (TPR/seasons played). As row 5 (Alternate Model 3) of Table 2 shows for the 2003 data, the percent of variation in card price rises modestly when lifetime player performance is measured on a per season basis. For the 2010 data, however, the percent of card prices explained (with or without Hispanics) remains largely unchanged when we replace the career performance variable with the career per season average variable. Thus, we do not have a consistent answer across data sets as to whether baseball card market participants focus more on career or on per season achievement.



Willie Mays, Mickey Mantle, and the Guy Next-door



In this study we follow HMOR's approach of using a single performance statistic. Our study finds that race and ethnicity of baseball greats do not matter to the prices of rookie cards. As noted at the outset, other studies have found differently and others similarly. The test is an important one. Prices communicate information about market valuations.

Combining prices with data on performance and card quality and availability might also tell us something about values and race or ethnicity.

Our discovery of measurement errors in HMOR's data set together with the omission of Hispanics from their sample raised concerns about the sensitivity of their finding of the absence of customer discrimination in the market for baseball cards. He and McGarrity (2004, 89) caution that "when estimating models with small data sets, empirical research runs the risk that errors may be responsible for the conclusions that scholars draw." They conclude (97) that "in these cases, careful examination of the data and robustness estimation techniques can clearly improve the analysis." Our corrections and extensions paint a picture of a market in which card prices reflect career performance, independent of player race or ethnicity.

We know how great Willie Mays and Mickey Mantle were. Race does not appear to matter in this market. Perhaps race matters more when the individual's merit is less well known and people rely on their notions, often faulty, about how merit and race (or ethnicity) co-vary.

Appendix

A supplement to this paper ([link](#)) estimates various specifications of the card price equations used by Hewitt, Muñoz, Oliver, and Regoli (2005). An Excel file ([link](#)) contains data used in the analysis.

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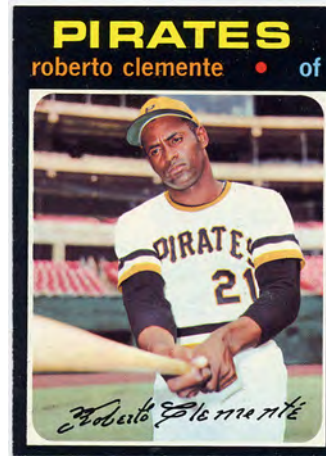


Beyond Race Cards in America's Pastime: An Appreciative Reply to Findlay and Santos

Robert Muñoz, Jr.¹

[LINK TO ABSTRACT](#)

I am one of the authors of the article—Hewitt, Muñoz, Oliver and Regoli (2005)—treated by David Findlay and John Santos (2012) in their piece on discrimination and the price of baseball cards.² I do not speak for my 2005 coauthors³, two of whom are now retired, but there is much reason to suppose they, like me, would salute Findlay and Santos for their fine work in correcting, replicating, and extending our investigation. Findlay's and Santos's examination and various analyses enrich and strengthen our findings and those of other scholars. Their article presents a wonderful opportunity to revisit an important and fascinating area of research in American society—baseball.



Findlay and Santos (2012) examine the data in ways that advance our parsimonious model. They undertake a wonderful and vigorous approach to both the data and the statistical estimates. Indeed, their examination of the relationship among price series, availability, and card quality explains a much larger percentage

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2. Images of Topps baseball cards used courtesy of The Topps Company, Inc. For more information about The Topps Company, please see their website at www.topps.com.

3. Oliver's role in the research focused on design and analysis of the statistical data.

of the variation in rookie card prices. What is less clear, perhaps, is the relation of these variables to the focus of our research question with respect to these variables, particularly their impact on the relationship between the race of a player and the price of his rookie card.

The examination of the impact of race on baseball card values is a research question that has been examined in various ways with varying results depending on sample and methodology. Some studies have found racial bias (Andersen and La Croix 1991; Burnett and Van Scyoc 2004; Fort and Gill 2000; Gabriel, Johnson, and Stanton 1999; Nardinelli and Simon 1990). Other research has found minimal or no racial bias (Gabriel, Johnson, and Stanton 1995; Hewitt, Muñoz, Oliver, and Regoli 2005; McGarrity, Palmer, and Poitras 1999; Messitte and Powell 1995; Mulligan and Grube 2006; Regoli 1991; Scahill 2005).

Our research, along with that of Findlay and Santos, has found a lack of a statistically significant relationship between race and baseball card values. However, we have expressed considerable reservation in the implications of these findings. Do these findings mean that race does not affect the value of baseball cards?

Bonilla-Silva (2003) argues that contemporary racism is obscured by talk of meritocracy and minimal racism. Such discourse may suggest that equally deserving African Americans rise to the top and that, due to exceptional Black representation across different arenas of social life, discrimination is not as bad as it once was.

The integration of baseball provided evidence that America's landscape was changing. Glasser (1987) has written about the importance of baseball in the national cultural landscape:

This progress was important on the cultural landscape during a time of much upheaval. I date the beginning of [racial] change from 1947, when Jackie Robinson broke the color line in baseball, because I have always believed that the changes enacted on the cultural stage are more profound than those on the legal stage. I was nine years old. I lived in Brooklyn and acted out that whole drama. I went to Ebbets Field. One day Ebbets Field was all white and the next day it was integrated. As a nine-year old, I suddenly found myself sitting beside a fifty-two-year old black guy drinking a beer and smoking a cigarette, and slapping hands with him when something good happened for the Dodgers; we were part



the drama that was going down on the field. Everybody identified with it. For this to be happening on national television as part of the mass culture that hundreds of thousands of people participate in was a drama that far exceeded in impact the business that goes on in Congress and the Supreme Court. (Glasser 1987, 84)

Glasser's observation makes a larger point about baseball's ability to unite people in a profound way, manifesting itself in the form of a major cultural event. Later in the history of our nation, television's response to negative stereotyping was to include blacks in positive and important positions, such as doctors, lawyers, business executives, and so on. However, the level of presentation greatly exceeds the level of integration in baseball and other professions. Thus, people came to believe that greater progress has been made since the Civil Rights Movement than is actually the case. Although we cannot deny great changes in the the U.S. racial landscape, the danger is that overcompensation in the visual terrain of popular culture masks underrepresentation and inequality along the lines of race in everyday life, the workplace, education, housing, income and other areas.

The sample of both our study and the Findlay and Santos study included only players selected into the Hall of Fame. They are the *crème de la crème* emerging from several decisions in a selection process that some studies have found to be affected by race (Desser et al 1999; Findlay and Reid 1997), while other research has found such effects to be limited in scope, particularly to the interaction among race, nationality and performance (Jewell et al 2002). As for the entry into the Hall of Fame itself, the selection process includes factors other than performance in that it subjects Black players to an analysis of their worthiness by a primarily White decision-making body.

Second, and relevant to both the selection process and the results of our analyses, there are severe limitations in conceptualizing racism in a static fashion or, more specifically, in interpreting results in dichotomous fashion or simply as a quantitative result. It is more analytically meaningful to consider racism along a continuum and also to consider the results in terms of the logic and meaning of collector preferences.

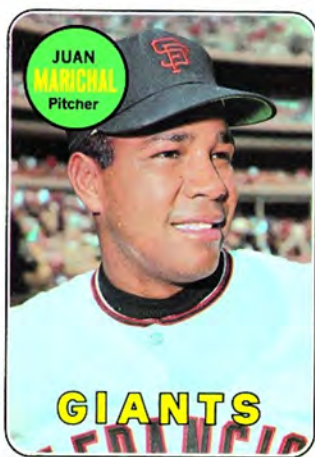
Although our findings indicate a lack of significant relationship between player race and card value, we have to keep in mind that we are looking at a preselected sample—that is, Black players who have already been deemed worthy of selection by the larger, dominant White society. The fact that some Black players have been allowed into the Hall of Fame, and that the card values of these players are similar by race, does not clearly establish that this arena of social life is free of racism or racial thinking.

Unlike the past, when African Americans were excluded from most American institutions, today we can point to almost any arena of social life in the United States and find the inclusion of African Americans. However, the inclusion of some African Americans does not satisfactorily account for the exclusion of many African Americans on a widespread level. Our finding—that no statistically significant difference exists in the value of their cards based on race—must be understood as only being operative for, or indicative of, Black players found to be acceptable for inclusion in the Hall of Fame. That is, there may be a form of tokenism at work here, a seeming level of equality based on those Black players found to be worthwhile and acceptable by a predominantly White decision-making body.

Thus, the measure of racism here should not be limited to whether African Americans are included or valued equally but under what conditions and based on what criteria are African Americans included and valued equally. We indicated in our study that to address this question researchers would need to expand our sample and data. However, future studies that hope to shed light on the impact of player race on card values also require a different methodology to determine whether any racial logic or thinking exists in the mind of collectors.

It is only by way of a more qualitative approach such as focused interviews that researchers will better understand the meaning of numbers or, more specifically, the reasoning and values attached to the prices of cards of Black and White players. Although Feagin (2000) posits that race affects all levels of society, it is not as simple as a yes or no question, or Black or White differences; it is also a question of how race might affect both the outcomes and also the meanings, explanations, and interpretations that collectors associate with the outcomes or, in this case, the valuation of the cards. Research on questions of race is not simply a case of ‘show me the money’—we must also ask research to show us the meaning.

On Latinos in the Player Sample



Findlay and Santos note that we excluded Latinos from our investigation. Before withdrawing commentary, I want to give a brief explanation of that decision.

Back in 2004, Regoli invited me to examine the findings and consider their implications within the larger body of research on race. I played a role in conversations about the decision to exclude Latinos from the sample. In the statistical analyses in preparation of our research publication (Hewitt, Muñoz, Oliver and Regoli 2005), we found no statistically significant estimates of the impact on ethnicity on baseball card values; this finding was subsequently

reported in Regoli, Primm and Hewitt (2007).

In a previous study (Regoli 2000) and in a subsequent study (Primm, Piquero, Hewitt and Piquero 2010), Regoli included at least three of five Latino players identified as Black in statistical estimates. The rationale was that baseball card traders identify race by physical appearance. In discussing our sample, while in the midst of conducting the research for the study, we concluded that the lack of significance was most likely a result of the limited number of Latinos in the sample. Thus, our research did not allow discussion of any reliable findings regarding the impact of Latino ethnicity on the value of baseball cards. In short, the issue of including Latinos had already been resolved by the time of our 2005 study.

Primm et al (2010) explain the complexity of racial identification and subsequent rationales in studies related to our research:

Since there were only four Latino players in the study they were combined with the Black players to form one category. There may be differences in the value of cards between Black, White, and Latino players that are being masked by their categorization in this study, and this will surely be the case in the future as Latino baseball players become an increasing and dominant presence in the game. In addition, this is likely to open useful inquiries that explore race and ethnicity based on skin tone (see Hunter's (2005) discussion of "colorism"). These and other questions regarding the role of race in sports card collecting should offer a rich area for researchers for some time to come. (872)

Racially speaking in the United States, many Afro-Latinos—Puerto Rican, Cuban and Dominican Americans—continue to be identified primarily as Black (Bonilla-Silva 2003; Gonzalez 2011). It is only recently that our consciousness about racial identity is beginning to emerge beyond the simple definition of race relations in terms of Black and White; this recognition is exemplified by increasing public awareness of the presence and impact of Latino players in baseball.

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Characteristics of the Members of Twelve Economic Associations: Voting, Policy Views, and Favorite Economists

Daniel B. Klein¹, William L. Davis²,
Bob G. Figgins³, and David Hedengren⁴

[LINK TO ABSTRACT](#)

This article offers characterization of members of twelve professional economic associations, based on a survey of economics professors in the United States.⁵ There seems to be very little literature comparing and characterizing such memberships.⁶

Previously we published an article entitled “Economics Professors’ Favorite Economic Thinkers, Journals, and Blogs (along with Party and Policy Views).” The article reports on a large-scale survey conducted in March 2010. The response rate was only 15.2 percent, but the gender ratio and party-voting ratio of the respondents give reason to believe that the set of 299 respondents is reasonably

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5. We thank the College of Business and Global Affairs at the University of Tennessee at Martin for funding the survey, and we thank Robert Whaples for valuable feedback and Paul Mueller for valuable research assistance.

6. Copp (1992) is based on a survey of samples of the members of the American Economic Association, the Union for Radical Political Economists, and the Association for Evolutionary Economics. The paper does not provide information that would enable comparison to our results.

representative of economics professors in the United States. Details are found in the paper (Davis et al 2011).

The survey instrument ([link](#)) included the following question:

The following list contains the names of 12 economics associations in the United States. Kindly mark your membership, both in terms of the present and for any time during the past ten years.

[Check all that apply. Please check only if the membership is in your own name (not that of an institution).]

TABLE 1. Association Membership Frequencies, of 299 respondents

	Member at present		Member any time during the past 10 years		Member at present or any time during the past 10 years	
American Economic Assoc. (AEA)	197	66%	101	34%	254	85%
Assoc. for Evolutionary Economics (AFEE)	9	3%	8	3%	14	5%
Assoc. for Private Enterprise Education (APEE)	14	5%	9	3%	20	7%
Eastern Economic Assoc. (EEA)	23	8%	49	16%	65	22%
Econometric Society (ES)	45	15%	47	16%	78	26%
Intern'l Assoc. for Feminist Economics (IAFFE)	10	3%	7	2%	15	5%
Public Choice Society (PCS)	9	3%	18	6%	27	9%
Society for the Advancement of Socio-Economics (SASE)	5	2%	4	1%	9	3%
Society for the Development of Austrian Economics (SDAE)	4	1%	1	0.3%	4	1%
Southern Economic Assoc. (SEA)	46	15%	63	21%	96	32%
Union for Radical Political Economics (URPE)	9	3%	8	3%	16	5%
Western Economic Assoc. (WEA)	34	11%	59	20%	85	28%

The numbers and percentages in the first two data columns come from the check marks that the respondent made on the survey. If we collapse those two columns into a single column, *Member at present or any time during the past 10 years*, we get the third column (which was not in the survey question). The denominator of the third column is the set of 299 respondents. In the remainder of this paper, except where stated otherwise, we use that combination response; that is, when we refer to the members of an association, we mean respondents who checked being a member “at present” or “any time during the past 10 years” or both.

We see that 85 percent of our respondents had been American Economic Association members during the preceding ten years. The next highest percentage

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is 32 percent for the Southern Economic Association. To the best of our knowledge, the survey mailing to 2000 economics professors did not have a regional bias. The next highest is 28 percent for the Western Economic Association. Then comes 26 percent for Econometrica Society, and then 22 percent for the Eastern Economic Association. There is then a big drop down to 9 percent for the Public Choice Society, and the other six have smaller percentages.⁷

Of the twelve associations, then, seven are represented by rather small numbers in our sample—27 or fewer. We believe, however, that even a sample of 14 members is helpful in revealing salient characteristics of the membership, and ten of twelve associations are represented in sample by 14 or more individuals. We report on all twelve, even the Society for Advancement of Socio-Economics (represented in the sample by nine individuals) and the Society for the Development of Austrian Economics (represented by just four individuals), but we caution the reader about the small numbers in those cases.

The voting question was as follows:

To which political party have the candidates you've voted for in the past ten years mostly belonged?

Democratic Green Libertarian Republican other

The results for the entire sample were 56.1 percent Democratic, 1.7 percent Green, 5.7 percent Libertarian, 20.7 percent Republican, with the remaining 15.8 percent being other/cannot or do not vote/no reply.⁸

As in our previous paper, we use the following party-voting index: $(\#Democrats + \#Greens)/(\#Republicans + \#Libertarians + 0.1)$. The “+ 0.1” appearing in the denominator is there to solve the problem that arises when it is otherwise zero. In reading the report that follows, when you see a party-ratio score that is wildly large, it is because there is nothing in the denominator except the 0.1.

7. We tried to obtain from each of the 12 associations its 2010 individual membership total, but succeeded with only six of them: the AEA, APEE, ES, SDAE, URPE, and WEA. Using those membership numbers and the “at present” data from our survey, we did an analysis that leads us to think that the AEA representation in our survey is very accurate to the population, that the ES is under-represented somewhat, the WEA is over-represented somewhat, and the three smaller associations are all over-represented at least somewhat. This analysis is available upon request.

8. Subsequent to publishing our 2011 article, we discovered that the party coding of one survey (#5011) was entered as Democratic when in fact the respondent's answer was Libertarian (the mismatch between the entered party coding and the policy views led us to double check). For this reason the percentages for those two parties differ very slightly from the reporting in our 2011 article—and other numbers in the 2011 paper are off slightly because of the error.

Crudely speaking, the index is the ratio of Left to Right.⁹ Using this party index with some misgivings,¹⁰ we arrive at a Left to Right ratio within the entire sample of 2.19.¹¹

The 17 policy questions took the form as shown in the sample statement below:

Higher minimum wages:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
support strongly	support, not strongly	neutral	oppose, not strongly	oppose strongly	have no opinion

We followed the format shown in asking these 17 policy questions:

1. Higher minimum wages
2. Tighter restrictions (e.g., tariffs and quotas) on imported goods
3. Tighter requirements for the permitting of new pharmaceuticals and medical devices
4. Tighter restrictions on private parties engaging in discrimination (on the basis of race, gender, age, ethnicity, religion or sexual-orientation) against other private parties, in employment or accommodations?
5. Tighter restrictions on the buying and selling of human organs
6. Tighter workplace safety regulation (e.g., by the Occupational Safety and Health Administration (OSHA))
7. Tighter air-quality and water-quality regulation (e.g., by the Env. Protection Ag. (EPA))
8. Tighter requirements on occupational licensing
9. Tighter restrictions on prostitution
10. Tighter restrictions on gambling
11. Tighter controls on immigration
12. Tighter restrictions on adult women having an abortion

9. When we use these terms in this paper, capitalizing the first letter, we mean merely these party groupings.

10. Our chief misgiving is in lumping the Libertarians with the Republicans. On the 17 policy questions, we find that the Republicans and Democrats are more alike than are the Libertarians and Republicans. Also, on three of the questions, the Democrats are meaningfully more liberal than the Republicans. But the Libertarian group is small, and there is a virtue in parsimony in reporting (as with our party index). Also, our respondents are all professors, and, in matters of the professoriate, it is well known that Democrats (along with a few Greens) dominate, and all else is periphery.

11. Regarding this value of 2.19, notice that the 5.7 percent Libertarian make this index quite different from the straight Democrat/Republican ratio, which for our sample is 2.71.

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13. Tighter restrictions on “hard” drugs such as cocaine and heroin
14. More redistribution (e.g., transfer and aid programs and tax progressivity)
15. More funding of the public school system
16. More benefits and coverage by Medicaid
17. More American military aid or presence abroad to promote democracy and the rule of law

Each policy question posits a reform that ratchets up restrictions on individual liberty or that expands tax-funded government activities. We create a *liberalism*¹² score of domain [0, 4] by scoring the responses as follows: “support strongly” was scored as 0, “support, not strongly” as 1, “neutral” as 2, “oppose, not strongly” as 3, and “oppose strongly” as 4 (and “have no opinion” as missing data, not as “neutral”). Higher scores are deemed more liberal. We are aware of the gray areas, the semantic controversies, and the other controversies (“Doesn’t abortion violate the liberty of the fetus?” “What about when immigrants support interventionist policies?” “Doesn’t the American military sometimes promote liberty?”), but we simply exercise our judgment and move on.¹³

TABLE 2. Each Association’s Party Voting Scores and Liberalism Scores

Association	N	Percent of 299	Party voting score	Liberalism score
AEA	254	85	2.14	2.29
AFEE	14	5	130.00	1.45
APEE	20	7	0.50	3.30
EEA	65	22	3.20	2.14
ES	78	26	2.70	2.26
IAPFE	15	5	116.67	1.69
PCS	27	9	0.48	3.02
SASE	9	3	7.27	1.63
SDAE	4	1	0.00	3.94
SEA	96	32	1.64	2.55
URPE	16	5	22.50	1.56
WEA	85	28	1.65	2.38
None	27	9	2.79	2.12
All	299	100	2.19	2.27

12. We use the term *liberalism* in the original or classical sense that is still revealed in the verb *to liberalize* and is still current in much of the world.

13. Liberalism scores varied substantially by party affiliation: Democrats 1.94, Greens 1.57, Libertarians 3.52, Republicans 2.71.

On the American Economic Association

The bottom row of Table 2 shows the results for all respondents. We see that the party voting and liberalism scores for the AEA are very close to those for the set of all respondents. That closeness might be unsurprising, since AEA was checked by 85 percent of the sample. It has been suggested by Klein (2006) and McEachern (2006) that the AEA is more Democratic than the profession at large; however, the present results indicate that those who have been a member during the preceding ten years are ideologically equivalent to the population of U.S. economics professors; in fact, the 45 non-members surveyed have a 2.45 voting score, putting them slightly to the Left of the members (2.14).

During a ten-year period, most any economics professor might join the AEA, if only because he or she attends the annual conference for reasons related to the economics job market. One might figure that a respondent who checked AEA membership “at present” is more likely to be an AEA faithful, so to speak, than one who checked AEA membership “during the past 10 years” but *not* “at present.”¹⁴ The liberalism score of the 197 respondents who marked “at present” was 2.32, while that of the 57 who did not mark “at present” (but did mark “during the past 10 years”) was 2.26, which would indicate that the average ‘faithful’ AEA member is very slightly more liberal than the average lapsed member, going against the speculations of Klein and McEachern. However, the party voting score for ‘faithful’ members is 2.31, which is to the Left of the lapsed members’ score (1.91). Still, that 2.31 voting score is close to the voting score of the entire sample of respondents (2.19). This study fails to support the notion that the AEA’s membership is significantly more Democratic than the population of economics professors.

It should be acknowledged that there is an important distinction between an association’s membership and its leadership.¹⁵ That distinction highlights a limitation of the present study: We are drawing out characteristics based on mere members, not leaders. In the case of the general/regional associations such as the AEA, SEA, WEA, and EEA, people often join them for reasons having little to do with what the leadership happens to be like. So it could be that their leadership has features that are not evident in the body of regular members.

14. Ideally, the two options about membership would have been neatly partitioned as follows: “at present” and “any time from ten years ago up to one year ago.” That would have given three distinct sets to compare. But we opted for an overlapping second option “any time during the past 10 years,” yielding us only two clearly distinct sets of members, because we thought it would be too tedious to ask the respondent “any time from ten years ago up to one year ago.”

The Southern, Western, Eastern, and Econometric Associations

The entire sample of economics professors had a party voting score of 2.19 and a liberalism score of 2.27, and the AEA had scores very close to those. The three regional associations show some departure. The Southern Economic Association has a party score of 1.64 and a liberalism score of 2.55, indicating that its membership leans less to the Left than does the entire sample, and the Western Economic Association has a party score of 1.65 and liberalism score of 2.38, indicating that its membership also leans less to the Left. By contrast, the Eastern Economic Association leans even more to the Left than does the general population of economics professors, with a party score of 3.20 and a liberalism score of 2.14. The Econometric Society is an association that might also be regarded as a “general” association; its party score is 2.70 and its liberalism score is 2.26.

The Evolutionary, Feminist, Socio-Economic, and Radical Associations

Four associations—the Association for Evolutionary Economics (AFEE), the International Association for Feminist Economics (IAFEE), the Society for the Advancement of Socio-Economics (SASE), and the Union for Radical Political Economics (URPE)—have a Left preponderance that goes far beyond the entire sample. None of the respondents who checked AFEE, IAFEE, or URPE mem-

15. When Klein and McEachern suggested that the AEA leaned Democratic, however, it was not chiefly the general membership that they had in mind. Although Klein (2006, 196-199) offered sparse data about AEA membership and voter registration—the drift of which our present results fail to support, or even go against—the chief focus both of Klein and of McEachern was the *leadership* of the AEA, including the editorships of the journals. McEachern (2006) provides data on campaign contributions during the 2004 election cycle. Regular members of the AEA were five times more likely to give to Democrats than to Republicans, but this might not be meaningful because only 3.8 percent of the membership gave to the Democrats. What is more significant is how that percentage climbed as one goes up the AEA pyramid: From 3.8 percent among regular members, the rate goes to 7.1 percent among *American Economic Review* authors, 10.4 percent among authors of the discretionary journals (*JEL*, *JEP*, and *AER P&P*), 14 percent among editors of those journals, and 16.2 percent among search and nominating committee members (McEachern 2006, 168-170). Meanwhile, the Republican support becomes remarkably scant. The data strongly indicates that the elites of the AEA supported the Democratic Party vastly more than the Republican Party and that the lopsidedness increases the higher up we go in the AEA structure.

bership responded merely Republican or Libertarian to the voting question, and only one SASE respondent did so. And compared to the 2.27 liberalism score for the entire sample, the liberalism scores of these four groups indicate that they are particularly interventionist: 1.45 for AFEE, 1.69 for IAFEE, 1.63 for SASE, and 1.56 for URPE. All of these scores are below the “neutral” mark of 2.00, which means that the members of these groups lean toward supporting the 17 proposals for stepping up incursions on liberty—not in every case, of course, but on the whole.

The Private Enterprise, Public Choice, and Austrian Associations

Three of the associations—the Association for Private Enterprise Education (APEE), the Public Choice Society (PCS), and the Society for the Development of Austrian Economics (SDAE)—have party scores below 1.00, which means they tilt to the Right: 0.50 for APEE, 0.48 for PCS, and 0.0 for SDAE. Only four respondents were members of the SDAE. It is important to note that among the 38 respondents who checked membership in any of those three associations, the party score is 0.47. Thus, the subset of economists who have been members in the three Right associations seems to lean to the Right only about as much as *the whole population of economics professors* leans to the Left!

As for liberalism scores, the four SDAE respondents nearly reached libertarian perfection, with a score of 3.94. The 20 APEE members scored 3.30 and the 27 PCS members 3.02. As economics is the only discipline among the humanities and social sciences for which the professoriate is not highly dominated by Left voting and corresponding policy views (Klein and Stern 2005; 2009), these three scholarly associations are probably quite exceptional among *all* humanities/social science associations for their liberalism and Right voting.

Favorite Economists of Various Ages

We also asked respondents to name their favorite economic thinkers, ranked first, second, and third, for each of four time frames. Table 4 shows for each age the three favorites of each association, according to our tallying system, which gave six points to a first-place response, five points to a second, and four points to a third. We also list in parentheses the number of pure mentions of the named individuals. In almost all cases the point-based ranking agrees with the number

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of pure mentions, but there is one (strict) exception: For AEA members' favorite economists under the age of 60, Greg Mankiw ranked slightly ahead of Daron Acemoglu, but had one less mention.¹⁶

TABLE 3. Each Association's Favorite Economic Thinkers (number of mentions)

Assn (N)	Pre-20th Cent.			20th Century – deceased		
	1st	2nd	3rd	1st	2nd	3rd
AEA (254)	Smith, Adam (193)	Ricardo, David (91)	Marshall, Alfred (60)	Keynes, J.M. (114)	Friedman, Milton (113)	Samuelson, Paul (80)
AFEE (14)	Smith, Adam (11)	Marx, Karl (7)	Mill, John Stuart (6)	Keynes, J.M. (10)	Veblen, Thorstein (7)	Galbraith, John K. (5)
APEE (20)	Smith, Adam (18)	Menger, Carl (4)	Marshall, Alfred (4)	Friedman, Milton (12)	Hayek, Friedrich (10)	Mises, Ludwig von (4)
EEA (65)	Smith, Adam (46)	Ricardo, David (26)	Mill, John Stuart (18)	Keynes, J.M. (38)	Friedman, Milton (24)	Samuelson, Paul (16)
ES (78)	Smith, Adam (56)	Ricardo, David (32)	Marshall, Alfred (17)	Keynes, J.M. (35)	Friedman, Milton (32)	Samuelson, Paul (31)
IAFFE (15)	Smith, Adam (8)	Marx, Karl (5)	Ricardo, David (5)	Keynes, J.M. (10)	Robinson, Joan (4)	Veblen, Thorstein (4)
PCS (27)	Smith, Adam (26)	Marshall, Alfred (9)	Ricardo, David (8)	Friedman, Milton (16)	Hayek, Friedrich (8)	Keynes, J.M. (7)
SASE (9)	Smith, Adam (7)	Mill, John Stuart (3)	Marx, Karl (3)	Keynes, J.M. (4)	Galbraith, John K. (3)	Polanyi, Karl (2)
SDAE (4)	Smith, Adam (4)	Menger, Carl (4)	Ricardo, David (1)	Hayek, Friedrich (4)	Mises, Ludwig von (3)	Rothbard, Murray (2)
SEA (96)	Smith, Adam (74)	Ricardo, David (34)	Mill, John Stuart (21)	Friedman, Milton (52)	Keynes, J.M. (38)	Samuelson, Paul (23)
URPE (16)	Marx, Karl (12)	Smith, Adam (12)	Ricardo, David (11)	Keynes, J.M. (13)	Robinson, Joan (5)	Galbraith, John K. (5)
WEA (85)	Smith, Adam (71)	Ricardo, David (28)	Mill, John Stuart (24)	Keynes, J.M. (40)	Friedman, Milton (38)	Samuelson, Paul (21)
All (299)	Smith, Adam (221)	Ricardo, David (106)	Marshall, Alfred (67)	Keynes, J.M. (134)	Friedman, Milton (124)	Samuelson, Paul (90)

16. Details about how we sorted out responses so as to put the responses into the proper era are found in Davis et al (2011, 133 n. 12).

TABLE 3 (cont'd). Each Association's Favorite Economic Thinkers (number of mentions)

Assn (N)	Living 60 and Older			Living Under 60		
	1st	2nd	3rd	1st	2nd	3rd
AEA (254)	Becker, Gary (58)	Arrow, Kenneth (39)	Solow, Robert (31)	Krugman, Paul (56)	Mankiw, Greg (20)	Acemoglu, Daron (21)
AFEE (14)	Davidson, Paul (2)	Sen, Amartya (2)	Daly, Herman (2)	Krugman, Paul (4)	Galbraith, James K. (3)	Mankiw, Greg (1)
APEE (20)	Buchanan, James (8)	Coase, Ronald (8)	Tullock, Gordon (4)	Easterly, William (5)	Shleifer, Andrei (3)	Cowen, Tyler (3)
EEA (65)	Arrow, Kenneth (11)	Becker, Gary (10)	Stiglitz, Joseph (10)	Krugman, Paul (17)	Mankiw, Greg (6)	Levitt, Steve (5)
ES (78)	Becker, Gary (19)	Arrow, Kenneth (17)	Solow, Robert (15)	Krugman, Paul (15)	Acemoglu, Daron (6)	Mankiw, Greg (4)
IAFFE (15)	Arrow, Kenneth (4)	Stiglitz, Joseph (3)	Ferber, Marianne (2)	Folbre, Nancy (5)	Krugman, Paul (2)	Galbraith, James K. (2)
PCS (27)	Buchanan, James (11)	Coase, Ronald (10)	Becker, Gary (8)	Acemoglu, Daron (4)	Easterly, William (4)	Shleifer, Andrei (3)
SASE (9)	Stiglitz, Joseph (2)	Sen, Amartya (2)	Klein, Lawrence (1)	Krugman, Paul (3)	Frank, Robert (2)	Folbre, Nancy (1)
SDAE (4)	Coase, Ronald (2)	Kirzner, Israel (2)	Reisman, George (1)	Shleifer, Andrei (2)	Easterly, William (2)	Stringham, Edward (1)
SEA (96)	Becker, Gary (31)	Coase, Ronald (15)	Arrow, Kenneth (10)	Krugman, Paul (18)	Mankiw, Greg (13)	Levitt, Steve (10)
URPE (16)	Sen, Amartya (5)	Stiglitz, Joseph (4)	Becker, Gary (3)	Krugman, Paul (5)	Galbraith, James K. (4)	Folbre, Nancy (3)
WEA (85)	Becker, Gary (25)	Arrow, Kenneth (14)	Coase, Ronald (12)	Krugman, Paul (19)	Mankiw, Greg (12)	Levitt, Steve (12)
All (299)	Becker, Gary (65)	Arrow, Kenneth (41)	Solow, Robert (35)	Krugman, Paul (60)	Mankiw, Greg (22)	Acemoglu, Daron (22)

In our paper on the favorites of the entire sample, we noted the towering place of Adam Smith in the pre-20th century category (especially when place points are awarded, as in Davis et al 2011, 132). The present analysis shows that appreciation for Smith also cuts across associational lines: Smith takes eleven first places and one second place.

The personages selected provide valuable guidance to the character of members of each association. Here we shall not treat the general associations, for the

results mostly mirror those of the entire sample, which are treated in our previous paper (Davis et al 2011). But we pause to comment on the other associations.

All four of the highly leftist associations (AFEE, IAFEE, SASE, and URPE) have Karl Marx in the pre-20th century category, and in the 20th-century-deceased category variously strong showings for J.M. Keynes, Thorstein Veblen, John K. Galbraith, and Joan Robinson. For the over-60 living category, two standouts are Amartya Sen and Joseph Stiglitz; and notable showings in the under-60 living category are for Paul Krugman, James K. Galbraith, and Nancy Folbre.

Likewise, the personages selected by the three liberal associations (APEE, PCS, and SDAE) represent such an outlook—notably, variously, Friedrich Hayek, Milton Friedman, Ludwig von Mises, James Buchanan, Ronald Coase, William Easterly, and Andre Shleifer.

Membership Intersections

Table 4 shows the percentage of the association listed at the top of the column belonging to the association listed in the row. The results show relatively high intersection rates among the leftist associations, and among the liberal associations.

TABLE 4. Percentage of the column association belonging to the row association

	All	AEA	AFEE	APEE	EEA	ES	IAFFE	PCS	SASE	SDAE	SEA	URPE	WEA
N	299	254	14	20	65	78	15	27	9	4	96	16	85
AEA	85%		86%	90%	92%	95%	93%	96%	89%	100%	95%	100%	92%
AFEE	5%	5%		5%	11%	1%	13%	0%	44%	0%	2%	31%	4%
APEE	7%	7%	7%		9%	5%	0%	33%	0%	100%	13%	6%	6%
EEA	22%	24%	50%	30%		24%	47%	19%	33%	0%	28%	69%	27%
ES	26%	29%	7%	20%	29%		13%	15%	11%	0%	26%	13%	31%
IAFFE	5%	6%	14%	0%	11%	3%		4%	11%	0%	3%	25%	5%
PCS	9%	10%	0%	45%	8%	5%	7%		0%	50%	15%	6%	14%
SASE	3%	3%	29%	0%	5%	1%	7%	0%		0%	2%	25%	2%
SDAE	1%	2%	0%	20%	0%	0%	0%	7%	0%		4%	6%	1%
SEA	32%	36%	14%	60%	42%	32%	20%	52%	22%	100%		19%	59%
URPE	5%	6%	36%	5%	17%	3%	27%	4%	44%	25%	3%		2%
WEA	28%	31%	21%	25%	35%	33%	27%	44%	22%	25%	52%	13%	

Concluding Remarks: Up with Characterology

Today, major books such as Daniel Kahneman's *Thinking, Fast and Slow* and Jonathan Haidt's *The Righteous Mind: Why Good People Are Divided by Politics and Religion* exemplify a trend toward awareness of the dominating role of subterranean sensibilities, or what David Hume might call the passions. A candid understanding of human psychology leads one into a study of character. Important features of character include political-party orientation and policy views, as well as admired figures. In this paper we have used such variables to characterize the members of twelve economic associations. For reasons articulated by Gunnar Myrdal (1969), we believe that science and ethics are advanced when individuals are open about their character and perspective and informed about those whom they read or listen to.

Appendices

At the survey homepage ([link](#)), one can download the survey instrument ([link](#)), the listing of 300 economics departments ([link](#)), and the Excel files for tables shown in this paper ([link](#)). The raw data for this paper are available upon request and will be posted online in September 2012.

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Editorial note: This piece was first published in 1951 and reprinted in Hayek's Studies in Philosophy, Politics, and Economics (1967, University of Chicago Press), pp. 195-200.

EJW thanks the estate of F. A. Hayek for granting permission to reprint the article. We composed the short biography that appears at the end, as well as [the abstract](#), and we added the photographs of Edwin Cannan (source: Library of the London School of Economics and Political Science), Ludwig von Mises (Ludwig von Mises Institute), Frank Knight (Warren J. Samuels Portrait Collection at Duke University), and Walter Eucken (Walter Eucken Institut). Otherwise, all that follows, including all footnotes, are Hayek's, exactly as in the 1967 volume.

The Transmission of the Ideals of Economic Freedom¹

F. A. Hayek

[LINK TO ABSTRACT](#)

At the end of the First World War the spiritual tradition of liberalism was all but dead. True, it was still uppermost in the thoughts of many a leading figure of public and business life, many of whom belonged to a generation which took liberal thought for granted. Their public pronouncements sometimes led the general public to believe that a return to a liberal economy was the ultimate goal desired by the majority of leading men. But the intellectual forces then at work had begun to point in quite a different direction. Anyone familiar, thirty years ago, with the thought of the coming generation and especially with the views propounded to the students in their universities, could foresee developments very different from those still hoped for by some of the public figures and the press of the time. There was

1. First published in German as a tribute to L. v. Mises on his seventieth birthday, which it was known he did not wish to see formally noticed, in the *Schweizer Monatshefte*, Vol. 31, No. 6, 1951, and later in an English translation in *The Owl*, London, 1951. I should not have wished to reprint this somewhat hastily written occasional piece, if with all its imperfections and errors of translation it had not already been used as a historical source, so that it seems desirable to make a corrected version available.

no longer, at that time, a living world of liberal thought which could have fired the imagination of the young.

Nonetheless, the main body of liberal thought has been safeguarded through that eclipse in the intellectual history of liberalism which lasted throughout the fifteen or twenty years following the First World War; indeed, during that very period the foundations were laid for a new development. This was due, almost exclusively, to the activities of a handful of men about whom I wish to say something here. No doubt, they were not the only ones striving to uphold the liberal tradition. But it seems to me that these men, each working alone and independently of the others, were the only ones who succeeded, by their teaching, in creating the new traditions which more recently have again united in one common stream. The circumstances surrounding the lives of the past generation make it hardly surprising that it should have taken so long for the like-minded efforts of an Englishman, an Austrian and an American to be recognized as such and to be built into the common foundation for the following generation's work. But the new liberal school which does now exist and about which there will be more to say, consciously builds upon the work of these men.

The oldest, and perhaps the least known outside his own country, was the Englishman, Edwin Cannan, who died nearly twenty years ago. The part he played is little known beyond a rather narrow circle. The reason for this may be that his main interests really lay elsewhere and that he dealt with questions of economic policy only in occasional writings; or it may be, perhaps, that he was more interested in practical details than in the basic philosophical questions. Many of his economic essays which he published in two volumes, *The Economic Outlook* (1912) and *An Economist's Protest* (1927), deserve, even now, renewed and wider attention, and translation into other



Cannan

languages. Their simplicity, clarity and sound common sense make them models for the treatment of economic problems, and even some that were written before 1914 are still astonishingly topical. Cannan's greatest merit, however, was the training, over many years, of a group of pupils at the London School of Economics: it was they who later formed what probably became the most important centre of the new liberalism—though, it is true, at a time when such a development had already been got under way by the work of the Austrian economist of whom we shall presently speak. But first let us say a little more about Cannan's pupils. The oldest is the well-known financial expert, Sir Theodore Gregory. For many years, when holding a chair at the London School of Economics, he too wielded great

influence on academic youth; but he gave up teaching a good many years ago. It was Lionel Robbins, who now has held Cannan's chair for twenty-two years, who became the real nucleus of a group of younger economists all very nearly the same age, which emerged at the London School of Economics during the 'thirties. Owing to a rare combination of literary talent and a gift for organizing his material, his writings have found a very wide circulation. Robbins' colleague, Sir Arnold Plant, has been teaching at the School nearly as long. He, even more than Cannan himself, is wont to hide away his most important contributions in little-known occasional publications, and all his friends have long been looking forward eagerly to a book about the foundations and significance of private property. If he ever publishes it, it should become one of the most important contributions to the theory of modern liberalism. We cannot here list all Cannan's pupils who have contributed to the discussion of our problems; just to give an impression of the scope of his influence, let us add the names of F.C. Benham, W.H. Hutt and F.W. Paish—even though the latter was not Cannan's student, he belongs to the same circle.

It could be said with some justification that Cannan really prepared the ground, in England, for the reception of the ideas of a much younger Austrian who has been working since the early 'twenties on the reconstruction of a solid edifice of liberal thought in a more determined, systematic and successful way than anyone else. This is Ludwig von Mises who worked first in Vienna, then in Geneva, and who is still very actively at work now in New York. Even before the First World War Mises had become known for his work on monetary theory. Immediately after the war, his prophetic book *Nation, Staat und Wirtschaft* (1919) initiated a development which reached its first peak as early as 1922 in *Die Gemeinwirtschaft*,² a comprehensive critique of socialism—and at that time, that meant a critique of all the ideologies of any serious consequence in the literature of economic policy.



Mises

There is no space here to give the long list of important writings which intervened between this and Mises's second main work which appeared in 1941 in Geneva. This was written in German and was originally called *Nationalökonomie*; its revised American edition, *Human Action*, has achieved almost unique success for a theoretical treatise of such size. Mises's work as a whole covers far more than economics in the narrower sense. His penetrating studies of the philosophical

2. Translated into English by Jacques Kahane, under the title *Socialism*, London, Jonathan Cape, 1936.

foundations of the social sciences and his remarkable historical knowledge place his work much closer to that of the great eighteenth-century moral philosophers than to the writings of contemporary economists. Mises was strongly attacked from the very beginning because of his relentlessly uncompromising attitude; he made enemies and, above all, did not find academic recognition until late. Yet his work has wielded an influence which is the more lasting and the more extensive for all its slow beginnings. Even some of Mises's own pupils were often inclined to consider as 'exaggerated' that unfaltering tenacity with which he pursued his reasoning to its utmost conclusions; but the apparent pessimism which he habitually displayed in his judgment of the consequences of the economic policies of his time has proved right over and over again, and eventually an ever-widening circle came to appreciate the fundamental importance of his writings which ran counter to the main stream of contemporary thought in nearly every respect. Even when still in Vienna, Mises did not lack close disciples most of who are now in the United States, like Mises himself; they include Gottfried Haberler (Harvard University), Fritz Machlup (Johns Hopkins University), and the present writer. But Mises's influence now reaches beyond the personal sphere to a far greater extent than does that of the other two main personalities with whom we are here concerned. He alone of them has given us a comprehensive treatment ranging over the whole economic and social field. We may or may not agree with him on details, but there is hardly an important question in these fields about which his readers would fail to find real instruction and stimulation.

Mises' influence became important not only for the London group, but equally so for the third, the Chicago, group. This group owes its origins to Professor Frank H. Knight of the University of Chicago, who is Mises's junior by a few years. Like Mises, Knight owes his original reputation to a theoretical monograph; notwithstanding an early lack of recognition, the latter's *Risk, Uncertainty and Profit* (1921) eventually became, and for many years continued to be, one of the most influential textbooks on economic theory, although it had not originally been designed as such. Knight has since written a great deal on questions of economic policy and social philosophy—mostly in articles the majority of which have since been published in book form. The best-known, and perhaps also the most characteristic, volume is *The Ethics of Competition and Other Essays* (1935). Knight's personal influence, through his teaching, exceeds even the influence of his writings. It is hardly an exaggeration to state that nearly all the younger American economists who really



Knight

understand and advocate a competitive economic system have at one time been Knight's students. From the point of view which interests us here the most important of these was Henry C. Simons, whose untimely and early death we mourn. In the 'thirties his pamphlet, *A Positive Program for Laissez Faire*, offered a new and common basis for the aspirations of America's young liberals. Hopes for a systematic and comprehensive work from Simons were disappointed; instead, he left a collection of essays which appeared in 1948 under the title *Economic Policy for a Free Society*. This book became very influential owing to its wealth of ideas and to the courage with which Simons discussed such delicate problems as trade unionism. Today, the nucleus of a group of like-minded economists—no longer confined to Chicago—is formed by Simons' closest friend, Aaron Director, and two of the best-known younger American theoreticians, George Stigler and Milton Friedman. Director has edited Simons' papers and carried on his work.

Alas, good manners make it impossible to claim a great nation's head of State for any particular economic school;³ I should, otherwise, name a fourth scientist whose influence in his own country is of comparable consequence. Instead, I shall complete the picture by turning at once to the last group which interests us here.⁴ It is a German group, and differs from the others in that its origin cannot be traced back directly to any great figure of the preceding generation. It came into being through the association of a number of younger men whose common interest in a liberal economic system brought them together during the years preceding Hitler's seizure of power. There can be no doubt that this group too received decisive stimulus from Mises' writings. This group had not yet made its mark in economic literature by 1933, and at that time some of its members had to leave Germany.

3. The reference is, of course, to the late Luigi Einaudi, at the time when this article appeared President of the Italian Republic.

4. In the original version of this sketch I unpardonably omitted to mention a promising beginning of this liberal renaissance which, though cut short by the outbreak of war in 1939, provided many of the personal contacts which after the war were to form the basis of a renewed effort on an international scale. In 1937 Walter Lippmann had delighted and encouraged all liberals by the publication of his brilliant restatement of the fundamental ideals of classic liberalism in his book *The Good Society*. Recognizing the importance of this work as a possible rallying point of dispersed efforts, Professor Louis Rougier of the University of Paris then called a symposium at which at the end of August 1938 about twenty-five students of public affairs from several European countries and the United States met at Paris to discuss the principles stated by Lippmann. They included Louis Baudin, Walter Lippmann, Ludwig von Mises, Michael Polanyi, Lionel Robbins, Wilhelm Röpke, Alexander Rüstow, Marcel van Zeeland and the present author. The meeting approved the proposal for the creation of a Centre International des Etudes pour la Rénovation du Libéralisme—but when its report appeared in print (*Colloque Walter Lippmann*, Paris, 1939), only a few weeks were left before the outbreak of the Second World War and the consequent suspension of all efforts of this kind.

There remained, however, one of the group's oldest members, Walter Eucken, who was then as yet relatively little known. Today we realize that his sudden death a little over a year ago robbed the liberal revival of one of its really great men. He had matured slowly, had long refrained from publication and had mainly devoted himself to teaching and to practical problems. It was not until after Germany's collapse that it became apparent how fruitful and beneficial his quiet activities had been during the National Socialist period; for only then was the circle of his friends and students in Germany revealed as the most important bulwark of rational economic thinking. That was also



Eucken

the time when Eucken's first major work began to spread its influence and when he undertook the exposition of his whole economic thought in several other works. The future will show how much of this remains to be recovered from the papers he left at his death. The annual *Ordo* which he founded continues to be the most important publication of the entire movement.

The second leading fixture of this German group, Wilhelm Röpke, had been in close contact with Eucken from the beginning. By 1933, Röpke had made such a mark in public life that his stay in Hitler's Germany immediately became impossible. He went to Istanbul first, and has now been in Switzerland for many years. He is the most active and the most prolific writer of the whole group and has become known to a wide public.

If the existence of a neo-liberal movement is known far beyond the narrow circles of experts, the credit belongs mainly to Röpke, at least so far as the German-speaking public is concerned.

It has been said above that all these groups which came into being in the course of the last quarter of a century did not really get to know each other until after the Second World War. We then witnessed a lively exchange of ideas. Today, it has almost become a matter of history to speak of separate national groups. For that very reason, this is perhaps the right moment to give a brief outline of this development. Gone is the day when the few remaining liberals each went his own way in solitude and derision; gone the day when they found no response among the young. On the contrary, they bear a heavy responsibility now, because the new generation demands to be told of liberalism's answers to the great problems of our time. An integrated structure of liberal thought is required and its application to the problems of different countries needs to be worked out. This will only be possible by a meeting of minds within a large group. There remain serious difficulties, in many countries, with regard to the dissemination of the available literature, and the

lack of translations of some of the most important works still stands in the way of a more rapid propagation of these ideas. But there is, today, personal contact between most of their supporters. Twice already Switzerland has been host to the informal, yet cohesive group which met there for the common study of its problems and whose name derives from a Swiss place-name. Another meeting took place in Holland in 1950, and a fourth conference in France in 1951.

The period which we have discussed in this paper can, then, be regarded as closed. Thirty years ago liberalism may still have had some influence among public men, but it had well-nigh disappeared as a spiritual movement. Today its practical influence may be scant, but its problems have once more become a living body of thought. We may feel justified in looking forward with renewed faith to the future of liberalism.

About the Author



Friedrich A. Hayek (1899-1992) was a social philosopher born and raised in Austria but who spent most of his career in Britain, the United States, and Germany. Originally a soft socialist, he converted to liberalism during his twenties, being influenced particularly by Ludwig von Mises. Hayek led the creation of the Mont Pelerin Society, early meetings of which are referred to in the present text. In 1974, Hayek was a co-

recipient of the Riksbank Prize in Economic Sciences in Memory of Alfred Nobel.

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