UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

NORMALCY AND PATHOLOGY:

BIOLOGY, SOCIAL REFORM, AND AMERICAN

DOMESTIC HANDBOOKS, C. 1840-1910

A THESIS

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

Degree of

MASTER OF ARTS

By

ALEXANDER I. PARRY
Norman, Oklahoma
2016

NORMALCY AND PATHOLOGY:
BIOLOGY, SOCIAL REFORM, AND AMERICAN
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A THESIS APPROVED FOR THE
DEPARTMENT OF ENGLISH

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To my friends and family,
who help me strive for more
and never settle for less.

Acknowledgements

This project would never have been possible without the feedback and support I received from the University of Oklahoma English Department and History of Science Department, each of which has shaped my research and its conclusions. I would like to thank Dr. Susan Kates, Dr. Ronald Schleifer, Dr. Peter Barker, and Dr. Kathleen Crowther for the secondary resources they recommended for the biological and rhetorical content of this study, which includes much of the covered material about germ theory and the history of evolution. Dr. Barker deserves additional credit for helping me compile and revise the prospective bibliography for this project during his Research, Criticism, and Analysis seminar; the annotations I wrote for his class have contributed significantly towards the structure and analysis of my final thesis.

Of course, I cannot fully express how much I appreciate the weekly conversations I had with my Committee Chair, Dr. William H. McDonald, who has consistently supported me since the second semester of my degree program. Dr. McDonald has reviewed countless drafts of this study and has not only refined its methodological assumptions and historical details but has also steadily reassured me about the intellectual value of my work. His assistance and advocacy have helped me define the research program I will hopefully continue for my doctorate and academic career, and he will always have my gratitude and respect.

Finally, I would like to thank my friends and family for the hours I have spent with them away from my desk. I could never have completed this project without my mother Teresa; father Dave; sister Megan; relatives Aunt Sis, Uncle Chris, Grandaddy, David Thomas, and Diane; and friends Chris, Renata, Trey, Courtney, Kenneth, Brittany, Meghan, Amanda, Vyas, Oliver, Ilya, Kunal, Sundar, Kevin, Collin, Neil,

Maggie, Matthias, Dave, Melissa, Diane, Darrell, Georgina, Steve, Karen, Steven, Nicole, and Charlie. Last but not least, Adriana, thank you for helping me withstand the stress of this semester and for reviewing almost every line of my thesis. I dedicate this project to all of you, and I wish you only the best.

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While American mothers had received advice about childcare, housework, and the proper position of women within civilized society for generations, the sociocultural upheaval associated with the Civil War, westward expansion, the industrialization of the United States economy, and the discoveries of contemporary science left women from the mid-nineteenth and early-twentieth centuries anxious about how they should fulfill their familial and social duties. American women increasingly solicited the advice of domestic professionals who published articles and handbooks about the orderly management of the home and the family, and these writers frequently defended their recommendations with the latest research from biology, medicine, sociology, and domestic economy. Unlike the usually-anecdotal information mothers still received from their friends and relatives, the advice of most domestic handbooks coupled the assurances of firsthand experience with the objective evidence of the sciences: "Instinct and tradition in childrearing were replaced by all-important medical and scientific advice. Parents, particularly mothers, clearly required the knowledge of experts in order to raise their families healthfully and appropriately, in order to be good mothers."[1] The middle-class white women who purchased these handbooks consulted them for practical instructions about the administration of their own households and, equally critically, learned how they could improve the physical and social health of their children with science and technology. Handbook writers valued the welfare of American mothers but

[1] Rima D. Apple, *Perfect Motherhood: Science and Childrearing in America* (New Brunswick: Rutgers University Press, 2006) 2.

located the continued success of the United States with the next generation, and many domestic professionals assumed women should occupy the maternal positions of parents, teachers, and nurses. Nicole Tonkovich observes that women could perform their "natural" political functions with "the embodied labor of natural reproduction or the mind-labor of cultural reproduction," and the writers of traditional domestic handbooks made American mothers the primary locus of application for the institution of improved, scientifically-grounded norms for the whole country.[2]

The popularization of American domestic handbooks and scientific childcare predictably coincided with the nineteenth-century consolidation of the nuclear family and the steady decline of the white birth-rate. Whereas the average white woman who survived until menopause during 1800 had approximately 7.04 children, this same population had only 3.56 children near the turn of the century.[3] This demographic shift meant individual mothers and middle-class society could invest more resources into each child than ever before, and handbook writers hoped their advice would help maximize the social and economic contributions of these children once they became adult citizens of the United States. Domestic handbooks also instructed mothers how they could lessen their domestic burdens so overworked women could not only increase the quality of their own lives but also appreciate their narrow duties within the domestic sphere. While later authors sometimes conceded women could productively enter the workforce, mainstream feminists from the early-twentieth century still believed respectable women should hold motherhood above their careers. Nina Baym cites the

[2] Nicole Tonkovich, *Domesticity with a Difference: The Nonfiction of Catharine Beecher, Sarah J. Hale, Fanny Fern, and Margaret Fuller* (Jackson: University Press of Mississippi, 1997) 92.
[3] Apple, *Perfect Motherhood*, 6.

representative opinion of the nineteenth-century educator Catharine Beecher, who felt that "once homemaking was reconceptualized as applied science, and once the applied scientist at home was recognized as a [qualified] scientific professional […] then women would gladly stay at home."[4] Domestic handbooks accordingly justified their practical guidelines for the organization and activities of the model American household with scientific evidence and legitimized the work of educated mothers with the well-regarded technical discipline of domestic economy. Despite the gradual decay of the popularity and reputation of domestic economy since the early-1900s, many public universities housed domestic economy programs under the Morrill Land Grant Act of 1862, which allocated resources for the professionalization of the residents of the United States.[5] Even if the campaign for the intellectual and financial equality of historically male careers and female housework failed, this effort fueled the widespread success of domestic handbooks and placed the home squarely within the domain of applied science.

Researchers have studied how domestic handbooks spread middle-class, white, Christian norms across American society and beyond its geographical borders and have recently discussed how the scientific content of these handbooks complements their underlying ideological projects. Whether or not ordinary women followed the advice of their professional counterparts, domestic publications advanced the sociocultural platforms of their writers and sometimes converted these positions into common values using the authority of contemporary science. The standard account of domestic

[4] Nina Baym, *American Women of Letters and the Nineteenth-Century Sciences: Styles of Affiliation* (New Brunswick: Rutgers University Press, 2002) 55.
[5] Sarah A. Leavitt, *From Catharine Beecher to Martha Stewart: A Cultural History of Domestic Advice* (Chapel Hill: The University of North Carolina Press, 2002) 44.

handbooks from the mid-1800s and early-1900s announces that women, whom men had largely excluded from experimental science and politics, reinserted themselves into national conversations about the status and future of the United States with their own interpretations and applications of research from the social and biological sciences. Sarah Leavitt clearly voices this rhetorical view of technical domestic texts: "Advisors used the word 'science' to bring a secular authority to their texts and to their vision of the ideal home. The middle-class women who read and wrote domestic-advice manuals […] began to turn to scientifically based ways to understand their homes. Americans began to believe that science could solve every problem […] and many saw the laboratory as a place of hope for the future."[6] Leavitt highlights how the use of scientific concepts and vocabulary increased the credibility of the advice from successful handbook writers but only cursorily explains how specific theories informed their work. Kimberly Hamlin, whose *From Eve to Evolution: Darwin, Science, and Woman's Rights in Gilded Age America* examines the relationship between evolutionary theory and nineteenth-century feminism, similarly implies that reformers supported Darwinian evolution more for its political expediency than its probable reality. While these interpretations usefully foreground the social construction of scientific facts, they oversimplify the intersections between science and rhetoric and neglect how often domestic writers verified the results of professional scientists. This study therefore addresses how science authorizes meaningful cultural reform because of its apparent objectivity and sets the parameters for rational social policy using the details of specific technical discoveries.

[6] Leavitt, *From Catharine Beecher to Martha Stewart*, 41.

This study will examine the relationships between the sociocultural and scientific content of American domestic handbooks from the mid-nineteenth and early-twentieth centuries and will consider not only how domestic professionals defended their ideological positions with scientific concepts but also how these same positions resulted from the recent discoveries of the biological and social sciences. Although handbook writers certainly recognized how science could improve their credibility, they nonetheless understood and provisionally accepted the doctrines they cited and could only construct scientific frameworks for prescriptive social reform under the empirical constraints of these frameworks. We might usefully compare the ideological projects of domestic handbook authors with the theory of scientific ideology from the French epistemologist Georges Canguilhem. Unlike counterfeit science and religion, scientific ideologies intentionally apply the "explanatory systems" of formally-recognized technical disciplines "beyond their own borrowed norms of scientificity" and occasionally lay the foundation for legitimate scientific fields.[7] When domestic professionals diagnosed problems with American society and proposed solutions using biology, medicine, and early sociology, they similarly reshaped the norms of human civilization with models from the natural world and attracted national support for experimental research into domestic economy. This study will review the popular publications of Catharine Esther Beecher and Charlotte Perkins Gilman, whose essays and handbooks situate their sociocultural platforms within two distinct yet scientifically-grounded schemes of normalcy and pathology: the constant replication of cells and germs and the tension between the Darwinian mechanisms of adaptation and

[7] Georges Canguilhem, *Ideology and Rationality in the History of the Life Sciences*, trans. Arthur Goldhammer (Cambridge: MIT Press, 1988) 38.

sexual selection. Despite their shared assumptions about the intrinsic value of the family and the significance of motherhood, Beecher and Gilman present almost antithetical solutions for the structure of the perfect American household and the proper roles of its members because of their sociopolitical differences and distinctive scientific paradigms.

Catharine Beecher (1800-1878) was the daughter of the renowned New England preacher Lyman Beecher and the eldest sister of the sentimental author Harriet Beecher Stowe, who wrote the controversial antislavery novel *Uncle Tom's Cabin*. Beecher lobbied for the higher education of American women and both founded and supervised multiple all-female colleges, including the Hartford Female Seminary and the Western Female Institute. Although Beecher believed women needed explicit instruction before they could function successfully within American society, she assumed most of her students would someday become wives and mothers and therefore resisted the possibility of gender-neutral education: "There was a time when the only object of woman's education [was shaping] an active, economical and accomplished *housewife*, and no intellectual refinement or erudition was esteemed of any value, but rather a disadvantage. Mankind, perhaps, are now urging to the other extreme; and in regarding the *intellect* are beginning to overlook the future duties and employments of domestic life."[8] Beecher mostly upheld the nineteenth-century doctrine of separate spheres and recommended that single women choose occupations associated with domestic responsibilities and Christian benevolence: education, nursing, childcare, cooking, housework, evangelism, and philanthropy. Notwithstanding this outward conservatism,

[8] Jeanne Boydston, Mary Kelley, and Anne Throne Margolis, *The Limits of Sisterhood: The Beecher Sisters on Women's Rights and Woman's Sphere* (Chapel Hill: The University of North Carolina Press, 1988) 45-6.

Beecher improved the educational opportunities available for American women and helped convince the nation that women would make successful schoolteachers because of their patience and comfort with children; over 80% of the teachers from Massachusetts, New Hampshire, Connecticut, and Rhode Island were women by 1866.[9] Unsurprisingly, Beecher not only lectured about domestic economy inside the classroom and for listeners across the country but also wrote handbooks for the many middle-class women she could not reach with live instruction. Her famous *Treatise on Domestic Economy, for the Use of Young Ladies at Home and School* (1841) ran fifteen editions between 1841 and 1856 and was later revised and expanded with her sister Harriet under the title *The American Woman's Home, or Principles of Domestic Science* (1869).[10] The cultural imprint of Beecher and her numerous publications framed the feminist debates of the late-nineteenth and early-twentieth centuries between traditionalists who insisted the domestic sphere should remain the center of female life and reformers who felt women should have independent livelihoods and exercise more control over their interactions with men, particularly their husbands.

Charlotte Perkins Gilman (1860-1935), the grandniece of Catharine Beecher, challenged the restrictive definition of womanhood associated with the ideology of separate spheres and the cult of motherhood using her own systematic research into sociology. After her father Frederick Beecher Perkins left home during her early childhood, Gilman became increasingly skeptical of the domestic programs of her great-

[9] Jo Anne Preston, "Domestic Ideology, School Reformers, and Female Teachers: Schoolteaching Becomes Women's Work in Nineteenth-Century New England," *The New England Quarterly* 46.2 (1993): 531.
[10] Catharine E. Beecher and Harriet Beecher Stowe, *The American Woman's Home*, ed. Nicole Tonkovich (New Brunswick: Rutgers University Press, 2004) xiii.

aunt and later aligned herself with the feminist and socialist movements of the late-1800s. While modern critics mostly remember Gilman for her short story "The Yellow Wallpaper" (1892) and her dreamlike utopian novels *Moving the Mountain* (1911) and *Herland* (1915), audiences from her lifetime were more familiar with her nonfiction studies about the history of Western civilization and the hardships of American women. Gilman seldom approached these subjects with the practical detail of conventional domestic handbooks, but her sociological works nevertheless supplied clear advice for constructing collective neighborhoods across the country, removing domestic labor from the home, leading women into the workplace, and fostering the talents of individual children. *Women and Economics: A Study of the Economic Relation Between Men and Women as a Factor in Social Evolution* (1898) produced seven print runs and several translations, and her later monographs *Concerning Children* (1900), *The Home: Its Work and Influence* (1903), and *The Man-Made World; or, Our Androcentric Culture* (1911) revisited her earlier explanations for the stagnation of American society and proposed additional solutions for the future.[11] Unlike Beecher, who believed the middle-class Christian norms of her generation would apply forever, Gilman held that successful nations would actively modify their values and institutions using the latest science, technology, and economics: "I figured it out that the business of mankind was to carry out the evolution of the human race, according to the laws of nature, adding the conscious direction, the telic force, [characteristic of] our kind—we are the only

[11] Judith A. Allen, '"The Overthrow' of Gynaecocentric Culture: Charlotte Perkins Gilman and Lester Frank Ward," *Charlotte Perkins Gilman and Her Contemporaries: Literary and Intellectual Contexts*, eds. Cynthia J. Davis and Denise D. Knight (Tuscaloosa: The University of Alabama Press, 2004) 60.

creatures that can assist evolution."[12] Gilman hoped humankind and, more specifically, her fellow Anglo-Americans would model their civilizations after the natural world and deliberately arrange their human and industrial resources into one dynamic ecosystem.

Despite their distinct sociocultural programs and historical contexts, Beecher and Gilman had similar respect for contemporary science and framed their domestic advice using the medical rhetoric of diagnosis and treatment.[13] During her 1855 handbook *Letters to the People on Health and Happiness*, Beecher prefaces her examination into the potential sources and remedies of the sickness of American mothers with the value of applied anatomy: "It is impossible that the evils referred to should be remedied until they are known, and their causes fully understood. And it is impossible to make them [intelligible] except by giving clear ideas of the construction of certain portions of the human body […] The aim will be to avoid all that is not strictly practical, and all the technics of science that are needless."[14] Before Beecher catalogues the social practices which contradict the laws of human health and presents her own solutions, she details the configuration and purposes of the skeletal, muscular, circulatory, excretory, digestive, and nervous systems for eight chapters and supplies four more chapters of rules for their proper care. Once Beecher does finally relate the abuses of the body associated with corsets, factories, dirtiness, poor ventilation, and overwork, she verifies her assessment of the frailty of American women with statistics

[12] Kimberly Hamlin, *From Eve to Evolution: Darwin, Science, and Women's Rights in Gilded Age America* (Chicago: The University of Chicago Press, 2014) 120.
[13] Monika Elbert, "The Sins of the Mothers and Charlotte Perkins Gilman's Covert Alliance with Catharine Beecher," *Charlotte Perkins Gilman and Her Contemporaries: Literary and Intellectual Contexts*, eds. Cynthia J. Davis and Denise D. Knight (Tuscaloosa: The University of Alabama Press, 2004) 110-7.
[14] Catharine E. Beecher, *Letters to the People on Health and Happiness* (New York: Harper & Brothers, 1855) 11.

from almost forty locations nationwide. Beecher divides this sample of 449 women into three classes: 106 "strong and perfectly healthy" women (23%), 188 "delicate or diseased" women (42%), and 155 "habitual invalids" (35%).[15] Beecher literally measures the health of middle-class American women so she can validate her planned domestic reforms, and Gilman similarly combines social and biological schemes of normalcy and pathology when she criticizes the over-sexualization of late-1800s civilization: "Like all natural phenomena, the phenomena of sex may be studied, both the normal and the abnormal, the physiological and the pathological; and we are quite capable of understanding why we are in such evil case, and how we may [eventually] attain more healthful conditions."[16] Gilman later compares nineteenth-century wives and mothers who cannot survive without the wealth of their husbands with queen bees and female gypsy moths, neither of which fulfills any biological function except reproduction. Beecher and Gilman may have agreed upon the pathological condition of contemporary women and consulted the sciences for solutions, but their discrete models of health and disease draw them apart.

The journalist G. K. Chesterton once commented, "The social case is exactly the opposite of the medical case. We do not [differ], like doctors, about the precise nature of the illness, while agreeing about the nature of health."[17] Chesterton submitted that political reformers have similar definitions of social disease but disagree about its proper remedies whereas physicians recognize health but often reach contradictory

[15] Beecher, *Letters to the People on Health and Happiness*, 127-8.
[16] Charlotte Perkins Stetson, *Women and Economics: A Study of the Economic Relation between Men and Women as a Factor in Social Evolution* (Boston: Small, Maynard & Company 1910) 27.
[17] Georges Canguilhem, *The Normal and the Pathological*, trans. Carolyn R. Fawcett and Robert S. Cohen (New York: Zone Books, 1991) 258.

diagnoses, yet Beecher and Gilman supported irreconcilable sociocultural reforms because they introduced completely different schemes of health, normalcy, pathology, and abnormality. Beecher, who proposed the spread of the independent single-family household under the authoritative control of the mother would improve the health, morality, and productivity of the nation, compared this normalization process with the reproduction of healthy cells and the proliferation of social pathologies (including free-love, prostitution, flexible gender roles, factories, tenements, and immigration) with the reproduction of biological germs. Beecher believed that the mother should regulate the health, values, education, and lived environment of her family and slowly mold her natural and adopted children into identical copies of her perfect middle-class Christian self. Mothers who let their family members differ from this norm merely facilitated their descent into physical and social disease, and Beecher summarized how mothers shaped the nation with the later editions of her *Domestic Receipt-Book* (1846): "You are training young minds whose plastic texture will receive and retain every impression you make, who will imitate your feelings, tastes, habits, and opinions, and who will transmit what they receive from you to their children, to pass again [onto] the next generation, and then to the next, until *a whole nation* will have received its character and destiny from your hands!"[18] Beecher correspondingly devoted her career towards the scientific improvement of the layout, purposes, and relationships of the conventional single-family household without changing its basic structure; the mother still administered the home and supervised its residents while the father controlled the economic and political responsibilities associated with the public sphere. Indeed, Beecher explicitly details her

[18] Tonkovich, *Domesticity with a Difference*, 103.

conservative vision for the future of the United States during the optimistic conclusion of *Letters to the People*: "In the perfected state of human society, toward which we hope our nation is to be the leader […] every man will be able to support a family and will seek a wife. In [this superior] society, the nursing and educating of children, the care of the sick, and the [related] departments of domestic economy, which all will allow are better filled by women than by men, will demand all the women there are."[19] Beecher thus finds the social and biological conditions of health and pathology perfectly symmetrical instances of cellular replication and only differentiates between these states using the gendered archetype of the middle-class Protestant home.

Polly Wynn Allen has discussed how the traditional belief that American society was one cohesive "web of interlocking families" deteriorated over the late-1800s because of urbanization and industrialization, and this cultural shift towards individualism strongly marked the scientific ideologies of Gilman and other social evolutionists.[20] Unlike Beecher, who insisted social health stemmed from the orderly reproduction of the middle-class household and the elimination of any deviations from this norm, Gilman not only questioned the doctrine of separate spheres but also asserted civilization could not operate without natural variations between the skills and expertise of its members. Where Beecher promoted formal domestic labor so mothers could economically support their spouses and children, Gilman realized specific mothers would fulfill their assigned responsibilities with different levels of success and assumed trained professionals could perform the same work more efficiently. The independent

[19] Beecher, *Letters to the People*, 188-9.
[20] Polly Wynn Allen, *Building Domestic Liberty: Charlotte Perkins Gilman's Architectural Feminism* (Amherst: University of Massachusetts Press, 1988) 12.

home presented three problems: it reduced the output of domestic labor because of the range of tasks required from each mother, excluded half of the potential workforce from the American economy, and limited cooperation among persons with complementary talents and resources. Gilman prioritized productivity over self-sufficiency and hoped the families scattered across the nation would gradually fuse into collective networks of specialists modeled after natural ecosystems, and her planned sociocultural reforms accepted the basic schemes of Darwinian evolution. *Women and Economics* correspondingly holds sexual selection and inflexible gender norms responsible for the decreased health, success, and freedom of American women and proposes mothers and fathers should occupy positions inside the home and workplace consistent with their personal characteristics instead of their sex. Gilman discards gendered civilizations for the biological alternatives of species variation and adaptation, wherein the inheritable traits of single organisms confer selective advantages over other members of the same species and its ecological competitors. Modern society, Gilman implies, similarly requires not constant self-replication but the competitive division-of-labor:

> The evolution of organic life goes on in geometrical progression: cells combine, and form organs; organs combine, and form organisms; organisms combine, and form organizations. Society is an organization. Society is the fourth power of the cell […] In the simplest combination of primordial cells the force that drew and held them together [was] economic necessity […] So with the appearance of the [higher] organisms: it profited them to become a complex bundle of members and organs in indivisible relation […] And so it is, literally and exactly, in a complex society, with all its [sophisticated] specialization of individuals in arts and crafts, trades and professions. A society so constructed survives, where the same number of living beings, unorganized, would perish.[21]

[21] Stetson, *Women and Economics*, 101-2.

Gilman charts the limits of cell-division and arranges single cells, specialized organs, composite organisms, and social organizations into one evolutionary hierarchy of increasing differentiation and cooperation between formerly-discrete individuals. If Beecher considers society the product of the arbitrary collection of self-contained families whose public lives merely sustain and copy the cellular home, Gilman downplays the domestic sphere and states men and women alike must insert themselves directly into the socioeconomic matrices of their communities.

Before we clarify the theoretical models of normalcy, abnormality, health, and pathology from Beecher and Gilman, we might compare their own scientifically-grounded domestic advice with the earlier work of Lydia Maria Child, who wrote the 1832 handbook *The American Frugal Housewife: Dedicated to Those Who Are Not Ashamed of Economy*. Child specifically addressed the lower-class audience conspicuously absent from the publications of Beecher and Gilman and listed recipes, home remedies, and cheap solutions for housework without any specific objective except saving money. Historians estimate between 138 and 475 active "scientific professionals" worked across the entire country during the antebellum period, and Child unsurprisingly frames her guidelines for conscientious housekeepers using the Puritan virtues of thrift and self-reliance instead of the sciences.[22] While Beecher and Gilman explain how the scientific frameworks and planned social reforms included within their handbooks complement each other, Child excludes technical content from her work and defends her domestic recommendations with anecdotes and personal testimony rather than official experts and experiments. Child correspondingly provides secondhand

[22] Baym, *American Women of Letters and the Nineteenth-Century Sciences*, 1.

evidence for her various rules-of-thumb: “Dairy-women say that butter comes more easily, and has a peculiar hardness and sweetness, if the cream is scalded and strained before it is used”; “It is thought to be a preventive to the unhealthy influence of cucumbers to cut the slices very thin”; “The Indians say that poke-root boiled into a soft poultice is the cure for the bite of a snake. I have heard of a fine horse saved by it.”[23] Child even states folk remedies can sometimes outperform the scientific medicine of professional physicians, and the lay sources and piecemeal organization of her handbook contrast strikingly with its successors from the late-nineteenth and early-twentieth centuries. Whereas *The American Woman’s Home* bookends its practical advice for American mothers and the scientific basis for this advice with its extensive table-of-contents and its glossary of technical concepts and vocabulary, *The American Frugal Housewife* includes two alphabetical indexes without headers for general subject categories.[24] Despite their apparent similarities, *The American Frugal Housewife* differs from the domestic publications of Beecher and Gilman because it never advances any consistent scientific ideology.

I-2. Theories of Normalcy, Abnormality, Health, and Pathology

Whether or not the empirical facts and theories of the biological and social sciences ever achieve complete objectivity, the machinery of the natural world often supplies the rationales for prescriptive sociocultural reforms outside the domain of descriptive scientific knowledge and its legitimate applications. Modern science limits

[23] Lydia Maria Child, *The American Frugal Housewife: Dedicated to Those Who Are Not Ashamed of Economy* (Boston: Carter, Hendee, and Company, 1832) 15, 18-9.
[24] Child, *The American Frugal Housewife*, 124-30.

how far researchers may extend their conclusions beyond the experimental, observational, and disciplinary contexts of their projects, yet domestic professionals and other popular spokespersons will occasionally stretch the boundaries between verifiable facts and the political implications of these facts. Even if experiments have proven the reality of cell-division, germ theory, sexual selection, and Darwinian evolution, these biological concepts can furnish analogies but never direct evidence for the preferred arrangement of human society unless reformers first remove these discoveries from their proper fields. The philosopher Nikolas Rose explains how information inevitably motivates practical actions: "It is not so much a question of what a word or even a concept 'means' – life, organism, gene, cell, reflex, reaction, 'persistent vegetative state' – but of the way it functions in connection with other things, what it makes possible."[25] Catharine Beecher and Charlotte Perkins Gilman similarly use contemporary biological models of normalcy, abnormality, health, and pathology so they can credibly overturn and replace the current norms of the United States. The scientific ideologies Beecher and Gilman construct around these four terms not only reinforce their respective criticisms of the present and visions for the future but also shape their detailed guidelines for housework, childcare, domestic architecture, and the social duties of men and women. This section of this study will accordingly summarize the differences between the two schemes of normalcy and pathology based upon cell theory and germ theory and adaptive variation and sexual selection. Where the prior framework pairs normalcy with health and abnormality with pathology, the latter pairs

[25] Nikolas Rose, "Life, Reason and History: Reading Georges Canguilhem Today," *Economy and Society* 27.2-3 (1998): 167.

static normalcy with pathology and abnormality with the opportunity for expanded health.

The contested relationship between normalcy, abnormality, health, and pathology results partly from the routine confusion of the two standard definitions of the word "normal." Georges Canguilhem pinpoints the discrete senses of this critical term from its Latin root: "Since *norma*, etymologically, means a T-square, normal is that which bends neither to the right nor left, hence that which remains in a happy medium; from which two meanings are derived: (1) normal is that which is such that it ought to be; (2) normal, in the [usual] sense of the word, is […] the average or standard of a measurable characteristic."[26] What we call "normal" may therefore reflect either the Platonic form approximated but seldom realized by nature and society or the statistical mean of the traits dispersed among the population; the first definition evaluates the apparent quality of the chosen sample against some presumed archetype while the second measures its demographic quantities. The survey Beecher conducts about the health of American women for *Letters to the People on Health and Happiness*, for example, not only estimates the percentage of "strong and healthy," "delicate or diseased," and "invalid" women across the United States but also presents the validation for social reforms capable of changing these norms. Beecher honestly assumed the orderly reproduction of the middle-class Christian home would improve the physical, economic, and moral wellbeing of the nation, and her domestic handbooks actively strive for the statistical normalization of her conservative worldview. Beecher repeatedly compares traditional families with healthy cells and the radical alternatives

[26] Canguilhem, *The Normal and the Pathological*, 125.

of industrialization, premarital sex, socialism, and female professionals with infectious diseases, and her work implies that social progress involves the gradual replacement of countless pathological norms with the proven model of the gendered single-family household. This process closely resembles the contemporary biometric research of the Belgian statistician Adolphe Quetelet, who mapped the characteristics of human populations onto symmetrical bell-curves with most individuals clustered around the mean. Quetelet himself asserted that these modal averages represented the favored biological norms of their surrounding environments and labeled all deviations from these averages mere accidents of nature.[27] Beecher conversely recognized the distinction between qualitative and quantitative norms but still hoped her domestic advice would recast the citizens of the United States into one entirely middle-class Protestant society regardless of their present composition.

This mode of social normalization includes three steps: the reformer selects the preferred norms for the characteristics of the overall population, calculates the statistical distance between these Platonic norms and the mean values of the available sample, and then devises reforms that shift the measured distribution of the sample towards these norms and reduce its spread. During his lecture series *Security, Territory, Population*, Michel Foucault introduces the administrative concept of security, which similarly involves the control of biological populations and appeared alongside the first epidemiological reports on smallpox from the mid-1700s. Foucault compares the vaccination of healthy citizens who might later contract smallpox with the previous medical solutions of leper colonies isolated from mainstream society and plague towns

[27] Canguilhem, *The Normal and the Pathological*, 156-60.

where municipal officials confined and monitored the community until the epidemic subsided.[28] Foucault submits that the public health campaign against smallpox eliminated the absolute distinction between the healthy and the sick and converted the single patient from the primary object of medical practice into one representative case from the studied population. While plague required the containment of every infected citizen, the regulation of smallpox applied collective statistics: "It takes all who are sick and all who are not as a [unified] whole […] and it identifies the coefficient of probable morbidity, or probable mortality, in this population […] In this way it was [soundly] established […] that the [overall] rate of mortality from smallpox (la petite vérole) was 1 in 7.782. Thus we get the idea of a 'normal' morbidity or mortality."[29] Like Quetelet and Beecher, the government agents who compiled these statistics had two objectives: they uncovered the current quantitative norms for the morbidity and mortality of smallpox across Europe and translated these baselines into practical goals for decreasing the general incidence of smallpox and its relative severity for infants and other susceptible demographics. Security and other comparable models of normalcy and pathology thus entail the dynamic interplay between the norms of the whole population and the norms of its specific components, each of which either trails behind or precedes the expected movement of the overall mean towards another, favored value.

Canguilhem discredits the ordinary conflation of normalcy, health, and homogeneity and questions whether any fixed quantitative or qualitative norm actually outcompetes its biological and social alternatives under every possible circumstance.

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[28] Michel Foucault, *Security, Territory, Population: Lectures at the Collège de France, 1977-1978*, ed. Michel Senellart, trans. Graham Burchell (New York: Picador, 2007) 10.
[29] Foucault, *Security, Territory, Population*, 62.

Canguilhem articulates his philosophy of normalcy, abnormality, health, and pathology using the laws of Darwinian evolution, and his thesis clearly differentiates between the two primary senses of normalcy and his own functional definition of physiological and species health: "Being healthy means being not only normal in a given situation but also normative in this and other eventual situations. What characterizes health is the possibility of transcending the norm, which defines the momentary normal, the possibility of tolerating infractions of the habitual norm and instituting new norms […] Health [provides] a margin of tolerance for the inconstancies of the environment."[30] This definition of health yields four conclusions: the health of specific individuals may not conform with the statistical averages of the population, the exact nature of health changes with the surrounding environment, healthy organisms have significant freedom for potential action, and "perfect" health helps the organism cope with both its lived milieu and unknown future situations. Canguilhem clarifies this position using the distinction between temporary norms, which reflect the current numerical and adaptive equilibriums of the environment, and normativity, which expresses how well the organism might respond when these biosocial equilibriums shift. If, for example, some variety of orchid evolved so only rare wasps could fertilize its flowers, then the orchid might thrive while these wasps are successful but become extinct after they decline; the orchid has limited health because it cannot tolerate subtle modifications of its environment. The case of farmers who grow monocultures of commercial wheat until drought, floods, pests, lower demand, increased supply, etc. drive them into bankruptcy follows this same principle, and Canguilhem labels quantitative and qualitative norms

[30] Canguilhem, *The Normal and the Pathological*, 196-7.

nothing more than artifacts of the moments and locations of their discovery. Canguilhem paradoxically matches health with adaptability and pathology with inflexible norms, which may include biological and social constraints upon the routine behavior of the organism and possible limitations upon its future. Mary Tiles offers the helpful medical example of hemophilia, where patients only experience symptoms whenever they withstand physical trauma during their daily activities and thus operate inside restricted domains of life.[31] Diseases and genetic abnormalities only become pathological once they narrow the available environments of their hosts, and whole species and societies may analogously decline if the accommodation of specific norms damages their natural capacities for variation and evolutionary development.

Indeed, Peter Bowler states the most important theoretical difference between Darwinian evolution and its precursors was not the mutability of species but the transition from typological interpretations of species towards what Ernst Mayr calls "population thinking."[32] Unlike earlier naturalists who had assumed the members of any single species merely approached the Platonic archetype of the species, Darwin recognized generic types resulted from the heritable attributes and sexual interactions of individuals: "On [the previous] view, individual variations are trivial, like minor imperfections in toy soldiers cast in plastic from a mold. In modern Darwinism there can be no ideal type or mold, because the species is [materially] the population of interbreeding individuals—and if selection changes the [composition] of the population,

[31] Mary Tiles, "The Normal and Pathological: The Concept of a Scientific Medicine," *The British Journal for the Philosophy of Science* 44.4 (1993): 738.
[32] Peter J. Bowler, *Evolution: The History of an Idea* (Berkeley: University of California Press, 2003) 160-3.

then by definition the species has changed."[33] Where Beecher and Quetelet believe the diversity of human populations merely showcases their social and biological flaws, Darwin and Canguilhem contend individual deviations from collective norms may not only confront biological organisms with pathological handicaps but also introduce healthier norms and wider environments for the species. If security seeks the replacement of the current statistical averages of the population with alternative norms and the compression of the measured bell-curve around these norms, evolution conversely relies upon the range of the population so its members can let their diverse characteristics decide their ecological niches and potentially stimulate further adaptation. Gilman directly applies this logic when she criticizes the widespread exclusion of women from the workplace and the idealization of the single-family household; society may need mothers, housekeepers, cooks, and nurses, but women will perform these tasks and even traditionally-male occupations with different amounts of success. Sexual selection and the doctrine of separate spheres, Gilman argues, have confined women inside the restrictive milieu of the home and thereby interrupted their evolution, and her proposals for collective neighborhoods and professionalized domestic labor would theoretically resume the biosocial progress of her gender, increase the efficiency of families and the national economy, and improve the comparative fitness of middle-class Anglo-Saxon Americans against immigrants, the lower-classes, and the races of other countries.

Gilman accordingly opposes conventional gender norms and self-contained homes where mothers, fathers, and children must satisfy predetermined roles despite

[33] Bowler, *Evolution*, 156.

their personal talents and aspirations and connects these unhealthy social practices with the evolutionary process of sexual selection. Where natural selection makes organisms compete against other members of their own species and their environments (which increases the chance individuals with helpful adaptations will survive and pass their characteristics onto their descendants), sexual selection concerns the competition between members of the same gender for mates and sometimes causes pathological sex-distinctions including the oversized tail of the male peacock. Gilman predictably concludes that sexual selection cultivates the secondary traits of each gender at the expense of the dynamic properties of the race, and her works advocate industrializing domestic chores and adding ladies into the public sphere so women and their occupations can develop under the selective pressures of capitalism. Much like the communitarian activist Charles Fourier, Gilman did not recommend socialism because she questioned property ownership and competition but because she believed collective neighborhoods would improve the division-of-labor among individuals and lower the cost of housekeepers, schools, cooks, laundries, and other shared amenities.[34] Gilman considers the personal variations of species and societies not correctable mistakes but unrealized biosocial opportunities and appreciates how the specific dimensions of health and pathology change with their practical contexts: "Primitive man did not send his children to school, but we do not [then] consider it unnatural that we do send ours. Primitive woman carried her naked baby in her arms; modern woman pushes her much-dressed infant in a perambulator […] It is natural to do what is easiest for the mother

[34] Jonathan Beecher and Richard Bienvenu, *The Utopian Vision of Charles Fourier: Selected Texts on Work, Love, and Passionate Attraction* (Boston: Beacon Press, 1971) 249-51.

and best for the baby."[35] The cultural requirements of motherhood during the prehistoric period and the nineteenth-century have few similarities, and the "normal" values and practices of American civilization must progress seamlessly alongside science, culture, and technology. Mothers cannot safely transport their children using strollers unless the community first provides roads and protection from predators and cannot help their children succeed inside the modern economy without competent schools. Health, pathology, normalcy, and abnormality are not absolute but contingent upon the exact conditions of the environments where biological organisms and social actors compete for their survival and reproduction. Although, for example, sickle-cell anemia causes severe blood clots and shortens the life-span of its carriers, the African populations where the sickle-cell trait appears most frequently actually benefit from the disorder because it increases their resistance towards endemic malaria.

Canguilhem discusses the related case of English moths whose coloration changed from gray into black during the Industrial Revolution because of the higher concentration of airborne ash within their environment, which improved the camouflage of darker insects against the bark of soot-covered trees.[36] Gilman, Darwin, and Canguilhem correspondingly share the assumption that current abnormal forms may occasionally become the quantitative and qualitative norms of the future, and the boundless flexibility of the environment means the natural and social worlds cannot sustain any permanent equilibrium. The unpredictability of the external milieu privileges adaptability and helps explain the value of community and species diversity:

> For us a living species is viable only to the extent that it shows itself to be fecund, that is, productive of novelties, however imperceptible these

[35] Charlotte Perkins Gilman, *Concerning Children* (Boston: Small, Maynard & Company, 1900) 257-8.
[36] Canguilhem, *The Normal and the Pathological*, 142-3.

> may be at first sight. It is well known that species near their end once they have committed themselves to irreversible and inflexible directions and have presented themselves in [mostly] rigid forms. In short, individual singularity can be interpreted as either a failure or as an attempt, as a fault or as an adventure.[37]

Canguilhem changes the conventional definition of abnormality from the cause and symptom of biological and social pathologies into the inevitable risk organisms and civilizations must accept so they can secure their long-term success; unadaptable species become extinct and nations with fixed sociocultural norms are eventually outcompeted. Where Beecher assumes the single-family Protestant household will restore the former health of the American population, Gilman believes this same institution has outlasted its usefulness and will become increasingly pathological over time. Gilman compares the contemporary United States with the affluent yet sterile kingdom of Persia before the triumph of the Greeks and predicts permissive gender norms, professionalized domestic labor, and collective neighborhoods will revitalize American life.[38] Beecher therefore couples the "normal" gendered home with health and abnormality with pathology while Gilman connects strict gender roles with pathology and diverse economic communities with the healthy progress of the Anglo-American race. The next chapter of this study will describe the scientific ideology Beecher formed around the archetype of the single-family household and its allegedly pathological alternatives and the microscopic research into cell theory and germ theory from the mid-1800s. The final chapter will discuss how Gilman confronts the conservative policies of her great-aunt and introduces her own reforms using the opposition between

[37] Georges Canguilhem, *Knowledge of Life*, eds. Paolo Marrati and Todd Meyers, trans. Stefanos Geroulanos and Daniela Ginsburg (New York: Fordham University Press, 2008) 125.
[38] Stetson, *Women and Economics*, 72.

the pathological results of excessive sex-differences and the benefits of evolutionary adaptation.

II-1. Cells, Germs, and Society: Catharine Beecher and Paradoxical Reproduction

When Catharine Beecher revised the 1841 *Treatise on Domestic Economy* with her sister Harriet Beecher Stowe, she streamlined the previous chapters of the handbook and added newer material about architecture, alcoholism, charity, masturbation, public entertainment, beekeeping, tenements, missionaries, and the decline of nineteenth-century America. The 1869 edition of the handbook, titled *The American Woman's Home*, was marketed primarily for upper-middle-class women who had purchased earlier publications by Beecher, respected Stowe for the antislavery bestseller *Uncle Tom's Cabin*, needed textbooks for their female students, or expected domestic advice based upon scientific observations.[39] *The American Woman's Home* predictably supports the cultural archetype of the self-contained middle-class Christian household and the doctrine of separate spheres, and the Introduction of the handbook repeats the principles Beecher voiced for her entire career: "The authors of this volume, while they sympathize with every honest effort to relieve the disabilities and sufferings of their sex, are confident that the chief cause of these evils is the fact that the honor and duties of the family state are not duly appreciated, that women are not trained for these duties as men are trained for their trades and professions, [and that] family labor is poorly done, poorly paid, and regarded as menial and disgraceful."[40] Beecher and Stowe believe the welfare of American women relies upon the preservation of the traditional gendered

[39] Beecher and Stowe, *The American Woman's Home*, xiii.
[40] Beecher and Stowe, *The American Woman's Home*, 19.

family from the pressures of socialism, industrialization, and urbanization and compile practical advice about the proper administration of the home for current and prospective mothers. Beecher and Stowe stress not only the efficiency of well-managed single-family households but also how the mothers of these households mold their children and the members of the broader community into healthy middle-class Christians. The subtitles of *The American Woman's Home* accordingly announce the handbook will teach its readers the "Principles of Domestic Science" so they might construct their own "Economical, Healthful, Beautiful, and Christian Homes," and its coauthors sponsor the replication of these "normal" homes across the United States.[41]

Despite their shared objective of the ideological and statistical normalization of the ideal single-family Protestant household, the *Treatise* and *The American Woman's Home* present two distinct strains of evidence for their domestic advice and support their practical guidelines using different systems of technical content. The Preface of the *Treatise on Domestic Economy* draws its scientific credibility from the fields of hygiene and physiology but finally confirms the value of its advice with firsthand testimony from Beecher herself and mothers with their own families: "Most of the domestic operations, detailed in this Work, have been performed by the Writer. But much in these pages is offered, not as the results of her own experience, but rather as gleanings from the experience of those more competent to instruct in such matters."[42] Much like the 1832 *American Frugal Housewife*, the *Treatise* supplements the scientific explanations for its content with personal anecdotes and does not introduce any stable

[41] Beecher and Stowe, *The American Woman's Home*, 3.
[42] Catharine E. Beecher, *A Treatise on Domestic Economy*, ed. Kathryn Kish Sklar (New York: Schocken Books, 1977) xxii.

hierarchy between evidence from the sciences and lived experiences. Indeed, nineteenth-century critics of Beecher frequently asserted that she should not advise American mothers about the home and family because she had never actually married, and the Preface anticipates this potential backlash with the authority of expert homemakers and the domestic responsibilities Beecher helped fulfill after the early death of her mother Roxanna.[43] *The American Woman's Home*, conversely, answers similar questions about the identities of its coauthors and their interpersonal connections and then confidently introduces its advice using the rhetoric of science: "The work on *Domestic Economy*, of which this volume may be called an enlarged edition, although a great portion is entirely new, embodying the latest results of science, was prepared by the writer as a part of the *Massachusetts School Library*, and has since been extensively introduced as a text-book."[44] Among the most significant discoveries Beecher and Stowe incorporated into their expanded handbook between 1841 and 1869 was cell theory, which hypothesized all biological organisms were composed of independent microscopic units called cells. Beecher and Stowe carefully describe the structure, function, and reproduction of cells during Chapter VII: The Care of Health and contrast the self-replication of healthy cells with the harmful growth of living germs inside their hosts. The related processes of cell-division and infection supply the theoretical basis for the scientific ideology Beecher and Stowe advance within *The American Woman's Home*, and their attempted regulation of the norms of American society conflates descriptive science with prescriptive social reform.

[43] Boydston, Kelley, and Margolis, *The Limits of Sisterhood*, 118.
[44] Beecher and Stowe, *The American Woman's Home*, 20.

Nina Baym has discussed how domestic professionals harnessed scientific disciplines for their household applications and identifies two political subtexts of the mid-1800s conversations about the relationship between women and formal science: "Educators of women also urged the specific value of one or another science for women's practical duties: arithmetic for household accounts; chemistry for cooking and cleaning; [physics] for heating and ventilating; physiology for diet and clothing […] Science was […] progressive because it elevated women's minds and launched them into modernity; it was conservative because it [assigned] women to the domestic sphere and valued frugality over finery."[45] Beecher and Stowe similarly adapt the conclusions of cell theory and germ theory so they can educate their audience about the processes of the natural world and convert the entire United States into one homogenous, middle-class, Christian nation without the pathological abnormalities caused by the breakdown of the traditional single-family home. While Baym herself reviews how Beecher and Stowe updated the scientific content from the *Treatise* for *The American Woman's Home* and briefly summarizes the added material about cell theory and germ theory, she considers these concepts generic examples of the rhetorical use of science for credibility and misses their potential for biologically-grounded reform.[46] Beecher and Stowe submit that biological health and pathology result from the symmetrical processes of cellular reproduction and the proliferation of germs and pair these natural models with the social archetype of the self-contained middle-class family and the countless deviations from this norm across American society. Beecher and Stowe make mothers the housekeepers and healthkeepers of their own families and the wider nation, and they

[45] Baym, *American Women of Letters and the Nineteenth-Century Sciences*, 11-2.
[46] Baym, *American Women of Letters and the Nineteenth-Century Sciences*, 65.

diagnose the physical and ethical decline of the United States so they can recalibrate its current norms. Foucault explains, "The norm is not simply and not even a principle of intelligibility; it is an element on the basis of which a certain exercise of power is founded and legitimized […] The norm's function is not [really] to exclude and reject. Rather, it is always linked to a positive technique of intervention and transformation, to a sort of normative project."[47] *The American Woman's Home* institutes and regulates its fixed Platonic norms within the narrow confines of what Foucault himself ironically calls the cellular family, and Beecher and Stowe confer the responsibility for the formation and administration of these families with the Protestant mother who must socialize not only the other members of her household but also the "pathological" residents of her community.[48]

Beecher and Stowe correspondingly highlight the time and resources successful mothers devote towards the intellectual, moral, and social education of their children and their charitable activities beyond the private sphere: "She has children whose health she must [preserve], whose physical constitutions she must study and develop, whose temper and habits she must regulate, whose principles she must form, whose pursuits she must guide […] She has the poor to relieve; benevolent societies to aid; the schools of her children to [decide upon]; the care of the sick and the aged; the nursing of infancy; and the endless miscellany of odd items, constantly recurring in a large family."[49] The archetypal mother shapes the physical and psychological characteristics of her children so they can function productively inside their future communities, and

[47] Michel Foucault, *Abnormal: Lectures at the Collège de France, 1974-1975*, ed. Valerio Marchetti and Antonella Salomoni, trans. Graham Burchell (New York: Picador, 2003) 50.
[48] Foucault, *Abnormal*, 248-50.
[49] Beecher and Stowe, *The American Woman's Home*, 167-8.

the handbook repeatedly acknowledges the continuity between the self-contained home and the public domain where men work and interact. Beecher and Stowe consider childcare and charity two dimensions of the same sociocultural project: mothers raise their children so they will ideally become moral copies of their healthy middle-class Christian parents and help the poor, the sick, and the vicious so these pathological members of American society can become "normal" citizens. The *Treatise* likewise claims that women stamp the values and practices of the country more deeply than men when Beecher remarks, "The proper education of a man decides the welfare of an individual; but educate a woman, and the interests of a whole family are secured," and middle-class ladies who enter the gendered occupations of nursing, philanthropy, housework, and education extend their influence even further.[50] Mothers and their families matter for Beecher because they can literally and metaphorically reproduce, and the spread of "normal" American households replaces social diseases with the health and order of the ideal multicellular community. *The American Woman's Home* insists this political motherhood does not necessarily require heterosexual marriages with biological children: "The blessed privileges of the family state are not confined to those who rear children of their own. Any woman who can earn a livelihood, as every woman should be trained to do, can take a [fully] qualified female associate, and institute a family of her own, receiving to its heavenly influences the orphan, the sick, the homeless, and the sinful."[51] Beecher and Stowe maintain families can operate normally without men and believe widows and spinsters may still perform their biosocial functions if they house and nurture the outcasts of American society. The

[50] Beecher, *A Treatise on Domestic Economy*, 13.
[51] Beecher and Stowe, *The American Woman's Home*, 25.

health of the country begins and ends with the mothers who administer the home and the female professionals who satisfy the domestic responsibilities of the public sphere, and the next section of this study will discuss how Beecher and Stowe align their own project of social normalization with the principles of cell theory and the methods of evangelical conversion.

II-2. Cell Theory, Self-Replication, and the Middle-Class Christian Home

Cell theory materialized during the mid-1800s from the research of the German scientists Theodor Schwann, Matthias Jakob Schleiden, Rudolf Ludwig Carl Virchow, and Robert Remak shortly after the 1841 publication of the *Treatise on Domestic Economy*. Beecher never mentions cells inside the *Treatise*, and her revised handbook outlines their structure, function, and division for her past readers and audiences unfamiliar with her earlier works. Andrew Reynolds helpfully lists the three propositions of contemporary cell theory: "(1) the cell is the fundamental structural and functional unit of life; (2) all living organisms are composed either of multiple cells or […] a single cell; and (3) all cells arise from pre-existing cells, so that we [arrive] at the conclusion that all forms of life are constructed *from* cells *by* cells."[52] Although the simplified definition of cells from *The American Woman's Home* does not share this technical precision, Beecher and Stowe cover each of these principles during Chapter VII: The Care of Health and clearly appreciate the discoveries associated with the gradual refinement of the compound microscope. The systematic study of cells and other microorganisms had previously stalled because of the color artifacts and limited

[52] Andrew Reynolds, "The Redoubtable Cell," *Studies in History and Philosophy of Biological and Biomedical Sciences* 41.3 (2010): 195.

resolution of compound microscopes with high magnification, which advances from the field of optics finally corrected around 1830.[53] Beecher and Stowe preface their own description of cell theory with favorable comparisons between the knowledge acquired from the microscope and the storied discoveries of the telescope: "By the aid of the microscope, we can examine the minute construction of plants and animals, in which we discover contrivances and operations, if not so sublime, yet more wonderful and interesting, than the vast systems of worlds revealed by the telescope."[54] Raised within the Calvinist tradition of their father Lyman, Beecher and Stowe assumed the mechanisms of the natural world reflected the will of God and therefore considered celestial physics and the anatomy of biological organisms two scales of one comprehensive plan for the universe. Where the telescope confirms the omnipotence of God and the limitlessness of space, the microscope reveals his presence inside all plant and animal life and detects the source of physical and social health. Beecher and Stowe care about cells because their activities control the physiological and pathological growth of the organism and its external community, and their handbook equates the healthy cell with the divinely-sanctioned Christian household.

The theoretical relationship between multicellular organisms composed of self-contained cells and social communities composed of independent members did not originate with Beecher and Stowe. Rudolf Virchow, the most vocal proponent of the third postulate of cell theory, used the analogy of the cell-state often during the 1850s alongside other respected nineteenth-century biologists including Matthias Schleiden,

[53] William Coleman, *Biology in the Nineteenth Century: Problems of Form, Function, and Transformation* (Cambridge: Cambridge University Press, 1977) 22.
[54] Beecher and Stowe, *The American Woman's Home*, 85.

Herbert Spencer, and Ernst Haeckel. Virchow himself argued the cooperation between the cells of higher organisms mirrored the interactions between the citizens of republican countries: "In 1855 Virchow wrote that the living organism is 'a free state of individuals with equal rights though not with equal endowments, which keeps together because the individuals are dependent upon one another and because there are certain centres of organization without [which] the single parts cannot receive their necessary supply of healthful [nourishment]'; and in 1859 [he wrote] '*The individual is, accordingly, a unified commonwealth* in which all parts work together for a common end.'"[55] While the cells of the multicellular body and the members of complex societies must ultimately combine together for their biological and social welfare, they retain their distinct identities and contribute toward the success of the whole with their own self-interested actions. Just as cells incorporate themselves into higher organisms so they can more-easily secure the nourishment required for their survival, so too do the citizens of political communities accept legal and social constraints upon their behavior so they can reap the social and economic benefits of the collective. Beecher and Stowe extend these comparisons between the biological cooperation of single cells and the organization of human societies when they discuss how networks of middle-class Protestant households might combine and reproduce until local neighborhoods, the American nation, and the world eventually become perfect copies of the "normal" family. Although *The American Woman's Home* mostly recycles the metaphors current among nineteenth-century biologists, it nevertheless considers the self-contained family rather than the detached individual the basic functional and structural unit of human

[55] Andrew Reynolds, "Ernst Haeckel and the Theory of the Cell State: Remarks on the History of a Bio-Political Metaphor," *History of Science* 46.2 (2008): 127.

civilization and makes the mother not only the figurative nucleus of the home but also the primary mediator between the public sphere and its domestic components.

Beecher and Stowe indirectly summarize the first two postulates of cell theory with their definition of cells from Chapter VII: The Care of Health: "The first formation, as well as future changes and actions, of all plants and animals are accomplished by means of small cells or bags [holding] various kinds of liquids. These cells are so minute that, of the smallest, some hundreds would not cover the dot of a printed *i* on this page. They are of diverse shapes and contents, and perform various different operations."[56] Beecher and Stowe explain how the initial development and voluntary actions of multicellular organisms arise from the activities of connected cells and label cells the fundamental unit of all plant and animal life. While each of these cells has its own protective membrane and remains physically separate from both other cells and the extracellular fluid, these cells can still interact with one another using liquids secreted from their interiors into nearby tissues and the bloodstream. This concept of the cell closely resembles how Beecher and Stowe understand the self-contained "normal" family; cells share one multicellular environment and cooperatively regulate the physiological processes of the higher organism, and middle-class Christian families define the cultural norms of the United States with the moral example, direct instruction, and benevolent actions of their mothers and daughters. Despite their descriptions of the form and functions of the cell, Beecher and Stowe seem more concerned with its continuous reproduction and review the steps of cell-division using the growth of chicken embryos:

[56] Beecher and Stowe, *The American Woman's Home*, 86.

> New cells are gradually formed from the nourishing yelk around the germ, each being at first roundish in shape, and having a [darker] spot near the centre, called the nucleus. The reason why cells increase must remain a mystery, until we can penetrate the secrets of vital force—probably forever. But the mode in which they multiply is as follows: The first change noticed in a cell, when warmed into vital activity, is the appearance of a second nucleus within it, while the cell gradually becomes oval in form, and then is drawn inward at the middle, like an hour-glass, till the two sides meet. The two portions then divide, and two cells appear, each containing its own germinal nucleus. These both divide again in the same manner, proceeding in the ratio of 2, 4, 8, 16, and so on, until most of the yelk [of the egg] becomes a mass of [independent] cells.[57]

Virchow himself had previously discussed the replication of embryonic cells inside eggs during his respected lecture series *Cellular Pathology* (1858) about the anatomy, symptoms, diagnosis, and treatment of cancer.[58] Virchow and his colleague Robert Remak eventually concluded cells could arise only from preexisting cells using related observations of animal embryos and tissue cultures, and Beecher and Stowe similarly highlight how cells multiply exponentially from their initial colonies and the apparent fidelity of the resultant copies. Each generation of cells doubles the current population whenever it divides, and newer cells gradually consume the nutritive yolk around the germ until the nascent embryo fills the egg. This representation of the third postulate of cell theory reflects the statistical normalization of the middle-class Christian family from *The American Woman's Home*, where the model household replicates until it completely overwrites contemporary American society. While Beecher and Stowe understand their stated objective of one homogeneous Christian nation will require extensive time and investment from their fellow women, they suppose the United States

[57] Beecher and Stowe, *The American Woman's Home*, 86.
[58] Rudolf Virchow, *Cellular Pathology as Based upon Physiological and Pathological Histology*, trans. Frank Chance (New York: Dover Publications, 1971) 442-3.

will inevitably reach this sociocultural endpoint because of their teleological vision of history. If God directs everything between the orbits of the planets and the "vital force" of cells (the same phrase the French anatomist Xavier Bichat used when he proposed life transcends its mechanical parts), then the laws of the natural world will eventually secure the religious paradise from the Book of Revelation.[59]

Although Beecher and Stowe realized this expected Christian society probably would not materialize until after their deaths, their handbook asserts future generations should continue the statistical normalization of the self-contained middle-class household for the collective health of the United States. Beecher and Stowe accordingly narrate how children initially receive full-time care and support from their families but must slowly assume the domestic and economic burdens of their siblings, their own children, and their parents: "The useless, troublesome infant is served in the humblest offices; while both parents unite in training it to an equality with themselves […] Soon the older children become helpers to raise the younger to a level with their own. When any are sick, those who are well become [their] ministers. When the parents are old and useless, the children become self-sacrificing servants."[60] The stable configuration of the "normal" household helps the family compensate for the variable health and efficiency of its individual members and outlast the lifespans of its parents and children. Once the mother and father have socialized their sons and daughters, these children will pass their middle-class Christian values onto not only the other members of their own homes but also their neighbors and the families produced from their later marriages. This logic of decline and replacement applies for American mothers who spread the perfect middle-

[59] Canguilhem, *Knowledge of Life*, 63-6.
[60] Beecher and Stowe, *The American Woman's Home*, 24.

class Protestant home via their children and the discrete cells of multicellular organisms. Beecher and Stowe write, "[After] the animal uses its brain to think and feel, and its muscles to move, the cells which [build] these parts begin to decay, while new cells are formed from the blood to take their place. Thus with life commences the constant process of decay and renewal all over the body."[61] The physiological processes of complex animals may weaken their cells, but the organism itself survives because the daughters of its older cells replace their dying parents. These cells share the structure and functions of their immediate precursors and thereby guarantee the survival of the biological whole despite the deterioration of its parts, and Beecher and Stowe debatably confer domestic advice for contemporary women less for the improvement of the present than the institution of healthier norms for the future.

This future-oriented mindset partly explains the ambivalence Beecher and Stowe express towards Roman Catholicism, which their handbook alternately connects with charity, missionary outreach, celibacy, and monasteries sequestered from the outside world. Beecher appreciated the opportunities Catholicism presented for unmarried women, widows, and philanthropists with its hierarchical network of religious institutions and private charities but criticized how Catholicism undermined the conventional middle-class family.[62] The first chapter of *The American Woman's Home* comments, "The Romish Church has made celibacy a prime virtue, and given its highest honors to those who forsake the family state as ordained by God. Thus came [vast] communities of monks and nuns, shut out from the love and labors of a Christian home; thus, also, came the monkish systems of education, collecting the young in great

[61] Beecher and Stowe, *The American Woman's Home*, 86.
[62] Boydston, Kelley, and Margolis, *The Limits of Sisterhood*, 239-40.

establishments away from the watch and care of parents."[63] Celibacy and monasticism prevent the biological and social reproduction necessary for the evangelical normalization of the American population, and Beecher and Stowe believe Christian norms cannot mature and spread without the divinely-sanctioned single-family household. The family not only teaches its members selflessness, compassion, and patience but also diffuses these values into the broader community with the moral example of its parents and children and the exponential proliferation of their descendants. Beecher and Stowe voice related concerns about the demographic shifts caused by the lower birth-rate of middle-class Christians; if the "pathological" strains of American society (including immigrants and the poor) reproduce more quickly than "healthy" citizens, then the statistical norms of the country may deviate even further from its Platonic archetypes. The final Appeal of the handbook consequently warns that the "political majority of New-England is passing from the educated to the children of ignorant foreigners" who might not advocate the doctrines of Christian domesticity and separate spheres because of their distinct cultural, economic, and ethnic heritages.[64] Beecher and Stowe likewise condemn masturbation and extramarital sex because these practices harm the nerves and redirect the biological drive for reproduction away from its legitimate channels, which replaces potential mothers and fathers with morally-compromised and sexually-diseased invalids. Indeed, Beecher and Stowe argue that children usually learn unhealthful sexual behaviors from their schoolmates after they

[63] Beecher and Stowe, *The American Woman's Home*, 26.
[64] Beecher and Stowe, *The American Woman's Home*, 342.

have left the constant supervision of the home and thus connect masturbation with the educational legacy of Catholic monasteries, nunneries, and universities.[65]

Before we examine how the principles of cell theory inform the architectural designs and recommended modes of charity from *The American Woman's Home*, we should discuss how this biological theory clarifies the aside from Chapter XXXIV: The Care of Domestic Animals about beekeeping. This section does not appear inside the *Treatise* and reflects the intersection between healthy cell-division and the multiplication of middle-class Protestant families introduced by the revised handbook. Beecher and Stowe mention beekeeping because of its profitability for single women without stable incomes from their families, but their descriptions more-directly concern how beehives reproduce over time: "One lady bought four hives for ten dollars, and in five years she was offered one thousand five hundred dollars for her stock […] In five years one man, from six colonies of bees to start with, [secured] eight thousand pounds of honey and one hundred and fifty-four colonies of bees."[66] Beehives correspond seamlessly with the three propositions of cell theory: the hive contains thousands of self-contained cells, these cells are the basic structural and functional unit of the hive, and the honeycomb slowly radiates outward from its initial cluster of cells. The hives themselves then reproduce once the first honeycomb has been saturated, and this process directly parallels how Beecher and Stowe present the growth of multicellular organisms and Christian neighborhoods. The model of the beehive condenses the scientific ideology of *The American Woman's Home* into its simplest form, where the steady replication of biological cells and independent households builds increasingly-

[65] Beecher and Stowe, *The American Woman's Home*, 212.
[66] Beecher and Stowe, *The American Woman's Home*, 294-5.

extensive systems of connected yet replaceable individuals. Beecher and Stowe simultaneously examine the relationships between reproduction and economics when they note successful beekeepers reap hundreds of dollars and thousands of pounds of honey every year. While other chapters from the handbook consider the pathological cycles of poverty and disease, Beecher and Stowe believe money, health, and property can also multiply under the right conditions. Ironically, the word "cell" itself would have reminded most nineteenth-century audiences of beehives rather than cellular biology; Canguilhem explains that scientists initially chose the term "cell" because of the physical resemblance between plant cells and honeycombs, which could have set the precedent for the political metaphor of the cell-state based upon the cooperative labor of honeybees.[67] Even if Beecher and Stowe never learned this etymological context, their handbook consistently arranges the natural world and human society into networks assembled from self-sufficient microcosms of the whole.

Beecher and Stowe relate the middle-class Protestant household and the single biological cell under this basic scheme because their scientific ideology makes the self-contained home the smallest functional and structural unit of the community and because every home has its own set of private rooms. When Beecher and Stowe review their architectural philosophy during Chapter II: A Christian House, they declare the model home should value efficiency over the appearance of its rooms and exteriors: "At the head of this chapter is a sketch of what may be properly called a Christian house; that is, a house [made] for the express purpose of enabling every member of a family to labor with the hands for the common good."[68] Unlike contemporary Gothic architects

[67] Canguilhem, *Knowledge of Life*, 30.
[68] Beecher and Stowe, *The American Woman's Home*, 28.

including Andrew Jackson Downing who planned upper-class homes with towers, asymmetrical floor-plans, and carved masonry, Beecher and Stowe insisted conscientious mothers should save their money for domestic appliances and useful space instead of decorations. Beecher and Stowe accordingly maximized the economy, symmetry, and reproducibility of the floor-plans from *The American Woman's Home* so "normal" families could not only afford their own homes but also complete their household chores with minimal time and effort. Where Charlotte Perkins Gilman supported the professionalization of domestic labor and the removal of all work from the private sphere, Beecher and Stowe designed their single-family home for wives and mothers who could not rely upon servants and collective neighborhoods for their gendered responsibilities. The first ground-plan from the handbook (Figure 1) consequently removes the outsized entry hall, formal dining room, and guest parlor usually reserved for wealthy families and distributes the conserved space between two multipurpose rooms with one movable screen. This compact layout achieves two objectives: it assigns most of the space available inside the household for the daily activities of its residents and helps the mother coordinate the cooking, cleaning, and childcare required for the proper administration of the home. Diana Strazdes discusses how Beecher and Stowe update seventeenth-century Puritan architecture for this plan and observes that the antiquated placement of its central chimney stack lets women easily access every other room from the kitchen.[69] Even the movable screen recommended for the second multipurpose room primarily grants the mother more control over the dimensions and operations of her house, and Beecher and Stowe

[69] Diana Strazdes, "Catharine Beecher and the American Woman's Puritan Home," *New England Quarterly* 82:3 (2009): 472-4.

recognize specialized rooms merely limit the options of the rational homemaker. While Beecher and Stowe clearly prioritize efficiency and economy over aesthetics, the square layout of their single-family floor-plan also increases the chance these homes will replicate across the nation because of their low construction costs and reproducible footprints.

Beecher and Stowe mostly marketed this cheap floor-plan for middle-class mothers who could not afford Gothic architecture so the "normal" Christian household could spread, but their handbook also recommends this plan for lower-income families who could never buy the house independently. Beecher and Stowe neatly estimate the cost of their model home and then present two solutions for families with limited budgets: "In a place where the *average* price of lumber is $4 a hundred, and carpenter work $3 a day, such a house can be built for $1600. For those [who must practice] the closest economy, two small families could occupy it, by dividing the kitchen, and yet have room enough. Or one large room and the chamber over it can be left till increase of family and means require enlargement."[70] If we calculate the total value of this $1600 floor-plan using the overall rate of inflation since 1869, we find the single-family plan from *The American Woman's Home* would cost about $28,000 today.[71] While middle-class mothers from the 1800s could probably have saved the money required for this investment, Beecher and Stowe realized that the cultural norms of American civilization would never change until poorer families could improve their socioeconomic status and form their own self-contained Christian homes. Beecher and Stowe therefore have their

[70] Beecher and Stowe, *The American Woman's Home*, 39-40.
[71] Robert C. Sahr, "Individual Year Conversion Factor Tables," *Inflation Conversion Factors*, 5 Feb. 2015, Oregon State University School of Public Policy, 7 Mar. 2016.

lower-class readers either combine their resources and divide the floor-plan between two families or leave the house half-finished so the "pathological" citizens of the country can start their transition towards legitimate middle-class lifestyles. Once the families who occupy each half of this shared home have more children and earn the money for their own self-sufficient households, then they should theoretically detach from their roommates and finish the model home from the handbook. This process repeats the steps of cell-division from Chapter VII: The Care of Health, where the parent cell sprouts another nucleus (the economically-secure family) and pinches near its center until it divides into two copies (the discrete homes generated from the initial two-family residence). Indeed, Canguilhem discusses how laymen associated the biological term "cell" first with beehives and later with separate rooms, and the perfect Christian household shares the symmetry, functionality, and self-replication of the healthy cell.[72] Beecher and Stowe even believed the example of these archetypal homes would improve neighborhoods where westward expansion and the Civil War had weakened civilized society:

> Let us suppose a [small] colony of cultivated and Christian people, […] who now are living as the wealthy usually do, [relocated] to some of the beautiful Southern uplands, where are rocks, hills, valleys, and mountains as picturesque as those of New-England […] suppose such a colony, with a central church and schoolroom, library, hall for sports, and a common laundry […]—suppose each family to train the children to labor with the hands as a healthful and honorable duty; suppose all this, which is perfectly practicable, [and] would not the enjoyment of this life be increased, and also abundant treasures laid up in heaven, by using the wealth thus economized in diffusing similar enjoyments and culture among the poor, ignorant, and neglected ones in desolated sections where many are now perishing for want of Christian example and influence?[73]

[72] Canguilhem, *Knowledge of Life*, 30.
[73] Beecher and Stowe, *The American Woman's Home*, 40-1.

This vision problematically connects the North with Christianity and the South with heathenism and presumes the middle-class Protestant families of Northern immigrants will save the citizens of the South and West from their poverty and ignorance. Beecher and Stowe accordingly center their hypothetical Christian neighborhood upon the church and the schoolroom, which socialize the prior residents of the community and their children until the locals become indistinguishable from the "civilized" colonists. Just as the embryonic cells inside chicken eggs consume the yolk around the germ until the nutrients have been completely replaced with the actual colony, so too does the gendered archetype of the single-family household reform "pathological" communities and neutralize their unhealthy values with middle-class domesticity.

Of course, Beecher and Stowe hoped these Christian colonies would gradually reproduce until every country supported middle-class motherhood and the doctrine of separate spheres, and this international project required American missionaries. Beecher and Stowe believed Christian neighborhoods could not mature without the instruction and moral example of Christian families and proposed their own architectural solution (Figure 2) for the construction of future Protestant missions during Chapter XXXVIII: The Christian Neighborhood. This simple plan combines the church, the schoolroom, and the single-family home into one coherent structure and theoretically satisfies the needs of the community using limited space, money, and personnel. The schoolroom and living room of this mission meet along its midline and help the missionaries alternately keep their domestic activities separate from the rest of the community and convert their private rooms into additional space for sermons and lectures. This layout intentionally minimizes the boundary between the rooms reserved for the missionaries

themselves and the space used for the religious and academic education of their flock, and this extensive overlap between the public and private spheres supplements the direct instruction of the missionaries with the implicit example of their own Christian family. Even the kitchen lets the mother of the household simultaneously feed her family and teach her children and the students from her neighborhood the principles of domestic economy. Beecher and Stowe predicted these outposts would expand until the mission could "no longer hold the multiplying worshipers" and "colonies from these [increasingly] prosperous and Christian communities would go forth to shine as 'lights of the world' [for] all the now darkened nations."[74] Much like biological cells, these religious colonies reproduce themselves indefinitely and send missionaries abroad so the entire world might someday contain only identical copies of the "normal" middle-class Protestant household. Amy Kaplan similarly describes how the word "domestic" aligns the home and the nation against the Other and unveils the political subtext of the orderly replication of the single-family household, and the word "colony" also adds biology into this scheme because scientists use the term "colony" for cell-clusters.[75] Beecher and Stowe thus associate cell-division, evangelism, and the natural reproduction of traditional families, and Beecher had personally advocated this mode of social normalization before the Civil War, when she sponsored the controversial American Colonization Society. The Society had solicited funds so freed slaves could settle outside of North America, which its members asserted would purify the racial

[74] Beecher and Stowe, *The American Woman's Home*, 337.
[75] Amy Kaplan, "Manifest Domesticity," *American Literature* 70.3 (1998): 581-4.

composition of the United States and spread Christianity into Africa until populations worldwide shared the norms of their American colonizers.[76]

The scientific ideology of cellular replication even frames the method of Christian charity from the handbook, which insists benevolent actions should help the poor and the vicious secure their own livelihoods. When Beecher and Stowe describe charity during Chapter XIX: Economy of Time and Expenses, they warn their audiences about donations made without clear objectives for the future normalization of their recipients. Beecher and Stowe explain this perspective using the following scenario: "Suppose a man of wealth inherits ten thousand acres of real estate; it is not his duty to divide it [equally] among his poor neighbors and tenants. If he took this course, it is probable that most of them would spend all in thriftless waste and indolence […] Instead, then, [of] putting his capital out of his hands, he [should use it] to raise his family and his neighbors to such a state of virtue and intelligence that they can secure far more."[77] Beecher and Stowe imply the wealthy, who already follow the norms of middle-class Christian domesticity, have superior judgment than the poor and conclude handouts will merely give "pathological" Americans more resources for their self-destructive behavior. Even if the patron from this case helps alleviate the poverty of his neighbors and tenants with his donations, the irresponsibility of the lower-classes means his beneficiaries will promptly spend their windfall without deciding upon any provisions for the subsequent welfare of their own households. This same acreage would not only meet the current needs of the community but also reshape its dependents

[76] Karen Fisher Younger, "Women's Sphere and the Public Square: The Beecher Sisters' Dilemma Over Slavery," *International Congregational Journal* 8:2 (2009): 48-9.
[77] Beecher and Stowe, *The American Woman's Home*, 188.

into “normal” Christian citizens under the control of the right owner, and Beecher and Stowe prove the success of this approach using the boardinghouses of one wealthy woman from the city: “She hired a large house near the most degraded part of the city, furnished it neatly and with all suitable conveniences to work, and then rented to those among the most degraded whom she could bring to conform to a few simple rules of decency, industry, and benevolence […] And so successful was her labor that she hired [out] a second house, and managed it on the same plan.”[78] These boardinghouses have two main purposes: they remove young women from the unhealthy physical and social environment of the inner-city and teach these women the skills needed for middle-class domestic life. The education these women receive from the proprietor and mother of these makeshift homes saves them from the social pathologies of disease, poverty, and prostitution, and Beecher and Stowe admire how this system converts mere “girls” into self-sufficient ladies. The handbook also notices that these halfway-houses reproduce after they reach capacity and continue the pattern of cell-division, the spread of Christian households, the growth of honeycombs, and the multiplication of Protestant missions. The next section of this study will examine the pathological opposite of this healthful self-replication and detail how *The American Woman’s Home* connects nineteenth-century germ theory with the uncontrolled proliferation of biological and social diseases.

[78] Beecher and Stowe, *The American Woman’s Home*, 189.

II-3. Miasmas, Germ Theory, and Nineteenth-Century Social Pathologies

While Beecher and Stowe believed their preferred healthy, middle-class, Christian nation would inevitably arise from the "normal" remnants of nineteenth-century American society, they admitted their present readers could not entirely avoid the biological and social germs from their communities. *The American Woman's Home* instead makes mothers responsible for the physical and social health of themselves and their families, which requires the protection of the home and its residents from unhealthy environments and the treatment of anyone whose bodies and norms might infect the general population. If Beecher and Stowe primarily uphold the normalization of the single-family household using traditional marriage, education, charity, and evangelism, then these medical practices supply the expected corollaries of this process for cases where the public sphere might introduce disease into the sanitary cellular household. Beecher and Stowe therefore propose that mothers should understand the basic principles of physiology and nurse their family members whenever they become ill: "There is no really efficacious mode of preparing a woman to take a rational care of the health of a family, except by communicating that knowledge [of] the construction of the body and the laws of health which is the basis of the medical profession. Not that a woman should undertake the minute and extensive investigations requisite for a physician; but she should [learn some] first principles, as a guide to her judgment in emergencies when she can rely on no other aid."[79] Despite their deference towards the expertise of male physicians for patients with acute and unfamiliar illnesses, Beecher and Stowe assign women the responsibility for the everyday health of their families and

[79] Beecher and Stowe, *The American Woman's Home*, 85.

declare mothers must sometimes diagnose and treat their children and husbands without any firsthand guidance from licensed doctors. This gendered division-of-labor corresponds with the contemporary distinction between the maternal burden of benevolent nurses and the masculine profession of medicine, and Rima D. Apple discusses how domestic handbooks let conscientious mothers learn and apply the advice of experienced clinical practitioners: "Nineteenth-century manuals assumed that mothers needed scientific and medical advice for healthful childrearing, but it was [practical] advice at a distance, advice women could read about and follow."[80] The advice from these handbooks concerned not only the treatment of specific diseases but also their prevention, and Beecher and Stowe concluded biological illnesses often had social causes which required the direct intervention of the Christian mother. When *The American Woman's Home* covers the symptoms of alcoholism, for example, Beecher and Stowe detail how the habitual consumption of alcoholic beverages permanently weakens the cells of the brain and argue that abstinence alone can save American families from "vino-mania."[81] Beecher and Stowe accordingly supported the female temperance movement because they recognized the law could impose biological and social health upon its subjects without the consent of the entire population. The handbook charts the correlation between physical diseases and the pathological breakdown of middle-class Christian domesticity, and Beecher and Stowe confront these related threats with private care, moral suasion, and national reform.

Beecher and Stowe represented the connection between biological and social pathologies using two contemporary theories of disease, each of which explicitly

[80] Apple, *Perfect Motherhood*, 17.
[81] Beecher and Stowe, *The American Woman's Home*, 110.

contrasted with the healthy model of cellular replication from their revised handbook. The first of these explanations, called the miasma theory, attracted widespread support from professional scientists until the late-1800s and speculated that many diseases originated from the atmosphere itself: "Long before the germ theory had gained wide acceptance, Americans were aware that people [who contracted] certain diseases, such as smallpox or bubonic plague, gave off some sort of intangible substance [which could make] others sick […] But the nature of this infective substance remained mysterious. The fact that many diseases spread without any known contact with the [sick] led many physicians to suspect a more generalized, atmospheric source of infection."[82] Beecher and Stowe consequently underscored the significance of proper ventilation for domestic and public spaces and feared the impure air of overcrowded factories, schoolrooms, hospitals, churches, and city tenements. Each of these unhealthy locations closely packed men, women, and children into confined spaces with limited amounts of clean air and surrounded them with organic waste, which reduced the vitality of the American population and increased the prevalence of disease. Beecher and Stowe explain the threat of corrupted air using the case of the Black Hole of Calcutta, where "one hundred and forty-six men were crowded into a room only eighteen feet square" overnight and "one-hundred and twenty-three" of the prisoners died.[83] While Beecher and Stowe concede the reported deaths from the Black Hole of Calcutta and the 1848 case of the Londonderry steamer exceed the usual extent of miasmatic illness, they nevertheless warn their audience about the morbidity associated with polluted atmospheres. Their

[82] Nancy Tomes, *The Gospel of Germs: Men, Women, and the Microbe in American Life* (Cambridge: Harvard University Press, 1998) 3.
[83] Beecher and Stowe, *The American Woman's Home*, 48.

handbook specifically quotes firsthand testimony from Dr. Dio Lewis about the unwholesome conditions of modern factories: "I visited an establishment where one hundred and fifty girls, in a single room, were engaged in needle-work. Pale-faced, and with low vitality and feeble circulation, they [did not realize] that they were breathing air that at once produced in me dizziness and a sense of suffocation."[84] Beecher and Stowe claim factories harm the biological health of their workers with repetitive movements, overlong shifts, and impure air and undermine the welfare of the nation because industry simultaneously removes women from the domestic sphere and limits their chances of marriage and reproduction. Miasma theory helps Beecher and Stowe define the relationships between biosocial norms and their contexts, and they consider natural and social miasmas two byproducts of the same environments.

The second biological scheme of disease from the handbook, called the germ theory, first surfaced during the early-1800s and later became the main explanation for the causes of sickness after the studies of Louis Pasteur and Robert Koch into anthrax, rabies, cholera, and tuberculosis from the 1870s and 1880s. Nancy Tomes summarizes the central features of germ theory, which differed markedly from miasma theory: "The germ theory consisted of two related propositions: first, that animal and human diseases were caused by [distinct] species of microorganisms, which [inhabited] the air and water; and second, that these germs could not generate spontaneously, but rather always came from a previous case of exactly the same disease."[85] The proponents of germ theory concluded that diseases arose from biological organisms that reproduced inside their hosts and could infect other members of the local community, and this

[84] Beecher and Stowe, *The American Woman's Home*, 50.
[85] Tomes, *The Gospel of Germs*, 33.

pathological reversal of healthy cell-division received considerable attention from Western scientists around the 1869 publication of *The American Woman's Home*. Beecher herself, who informally described miasma theory but not germ theory within her 1841 *Treatise*, introduced her updated account of biological diseases from Chapter XXXVI: Warming and Ventilation with the uncited remark, "A work has recently been published in Europe, in which representations of [the] various microscopic plants generated in the fluids of [patients with specific diseases] are exhibited, enlarged several hundred times by the microscope."[86] While historians have not determined the source of this citation, Beecher and Stowe may have learned germ theory from the essays Pasteur and Joseph Lister published about fermentation and antisepsis over the 1860s and the microbial research of James Henry Salisbury and Ernst Hallier. Salisbury mistakenly proposed fungal agents for typhoid fever, smallpox, and cowpox during his 1868 *Microscopic Examinations of Blood*, which included microscopic plates of spores and threads cultured from the blood of patients who had contracted each illness.[87] This study could have prompted the content about germs from *The American Woman's Home* because he submitted that the fungal germs he identified had caused the visible symptoms of his patients and because he examined two diseases from the handbook (typhoid and smallpox), but Salisbury both lived and published his article inside the United States. Another possible source for Beecher and Stowe was the German botanist Ernst Hallier, who believed polymorphic fungi could mature into different microorganisms with separate pathologies and defended his theory using plates, yet his

[86] Beecher and Stowe, *The American Woman's Home*, 309.
[87] James Henry Salisbury, *Microscopic Examinations of Blood; and Vegetations Found in Variola, Vaccina, and Typhoid Fever* (New York: Moorhead, Bond & Company, 1868) 47-67.

illustrations did not match the descriptions from the handbook and concerned cholera instead of typhoid and smallpox.[88] Whether or not Beecher and Stowe personally consulted articles from Salisbury, Hallier, and other contemporary germ theorists or merely learned about their research secondhand, their scientific framework for biological and social pathologies combines the basic principles of miasma theory with the latest advances of germ theory.

Where the orderly reproduction of individual cells sustains the health of the multicellular organism, the exponential multiplication of germs damages and occasionally destroys the tissues of their human and animal hosts. Beecher and Stowe describe how particular illnesses stem from the proliferation of different varieties of microscopic vegetation:

> There are some recent scientific discoveries that [concern] impure air which may properly be introduced here. It is shown by the microscope that *fermentation* is a process which generates extremely minute plants, that gradually increase till the whole mass is pervaded by this vegetation. The microscope also [shows] the fact that, in certain diseases, these microscopic plants are generated in the blood and other fluids of the body […] Each of these peculiar diseases generates [different] kinds of plants. Thus in the typhoid fever, the microscope reveals in the fluids of the patient a plant that resembles [some] kinds of seaweed. In chills and fever, the microscopic plant has another form, and in small-pox still another.[89]

This account of the self-replication of pathological microbes closely resembles how Beecher and Stowe summarize the development of embryonic cells inside the egg, where the expanding germ consumes the nutrients of the adjacent yolk. Beecher and Stowe understand that microorganisms and the normal cells of other species share the

[88] Christoph Gradmann, "Isolation, Contamination, and Pure Culture: Monomorphism and Polymorphism of Pathogenic Micro-Organisms as Research Problem 1860–1880," *Perspectives on Science* 9.2 (2001): 152-8.
[89] Beecher and Stowe, *The American Woman's Home*, 309.

same mechanism of exponential reproduction, but most germs undercut the physiological welfare of their multicellular carriers. Beecher and Stowe thus advocate biosocial replication whenever this process yields healthy, middle-class, Christian households and oppose the spread of parasites and abnormal values which might delay the social normalization of the American population. Even the bacteriologist Ferdinand Cohn, who claimed different species of bacteria had identifiable characteristics and supported germ theory during the 1870s, highlighted how quickly microorganisms could multiply and potentially transmit diseases between their hosts: "It well repays the trouble to [compute] the incredible masses to which these smallest of all organisms [can grow]. We know that bacteria divide themselves in the space of an hour into two parts, then again after another hour into four, after three hours into eight, etc. After twenty-four hours the number exceeds sixteen and a half millions (16,777,220); at the end of two days this bacterium will have [become] 281,500,000,000."[90] Beecher and Stowe may expect the replacement of nineteenth-century American society with the Platonic norm of the self-sufficient middle-class Protestant family, yet their handbook warns its audience about the ease with which biological and social diseases appear and spread. If one bacterium, parasite, tenement, prostitute, alcoholic, or factory can become thousands after the necessary time has passed, then civilization will decline unless the favorable reproduction of the perfect Christian home outstrips its harmful alternatives. When Beecher and Stowe state diseases result from "microscopic plants which float in an impure or miasmatic atmosphere, and are taken into the blood by breathing," they therefore propose two pathways for the spread of social pathologies: "normal"

[90] Ferdinand Cohn, *Bacteria: The Smallest of Living Organisms*, trans. Charles S. Dolley (Baltimore: The Johns Hopkins Press, 1939) 19.

American citizens become infected with germs and unhealthy norms from their immediate environments and direct contact with human carriers who have already contracted biological and cultural infections.[91] The health of the United States accordingly requires treatment for neighborhoods where these diseases have become endemic and patients who might contaminate the wider population.

Beecher and Stowe therefore compare the regulation of cultural norms with medicine and submit the moral leaders of the nation, including preachers, doctors, teachers, and mothers, must protect the general public from harmful values and practices. Beecher and Stowe explicitly relate this expectation when they discuss how American society should detect and censor literature that glorifies sinfulness and sexuality: "It is more suitable for editors, clergymen, and teachers to read indiscriminately, than for any other class of persons; for they are the guardians of the public weal in matters of literature […] In doing this, however, they [must follow] the same principles which regulate physicians, when they visit infected districts—using every precaution to [escape] injury to themselves […] and faithfully employing all the knowledge and opportunities thus gained for warning and preserving others."[92] *The American Woman's Home* implies that social pathologies and biological germs circulate inside circumscribed locations and infect healthy Americans who come into contact with these germs and their carriers. Just as physicians must protect themselves from disease when they diagnose and treat their patients, so too must social gatekeepers weather the temptations of selfishness, crime, and pornography when they review literature for the moral safety of their communities. Beecher and Stowe consequently

[91] Beecher and Stowe, *The American Woman's Home*, 310.
[92] Beecher and Stowe, *The American Woman's Home*, 218.

oppose the moderate consumption of alcohol, horseraces, dances, and unselective charity less because of their own drawbacks than the unhealthy environments connected with these practices; alcohol causes alcoholism, races and dances may support gambling and sexual promiscuity, and handouts for the poor and the vicious reward their antisocial conduct. The handbook reserves its sharpest criticisms for city tenements where biosocial pathologies have gradually infected the whole population because of the poverty and simplicity of immigrants and the lower-classes. Beecher and Stowe reveal the unhealthiness of these tenements with quotations from the Reverend W. O. Van Meter, who studied the Fourth Ward of New York during the 1860s: "In one tenant-house one hundred and forty-six were sick with smallpox, typhus fever, scarlatina, measles, marasmus, phthisis pulmonalis, dysentery, and chronic diarrhea. In another [holding] three hundred and forty-nine persons, *one in nineteen died* during the year, and on the day of inspection […] there were [precisely] one hundred and fifteen persons sick!"[93] The members of these tenements spread and contract multiple diseases that not only limit the productivity and vitality of the lowest tiers of American society but can also reach middle-class Christian households from the continual interactions of the city. Beecher and Stowe worry these tenements will transmit smallpox, typhus, measles, and other biological diseases into the broader community and wonder how many residents of these "contaminated" neighborhoods carry equally-virulent social germs including prostitution, masturbation, pornography, premarital sex, nontraditional gender norms, substance-abuse, and factory labor.

[93] Beecher and Stowe, *The American Woman's Home*, 320.

Despite the detailed information Reverend Van Meter presents about the higher mortality rate of the Fourth Ward compared with the general population, Foucault argues that the political methods of collective statistics mainly apply for morbidity. Unlike epidemics where diseases kill the members of the community but seldom change its permanent composition, endemics require accurate statistics about specific demographics because the distribution of healthy and unhealthy cases across the community shapes its daily operations; Foucault attests endemics have "sapped the population's strength, shortened the [work] week, wasted energy, and cost money" and made death itself into "something permanent, something that slips into life [and] perpetually gnaws at it, diminishes it and weakens it."[94] Even if tenements and the other sources of biosocial diseases from *The American Woman's Home* cost relatively few lives, Beecher and Stowe recognize how the unhealthy norms of the contemporary United States reduce its economic welfare and slow its progress towards universal, middle-class, Christian domesticity. Beecher and Stowe accordingly chart the incidence and severity of the natural and social pathologies of the Fourth Ward so they can align its current practices with the mean values of New York City and the Platonic archetype of the single-family household. The handbook nevertheless cites the reports from Reverend Van Meter about the extent of the Fourth Ward with evident anxiety: "The tenant-house population is crowded at the rate of two hundred and ninety thousand inhabitants to the square mile […] Were the buildings inhabited by these miserable creatures removed […] there would [be] one and two ninths of a square yard for each,

[94] Michel Foucault, *"Society Must Be Defended," Lectures at the Collège de France, 1975-1976*, ed. Mario Bertani and Alessandro Fontana, trans. David Macey (New York: Picador, 2003) 244.

and this unparalleled packing is *increasing*."[95] These tenements will theoretically replicate until Christian benevolence, formal education, and the moral example of "normal" American mothers cure their diseased residents, but the size of these neighborhoods conceals their total population. The members of these tenant-houses may already outnumber the middle-class families scattered across the city, but the inward multiplication of these unhealthful communities protects them from the steady normalization of the country and increases the need for social intervention. Beecher and Stowe contrast the added competition for minimal resources between the residents of the Fourth Ward with the private wealth of upper-class Americans who have forsaken Christian charity: "Their expensive pictures multiply on their frescoed walls, their elegant books increase in their closed bookcases, their [finest] pictures and prints remain shut in portfolios, to be only occasionally opened by a privileged few."[96] The socioeconomic inequality of the contemporary United States injures both the lower-class, which has neither the money nor the space for the ideal Christian household, and the upper-class, which becomes more concerned with its own belongings than the future health of the nation. Beecher and Stowe may confirm the superiority of middle-class domesticity over all other norms, but their evangelical outlook means they would rather identify and cure "pathological" citizens than neglect them.

Beecher and Stowe predictably assume the rehabilitation of the lower-class must involve the restoration of the single-family Christian home and redesign their floor-plan from Chapter II into one level of their own multistory apartment complex. This model tenement house (Figure 3) has four self-contained apartments per floor and divides

[95] Beecher and Stowe, *The American Woman's Home*, 320.
[96] Beecher and Stowe, *The American Woman's Home*, 322.

these units with one communal hallway and stairwell, and the complex has fully-symmetrical vertical and horizontal cross-sections. The arrangement of these duplicate residences across the hallway and around their separate kitchens mirrors the process of cell-division, where the parent cell pinches near its center until it becomes two copies with distinct nuclei. Each apartment contains its own parlor, kitchen, and bedroom so the families who occupy the tenement can readily perform the domestic operations of the perfect middle-class Christian household without the direct involvement of their neighbors. Beecher and Stowe felt their vision of one uniform, middle-class, Protestant society could never exist without the self-sufficient home, and their design openly rejects the later communitarian projects of their grandniece Charlotte Perkins Gilman. Gilman published multiple plans for socialist communities around the turn of the twentieth century, and Valerie Gill notices that the blueprints for her town "Applepieville" positioned its self-contained households radially around the shared amenities of the central square.[97] The tenement from *The American Woman's Home*, however, minimizes the contact between its residents and retains the kitchen Gilman would later remove from her houses so women could outsource domestic labor and start their own public careers. Beecher and Stowe believed their model apartment complexes could limit the pathological multiplication of modern slums and hoped their perfect tenements would spread until they replaced unhealthy lower-class neighborhoods: "Such a building, four stories high, would accommodate sixteen families of four members, or eight larger families, and provide light, warmth, ventilation, and more comforts and conveniences than are usually found in most city houses built for only one

[97] Valerie Gill, "Catharine Beecher and Charlotte Perkins Gilman: Architects of Female Power," *Journal of American Culture* 21:2 (1998): 20-2.

family."[98] This cheap tenant-house contains four copies of the same apartment per floor and four floors altogether, and the self-replication of these architectural subunits repeats the exponential pattern of cell-division: one residence yields two copies along each side of the hallway, four copies for every floor, eight copies for two stories, sixteen copies for the entire complex, and thirty-two copies once someone constructs another tenement. Unlike the ingrown communities of the Fourth Ward, the Christian tenement expands upward and outward and solves the endemic pathologies of city environments with the healthier domestic norms of the suburbs and countryside.

The final Appeal from the handbook therefore cautions its audience about the breakdown of the traditional middle-class Protestant household, which Beecher and Stowe associate with the pathological spread of immigration, radicalism, free-love, varied gender norms, spiritualism, and industrialization. Beecher indicates these social diseases weaken the health of American mothers and sap the "foundations of the family state," and her conclusion sharply criticizes the relocation of New-England women from the domestic sphere into the factory: "Factory girls must stand ten hours or more, and consequently in a few years debility and disease ensue, so that they can never rear healthy children, while the foreigners who supplant [their] kitchen labor are almost the only strong and healthy women to rear large families."[99] The present and future welfare of the United States relies upon the conservation and reproduction of the "normal" cellular family, and women who choose industry over domestic service not only have fewer healthy children but also master fewer of the skills required for the proper administration of the home. Beecher worries about the nineteenth-century demographic

[98] Beecher and Stowe, *The American Woman's Home*, 322.
[99] Beecher and Stowe, *The American Woman's Home*, 342-3.

transition away from the Puritan stock of the Northeast towards recent immigrants from Europe and Asia and allows that whatever population controls the home and the kitchen will eventually become the sociocultural majority. Although Beecher and Stowe hope American society will successfully convert these potential carriers of biosocial disease into perfect copies of the white, middle-class, Christian norm, Nicole Tonkovich aligns Beecher with the later eugenics movement because of her concern with the differential reproduction of various races and the upper and lower classes.[100] If Beecher and Stowe consider the decline of the model single-family household the core pathology of contemporary American civilization, then perhaps their handbook contains the prescription for the infected national body. *The American Woman's Home* makes the "normal" mother the principal housekeeper and healthkeeper of her family and the wider nation, and the handbook comprises yet another social cell for the evangelical program of its authors. Beecher personally affirms, "Every woman who wishes to aid in this effort for the safety and elevation of our sex may do so by promoting the sale of this work, and its introduction as a text-book into schools."[101] Much like the biological process of cell-division, the print copies of *The American Woman's Home* gradually replicate its conservative values using the all-female classrooms where it became the accepted textbook, the field of domestic economy, and the many homemakers who privately followed and publicly supported its advice.

[100] Tonkovich, *Domesticity with a Difference*, 88-9.
[101] Beecher and Stowe, *The American Woman's Home*, 343.

III-1. Evolution and the Progressive Feminism of Charlotte Perkins Gilman

Even after the deaths of Catharine Beecher and Harriet Beecher Stowe near the end of the nineteenth century and the simultaneous popularization of evolutionary theory across Britain and the United States, the doctrine of separate spheres and the cult of traditional motherhood retained substantial cultural and biological authority well into the early-1900s. Where Beecher and Stowe had constructed their distinct scientific ideology around the biosocial networks derived from the self-sufficient microcosms of the cell and the family, later supporters of the gendered division of the public and private spheres more commonly drew from the research of Charles Darwin, other naturalists, and the related fields of sociology and demography. Detractors of the female suffrage movement, for example, insisted the sexes were "separate but equal" and worried the vote would simultaneously "unsex" American women and increase the proportion of uneducated immigrants within the electorate; the norms associated with the white, middle-class, Protestant audiences of *The American Woman's Home* became increasingly unstable with the changing ethnic and social composition of the United States.[102] Beecher had personally opposed female suffrage because it unsettled the boundaries between the sexes and had declared the balance of mental and physical labor inside the model Christian household perfectly suited the female constitution, which could supposedly handle multiple smaller chores more easily than complicated projects that demanded sustained attention.[103] The social evolutionists who feared the breakdown of conventional gender norms later reinforced these physiological

[102] Judith A. Allen, *The Feminism of Charlotte Perkins Gilman: Sexualities, Histories, Progressivism* (Chicago: University of Chicago Press, 2009) 148-9.
[103] Beecher, *Letters to the People*, 110-1.

rationalizations for the single-family household using information from Darwin himself about the evolutionary advantages of sexual reproduction over asexual reproduction. Kimberly Hamlin observes, "In *The Descent of Man*, Darwin asserted that sex differences promoted the evolutionary process by efficiently dividing labor and that the most advanced species were those [where] the sexes were the most differentiated […] At the very top of this ladder were those humans with the most strictly defined gender roles: married couples in which the husband worked outside the home and the wife [supervised the] children and domestic tasks."[104] Mainstream biologists concluded that sex-distinctions introduced useful variations into the population and assisted the division-of-labor between the members of separate families, and these hypotheses indicated the health of modern women and the welfare of the American nation required the protection of the separate spheres. Conservative activists therefore appropriated the cultural platform of Beecher and her affiliates yet replaced their cellular framework of normalcy and pathology with their own Darwinian scheme for the natural order of society.

This reaction against the progressive reforms associated with industrialization, socialism, permissive gender norms, urbanization, female suffrage, and collective neighborhoods reflected the sudden demographic shifts from the decades between Reconstruction and World War I. The increased education of American citizens, especially white women and minorities, redistributed the national population from the countryside into the city and directed many young ladies away from marriage and into the workforce: only 52.7% of the white women and 10% of the minority women

[104] Hamlin, *From Eve to Evolution*, 72-3.

between the ages of five and nineteen routinely attended schools during 1870, yet these same proportions reached 61.3% and 46.6% around 1910.[105] These educated ladies could secure their own livelihoods from factory labor and occupations within and beyond the maternal sectors of healthcare, education, housework, and childcare, and they occasionally continued their careers after they became wives and mothers. American women formed 36% of white-collar and service workers and 20% of all wage-earners by 1890 and 1910 respectively, and their entrance into the public sphere produced widespread anxiety about the future of the middle-class Christian family and the potential economic competition between men and women.[106] These nontraditional ladies not only changed the makeup of the historically-male spaces of the schoolroom, the college, and the workplace but also questioned the impartiality of the male scientists whose research showed women could not succeed outside the private sphere. Antoinette Brown Blackwell, who became the first ordained female minister from the United States and published commentaries about the contemporary political interpretations of Darwinian evolution, stated women alone could dispute the gendered perspective of professional biologists: "What women lacked in specialized training and laboratory access, they made up for by having female bodies and female experiences, traits which no male scientist could boast […] If woman [did not voice her particular viewpoint], then [Blackwell allowed that] she must 'forever hold her peace, consent meekly to crown herself with these edicts of her inferiority.'"[107] Blackwell asserted women should reinterpret the conclusions of biological and social scientists about the proper positions

[105] Apple, *Perfect Motherhood*, 19.
[106] Hamlin, *From Eve to Evolution*, 112-3.
[107] Hamlin, *From Eve to Evolution*, 62-3.

of women within nature and society even if they could not collect new information, and progressive female reformers presented their own evolutionary account of American civilization. Where conservative evolutionists submitted the doctrine of separate spheres merely reflected the healthy sex-distinctions required for sexual reproduction, feminist theorists including Blackwell and Charlotte Perkins Gilman reasoned that the excessive biosocial differences between males and females limited the biological fitness and socioeconomic progress of the modern United States.

Progressive evolutionists compared strict gender norms and their effects with the harmful adaptations of sexual selection, where organisms inherit and transmit characteristics that increase their own chance of reproduction but compromise how well the entire species operates within its current environment. Scientific reformers accordingly disagreed about whether the physiological sex-distinctions between men and women and the model of the middle-class Christian household benefitted American mothers and their families or converted women into the sexualized property of their husbands. Gilman likewise believed the policy of separate spheres reduced the economic output of self-sufficient families and the nation because of the inefficiency of domestic labor and the confinement of women inside the home, and she assumed female professionals would supply healthier conditions for their families and become more socially-invested and productive citizens once they overcame the biosocial handicaps of contemporary society. After Gilman divorced her first husband Charles Walter Stetson, she therefore let Stetson and his second wife Grace Ellery Channing raise her daughter Kate so she could dedicate more time towards socialism, feminism, and sociology instead of childcare and housework. This controversial solution resisted the norms of

separate spheres and the cult of motherhood, where women either sacrificed their earlier lives for their biological children or performed the maternal functions of the general community using the skills of domestic economy. Beecher had previously defended unmarried women and widows who entered the workforce but set gendered conditions for female occupations: "*All women will be educated,* and, what is more, they will all be educated *for their profession,* as the conservators of the domestic state, the nurses of the sick, the guardians [of infant bodies], and the educators of the human mind […] The science and practice of Domestic Economy will be [properly] taught to every woman."[108] Beecher assumed the sexual division-of-labor between men and women across the public and private spheres fit their natural characteristics and secured meaningful livelihoods for single and married ladies, and she promoted domestic economy so women could satisfy their assigned responsibilities with modern science and technology. Gilman conversely questioned the entire field of domestic economy because she concluded specialized nurses, cooks, cleaners, and teachers could supply higher-quality services for lower costs than overworked housewives: "We are [now] founding chairs of Household Science, we are writing books on Domestic Economics; we are striving mightily to elevate the standard of home industry—and we [do not] notice that it is just because it is home industry that all this trouble is necessary."[109]

Gilman hoped the reassignment of domestic industries from the self-contained home into the national economy would not only improve the productivity of household labor because of the competition between professionals for clients and resources but

[108] Boydston, Kelley, and Margolis, *The Limits of Sisterhood*, 139.
[109] Charlotte Perkins Gilman, *The Home: Its Work and Influence* (New York: Charlton Company, 1910) 93.

also pinpoint where specific men and women should fit inside the whole social matrix. Where Beecher and her successors asserted men should control politics, science, and industry and women should become private and public mothers based exclusively upon their sex, Gilman realized traditional motherhood required more expertise than the average women could reasonably master and denied the supposed relationship between sex and personal ability. Gilman replaced the sexual division-of-labor within the family with the collective networks of modern capitalism, which let the marketable skills of its workers and the needs of the overall population decide their positions inside American society regardless of their gender. Peter Bowler relates how this system of differentiation and cooperation between economic actors resembles how physiologists understood the connections between the organs of the body and how Darwin portrayed ecosystems: if different species of plants and animals could access and use varied resources from their environments and potentially benefit from the actions of their biological neighbors, then the ecosystem could theoretically accommodate more species with higher chances of survival.[110] Gilman claimed the same logic could apply once the millions of unspecialized mothers scattered across the United States became professionals who supported their homes with additional family incomes and hired service workers: "The domestic system of feeding, clothing, and cleaning humanity costs more time, more strength, and more money than [any] other way except absolute individual isolation. The most effort and the least result [occur] where each individual does all things for himself. The least effort and the most result [entail] the largest specialisation and exchange."[111] Gilman thus considered traditional housewives the

[110] Bowler, *Evolution*, 170-3.
[111] Gilman, *The Home*, 52.

most expensive and least qualified source of labor for American families and stated women could lead more meaningful and productive lives if they learned one profession and traded their specialized expertise for wages over the open market. These mothers would still administer their homes and raise their children but could outsource their domestic labor and choose whatever careers suited their individual talents and preferences; even women who later became cooks and housekeepers could financially support their families with skilled service for the whole community rather than save their own thankless and mediocre housework for the private sphere.

Indeed, Gilman believed the self-sufficient household actually counteracted the evolution of American society because traditional families generally resisted her proposals for cooperative neighborhoods and the direct incorporation of men, women, and children into public life:

> The life of any society [ultimately depends upon] the successful interaction of its members, rather than the number of its families. For instance, in those vast, fat, ancient empires, where a vast population, scattered over wide territory, supported local life in detached families, by individual effort; there was almost no national life, no general sense of unity, no conscious connection of interests […] A vital nation must exist in the vivid common consciousness of its people; a [collective] consciousness naturally developed by enlarging social functions, by undeniable common interests and mutual services. If any passing conqueror [annexed some] portion of our vast territory, he would find no slice of jellyfish, no mere cellular existence with almost no organised life. He would [discover] that every last and least part of the country was vitally one with the whole.[112]

Gilman speculates the collective networks of modern industrial civilization exceed the sum of its distinct families and geographical territories, and she explicitly refutes the cellular scheme of the United States from Beecher and Stowe. While *The American*

[112] Gilman, *The Home*, 306-7.

Woman's Home proclaims society arises naturally from the combination of replaceable middle-class Christian households, Gilman proposes the higher organizations of the state and the nation require not the orderly reproduction of identical families but the arrangement of diverse citizens into one collaborative matrix. If the scientific ideology of Beecher and Stowe relies upon the relationships between microcosms and macrocosms, the evolutionary framework of normalcy and pathology from Gilman reiterates the biosocial models of the assembly-line, the organ, and the Darwinian ecosystem. Gilman realizes the needs of the family often conflict with the aims of the population and notes the conventional home not only excludes women and children from the community but also narrows the political awareness of most Americans upon the welfare of their friends and relatives. Polly Wynn Allen accordingly explains the organicist theories of human civilization that Gilman adopted from the contemporary biologist Herbert Spencer: "The major contention of organicist social theories has been that society has a sacrosanct life of its own, which is not to be equated with the mere sum total of its individual members. A society's systems of production, distribution, and government are its organs and life systems. Whereas social contract theories [assert] the human individual is independent of society […] organicist theories [hold] that a human being is complete only when understood as an integral part of the social whole."[113] Gilman maintains every American citizen should contribute toward the progress of the nation using the mechanisms of diversification and cooperation: men and women should fill specialized positions inside the socioeconomic network like technicians who operate different machines for the same factory and the species that occupy separate

[113] Allen, *Building Domestic Liberty*, 122-3.

niches inside their shared environment. Gilman therefore connects health with adaptive variation and pathology with sexual selection because the skills and expertise of specific persons support the biosocial division-of-labor whereas excessive sex-distinctions reduce men and, more strikingly, women into two generic populations with limited opportunities for present and future development. Gilman consequently affirms, "In social evolution as in all evolution the tendency is from 'indefinite, incoherent homogeneity to definite, coherent heterogeneity,'" and the second section of this chapter will review how Gilman criticizes the doctrine of separate spheres and the self-sufficient home with the Darwinian theory of sexual selection.[114] The final section will then explain how Gilman defends flexible gender norms and her own radical proposals for collective neighborhoods using the evolutionary concepts of adaptation and ecosystems.

III-2. Housewives, Homes, and Pathological Sexual Selection

Darwin originally proposed the mechanism of sexual selection during his monograph *On the Origin of Species* (1859) and published additional evidence for his theory using the different behaviors and physical characteristics of the male and female varieties of the species recorded by *The Descent of Man, and Selection in Relation to Sex* (1871). Darwin researched sexual selection for his account of how species change over time because of the marked sex-distinctions between male and female animals that naturalists could not explain with the needs of sexual reproduction and motherhood alone; women, for example, grow ovaries and breasts so they can bear and feed their

[114] Stetson, *Women and Economics*, 223.

children but also have sparse body-hair, small bodies, and childlike features compared with men. Darwin concluded that these otherwise-inexplicable secondary sexual characteristics arose not from the competition between members of the same species for the limited resources of their chosen environments but the constant competition among the males and females of these species for potential mates. Although Darwin realized sexual selection would produce maladaptive traits if the preferences of the opposite sex weakened the biological fitness of the species, he assumed this process would mostly stimulate helpful variations within the population: "This [mechanism] depends, not on a struggle for existence, but on a struggle between the males [of the species] for possession of the females; the result is not death [for] the unsuccessful competitor, but few or no offspring […] Generally, the most vigorous males, those which are best fitted for their places in nature, will leave most progeny."[115] If male animals must strive for the favor of healthy females so they can pass their inheritable characteristics onto the next generation, Darwin reasoned, then sexual selection should theoretically help sturdy, intelligent, and attractive individuals reproduce more frequently than their inferior counterparts and thereby improve the species. The boars with the sharpest tusks and the stags with the largest antlers, for instance, might not only outcompete other males for mates but also reward their adult descendants with additional protection against predators. Gilman applies the theory of sexual selection for her critical assessment of late-1800s American society but insists sexually-selected characteristics seldom help and frequently disable their recipients: "All the minor characteristics of beard or mane, comb, wattles, spurs, gorgeous color or superior size, which distinguish

[115] Charles Darwin, *On the Origin of Species: A Facsimile of the First Edition* (Cambridge: University of Harvard Press, 2003) 88.

the male from the female,—these are distinctions of sex […] The creature is not profited personally by his mane or crest or tail-feathers: they do not help him get his dinner or kill his enemies. On the contrary, they [limit his] personal gains, if, through too great development, they interfere with his activity […] This is precisely the condition of the human race."[116] Gilman denies any positive relationship between adaptation and sexual selection and believes species normally succeed when their shared "racial" attributes predominate over the secondary features of their sexes. Unlike Darwin and other naturalists who defended the doctrine of separate spheres because women insulated from the relentless competition between males had never evolved the vitality and intelligence necessary for public life, Gilman contends the present physiological and sociocultural differences between the sexes needlessly cultivate the sensuality and competitiveness of men and the frailty and dependence of women.

While Gilman used the main principles of sexual selection for her international bestseller *Women and Economics* (1898), her sociological analysis of the biological and social pathologies of nineteenth-century civilization assumed cultural norms influenced human evolution more than the natural environment. Gilman explains that humanity has successfully overcome the selective pressures of exposure and starvation but may still improve or diminish its own health, economic welfare, and collective morality with the manmade conditions and variable social conventions of its specific communities. Gilman accordingly indicates the doctrine of separate spheres and other unfavorable norms merely reflect the historically-conditioned preferences of contemporary men and women instead of the perfect arrangement of the United States. Without the external

[116] Stetson, *Women and Economics*, 32-3.

checks of natural selection, human populations cannot constrain the pathological tendencies of tradition and sexual selection that Gilman herself identifies with the secondary characteristics of the male peacock: "If the peacock's tail were to increase in size and splendor till it shone like the sun and covered an acre,—if it tended so to increase, we will say,—such excessive sex-distinction would be so inimical to the personal prosperity of that peacock that he would die, and his tail-tendency would perish with him."[117] Gilman believed the average woman would never survive outside the conventional single-family household because of her hyper-feminized body and mind, which had deteriorated from her extended confinement inside the domestic sphere and the cultural standard of delicate and submissive wives. Gilman considers these excessive sex-distinctions the product rather than the motivation for the unequal positions of men and women within American society and proposes single and married ladies must exit the home and enter the public workforce before their morbid secondary sexual attributes become permanent impairments for their gender and the overall race. Indeed, Gilman asserts the sexualization of American women has already reshaped their anatomy into semi-functional markers of their sex: "Woman's femininity—and 'the eternal feminine' means simply the eternal sexual—is more apparent in proportion to her humanity than the femininity of other animals in proportion to their caninity or felinity or equinity. 'A feminine hand' or 'a feminine foot' is distinguishable anywhere. We do not hear of 'a feminine paw' or 'a feminine hoof.' A hand is an organ of [apprehension], a foot an organ [for] locomotion: they are not secondary sexual characteristics."[118] Gilman worries this unnatural feminization might leave women unfit

[117] Stetson, *Women and Economics*, 35.
[118] Stetson, *Women and Economics*, 45.

for any occupations except marriage, domestic service, and prostitution and argues men have annexed all the political and economic operations responsible for racial progress while women have settled for the subordinate roles of wives and mothers. Unless women reincorporate themselves into national life and restore their past autonomy, then American ladies may devolve until they resemble the wingless gypsy moth from Gilman and *The Descent of Man,* which waits passively for its fully-formed mate and dies after it lays its eggs.[119]

Gilman explicitly compares the pathological condition of the female gypsy moth with the restrictive milieu of the traditional housewife, who lives inside the home and under the authority of first her father and then her husband. Where Beecher contends the "normal" household grants women the opportunity for the complete expression of their maternal drives, Gilman believes the home and the middle-class Protestant family artificially reinforce the gendered division-of-labor behind the steady deterioration of American civilization. Gilman defended this perspective using the gynaecocentric theory of the feminist and sociologist Lester Frank Ward, whose 1888 lecture "Our Better Halves" and 1903 study *Pure Sociology: A Treatise on the Origin and Spontaneous Development of Society* hypothesized primitive men had forcefully seized sociopolitical control and the biological process of mate selection from less-evolved women. While Ward and Gilman agreed that matriarchal communities had predominated until men overthrew their female leaders with their sexually-selected strength and intelligence, Ward supposed men had enslaved women for sexual gratification and Gilman proposed men had kept women inside the home for domestic

[119] Stetson, *Women and Economics*, 65.

industry.[120] Despite this theoretical conflict, Ward himself sketched the pathological relationship between the Western household and female servitude using the etymology of the word "family" from Auguste Comte: "The word *family* originally meant the servants or slaves. The philologists have traced it back to the Oscan word *famel* from which the Latin *famulus*, *slave*, also proceeds, but whether all [of] these terms have the same root as *fames*, hunger, signifying dependence for subsistence, is not certain."[121] Gilman similarly argued the doctrine of separate spheres had made women the personal cooks, nurses, maids, and caretakers of their husbands and drew contentious parallels between nineteenth-century housewives and antebellum slaves. Even unmarried women seldom received any payment for their domestic work and instead depended upon the generosity of their male relatives, and the limited professional opportunities available for women facilitated mercenary marriages where ladies selected their future husbands for financial security. Kimberly Hamlin explains how progressive evolutionists used the example of mercenary marriages and the natural alternative of female choice so they could establish the unhealthy condition of American society: "Because most women could not support themselves financially, they [therefore] had to marry a man, any man, in order to survive, [disrupting] the natural process of sexual selection by introducing money into the equation. Thus, female choice presented feminists and socialists with one unified way to critique the institution of marriage, decry the lack of economic opportunities for women, […] and reject the [preferred] type of women—corseted,

[120] Allen, *The Feminism of Charlotte Perkins Gilman*, 98-9.
[121] Lester Frank Ward, *Pure Sociology: A Treatise on the Origin and Spontaneous Development of Society* (New York: The Macmillan Company, 1909) 351.

weak, and submissive—so often selected as wives by men."[122] Gilman and her associates hoped the professionalization and economic independence of American women would improve their status and restore the positive aspects of sexual selection, which would let women choose suitable mates for their achievements and reduce the number of marriages between helpless wives and immoral husbands.

Gilman perfectly summarizes how the nation circumscribes the potential of contemporary woman when she writes, "All that she may wish to have, all that she may wish to do, must come through a single channel and a single choice. Wealth, power, social distinction, fame,—not only these, but home and happiness, [public] reputation, ease and pleasure, her bread and butter,—all, must come to her through a small gold ring."[123] Where men freely choose their occupations and determine their locations inside the social matrix based upon their talents and aspirations, women must channel their needs for self-actualization and racial progress into the ideological bottleneck of marriage. This static norm reduces the variation of the population because it shapes all women into identical copies of the middle-class Christian housewife and makes women with other skills and objectives either suffer the criticism of mainstream society or search for maternal outlets for their personal characteristics. Like Canguilhem himself, Gilman concludes excessive adherence towards one norm undermines the present division-of-labor and future adaptability of American civilization, and this pathological socialization starts during early childhood: "When our infant daughter coquettes with

[122] Kimberly A. Hamlin, "Sexual Selection and the Economics of Marriage: 'Female Choice' in the Writings of Edward Bellamy and Charlotte Perkins Gilman," *America's Darwin: Darwinian Theory and U. S. Literary Culture*, eds. Tina Gianquitto and Lydia Fisher (Athens: University of Georgia Press, 2014) 154.
[123] Stetson, *Women and Economics*, 71.

visitors, or wails in maternal agony because her brother has broken her doll, whose sawdust remains she nurses with [pitiful] care, we say proudly that 'she is a perfect little mother already!' What business has a little girl with the instincts of maternity?"[124] Gilman anticipates the philosophy of later feminist theorists including Judith Butler who carefully divide sex from gender and shows cultural archetypes constrict the horizons of most women before they even recognize the options they have lost. Every moment of praise and correction young women receive from their friends, teachers, neighbors, and parents ultimately reflects how successfully they perform the actions necessary for marriage and motherhood, and young men must similarly project the competitiveness and confidence associated with modern capitalism. Gilman considers the family the primary mechanism of this gendered education and asserts the visible conflict and quiet harmony of the home derive equally from its coercive force: "Another result, pleasanter to look at, but deeply injurious to the soul, is the affectionate dominance of the strongest member of the family; the more or less complete subservience of the others. Here is peace at least; but here lives are warped and stunted forever by the too constant pressure, close and heavy, surrounding them from infancy."[125] If Beecher supports the authority of the mother so she can reproduce her "normal" middle-class Christian values, Gilman upholds the distinctive identities of the children who otherwise become extensions of their parents and decides the family should cultivate rather than standardize the diverse characteristics of its members.

The Home: Its Work and Influence (1903) reinforces these criticisms about the restrictive environment of the family with information about the inefficiency of

[124] Stetson, *Women and Economics*, 56.
[125] Gilman, *The Home*, 41.

traditional household labor compared with modern industry. Yvonne Gaudelius contrasts the proposals of Gilman and other turn-of-the-century feminists with earlier domestic reforms more consistent with the doctrine of separate spheres. These plans had located female responsibilities inside the home and insourced the external occupations of healthcare, education, domestic service, and philanthropy: "Beecher, Gilman's great-aunt, proposed a model for a [conservative] home that was 'above all a space for woman's domestic labor in the service of men and children.' The goal of projects such as [these] was to give women control over the private, domestic spaces of the home. Beecher believed that such control was necessary if women were to gain equal footing with the control that men had in the public sphere."[126] Gilman not only questioned the fundamental premise behind the gendered division-of-labor and the assumption housewives could attain the personal and political authority of male professionals but also claimed the social norm of domestic industry sapped the economic health of the country and its constituent families. Gilman believes all industries started inside the home but later entered the collective economy alongside the development of modern society, and she accordingly holds the term "domestic industry" concerns the "grade" instead of the "kind" of work reserved for the private sphere.[127] Domestic labor causes four related problems: it raises the individual expense of the goods and services (including foodstuffs, childcare, and housekeepers) necessary for the family, fills the home with expensive facilities and equipment (particularly the kitchen), excludes women from the workforce, and decreases the quality of traditionally-private economic

[126] Yvonne Gaudelius, "Kitchenless Houses and Homes: Charlotte Perkins Gilman and the Reform of Architectural Space," *Charlotte Perkins Gilman: Optimist Reformer*, eds. Jill Rudd and Val Gough (Iowa City: University of Iowa Press, 1999) 112.
[127] Gilman, *The Home*, 30.

outputs. Gilman explains this final drawback extensively when she discusses how the industrial capacity of "average" mothers with varied responsibilities differs from the production of female specialists combined into one socioeconomic network:

> Just consider what any human business would be [where] there was no [prospect] of choice, of exceptional ability, of division of labor. What would shoes be like if every man made his own, if the shoemaker had never come to his development? What would houses [look] like if every man made his own? Or hats, or books, or waggons? To confine any industry to the level of a universal average is to strangle it in its cradle. And there, for ever, lie the industries of the housewife.[128]

Unlike Beecher, who insists women must become proficient across the whole range of functions performed within the domestic sphere, Gilman concludes this process of statistical normalization only helps wives and mothers reach the mean values of the general population. Even if everyone can build average houses, write average books, or cook average food, the experts who approach the upper limits of the distributions for these diverse skills outperform their averages and should market their specialties for other members of the community without the same success. The sum of the highest values across multiple bell-curves will always exceed the sum of their means, and Gilman supports the professionalization of domestic labor and the diversification of occupations for women so her sex can exceed the suboptimal averages of motherhood.

This demographic logic validates the processes of specialization and coordination behind the socialist-feminist platform Gilman promoted for her entire career, and she regularly supplied detailed estimates for the relative costs of independent single-family households and her planned collective neighborhoods. Gilman represents these expected financial benefits using the expense chart from her

[128] Gilman, *The Home*, 90-1.

1904 essay "Domestic Economy," which shows that domestic labor usually costs families $4224 per year ($1500 for rent, $1664 for food, $960 for housework, and $100 for other expenses) where "organized industry" would only cost $3120 per year ($1200 for rent, $785 for cooked food, $265 for housecleaners and laundry, $550 for child-culture, $300 for dues, and $25 for fuel and light).[129] Gilman demonstrates that communities with shared domestic professionals would need fewer resources from their families; improve popular norms for childcare, nutritious food, and cleanliness; and increase the cumulative income of many households because married women could enter the workforce more frequently without daily chores. This solution also helps minimize the wasteful replication of industrial facilities required for self-sufficient homes, which Gilman primarily associates with food-preparation: "We pay rent for twenty kitchens where one kitchen would do. All that part of our houses which is devoted to [domestic] industries, kitchen, pantry, laundry, servants' rooms, etc. could be eliminated from the expense account by [moving] the labour involved to a suitable workshop […] We [currently] pay severally for all these stoves and dishes, tools and utensils, which, if [supplied for] one proper place instead of twenty, would cost far less."[130] Although private kitchens, pantries, and servant quarters convert the home into one self-contained microcosm of the nation and correspond with the cellular model of the family from Beecher, Gilman affirms these spaces virtually guarantee high-price and low-quality labor and raise artificial socioeconomic barriers between the members of separate households. Gilman understands the design of the self-sufficient household actively opposes her own communitarian vision and repeats the complaints of Charles

[129] Allen, *Building Domestic Liberty*, 65.
[130] Gilman, *The Home*, 118.

Fourier, who held that personal industrial facilities maximize costs, cause needless duplication, and decrease efficiency.[131]

While Gilman admits modern industries could never have evolved without the institution of the self-contained home, she concludes the middle-class Christian household has outlasted its usefulness and cannot sustain the recent progress of American civilization. Unlike Beecher, who considered the "normal" single-family home the reproducible source of national health, Gilman locates biosocial diseases inside the household and beyond the reach of both the community and the state: "A public building is more easily and effectively watched and guarded than our private homes. Sewer gas invades the home; microbes, destructive insects, all diseases invade it also; so far as civilised life is open to danger, the home is defenceless. [Insofar] as the home is protected it is through social progress—through public sanitation enforced by law and the public guardians of the peace."[132] Gilman asserts the private household compromises not only the productivity but also the health and safety of its residents and characteristically advocates the collective solutions of police and public health. Gilman questions the supposed impermeability of the home with the threats of sewer-gas, microbes, and pathological insects and underscores the interconnectedness of the domestic sphere and its external environment. The neighborhood should gradually absorb the operations of the home because the self-sufficient household neither can nor should preserve itself from the broader social matrix, and Gilman discusses the architectural problems associated with the intersections of family life and domestic industry. Gilman therefore calls the sentimental home a nonfunctional "box" where

[131] Beecher and Bienvenu, *The Utopian Vision of Charles Fourier*, 25-6.
[132] Gilman, *The Home*, 32.

society inadvisably shelters its citizens: "We feed the animal in [this] box, bringing into it large and varied supplies of food, and cooking them there. Growing dissatisfied with the mess resultant upon this process, disliking the sight and sound and smell of our own preferred food-processes […] we [gradually divide] the box into many varied chambers [and] shut off by closed doors these offensive details."[133] Gilman believes American civilization must replace the conventional single-family home and the nineteenth-century housewife because these social norms prevent the specialization associated with natural ecosystems and the modern economy and because they resist progressive reforms. The industrial spaces and technologies of the home problematically limit its restfulness for the family and promote its unnatural extension beyond the private relationships between married couples and their children into the competitive national market. The cellular household unsurprisingly preserves the gendered division-of-labor behind the morbid evolutionary mechanisms of sex-distinction and sexual selection, and Gilman decides her plans for genderless collective neighborhoods require the complete removal of work from the home and the breakdown of the "boxes" around specific families.

Gilman worried that the unhealthy outcomes of the doctrine of separate spheres, domestic industry, and the organization of the contemporary home would arrest the historical development of the middle-class United States and potentially reduce its fitness compared with other countries and its own lower-class and immigrant populations. Critics have debated whether Gilman shared the racist and classist views of her contemporaries, and Judith Allen argues Gilman accepted the biological equality of

[133] Gilman, *The Home*, 66-7.

individuals from different races, cultures, and socioeconomic backgrounds but expected their assimilation into mainstream society. Whether Gilman herself opposed ethnic miscegenation or cultural minorities, she became increasingly concerned about the demographic composition of the United States after 1900: "As the 1920 census would show, of the 2,284,103 residents of Manhattan, only just over half were classified as born 'native white' (54.6 percent), nearly two-thirds with [two foreign parents] […] The remaining 45 percent of the borough were themselves foreign-born. Gilman [publicly] bemoaned hearing no English as she traveled about the city. Many other signs pointed not to [widespread acculturation] but to unassimilated ethnic enclaves."[134] Despite her campaign for nonrestrictive gender norms and the diversification of the American economy, Gilman holds that society cannot operate smoothly without the middle-class values of responsibility, efficiency, thrift, patriotism, and cleanliness supposedly absent from the communities of blue-collar laborers and recent immigrants. Unless pathological citizens acquire these biosocial requirements for modern life from their Anglo-American counterparts, the nation will never successfully combine its varied members into one social matrix capable of biological and economic progress. Gilman correspondingly voices the same anxieties about the differential reproduction of the rich and the poor from the final Appeal of *The American Woman's Home* yet dismisses its recommendation of higher birth-rates for upper-class whites: "We cannot afford to have one citizen grow up below the standards of common comfort, health, and general education. To the scared cry, 'But, if you take the responsibility off these people, they will simply flood the world with wretched babies!' comes the answer of natural law,

[134] Allen, *The Feminism of Charlotte Perkins Gilman*, 301.

'Improve the individual, and you check this crude fecundity.' It is [exactly] because they are neglected and inferior that they have so many children."[135] Where Beecher and Stowe presume the orderly replication of the "normal" middle-class Protestant household inevitably benefits the nation because of their cellular scheme of normalcy and pathology, Gilman differentiates between the quality and quantity of American citizens. Families and communities with multiplying children cannot always properly train their members for the specialized functions of twentieth-century capitalism, and Gilman insists health does not require the constant reproduction of one Platonic norm but the controlled interaction of multiple norms suited for the present and future conditions of the environment. The final section of this study will thus examine how Gilman validates her proposals for collective neighborhoods and the professionalization of women and their occupations using the rhetoric of organicism and the Darwinian processes of adaptive variation and ecological cooperation.

III-3. Collective Neighborhoods and the Evolution of American Society

After the 1859 publication of *On the Origin of Species* and the extensive circulation of its theories between scientific contexts and mainstream culture, conservative and progressive social reformers split over the implications of evolution for Western society. Darwin himself generally avoided speculations about the proper arrangement of contemporary political institutions and the industrial economy, but his research contributed evidence for the prescriptive recommendations of biologists and sociologists including Herbert Spencer, Lester Frank Ward, Francis Galton, and Alfred

[135] Gilman, *Concerning Children*, 297-8.

Russel Wallace, the co-discoverer of natural selection. Two different scientific ideologies stemmed from this conscious reapplication of the descriptive facts of evolution into the realm of social policy: social Darwinism (which asserted the wealthy and powerful should outcompete the under-evolved populations of the poor, the sick, and the vicious and explicitly aligned itself with capitalism) and reform Darwinism (which asserted society should benefit all of its members and therefore supported philanthropy, welfare programs, and socialism). Whereas reform Darwinists believed science and technology would gradually narrow the biosocial disparities between the fit and the unfit, social Darwinists accepted the supposed determinism of natural selection with few reservations: "As many more individuals of each species are born than can possibly survive; and as, consequently, there is a [continual] struggle for existence, it follows that any being, if it vary however slightly in any manner profitable to itself, under the complex and [dynamic] conditions of life, will have a better chance of surviving, and thus be *naturally selected*."[136] Foucault relates how evolutionism often supports racism and even genocide, and contemporary social Darwinists considered the high morbidity and mortality rates of the lower-classes the natural means of their removal from the population and the continued advancement of the species.[137] Traditional social evolutionists assumed adaptation would inevitably direct the human race along the path towards perfection, and reform Darwinism differed from social Darwinism mainly because it insisted this progress did not automatically exclude the "inferior" members of the nation. Reform Darwinists concluded that inequality was not merely the symptom but the cause of the biological and social differences between

[136] Darwin, *On the Origin of Species*, 5.
[137] Foucault, *"Society Must Be Defended,"* 255-6.

specific demographics and hoped improved intellectual and moral education would reshape American citizens into healthy professionals. Peter Bowler accordingly discusses how progressive evolutionists recovered the earlier theory of inheritable acquired characteristics from the French naturalist Jean-Baptiste Lamarck, who proposed species evolved over time from the conscious actions and decisions of successive generations: "As popularly understood, natural selection left the organism at the mercy of its environment—life or death depended [only] on the luck of the draw in the process of random variation […] By focusing on new habits as the driving force of evolution, Lamarckism allowed the organism to be [instead] an active, creative agent in charge of its own and its species' destiny."[138] If the United States could advance from the spread of information, expertise, and technology instead of the steady elimination of unfit citizens, then reformers could theoretically achieve meaningful social progress during their own lifetimes and balance the economic interests of the successful and the disadvantaged.

Despite her anxieties about the comparative fitness of different races and nations, Gilman mostly accepts the principles of reform Darwinism and separates evolution into the processes of natural selection, which improves biological attributes and instincts, and social evolution, which involves the education and distribution of specific individuals across the social matrix. Although Gilman admits how much natural selection shapes the development of other species, she decides direct instruction benefits American citizens more than biological evolution because humankind has already extricated itself from the selective pressures of its environment, the information

[138] Bowler, *Evolution*, 238.

and technologies of modern civilization outstrip the rate of natural adaptation, and education reduces the casualties of the survival-of-the-fittest: "Nature's way of teaching is a very crude one—mere wholesale capital punishment. She kills off the erring without explanation […] We, by education, markedly assist nature, transmitting quick knowledge from mouth to mouth, as well as [natural] tendency from generation to generation. More and more we learn to [compile] race-improvement and transmit it to the child, the most swift and easy method of social progress."[139] Gilman claims that the socioeconomic conditions of the United States change more frequently and dramatically than standard ecosystems and therefore values the skills and expertise humans acquire after their births over the stable characteristics inherited from their parents. Where physical adaptations and instincts evolve over multiple generations and might become useless every time the environment changes, education lets the population quickly accommodate the variable needs and expectations of the nation without protracted intervals of selection and reproduction. Indeed, Gilman observes that the information required for contemporary workers and consumers, including the operations of industrial machinery and the healthiest brands of baby-food for their children, falls completely outside nature and the past experiences of Western society.[140] This complication further explains why Gilman opposes domestic economy because the countless rules-of-thumb housewives learn from daily practice neither replace professional expertise nor permit reliable transmission along the pathways of biological instinct and formal instruction. Whether Gilman ultimately concludes social evolution extends or overturns natural selection, her scientific framework for cultural and

[139] Gilman, *The Home*, 231.
[140] Stetson, *Women and Economics*, 196.

economic reform introduces progress into the scheme of cellular replication from her great-aunt Beecher: "[Insects] would cover the earth like a blanket but for [the] merciful appetites of other creatures. But this is only multiplication—not improvement. Nature has one more law [for] life besides self-preservation and reproduction—progress. To be, to re-be, and [lastly] to be better is the law."[141] Unlike *The American Woman's Home*, which promotes the statistical normalization of the fixed archetype of the middle-class Christian household, Gilman realizes norms shift over time and infers that biosocial diversity maximizes the options for additional growth.

The causal relationship Gilman traces between the evolutionary mechanisms of personal variation and ecological specialization and the projected outcome of socioeconomic progress not only informs her capitalistic advocacy for the division-of-labor but also clarifies her reservations about the family. If the conventional household cannot provide the technical skills and expertise required for the public sphere and supports the continual reproduction of its members instead of their future development, then the family merely supplies the biosocial stock for other collective institutions including schools, laboratories, museums, offices, and factories. While Beecher and Stowe consider the middle-class Christian home entirely self-sufficient and believe children may become successful adults using only domestic instruction from their parents, Gilman asserts that the private sphere cannot cover the extensive range of professional and educational opportunities available across the whole social matrix and indicates modern civilization exceeds the sum of its constituent households. Gilman herself confirms, "The young of the human race require for their best development not

[141] Gilman, *The Home*, 88.

only the love and care of the mother, but the care and instruction of many besides their mother […] It would [thus] be better for a child to-day to be left absolutely without mother or family of any sort, in the city of Boston, for instance, than to be supplied with a large and affectionate family and be planted with them in Darkest Africa."[142] Whereas *The American Woman's Home* proposes that the families of Protestant missionaries can withstand the pressures of different cultural environments and reshape communities worldwide into exact copies of their colonizers, Gilman acknowledges the welfare and specialized capacities of modern citizens rely upon public infrastructure. Beecher and Stowe assume the self-contained family should succeed anywhere if its members follow the strict norms of middle-class domesticity, but Gilman argues that the family itself matters less than its external contexts and reduces the cellular home into the protected space from which people enter their collective lives. Although advanced societies may satisfy the functions of the family with daycares, orphanages, schools, and hospitals, people from nations with fewer social institutions cannot reach the full potential of their Western counterparts even if their families nurture their talents and aspirations. Gilman therefore contends the singular household rarely overcomes its local conditions, and she places service for the wider community above labor for the self and the family: "Work the object of which is merely to serve one's self is the lowest. Work the object of which is merely to serve one's family is the next lowest. Work the object of which is to serve more and more people […] [until] it [resembles] the divine spirit that cares for all the world, is social service in the fullest sense."[143] Gilman ranks work for the family beneath the professional expertise American men and women exchange over the market

[142] Stetson, *Women and Economics*, 180.
[143] Stetson, *Women and Economics*, 279.

because economic service benefits the highest proportion of the national population, extends the attention of its citizens beyond themselves and their relatives, and discredits social pathologies associated with selfishness including adulteration, fraud, and embezzlement.

Gilman consequently supports the utilitarian policy of securing the maximum benefit for the highest number of citizens and promotes economic specialization, the professionalization of domestic industries, and collective consumption within discrete neighborhoods. Gilman defends her proposals using the biosocial principle of division-of-labor, which she considers the primary difference between "savages" and the members of civilized society:

> Sociology is beginning to teach us something of the processes by which man has [achieved] his present grade, and may move farther. Among those processes none is clearer, simpler, [or] easier to understand, than industrial evolution. Its laws are identical with those of physical evolution, [which shows] a progression from […] the simple to the complex, a constant adaptation of means to ends, a tendency to minimise effort and maximise efficiency. The solitary savage applies his personal energy to his personal needs. The social group applies its collective energies to its collective needs […] By the division of labour and its increasing specialisation we vastly multiply skill and power; by the application of machinery we multiply the output […] the whole line of growth is the same as that which makes a man more efficient than his weight in shellfish.[144]

Gilman compares the evolution of biological organisms and the adaptations they acquire for their respective ecosystems with the diversification of the workers and machinery of the contemporary economy and its commercial outputs. Much like the human species has developed sophisticated networks of well-defined organs so it can perform more useful operations than the same biomass of shellfish, animals and the

[144] Gilman, *The Home*, 84-5.

members of industrial societies have become modified for specific positions within their environments for their own welfare and the advantage of their surrounding communities. Whether these adaptations result from natural selection or the Lamarckian process of education and specialization, the proper division-of-labor increases the availability, decreases the cost, and improves the overall quality of consumer goods because professionals may supply one maximally-efficient service for their neighbors and then fulfill their personal needs with the paid work of other experts. Gilman observes that this progressive tendency towards diversity and interdependence has extracted almost every industry from the household except for the gendered labors of cooking, housework, and childcare: "Where the patient and laborious squaw once […] [built] a rude shelter of boughs or hides for her own family, now mason and carpenter, steel and iron worker, joiner, lather, […] and decorator combine to [shelter] the world. Where she chewed and scraped the hides, wove bark and grasses, made garments, made baskets, made pottery, made all that was made […] now the thousand manufactures of a million mills supply [our] needs […] Where she [earlier] prepared the food and reared the child for her own family—what! […] *There she is yet!*"[145] Gilman supposes domestic industry has arrested the social evolution of American women, the traditional occupations of twentieth-century wives and mothers, and the layout of the home, and she asserts this remnant of primitive civilizations measurably dilutes the consumption and productivity of specific families. Gilman estimates that the average city block contains about two-hundred families who should therefore pool their demand and purchase goods from first-rate producers at lower wholesale prices. *The Home* assesses

[145] Gilman, *The Home*, 82-3.

the benefits of collective purchases and communal work using calculations for the total cost of private food-preparation: if two-hundred mothers spend six hours per week inside their well-equipped kitchens at the rate of six cents per hour, then the entire community wastes almost $1680 every week for amateur cooks, overpriced foodstuffs, and substandard meals.[146] Thirty professionally-trained chefs could produce the same quantity of higher-quality food using one industrial facility for $300 per week, which would cut the communitywide budget for this expensive process by over 80%.

Where Beecher and other nineteenth-century proponents of the separate spheres assigned women economic responsibilities inside the household so they could assist their families without specialized professions, Gilman opposes domestic industry because she hopes women will enter the public workforce yet paradoxically concedes the home should secure comfort and rest for all of its members. Gilman similarly declares, "The home should offer to the individual rest, peace, quiet, comfort, health, and that degree of personal expression requisite […] The home should be to the child a place of happiness and true development; to the adult a place of happiness and that beautiful reinforcement of the spirit needed by the world's workers."[147] Gilman claims the home should help men and women alike recover from the hardships and stress of their public lives and implies housewives cannot ever separate themselves from their work because of their permanent confinement inside the private sphere. The domestic industries of the middle-class home prevent wives and mothers from setting aside their personal responsibilities and sharing meaningful time with their husbands and children, who become constant liabilities instead of sources of affection and relief. These same

[146] Gilman, *The Home*, 132-3.
[147] Gilman, *The Home*, 3.

household operations, especially cooking and cleaning, not only leave the mother with few opportunities for the proper supervision and instruction of her children but also make the home relatively dangerous for its younger residents because of the collection of knives, stoves, detergents, poisons, and other harmful products stored and used inside its rooms. Gilman divides the varied functions of the housewife into multiple clearly-defined occupations and then removes this work and its associated facilities and equipment from the home, and this proposed solution predictably overturns the early-1800s practice of piecework consistent with the doctrine of separate spheres. While Beecher insisted active mothers should first manufacture homemade goods for their families and then sell their surpluses over the open market, Gilman preserves the present and future socioeconomic relevance of American women when she relocates them from the preindustrial home into the contemporary factory.[148] If *The American Woman's Home* shows middle-class Christian mothers how they might streamline their domestic labor, Gilman reserves the home solely for the personal interactions of the family and consequently introduces her own distinction between public and private houses: "The home is a private house. That belongs to us separately for the fulfilment of purely personal functions. Every other [communal structure] is a public house, a house [made] for the fulfilment of social functions. Church, school, palace, mill, shop, post office, railway station, museum, art gallery, library, every kind of house [besides] the home is a public house […] Every human—*i.e.*, social—process goes on outside the home, and has to have its appropriate building."[149] Gilman locates transportation, commerce, government, religion, and the arts outside the domestic sphere and contends

[148] Allen, *Building Domestic Liberty*, 11.
[149] Gilman, *The Home*, 190.

each of these social needs should have its own dedicated facility. Unlike Beecher and Stowe, who promote multifunctional spaces where childcare, education, housework, charity, and evangelism might overlap, Gilman believes properly-designed structures have single purposes and breaks apart the overcrowded home with neighborhood laundries, kitchens, cafeterias, daycares, and nurseries.

Before we examine the specific proposals for collective neighborhoods Gilman sketched within her sociological publications, we should briefly cover how her social organicism clarifies her definition of biosocial progress and her advocacy for communities with highly-differentiated yet interdependent members. Gilman compares complex societies with biological organisms and asserts civilizations exist for the progressive evolution of the species: "What is a society? It is an organization of human beings, alive, complex, exquisitely developed in co-ordinate inter-service. What is it for? It is for development, growth, progress, like any other living thing. How does [it] improve? By combinations of individuals evolving social processes which react favourably upon the individual constituents."[150] Gilman draws direct parallels between the specialized organs and physical growth of multicellular organisms and the socioeconomic components and teleological advancement of American society, and she extends this scientific ideology even further with the Darwinian metaphor of the tree-of-life. This visual representation of the evolution of humankind and life itself, where the various branches of the tree divide from its main trunk and occasionally fall away, helps Gilman express how diversification, cooperation, and racial development might combine into one healthy model for the twentieth-century United States: "The five-

[150] Gilman, *Concerning Children*, 279.

fingered leaf, closely bound in the bud, separates as it opens. The branches separate from the trunk as the trees grow. But this legitimate separation does not mean disconnection. The tree is as much one tree as if it grew in a strait-jacket. All growth [should] widen and diverge. If natural growth is checked, disease must follow. If allowed, health and beauty and happiness accompany it."[151] Despite the differences between the citizens of the broader social matrix and the members of the genderless household, these persons contribute towards the success of the whole using their individual skills and expertise and thereby propel the organic ascent of the country. While Darwin introduces the tree-of-life so he can explain the fundamental continuity of life and the relationships between its current and extinct lines-of-descent, Gilman adds directional progress into this analogy when she indicates that the upward growth of the central trunk carries along every other branch.[152] Gilman simultaneously reiterates her evolutionary framework of normalcy and pathology, which couples uniformity with stasis and decay and variation with the opportunity for ecological specialization and future biosocial adaptation. Unsurprisingly, Gilman concludes advanced societies result not from the accumulation of self-sufficient households but the essential and inevitable combination of private homes and public utilities and institutions: "That the home is not isolated we are made painfully conscious through its material connections,—gas pipes, water-pipes, sewer-pipes, and electric wires,—all serving us well or ill [depending on] their general management. Milk, food, clothing, and all supplies brought [into the home may] bring health or disease according to their general management […] None is safe

[151] Gilman, *The Home*, 336.
[152] Gilman, *The Home*, 14.

and clean till all are safe and clean."[153] Gilman implicitly associates the pipes and wires threaded between the supposedly-autonomous houses of modern neighborhoods with the anatomical systems of higher animals and proves the residents of these communities cannot remove themselves from their social contexts. The welfare of the American population either sustains or compromises the health of its members, and Gilman speculates that the communal networks built around shared infrastructure and widely-sold consumer goods will only expand with the recent demographic movement into the city.

Gilman contends the industrialization and urbanization of American society have already destabilized the Platonic norm of the self-sufficient Christian household and replaces this model with the communitarian alternative of collective apartment houses. Gilman persistently criticizes the standard twentieth-century apartment complex because its architects and residents care more about the separateness of its suites than their personal cost and shared amenities, and she claims the owners of these apartments have overlooked the interconnectedness of modern communities because of their outdated assumptions about the private home: "Our houses are threaded together like beads on a string, tied, knotted, woven together, and in the cities [our houses are] even built together; one solid house from block-end to block-end; their boasted individuality maintained by a thin partition wall. The tenement, flat, and apartment house still further group and connect us; and our claim of domestic isolation becomes merely another domestic myth."[154] Gilman asserts the architectural layout of the city should match the biosocial specialization and interdependence of its citizens and realizes the cultural

[153] Gilman, *Concerning Children*, 290.
[154] Gilman, *The Home*, 330.

preference for self-contained homes neither acknowledges reality nor properly allocates the resources of the overall community. Where Beecher and Stowe favorably compare their Protestant tenement with collections of cells and beehives, Gilman calls the replicated apartments of the normal city-block honeycombs "without the honey" and submits that neighborhoods will become more healthy, productive, and beautiful once they offload their domestic labor onto professionals with public facilities.[155] Gilman accordingly presents her own proposal for apartment houses based upon the division-of-labor:

> If there should be built and opened in any of our large cities to-day a commodious and well-served apartment house for professional women with families, it would be filled at once. The apartments would be without kitchens; but there would be a [shared] kitchen [for] the house from which meals could be served to the families in their rooms or in [the] dining room, as preferred. It would be a home where the cleaning was done by efficient workers, not hired separately by the families, but engaged by the manager of the establishment; and a roof-garden, day nursery, and kindergarten, under well-trained professional nurses and teachers, would [secure] proper care of the children. The demand for such provision is [growing], and must soon be met, not by a boarding-house or a lodging-house, a hotel, a restaurant, or any makeshift [patchwork] of these; but by a permanent provision for the needs of women and children, of family privacy with collective advantage.[156]

This apartment house combines the political and architectural solutions Gilman advanced for her entire life: the complex excludes the personal kitchen from its apartments, hires skilled domestic workers for its tenants, and provides safe educational spaces for its children so professional men and women can lead successful careers and still administer healthy, productive, and comfortable families. Gilman radically converts the traditional home, which preserves domestic industry and the undifferentiated

[155] Charlotte Perkins Gilman, "The Beauty of a Block," *The Independent* 57 (1904): 67.
[156] Stetson, *Women and Economics*, 242.

housewife, into connected apartments sustained using one common network of public institutions. This hypothetical complex outsources the daily labors of the private sphere with fully-staffed kitchens, daycares, laundries, and nurseries and frees wives and mothers from the restrictive environment of the self-sufficient household so women might enter the workforce and recover the home for family life. Despite significant resistance from Americans who upheld the doctrine of separate spheres and questioned whether nurses and teachers could ever raise the children of other parents, Gilman hoped collective neighborhoods would systematically perform the operations of the home without the wholesale confinement of her sex or purchasing domestic services for the family from multiple unrelated businesses.[157]

Although Gilman never made any explicit architectural plans for her proposed collective neighborhoods, her written explanations for this decision clearly reflect her scientific framework of normalcy and pathology: "Nor need we labour to forecast events too accurately; especially the material details which [require] long experiment. No rigid prescription is needed; no dictum as to whether we shall live in small separate houses, greenly gardened, with [nearby] conveniences for service and for education, for work and play; or in towering palaces with [covered] flower-bright cloisters. All that must work out as have our other great modern wonders in other lines, little by little, in orderly development."[158] Gilman not only believes the continual evolution of American society will settle the proper arrangement of the home and its possible variations for the city and countryside but also worries that detailed solutions will needlessly constrain the practical options applied for different communities. Unlike Beecher and Stowe, Gilman

[157] Apple, *Perfect Motherhood*, 42-3.
[158] Gilman, *The Home*, 342-3.

seldom recommends any stable norms for the nation except the principles of specialization and cooperation, and even the 1920 sketch for her rural neighborhood "Applepieville" (Figure 4) reinforces the socioeconomic logic behind her project instead of refining its exact characteristics. Concerned about the mental and physical health of American farmwives, Gilman introduces her sketch with various statistics about their daily labor: 87% never have any vacation, their average summer workday lasts over thirteen hours, 62% pump the water for their families, 92% perform all of the sewing, and about 25% help their husbands with the harvest.[159] Gilman argues that these overworked women have shorter lifespans and higher rates of insanity than the general population because of the industrial and social remoteness of their homesteads, and she resolves this problem with rural communities divided into pie-shaped wedges arranged radially around one common square which contains the municipal and commercial institutions necessary for public life. These homesteads position their farmhouses near the hub of the neighborhood and their crops further away, and Gilman basically overturns the proposals of Beecher and Stowe because she repurposes the collective architecture of the city for suburbs and farmland. The "Applepieville" schematic may not attempt the radical solutions of shared daycares, kitchens, laundries, and nurseries from *Women and Economics* but does continue its program of centralization and division-of-labor. Gilman appropriately ends her article with the comment, "With organization, specialization, and proper mechanical appliances, twenty or twenty-five women could do the cooking, with hot meals delivered [in] 'thermos'-like containers; the cleaning, laundry-work, sewing and mending, and [nursing] that is

[159] Charlotte Perkins Gilman, "Applepieville," *The Independent* 103 (1920): 365.

now done by a hundred, and do it in an eight hour day."[160] Gilman hopes the members of this model community will consolidate themselves into formal networks of service professionals who might satisfy the functions of the domestic sphere and supplement the income of their families, and she maintains that biosocial health requires diversity and ecological interdependency.

The domestic publications of Catharine Beecher and Charlotte Perkins Gilman show how biological science not only supports the authority of contemporary social reformers but also sets the parameters for any logical policy about the expected values and actions of American women and their families. Kimberly Hamlin accordingly observes, "In democratic governments founded on the principle of 'natural rights,' the political world is supposed to mirror the natural, so what people accept as evidence from nature shapes political, cultural, and personal realities."[161] While Lydia Maria Child and other early domestic handbook writers generally verified their advice for wives and mothers using firsthand testimony, well-known aphorisms, and scripture, Beecher and Gilman lived alongside the discovery and circulation of cell theory, germ theory, and Darwinian evolution and personify the historical transition from religious towards scientific frameworks for the proper arrangement of American society. Beecher and Gilman helped open the private space of the home for systematic research and formulated different biological models of normalcy and pathology so they could deliver their contradictory diagnoses for the deterioration of the country and their plans for its restoration. Beecher believed the symmetrical processes of healthy cellular reproduction and the replication of microscopic germs directly reflected the divine spread of the

[160] Gilman, "Applepieville," 395.
[161] Hamlin, *From Eve to Evolution*, 5.

middle-class Christian household and the proliferation of social pathologies, and *The American Woman's Home* combines its technical content with Protestant evangelism. Gilman, by contrast, appropriated the secular evolutionary schemes of sexual selection and adaptive variation for her socioeconomic platform and submitted that the United States would not evolve until women left the restrictive environment of the home and became active members of the public sphere. These writers may have presented unrelated biological explanations for their reforms and differed over the doctrine of separate spheres, but their scientific ideologies each combined nature and politics into one comprehensive biosocial system with regular laws. Beecher and Gilman thus advanced the biological regulation of society that has continually shaped the twenty-first century, and their domestic handbooks and sociological publications uncover the explicit relationships between the descriptive content of modern science and prescriptive social norms.

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Appendix: Architectural Diagrams

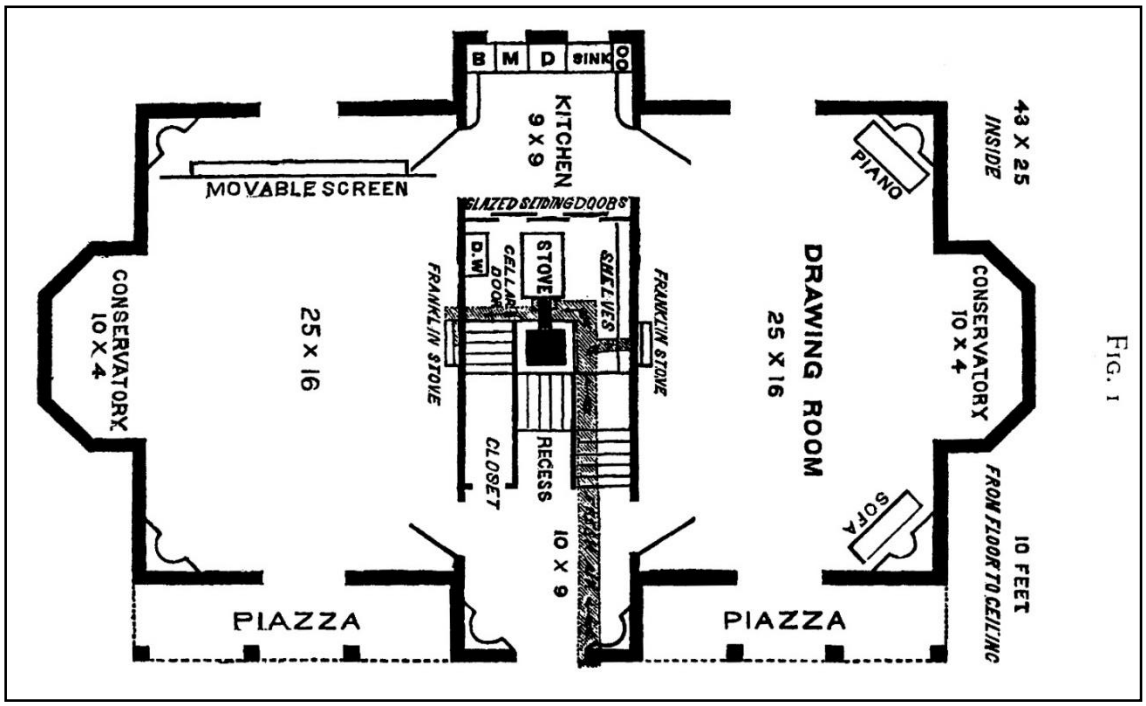

Figure 1. Floor-Plan for Single-Family Home
Source: Harriet Beecher Stowe Center, Hartford, Connecticut

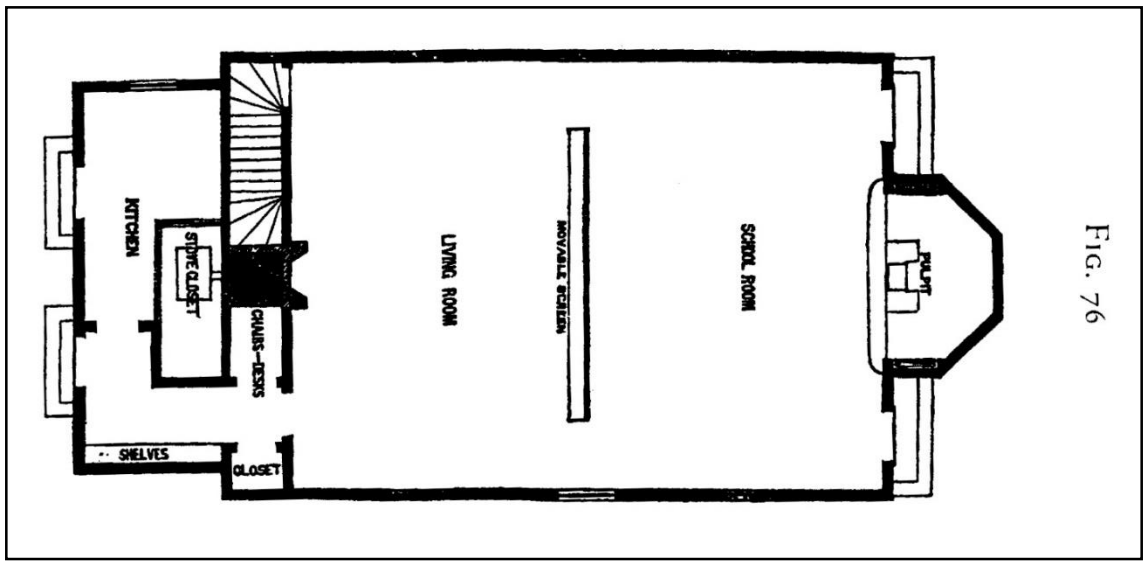

Figure 2. Floor-Plan for Protestant Mission
Source: Harriet Beecher Stowe Center, Hartford, Connecticut

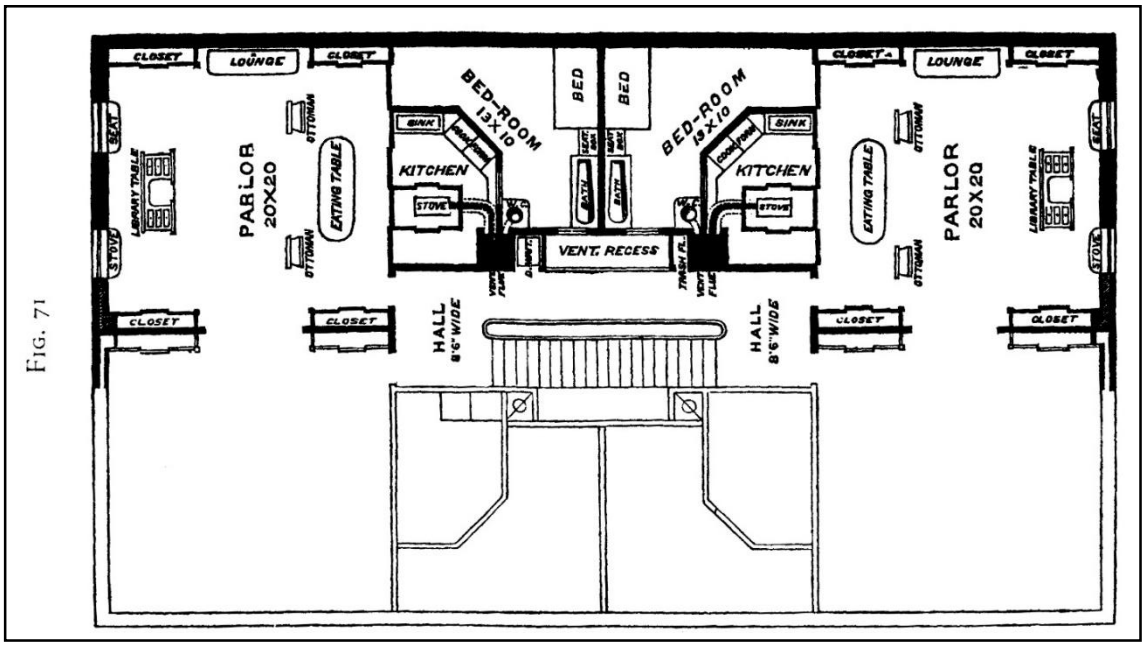

Figure 3. Floor-Plan for Christian Tenement
Source: Harriet Beecher Stowe Center, Hartford, Connecticut

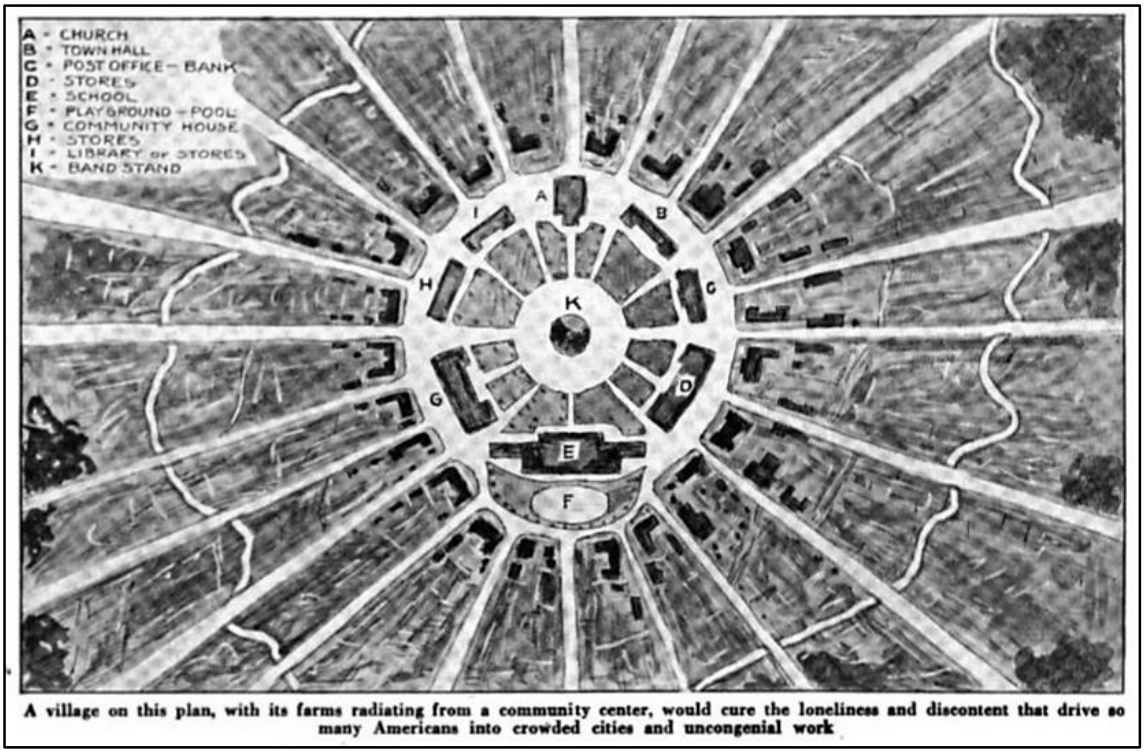

Figure 4. Community Plan for "Applepieville"
Source: The Independent, *Volume 103 (1920): 365*