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Making Coal Sharp: Gendered Consumers and Users of Mineral Fuel in the 19th Century United States

Abstract
At the same time that urban American hearths and kitchens became dependent upon coal, proscriptive accounts of gendered domesticity grew in popularity. Buying coal was a man's world, full of sharp dealings, underhanded sellers, and cutthroat competition. Using coal, on the other hand, was women's work, in which emergent ideas of domestic economy placed an emphasis upon efficiency and order. Although these worlds were separate in theory, in actuality the use of coal blurred idealistic visions of a gendered division of labor in the home. "Making Coal Sharp" examines the ways in which industrial capitalism connected the hearth and kitchen to wider energy markets, while complicating an idealized gendered division of labor held dear by middle and upper-class American households as they negotiated this first major energy transition to fossil fuel use.

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INTRODUCTION

1 In 1966, the Connecticut Yankee Atomic Power Company produced a brief film to support the construction of their nuclear power plant in Haddam Neck, Connecticut. The film, entitled *The Atom and Eve*, featured the Broadway actress Leslie Franzos dancing amid a showcase of household goods meant to represent the power of electricity—and in this particular case nuclear power—to make an idyllic home life a possibility. "Eve and thousands of Eves like her," the narrator proclaims, "live in truly an electrical Garden of Eden." (fig. 1). The images of Franzos cavorting with a refrigerator and several other home appliances demonstrated the ease of modern life and the role of energy in creating those many luxuries. As an angelic figure separated from the dirty work of creating energy, Eve represented the pinnacle of domestic life made clean, simple, and alluring through the application of cheap and easy energy. Rather than struggle with coal or oil furnaces to stay warm in the frosty New England winters, families could rely upon nuclear power to provide a clean and efficient alternative to their existing energy regimes. But would this new form of energy work the wonders as promised? *The Atom and Eve* attempted to convince a skeptical American public of nuclear energy's utility for domestic work; in doing so it tapped into longstanding tropes about the role of women and energy in the American home.

2 Since the founding of the American Republic, the notion of making domestic work cheap and easy through the application of new forms of energy have made their way into public forums via household management literature, newspaper and journal articles, and various forms of advertising. Changing an everyday routine is not easy, and where new technology is involved the learning curve can be steep. Eve might dance around the wonderous appliances made possible by new forms of energy, but the work of purchasing and installing them most likely fell to her male counterpart, Atom (or Adam). Staying warm in North American winters remained a constant

Figure 1: Leslie Franzos surrounded by nuclear energy's labor-saving devices. The actual reaction to domestic appliances by women in the industrial era was less celebratory.
(Source: YouTube. https://youtu.be/2_epgo6cxdg)

even as the means to do so would undergo periodic change. How do these energy transitions occur on the ground level? In the urban centers of the East Coast, where much of this change originated, the distinction between the *users* and *consumers* of technology became significant, as there was a gendered division between those who mostly used energy-intensive appliances and the household occupants who purchased them. This distinction was rooted in the emergence of middle-class assumptions about the role of men and women in the growing industrial economy of nineteenth-century urban America; one based upon labor-saving devices that implemented new technological systems. These changes necessitated participation in a market economy that emphasized aggressive bargaining under the rules of *caveat emptor*. For Americans steeped in this nineteenth-century mindset, men were naturally suited for this activity and women more adept at implementing innovations once they crossed the threshold of the home. The notion of "sharp dealing," or negotiating a good price for goods in a competitive marketplace at the expense of the other party, remained quintessentially male while the housework itself occupied the feminine sphere of influence. These proscriptive distinctions broke down many times in the face of reality, and yet the common assumption that men would act as consumers of new forms of industrial technology, while women would use them, remained in place from the age of wood-burning fireplaces through the Franzos' Atomic Age dance routine.[1]

3 In the early part of this campaign to apply energy to the housework, a quotidian Eve was much more likely to burn coal than flip an electrical switch. Yet the need for a cultural campaign to switch energy regimes drew upon similar themes that emphasized both economy and ease. In 1823 the editors of *Niles' Register* sought to "induce prudent housekeepers to adopt the use of this very cheap fuel" and the designers of one anthracite coal cooking grate promised housekeepers in 1826 "No stoop, no smoke, no odors—little care and less fuel." Despite the centuries that separated the adoption of mineral and nuclear energy in the American household, the message sent from energy producers was the same: our product can make your life easier, your home comforts many, and your family happy. The comparison here might seem strange—isn't burning coal a natural extension of firewood? In fact, the implementation of a new technology such as a coal-burning stove, while perhaps not complex to modern eyes, did represent an integration of America's rising industrial economy—one that became increasingly dependent upon manufacturing, complex systems of transport, and a closer reliance upon fuel efficiency—into the home.[2]

4 Despite promises of domestic bliss, historians of technology and the home have long documented the many problems that new energy regimes faced as households attempted to integrate them into their daily routine. The transformation of the hearth over the course of the nineteenth century was revolutionary, as the incorporation of coal in home heating and cooking linked urban households, particularly in the North where home heating needs were most acute, into America's industrial economy at two critical junctures: the market for consumer durables and the national distribution network for mineral fuel. Theoretically, this change reduced the cost of heating a home and spared families from the endemic shortages of firewood that plagued northern cities and towns during the early 19th century. Reducing the price of home heating fuel might please male consumers, yet the female

1 Historians of technology have unpacked the gendered assumptions about male-dominated production and female-centered consumption to reveal more subtle relationships at work in both public and private settings. In this case, the focus upon energy use in domestic technology sidesteps the production/consumption divide. See, for example, the essays in Roger Horowitz and Arwhen Mohun (eds.), *His and Hers: Gender, Consumption, and Technology* (Charlottesville: University of Virginia Press, 1998).

2 *Niles' Register* (Baltimore), 24 September 1825; Frederick Binder, "Anthracite Enters the American Home," *Pennsylvania Magazine of History and Biography*, 82, 1958, 91. The integration of the industrial economy into the American home is the major theme in Sean Adams, *Home Fires: How Americans Kept Warm in Nineteenth-Century America* (Baltimore: Johns Hopkins, 2014).

users of this new form of domestic energy did not see much in the way of labor-saving innovations with the adoption of stove-coal system. Susan Strasser argues that the cast iron stove "reduced the hazards and some of the work, but did not eliminate the central tasks of hauling fuel and tending fires," which traditionally fell to women of the household. Ruth Schwartz Cowen notes that "stoves were labor-saving devices, but the labor that they saved was male" as the work of cutting and hauling wood disappeared, yet the labor required to provide meals did not. In fact, the integration of coal stoves provided even more work for women in the household, as building and maintaining a fire, as well as cleaning and polishing iron stoves, fell to them.[3]

5 The notion that men and women inhabited "separate spheres" of work and home emerged from the proscriptive ideals of a narrow sliver of middle and upper-class observers during the 19th century rise of the "cult of domesticity." As limited as this doctrine was in its real application, it remained influential in both Victorian England and the United States, where it reached its most idealistic form in the late decades of the nineteenth century. As the application of new technology in the home, as well as the expansion of domestic service in middle class households advanced in the post-Civil War decades, the ways in which male and female Americans integrated their own household within the emerging network of coal-burning domestic appliances reflected a gendered division of men as consumers and women as users of mineral fuel. Of course, overlap in these roles might occur from time to time, but rather than smooth out any differences and make a coal-fired Eve surrounded by newfangled stoves and furnaces, this energy transition reflected an emerging industrial marketplace and yet it was still influenced by notions of domesticity. Both American men and women had proscriptive roles in this new coal-burning world, even as brand new, gendered actors such as coal dealers integrated themselves into the industrialized hearth that was commonplace in northern American cities by the turn of the century.[4]

ENERGY AND GENDER IN THE EARLY AMERICAN REPUBLIC

6 Although mineral fuel did not eclipse the use of wood in the economy of the United States until the 1880s in terms of overall use, American cities were the vanguard of the transition to coal. In the two decades following the War of 1812, urban homes began to burn more and more coal, as disappearing stocks of nearby firewood and increased production in American coal fields helped along this energy transition. By the 1830s and 1840s, the residents of large cities such as Boston, Philadelphia, New York, and Baltimore burned both firewood and coal for home heating, with the latter taking a definitive lead in terms of preference and overall usage. Families saw coal transformed from a novelty used only during periods of firewood scarcity into an everyday commodity; mineral fuel was ubiquitous in the urban American hearth by the outbreak of the Civil War. But unlike the previous energy regime that relied up on local stocks of firewood, the American coal trade developed an extensive network of canals and railroads to distribute coal across the nation. Rather than purchasing wood fuel in a spot market, American consumers in the mineral fuel regime tapped into this extensive network. In doing so, men and women extended the needs of their household both forwards into the industrial marketspace, while also inviting the values of that market backwards into their homes. Firewood appeared in seasonal markets, often shipped to urban centers by local farmers looking to augment their year's

3 Susan Strasser, *Never Done: A History of American Housework* (New York: Pantheon Books, 1982), 49; Ruth Schwartz Cowen, *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave* (New York: Basic Books, 1983), 61.

4 For a brief overview on the problematic nature of domesticity as a proscriptive measure in 19th century American society, see Nancy Cott, *The Bonds of Womanhood: "Woman's Sphere" in New England, 1780-1835* (New Haven, CT: Yale University Press, 1977); Linda Kerber, "Separate Spheres, Female Worlds, Woman's Place: The Rhetoric of Women's History," *Journal of American History*, 75, 1988; Cathy N. Davidson and Jessamyn Hatcher (eds.), *No More Separate Spheres! A Next Wave American Studies Reader* (Durham, NC: Duke University Press, 2002).

income. Nineteenth-century households that transitioned to coal usage represented the end-point of a commodity chain that involved corporate mining ventures in distant fields, extensive rail and canal networks, and retail coal dealers seeking to stay afloat in cutthroat urban markets. Men and women in urban households of the North did not necessarily jump into this complex system of energy distribution knowingly; like so many agents negotiating change they fell back upon the familiar roles expected of them. The center of the home, the hearth, thus underwent a kind of industrialization filtered through a gendered lens. Whether they liked it or not, American men and women needed this new and complex industrial system in order to stay warm in the colder months of the year.[5]

7 The change in fuel regime adapted to longstanding gender roles in the reordering and tending to the American hearth. Male family members, or in more affluent households a male servant, were responsible for the outdoor work such as securing wood from local dealers, managing the season's supply outdoors, splitting logs to a manageable size, and carrying the wood fuel into the house. Once fuel entered the proximity of the hearth, female residents or servants took charge of lighting and maintaining the fire, keeping fireplaces clean and orderly, and cooking meals. The installation of a coal grate in existing fireplaces made this adaptation rather straightforward. Coal stoves added more tasks on both sides of this gendered division of labor. Male members of the household generally took responsibility for securing the coal stove from dealers and installing it in the house. Once in place, though, women and female servants experienced an increase in their household responsibilities. The traditional task of lighting and maintaining the fires of the household remained in place for women, but the installation of an apparatus such as an iron stove or a coal-burning furnace created new responsibilities for them. For example, iron stoves could rust, and so in addition to removing ashes and fused particles of impurities—known colloquially as "clinkers"—from the stove, women were expected to clean the stove's interior and exterior surfaces and polish it with a blackening agent. This was hard, dirty, but necessary work. On the surface, then, the outdoor/indoor division of labor based on gender seemed to hold firm through this major energy transition.[6]

MAKING THE INDUSTRIAL HEARTH THROUGH STOVES

8 Adapting existing domestic spaces to mineral fuel required both physical and economic changes in the household. In smaller fireplaces for heating individual rooms, a cast-iron grate for burning either bituminous or anthracite coal could be installed a small cost. Wealthy families might continue to burn wood in open fireplaces, mostly for its aesthetic appeal, but by the 1830s and 1840s the coal stove became a common sight in homes across the American North. Most homes, whether purchased, constructed, or rented, would have had existing fireplaces built into the space; stoves offered an innovation for the American home as the nation's first real consumer durable and as a product secured by men in the antebellum marketplace. Iron stoves, although simple, were expensive, with many models costing the equivalent of a few weeks' wages for many working-class families. Producers responded by creating a diversity of home heating devices aimed at various levels

5 For a good overview of how this energy transition took place and how domestic use led the way, see Christopher Jones, "The Carbon-Consuming Home: Residential Markets and Energy Transitions, "*Enterprise and Society*, 12, 2011. The larger story of the "industrial hearth" and the ways that it connected homes to national network of coal distribution is covered in Adams, *Home Fires*, 65-92. Jeremy Zallen expands the connection between households and energy systems to encompass global systems of work and exploitation for home illumination in *American Lucifers: The Dark History of Artificial Light, 1750-1865* (Chapel Hill: University of North Carolina Press, 2019).

6 For more on the gendered division of labor in early American households, see Jeanne Boydston, *Home and Work: Housework, Wages, and the Ideology of Labor in the Early Republic* (New York: Oxford University Press, 1990) and Suellen Hoy, *Chasing Dirt: The American Pursuit of Cleanliness* (New York: Oxford University Press, 1995). For the integration of coal-burning apparatuses in the American home, see Priscilla Brewer, *From Fireplace to Cookstove: Technology and the Domestic Ideal in America* (Syracuse, NY: Syracuse University Press, 2000) and Adams, *Home Fires*.

of income and needs—combination cooking and heating stoves, elaborate self-feeding stoves, and simple six plate designs aimed at economy and thrift. The increasing use of coal-burning stoves in American homes extended the domestic economy into the more public areas of the marketplace in unprecedented ways by the 1840s. By 1845, the U.S. patent office estimated that there were more stove patents issued from their office than for any other kind of invention. The stoves themselves were sold in a variety of forms, first as novelty items at general merchandise retailers, and eventually the stove dealer became a specialized merchant in the field.[7]

9 Purchasing a stove put families directly into contact with one of the vanguards of American industrialization. The historian Howell J. Harris estimates that by 1860 one stove was sold for every five American households and argues that stovemakers "developed methods of product differentiation, began to establish valuable brand identities, reached out to their consumers and built their own direct-sales networks." As the market for stoves expanded, the location of selling points moved from domestic to commercial settings. Stove foundries eventually opened their own showrooms close to their production facilities and hired jobbers to install showroom models in more distant locations.The stove industry shifted the point of sale from a tinker or peddler approaching the home directly—where they would have had direct contact with both male and female members of the household—to specialized retail centers more likely to serve as male spaces devoted to back and forth bargaining. As a result, urban households were removed from most of the retailing aspect of stoves, which allowed for a deepening of gendered divisions between consumers and users. Men might purchase and install them, while women were expected to adapt them to heating and cooking practices. As in other areas of the rapidly developing market for industrial goods, the practice of "sharp dealing" in stoves required male consumers to be wary of false promises of quality, the upsale of certain models, or prices far removed from the wholesale cost. In 1844 the Boston stove dealer, L.V. Badger, printed an almanac with helpful hints for consumers beleaguered by the "infinite variety" of stoves and noted that "Often has a person to lament his sad mistake in getting a poor stove." Of course, Badger's almanac promised to enlighten his customer: "now for 6 ¼ cents the whole story is told, and who is there so unwise as to be without such a valuable acquisition to their daily enjoyments."[8]

Stove retailers dealt mainly with upper and middle-class consumers. Philanthropic organizations hastened the transition to stoves among the nation's working poor by subsidizing the cost of the transition from wood to coal. The suffering of families during the cold winters of the American North triggered a rise in fuel philanthropy aimed at making all urban residents into consumers of coal. In part, these initiatives were aimed at protecting the most vulnerable families without male breadwinners. Tales of single women with children shivering in the cold accelerated the use of stoves among the urban poor. For example, during a particularly brutal winter in 1831, Philadelphia's newspapers teemed with stories of mothers burning furniture in order to stay warm at the same time that the Lehigh Coal and Navigation Company advertised a $1.50 anthracite cooking stove under the heading "Economy and solid comfort for the poor." Philadelphia's Fuel Savings Society purchased one hundred stoves from a local dealer and sold them to the "deserving poor" at a discount rate of $5.50. The Union Benevolent Society, another philanthropic society, sent out nearly 400 stoves to poor families for winter seasons. Overall, these programs developed into as a substantial subsidy for new fuel technology, as cheap coal stoves sold for about $15 to $20 dollars during the 1830s, with most models averaging about $30. During the antebellum years, similar initiatives in which charities distributed both fuel and the means to burn it to households appeared in cities across 10

7 Brewer, *From Fireplace to Cookstove*, 64, 85-86.

8 Howell Harris, "Inventing the U.S. Stove Industry, c. 1815-1875: Making and Selling the First Universal Consumer Durable," *Business History Review*, 82, 2008, 702; *Stove Almanac for 1844* (Boston: L.V. Badger, 1844), 1, 19.

the American North, as philanthropy and fuel markets merged to encourage technological change in working-class households.[9]

11 Stove production facilities clustered around industrial nodes such as Troy, New York, which was the nation's leading center for the manufacture of stoves. After fabrication, stoves moved through an extensive network of wholesalers and retailers based in American cities and towns. These production and distribution functions were exclusively the province of male manufacturers and merchants, even as advertisements stressed the utility of stoves for domestic purposes. As the primary decider for large purchases, American men acted as *consumers* in the market for stoves, while women represented the primary *users* of them. In other words, once the stoves crossed the threshold of the domestic space, their use and care became subject to female oversight. Eventually designs became so sophisticated that in 1878 Catharine Beecher proclaimed that the modern coal-burning stove "can be used satisfactorily even when the mistress and maid are equally careless and ignorant of its distinctive merits." Beecher admitted that she used the coal stove herself, proof that "even without any instructions at all except the printed directions sent with the stove, an intelligent woman can, by due attention, though not without, both manage it, and teach her children and servants to do likewise."[10]

"SHARP DEALING" AND THE MANLY ASPECTS OF COAL

12 Anthracite coal, the preferred mineral fuel in eastern cities such as Boston, New York, or Philadelphia, needed more kindling and early attention than traditional wood fires. Once lit, an anthracite fire required regular attention and, according to one domestic manual, "should always be punctually replenished at the stated hours." Careful attention to the amount of fuel insured that the fire would not extinguish itself or, more ruinously, melt the iron grate that separated it from its ashes. "Injudicious poking and stirring will put it out," Eliza Leslie advised in 1840, "instead of improving it." Domestic servants found coal fire maintenance an essential part of their portfolio. "Very few servants at first understand the method of kindling and continuing a fire of Lehigh coal, any will never learn, and many more from erroneous instructions, whilst they think they understand it, make but a bungling piece of work of it," Robert Roberts argued in his 1827 guidebook, *The House Servant's Directory*. "As our book is intended to be useful to servants," Roberts concluded, "it must be granted that a knowledge of how to make a Lehigh [anthracite] coal fire, when it is becoming so common in this country, is quite an acquisition."[11]

13 As urban households converted to mineral fuel over the course of the antebellum period, they relied more heavily upon a national network of coal distribution. Anthracite, the preferred fuel of most households, shipped from Eastern Pennsylvania to major urban centers of the East Coast. Bituminous coal served as the main household fuel in the northern regions west of the Appalachians. Regardless of rank, coal traveled via canals and railroads to urban distribution centers,

9 *Philadelphia Gazette and Advertiser*, 19 January 1831; *Niles' Register*, 16 July 1831; *A History of the Fuel Savings Society of the City and Liberties of Philadelphia: From its Organization to 1871* (Philadelphia: Collins, 1875), 9; *Union Benevolent Association, 1831-1881: Fifty Years of Work Among the Poor of Philadelphia. Historical Sketch of the First Half-Century of the Union Benevolent Association* (Philadelphia: Chandler Printing House, 1881), 25. Estimates on the cost of stoves come from Priscilla Brewer, who notes the "sticker shock" that most antebellum consumers faced when purchasing a stove. Brewer, *From Fireplace to Cookstove*, 79. For more on fuel philanthropy, see Sean Patrick Adams, "Warming the Poor and Growing Consumers: Fuel Philanthropy in the Early Republic's Urban North," *Journal of American History*, 95, 2008.

10 Howell J. Harris, "Conquering Winter: U.S. Consumers and the Cast-Iron Stove," *Building Research and Information*, 36, 2008; Catharine Beecher, *Miss Beecher's Housekeeper and Healthkeeper: Containing Five Hundred Recipes for Economical and Healthful Cooking* (New York: Harper & Brothers, 1873), 188.

11 [11]Eliza Leslie, *The House Book: or, a Manual of Domestic Economy* (Philadephia: Carey & Hart, 1840), 132-133, 135; Robert Roberts, *The House Servant's Directory, or A Monitor for Private Families* (Boston: Munroe and Francis, 1827), 159. For more on the struggles of users in everyday technology, see Joseph J. Corn, *User Unfriendly: Consumer Struggles with Personal Technologies, from Clocks and Sewing Machines to Cars and Computers* (Baltimore: Johns Hopkins University Press, 2011).

where it diffused out to local coal yards. These retailers then secured orders from urban households, which was accompanied by some intense haggling over the price per ton, then delivered their product to the purchased. For upper and middle-class households, this entailed the loading in of several tons of coal into a "coal hole" in front of their dwelling, or a coal cellar. Less affluent consumers purchased much smaller amounts, at a high markup in in price. If they could not afford to deal directly with a coal dealer, poor families and individuals likely purchased their fuel by the bushel or bucket from a local grocer. Whatever the size of the order, coal dealers, emerged as the major contact point between households and the American mineral fuel network in the decades following the Civil War.

14 For the most part, the world of the coal dealer, in which "sharp dealing" and cutthroat competition ruled the day, was dominated by men. As the national market for mineral fuel allowed highly competitive railroads and coal companies to dump vast amounts of bituminous and anthracite coal into urban markets, competition was fierce and profit margins thin—usually less than ten cents on the ton—and so some dealers succumbed to the temptation to cheat their customers. They viewed this as a necessary tactic in a highly competitive, easy entry/easy exit business and were shielded by the spirit of *caveat emptor* shaping American common law. This behavior was reinforced by the structure of the industry. In 1873, the president of the Philadelphia Coal Exchange estimated that about four hundred coal dealers worked in his city, and that "Any one who commands trade and capital can enter the business, and securing any Coal for sale is simply a matter of private bargain between himself and the producer who chooses to have his Coal disposed of in that way." A year later, the *Chicago Tribune* proclaimed that "the sooner it is understood that your neighborhood petty coal merchant swindles you inevitably and of necessity, the better it will be for coal consumers."[12]

15 Male consumers and dealers seemed most at odds when dealing with weight. Although most cities had a small number of public scales and inspectors on hand to ensure standard weights, these officials were overwhelmed. Philadelphia, a city of nearly 675,000 inhabitants, had three coal inspectors in place by 1871 to oversee a trade that saw between 200,00 and 500,000 tons sold every month. Male customers could demand that dealers send their wagonload loads to public scales, but in doing so they appeared incapable of "sharp dealing" themselves. More often than not, purchasers eyeballed the coal wagon and proclaimed it a fair deal. Dealers purchased "long" or "gross" tons of coal measuring 2,240 pounds from wholesalers and coal companies but sold "short" or "net" tons of 2,000 pounds to their customers. As waste rock and slate did make its way into wholesale shipments of coal, dealers argued that they needed this discrepancy to break even. Consumers often complained that they were sold tons of coal that were well short of the 2,000-pound mark. Investigative reports tended to support this accusation. In New York, a set of dealers used eighteen and nineteen hundred pounds delivery wagons and pocketed the excess coal. In 1869 the state investigated sixteen dealers and found that fourteen of them were well short of 2,000 pounds. At the same time, samples of a "ton" of coal sold to consumers in Philadelphia found them from three hundred to two hundred pounds short.[13]

16 These very public complaints about coal dealers and weight wound their way into the daily routine of urban life in late 19th century America. The unscrupulous coal dealer, for example, became a stock character in popular humor as their "sharp dealing" took a dark turn. Jokes focused on the dealer's propensity to cheat consumers at every turn and in this case, humor blunted what was a very large concern for American households. The

12 *The Coal Monopoly. The Coal Trade of Philadelphia in Reply to the President of the Philadelphia and Reading Railroad Company* (Philadelphia: A.T. Ziesing & Co., 1873), 4; *Chicago Tribune*, 15 Nov. 1874.

13 *Journal of the Common Council of the City of Philadelphia*, vol. 2 (Philadelphia: King and Baird, 1874), 355-356; R. G. Healey, *The Pennsylvania Anthracite Coal Industry, 1860-1902: Economic Cycles, Business Decision-Making and Regional Dynamics* (Scranton, PA: University of Scranton Press, 2007), 227; *Gray's New England Real Estate Journal*, 15 Feb. 1869; *Saward's Coal Trade Journal*, 15 Dec. 1875, 10 Jan., 16 May 1877.

humor magazine *Puck* reprinted an article from a Philadelphia newspaper that reported "The only thought that troubles a coal-dealer when he reads of a terrible colliery explosion is to know whether he shall clap fifty cents or a dollar on the price of a ton." Not only does this joke establish the coal dealer's love of profit; it also paints this figure as lacking basic human emotion. In both interpretations, the profession does not fare well in the public eye. In 1888 *Puck* printed two coal dealer jokes in subsequent issues: one had Col. Colcart, the famous dealer, building a yacht that measured "eighty tons coal measure, sixty tons ordinary," and another reported that "Strange as it may seem, a ton of feathers is heavier than a ton of coal, as every coal dealer and consumer well knows." A joke entitled "The Honest Dealer" featured a dealer who asks his employee how much they sent Mrs. Goodheart for the last ton she bought. The worker answers "1700 pounds" and the dealer retorts, "That's right. Now come and paint these pebbles black." Finally, a joke published in 1900 features a city merchant asking a coal dealer, Mr. Brown, if the people in his town take any interest in athletics. The coal dealer answers yes, and when asked what kind, he says ("unconsciously") that "I am the champion light weight." The principal actors in these jokes were almost always male; more significant is their common theme that reflected an aggressive atmosphere of sharp-dealing and swindling. As the stock character of the dishonest coal dealer became more ingrained in everyday life, the need to insulate the American family from their predatory behavior was all the more pressing; humor could blunt this impact, but never quite remove it.[14]

WOMEN AND THE HOUSEHOLD FUEL ECONOMY

17 There is little evidence that American women spent a great deal of time haggling with coal dealers over the price of a ton, but they were involved in fuel economy once it crossed the front door. The proscriptive view of the home and hearth as the realm of women held firm in the wake of coal's adoption, but the notion that women were absolved of being economical users of fuel did not. They might not confront dealers in stoves or coal on their own turf, but female users of coal nonetheless were aware of fluctuations in energy markets. In fact, evidence suggests that female housekeepers kept well abreast of coal prices even as they were expected to remain insulated from rapacious dealers. *Frank Leslie's Ladies Magazine* published a fictional account of a young housewife who reminded her husband, when he complained about the chill in the air, that coal was $12/ton and they must economize. For example, Elizabeth Ellet's advice to female housekeepers in 1872 was to check fuel bills regularly, and "thus she will detect, and can check, any inaccuracy on the part of the tradesman, or extravagance on the part of her servants." *Everyday Housekeeping* recommended that women actively learn about their local fuel markets: "The different names by which the various kinds and grades of coal are known are liable to be a source of some perplexity to the house keeper until she becomes acquainted with the supplies of her market, and with the customs of the dealers there."[15]

18 In addition to staying in tune with price movements, housekeepers needed to adjust to various types of coal in their stoves and grates. By the 1870s, coal dealers offered a dizzying array of choices named for location, size, and rank: Peach Mountain, Grey Ash, Sub-bituminous, Nut, Pea, and other descriptive names dotted the newspapers and broadsheets. Male consumers might act on price alone in making their purchase, but as the agent for coal dealing firm Meeker & Dean wrote in *Saward's Coal Trade Journal* argued in 1874, "Such people seldom see beyond the end of their noses; they save at the spigot, but lose at the bung-hole." But even the savvy consumer might find it difficult to balance

14 *Puck*, 28 November 1877; 4 April 1888; 23 May 1888; *Judge's Library: A Monthly Magazine of Fun* 54 (January 1894): 40; *Sis Hopkin's Own Book and Magazine of Fun* (New York: Judge Publishing Company, 1900), 19.

15 *Frank Leslie's Ladies Magazine* 17 (December 1865), 422; Elizabeth Ellet, *The New Cyclopedia of Domestic Economy, and Practical Housekeeper* (Norwich, CT: H. Bill, 1872), 33; Charles White, "Household Fuels and Their Economic Uses," *Everyday Housekeeping*, 10, November 1898, 52.

price and quality in the marketplace, as subterfuge from unscrupulous dealers. In 1880 the Philadelphia Retail Coal Dealers Association sent around a circular asking dealers to list best quality coal at the top of their broadsheets and list prices for inferior coal going downward. "This policy is rendered essential by reason of the numerous advertisements of low priced coal fictitiously set forth, as 'best Lehigh' whereby the public are deceived," the Association argued, "and led to believe that they are being imposed upon by the reasonable charge of honest dealers." As a result, many women in urban households might have a preference for their type and rank of coal, but that by no means guaranteed that they could secure it. Making do with various fuels was an important part of homemaking, and knowledge of the comparative strengths and weaknesses of each fuel once it crossed the threshold could save time and money. The image of a housekeeper or servant making do with inferior fuel became a trope in some domestic guides; the notion that women needed to "make do" with what the marketplace offered became an argument in favor of electricity by 1900. Helen Campbell argued that removing coal stoves altogether might remedy the "millions of hours spent by millions of women and an occasional man in tending fires, wrestling with poor coal and wet wood." Campbell's chosen ratio in describing this struggle offers an insight into the gendered aspect of making fires in nineteenth-century America.[16]

19 The issue of weight, so pervasive in the public aspect of coal purchases, had a household dimension that fell under the purview of women. Elizabeth Ellet described the difference between male and female responsibilities as such: "Many heads of families are exceedingly particular about the *price* of their purchases, who are utterly regardless whether or not they have the *weight* they paid for." In fact, the physical space that coal occupied in the home proved much more significant than its weight in tons. In 1878 Marie Ackley Marshall recommended that families not only measure the size of their coal bin, but that they also secure a box that could hold exactly a bushel. Twenty years later, *Everyday Housekeeping* recommended the purchase of "coal-bins of known capacity" so that "the dealer's weights may be approximately corrected or verified." This hardly kept unscrupulous dealers from continuing their grift, as a cartoon in *Time* from 1889 suggests (fig. 2). In that image, a coal dealer recommends using empty boxes to fill up the bin. When his worker asks if that is theft, the dealer responds, "Of course not. They'll

Figure 2: The swindling coal dealer became a common character in American popular literature by the late 19th century. Here a crooked dealer invades the sanctity of the home in order to turn a profit.
Source: *Time*, Vol. 8, 23 February 1889.

16 *Saward's Coal Trade Journal*, 8 April 1874; "Confidential Circular of the Philadelphia Retail Coal Dealers Association, 15 October 1880," from Donaghy and Sons Accounts and Scrapbook, Historical Society of Pennsylvania, Philadelphia, PA; Marie Ackley Marshall, *The Home Guide: A Compendium of Useful Information Pertaining to Every Branch of Domestic and Social Economy: A Manual for Every Household* (Chicago: J. Fairbanks, 1878), 45; Helen Campbell, "As to Ashes and Rubbish," *Everyday Housekeeping*, 13, August 1900, 176.

find them in the Spring." Small swindles like this were all too commonplace in the American fuel economy.[17]

20 Of course, single women or those in less affluent households did not have much choice in regard to space. For renters of single rooms or small apartments, the idea of maintaining a separate space for fuel storage was out of the question. The Massachusetts Bureau of Labor Statistics surveyed Boston tenement apartments and found coal stored in cupboards, closets, and other small nooks and crannies. Poor families there purchased coal in sizes ranging from the "peck," or twenty pounds, to the eighty-pound bushel, which lasted a few days to a week in New England's harsh winter weather. The mark-up on these small quantities was outrageous, but less affluent consumers enjoyed neither the ready cash nor the storage space to "put in" a winter's supply of fuel. Proscriptive accounts from middle-class writers exacerbated this division by chalking up the management of fuel among America's urban poor to ignorance. Ida Branch Mills reported in 1888 that among the poor, "Coal is bought by the pail, thus making the cost to the consumer from eight to twelve dollars per ton for what could be purchased for four dollars at the yard." However, without the space to "lay up" their supplies, less affluent consumers had no choice but to purchase heating fuel intermittently and on these kinds of unfavorable terms.[18]

21 Once coal was in the domestic space, a shared division of labor still existed in building and maintain fires, although men often found their responsibilities limited to the hard physical work of carrying coal from storage space to the hearth. "The statement that the coal fields of the world will be exhausted in two thousand years," joked *Frank Leslie's Ladies Magazine* in 1878, "brings no permanent solace to the man who has to carry the present daily supply for the family up three pairs of stairs." The editors of *Good Housekeeping* were more direct in 1889: "No man worthy of the name permits his wife or any woman in his house to perform the heavy drudgery of carrying coal and wood, caring for furnaces and stoves, moving stoves or heavy furniture, beating carpets and so on." Although this work seemed necessarily male, both sides were not seem particularly satisfied with its execution in American homes. Mary Sargent Hopkins complained in *The Ladies World*, "It has been said of some men that it would be far easier for them to discover a new constellation than to see the coal-hod that needed replenishing." "Women still insist that men shall put coal into the cellar, then bring it up again, and then carry away the ashes," Edward Atkinson countered in the *American Kitchen Magazine*, "in order that they may burn two to two and a half pounds of coal to every pound of food that they badly cook." [19]

MORE WORK FOR MOTHER

22 It is safe to say that installing coal stoves intensified the work involved in home heating and cooking for women. For single women or those who could not afford domestic help, the day began by sweeping out the ashes and clinkers from the night's fire, piling kindling on top of coal, and then making sure the fire was lit—more often than not with icy breath and numb fingers from the cold morning hindering the effort. Once burning, the fire needed to be maintained. This entailed finding the right amount of coal to feed the fire and watching it carefully. In 1887, Hannah Lane referred to maintenance of a fire as "the most important item in household economy" as wastes of heat and fuel were expensive and uncomfortable: "If a coal fire is not properly regulated the temperature of a room will vary accordingly that is, it will be extremely hot one hour, and chilly the next perhaps, thus rendering its inmates liable to suffer from sudden change."

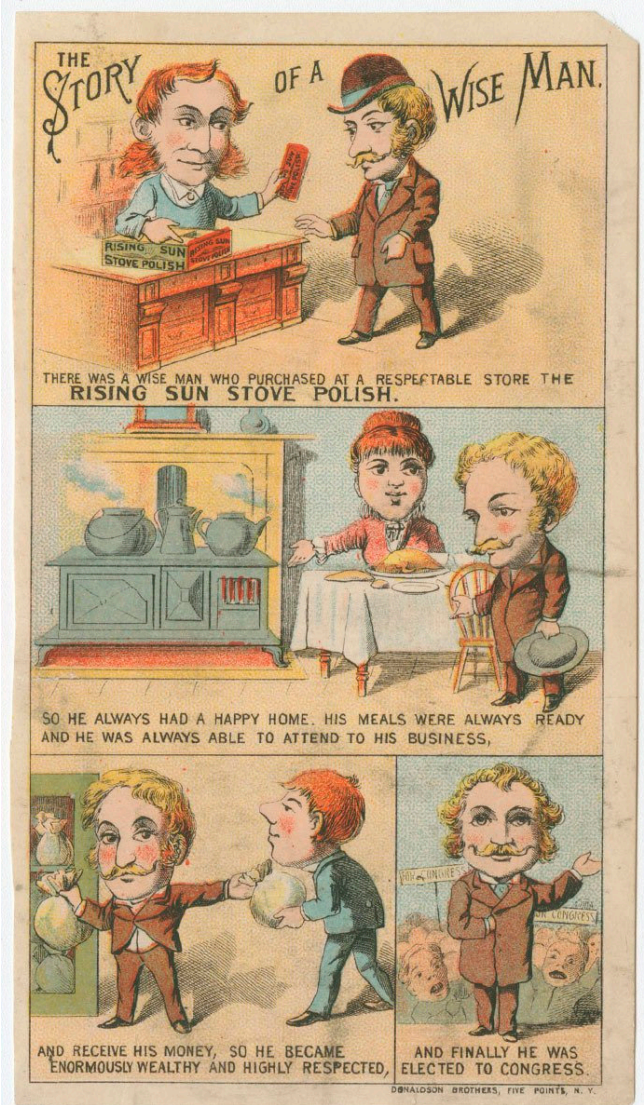
17 Ellet, *The New Cyclopedia of Domestic Economy*, 33; Marshall, *The Home Guide*, 50; White, "Household Fuels," 54.
18 *Report of the Massachusetts Bureau of Statistics of Labor, 1870* (Boston: Wright and Potter, 1870), 173, 176, 179, 246, 272; Ida Branch Mills, "Economy," *Good Housekeeping*, 12, October 1888, 276.

19 *Frank Leslie's Ladies Magazine*, 42, February 1878, 151; "A Man in the Kitchen," *Good Housekeeping*, 8, 16 February 1889, 178; *The Ladies World*, 17, January 1896, 10; Edward Atkinson, "Home Life. Why Not?" *American Kitchen Magazine*, 6, January 1897, 146.

Figure 3: Advertisers through the ages attempt to link the use of their product to domestic bliss. Stove polish was no exception, as unlikely as that connection might seem to modern consumers.
Source: Courtesy of the Alice Marshall Women's History Collection, Ephemera and Artifacts, Accession No. AKM 91/1.1. Archives and Special Collections at the Penn State Harrisburg Library, Pennsylvania State University Libraries.

Figure 4: According to the Rising Sun Stove Polish advertisers, use of their product made for an orderly domestic environment, which would translate into success in the traditionally male worlds of business and politics.
Source: Library Company of Philadelphia Digital Collection. https://digital.librarycompany.org/islandora/object/digitool%3A106440

Periodically, women were expected to "polish" the stove, not for aesthetic reasons, but to keep rust and cracks at a minimum. This meant mixing a black stove polish with vinegar and using a wire brush to scrape build up from the stove's surface. Hazel Webb Dalziel described it as a "horrible messy job" and noted that "it was always Mother who polished the stove." This vital maintenance work meant that the stove was not a labor-saving, but a labor-creating, device for most American women in the late 19th century. Advertising for particular polish brands like Rising Sun stressed the ease and time saved with their particular advice, as trade cards from the late 19th century promising domestic bliss and even financial success, demonstrate (fig. 3 & 4). Ellen Battelle Dietrick recommended in 1894 that "young women should begin to learn domestic science by going through every operation, from cleaning stoves and building fires, to the artistic arrangements of a parlor," preferably through formal courses in the field. For example, she praised one housekeeper who learned that scientific application of kindling saved $2 a month, in addition to the "saving of comfort and increase of pleasure" of having learned to do it correctly. Management of the hearth remained women's work, whether formally or informally learned.[20]



20 "Only a Husband. A Sketch for both Husbands and Wives," *Good Housekeeping*, 5, 3 September 1887, 215; Brewer, *From Fireplace to Cookstove*, 175-178; *Everyday Housekeeping: A Magazine for Practical Housekeepers and Mothers*, 1, June-July 1894, 199, 200.

23 Of course, expanding incomes among middle-class American households meant that hiring domestic servants could mitigate the physical work expected of women. The management of domestic labor was a big topic among housekeeping journals, and in particular the overseeing of home heating and cooking. Catharine Beecher's much reprinted guide to housekeeping argued that "an intelligent woman can, by due attention," learn to manage a coal stove quite easily, "and teach her children and servants to do likewise." In 1881, Beecher's niece Eunice wrote her own set of guidelines for managing servants. *Good Housekeeping* advised women to retrain their servants in which she stressed close supervision and warned against "the lavish expenditure of coal and wood in the laundry and kitchen" which "through mismanagement or indolence, is no unimportant drain in the course of a year if not stopped at an early date." Most domestic guides and proscriptive journals echoed the Beechers' sentiment, with a great deal of emphasis placed upon imparting knowledge of hearth maintenance throughout the entire staff. "For, although your maid *may* know how to get a mass of ignited coal in the stove," the editors of *Good Housekeeping* warned in 1886, "she may be far from knowing how to build a fire that it will burn up brightly and *quickly*, which has a great deal to do with getting to work easily and successfully."[21]

24 Whether a coal fire in a stove was lit and maintained by servants, wives, or daughters, the need for fuel economy reflected the values of the industrial marketplace. In the same way that spending too much money on a coal stove or paying inflated prices for a ton well short of 2,000 pounds represented a waste of hard-earned dollars for American men, the faulty maintenance of a fire or injudicious feeding of coal over the course of a day could take a lasting toll on the family budget. Even as new appliances such as central furnaces appeared in homes, the need for fuel economy persisted. In 1886 one family revealed their secrets for managing a furnace fire with servants in the pages of *Good Housekeeping*: build a fire and keep it going all winter, with a blend of one ton Cumberland coal at $5/ton and five tons of Plymouth at $6/ton. By starting the fire with the cheaper Cumberland coal and allowing it to self regulate "you will see what freedom there is from care, and how one can easily spend the day in town and return at night to a warm house, with no Bridget to watch your fires either." In offering advice to young women on household management, Eunice White Beecher praised the science of building a fire and economizing on coal, but warned about "the lavish expenditure of coal and wood in the laundry and kitchen, through mismanagement or indolence," which could cause "no unimportant drain in the course of a year if not stopped at an early date." The conservation of fuel added to the housekeeper's burden, which by the close of the nineteenth century had become considerable.[22]

CONCLUSION: SAME ROLES, DIFFERENT CHORES

25 The arrival of mineral fuel in American households fused well-established domestic roles of men and women into a new industrial model that depended upon a national network of energy distribution in order to maintain a decent standard of living. This allowed the "industrial hearth" to pave the way for additional innovations in household technology, without major disruption to the gendered division of labor in American homes. Instead, the adoption of coal as a domestic fuel in the United States extended these domestic roles into unprecedented places. For men, this meant securing cheap and effective stoves in the urban marketplace, as well as dealing with unscrupulous coal dealers intent on expanding profit margins at the fuel consumer's expense. American women did not find themselves shielded completely from the logic of the marketplace when burning coal; new dictates of

21 Catharine Beecher, *Miss Beecher's Housekeeper and Healthkeeper: Containing Five Hundred Recipes for Economical and Healthful Cooking* (New York: Harper & Brothers, 1873), 188; *Good Housekeeping*, 4, November 1886, 3.

22 "Steam Heat in the Household: The Economical Management of a Furnace," *Good Housekeeping*, 4, 11 December 1886, 57; Eunice White Beecher, *All Around the House, or, How to Make Homes Happy* (New York: D. Appleton and Co., 1881), 337.

fuel economy required fast learning on their part as well. And in affluent households this education extended into the indirect management of coal-burning hearths through their domestic servants. Coal thus connected the American to the industrial marketplace quite effectively by integrating the home with wider market practices.

26 By the close of the 19th century, gendered work in domestic energy persisted, but emerging trends in home heating threatened to replace the coal-fired version of urban domesticity. As the twentieth century unfolded, consumers and users confronted new innovations in home heating and cooking as gas, electric, and oil stoves and furnaces became common in the marketplace. Electricity and gas, in particular, allowed American homes to remove the need to build fires completely and instead tap into even larger utility networks. In 1900 Helen Campbell hoped that electricity "bring comfort to the housekeeper who looks beyond the difficulties with her own range and furnace, and plans for the general good," thus "not only bringing release from that form of labor but a cleanliness which today no man knows or can know." These innovations in new forms of energy eventually replaced the mineral fuel network and although they might represent major cost savings for male consumers, the use of coal did not reduce the amount of work required by female users to keep homes clean and warm and families well fed. In this way, the adoption of mineral fuel in households reinforced the gendered division of labor while altering the actual work done by men and women in bringing about this critical energy transition. The story of twentieth-century housework would present new challenges for American women and proved that an Atomic Eve dancing around a new set of energy-rich appliances was still an aspiration for the American home, not a reality.[23]

23 Helen Campbell, "As to Ashes and Rubbish," *Everyday Housekeeping*, 15, September 1901, 176.

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