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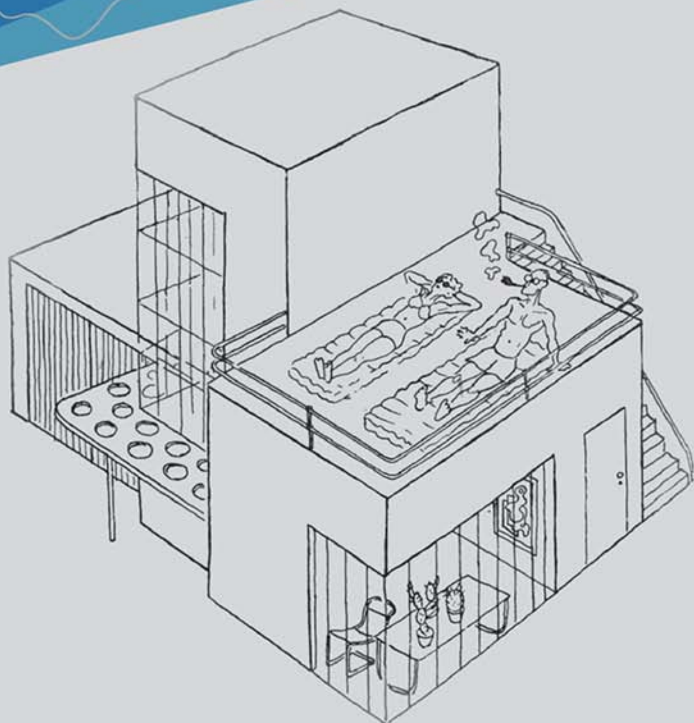
MACHINES for LIVING

modernism and domestic life



VICTORIA ROSNER

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to Mary McLeod

ACKNOWLEDGMENTS

The project that became *Machines for Living* was sparked decades ago when, as a graduate student doing research in London archives, I was directed to the Women's Design Service (WDS), a now-defunct organization dedicated to gender and the built environment. On arrival, I was invited to peruse their modest library. As I sat on the floor and read through their holdings, I began to make connections across literature, architecture, design, science, and technology, and to understand that the revolution that was modernism was profoundly connected to domestic life.

This book has been a long time in the making, and as it draws to a close I am very much aware of the many people who contributed to it their wisdom or their encouragement, and often both. Kevin Dettmar and Mark Wollaeger invited me to bring a proposal to Oxford University Press, and offered key guidance at an early stage. The anonymous readers helped set a direction for the book and as my research continued over the years I found myself returning to their reports at regular intervals. At Oxford University Press I have had the generous support of Jacqueline Norton and Aimee Wright, and the patient guidance of Brian North and Sinduja Abirami. Kevin Sani's skill made possible the appearance of one of Virginia Woolf's renovation plans, and Maur Philippe Dessauvage brought artistry and judgment to the reproduction of images.

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* * *

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The poetry of T. S. Eliot is reprinted by permission of Faber and Faber Ltd.

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1

INTRODUCTION

Modernism and domestic life in the machine age

Modernist literature and the modernization of the early twentieth-century home exist in an uneasy tension, illustrated by the young woman typist who appears at the center of T. S. Eliot's great poem of modernity, "The Waste Land" (1922). She is first given to us as "the typist home at teatime," and in a crisp sequence we learn that she is a modern woman who lives alone in her flat, eats out of tins, and washes her own dishes. She receives a guest, "the young man carbuncular," who sexually assaults her and departs with a "final patronizing kiss," leaving the typist alone to recover, which she does in silence, looking at herself in the mirror. In our last glimpse of her, she "smooths her hair with automatic hand, / And puts a record on the gramophone."[1] The new accouterments of modern life—tins, gas stoves, gramophones—surround the young woman until she seems an automaton, her "automatic hand" continuous with the arm of the record player. Yet in her reach for the transcendence of music enabled by the gramophone, the young woman exceeds the terms of her environment and confirms her own humanity, linking technology and aesthetics, mechanization and domestic life.

As Le Corbusier put it in his famous 1923 phrase, from which this book takes its title: "Une maison est une machine-à-habiter," or as translated by English artist and architect Frederick Etchells in 1927, "a house is a machine for living in."[2] The phrase is a provocation: What could be more antithetical to the cozy, individualistic spaces of the house/home ("maison" is both) than a machine? What could the spontaneous, organic process of living

have to do with mechanization? The young woman typist provides a mixed answer: the conversion of her home into a machine for living, accessorized with modern conveniences, seems to drain her life of some of its humanity and routinize her sexual violation, even as it also grants her access to the grace of music. The machine, for Le Corbusier and others in the early twentieth century, was a potent symbol for many of the values associated with modernity. These values transformed the workplace, and the shapers of the modern home began to look to them for inspiration as well, setting in motion a fundamental reconception of the home and domestic life.

The early twentieth-century home was a site of experimentation and transformation, its population diminished by a decline in the birth rate and a shrinking pool of household labor; its plan altered by the addition of indoor plumbing and the migration of the kitchen from the margins to the center of family life; and its appearance revitalized by electrification and a new understanding of hygiene that rejected dark Victorian interiors and ornamentation. The technologies that enabled modernization originated in the late nineteenth century, but not until the 'twenties and 'thirties were they widely available. In both England and the U.S., more household appliances moved from innovation to necessity during this period than in all the previous hundred years.[3] A new allure surrounded housework, as the invention of the "Rational Household"—a counterpart to the rising supremacy of efficiency in the workplace—conveyed a novel prestige on housecleaning. Changes in the routines of domestic life were among the most striking social phenomena of the period between the wars. The home came into focus as a problem to be solved: re-imagined, streamlined, electrified and generally cleaned up.

These were crucial years for the modernization of the home, but they were also critical years in the development of modernism. Modernist writers understood themselves to be living in an epochal moment when the design and meaning of home life were reconceived. Their participation in this endeavor is at the heart of the cultural project of modernism, as modernism's famous program of rupture and renewal intertwines with the drive for renewal in the home. These concurrent revolutions share many

features, including an emphasis on the quotidian, a profound commitment to rethinking human relations, and an ambition to expand and transform sensory experience. From the pride of William Carlos Williams in new household machinery ("This is the kitchen– / We have a new / hotwater heater and a new / gas-stove to please you"[4]), to the disapproval of Eliot ("mechanization comes to kill local life"[5]), to the vitriol of D. H. Lawrence ("Tin people! . . . with india rubber tubing for guts and tin legs and tin faces"[6]), modernist writers were fascinated by the changes in the home and their implications for culture.

The modernization of the home underwrote many modernist experiments with literary form. Modernist formal innovations participate in the tensions and contradictions posed by the modernization of the home: the allure of new technologies in conjunction with the tedious and repetitive nature of housework; the spread of efficiency science and mass production countered by attendant anxieties about the devaluation of creativity; the scientific norming of child development set against the value of individuality; the sensory and moral appeal of the new hygiene undermined by fears of the inadequacy of human senses. Modernist writers were drawn to the theoretical and conceptual framing associated with modernization and embodied these new ideas in literary form. Such adaptations accompanied writers' strong stated objections to aspects of modernization. Eliot and Lawrence both fulminated against the machine age, but each also found valuable models in the new rhythms of production and the standardization of household tasks. Aldous Huxley worried that mechanization produced efficiency by sacrificing creativity, but he was fascinated by new, rationalized approaches to human development and remade the arc of the *Bildungsroman* in response. As Virginia Woolf sought new narrative shapes for her novels she looked to modern architecture for inspiration, using her own house as a design laboratory.

These are not contradictions. They are aspects of what I consider a generative ambivalence on the part of modernist writers, an ambivalence that yields a layered engagement with modernity's changes and challenges. That is, even as modernist writers criticized the expanding reach of

modernization into the home, they drew on its conceptual vocabulary to develop both the thematic and formal commitments of literary modernism. Williams looked to emerging technologies of housecleaning to conceive of the poet's vision as a hygienic tool. Modernism's nonlinear approach to the *Bildungsroman* in novels by Huxley and others responds to the "rational" narratives of child development advanced by newly professionalized childhood experts. Ford Madox Ford and Ivy Compton-Burnett looked to the new doctrine of "minimum dwelling" and found inventive models for what I will call "minimum writing."

Machines for Living shows how the modernization of the home led to profound changes in domestic life and relied on a set of emergent concepts, including standardization, scientific method, functionalism, efficiency science, and others, that form the basis of literary modernism and stand at the confluence of modernism and modernity. "Modernism" and "modernity"—these two terms are generally understood to be somewhat at odds. The title of the leading journal in modernist studies, *Modernism/modernity*, separates them with a dividing bar, accentuating the space between them even as it brings them into relation. In its 1994 debut issue, founding editors Lawrence Rainey and Robert von Halberg wrote that their "difficult objective is to bring into dialogue writers in the social sciences engaged by issues of modernity and modernization and scholars of the literary and fine arts committed to the history of the fine arts."[7] Twenty-five years later, my objective in this book is to discard the dividing bar and examine how sea changes in the household wrought by what was often called "the machine age" participated in the formation of both the thematic and formal agendas of modernist literature.[8]

Critics of modernism have largely bypassed the home, perhaps because modernist writers themselves often insulted and dismissed domesticity and its ideologies. But this book suggests the need for a re-evaluation of many of modernism's foundational aesthetic commitments, including its discourse of originality, its didacticism, its commitment to verbal concision, and its understanding of emotional attachment, all of which, I argue, are forged in the specific historical context of the modernization of the

home. Returning literary modernism to this context leads to a profound reassessment of some of the stories modernism tells about itself, its originality, its difficulty, its autonomy, its interiority—and its putative rejection of all things domestic. I do not dismiss these stories, but I try to uncover the ideas, connections, and circumstances that underwrite them, and in this way hold up to scrutiny some of the foundational claims that define modernist studies.

* * *

The story of the creation of a "Rational Household" is the backdrop for this book, dramatizing the significant and rapid changes that modernization wrought in the home. In the 1920s and 1930s, new theories of scientific management that transformed the nature of industry moved into the home. The rational household was born, with a commitment to reform along ostensibly scientific lines; it stood for planning and efficiency, for modernization and mechanization, and for the professionalization of housework as performed by the woman of the house. Machine-inspired design, the principles of mass production, and the industrial workplace became, in many ways, models for domestic life. Industrial experts like Frederick Taylor and Frank Gilbreth showed that efficient arrangement of the work process and the creation of specific tools to aid workers in their tasks enhanced factory production, and the same methods could be applied to the home.[9] The rise of the rational household also dramatizes the gendered stakes of modernization, with women homemakers eager to redefine their roles and harness the prestige and power of modernization to elevate the status of domestic labor.

The rational household produced and promoted the notion that both the housewife and the working woman could be relieved of drudgery and turned into modern paragons of efficiency and professionalism using techniques like those that had transformed the workplace: efficiency studies, motion science, assembly line production, and mechanization of work processes. The modern home, experts argued, should draw inspiration from the factory. Manufacturers, home economics experts, women's

magazine editors, and the authors of innumerable books and pamphlets joined in urging women to rationalize their households and adapt the principles of the efficiency movement.

The rationalization of the household rested on the notion that the principles that governed the workplace could reform domestic labor.[10] This comparison challenged the popular idea that the home should be a spiritual haven with its own resident Angel, a place kept strictly apart from the putative degradation of the male world of commerce and industry. The cozy, inefficient, and cluttered world of the nineteenth-century middle-class kitchen became a room filled with hard surfaces and gleaming machines. The home was rethought through the lens of science and posited as a place where women could pursue coeval status with men, working side by side to bring domesticity into the modern era.

The postwar economy drove the rise of the rational household. Factories that produced munitions during World War I needed to find other objects to manufacture, and some shifted to the production of the new home appliances. In addition, during the war many women previously employed as domestic servants found more regular and satisfying employment in factories, filling jobs once held by men. After the war, these women were reluctant to return to domestic service if they could find other work and, in any case, fewer households could afford outside help. At the turn of the century in England, one-third of working women were in domestic service. By the interwar period, that number declined to one-quarter.[11] The shortage of domestic labor was acute and many middle-class women began to clean their own homes. The rationalization of the household helped these women to draw a dividing line between the work they did and what their servants had done previously. Rationalization conveyed prestige on housecleaning and granted those who did the work a professionalized status, even if they were unpaid. The professionalization of the role of the domestic worker meant that housework and child care could no longer be seen as "natural" endowments of true womanhood, something that women instinctively knew how to do. Rational housework had to be learned.

In the rational household, housewives became domestic engineers who followed complex schedules, used scientific methods to increase their efficiency, and implemented the latest technologies for cooking and cleaning. While these ideas were class-bound and not universally embraced, they did gain purchase and marked a break from the kitchens of the previous generation, which looked more like other rooms in the house. The modern kitchen, writes Juliet Kinchin and Aidan O'Connor, became "a theater of social, cultural, and political debate."[12] Household manuals from this era emphasize the need for operational principles in the home. In 1936, Thelma H. Benjamin advised housewives that

> The application of method is perhaps the most important factor towards the smooth running of a household. Muddle must at all costs be avoided. You can contrive so that there is no overlapping, that one task is finished and out of the way before another is commenced, that unnecessary steps are saved, and energy conserved and made easy to direct into the way it should go.[13]

In addition to the rationalization of the work process, housewives were aided by new machinery designed to reduce labor: washing machines, dishwashers, and small electric tools. The new household machines changed the very meaning of housework by standardizing and regulating human motions.[14] In many cases, the machines actually did save labor as they claimed. This was most true for laundry, which previously occupied one full day a week, but which the new machines reduced to a few hours of labor.

Christine Frederick, one of the best-known writers about domestic engineering in the early twentieth century, popular in both the U.S. and Europe, urged women to "route" their work, that is, to analyze the way they moved about in their kitchens in order to reduce waste motions. Frederick also stressed the need for homemakers to have the latest and most advanced in electrical gadgetry to further the cause of efficient housekeeping. As she argued,

> The chief difference in work as done under factory or shop conditions as compared with work done in the home, is that industry has invented and

> utilized machinery and modern equipment whereas the home still clings to the traditional, old-fashioned, and often entirely unsuitable devices of other days. The washboard instead of the power washer, the corn broom instead of the vacuum cleaner, the heavy iron pot instead of the light, sanitary utensils—are only some of the examples of and reasons why housekeeping may still be drudgery![15]

Frederick wrote these words in a pamphlet called "Come into my Kitchen" (1922), published by the Vollrath Company, manufacturers of home appliances. Companies like Vollrath paid Frederick to promote the use of their wares, an occupation aligned with her mission to modernize housework. Female consumerism went hand in hand with the modernization of the home in the early twentieth century, and many of the advertisements for appliances show men treating appliances almost like tokens of affection, offered to buy their beloved's favor.[16]

In urging women to persuade their husbands to buy machines to alleviate the burdens of housework, Frederick argued that women deserved to have the same aids and conveniences at home that men had at work. She, like most domestic reformers of her time, did not make the more radical argument that women should be able to join the workforce and men do housework; Frederick's ideas pushed for women's equivalence, not equality. In her 1913 book, *The New Housekeeping*, Frederick praised her husband for "stimulat[ing] me in every point to regard homemaking as a profession as equally worthy as his own."[17] Some promoted mechanization of the home as a way to increase women's authority via the acquisition of a professional identity and the mastery of a body of professional labor, but critics have questioned the presumption that "the new housekeeping" actually empowered women to attain greater leisure or expanded participation in public life. Still, as Mary McLeod has argued, the attention directed at the remaking of the home made the domestic sphere the object of serious and professional inquiry.[18] And there is little doubt that for women who were also working outside the home, the rationalization of the household decreased the burden of housework. From the perspective of this book, it is important to note that the terms

of the debate over the rational household—women's changing roles, the impact of mechanization on modern life, the new equivalence between the public and private spheres—were all central questions for modernism.

The tenets of the rational household also extended to child-rearing. Children were the product of the home, and their development could be improved with insights gained from mass production. As Daniel Beekman writes in *The Mechanical Child*, "All that seemed to be required of the family was that the parents submit to the same kind of systemization and discipline in the handling of their children as was routinely demanded of factory workers on a production line."[19] The analysis of tasks through motion study and their division along an assembly line might not seem to be processes readily applicable to child-rearing. However, childhood experts urged mothers to regiment the nursery and use behaviorist techniques to instill appropriate habits in the young. Developmental psychology established a periodization of childhood: a map, punctuated by milestones, that children were expected to traverse to reach maturity successfully. Though Freudian thought and theories of sexual deviance have been more influential in literary studies to date, there were many other, and often better-known, approaches to psychology on the rise in the 1920s and 1930s, and behaviorism was among the more prevalent.[20]

The rise of the rational household and the broader transformation of the home wrought by mechanization is a signal event in the history of modernity. It helped to redefine the meaning of personal life and the private sphere, a process that was of great interest and concern to many modernist writers. The reconceptualization of housework as a professional activity altered the perception of the middle-class housewife's labor and created a new continuity between the worlds of industry and family. The foundational insight that women's professionalization and modernity were intertwined was basic to modernism, articulated most notably by Virginia Woolf in *A Room of One's Own* (1929), where she argued that the opening of the professions to women was one of the great events in human history.

Most modernist writers were far less supportive than Woolf of the changes that modernity brought to the home, and they were particularly

suspicious of the seeming elimination of the private sphere. T. S. Eliot voiced concerns that the scope of private life was gradually losing its distinct character and worried in a 1939 essay that, "imperceptibly this domain of 'private life' becomes smaller and smaller, and may eventually disappear altogether."[21] Two years earlier he had expressed a similar concern that social pressures would "put an end to man's private life altogether"[22] and that the public domain would overtake the whole of human existence. Eliot's concerns about the diminution of private life were rooted in his feeling that, in contrast to those who took a more positive outlook, the world of industry and mechanization was invading the home. In 1937, he wrote that, "a large part of our failure has been the failure to control, for the purposes of living, the mechanical world (mechanical in the largest sense, including our systems of production, distribution and finance) which has sprung up everywhere almost of itself."[23] He chastised the migration of modernization and its industrial practices and attitudes into the home as a symbol of humanity's misguided attachment to materiality in lieu of spirituality, its abandonment of the sanctity of private life, and its preference for the man-made over the natural.

For members of the working class, the home had long been visibly a place of work. But middle- and upper-class families in the nineteenth century habitually went to great lengths to hide the labor of maintaining their homes. Kitchens and servants' quarters were so separate from the family rooms as to form, as nearly as possible, a separate residence. Servants stopped working and left the room if a family member entered. The kitchen was located as far as possible from the dining room, in part to reduce food smells but also to divorce the work of food preparation from its consumption. As more middle-class women took up housekeeping, the middle-class home shifted to a different spatial organization, one that increased the visibility of housework. The kitchen migrated from the periphery to the center of the home, where it often remains today.

The rational household thus marks a significant break from nineteenth-century bourgeois domesticity, which idealized the home as a retreat from commerce and industry and offered a space for the flowering of a private

self. Walter Benjamin famously described the character of this space in "Paris, Capital of the 19th Century": "The private individual, who in the office has to deal with reality, needs the domestic interior to sustain him in his illusions."[24] The establishment of a robust public arena for civil engagement finds its opposite in a more sequestered private domain and the image of the home as a spiritual retreat from the impurities and depersonalizations of the commercial world became a sustaining fantasy.[25] This fantasy flowed from, above all, the distinction between the feminine character of the home rather than from the masculine public sphere, as famously celebrated by John Ruskin in *Sesame and Lilies* (1865). In *The Arcades Project*, Benjamin depicts the nineteenth-century domestic interior as isolating its occupant:

> We must understand dwelling in its most extreme form as a condition of nineteenth-century existence. The original form of all dwelling is existence not in the house but in the shell. The shell bears the impression of its occupant. In the most extreme instance, the dwelling becomes a shell.[26]

Benjamin's image invokes the sense of a womb, a nurturing space that protects the dweller from the world outside. The hardness of the shell, together with its singularity, suggests the way in which the nineteenth-century interior was intended not only to sequester its inhabitants but also, through its furnishings, to reflect the nuances of the individual personality. Quirks, habits, and interests that had no place in the collective world of work could find expression in the home. Oscar Wilde's Dorian Gray, for instance, fills his home with objects that, like their owner, are both poisonous and perfect: jewels, perfumes, religious vestments; the prototype of the collector is perfectly attuned to late nineteenth-century domesticity.[27] Charles Dickens's Miss Havisham creates a home that is closed off even from the passage of time, a home that is a living shrine to her obsession with her aborted wedding.[28]

Early twentieth-century design broke with this approach. In the final scene of *The Picture of Dorian Gray*, Dorian's most private possession, his closely hidden self-portrait, is exposed to the eyes of strangers along with

Dorian's corpse, an invasion that portends the new direction in domestic life. Benjamin writes, "The twentieth century, with its porosity and transparency, its tendency toward the well-lit and airy, has put an end to dwelling in the old sense."[29] The border between the public space of work and the private space of leisure began to dissolve; Benjamin's "well-lit and airy" home indicates a new style and points to changes in artificial lighting and interior ventilation. Woolf, in similar terms, describes her move from the Victorian streets of Hyde Park Gate to the modern world of Bloomsbury. In her old Victorian home, as she wrote, "The walls and the rooms had in sober truth been built to our shape."[30] In the Victorian home, the inhabitant isolates himself; in the modern home, as in Benjamin, influences from the outside world come pouring in. After her move, "The light and the air after the rich red gloom of Hyde Park Gate were a revelation," Woolf tells us.[31] When she had the chance to make her own home in Bloomsbury, Woolf was open to the idea of experimentation and modernization.

As I have already suggested, the goal of opening the home to the influences of industry and forging an analogy between them did not find universal favor, particularly in England. Even the women who billed themselves as domestic efficiency experts saw the limitations of their agenda. Coventry Patmore's grandson, the author Derek Patmore, wrote a 1936 book on the decoration of his own home in which he recorded a conversation with just such an expert, Mrs. Darcy Braddell (Dorothy Adelaide Busse). Braddell was an award-winning designer and home planner in interwar England who advocated labor-saving in the home through careful planning. As she told Patmore,

> I am always hearing the kitchen described as the 'workshop of the house.' . . . They cannot really want to make the daily work of the housewife comparable with that of the factory hand, yet they would appear at times to have you look upon the cook in her kitchen as being on all-fours with the research chemist in his laboratory, or the factory hand in a perfectly appointed workshop where efficiency is the one and only object in view.[32]

Braddell questions the equivalence between the home and the workplace that was the foundation of the rational household. As she suggests, the analogy between the housewife and the research chemist or factory worker could become strained. Despite the elaborate propaganda served up by manufacturers and the exhortations of efficiency experts, women's magazines, and advice books, the idea of recreating the home in the image of the workplace could succeed only in limited ways. The analogy was aspirational rather than exact, revealing how women and the home were seen, or wanted to be seen. Housework was generally repetitive rather than productive, solitary rather than collective, generalist rather than specialized, and perhaps most important of all, unpaid. Second-wave feminist critics argued that the rationalization of the household was not necessarily progressive for women, since it focused their energies on housework rather than directing them to professional and compensated labor that would actually, rather than analogically, place them in a position equal to men.[33] As Woolf argued, the professionalization of women remained a frustratingly incomplete project, even as modernization improved people's everyday lives and decreased the amount of time needed for housecleaning.

The reformers who created the rational household did in part achieve the goals of efficiency, increased leisure, and rationalization of the work process. By extracting factory techniques from the context where they had utility, the rational household also transformed these techniques into something else—a style. The rational household made a visible commitment to the machine age, but with technology sometimes deployed for its own sake, rather than to save labor.[34] Buster Keaton mocks this approach in his 1922 film *The Electric House,* where a well-to-do family commits to electrifying their home, but many of the "efficiencies" introduced are showy flourishes rather than actual labor-saving practices. For instance, dinner is served via an electric toy train that runs from the kitchen to the dining room on tracks around the table, stopping in front of each diner so that a plate can be removed. Meanwhile a traditional uniformed maid hovered in the kitchen.

Industrial innovations such as standardization, mass production, and efficiency could become style when they entered the home—symbols of modernity rather than the functionalist expedients they were created to be. For example, in the 1930s, streamlining was introduced as a design technique that made trains, cars, and planes more aerodynamic by decreasing wind resistance. Streamlining lost its function in the design of many household objects; applied to a toaster or any stationary object it served no functional purpose and merely symbolized the value conferred by modern aesthetics. As R. L. Rutsky notes, "The 'machine aesthetic' of modern design was, then, precisely that: an aesthetic, a style, a simulation of the rationalized, standardized forms of machines and factories, often abstracted from any functional or instrumental context."[35] We will see this technique used by modernist writers, who adapted modern values like hygiene into the context of literature where they had no strictly functional application, since literature could not actually be clean or dirty.

The story of the rational household forms an important backdrop for this book because it combines and animates many of the ideas that I argue are at the heart of the modernization of the household, ideas taken up in force and in conflict by modernist writers. If the nineteenth-century interior was personal, idiosyncratic, and sheltering, the rational household, by contrast, was systematic, standardized, and modeled on the workplace. The rational household was powered by new mechanical devices and inspired by the values associated with mechanization, including efficiency, standardization, and functionalism. In his 1935 manifesto, "Towards a Rational Aesthetic," British architectural writer J. M. Richards described the advent of a rational aesthetic as moving toward a system in which "interference by the personal factor . . . is reduced to a minimum."[36] Accordingly, the rational household moved domestic life away from individual tastes and habits and toward universal standards.

With its model kitchens, daily schedules detailed to the minute, and focus on method, the rational household sought to modernize both the home and private life itself. The rational household postulated an ideal home that was regular in its routines, mechanical in its systems, and efficient in its approach

to the feeding, cleansing, and raising of its inhabitants. To substantiate their principles, the early twentieth-century American time management experts Frank and Lillian Gilbreth raised twelve children; they would demonstrate the family's efficiency by blowing a whistle and then timing with a stop-watch how long it took for all the children to assemble.[37] The idea that even child-rearing could be subject to rationalization, raised "cheaper by the dozen," in the Gilbreths' phrase, signals the strength of the popular idea that modernization could productively transform private life as well as public. The idea of evacuating the personal from private life was hard to countenance for many modernist writers, who were nonetheless captivated by many of the features of the modernized home.

Scarcity may have contributed to the allure of domestic modernization. Despite the enthusiasm of modernization's proponents, the dissemination of modernization's major innovations into the home took decades and unfolded across the early decades of the twentieth century. For example, although Thomas Edison invented the incandescent light bulb in 1879, there were no electrical networks in Europe or the U.S. through the 1890s.[38] In 1900, there was still public speculation about whether electricity could ever replace gas power.[39] In England in 1918, only 6 percent of private homes received electricity from a central supply; by 1939 nearly 70 percent did. The figures from America are equally striking. In 1902, only 8 percent of homes in the U.S. received electricity from power stations; by 1948, 78 percent of homes had power from a central source.[40] The same decades saw the mass introduction of indoor plumbing and hot water, which Sigfried Giedion dates, in the U.S., to 1921–3, though change came more slowly in rural areas.[41] Indoor plumbing required immense retrofitting of existing homes. In *The Evolving House*, Bemis shows us that in 1930, only 30 percent of homes in Great Britain and 60 percent of those in the United States had bathrooms.[42]

Electricity and plumbing were central to the advent of modernization in the home. Electricity provided better light and granted households with sufficient means the ability to acquire the latest household appliances, many of which required electricity. Plumbing enabled more rapid and

thorough cleansing of both the home and the body and underpinned new conceptions of hygiene, as well as eliminating the labor necessary to gather and move water. The two decades that saw a steep rise in the mechanization of the home, roughly 1920 to 1940, were also key years for the articulation and consolidation of the aesthetics of literary modernism, and as such, they roughly provide the boundaries for this study.

The slow advent of the modernization of the home was not lost on modernist writers. As early as 1909, H. G. Wells expressed the sense that modern homes, long expected, had not yet arrived. In his 1909 novel *Tono-Bungay*, the forward-looking entrepreneur Teddy Ponderevo is working on an advertisement for "The Ponderevo Patent Flat, a Machine you can Live in," but the flat Ponderevo lives in is distinctly Victorian, with "something . . . hung about or wrapped round or draped over everything."[43] Ornament is clearly not a crime at the Ponderevos'. Twenty years later, Woolf opened her last novel, *Between the Acts*, with another scene of modernization deferred: "It was a summer's night and they were talking, in the big room with the windows open to the garden, about the cesspool. The county council had promised to bring water to the village, but they hadn't."[44]

These references suggest something of the excited anticipation with which modernization was frequently greeted. This excitement could seem particularly keen for women. In Lawrence's novel *Women in Love* (1920), when Birkin appears in the school classroom where Ursula is teaching and switches on the lights, the effect on her is transformative: "[Birkin] switched on the strong electric lights . . . [Ursula] looked like one who is suddenly wakened."[45] Something similar happens for Natalia, the main character in H.D.'s 1930 novella *Nights*; electricity seems to bring her to life: "She was sexless, being one chord, drawn out, waiting the high-powered rush of the electric fervor. It crept up the left side, she held it, timed it, let it gather momentum, let it gather force . . ."[46] Electrification literally turns these women on; their power derives in part from the mechanical transformation of the home, presided over by women. All this power was not necessarily empowering, however. Modernization seemed to bring new