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► **To cite this version:**

Dean Ferguson. Work on the Margins: Rags and Ragpickers: Some Thoughts on Recycling as a Dimension of the Industrious/Industrial Revolutions. H-France salon, 2023, Enabling Curiosity & Starting Careers: Honoring the Retirement of James R. Farr, 15 (12). hal-04473850

**HAL Id: hal-04473850**

**<https://hal.science/hal-04473850>**

Submitted on 26 Feb 2024

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**Work on the Margins: Rags and Ragpickers—Some Thoughts on Recycling as a Dimension of the Industrious/Industrial Revolutions**

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Jean-Elie Bertrand, in his *Descriptions des arts et métiers*, in 1776 described how the rags of the Rhône-Alps region were acquired and transported to the paper mills of the Auvergne:

Merchants from Lyon have the rags of the Lyonnais, Dauphiné, Bresse, and above all Burgundy, gathered to furnish the manufacturers of the Auvergne. *Pattières*, *chiffonniers*, and *drapelières* cover the villages, collecting *pattes* or *chiffons*, sometimes even in street rubbish, or often by giving a few needles to domestics or the poor who don't know what is done with a rag. A yard of lace worth two or three *sols* will sometimes buy a considerable quantity [of rags]. Even more attention is paid to this in cities; it is rare that a merchant does not carefully gather the old linens which are sold to them by the people, and store them in warehouses, before they are transported to the Auvergne on mules.<sup>1</sup>

Bertrand's description illustrates the critical roles of rag pickers, wholesale rag collectors, rural peddlers, and urban merchants in acquiring and redirecting worn clothing and linen from France's consumers to the kingdom's paper mills. Additionally, however, Bertrand's dictionary also demonstrates a commerce in petty consumer items exchanged for rags, and the way rags (and other refuse material) served as a form of currency and a store of value for households in early modern France. Rags, and a multitude of other "waste" materials collected in this fashion then became the raw material and circulating capital critical to the growth of France's paper production, one of the nation's important industries, but also to other industries that benefited from rag-pickers' careful triage of discarded materials. Moreover, rags and waste materials served as a form of savings and small money that also contributed to household consumption activity across the early modern period.

The presence of rag collectors and exchanges involving ragged linens, decrepit garments, battered furnishings and other well-used household items, was hardly new to the eighteenth century. Daniel Lord Smail has studied the ways in which in fifteenth-century Marseille and Lucca household goods, even those with little value, were both recycled and served as stores of value and even a

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<sup>1</sup>Jean-Elie Bertrand, *Descriptions des arts et métiers*, Vol. IV (Neuchâtel Librairie de la Société Typographique, 1776), 413.

medium of exchange during an era when hard currency and credit were in short supply.<sup>2</sup> The role of rag collectors and other “recyclers” in early modern France, I will briefly propose in this forum, might well also deserve mention in histories of French economic growth and industrial development. Early modern “recyclers” were critically situated at the very pivot point uniting supply-side and demand-side factors contributing to long-term industrial growth in Europe.<sup>3</sup> Demographic growth, new patterns of consumption, the rise of fashion, and growing industriousness on the part of households have all been features of explanations that favored demand-side factors contributing to industrialization.<sup>4</sup> Each of these developments contributed materially to increasing quantities of rags and other wastes during the early modern period. Conversely, technological change, capital investment, and industry consolidation in the paper trade (and in other industries) depended to varying degrees on the intensification of work done by rag pickers, scavengers, and peddlers who foraged, collected, and traded in waste products. Additionally, this diverse labor force, in an era before the emergence of modern financial institutions or even widespread availability of small money, served as a conduit to manufacturers of the in-kind savings of households, often exchanged for a range of petty consumer items. These recyclable materials, then were often turned into petty cash, or credit instruments, as households consigned to peddlers or paper mill owners future collections of wastes in exchange for immediate purchasing power. In this way, the labor of rag-pickers and the thrift and industriousness of householders contributed to amassing the circulating capital needed by paper mills and other industries.

This paper represents an introductory effort to examine the relationship between the recycling of household wastes, the expansion of household consumption and petty savings, and the work of rag collectors across the early modern world.<sup>5</sup> This work is an extension of research begun some thirty years ago at Purdue University under James R. Farr’s guidance. Jim had recently published *Hands of Honor: Artisans and their World in Dijon, 1550-1650*.<sup>6</sup> The way *Hands of Honor* combined social history and the new cultural history, offering a microhistory of the world of work in early

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<sup>2</sup> Daniel Lord Smail, *Legal Plunder: Households and Debt Collection in Late Medieval Europe* (Cambridge, MA: Harvard University Press, 2016), 42-45.

<sup>3</sup> Gary Bryan Magee has suggested that historians of industrialization often offer causal explanations that focus on either “demand-side” or “supply-side” factors. Gary Bryan Magee, *Productivity and performance in the paper industry: Labour, capital, and technology in Britain and America, 1860-1914*, Cambridge Studies in Modern Economic History (Cambridge: Cambridge University Press, 1997), 30.

<sup>4</sup> Jan de Vries characterizes the “industrious revolution” as a “companion concept” which can “help in the sharpened formulation of the Industrial Revolution...” Jan de Vries, “The Industrial Revolution and the Industrious Revolution,” *Journal of Economic History* 54:2 (1994), 254. The most complete statement of de Vries argument is found in Jan de Vries, *The Industrious Revolution: Consumer Behavior and the Household Economy, 1650 to the Present* (Cambridge: Cambridge University Press, 2008).

<sup>5</sup> This work expands on research done on nightsoil collection across the early modern world. Dean T. Ferguson, “Nightsoil and the ‘Great Divergence’: human waste, the urban economy, and economic productivity, 1500-1900,” *Journal of Global History* 9, no. 3 (13 October 2014): 379-402.

<sup>6</sup> James R. Farr, *Hands of Honor: Artisans and Their World in Dijon, 1550-1650* (Ithaca, N.Y.: Cornell University Press, 1988.).

modern France, proved inspirational. While Jim featured Dijon's artisans, he encouraged my interest in studying work outside the guilds, promoting an interest I had in the work of the urban poor, and the many ways they cobbled together livings despite their exclusion from the corporate institutions so critical to shaping legal identities in early modern France.<sup>7</sup> As this forum illustrates, Jim has influenced generations of scholars of early modern France along a variety of different intellectual and historiographical paths. This essay on the *chiffonnier* represents one small extension of Jim's very broad intellectual impact, reaching back to some of his earlier interests and approaches.

Pierre Richelet's *Dictionnaire françois*, first published in 1680, defined the *chiffonnier* as one who collects rags in the streets of Paris, using a long-handled hook to sift through trash.<sup>8</sup> Antoine Furetière's *Dictionnaire universel* described *chiffonniers* as "criers of old hats and old clothes" but also "those who search through filth for old rags and old cloth."<sup>9</sup> Jacques Savary des Bruslons' dictionary listed a variety of regional terms for France's rag pickers: *chiffonniers*, *pattiers*, *drilliers*, or *peilliers*. According to Bruslons, *chiffonniers* not only bought rags from households, they also searched through the filth of trash heaps and in the streets for rags. Bruslons, however, also described the wholesale rag trade, noting how, after the rags were cleaned and dried, they were stored and sold to paper makers, or to other merchants who re-sold them to paper producers. These wholesale merchants, according to Bruslons, maintained warehouses in Mâcon and Chalons-sur-Saône, and "while it seems at first sight, that the commerce in old rags and cloth would not be an object of consideration, ... every year in France they are sold for very considerable sums."<sup>10</sup>

The *Encyclopédie* also included a scattering of references to *chiffonniers* and the rag trade, noting French prohibitions against exporting rags, and describing Parisian authorities' requirements that stockpiles of rags and bones be removed outside the city walls.<sup>11</sup> The *Encyclopédie*, like many other sources from the period, observed the irony that "ruined tatters" found in "the corners of garbage, gutters, piles of mud and filth... form an immense mass of material necessary for paper, enriching commerce, and furnishing a need to the arts."<sup>12</sup> The *Encyclopédie* also noted the presence of well-off wholesale *chiffonniers* and their warehouses in the faubourgs Saint-Marceau and Saint-Antoine in Paris.<sup>13</sup>

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<sup>7</sup> Dean T. Ferguson, "The Body, the Corporate Idiom, and the Police of the Unincorporated Worker in Early Modern Lyons," *French Historical Studies* 23, no. 4 (Fall 2000): 545-575.

<sup>8</sup> Pierre Richelet, *Dictionnaire françois, contenant généralement tous les mots tants vieux que nouveaux et plusieurs remarques sur la langue françoise* (Amsterdam: J. Elzevir, 1706), 184.

<sup>9</sup> Antoine Furetière, *Dictionnaire universel, contenant généralement tous les mots françois tant vieux que modernes & les termes des science et des arts*, Volume I, Second edition (La Hague: A. et R. Leers, 1701), n.p.

<sup>10</sup> Jacques Savary des Bruslons, *Dictionnaire universel de commerce*, Tome 2, C-K, (Paris: Estienne et Fils, 1748), 310.

<sup>11</sup> *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*. Volume 3, *Cha-Conjonctif*, Denis Diderot and Jean d'Alembert, eds., (Paris: Briasson, 1751-1765), 333.

<sup>12</sup> *Ibid.*, 534.

<sup>13</sup> *Ibid.*

Paper mills were not the only beneficiaries of the *chiffonniers*' labor. A wide variety of animal wastes, bones, horn, parings of hides, and even woolen rags were processed into muriatic acid, sulphate of ammonium, salammoniac, and muriate of ammonium. Woolen rags were also shredded and used as fertilizer.<sup>14</sup> Horse carcasses collected by rag pickers were rendered into an oil and sold to enamel makers or to soap producers to make bar soap.<sup>15</sup> An incomplete list of the variety of refuse items sought by eighteenth-century rag pickers might include, in addition to cotton, linen and woolen rags, chimney soot used to stain cloth or sold to make lye soap, dead cats and dogs for their skins, horse hair, the fat of horses to make oils, dog excrement used in leather trades, human hair used to fashion wigs, cork and nails, and splinters of glass and bone.<sup>16</sup> Louis-Sébastien Mercier noted how buttons and heads of canes were produced from the bones unearthed by *chiffonniers*.<sup>17</sup> But, as Mercier emphasized, it was the "vile rag... which will become the ornament of our libraries and the precious treasure of the human spirit. This rag came before Montesquieu, Buffon, Rousseau. Without [*the chiffonnier*'s] hook, my work would not exist for you, reader."<sup>18</sup>

*Chiffonniers* and others in the rag trade did not merely sift through refuse for recyclables. They also relied on the industriousness and thrift of householders and domestics acquiring rags and other wastes through a variety of exchanges. One of the measures used by paper mill owners was to provide small advances to rural women in exchange for consignments of rags to be supplied at a specified future date. Jacques Lacombe in 1789 described how, in this way, new paper mills could secure as many as 8,000 rags per month from a catchment zone of some eight to ten leagues. Within two years, according to Lacombe, newly opened mills might take in enough rags to keep two vats occupied, dispense with purchases from rag merchants, and even maintain a surplus of rags sufficient to sell on their own account.<sup>19</sup> Breton rag collectors, known locally as *peilliers* or *stoupes*, scoured lower Brittany for rags, scrap metal and other materials, acquiring these things in exchange for fruit in summer or crockery in winter.<sup>20</sup> These practices may have been quite old, for

<sup>14</sup> For a description of a number of eighteenth-century methods for the production of sal ammoniac, see Jacques Lacombe, *Encyclopédie méthodique. Arts et métiers mécaniques*, Volume 6 (Paris: Panckoucke, 1789), 747-751.

<sup>15</sup> Jacques Savary des Bruslons, *Dictionnaire universel de commerce, contenant tout ce qui concerne le commerce qui se fait dans les quatre parties du monde*, Volume I (Amsterdam: Chez les Jansons à Amsterdam, 1726), 739; This oil reportedly sold for prices as high as those paid for the best olive oils. Nicolas Baudeau, *Encyclopédie méthodique: Commerce*, Volume 2 (Paris: Panckoucke, 1788), 659; Antoine-François Fourcroy, *Encyclopédie méthodique: Chimie et métallurgie*, Volume 6 (Paris: M<sup>me</sup> Veuve Agasse, 1815), 115, 119-120.

<sup>16</sup> Pierre-Denis Boudriot, "Essai sur l'ordure en milieu urbain à l'époque pré-industrielle: Boues, immondices et gadoue à Paris au XVIIIe siècle," *Histoire, économie, et société* (1986): 515-528.

<sup>17</sup> Louis-Sébastien Mercier, *Le Tableau de Paris, corrigée et augmentée*, Vol. 1 (Amsterdam: s.n., 1782), 376.

<sup>18</sup> *Ibid.*

<sup>19</sup> Jacques Lacombe, *Encyclopédie méthodique. Arts et métiers mécaniques*, Vol. 5 (Paris: Panckoucke, 1789), 481-482.

<sup>20</sup> J. Lemoine and H. Bourde de la Rogerie, "Introduction," *Inventaire sommaire des archives départementales antérieures à 1790—Finistère*, Archives civile—Série B, Tome III. Eds. J. Lemoine and H. Bourde de la Rogier (Quimper: Imprimerie Brevetee, 1902), p. cxcv; In the nineteenth century these figures became a subject of folklorists and antiquarians interested in their peculiar argot. See Narcisse Quellan, *L'argot des nomads en Basse-Bretagne* (Paris: J.

as early as the thirteenth century, very soon after the introduction of paper production in France, rag gatherers were already exchanging pins and needles for worn garments and rags.<sup>21</sup> These exchanges reveal both the ways in which rag collectors acquired a variety of recyclables, but also illustrate a form of in-kind savings, even a form of petty cash used as a purchasing medium by poor households.

Rags, of course, were not only sources of savings and income for households. Institutions across early modern France also benefited from rag collections and sales, as well as from sales of ashes, kitchen grease, and other waste materials. For example, the account books of Lyon's *Hospice general* for the year 1793, listed among its casual receipts 677 *livres* for the sale of old linens and rags, 6,463 *livres* 11 *sous* for the sale of kitchen grease, and 310 *livres* for ashes.<sup>22</sup> The regulations for the *Hôpital de la Charité* in Lyon included the following instruction for the hospital's *oeconome*: "Each month an inventory will be done of all the linen no longer in service...and scraps and old rags will be collected until there is a quantity sufficient to be sold to the highest bidder."<sup>23</sup> Early modern households and institutions, therefore, employed rags and other wastes as stores of value and sources of petty cash. The significance of this saving as a source of variable capital in a number of industries deserves further exploration.

In 1847 an anonymous English author observed that "the labour of the *chiffonnier*... creates capital out of refuse."<sup>24</sup> Is it possible to measure this capital and its significance? Perhaps, though primarily as it relates to France's paper production. Growth of paper production, prior to the early nineteenth century, depended more directly on expanding quantities of rags, and increasingly intensive efforts to collect them, than on technological innovation within the industry. Account books of paper mills, more specifically, or even the output of French paper mills, therefore, provide a rough measure of the rags, the principle variable capital, required by the industry.

It is possible to gain some measure of this variable capital by examining a variety of sources from the early modern period. Monopolies granted by local authorities to rag collectors to ensure supplies of rags for local paper mills provide one such source. The town of Metz, in 1451, for example, granted a rag collector a monopoly to collect rags in the city, and to supply the city's paper mill with thirty thousand pounds of good rags at 4 *livres* 10 *sous* per thousand, and five thousand coarse rags at 45 *sous* per thousand.<sup>25</sup> Contracts between rag collectors and paper mill owners also provide a measure of the quantities of rags collected from surrounding areas. A

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Maisonneuve et Ch. Leclerc, 1889). A lengthy excerpt of Quellan's piece can be found in "Les Nomads Rochois" *La Revue Illustrée de Bretagne & D'Anjou* (Paris: Boulevard de Port-Royal, 1886), 70-72.

<sup>21</sup> Augustin Blanchet, "Avant-propos," *Papyrus, sive, Ars conficiendaie papyri J. Imberdis: avec traduction française; 1693-1899* (Paris: C. Béranger, 1899), iv.

<sup>22</sup> *Compte-rendu par l'administration de l'Hospice général des malades de commune-affranchie ci-devant Grand Hôtel-Dieu, pour l'Année 1793, faisant suite aux Comptes-Rendus pour 1791 et 1792*, (Commune-Affranchie: Imprimerie Républicaine, 1794), n.p.

<sup>23</sup> *Règlements de l'Hôpital de la Charité de Lyon*, (Lyon: L. Cutty, Imprimeur des Hôpitaux, 1808), 100.

<sup>24</sup> Anon., "Rags," *Chambers's Edinburgh Journal* 7:158 (Saturday 9 January 1847), 23.

<sup>25</sup> Charles-Moïse Briquet, *Les Filigranes: Dictionnaire historique des marques du papier*, Volume I A-Ch, (Paris: Alphonse Picard et Fils, 1907), 59-60.

contract, concluded in 1561, detailed an agreement between a rag collector from Saint-Morice and a paper merchant from Étampes, in which the former promised to deliver five hundred quintals of fine and one hundred quintals of coarse rags at thirty *sols* per hundredweight of fine linen and fifteen *sols* per hundredweight of coarse rags.<sup>26</sup> These contracts provide a suggestive evaluation of both the resource needs of local paper producers, and a rough estimation of the quantity and value of rags collected in a particular catchment area.

In the second half of the eighteenth century, the quantities of rags needed to operate a paper mill year-round appear to have increased significantly and perhaps reveal the emergence of regional or national markets for the raw material. Jean-Elie Bertrand, in 1776, estimated the quantity of raw material needed by a paper mill to operate year-round at 600 quintals of rags, valued at between four and eight *livres* per hundredweight.<sup>27</sup> Local evidence, perhaps indicative of varied availability of raw materials and intermittent delays to production, suggests somewhat smaller supplies of rags. For example, Damien Balay, operator of a paper mill in the Auvergne, listed among his expenses in 1767, the purchase of 33,000 pounds of rags at a price of 12 *livres* 16 *sous* per quintal, paid to the widow Madame Bonnefoix, a rag merchant.<sup>28</sup> In 1779 a small mill in Saint-Gingolph on the Franco-Swiss frontier with one vat and one water wheel consumed 400 quintals of rags during the year.<sup>29</sup> These contracts scattered across early modern France provide a measure of rag consumption by the industry, but also might provide suggestive evidence of the thrift of local populations and the value to households of rags as one form of in-kind savings. Of course, these contracts represent largely local evidence with perhaps limited larger significance.

However, on a more macro-economic level, it is also possible to speculate. On the eve of the revolution, according to Pierre-Claude Reynard, France remained the largest producer of paper in Europe, with perhaps between 700 and 750 paper mills and an output of 6,000 to 10,000 tons of paper, requiring between 9,000 and 20,000 tons of rags.<sup>30</sup> This corresponds well with Auguste Lacroix's estimation, offered in 1863, that French paper makers a century earlier had consumed some twenty million kilograms of rags per year.<sup>31</sup> These rags represented a measure of the output of *chiffonniers*'s, peddlers', and rag dealers' labor, and an imperfect indicator of one aspect of thrift and the accumulation of in-kind savings by French households and institutions. They thus represented one measure of the nation's wealth.

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<sup>26</sup> Maurice Jusselin, "Achats de chiffons à Chartres par un papetier d'Étampes en 1561," *Bibliothèque de l'École des chartes* 97 (Janvier-Juin 1936): 459-60.

<sup>27</sup> Jean-Elie Bertrand, *Descriptions des arts et métiers*, Volume IV (Neuchatel: Imprimerie de la Société Typographique, 1776), 501.

<sup>28</sup> *Archives départementales du Puy-de-Dôme*, 3 J Art. 42.

<sup>29</sup> Victor Barbier, *La Savoie industrielle*, Mémoires de l'académie de Savoie, Troisième Série, Tome III (Chambéry: L'imprimerie d'Albert Bottero, 1875), 457.

<sup>30</sup> Pierre-Claude Reynard, "Unreliable Mills: Maintenance Practices in Early Modern Papermaking," *Technology and Culture* 40:2 (1999), 243. This calculation is based on Reynard's assumption that at this date for every pound of paper produced between one and a half to two times the quantity of rags were required.

<sup>31</sup> Auguste Lacroix, *Historique de la papeterie d'Angoulême suivi d'observations sur le commerce des chiffons en France*, (Paris: Ad. Lainé et J. Havard, 1863), 151.

The nineteenth-century scion of a French paper-making family, Ambroise Firmin-Didot, expressed this connection succinctly: “The price of rags is the principal base of the price of paper, and conforming to the general law, the value of rags almost always corresponds to the degree of wealth and prosperity of diverse peoples.”<sup>32</sup> In an era before the emergence of modern financial institutions, the development of benevolent societies, or even widespread availability of money, the rags and other materials saved by households served as a form of “in-kind savings” with which households might respond to emergencies, or with which they made many of the consumer transactions that have been associated with the increased consumerism of the eighteenth century. In-kind savings, which included collections of rags, broken crockery, glass and dishware, as well as old clothing, could be utilized to make many of the petty purchases critical to household consumption. In this way, what was otherwise a waste, a spillover effect of urban ways of living, made possible petty transactions that extended both the opportunity and the habit of consumerism. And, as importantly, rags and other waste materials provided critical raw materials, a vital variable capital, required in a host of industrial processes. These accumulations of waste, and the exchanges, as well as the scavenging activity, that made them available to a range of early modern manufacturing processes, perhaps deserve further attention within the interlocking histories of industrialization, the “industrious revolution,” and the expansion of consumerism in the early modern period. Lenard Rosenband has argued against easy dismissal of an early modern “industrious revolution” as a “concept too many,” despite “paper thin” evidence of longer hours and newly intensified work in the paper mills of the eighteenth century. Rosenband points to “new avenues of inquiry” prompted by de Vries’s paradigm, and the need to establish the precise links between new patterns of consumption and changes in production processes.<sup>33</sup> One such link, I would argue, is found in the intersection of the collection of waste, the in-kind savings that such waste often represented for households, and purchases of consumer items using things like rags, household grease, scrap iron, bones, and other household wastes as a form of petty cash.

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<sup>32</sup> Ambroise Firmin-Didot, *Essai sur la typographie*. Extrait du Tôme XVI de l’Encyclopédie Moderne (Paris: Typographie de Firmin-Didot, Frères, 1855), 91.

<sup>33</sup> Leonard N. Rosenband, “The Industrious Revolution: A Concept Too Many?” *International Labor and Working-Class History* 90 (Fall 2016): 237-238.

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H-France Salon  
ISSN 2150-4873  
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