

The Age of Obsolescence:
Senescence and Scientific Rejuvenation in Twentieth Century America

by

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Dissertation submitted in partial fulfillment of
the requirements for the degree of Doctor
of Philosophy in the Department of
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ABSTRACT

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Abstract

Growing “old” in contemporary American society often means being seen as a problem: you threaten the stability of Social Security and Medicare; cutting-edge science seeks a cure for what ages you; cosmetic companies and health magazines sell you products and strategies for holding on to your youth as long as possible. *The Age of Obsolescence: Senescence and Scientific Rejuvenation in Twentieth Century America* traces the emergence of these attitudes toward old age back to the turn of the twentieth century when a publicly shared conception of aging was emerging in relation to advances in science and medicine, industrialized labor practices, a slowly developing welfare state, demographic observations of increased life expectancy, changing gender roles and expressions of national identity. During that time, the quest for the fountain of youth shifted from the stuff of legend to a driving motivation behind modern science.

In the four chapters of this dissertation, I bring literary critical methods to bear on literary and scientific texts, public health tracts, journalistic accounts, advertisements and public records. Through this survey of science, government and popular culture, I document the formation of several cultural narratives of aging—or, formulaic ways of addressing aging produced by repeated metaphors, imagery and story lines—that circulated with reciprocal influence through all of these spheres, determining attitudes toward, and experiences of, aging at that moment and into the present. After briefly exploring our contemporary “anti-aging” culture, the four chapters of *The Age of Obsolescence* address the framing of a moral responsibility for aging individuals to “take care of themselves” as a duty to their nation; the association of aging with obsolescence and its influence on worker’s experiences and industrial practices; the scientific and cultural construction of aging as a disease in need of professional intervention; and the

proposed “cure” for this problem of aging: scientific rejuvenation, particularly the glandular rejuvenation fad of the 1920s. My conclusion traces this fervor for scientific rejuvenation into the present, showing how the turn-of-the-century cultural logic of aging has become a taken-for-granted framework of American popular culture today. In illuminating the historical moment when the “problem” of aging was located in the bodies of aged individuals, I point toward solutions that may arise not from scientific discovery, but from rewriting these cultural narratives of aging and old age and restructuring the national practices that stem from them.

*For Mildred Nelson, Mildred Brooks and Carolyn Gentry,
who taught me so much about the older woman I want to be.*

And for Julian, with whom I look forward to growing old.

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INTRODUCTION

The Way We Age Now

On December 26, 2004, the Indian Ocean earthquake triggered one of the deadliest natural disasters in history: a devastating tsunami that killed more than 225,000 people in eleven Asian countries. Less than three years later, a Cox News Service article heralded tidings of a different kind of impending *national* disaster: “The leading edge of the ‘silver tsunami’ that many fear could overwhelm Social Security moved closer Monday as the very first American baby boomer applied online for retirement benefits” (Gosik). It is striking, but not unusual, that in seeking to describe the aging of the post-World War II demographic bulge commonly known as the “Baby Boom” generation, the news media would reach for a disaster metaphor. This language is but one example of what Women’s Studies scholar Margaret Cruikshank calls “demographic demagoguery”—the fear-invoking language often used to describe America’s aging population—of which she notes such other common examples as “onslaught,” “age wave,” “grey hordes,” “flood,” “epidemic,” “demographic iceberg,” and “time bomb” (Cruikshank 26-7). The rhetorical intent implicit in such language, Cruikshank argues, is to “create fear of increasing longevity,” and to “divide old from young by creating a huge disparity of interests” (26-7). Indeed, whose lives (or, livelihoods) are threatened by the “silver tsunami”? Those whose futures the “overwhelming” of Social Security would make financially unstable: the generations that follow in the wake of the Baby Boomer’s “age wave.” Whether the metaphor is one of generational warfare or natural disaster, the message is clear: the “graying of America” presages a national crisis for the health of Medicare, Social Security, and the future beneficiaries of these “entitlements.”

Disaster metaphors are not the only rhetorical flourish commonly applied to aging in contemporary popular culture. Mainstream media regularly decry the lack of, or announce the potential for, a “cure” for aging. “Can We Cure Aging?” asks a headline in the December 2007 *Discover* magazine, telling its readers of “a provocative new view” that aging “is actually something our own bodies create” as a side effect of the inflammatory responses of our immune system: “As we fight off invaders, we inflict massive collateral damage on ourselves, poisoning our own organs and breaking down our own tissues. We are our own worst enemy” (McGowan 60). This language very nearly casts aging as an auto-immune disease. Certainly, the terminology of “cure” implies that aging itself is a disease. Even within the scientific community, the language of “cure” and “disease” is used to discuss aging. An August 2008 article in *Nature* titled “Puzzles, promises and a cure for ageing” reviews recent discoveries in the science of aging to determine if “abrogation of human senescence is a realistic prospect.”¹ They conclude: “Although there is no scientific reason for not striving to cure ageing—similar to what we profess to do for cancer and other diseases—our current understanding makes it impossible to assert that indefinite postponement is feasible” (Vijg and Campisi 1070). While this conclusion is rather irresolute, the identification of aging as a disease—like cancer—is absolute. Aging is a process that, in its most benign definition, includes the “growth” and “progress” of childhood development as well as the predicted

¹ “Senescence” is the preferred scientific term for aging. Aging, in its broadest sense, simply refers to changes that occur to an organism during the lifespan, and includes changes like gray hair and wrinkles which “certainly are manifestations of aging, but neither is harmful.” To distinguish between these superficial changes and those which “increase the risk of disease, disability, or death,” gerontologists prefer to use to the term senescence to signify “the progressive deterioration of many bodily functions over time. This loss of function is accompanied by decreased fertility and increased risk of mortality as an individual gets older.” *Aging under the Microscope: A Biological Quest*, ed. National Institute on Aging (Bethesda, MD: National Institutes of Health, 2002) 3-4.

“decline” of later life. When we classify aging as a disease, however, we identify as diseased only those who show “symptoms:” gray hair, wrinkles, impaired functioning, declining senses, debility and dependence. The language of disease is hardly innocent. One needs only to turn to the work of Susan Sontag or Sander Gilman to start to see how the stigma attached to the “disease” of aging could turn entire generations into “burdens” on families, communities, and most definitely on the nation.

Who wants to be a “burden?” And who would willingly choose to rain down the destruction of a “silver tsunami” on the generations to come? As an outgrowth of this negativity surrounding aging, and at the behest of commercial interests eager to tap into the multi-billion dollar market, America has developed a significant “Anti-Aging” market and culture. In every women’s, fashion or health-related magazine, you are likely to find advice on nutrition, physical fitness, skin care and other health habits aimed at “preventing” aging. Advertisements feature miracle creams which will restore younger-looking skin and new “scientifically proven” supplements that promise to stop aging in its tracks. Email spam guarantees the lowest prices on Human Growth Hormone treatments that will turn back the hands of time. Television commercials tout facial fillers like Juvederm that offer “immediately effective wrinkle treatment” and Botox injections that offer “freedom of expression” while freeing you from frown lines and brow furrows. Cosmetic procedures intended specifically to counter the appearance of aging—from chemical peels to eyelifts to facelifts—increase each year. But beyond the “Anti-Aging” market lies “Anti-Aging” science. The American Academy of Anti-Aging Medicine (A4M, founded in 1992) promotes research into tissue engineering, stem cells, nanotechnology, genetic and pharmaceutical research all aimed at retarding and optimizing the human aging process. Even though A4M was the *un*-distinguished

recipient of the first annual “Silver Fleece” Award for most egregious anti-aging hype, billions of dollars of federal funding go every year to support basic scientific research on aging. There are quacks, but there are also high profile scientists pursuing the scientific fountain of youth, like Cynthia Kenyon at UCSF. Funded by the NIH and the American Cancer Society, Kenyon in 1993 discovered that a single-gene mutation could double the lifespan of nematodes, and has since founded the company Elixir Pharmaceuticals to develop compounds to help slow the aging process. “Anti-Aging” is as much a part of legitimate scientific agendas as it is always guaranteed to be hot tabloid news.

Americans who contemplate their own aging do so amid accepted cultural pressures to “take care” of themselves, and not to “let themselves go.” Such pressures typically come in the guise of ostensibly “pro-aging” messages. For example, an editor’s letter in *Shape* magazine emphasizes that this particular August 2007 issue is dedicated to telling readers to “be proud of how old you are” and “to find the fountain of youth...right inside of you...linked to your self-esteem.” “An optimistic attitude is key,” the letter promises, “but so are the right habits....The truth is the better you take care of yourself, the better you’ll feel (and look)—and the more confident you’ll be, no matter what birthday is coming up for you,” and thus the letter points out articles on skin-care and “doable workout tips, eat-right strategies, and beauty advice for every age” (Latona). The underlying message is clear: the “fountain of youth” is not just a matter of attitude, but rather one of active preservation. In her humorous take on the “maintenance” all aging women perform, Nora Ephron suggests it was Gloria Steinem who coined that “great line” upon turning forty and being complimented on how remarkably young she looked: “This is what forty looks like” (Ephron 35). Now we hear everywhere how “Forty is the new thirty,” or “Sixty is the new fifty,” and the understanding is that it is *never* a

compliment to “look your age,” only to “look good *for* your age.” Reporter Kira Cochrane in the *New Statesman* posits that the days of reaching 40 or beyond and not having to worry “about a bit of sagging and bagging” have “been replaced by a distinct moral Puritanism. To let yourself go, to eat badly, to hold off the exercise, to smoke, drink and carouse, have become the greatest crimes of all, making you instantly *déclassé*. And because the physical effects are often visible, all those who succumb are modern Hester Prynnes, forced to trail their shame” (Cochrane). Numerous television makeover shows, like The Learning Channel’s “10 Years Younger,” serve as primers for how to avoid the scarlet A of “Aging.” And for those who do “let themselves” grow visibly and especially physically old, there is little sympathy. In an infamous speech in 1984, Colorado Governor Richard Lamm asserted that people who are elderly and terminally ill have “a duty to die and get out of the way....Let the other society, our kids, build a reasonable life” (“Gov. Lamm Asserts”). It has been more than two decades since Governor Lamm’s shocking speech, but his “duty to die” rhetoric flourishes yet in discussions of age-rationing of health care as a solution to rising health care costs, all part of that “silver tsunami.”

These examples illustrate our dominant contemporary cultural narratives of aging and old age in the early twenty-first century United States. We position old age and an aged population as antithetical to the healthy, productive modern nation we imagine ourselves to be, as well as a drain on, rather than contribution to, our national resources. We place a moral responsibility on individuals to “take care of themselves” in their aging and retain their youthful health, or, should they fail to do so, to “get out of the way.” We regularly talk about aging as though it were a disease, even though we rarely explicitly name it as one. Accordingly, we invest our time, money and faith in the promise of

scientific rejuvenation and longevity, looking to the stop-gap measures of the “Anti-Aging” market to tide us over until the scientific search for the key to aging yields the long-sought aging “cure,” rescuing us from impending individual and national obsolescence. These are certainly not our *only* cultural narratives of aging and old age, nor are they all-pervading. Similarly, just as culture is not monolithic, the “we” that these narratives address does not encompass the diversity of all those who comprise the American public, even if they sometimes claim to speak for “all of us.” Nevertheless, these cultural narratives are widespread and influential. They are not, however, particularly “new.” *The Age of Obsolescence* emerges from my interest in showing how these cultural narratives—so familiar to us today—developed in the context of particular social, cultural, economic, scientific and demographic changes happening around the turn of, and in the early decades of, the twentieth century.

The Age of Obsolescence

What about the turn of the twentieth century made it such an integral moment for shaping our understandings of aging and old age? One obvious factor is that Americans were living longer than ever before. Statistics are incomplete for the years before 1900, but data for the state of Massachusetts reports that a white man born in Massachusetts in 1850 might expect to live 38.3 years, and his wife 40.5 (“Life Expectancy”). Were that same man and his wife born in 1900, they might instead expect to live to 48.23 and 51.08 years respectively. Two decades later, the life expectancy at birth for a white man and a white woman stood at 56.34 and 58.53. By 1950, they had risen again to 66.31

and 72.03, more than 70% higher than a century previously ("Life Expectancy").² Public health efforts against child and maternal mortality, increases in sanitation that helped curb the spread of acute disease, and improvements in medical treatment all contributed to the fact that there were simply *more* older people in the U.S. than before.³ The turn of the century was also a moment of rapid industrialization as well as mechanization of labor, which occurred in tandem with the rise of pension systems and the institution of mandatory retirement within certain industries. Many workers felt displaced by "the machine age," but older workers in particular were depicted within the popular press as having lost their value in a labor system that emphasized, speed, strength, efficiency and the ability to adapt to the "new."⁴ Finally, this was also a moment when American medicine began to resemble the system we recognize today, and when American science was making great strides in fields like microbiology, immunology and endocrinology. Some scientists and physicians were beginning to turn their investigations to the nature of aging, trying to discern how and why we age, and whether or not it might be possible to intervene in the process.⁵ All of these factors conspire to make the early twentieth century a formative period for ideas about aging and old age.

² The Infoplease Database from which these statistics are drawn is in turn based upon (for the year 1850) data from the U.S. Dept. of Commerce, Bureau of the Census, *Historical Statistics of the United States*, and (for 1900 and beyond) from the Department of Health and Human Services, National Center for Health Statistics; *National Vital Statistics Reports*, vol 54., no. 19, June 28, 2006. The corresponding statistics for non-white males and females is significantly lower, reflecting—as the same statistics do today—the health disparities caused by racism and socio-economic inequality. In 1900, a non-white male might expect to live to 32.54 years, in 1920 to 47.14 years, and in 1950, 58.91 years. A non-white female might expect to live to 35.04 years in 1900, to 46.92 years in 1920, and to 62.70 years in 1950.

³ For more on these topics, see Chapter One, "Natural/National Salvation: Aging and Biological Citizenship."

⁴ For more on these topics, see Chapter Two, "Efficiency, Obsolescence and the Human Scrap Heap."

⁵ For more on these topics, see Chapters Three and Four.

Through all these changes, *The Age of Obsolescence* traces the emergence of several cultural narratives of aging and old age. I use the term “cultural narrative” to denote formulaic ways of talking about, and thinking about, aging and old age. These formulaic depictions were produced by the use of repeated phrases, imagery and storylines when addressing these topics. These rhetorical configurations circulated across disparate spheres, often moving from the “professional” discourses of science, government and industry into the more “popular” discourses of mainstream media and literary works; sometimes circulating in the other direction. They provided a readily available vocabulary with which to describe, and through which to understand, what aging was, what it meant for a person to grow old, and what the impact of an aged population would be. For example, economic metaphors for longevity conveyed the idea that there was “no more valuable possession than a good heredity—an inheritance of longevity,” and that one could build up—or squander—this inheritance for one’s offspring through individual health behaviors (“Longevity”). Correspondingly, the longevity of a nation’s citizens—and by proxy, citizens’ health behaviors—were calculated by the government as a direct contribution to “national vitality” and wealth (Fisher “Report”). The imagery of the “human scrap heap” and the sentimental storyline of the old woman abandoned by her children and sent “over the hill to the Poorhouse” were invoked both to explain the problems older workers faced in the machine age, as well as to galvanize the public to take action against these problems (“Eight-Hour-Day Peril”; Carleton). Scientific disputes over whether aging should be categorized as a pathological “disease” or as natural “degeneration” held fundamental consequences for what scientists and the government sought to do about an aging population, as well as for what individuals

sought to do about their own aging: seek a “cure,” or find ways to cope (Metchnikoff The Nature of Man; Nascher).

My approach to cultural narratives of aging and old age has been significantly shaped by Priscilla Wald’s theorization of the formulaic “outbreak narrative” of disease emergence. Wald argues that both “outbreak narratives” (the many epidemiological stories that get told about disease outbreaks) and “*the* outbreak narrative” (the paradigmatic story that arises from and shapes the form of future such outbreak narratives) have real and material consequences: “They promote or mitigate the stigmatizing of individuals, groups, populations, locales (regional and global), behaviors, and lifestyles, and they change economies. They also influence how both scientists and the lay public understand the nature and consequences of infection, how they imagine the threat, and why they react so fearfully to some disease outbreaks and not others at least as dangerous and pressing”(Wald 3). Like Wald, I am convinced that our cultural narratives of aging and old age have helped to stigmatize individuals, groups, populations, behaviors and lifestyles, have directly influenced how we view individual and national wealth and the bases of American national identity, and have shaped how scientists, government officials and the lay public all understand the nature and consequences of aging and the condition of being “old.” In helping to illuminate the historical moment and conditions under which many of our familiar cultural narratives of aging and old age first emerged, I believe *The Age of Obsolescence* will help us question some of the axiomatic ways we categorize and describe aging, old age, and the elderly today.

In recent years, scholars across fields and disciplines have begun to turn their attention to these questions of how we currently represent, and have historically

represented, aging, old age and the older population. Such questions of representation have traditionally not been central to the multidisciplinary field of gerontology. First coined in 1904, and “formalized” with the founding of the Gerontological Society of America in 1945, gerontology primarily studies the social, psychological, demographic and biological aspects of aging, seeking to know how and why we age, and how we might best fulfill the needs and deal with the problems of aging individuals and populations. Robert Butler coined the term “ageism” in 1969, calling attention to the importance of the cultural aspects of aging, and in the late 1970s David Hackett Fischer and W. Andrew Achenbaum produced the first cultural histories of old age in America.⁶ However, it was not until the early 1990s that scholars working in the humanities and interested in bringing the insights of critical theory and cultural studies to the study of aging began to coalesce into a field referred to both as “critical gerontology” and as “aging studies.”⁷ I am building on the recent work in this field as I ask not how we might alleviate the problems of aging for the individual and for society (the characteristic question of gerontology) but rather how and when aging became a “problem” for the individual and for society.

⁶ One important influence behind the increased attention to aging and ageism in the late 1960s and beyond was the legal attention drawn to age discrimination that came about as part of the civil rights movement. Shortly after the passage of the Equal Pay Act in 1963 and the Civil Rights Act in 1964 barring discrimination against women and minorities, the U.S. Congress passed the 1967 Age Discrimination in Employment Act.

⁷ Important early efforts at collectivizing included the publication of Thomas R. Cole, David Van Tassel and Robert Kastenbaum eds. Handbook of the Humanities and Aging (New York: Springer, 1992), and Thomas R. Cole, W. Andrew Achenbaum, Patricia L. Jakobi and Robert Kastenbaum eds. Voices and Visions of Aging: Toward a Critical Gerontology (New York: Springer, 1993). In his introductory “Overview: What is Critical Gerontology and Why Is It Important?,” Harry R. Moody suggests that “above all critical gerontology is concerned with the emancipation of older people from all forms of domination” Cole, Achenbaum, Jakobi and Kastenbaum eds. Voices and Visions of Aging: Toward a Critical Gerontology xv-xvi. Sociologist Stephen Katz further outlines the role of critical gerontologists as to “admonish gerontology for its narrow scientificity, advocate stronger ties to the humanities, endorse reflexive methodologies, historicize ideological attributes of old age, promote radical political engagement, and resignify the aging process as heterogeneous and indeterminate” Stephen Katz, Disciplining Old Age: The Formation of Gerontological Knowledge (Charlottesville: UP of Virginia, 1996) 4.

Through my consideration of cultural narratives, I approach this question as a literary critic paying careful attention to the way language is used: how repeated tropes allow us to access and assess the assumptions embedded behind the choice of language, and how the conventions of storytelling help to shape the plot and predetermine the outcome. While I apply literary critical methods to a variety of texts, I privilege literary texts for the complex ways they engage the cultural narratives I examine. At times, literary texts uncritically invoke these cultural narratives, but do so by presenting them within an extended scenario that allows the reader to visualize the narratives' implications. Other times, literary texts push back upon and complicate these cultural narratives, subtly challenging the assumptions that undergird them. In the preface to *Hope Leslie*, Catharine Maria Sedgwick wrote that her purpose in writing the novel was "to illustrate not the history, but the character of the times" (Sedgwick 5). I privilege the literary for giving us access to that character in a way that many of the other texts I explore simply do not. In this attention to language and the value of the literary, I am guided by the work of scholars like Kathleen Woodward, Betty Friedan, Margaret Cruikshank and Margaret Morganroth Gullette; these women have not only provided excellent critical, discursive analyses of aging in contemporary culture, but have also helped to pioneer attention to aging within literary studies and Women's Studies and have thus been inspirational both for me personally and for my project.⁸

⁸ Kathleen Woodward is the author of *Aging and Its Discontents*, which focuses on the social construction of old age from psychological and psychoanalytical perspectives. Kathleen Woodward, *Aging and Its Discontents: Freud and Other Fictions*, Theories of Contemporary Culture ed. Kathleen Woodward (Bloomington: Indiana UP, 1991). Woodward also edited the important compilation *Figuring Age: Women, Bodies, Generations*, which was very influential in calling for attention to aging within cultural studies and Women's Studies. Kathleen Woodward ed., *Figuring Age: Women, Bodies, Generations* (Bloomington: Indiana UP, 1999). Feminist, activist and writer Betty Friedan, most famous for her 1963 *The Feminist Mystique* which is sometimes credited as being the impetus for second wave feminism, wrote *The Fountain of Age* thirty years later in which she tackles "the age mystique," or our culture's tendency to deny age while

I also approach the question of how and when aging became an individual, social and national “problem” as a cultural studies scholar, analyzing texts through the “circuit of culture,” which may include investigation of how they are produced and consumed, what mechanisms regulate their distribution and use, how they are represented and what social identities are associated with them (du Gay et al.). Attention to authorship, audience and reception enables an analysis of how these cultural narratives of aging were strategically used by various interested parties to advance particular points of view or encourage specific behaviors. In my investigations of the historical contexts for many of my texts, and for my understanding of historically changing attitudes towards aging and old age more generally, I have been greatly aided by the work of scholars like W. Andrew Achenbaum, Thomas R. Cole, Stephen Katz and Laura Davidow Hirshbein. These scholars approach aging from the fields of history and sociology and their work, collectively, offers excellent archival data and compelling meta-narratives of the changing cultural history of aging.⁹ In *The Age of Obsolescence*, I seek to connect the

at the same time associating it with decline and deterioration from youth. Betty Friedan, *The Fountain of Age* (New York: Simon & Schuster, 1993). Margaret Cruikshank's *Learning to Be Old* offers a strongly feminist analysis of cultural ageism. Margaret Cruikshank, *Learning to Be Old: Gender, Culture, and Aging* (Lanham, MD: Rowman & Littlefield Publishers, Inc., 2003). Similarly, Margaret Morganroth Gullette brings a feminist perspectives to how we are *Aged By Culture*, and explored the new ground of “middle-ageism” in *Declining to Decline*. Margaret Morganroth Gullette, *Aged by Culture* (Chicago: U of Chicago P, 2004); Margaret Morganroth Gullette, *Declining to Decline: Cultural Combat and the Politics of the Midlife*, Age Studies ed. Anne M. Wyatt-Brown (Charlottesville: UP of Virginia, 1997).

⁹ W. Andrew Achenbaum's history of *Old Age in the New Land*, his visual catalog of *Images of Old Age in America: 1790 to the Present* and his account in *Crossing Frontiers* of gerontology's emergence as a science are some of the canonical texts of critical gerontology in relation to which many later scholars position their work. W. Andrew Achenbaum, *Old Age in the New Land: The American Experience since 1790* (Baltimore: Johns Hopkins UP, 1978); W. Andrew Achenbaum and Peggy Ann Kusnerz, *Images of Old Age in America: 1790 to the Present* (Ann Arbor: U of MI Institute of Gerontology, 1978); W. Andrew Achenbaum, *Crossing Frontiers: Gerontology Emerges as a Science* (New York: Cambridge UP, 1995). Thomas R. Cole's *The Journey of Life: A Cultural History of Aging in America* offers a convincing reading of changing religious and scientific frameworks that shaped the cultural meaning of old age in the early years

methods of the critical, discursive analyses of aging in contemporary culture to these historical investigations of aging in order to show how some of these discursive patterns first arose within specific cultural, social, economic and scientific circumstances peculiar to the early twentieth century. By grounding these narratives within a particular historical moment, I reveal how some of the most familiar ways we talk and think about aging today have not always been in place, and thus, do not always have to remain.

One of these familiar ways of talking and thinking about aging is the moral judgment applied to the appearance of aging, or the way “the fear of ‘letting yourself go’ is embedded in the culture through advertising,” in the words of *Going Gray* author Anne Kreamer (Donahue). This cultural narrative of aging is not just an outgrowth of contemporary “Anti-Aging” marketing, however, as I show in the first chapter of *The Age of Obsolescence*. In “Natural/National Salvation: Aging and Biological Citizenship,” I explore the narrative of aging healthily as a moral responsibility and national duty by delving into the aging-related popular health advice that was provided to hundreds of thousands of Americans via the widely circulated weekly magazine *The Youth’s Companion* during the more than three decade span between 1886 and 1918. Set

of the American republic up to the time period of my own interest. Thomas R. Cole, *The Journey of Life: A Cultural History of Aging in America* (Cambridge: Cambridge UP, 1992). Sociologist Stephen Katz’s *Disciplining Old Age: The Formation of Gerontological Knowledge* has been helpful for illustrating how the “professional knowledges” of gerontology have widely influenced thinking about the aged body and population aging. Katz, *Disciplining Old Age*. Laura Davidow Hirshbein’s unpublished dissertation *The Transformation of Old Age: Expertise, Gender, and National Identity, 1900-1950* has been highly informative in many respects, especially in tracking ideas of masculinity in relation to aging and in providing different takes on many of the materials I examine in my project such as Irving Fisher’s work with the Life Extension Institute and the glandular rejuvenation fads of the 1920s. Laura Davidow Hirshbein, “The Transformation of Old Age: Expertise, Gender and National Identity, 1900-1950” Unpublished Dissertation, Johns Hopkins University, 2000.

against the larger history of nineteenth-century health reform's emphasis on individual health behaviors leading to an ideal old age, the articles trace the increasing authority granted to science as the arbiter of what aging was and what would lead to a good old age. Notions of "right living" and the moral judgment they carried became attached to scientifically-prescribed health and lifestyle behaviors. These articles champion longevity and youth as national ideals and suggest the fate of "national health" was rooted in citizens' bodies. Consequently, they implicitly construct the physical decay of aging as an individual moral failure that held *national* consequences for America's international superiority. Through rhetoric like that evidenced in *The Youth's Companion*, aging came in a roundabout way into the purview of public health.

The man who penned most of the health columns for *The Youth's Companion* was one of its editors, author and physician C. A. Stephens. Stephens' medical interests centered on the physiology of aging, as did all of the scientific monographs he published on his own time and at his own expense. The "problem of aging" as framed within the pages of the *Companion*—one that made aging both a moral failure and a failure of citizenship—was offered a logical solution in Stephens' most significant scientific publication, *Natural Salvation: The Message of Science, Outlining the First Principles of Life on Earth*, which first appeared in 1903. Stephens presented a vision of government-sponsored investment in aging research leading to scientifically-achieved physical immortality, and consequently the unity of mankind in realization of Christian brotherhood on Earth. Stephens' vision is a ridiculous messianic fantasy, but it is also a prodigious portent of the faith that we today place in a scientific "cure" as the solution to the "problem" of aging.

If Stephens' work promoted the narrative of aging healthily as an *individual* moral responsibility and national duty, then the "problem" of aging and its "national consequences" were framed on a *national* level by the narrative of aging as obsolescence. My second chapter explores how notions of uselessness were coupled to the moral failure of aging when productivity became the reigning criterion by which the value of aging (male) individuals was measured. "Efficiency, Obsolescence and the Human Scrap Heap" opens by recounting the "fixed period" controversy, a vigorous public debate that was instigated by a frequently cited speech by renowned physician Dr. William Osler in 1905. Ostensibly talking about the need for retirement within the professoriate, Osler proclaimed that men were relatively useless after forty and completely useless after sixty, an age at which—he suggested jokingly, referencing Anthony Trollope's fictional novel *The Fixed Period*—men should perhaps consider chloroforming themselves to death. Some reacted to Osler with outrage, offering up long lists of examples of productive men over sixty; others offered clinical support for the decline of usefulness with age. Everyone, however, responded in the terms of Osler's argument with tacit agreement that the "value" of aging individuals was, in one way or another, a measure of productivity.

Larger debates about the impact of age on usefulness and productivity (which preceded but were amplified by Osler's speech) took on particular significance in the industrial cityscape as they joined with narratives detailing the "speeding up" of industry and the displacement of human workers in the machine age to create the cultural narrative of aging as obsolescence in a modern world. I trace this narrative through journalistic accounts where it was invoked to explain perceived age discrimination in employment, increasing numbers of older people in almshouses, and the need for

mandatory retirement policies and pension plans. As the narrative of aging as obsolescence in a modern world circulated through fiction and non-fiction texts, its causes and consequences were elaborated on—and argued against—in works such as Sarah Orne Jewett's *The Country of the Pointed Firs* (1896), Theodore Dreiser's *Sister Carrie* (1900), Jacob Riis' *How the Other Half Lives* (1901) and Upton Sinclair's *The Jungle* (1906). The ideals of efficiency that were used to support this narrative were perhaps best embodied in Frederick Winslow Taylor's industrial bible *The Principles of Scientific Management* (1910). I close with a reading of Edith Wharton's *Twilight Sleep* (1927) which illustrates the lasting effects and wider ramifications of the emphasis on efficiency in industry and the narrative of aging as obsolescence as it ridicules the "Taylorized" efforts of middle-aged women and men to control the physical evidence of their aging.

Ideas about what kind of "control" over the aging process might be possible were fundamentally dependent on what the aging process was believed to be. Thus, moving from the more widely-circulating narratives of the first two chapters, Chapter 3, "Disease or Decay?: The 'Nature' of Old Age and What to Do About It" traces two conflicting scientific narratives about the nature of aging. One narrative held that aging was the result of disease (or, in some cases, a disease itself) and was thus amenable to prevention and treatment. The other held that aging was a natural and inevitable, albeit pathological, process, and the only hope for intervention lay in scientists' discovering, and manipulating, the natural mechanisms of aging. The narratives of aging as disease and as natural degeneration offered different ideas about *what* should be done about aging (seek a "cure" for it, or seek to "manage" and "mitigate" it) and *who* should be authorized to do it (bench scientists, health reformers, certified physicians,

gerontologists). While “optimistic” scientists like Elie Metchnikoff and health reformers like John Harvey Kellogg and Sanford Bennett believed aging was a disease, those who now form the canonical history of gerontology—physicians and scientists such as Jean Martin Charcot, I. A. Nascher and Charles Manning Child—favored the degeneration view.

The narrative of aging as disease initially had a much broader public reach, as it was championed by popular health reformers like Kellogg and Bennett, and offered optimism that the problem of aging was ultimately solvable. I trace the institutionalization of this narrative (and its optimistic promise of immediate possible change) in American government through Irving Fisher’s 1909 *Report on National Vitality*. Commissioned by President Roosevelt as part of the larger *Report of the National Conservation Committee*, Fisher’s project was based once again on the idea of long-lived and healthy (vs. aging) citizens as an essential part of the nation’s resources, and thus wealth. The narrative of aging as disease was also promoted to the larger public through the advertising of the preventive health firm, The Life Extension Institute, which promised the fountain of youth (or, at least, the avoidance of decrepit old age) to those who would regularly come to the Institute for medical check-ups and follow the prescribed preventive health behaviors. The American Medical Association, particularly through its “Fraudbuster” Dr. Morris Fishbein, challenged The Life Extension Institute both for its promotion of this narrative and for encroaching on “legitimate” medical practice. Ultimately, the medical and scientific community would “authorize” the narrative of aging as natural degeneration (a process of decline that required the attention of expert medical authorities and professional gerontologists to help manage and mitigate it). However, the wide circulation and the inherent optimism for a “cure” that

characterized the narrative of aging as disease would result in lingering and stigmatizing associations between aging and disease, and in the continuing hope for a “cure” for aging.

The consequences of that continuing hope form the subject of my final chapter. “The Glandular Grail: Scientific Rejuvenation and the ‘Cure’ for Old Age,” chronicles how the sex gland rejuvenation practices in America in the 1920s captured the public imagination, strengthened perceived gender disparities in aging, and firmly established the cultural narrative of a scientific fountain of youth. Rejuvenation had traditionally been the province of legend and quackery, but in the 1920s, it found a new home within “legitimate” science. Drawing from news coverage of gland science, of the Rejuvenators (particularly Eugen Steinach and Serge Voronoff), and of the high profile figures who received these treatments (Sigmund Freud, William Butler Yeats)—as well as from popular film and fiction treatments of the fad—I show how the promise and potential pitfalls of rejuvenation as a legitimate (or, at least, nearly so) scientific enterprise were sold to the American public.

The best-selling novel turned feature film, Gertrude Atherton’s *Black Oxen* (1923), initiated a new “scientific” version of the traditional Fountain of Youth narrative that harmoniously re-wrote the relationships between man, nature and science. A recipient of the treatment herself, Atherton consolidated the circulating promises into a narrative that not only reached a wider popular audience, but was also drawn into scientific debates; this narrative of the scientific fountain of youth helped to legitimate the continued search for a scientific “cure” for aging. As a return to the satire of Edith Wharton’s *Twilight Sleep* makes clear, the promise of a scientific solution for the perceived obsolescence of aging, coupled with the persistent emphasis on individual

responsibility for one's health, created the ubiquitous cultural practice of searching for the "magic bullet" of youth in the latest "scientific" health fads.

The cultural narratives of aging and old age I trace within *The Age of Obsolescence* are eerily familiar. The epilogue brings us from the close of the glandular rejuvenation fervor up to the present moment, where we are still gripped by the ardent hope for scientific rejuvenation. This hope remains the heralded solution to our problematic cultural narratives of aging and old age, whether it fuels scientific discussion of a "cure" or the multi-billion dollar "Anti-Aging" industry. By illuminating the historical emergence of some of our cultural narratives of aging and old age, I hope to show that such formulaic ways of thinking and speaking are themselves not ageless, but rather contingent, and there is always room for new and different ways of telling the story and identifying the "problem" of aging. Drawing on the example of disability studies, I suggest that it is today's anti-aging sentiments, and our tendency to locate the "problem" of aging in the bodies of aged individuals, that are themselves the problem in need of a solution. Such solutions lie not only beneath the laboratory microscope, but also in the larger realm of cultural assumptions about and national practices around aging and old age.

CHAPTER ONE

Natural/National Salvation: Aging and Biological Citizenship

The Message of Science

In 1903, the author, editor and trained physician Charles Asbury Stephens published a book that encompassed his theories about aging, his faith in the progress of science, and his vision of what aging and science meant both to his country and to the world; it was a strange little book. He titled it *Natural Salvation: The Message of Science, Outlining the First Principles of Immortal Life on the Earth*, and the essence of his “message” was this: he believed that science could and would unlock the secret of immortality, and that this “natural” (meaning scientific and bodily, versus religious and non-material) salvation from death would unite all the enlightened peoples of America and of the world. He prophesied that from this unity would come national and international peace, ultimately confirming (rather than conflicting with) Christian doctrines of human brotherhood. Thus, according to Stephens, scientific investigation of the mechanisms of aging would produce the key to immortality and the salvation of both body and soul, not to mention individual, national and international prosperity. Instead of looking to religion to provide a meaningful context for aging, mortality and the hereafter, Stephens championed science as the ultimate arbiter of these existential experiences.

In many ways, Stephens’ argument was responding to prevalent contemporary debates about whether or not scientific evidence supported or challenged the idea of the immortality of the “soul” or “mind” or “personality.” These debates were essentially about the clash, and attempted reconciliation, of religious and scientific world views,

particularly following in the wake of the Charles Darwin's evolutionary hypothesis presented in *Origin of the Species* in 1859. As one scholar put it, to many learned people, Darwin's hypothesis had "seemed to sweep away every scintilla of scientific evidence for the separate existence of the soul" (Mackay 387). To these debates, Stephens added two intriguing elements. The first was a far more radical view of what would constitute scientific "proof" of the possibility of immortality. Most thinkers who argued that science supported immortality were proponents like physicist Sir Oliver Lodge who touted the validity of spiritualism (spirits communicating from beyond the grave) or those who argued that science could not *disprove* the possibility of the soul's existence. Stephens bypassed the issue of non-material immortality completely, identifying immortality on a cellular level and proposing, quite literally, life without death. He was certainly not the first to propose that science might indefinitely prolong life, nor the only voice championing this idea at this time, but he was unusual in suggesting that science was actually the means by which Christian ends could be accomplished, and he was one of the few to offer a relatively specific intervention (focusing on the processes of cellular nutrition and growth) for achieving scientifically-based immortality.¹

¹ Stephens was not by any means the first scholar to propose that science could, perhaps indefinitely, prolong life. In quite varying versions, men like Rene Descartes, Francis Bacon, Benjamin Franklin, William Godwin, and the Marquis de Condorcet all promoted "meliorist" visions of humanity's future, i.e., they promoted the idea that human action would improve the world (which included bringing about longer, fuller lives). See Gerald J. Gruman, [A History of Ideas About the Prolongation of Life](#), Classics in Longevity and Aging Series ed. Robert N. Butler, MD and S. Jay Olshansky (New York: Springer Publishing Company, 2003) Chapter 7. Stephens was, however, one of the first to pin down a somewhat exact mechanism through which the prolongation of life could happen (for Stephens, this was through improved cellular nutrition). He was also one of the first to suggest that death itself might be overcome. During this same time period, pioneer in immunology Elie Metchnikoff was promoting his concept of "orthobiosis"—basically, the significant extension of life through "correct" (that is hygienic and moral) living—although even he saw orthobiosis as eventually ending in "Natural Death" (that is, a desired death after a long, fulfilling life), and not in physically immortal life on Earth. For more on Metchnikoff, see Chapter 3: "Disease or Decay?: The 'Nature' of Old Age and What to Do About It." Gruman claims that it was not "until the late nineteenth-century American physician C. A. Stephens that a prolongevitist [someone who believes in the significant

Stephens determined the particulars of that intervention through his scientific investigations into the process of aging, and this marks the second intriguing element of his vision. In effect, Stephens regarded aging as the extended process of dying. Again, this was not the first time that aging and death were linked as one physiological process (although this association, according to Stephen Katz, was not in place until as recently as the late eighteenth century).² However, this may well have been the first time that the understanding of the aging body as a dying body was explicitly juxtaposed with the notion of science conquering bodily mortality. The logical outcome of this juxtaposition was the perceived need for scientific intervention into the processes of aging.

To understand the full importance of this juxtaposition, however, it is necessary to view Stephens' "message" in the larger context of America's turn-of-the-century attention to public health and the importance that was placed on citizens' health and longevity for the wealth of the nation. Stephens' own larger body of work offers us a window into this context. When not commencing his own scientific investigations, or self-publishing his results, Stephens worked as an editor and a beloved story writer and columnist for the highly popular and widely-distributed weekly magazine *The Youth's*

extension of the length of life possible through human action] dealt with [the question of scientific conflict with religious views of immortality] in an articulate way" (155).

² Katz suggests that in premodern society, "death was portrayed as a mysterious, unpredictable force ranging outside the boundaries of bodily life. The clinical research of the early nineteenth century relocated death as a traceable presence within the body." Katz especially cites the work of Xavier Bichat (*Recherches physiologiques sur la vie et la mort*, 1801) and the Comte de Buffon (*Histoire naturelle de l'homme*, 1774) as initiating a new way of conceiving death, one that viewed death as a constant process of decay warring with the vitalism of life and observable as a decipherable set of signs or "lesions" within the body's organs, tissues and cells. This new conception of death "by extending and distributing death throughout the body, transformed the aging process into a constant dying. The aged body became reduced to a state of degeneration where the meanings of old age and the body's deterioration seemed condemned to signify each other in perpetuity." Katz, Disciplining Old Age 41.

Companion. Drawing upon *The Youth's Companion* as a case study, this chapter explores the repetitive circulation in the late nineteenth and early twentieth centuries of a number of stock ideas about individuals' health and longevity and the relation of these to the American nation, ultimately arguing that these ideas produced a dominant—and problematic—framework for thinking about an individual's aging. These repeated narratives, particularly in the form of popular health advice, emphasized several ideas: that aging was a process of biological decay, that one's longevity and the quality of one's old age could be influenced by one's behaviors, and that a nation's health and wealth depended on the health and longevity of its citizens. These ideas were hardly universal or unvarying, but in their repetition they created a widely available formula for how an individual should perceive his or her own—and other people's—aging and old age, a formula that both registered and promoted American sentiments about independence and progress.

Mirroring Stephens' rewriting of science as the proper mechanism for realizing Christian ideals, this formulaic understanding of aging increasingly emphasized physiological over spiritual changes. Accordingly, the authority over the aging body and the power to dictate what was or was not "healthy" behavior was increasingly placed in the hands of science and medicine, while at the same time the responsibility for the aging body and its health outcomes was increasingly thrown upon aging individuals. As one's longevity and "good" old age came to be seen as the consequence of one's health-related behaviors, and as citizens' health and longevity came to be seen as directly tied to the nation's wealth and success, so the promulgation and practice of specifically aging-related health behaviors became the province of national public health concerns. Through the connection of these ideas, the responsibilities of good citizenship

came to include the maintenance of one's health while aging. If one did not achieve an "ideal old age," then one's aging could be rationalized as the result of personal, moral failure, and moreover as a failure of citizenship duty. In short, in an early version of "biological citizenship," a well-intentioned citizen could age, but there were few responsible and respected ways to grow "old." The chapter concludes by returning to the vision Stephens offers in *Natural Salvation*. Faced with this problematic if not impossible situation where old age and good citizenship were presented as mutually exclusive, the logical solution—for both the nation and the individual—was to invest in the hope and the search for a scientific solution to the nationally framed "problem" of aging: a national desire for natural salvation.

Health Reform and Aging in 19th Century America

To appreciate the significance of the cultural narratives about aging, health, longevity and the nation that were circulating through *The Youth's Companion* around the turn of the century, it is important to situate these narratives in the larger context of nineteenth-century health reform, public health, and ideas about aging. The middle decades of the nineteenth century saw the emergence of many popular—if often quickly passing—movements and messiahs of health reform. There were dietary faddists, water-cure specialists, animal magnetizers and electromagnetizers, phrenologists and physical educators; they formed physiological societies, preached sexual and dietary reform, championed preventive medicine, and worked to initiate hygiene and physical education in the schools.³ Scholars chronicling the various reform movements argue

³ As Thomas Cole notes, "Health reform itself was part of much broader reform movements that included revivalism, temperance, feminism, sabbatarianism, abolition, and various utopian experiments." Cole, *Journey of Life* 93.

that different impulses motivated the reformers at different periods within the century, but throughout, the impetus for “good health” had strong moral overtones (at times more overtly religious than others) and the focus for intervention was on the individual.⁴ Drawing on longstanding Puritan ideals, many reformers explicitly advocated the idea that “the individual was always solely responsible for his or her own condition— economic, social, or medical. If taken by some serious disease, people had only themselves to blame for not being in perfect health” (Green 249).

Alongside health reform movements, public health also grew prominently during the nineteenth century. The antebellum period witnessed the emergence of vital statistics as a public health tool and the increasing role of medical societies in promoting community health, but it was the Civil War that “helped usher in the sanitary revolution;” immediately following the war the first effective municipal health departments and the beginning of state boards of health began to appear (Duffy 126). The sanitary revolution was in full swing in the final decades of the nineteenth century, as towns and cities

⁴ In his excellent survey *Fit for America*, Harvey Green distinguishes between 3 periods of health reform with different motivating impulses. He argues that between 1830-1860, the “millennial spirit of religious enthusiasm and a concern for the fate of the republic after the death of the great leaders of the eighteenth century provided the impetus to reform human beings and their society” (x). Paving the way for Stephen’s later vision of *Natural Salvation*, Green identifies this millennialism as based on the belief that Christ would only reappear (i.e., humans would only receive salvation) after human civilization had evolved to a state of perfection, and “the awesome responsibility for arriving at the state of grace and perfection rested squarely upon human shoulders.... Physical degeneration was a spiritual as well as medical or physiological problem” (10). Green further divides nineteenth century health reform into two more periods: 1860-1890, in which reform was driven by “the new maladies of the growing urban and village middle class...as well as new technologies and new theories about disease,” and 1890-1940, when “a profound sense of cultural pessimism had set in among many of the nation’s middle class, as well as its elites, and they turned to new activities and new foods, and developed a new standard of the human body” (x). Harvey Green, *Fit for America: Health, Fitness, Sport and American Society* (New York: Pantheon Books, 1986). Looking at the same span of years, James Whorton argues that while radical schemes of hygiene “have been a constant feature of American life since the early 1800s,” they particularly “flourished in periods of general reformist ferment and social optimism when an expanding public spirit enlarged the constituency for perfectionist campaigns. Thus the Jacksonian 1830s and 1840s and the Progressive 1900s and 1910s were years of extraordinary reform activity, and the Gilded Age a relatively quiescent transition period.” James C. Whorton, *Crusaders for Fitness: The History of American Health Reformers* (Princeton: Princeton UP, 1982) 11.

established water and sewer systems, instituted garbage collection and expanded their health departments, while Congress, under pressure from the American Public Health Association, finally created the United States National Board of Health in 1879. The real revolution in public health, however, came with advances in the field of bacteriology in the late 1870s and 1880s, particularly the identification of the bacilli causing diphtheria, tuberculosis, typhoid and other communicable diseases. The popular spread of germ theory blurred the boundaries of the fields of public health and medicine, as the field of public health began to shift attention from the environment to the individual (Starr 181).⁵ Public health began to reach out to individuals in their homes with messages about personal hygiene disseminated through advice books, magazines, newspaper articles and health department circulars: "From sewer gas to germs, late 19th-century Americans became alert to a host of new dangers lurking in the home....At a time when municipal public health services were still very primitive, the public was urged to take individual measures, such as improving household ventilation and plumbing, boiling and filtering drinking water, and isolating the sick within the household, to protect their loved ones from debility and death" (Tomes 506).

While the "prolongation of human life was the central goal of both popular health reform and the public health movement," the phenomenon of aging was of peripheral interest to the former and generally not of concern to the latter for much of the

⁵ Paul Starr, telling the history of American medicine, reads conflict into these shifting boundaries, as "public health agencies intruded into activities that the medical profession believed to be rightfully its own" Paul Starr, The Social Transformation of American Medicine (New York: Basic Books, 1982) 181. John Duffy, telling the history of American Public Health, suggests instead that although the medical profession was "somewhat ambivalent about bacteriology and the development of public health agencies," ultimately "the bacteriological revolution, along with other developments in medicine, immeasurably strengthened the position of the medical profession, and it also firmly ensconced physicians in charge of public health" John Duffy, The Sanitarians: A History of American Public Health (Urbana: U of Illinois P, 1990) 196.

nineteenth century(Cole 95). In his cultural history of aging in America, Thomas Cole argues that there emerged in the first decades of the nineteenth century a bifurcated view of later life, with “sin, decay and dependence on the one hand, and virtue, self-reliance, and health on the other” (Cole 91).⁶ Where aging was once tied to original sin, in the middle third of the nineteenth century, Victorians assumed that “anyone who lived a life of hard work, faith, and self-discipline could preserve health and independence to a ripe old age and die a natural death,” and that “poverty, disease, and frailty” were “visible signs of personal moral failure” (Cole 91, 140). Thus, throughout much of the nineteenth century, health reformers championed the idea that an individual’s behavior—understood primarily in moral terms—was the key to achieving an ideal old age. While sentimentalized visions of old age proliferated mid-century and emphasized the positive pole of a “civilized” old age, by the 1870s, Cole argues, the pendulum began to shift toward the negative pole. Old age was re-envisioned as “an unacceptable obstacle to progress” (Cole 162).⁷ This was in part because aging was gradually shifting from being perceived as primarily an existential experience to primarily a physiological one: “By the early twentieth century, aging had been largely cut loose from earlier, religious, cosmological, and iconographic moorings, made available for modern scientific scrutiny;” in place of these frames of meaning, people “turned to biology in the hopes that nature itself contained authoritative ideals and explanations of old age” (Cole 192,94). The

⁶ Prior to the nineteenth century, according to Cole, “New England Calvinists had constructed an integrated view of aging, emphasizing *both* inevitable loss and hope of redemption.” Cole, Journey of Life 91.

⁷ Cole posits many factors behind this shift, several of which are explored at length within this project. He writes: “By the end of the century, a cluster of interrelated developments—rapid demographic and sociogenic aging of urban immigrants, perceptions of an accumulating scrap heap of older industrial workers, the recognition of old age as a clinically distinct period of life, and the early stages of an epidemiologic transition from infectious to degenerative diseases—all tended to shatter the dreams of a ‘good’ old age.” Cole, Journey of Life 163.

cultural narratives this chapter traces emerged during this time of shifting paradigms for understanding aging, and much of the material I examine corroborates Cole's argument at the same time that it helps reveal the forms through which these changing understandings of aging were conveyed to the American public. The messages about health circulating in *The Youth's Companion* illustrate both moral and scientific frameworks used to offer up the "meaning" of aging and to suggest proper care for the aging body, but also show how the scientific care of the aging body came to be framed in undeniably moral terms.

While aging would not become an explicit concern for public health until later in the twentieth century, the cultural narratives this chapter traces reveal that it was already—even in these early decades—beginning to be framed in the same terms of national interest and well-being as were other public health concerns. The period in which science and medicine were becoming the authoritative frameworks for understanding aging was the same in which bacteriology was so radically changing the field of public health. In the interests of national well-being, public health officials reached out to individuals with messages about hygiene and "right" living, much as the health reformers had been doing throughout the century. Amid this convergence of concerns around the turn of the century, the aging of individuals and the health behaviors associated with aging came to be framed as of critical importance for the nation's health and well-being, already bringing aging within the purview of public health. To illustrate this process by which individual's aging became a national concern, I first turn to *The Youth's Companion* to provide a close and careful examination of how messages about the meaning of one's aging health and the importance of aging-related health behaviors were repetitively drilled into America's public imagination. Exploring

the language of these narratives—the dominant metaphors, the recurring aphorism, the shifting meaning of key terms—reveals how aging subjects were called upon to understand their aging and to work to modify it through their behaviors, all in the name of good citizenship.

The Youth's Companion and C. A. Stephens

In 1885, the weekly magazine *The Youth's Companion* had the highest circulation of any periodical in the nation. By 1900, its circulation reached 540,000, the largest of all the weeklies (Mott Vol. IV 17, 596). The total readership of the magazine, however, would likely have reached well beyond its subscription list, as periodicals at this time were commonly passed hand to hand among families and communities:

“Because it reached into practically every home in America it had a powerful moral and social influence. It was clearly one of the perceptible forces which gave the American character its shape in the latter part of the nineteenth century and the early years of the twentieth” (Whitney 38).

Despite its name, the magazine billed itself at various times as “An Illustrated Family Paper” and “For all the family” (Satelmajer and Hill). While there were separate sections for a “Children's Page” and “Poetry,” there were also—up until 1891 when they came to be grouped in the “General Index of Articles and Stories”—sections on “Hygiene” and “Educational and Scientific,” along with “Manners and Customs,” “Humorous” and “Shorter Editorials.” By specifying the material intended for children, the magazine's structure reinforced the appropriateness of the rest of the articles for

consumption by family members of all ages.⁸ Certainly, much of the magazine's material—focused as it was on topics such as arteriosclerosis, baldness and delaying old age—addressed itself to more mature audiences, and to audiences assumed to be explicitly interested in the science of health and the biology of aging.

Amid its fiction, poetry, travel narratives and other educational pieces, *The Youth's Companion*, like many periodicals of its day, devoted a significant amount of space to scientific and medical articles, many of a public health nature providing preventive health information. In the mid-to-late nineteenth century, according to historian of American magazines Frank Luther Mott, “nearly all the magazines established departments of scientific notes” (Mott Vol. III 105). Such was the popularity of science that it was typical for the general magazines of this period to devote more pages to science than to either fiction, travel or history-biography (Mott Vol. III 105). In particular, and in keeping with the popularity of the many health reform movements, the last decade of the nineteenth century saw a vast increase in publications centered on health. For example, Mott notes the contemporaneous but limited lifespans of publications such as the *Public Health Journal* (1886-1903), which became the organ of the National Board of Health, the *American Journal of Public Hygiene* (1891-1910) which became the publication of the American Public Health Association, and the *Sanitary Inspector* (1887-1901). Beginning in 1899, bodybuilder and health crusader Bernarr

⁸ In his larger study of the history of the Pledge of Allegiance—which pledge *The Youth's Companion* was significantly responsible for promoting to national popularity—John Baer notes the appeal of the magazine for the whole family: “The decorative seal on the title page showed a family group reading *The Companion*. In the center was grandmother holding the paper. Behind her were father and mother. Completing the group were a boy about fifteen, a boy of eleven, and a girl about eight years old.” John W. Baer *The Pledge of Allegiance: A Centennial History, 1892-1992* 1992 Electronic Book John W. Baer Available: <http://history.vineyard.net/pdgech0.htm> October 5 2006. Striking in this image is the centrality of the oldest member of the family and the more peripheral placement of the youths.

Macfadden published the magazine *Physical Culture* which was widely popular for decades.⁹ In short, “health in the home, physical culture and exercise for both health and sport were almost a cult in the nineties, increasing every year” (Mott Vol. IV 316). It was in keeping with this national interest in health that the *Companion’s* editor Daniel Sharp Ford, looking to keep his magazine at the forefront of popularity, decided to employ a physician on the regular staff (replacing a rotation of Boston physicians) to write a weekly medical column for the magazine. To this end, in 1884, Ford paid C. A. Stephens’s way through Boston University Medical School (Gruman "Prophet" 659).

Charles Asbury Stephens (1844—1931) achieved remarkable success as a writer at an early age, publishing stories as a means of paying for his education and pursuing this occupation more actively after graduating from Bowdoin college in 1869, such that between 1870 and 1874 at least one hundred of his stories appeared in such magazines as *Our Young Folks*, *St. Nicholas*, *Scribner’s Monthly* and *The Youth’s Companion* (Whitney 36). Shortly after his entry into the world of published authorship, Stephens became a full-time salaried staff writer for *The Youth’s Companion*. He traveled extensively at the magazine’s behest, writing accounts of his experiences for publication, and when home from his travels served the magazine as an Assistant Editor. He continued these associations with the magazine for nearly 60 years, up to the point of the *Companion’s* termination in 1929 when it was sold to *The American Boy*. Stephens became a “household word to millions” for his fiction, but his deepest passions

⁹ In an early issue, *Physical Culture* noted just how phenomenal the growth of interest in health issues was, saying “the subject is given almost daily attention by all the prominent newspapers, and the magazines are everywhere taking it up.” Frank Luther Mott, A History of American Magazines, Volume IV: 1885-1905 (Cambridge, MA: Harvard UP, 1957) qtd on 316.

lay in more empirical directions (Whitney 99).¹⁰ When Ford requested he attend medical school in order to provide the magazine with a regular health column, Stephens was delighted at the opportunity. He had long held an avid interest in science and, in particular, biological research. And within the field of research, Stephens was particularly fascinated with questions of senescence.

Stephens entered the Boston University School of Medicine in 1884, at 40 years of age, and graduated near the top of his class three years later. He found multiple ways to incorporate inquiries into senescence into his medical studies: he wrote about it in his thesis, he investigated the histology of old and young dogs in the laboratory he built at his home in Norway, Maine, and he avidly encouraged other researchers to join him in the study of aging. He published his writings at his own expense and sent them out to physicians and scientists. He advertised \$400 in prizes in 1890 for “microscopic demonstrations comparing young and old capillaries in either dogs or human beings” (Gruman "Pioneer" 335). His greater dream was to open a large-scale research center out of his Norway, Maine home devoted to gerontology; this plan was foiled when the project’s financier—J. C. Coombs—died suddenly in 1905 when Stephens was 61 years old (Gruman "Pioneer" 335-6). Stephens’ personal scientific endeavors and publications never enjoyed the kind of notice and circulation that his writings in *The Youth’s Companion* merited. Nonetheless, Stephens’ scientific approach to understanding aging and the emphasis he laid on the science of aging as the key to national and international prosperity seeped into columns and stories that regularly filled the *Companion’s* pages.

¹⁰ Especially popular were his semi-autobiographical stories about “life on the old Squire’s farm” in rural Maine and his moralistic and educational tales of four college boys “camping out” in adventures around the world. Ronald G. Whitney, *The World of C. A. Stephens* (Springfield, MA: Waynor Publishing Company, 1976) 3.

Two prominent and intersecting narratives about aging, health, longevity and the nation appeared repeatedly in articles from *The Youth's Companion* during the more than three decade span of 1886-1918. The first of these narratives promoted an "ideal old age." Already seen primarily through a biological lens, aging was most often represented within these articles as a process of inevitable physical decay explicitly contrasted with the growth that characterizes youth. The message of *The Youth's Companion*, however—similar to that of health reformers throughout the nineteenth century, albeit presented with more scientific authority—was the insistence that this process might be slowed down and the miseries of growing old avoided by adherence to "moderation" in bodily habits and by "taking care of oneself" in accordance with the latest scientific findings. Thus, the magazine offered its readers a vision of an "ideal old age" that was really an infinitely extended middle-age; the underlying promise was that it was possible to keep aging without ever growing "old." Effectively, these messages invoked "old age" as an undesirable and anything-but-ideal state. The second prominent narrative promoted health maintenance as a citizenship duty. Within the articles, the health and longevity of individual citizens were named as direct economic contributions to American superiority. Accordingly, the maintenance of health was promoted as a duty owed to oneself, to those around one, and to one's nation. It was in the intersection of these two overlapping narratives that the management of individual's aging became tied to the duties of their citizenship, and that aging, in turn, was increasingly framed as a national "problem."

The Youth's View of Old Age

"Happily, it is quite possible to live to an advanced age without suffering to any great extent from the deterioration of structure that is implied in the world 'senile.'"
(*"A Long Life"*)

Around the turn of the century, the *Companion's* health column frequently and repeatedly detailed the effects of aging on the body and the mind, most often representing these as inevitable decline in capacity and function.¹¹ While other *Companion* articles tended to focus on the changes in one's character and appropriate social behavior which should accompany the changes of aging, these medical columns presented aging in graphic biological terms that equated the outward manifestations of old age with internal physiological changes. For example, an 1890 article titled "The Shrinkage of Old Age" begins with the changes of appearance brought on by aging—"the wrinkled face, the lank legs and the bowed form"—and then moves inside the body, mapping the physical symptoms of aging onto un-seeable, causative, biological changes:

The shrinkage, of which these are but the outward signs, affects the entire muscular system....But other tissues as well...undergo shrinkage. Thus the cartilaginous cushion between the joints of the spine contracts....the spine loses its suppleness and elasticity....The person also becomes appreciably shorter. The bones undergo a similar change, and not only fracture more readily, but are less easily healed....When the teeth are lost by age, the shrinkage of the jaw narrows the canals through which important nerves pass...giving rise to almost incurable neuralgia. The nerves themselves are subject to the same shrinkage, so that in old age there is a lessening of nervous sensibility. It follows that hearing, sight, taste and appetite lose somewhat of their keenness. Old age also tells upon the brain itself. It no longer fills the skull, and the vacant spaces are filled with water....In all cases, mentality is lessened. ("The Shrinkage of Old Age")

¹¹ Although these weekly medical columns were anonymous, we may assume that C.A. Stephens penned many if not most of these articles upon his graduation from medical school in 1887. He also likely influenced the content of many other age- and health-related articles—some authored anonymously, others written by prominent physicians and health officials—through his position of Editorial Assistant, held throughout these decades.

This article's focus on the physiological changes of aging, presented in language accessible to a wide audience, is characteristic of discussions of the topic in *The Youth's Companion*.¹² Such descriptions presented aging as a process of loss and decline occurring at a molecular level beyond direct observation. The clues by which we identify aging—changes in appearance, physiological function, and ultimately social function—were seen as the manifestations, or “outward signs,” of the internal phenomenon of aging.

Describing aging in biological, specifically cellular, terms—the reigning paradigm of our twenty-first century approaches to understanding aging—was something new to the late nineteenth century, fostered by the development of cell theory in the mid-nineteenth century and the inquiries into aging by the famous neurologist Jean Martin Charcot and others. These developments helped to usher in what Tim Armstrong calls “a revolution in perceptions of the body in the nineteenth century” (Armstrong 2). He suggests that “at the beginning of the century, the body was the machine in which the self lived” and it “was also a boundary: a doctor in 1800 would listen to a case history, with examination by touch; the live body could not be penetrated safely” (2). This began

¹² For other examples of articles seeking to explain aging in biological/physiological terms to a lay audience, see "Cautions for the Aged" *The Youth's Companion* April 15 1886; "Premature Wrinkles" *The Youth's Companion* January 27 1887; "The Age of Decay" *The Youth's Companion* April 16 1891; "Health in Old Age" *The Youth's Companion* April 25 1901; "Disease in the Aged" *The Youth's Companion* January 8 1903; "Growing Old Too Early: I. The Middle-Aged American" *The Youth's Companion* August 5 1915; "Growing Old Too Early: II. Arteriosclerosis - the First Signs" *The Youth's Companion* August 12 1915; "Growing Old Too Early: III. Blood Pressure" *The Youth's Companion* August 19 1915; "Growing Old Too Early: IV. The Perils of Arteriosclerosis" *The Youth's Companion* August 26 1915; "Growing Old Too Early: V. What Can We Do for Arteriosclerosis?" *The Youth's Companion* September 2 1915; and Rupert Blue, M.D., D.P.H., "What Medicine Has Found: II. Prolonging Life" *The Youth's Companion* February 24 1916. Not all of the articles are as general; several of them attempt to present more technical theories of aging, though still in widely accessible language. For example, a 1908 article reports on Elie Metchnikoff's proposed theory of aging as “a constant warfare going on between...the ‘noble’ cells [of the organs, for example]... and those of the lower order, the ‘phagocytes’ or eating cells.” “The Prolongation of Life” *The Youth's Companion* June 18 1908.

to change, however: “A little later the same doctor might subscribe to phrenology, which let interior states be ‘read’ off from lumps on the head” (2). And “by the early twentieth century...a range of changes had taken place, culminating in ‘Flexnerian medicine’ — the research-oriented, specialized, scientific medicine codified in the 1910 Flexner Report in America” (2). One of the key assumptions of “Flexnerian medicine” was that “the highest level of medical knowledge came from studying the smallest and most basic level of organization” (Brody). Thus, when Stephens looked for the key to “natural salvation” in cellular nutrition, his attempt to isolate the mechanism of aging on “the smallest and most basic” levels was in keeping with prevailing views of what scientific medicine ought to do. Similarly, albeit in less detail, articles like “The Shrinkage of Age” encouraged people to understand aging as an internal process, happening on levels beyond their immediate detection. Importantly, once aging was seen as a biological problem, it mandated a biological solution, to be proposed by those with the authority to speak about biology.

In her wide survey of popular magazines and newspapers, historian of science Laura Hirshbein argues that popular press coverage of the topic of aging in the early twentieth century most often featured older people discussing and defining their own experiences of aging. She concludes that old age was not at this time wholly associated with mental or physical decline (in marked contrast to the 1940s, in which she argues the rise of geriatric and gerontological professional authority was accompanied by a more clearly defined association with decline).¹³ While several articles and short stories from

¹³ In her dissertation “The Transformation of Old Age: Expertise, Gender, and National Identity, 1900-1950,” Hirshbein argues that the “authority” for defining what old age is and could be gradually shifted in the first four decades of the twentieth century from older people themselves to “aging professionals” in the newly created fields of geriatric psychology and gerontology. According to Hirshbein, in the first two decades of

the *Companion* evidence older people self-authoring the experience of aging—effectively supporting Hirshbein’s thesis—other examples from *The Youth’s Companion* show competing voices and visions of aging even before the turn of the century. In particular, they reveal an increasingly authoritative medical voice which asserted that older people did not have the capacity even to recognize, let alone authoritatively speak about, their own decline.¹⁴ For example, the conclusion to the article described above, “The Shrinkage of Age,” shifts from descriptions of biological decay to the decay of older people’s functional capacities. While it acknowledges that “some old persons are apparently as capable as ever” in later life, the article quickly reasserts “but this is only in certain lines where they have the advantage of earlier habits and all previous accumulations. Their versatility, their power to turn effectively in other directions, to train themselves to new intellectual habits, is far from what it once was.” The lost power to adapt to “new intellectual habits”—a medical pronouncement on the functionality of the aged—became the aging man’s inability to judge his own capacities: “it is often the

the twentieth century “many of the popular magazine articles that addressed [the topic of old age] were written by or about older people and discussed aging in terms of older people’s definitions of the later stage of life.” She finds more positive representations of aging in these early decades, insisting that “within American popular press discussions of old age in the early twentieth century, there was no necessary correlation between advanced age and any specific mental or physical state” Hirshbein, “Transformation” 1,31.

¹⁴ For articles and fictional stories in which older people speak authoritatively about the experience of aging, see Mary Gilbert, “Renewing Her Youth” *The Youth’s Companion* September 14 1905; Rev. Edward Everett Hale and Col. Thomas Wentworth Higginson, “On Keeping Young” *The Youth’s Companion* December 19 1907; Julia Ward Howe, “Keeping Young” *The Youth’s Companion* January 7 1909; Helen Ward Banks, “Mrs. Pepper Passes” *The Youth’s Companion* April 5 1917; and Winifred Kirkland, “The Girl from the Young Women’s” *The Youth’s Companion* September 26 1918.

case...that an old man does not perceive his intellectual shrinkage as clearly as others see it" ("The Shrinkage of Old Age").¹⁵

This "authoritative" scientific voice not only denied the "subjective" authority of older people speaking about the experience of aging, but also redefined the nature of aging itself. In essence, old age was being medicalized; that is, the study of aging and its most authoritative descriptions were coming to be seen as the proper province of the field of scientific medicine. In these medicalized descriptions, the physiological changes of aging—rhetorically presented as physical decay—became the "normal" course of aging. As one illustration, in an 1893 medical column on "Old Sight," the author writes that what is called "old sight" does not "indicate old age:" "It precedes the age even of forty-five, though till about that time persons with normal eyes remain unconscious of it. The change is not pathological, but physiological; that is to say, it is not the result of disease, but occurs in the regular course of nature. It is a part of the general change that hardens, and to some extent shrivels, the muscular system" ("Old Sight"). With the focus of "aging" on inner, biological processes, the charted process of decline—

¹⁵ Among the notable "exceptions" to such inevitable loss, and one of the remarkably consistent models of positive aging to be found in *The Youth's Companion* during these decades, is the British Prime Minister William Gladstone. "The Shrinkage of Old Age" says of the prime minister: "Men like Gladstone seem to be exceptions, but such as he are born for a hundred years. Their old age comes later." William Gladstone served four terms as England's Prime Minister between the years 1868 and 1894. Born in 1809, he was still serving in political office into his eighties, and died in 1898 at the age of 89 years old. He has a regular presence in the discussions of aging within *The Youth's Companion* up until his death, in which he is almost always held up a model of exemplary aging: active and productive, yet recognizing the need for recreation, rest and moderation in all things. His successful management of his aging is negatively contrasted with that of Otto von Bismarck, who served as the Chancellor of Germany up until 1890 and, like Gladstone, passed away in 1898 at 83 years of age. Bismarck, forced to resign the chancellery by Emperor Wilhelm II, was described in 1897 as making "recent utterances" that "declare that his existence is no longer of any use.... Restlessness and lamenting and acrid criticism, too, are conspicuous features of these last years of his wonderful life." This is contrasted with Gladstone who is still "strong to labor, high in courage, benignant in spirit." "Gladstone and Bismarck" *The Youth's Companion* March 11 1897. For other examples of Gladstone as a positive model of aging, see "Longevity" *The Youth's Companion* September 24 1891; "Overwork and Underwork" *The Youth's Companion* May 18 1893; "Hygienic Ignorance" *The Youth's Companion* April 12 1894; "The Real Gladstone" *The Youth's Companion* April 8 1897; and "Famous Old People" *The Youth's Companion* February 10 1898.

pathological in terms of “normal’ adult functioning—became the norm of aging individuals. Sociologist Stephen Katz notes that this “medicalization of old age” created a paradox in the earliest formations of geriatrics and gerontology at the beginning of the twentieth century. On the one hand, the aged body was “examined according to the pathological signs of senescence that separated it from the bodies of other ages;” on the other hand, these pathological signs “were considered to be normal in old age no matter how diseased or dying the body” (Katz Disciplining Old Age 44). Thus, within this paradox, old age was both “a disease and not part of healthy physiology” while at the same time “its pathology [was] its normality” (Katz Disciplining Old Age 83).¹⁶ Essentially, normal “old age” was depicted as a pathological, or diseased, state, leading to permanent associations between aging and disease, and to some speculation that aging was itself a disease.¹⁷

Within this logic of the pathology of “normal” old age, there was a further distinction drawn between a normal (pathological) old age and an ideal old age, a distinction that maps neatly onto the contemporary gerontological concepts of “usual” and “successful” aging, and that lies at the heart of the first narrative I am tracing.¹⁸

¹⁶ Katz further argues that this medicalization of old age drew upon a “discourse of senescence” in late eighteenth and early nineteenth century medical research “that captured the aged body through three commanding perceptions” (40). These perceptions were of 1) *the aged body as a system of signification* in which the “signs on the surface of the body were... fixed to signify all that was layered within the body” (40); 2) *the aged body as separate*, having its own “distinct pathological anatomy” that led “age” to become a foundational basis for treatments for disease (41), and; 3) *the aged body as dying*, a perception made possible as clinical research “relocated death as a traceable presence within the body” thus “[transforming] the aging process into a constant dying” (41). Katz suggests that in the early twentieth century, “the microscopic assiduity of the medical gaze technically enhanced the discourse of senescence” while “the binary logic of the *normal* and the *pathological* conceptually legitimated it” (43). Katz, Disciplining Old Age

¹⁷ For more on this, see Chapter 3: “Disease or Decay?: The ‘Nature’ of Old Age and What to Do About It.”

¹⁸ The concepts of normal and pathological have retained their paradoxical relationship with respect to aging in contemporary gerontology and geriatrics through the notions of “successful” and “usual” aging. As with many medical categorizations, aging is often divided into pathological and normal aging. However, normal

Within this distinction, “usual aging,” while not the overt disease state of “pathological aging,” describes the typical course of physical and functional decline that marks senility. “Successful aging,” on the other hand, occurs when the advancing years, despite biological changes, do not bring changes in experienced bodily function (i.e., the “normal” functioning of mature adulthood is maintained). In effect, “successful aging” is about not aging (or, at least, not showing the signs of aging) at all. Within one of Stephens’ medical columns from a 1914 issue of the *Companion*, this distinction between usual and successful aging is laid out in the terms of “senility” and “old age:” “Senility and old age do not mean the same thing, although many people seem to think they do. Happily, it is quite possible to live to an advanced age without suffering to any great extent from the deterioration of structure that is implied in the word ‘senile.’ But do not forget that even the most healthy old age causes a general ‘slowing down’ of the vital powers” (“A Long Life”).¹⁹ In this final rejoinder, we see a reassertion of the inherent pathology of normal old age. The ideal, however, is clear: an old age where the passing

aging is further subdivided into successful and usual aging in order to “recognize the large heterogeneity within the normal category.” Richard Schulz and Jutta Heckhausen, “A Life Span Model of Successful Aging” *American Psychologist* 51 (1996): 702. A 1999 Gerontology textbook explains the difference between these terms: “Whereas most people tend to show *usual patterns of aging* that reflect the typical, or normative changes with age, other people show *successful aging* in which few signs of change occur.” John C. Cavanaugh and Susan Krauss Whitbourne eds. *Gerontology: An Interdisciplinary Perspective* (New York: Oxford UP, 1999) 4. Thus, pathological aging often indicates the presence of disease, perhaps compounded by the physiological changes of aging. Usual aging, while not in itself a disease, shows expected pathological changes from the “normal” functioning of mature adults. Successful aging maintains the “normal” health of adulthood, i.e., according to the logic of these categorizations, successful aging means not aging at all (in terms of physical function).

¹⁹ Several scholars have traced the historical shift in the meaning of the word “senile.” Where it once meant anything suited for or related to old age (these could be positive connotations as well as negative), by the late nineteenth century it had come to solely indicate age-related illness and pathology. For more, see Carole Haber, *Beyond Sixty-Five: The Dilemma of Old Age in America’s Past* (Cambridge: Cambridge UP, 1983) 73-4; Katz, *Disciplining Old Age* 41; and Henning Kirk, “Geriatric Medicine and the Categorisation of Old Age - the Historical Linkage” *Ageing and Society* 12 (1992): 491-2.

years have not brought “suffering” from physical “deterioration,” i.e. where the inevitable, internal physiological changes of aging have not manifested themselves as observable “symptoms.” While never denying that aging will bring internal, pathological changes, the “ideal old age” is presented as one in which all the signs that mark the appearance and performance of old age are successfully postponed. It is, effectively, the ideal of an “ageless” old age.

This ideal is made explicit in a 1916 article by Rupert Blue, Surgeon-General of the US Public Health Service, titled “What Medicine Has Found: II. Prolonging Life.” The terms of Blue’s argument are different—“aged” takes on the negativity above prescribed to “senile”—but his line of reasoning mirrors the above example:

It is one thing to be old and quite another to be aged. Some people become aged before they have lived long enough to be old. Others who are really old have not yet become aged—that is, the processes that mark the beginning and progress of senility have not yet begun in them.

There is no objection, then, to being old. All of us wish to be old some day. But none of us want to be aged. We would avoid senility—at all events postpone it to the latest possible moment. (Blue 99)

Here “aged” and “senility” describe a pathological and undesirable old age, while “old” stands in for the ideal postponement of senility despite advancing years. Blue offers several suggestions for how one might prolong life and postpone senility—i.e., successfully reach the ideal “ageless” old age—from moderation in diet, exercise and sleep to balancing work with play and associating with younger people.

Interestingly, in the article’s concluding lines, a slippage occurs between Blue’s distinction of “old” from “aged” or senile: “Every person who is approaching old age should make up his mind to try beyond all things to be cheerful.... As a result, we not only get a great deal more enjoyment out of the remaining years of our life but we postpone to the utmost the arrival of old age” (100). In this subtle rhetorical shift, the

goal of postponing senility becomes the goal of postponing old age, and “old”—which “all of us wish to be...some day” and to which “there is no objection”—becomes the end state against which all of Blue’s recommended preventative health measures are exercised. Blue’s preventive measures are ostensibly aimed at putting off for as long as possible a senile, dependent old age, but as the words and distinctions blur, it becomes old age—in any form except the ideal “ageless” one where the functional and apparent changes of age are not manifest—that the readers are advised how to prevent. This example suggests that in spite of whatever distinctions people attempted to draw within the category “old,” “old” was always ultimately defined against the category “not old,” where “old” was the devalued half of that dichotomy. Behind his rhetoric—and with the authority of his position as the Surgeon-General—Blue not only promoted an ideal “ageless” old age that excluded growing old itself, but also indicated that this ideal was a realistic possibility for those who would adhere to his medical advice and “take care” of themselves.

While health reformers and those offering tracts on how to attain longevity had been insisting for centuries that careful attention to diet, exercise and other “self care” habits could lead to a long and healthy life, I identify a subtle shift in their messages—much like that discussed in Blue’s article—around the turn of the century. Buoyed by the rise of “modern medicine,” the bacteriological identification of specific pathogens behind communicable diseases, and growing knowledge of the previously uncharted cellular building blocks of human life, experts were able to envision—and to promote to the public—the possibility of greatly extending the life span and intervening into aging on entirely new levels; in other words, they could not only promote the possibility of achieving a much longer life and a good old age, but they could also now conceive that

science might allow people to enjoy their longer lives while avoiding growing “old” entirely. Historian Thomas Cole positions this optimism about the attainability of an ideal “ageless” old age as part of a “prolongevity movement” arising in America between 1890 and 1925 (Cole 175).²⁰ This movement was marked by the view of aging as “a chronic disease, susceptible to treatment and eradication” and an optimism that “modern medical therapeutics and proper hygienic regimen could defer significantly, if not indefinitely, the onset of senile changes” (Cole 179).²¹ Stephens certainly held this optimistic view, and it leaked out into the pages of *The Youth’s Companion* as well.²² A close examination of the *Companion* articles reveals the particular ways in which this optimism about extending life and delaying the onset of “old age” was conveyed to the literate public (at least to the hundreds of thousands of readers of *The Youth’s Companion*), and the measures with which the public was called upon to respond. In brief, this optimism was conveyed through messages about the nature of longevity and the problems of excess, and the response required from the individual was “moderation.”

The *Companion* shows that behind the turn-of-the-century optimism that old age could be postponed lay an understanding of longevity as something both heritable and influenced by one’s habits. With resounding overtones of the contemporaneous

²⁰ “Prolongevity” is a term originally coined by Gerald Gruman to mean “the significant extension of the length of life by human action.” Gruman, *A History* 3. It encompasses notions of scientific rejuvenation, immortality and longevity despite the subtle differences in each of their goals.

²¹ Similarly, Laura Hirshbein describes the first two decades of the twentieth century as “a time when Americans became convinced that life extension was possible and could even be a measure of national progress.” Hirshbein, “Transformation” 36. For more on the view of aging as a disease, see Chapter 3.

²² To provide one explicit example of the promotion of prolongevity, a 1909 *Companion* article reports on the retiring presidential address of Professor Edward L. Nichols to the American Association for the Advancement of Science: “Professor Nichols then went on to say that biologists are beginning to intimate the possibility, remote but thinkable, of a considerable extension of the term of bodily life, and that it is equally conceivable that the human race may so modify and control conditions as greatly to prolong its career.” “Science and the Future” *The Youth’s Companion* March 11 1909.

eugenics movement, the *Companion* told its readers in 1891 that they could “have no more valuable possession than a good heredity—an inheritance of longevity; and if this has not descended to us, it is generally because ancestors, more or less remote, have squandered it” (“Longevity”). This framing of longevity in economic terms was common throughout the decades surrounding the turn of the century.²³ So, too, were circumstances in which health was explicitly valued more than monetary riches: “To squander the vital inheritance of one’s offspring is vastly worse than to squander its large ancestral estate” (“Longevity”). In fact, in this moral economy of health, one article went so far as to suggest there might actually be an inverse relationship between longevity and wealth such that “most of the authentic examples of extreme old age are among the poorest classes, and they are usually persons who have worked very hard (often in the open air) and lived very frugally” (“A Long Life”). As the invocation of “hard work” and “frugal living” in this example implies, while longevity was understood to be heritable, it was also believed to be significantly influenced by lifestyle.²⁴ Taking up this theme, the *Companion* promised those unfortunate souls whose ancestral “stock” of

²³ For other articles which frame the value of longevity in economic terms, see “Long Life and Heredity” *The Youth’s Companion* September 2 1886; “Storage of Life” *The Youth’s Companion* March 14 1889; “The Use and Abuse of Health” *The Youth’s Companion* September 6 1900; “Health from Economy” *The Youth’s Companion* September 17 1908; “Health and Wealth” *The Youth’s Companion* April 1 1909; “Lengthening the Span of Life” *The Youth’s Companion* September 2 1909; “A Higher Value on Life” *The Youth’s Companion* December 14 1911; “The Price of Health” *The Youth’s Companion* March 14 1912; “Growing Old Too Soon” *The Youth’s Companion* December 12 1912; Richard C. Maclaurin, “The Profits of Scientific Research” *The Youth’s Companion* July 10 1913; “A Long Life” *The Youth’s Companion* April 30 1914; Dr. C. W. Saleeby, “The Longest Price of War” *The Youth’s Companion* February 11 1915; “Abstinence and Longevity” *The Youth’s Companion* January 25 1917; and “One Life for Your Country” *The Youth’s Companion* May 30 1918. Additionally, for more on this topic see Cole, *Journey of Life* 98-9. Cole describes how the metaphor of the body as capital was central to the rhetoric used by 19th century health reformers and remained commonplace long after popular health reform faded in the last quarter of the nineteenth century.

²⁴ The logic of this statement also reflects a version of the American dream wherein success is equated not with individual wealth, but with the national wealth that derives from the citizenry’s health and longevity.

longevity was of little value that “By obedience to the laws of health, [one] may reverse the hereditary tendency”(“Long Life”).²⁵

The key to influencing longevity lay in controlling “excess.” Readers were told that poor heredity could be compounded by, and even good heredity could be sacrificed to, the dangers of excessive living, where “excess” implied everything from food, drink and sex to work and worry. As one 1891 article summarized, “the danger of the adult age, especially in the highly artificial conditions under which a large part of the race now lives, is excess. This excess, or over-stimulation, it may be of the brain, the stomach, the animal passions; or it may run to amusements, or even to gymnastic sports. Whatever direction it takes, the end is nearly always the same—premature enfeeblement or death” (“The Adult Age”).²⁶ The dangers of “excess” were believed to be compounded by the continual migration of people from the country to the cities, and the existence of cities as the site of both a rising standard of living for some, and desperate slums for others. This was the lesson of history, according to one 1886 article: “History shows us that the ancient nations perished because power and prosperity brought to one class luxury and effeminacy, and to the other crushing poverty,

²⁵ For other articles which assert that behavior influences heredity in the determination of longevity, see “Old Age” The Youth's Companion September 1 1887; “Storage of Life” ; “The Age of Decay” ; Sir Benjamin Ward Richardson, “How to Prolong Life” The Youth's Companion February 6 1896; “After Middle Age” The Youth's Companion February 23 1899; “Use and Abuse” ; “Growing Old Too Soon” ; and “The Length of Life” The Youth's Companion March 22 1917.

²⁶ On the perception of excess, one 1891 article speaks to the body as “a living machine... made to run a hundred years or so, but liable, by bad management, to be disarranged and brought to untimely destruction. That drunkards, debauches, gluttons, and the devotees of sensual pleasures generally, do not live out half their days, is plain to every one. But all continuous physical transgression, however innocent it may seem, is followed by a like retribution. Such is the punishment which overtakes multitudes who overwork their brains and underwork their muscles; of not a few who waste vital energy with anxiety, fret and unstinted care; of many who overlook the great law of their physical being that makes daily recuperation depend on the interchange of work and rest.” “Longevity” This admonition against excess explicitly shifts from a moral register (drinking and debauchery) to what we might call a “modern” register, one concerned with the reshaping of individuals’ health and lives by the processes of industrialization, a rising standard of living and the increase in managerial (i.e. “brainwork”) labor.

and thus to both every possible vice and physical degeneration.... [I]t is the cities that are the centres of decay" ("Physical Decay").²⁷

In the face of such dangerous excess, the solution was "moderation"—a word repeated over and over within the pages of *The Youth's Companion*. A fairly thorough and representative sample of health advice for "moderate" living might include:

Be as much in the open air as possible, take plenty of exercise, and above all, breathe deeply and regularly. Live on a simple diet, eat meat only once a day, and take care to chew your food thoroughly. Go to bed early and rise early; sleep in a dark and quiet room with open windows, and take never less than six or more than seven and a half hours if you are a man, or more than eight and a half hours if you are a woman. Avoid worry about the things that have happened and cannot be helped, or that may happen and cannot be foreseen, and be temperate to abstemiousness in the use of alcohol, tobacco, tea and coffee. ("Growing Old Too Soon")

Counsel such as this was very much in keeping with general hygiene and public health recommendations of the time. It is worth noting, however, that in this example and in many others from the time, these admonitions were applied not toward achieving some general idea of "good health," but rather specifically toward avoiding "growing old too soon." The economic metaphors for longevity remained present in these discussions of moderation. "The little daily precautions" of good health, so the circulating narrative went, were a solid investment toward the achievable goal of life extension: "The time they take is more than repaid by the dividends which accrue to the paid-up policy of reasonableness and self-restraint" ("Lengthening"). The nature of such "dividends" was clear: "No man who takes care of himself begins to be old before he is seventy" ("The Shrinkage of Old Age").

²⁷ For more on the way that such "modern" excesses were framed as city vs. country and white/American vs. ethnic/immigrant, see Chapter 2: "Efficiency, Obsolescence and the Human Scrap Heap."

Attention to developing moderate health behaviors in order to impact one's future aging was presented as important at all stages of the life course. Based on the idea that health and longevity were the accumulation of a lifetime's health behaviors, some went so far as to assert that "The business of postponing old age should properly begin in infancy" (Blue 99).²⁸ Intervening early in life was also important because of the perceived "conservatism and mental rigidity natural to age" ("Twig and Tree").²⁹ However, even if one had not been raised to these values from birth, intervention was still seen as very important for "a person who has reached middle life, and who wishes to live to be old" ("A Long Life"). And while "moderation is wisdom for all...it is absolutely necessary for the old" ("A Long Life").³⁰ In short, the readers of *The Youth's Companion*

²⁸ Similarly based on this notion that health habits must begin as early as possible, another article claimed that "only from helpless infancy can the future [of the nation] be raised." Dr. C. W. Saleeby, "The Origin of Adults" *The Youth's Companion* June 8 1916: 315. For another article which speaks to the effects of childhood experience and behaviors on later life, see "Youth and Health" *The Youth's Companion* July 14 1887. The relationship between infancy and old age was complicated; old age was seen as the antithesis of youth, suggesting discrete stages of life, at the same time that one's old age was seen as the product of one's activities from youth to the present, suggesting a continuum of development. For example, a 1901 medical column emphasized fundamental biological differences between young and old: "Infancy and old age are frequently referred to as analogous states. In point of fact they are much more nearly opposites. Infancy is the expanding, rapidly developing period, while old age is a time when the tissues shrink, as it were, to accommodate the lessening vital forces." "Health in Old Age" From the processes of development to the manifestation of disease, the body in old age was seen as essentially, physiologically different from the younger body. At the same time that youth and old age were declared "opposite" rather than "analogous" states, the moral narrative of the need to "take care of oneself" connected these two states, as the behaviors and habits of one's youth were believed to determine the nature of one's old age. Thus, the line between youth and age—a line marking both absolute difference and direct influence—was paradoxical, strictly demarcating that which it judged always in relation. For other examples of articles that assert fundamental biological differences between youth and old age, see "The Shrinkage of Old Age" *The Youth's Companion* December 11 1890; "The Age of Decay" ; "Recuperative Power in the Aged" *The Youth's Companion* December 8 1892; "Health in Old Age" ; "Disease in the Aged" ; "Postponing Old Age" *The Youth's Companion* October 15 1903; "The Care of the Aged" *The Youth's Companion* June 18 1914; and "Growing Old Too Early: II. Arteriosclerosis - the First Signs"

²⁹ By the time of old age, one's character was supposed to be fixed: "The tree full grown cannot bend. As it grew, so it stands." "The Twig and the Tree" *The Youth's Companion* November 14 1901. For other articles that represent older people as incapable of change, see "Young Folks and Old" *The Youth's Companion* May 29 1902; and "The Care of the Aged"

³⁰ In addition to cultivating good health habits, older readers were encouraged to nourish a youthfulness of spirit, though they were frequently warned that they must never attempt to ape the young in manner or dress. For articles and stories that call for older people to try to "think young," to act cheerful or to nurture

were inundated with the message that they were responsible for “taking good care of [them]selves,” and by such, ultimately responsible for their health and eventual old age at every stage of their life (“Long Life”).³¹ Within the logic of this “self care ethos,” an undesirable old age could be regarded as a moral failure to live up to these responsibilities so clearly delineated by contemporary medicine and public health.

Conceiving of a dependent old age as a moral failure was not new at the end of the nineteenth century. Thomas Cole argues that where many nineteenth century Americans sought the authoritative “meaning” of aging in religion, by the turn of the century they were looking instead to science and scientifically prescribed health behaviors; where the infirmities of old age had once been seen as “inevitable

their inner life, see "Premature Wrinkles" ; "Mind and Body" The Youth's Companion December 18 1890; "The Age of Decay" ;"The Adult Age" The Youth's Companion April 9 1891; "Always Young" The Youth's Companion August 31 1893; "Gladstone and Bismarck" ; "After Middle Age" ; Gilbert, "Renewing Her Youth" ; Hale and Higginson, "On Keeping Young" ; "Living up to Youth" The Youth's Companion November 12 1908; Howe, "Keeping Young" ; Thomas L. Stedman, "The Popular Health Article" The Youth's Companion March 25 1909; "Growth and Age" The Youth's Companion April 2 1914; Blue, "What Medicine Has Found: II. Prolonging Life" ; "The Acme of Life" The Youth's Companion March 23 1916; Banks, "Mrs. Pepper Passes" ; "Inventing Life" The Youth's Companion April 25 1918; and "Deceiving Age" The Youth's Companion May 23 1918. For articles that warn of the folly of “apeing the young,” see "A Long Life" ; "Dress and Age" The Youth's Companion December 31 1914; "Dress and Character" The Youth's Companion June 10 1915; and "Deceiving Age"

³¹ For more articles which address the excesses of modern living and the need for moderation at all stages of the life course, see "Cautions for the Aged" ; "Youth and Health" ; "Old Age" ; "Storage of Life" ; "The Shrinkage of Old Age" ; "Mind and Body" ; "The Age of Decay" ; "Overwork and Underwork" ; "Health and Physical Beauty" The Youth's Companion April 12 1894; "Work and Health" The Youth's Companion February 7 1895; Richardson, "How to Prolong Life" ; "Genius and Old Age" The Youth's Companion April 8 1897; Mary Putnam Jacobi, "The Growing Child" The Youth's Companion December 28 1899; "After Middle Age" ; "Use and Abuse" ; "The Hygiene of Old Age" The Youth's Companion October 11 1900; "Longer Life, Fewer Deaths" The Youth's Companion November 21 1901; "Postponing Old Age" ; "Retarding Old Age" The Youth's Companion October 22 1903; "Fletcherism" The Youth's Companion April 2 1908; "Health from Economy" ; "Hardening of the Arteries" The Youth's Companion June 3 1909; "New Cures and Old Troubles" The Youth's Companion July 24 1913; "A Long Life" ; "Growing Old Too Early: II. Arteriosclerosis - the First Signs" ; "Growing Old Too Early: V. What Can We Do for Arteriosclerosis?" ; Blue, "What Medicine Has Found: II. Prolonging Life" ; "Self-Restraint That Pays" The Youth's Companion June 8 1916; "The Length of Life" ; "One Life for Your Country" ; "The Senile Heart" The Youth's Companion June 27 1918; and "Care of the Senile Heart" The Youth's Companion July 4 1918.

consequences of original sin,” they were now perceived “as results of individual moral failure” (Cole 104). As Cole suggests, the “reterritorialization” of aging by science did not remove the moral judgment that accompanied poor health, and an infirm old age in particular. A 1908 *Companion* article neatly articulates how the laws of health, once generated by the moral realm of religion, were now shown to be authoritatively proven by empirical science: “What the moralist knew by observing men, the physician proves by experiment, and proves it so that no man of sense can dodge the facts” (“Science, the Moral Teacher”). Thus, the dictates of this self-care ethos, many of them emerging from religiously prescribed morality, came to be seen by the twentieth century as the mandates of empirical science and modern medicine. In turn, this scientific authority reconfirmed their moral correctness. The rules for the self-responsibility for one’s health bore both the indisputable stamp of scientific precision and the religious remnants of moral judgment, ensuring the righteousness of viewing infirm old age as an individual’s personal, moral failure to adhere to infallible scientific prescription. This ethos of self-care as it related to one’s old age—what I identify as the narrative of an ideal “ageless” old age possible through “taking care of oneself”—was focused on the individual. However, once such health maintenance was perceived as essential to national health and wealth, it became promoted as part of the duties of citizenship. This brings us to the second, intersecting narrative so prevalent in *The Youth’s Companion*, one which positioned individual health and longevity as national resources, and the maintenance of these as citizens’ duties to themselves, their comrades and their nation.

National Needs and Moderate Measures

“You have but one life, and your country may want that one long

and want it at its best.
("One Life for Your Country")

The same economic metaphors used to describe an individual's longevity as an "inheritance" that could be both accrued and squandered were also employed at the national level; the general metaphor of the body's health and longevity as capital figured in discussions of America's wealth, success and international supremacy. In the most general sense, health and longevity were used as measures of the progress of (nationalized) medical science and features by which nations were compared, whether through average life expectancies (which were advancing significantly at this time), the number of each nation's centenarians, or by placing citizens' health in relation to international competition ("The Progress"; "Oldest Man").³² For example, a 1904 article reported that in Japan, "health is not only the fashion—it is the universal habit," a characteristic which was ascribed as, at that moment, enabling Japan to triumph over the "huge and powerful nation" of Russia ("Where Health"). But individual citizens' *"life capital"* was also explicitly and directly tied to national capital, such that MIT president Richard C. Maclaurin could declare in 1913 that "anything, therefore, that is done to improve the health and productive capacity of the worker, and to prolong his life, is a direct contribution to the national wealth" (Maclaurin). Such a relationship had been governmentally sanctioned four years earlier when the conservation commission appointed by President Roosevelt included in its reports attention to "National Vitality," declaring therein that because "the greatest of our national assets is the health and vigor of the American people our efficiency must depend on national vitality even more than

³² Life expectancy from birth rose dramatically around the turn of the century. See the introduction for more information.

on the resources of the minerals, lands, forests, and waters” (Fisher Report on National Vitality).³³ That the moral economy of health perpetuated by this report filtered out to the larger public is evident from examples such as the following from a 1911 *Companion* article: “The conservation commission appointed by President Roosevelt made the estimate that, considered merely as capitalized working power, our population is worth from three to five times all our other capital, and that the unnecessary loss of life among us costs the nation a billion and a half dollars every year” (“Higher Value”). Simply put, citizens’ lives and health were perceived as having fiscal value to the nation. The idea that long life and “good health [were] good business” for the nation was a popularly circulating narrative in the early twentieth century (“Health and Wealth”).

However, at the same time that a high average longevity was considered a mark of a nation’s success, by the early twentieth century, the nation’s youth—both literal and metaphorical, both existing and projected through concerns about the future of “the race”—were credited with maintaining that success. It was “commonly noted... that this [was] the day of young men” (“Not Superannuated”).³⁴ A 1903 article speculated on the reasons behind America’s international successes—from its third consecutive triumph in the *America’s Cup* to the industrial efficiency that guaranteed its international contracts

³³ A separate third volume of this report, entitled “National Vitality; its wastes and conservation,” was penned by the popular health reformer and prominent economist Irving Fisher. For more on this report, see Chapter 3: “Disease or Decay?: The ‘Nature’ of Old Age and What to Do About It.”

³⁴ The ascendancy of “youth” within the magazine increased steadily throughout the years that I examined, to the point where one can observe a cultural shift from expected reverence for old age to reverence for youth. While an 1887 article speaks of “that respect for age which is paid to them by younger people,” a 1902 article, in the name of advocating parental respect, suggests that “the first lesson that the young need to learn about their elders is that change of the point of view is difficult, if not impossible, for them,” and by 1918 an article observes the good manners of “our young people... toward their elders” and questions indignantly: “For this graceful submissiveness of youth does middle age or advanced age make an adequate return?” “Old Age” ;“Young Folks and Old” ;“The Dues of Age to Youth” The Youth’s Companion February 21 1918.

for bridge building and locomotives—and credited these successes to the youthfulness of America:

In the first place, we are young; neither the national mind nor the national body has had time to stiffen into senility....In the next place we have no matured and weakening racial stock, but one which is constantly rejuvenated and revived by the introduction of fresh blood from every nation in the world. That, too, tends to vigor....We work as young men work, eagerly and energetically, and we have the young man's impatience of precedent and conservatism; therefore we are ready to adopt new ways so soon as they are proved to be better ways. ("Advantages")

The values expressed here no longer reflect an appreciation of "experience" or "wisdom" (translated into "precedent and conservatism"); rather, speed and adaptability are the valued skills, traits which were being extolled by rising interest in scientific management and which were simultaneously being located within certain types of (young) bodies to the exclusion of other (older) bodies.³⁵ Instead, it is the relative youthfulness of the country, of its attitude and of its workers that receive the credit of America's international ascendancy.

However, this same national youthfulness and vitality was also the focus of significant concern around the turn of the century. For example, some *Companion* articles evinced anxiety over declining birth-rates among Anglo-Saxons, and affirmed the "actual, definite, tangible fact" of "what President Roosevelt calls 'race suicide'" (North 284).³⁶ Longevity was a part of this eugenic equation, as Anglo-Saxon heredity was positively identified with longer, healthier living.³⁷ Such concerns were expressed,

³⁵ For more on the rise of scientific management and the gradual shift from a valuation of experience to efficiency in the workplace, see Chapter 2: "Efficiency, Obsolescence and the Human Scrap Heap."

³⁶ See also, for example, "The Birth-Rate" The Youth's Companion April 29 1909.

³⁷ For example: "The living organism that possesses the power of long vitality can, to a certain degree, be identified. The color of the eye of the long-lived is usually bright hazel, the hair is brown, the skin is inclined

however, amid constant reassertions of generational improvements in Americans' physiques: "The new generation of Americans, those of the well-to-do classes at least, is taller and better built than the old....making our children the superiors, physically at least, of their parents" ("Larger and Healthier").³⁸ These "physically superior" progeny were seen as holding the key to America's future. So much so that during the first World War, one commentator would call the lost heredity of young, able-bodied men "the longest price of war," and in light of America's much lower casualties, would conclude "that the future leadership of mankind must be transferred from Europe across the Atlantic" (Saleeby "Longest Price" 72). Similarly, if America, like Great Britain at the time, was experiencing racial decline by numbers, there was comfort to be taken in America's greater racial physique: "At a time when England has had to consider the problem of national physical deterioration, it is gratifying to know that the tendency in this country is in the right direction" ("American Physique 2").³⁹ Here again, as with the promotion of an ideal "ageless" old age, there was a very narrow subject position created for older citizens within the rhetoric of national and international success. A long life was a national value, but success and productivity came from health and youth, thus

to be florid, the lips and eyes are of a good, natural red, never pale, and rarely of a bluish tint." Richardson, "How to Prolong Life": 68.

³⁸ Another article reports "a general impression that the stature and strength of Americans is increasing. The sons appear to be taller, on the average, than their fathers, the daughters to overtop their mothers." "The American Physique" The Youth's Companion July 16 1908.

³⁹ Another example: "As a nation the Americans are not deteriorating physically; they are improving....there is nowhere any need of a commission like that which Great Britain found necessary after the Boer War, to investigate the cause of the physical deterioration of the race." "The American Physique" The Youth's Companion November 30 1905.

a *valuable* long life was one where one aged healthily, but did not grow old and “stiffen into senility.”

Just as youthful health and longevity were framed as valuable national resources, so too were the fears of “excess” which threatened these resources and the call for “moderation” in health behaviors framed in specifically national terms. Those fears of individual “excess”—in diet, drink, lifestyle, worry, dissipation, etc.—which fueled the self-care ethos were generalized, on the national level, into concerns about “American temperament.” For instance, a five-part series in the *Companion's* medical columns focused on “Growing Old Too Early” commented that “the Americans as a people have too often idealized hurry as a thing good in itself.... It is, when all is said and done, a defect in our national temperament,” if not a threat to U.S. standing in the international order, for “Americans break down prematurely much oftener than Europeans do” (“Growing Old Too Early: I”).

The problems of excess were linked to the discourse of race suicide as well, putting individual behavior choices into the calculus of both national and racial health. Physician, health reformer and cereal magnate John Harvey Kellogg was one popular figure who consistently linked these discourses. At a conference on “Health and Sanitation” in 1887, delivering a speech entitled “Are we a dying race?,” Kellogg asserted that “we are certainly going down physically toward race extinction” (Kellogg “Are We a Dying Race?” 1). Vital statistics (of the average length of life) are not the true measure of the constitutional vigor of the race, he argued, but rather *how many* people attain great age, and what power they have to resist degenerative changes. He saw this power as sorely weakened in “the man whose liver has been spoiled by whisky, tobacco, gormandizing, excessive consumption of effete meats, or blistering condiments,” in other

words, by excess (5).⁴⁰ Relying once again on economic metaphors of longevity, Kellogg thus framed the problem of race suicide as caused by the dereliction of individual duty, by the succumbing of the individual to unhealthful excess: “Through the almost universal ignoring of the duty devolving upon every human being to preserve intact, as far as possible, the natural powers transmitted to him from his ancestors, and by training and painstaking development make the most of them, we find the human race deteriorating in physical stamina, and a rapidly growing multitude of “disinherited” individuals who are born into physical, mental, and moral bankruptcy” (25). In keeping with the identification of an individual problem, Kellogg advocated that “the remedy is to be found, not in the abolition of public hygiene, but in the cultivation of private hygiene. More attention must be given to the training of the individual” (28).

As the logic of Kellogg’s “remedy” reveals, the responsibility to care for the aging self was explicitly framed as “a duty” owed “to ourselves,” “to each other,” and to the nation (“Price of Health”). As expressed in one 1895 article, “everyone, in justice to himself, his family and the state, should devote some portion of his thought and time to a systematic care of his health” (“How to Keep Well”). To fail in such a duty was to become, in the words of a 1906 article aimed at discouraging young boys from smoking, “a burden to everybody—especially to your friends, to yourself most of all” (“The Boys’ Cigarette Habit”). It was also to fail the race—and in light of the tendency to consider race in relation to the state—to fail the nation. To become a “burden” because of poor

⁴⁰ Extolling again the moral economy of health, Kellogg argued: “The examples of great longevity are all to be found in the lowly ranks of life, among peasants and common laborers and a study of the habits of centenarians has shown them to be without exception, persons of simple habits of life. The majority of them used neither spirits nor tobacco, and many have abstained even from meat and stimulating foods of all kinds, living upon the simplest and most frugal fare.”

health choices was to contribute to race suicide and detract from national wealth: “Our benevolent care of the imperfect specimens of humanity—right and Christian as we must believe it to be—is at the expense of the race as a whole” (“The Period of Development”). On the other hand, adherence to good health behaviors was rewarded through such institutionalized practices as granting lower life insurance premiums to teetotalers (“Insurance for Teetotalers”).

Such responsibility for individual health, and by proxy for national health, was very much in keeping with a rising “new view of the doctor’s duty to his patients.... He is not so much to cure them when they are sick, as to keep them from getting sick at all” (“Preventive Medicine”). By the logic of preventive medicine, if science has provided the formula for healthy living to the public, then it is the public that must accept responsibility for ill health: “We do not beat our physicians when we are sick, as do the Chinese according to tradition, but at least we may have the grace figuratively to scourge ourselves, because there is daily less and less excuse for us” (Stedman). Or, as another article suggests, once science has found a “cure” for “any human ill, it is then for humanity to take care of itself” (“The Control of Disease”). Thus, on the presumption that science did, in fact, have “cures” to offer, these narratives identified “good citizens” as those disciplined enough to follow physicians’ advice and maintain their good health; by extension, those whose health was not good could be seen as failing in their citizenship duties. As one 1918 article summarized it: “You have but one life, and your country may want that one long and want it at its best” (“One Life for Your Country”).

Specifically in terms of old age, this nationalized narrative of self-care could only interpret a dependent old age as a failure to have fulfilled one’s citizenship duties. Rather than make allowances for the increasing needs which one’s health habits must

accommodate as one ages, the message instead was that vigilance was simply ever more necessary. One 1914 article on “Dress and Age” admonished its readers: “Never say or think that your body is not worth care any longer. Remember that others have to live with you, and that your untidiness means their discomfort. If you brushed and sponged and mended when you were young, do it three times more when you are old” (“Dress and Age”). As one’s health in old age was seen as the result of an accumulated lifetime of health behaviors and of one’s willingness to continue performing these behaviors as the need for them increased, then an unkempt and dependent old age was a moral failure of duty to self, society and state, the result of “a daily sinning against health” (“How to Keep Well”). Maintaining healthy independence was the citizen’s duty to the nation; by this logic, it was *not* the nation’s duty to support its older, dependent citizens. Accordingly, amid many articles commenting on the national pension systems developing in Europe, one 1909 article concluded that “Americans, who cultivate the spirit of self-help and individual independence, may continue long to stand alone as a Western nation without old-age pensions” (“Old-Age Pensions”). The very idea of a pension system, of the nation’s *responsibility* to care for its older citizens, was unintelligible within the logic of self-responsibility for one’s health coupled with the widely-circulating narrative that it was, in fact, possible to postpone growing “old.”⁴¹

The Aging Biological Citizen

To think through the implications of the narrative of self care as a national duty that I am describing here, particularly as they relate to aging, I find it useful to turn to the

⁴¹ For more on the ideology behind the United States’ reluctance (and comparatively late acquiescence) to adopt a national pension system, see Chapter 2: “Efficiency, Obsolescence and the Human Scrap Heap.”

work of Nikolas Rose and Carlos Novas and their concept of “biological citizenship,” a term they use to address the array of ways in which citizenship has been linked to or articulated in biological terms. Rose and Novas focus on the agency of both the state and of citizens. On the one hand, they explore the state’s “citizenship projects,” which they define as “the ways in which authorities [think] about (some) individuals as potential citizens, and the ways in which they [try] to act upon them” as biologically defined human beings, individuals, families, lineages, communities, populations, races or species (Rose and Novas 439). Yet they also consider the ways in which citizens make claims upon authorities on the basis of their somatic selves. Concerned with articulating the changes in biological citizenship taking place in our contemporary “age of biomedicine, biotechnology, and genomics,” Rose and Novas are interested in genomic databases, internet-facilitated patient advocacy, and other emerging developments which they use to argue that biological citizenship is taking a “new” form, one that is no longer fundamentally national but is rather “re-territorializing itself along national, local and transnational dimensions” (439-40).

Exploring the concept of biological citizenship a century earlier, I am instead firmly grounded in a national framework for citizenship. At the turn of the century, biological concepts and practices of race, degeneracy, eugenics and demography were employed to determine who was eligible to vote, to warn the nation of impending “race suicide,” to influence who should (and should not) reproduce, and many other such “citizenship projects.”⁴² Despite the “newness” for which Rose and Novas argue, many

⁴² Despite our rapidly changing world, I would suggest that aging—in the context of biological citizenship—not only came to bear particularly *national* significance in America in the late nineteenth and early twentieth centuries, but remains consistently framed at the level of a national concern yet today. The United States did not establish a national pension system until 1935, and did not institute a national health insurance

of the points they make about contemporary biological citizenship are illuminating for this project. They argue that biological citizens are not only identified through the interpretive, labeling gaze of professionals and experts, but they also come to understand “aspects of themselves or their identities” through a biological framework and use “biologically colored languages.... and the types of calculation to which they are attached, to make judgments as to how they could or should act, the kinds of things they fear and the kind of lives for which they can hope” (445-6). Rose and Novas describe the new responsibilities of biological citizens as a “regime of the self.”

Activism and responsibility have now become not only desirable but virtually obligatory – part of the obligation of the active biological citizen, to live his or her life through acts of calculation and choice. Such a citizen is obliged to take appropriate steps, such as adjusting diet, lifestyle, and habits in the name of the minimization of illness and the maximization of health. And he or she is obliged to conduct life responsibly in relation to others, to modulate decisions about jobs, marriage, and reproduction in the light of knowledge of his or her present and future biomedical make-up. The enactment of such responsible behaviors has become routine and expected, built in to public health measures, producing new types of problematic persons – those who refuse to identify themselves with this responsible community of biological citizens. (451)

I find this articulation of the “biological citizen” particularly insightful for thinking about aging and the way that aging individuals have been, and are still, identified as “problematic persons.”

Aging is one of the prime categories drawn upon by the classifying, “interpretive gaze” of authorities, resulting in the commonplaceness of such labels as “senior

program for seniors until 1965, and despite more recent attention to “global aging,” our most common discourse on aging remains attuned to these national citizenship projects and other nationally specific features (think of “the threat to Social Security” and the “impending Medicare crisis” predicted with the graying of the “baby boomer” cohort).

citizens,” “retired persons,” “the elderly” and “the oldest-old.” Several of these categories were not in existence at the turn of the century in America, but it was in these decades of rapidly increasing life expectancy and an increasingly visible population of poor older people in almshouses that “the elderly” became identified as a somewhat homogenous—as well as needy and problematic—population.⁴³ Like the notion of “genetic predisposition” that partly fuels Rose and Novas’s analysis, aging is fundamentally anticipatory in nature—so much so that even in the objective realization that “I am aging,” we tend to defer to a future moment (“but I am not yet ‘old’”)—making it suitable for the “management” strategies of a “regime of the self.” In a culture that additionally understands aging as an experience highly influenced by individual health behaviors, then many of these aging-related health behaviors become “routine and expected,” built into such public health recommendations as regular prostate examinations and mammograms, attention to cholesterol in the diet, admonitions against obesity, and counsel to take daily calcium pills and multi-vitamins beginning in childhood and to never forget sunscreen.

Our “regime of the aging self” has become so engrained in contemporary American culture that we regularly talk about “letting yourself go” and “not taking care of yourself;” similarly, we frequently judge whether someone looks good or bad “for their

⁴³ For more on the shifting populations within almshouses and the impact on public perceptions of aging, see chapter 2: “Efficiency, Obsolescence and the Human Scrap Heap.” Linking contemporary investigations of the scientific bases of aging (for more on this see Chapter 3) to the growing population of older people in almshouses, Stephen Katz writes: “The elderly population was made knowable on the basis of supposedly behavioral, physical, and moral ills specific to the age of its members. In this sense, the custodial and medical institutions were allied: the elderly population became a focus of almshouse-centered relief as the aged body became of a focus of hospital-centered medicine. Hence, the discourse on the aged body and the elderly population shared an institutional matrix in the late nineteenth century. Within it, old age was posited as a separate, subjective existence identifiable from the microscopic cell to the macroscopic population.” Katz, *Disciplining Old Age* 59-60.

age.” Part of the judgment behind these terms rests on the notion that beyond the barrier of “good health,” the ailing older person becomes a “burden,” to family, to community, to nation. I see the logic behind this regime of the aging self originating around the turn of the century in the intersection of the two narratives I have been tracing through *The Youth’s Companion*—the narrative of an ideal ageless old age achievable by disciplined self-care, and the narrative linking citizens’ health and longevity to the nation, and thereby promoting “moderation” and self-care as duties of citizenship. Through this logic, a “good” citizen was obliged to adopt appropriate health behaviors to minimize the dependency-inducing changes of aging and to maximize (healthy) longevity. To do otherwise was to become a “problematic person.”

Psychologist and pioneer of gerontology G. Stanley Hall made clear this problematic encumbrance of a non-ideal old age in a 1910 article:

The permanency of a civilization depends very largely upon the kind of old age it produces. If this is the ideal Ciceronian type of senescence, wherein the lessons of life are gathered and its philosophy matured, if it is an old age that is serene, poised, illuminating, it is the best age of all; but if, by overstrain or indulgence, it becomes querulous, exacting, disagreeable, *in need of constant care*, as is sometimes seen in old people’s homes and in families, then instead of being worthy of great reverence, *it is despicable*. (G. S. Hall "Age of Efficiency" my emphasis)

In these sentiments, Hall places the responsibility for a nation’s success (“the permanency of a civilization”) on the condition of its aged citizens, while he places the responsibility for the condition of its aged citizens on the aged themselves (those who might be guilty of “overstrain or indulgence”). While he does not emphasize the physical qualities of an ideal old age, they are made clear by his naming dependence (“in need of constant care”) a prime feature of a “despicable” old age.

In both this implicit gesture towards an “ageless” old age, and in his omission of any explicit identification of such, Hall’s quotation reveals the deep conundrum at the

heart of a “regime of the aging self.” While one’s moral character in old age (“serene, poised, illuminating”) may realistically be subject to an individual’s will, reaching an “ideal old age”—the absence of all physical or mental effects of aging—is hardly a guaranteed outcome of devotion to one’s health. The consequence of this “regime of the aging self”—in a world where a century later the physiological changes of age still defy our scientific, medical and personal attempts to postpone growing old—is a nation that problematizes dependent old age on many levels (economic, institutional, social, etc.) but that locates the source of this problem (and its invariably ineffective solution) in individual aging bodies, thereby creating “biological citizens” problematically situated in relation to their inevitable aging.

The Natural Salvation of Biological Citizenship

Under this “regime of the aging self,” the question then becomes—what to do with these “problematic persons” who do not have within their power the means necessary to make themselves unproblematic? This question was a practical one at the turn of the century, faced with a growing number of poor, dependent elderly people, but it was also a philosophical one. If we accept that “taking care of oneself” *does* affect how one ages, how do we avoid wholesale moral condemnation of the dependent elderly? We can of course refer to the iniquities of fate, but steeped in the self-reliance that is so foundational to the American dream, the tendency is still to “blame the victim.” The most logical solution to this quandary, so posed—which, like the problem itself, I argue first emerged around the turn of the twentieth century—is a solution which we in the twenty-first century readily accept as an obvious and valid goal: the scientific search for a more effective means of rejuvenation. It was already understood, as one piece of the narrative forming the “regime of the aging self,” that science was authorized to

prescribe the health behaviors that biological citizens must follow. It followed then that if the citizens' adherence to these rules did not produce the desired effect, science must improve its prescriptions. The problem of aging might be socially "managed," but it could only be "solved" by conquering aging at its very source. And if the problem of aging was seen to lie in individual biology, so too must the "cure" then come from biological science. By this logic, the quest for the Fountain of Youth—in the Petri dish and under the microscope—would eventually come to be seen as a legitimate scientific pursuit worthy of the investment of national resources.⁴⁴

This solution, and the problematic premises on which it was based (for example, since one cannot grow physically and functionally old and still serve one's country, aging is in need of a "cure"), was yet a bit radical for the first decades of the twentieth century, though it would be the stuff of front page headlines by the 1920s.⁴⁵ It was too radical to be explicitly acknowledged by *The Youth's Companion*, at least by the close of the First World War, despite the magazine's positive views on prolongevity. The "Nature & Science" section could report that "biologists are beginning to intimate the possibility, remote but thinkable, of a considerable extension of the term of bodily life" ("Science and the Future"). And C.A. Stephens, reporting in one of his health columns about Elie Metchnikoff's proposal for a lactic acid bacilli "cure" for auto-intoxication (which he believed to be the cause of aging), could write: "His theory is simple, but he himself is not so simple as to regard buttermilk as the elixir of life. He maintains only that the use of sour milk helps to prolong life by preventing the formation of poisons which shorten it"

⁴⁴ See Chapter 4: "The Glandular Grail: Science and the 'Cure' for Old Age" for more on the scientific rewriting and legitimation of the Fountain of Youth quest.

⁴⁵ Again, see Chapter 4 for journalistic coverage of glandular rejuvenation procedures in the 1920s.

("Prolongation of Life").⁴⁶ The suggestion that science could and should pursue an "elixir of life" conflicted with the scientific and moral righteousness that perceived an individual's old age as the product of his or her life's behaviors; it also required the admission that an "ideal old age" was not as accessible as popular health advice implied. Stephens himself acknowledged the radical nature of his own theory of scientific rejuvenation and immortality in his science writings: "The idea...is still too novel, too startling, to be accepted without a period of mental incubation. It is too subversive of old beliefs to be entertained without a struggle against it; or at best, the new belief must have time to be born and grow up" (Stephens Natural Salvation 1903 101).

Despite the radicalism of scientific prolongevity, this solution was exactly what C.A. Stephens gave birth to in the scientific writings he published out of his own pocket, particularly in his 1903 book *Natural Salvation: The Message of Science, Outlining the First Principles of Immortal Life on the Earth*, republished six more times over the course of the next ten years.⁴⁷ In this text, Stephens rewrote both magical tales of the "elixir of

⁴⁶ Autointoxication, or the idea that intestinal waste products build up and poison the body, was a popular theory for the cause of many physical ills, including the hastening of old age. Dr. John Harvey Kellogg, founder of Kellogg Cornflakes and the Battle Creek Sanitarium (fictionalized in T.C. Boyle's book *The Road to Wellville* and the movie of the same title), was a particularly well-known proponent of the autointoxication theory of disease. For more on Metchnikoff and Kellogg, see chapter 3, "Disease or Decay?: The 'Nature' of Old Age and What to Do About It."

⁴⁷ Specifically, *Natural Salvation* was published in new editions in 1905, 1906, 1907, 1909, 1910 and finally, 1913, when it was published under the name *Salvation By Science (Natural Salvation): Immortal Life on the Earth from the Growth of Knowledge and the Development of the Human Brain*. I am basing my reading on Stephens' second, 1905 edition which was reprinted by Arno Press in the late 1970s as part of their series on "The Literature of Death and Dying." While Stephens attempted to update and revise the scientific basis of his philosophies between editions, and while parts of his unconventional text disappeared and occasionally reappeared in subsequent editions (for example, a short fiction section titled "Laboratory Stories," or his translation of "Three Hundred Lines of Lucretius"), the main thrust of his argument remained constant over his lifetime. Among Stephens' other scientific publications were his 1888 book *Living Matter: Its Cycle of Growth and Decline in Animal Organisms*, and his 1896 book *Long Life: An Investigation of the Intimate Causes of Old Age and Organic Death*. Following the many republications of *Natural Salvation*, Stephens also published in 1920, *Immortal Life: How It Will Be Achieved*. Historian Gerald Gruman has

life” and religious promises of immaterial, spiritual salvation into a new, scientific narrative of bodily immortality. He presented science as the originator of a more authoritative narrative that could encompass, and surpass, what both magic and religion could offer. Thus, in Stephens’ opening paragraphs, he is careful to distinguish “the man of science” from “the charlatan,” and he explicitly resituates the quest for an “elixir of life” from legend to the laboratory, from the result of magic to that of merit: “Alchemists had dreamed of a sporadic immortality by magic potations; but not till now have men come to see that vastly prolonged life is to be the outcome of brain evolution” (Stephens Natural Salvation 1905 7, 77).⁴⁸ By “brain evolution,” Stephens was referring both to the evolving intelligence of scientifically-minded men and to brain cells, which he claimed “*would live on indefinitely were it not for accidents to other parts of the organism*” and could thus provide the model for cellular, and by extension organismal, immortality (42, original emphasis). Stephens perceived death as “an unnatural event, a result of hardship and distress” and believed that biological science, still in its infancy, would, “within another quarter of a century...[penetrate] the secret of cell nutrition and growth, and [open] the way to a scientific renovation of the tissues” (66, 82). Thus Stephens combined his belief that “longevity is the proof of correct living” (i.e., the mantra of individual responsibility for one’s health) with new understandings of cellular functions

suggested that, although Stephens continued to self-publish “new” revised editions of his work until his death in 1931, his scientific ideas were still rooted in the years of his medical training and grew more obsolete and eccentric over time. Gerald J. Gruman, “C. A. Stephens - A Pioneer of American Gerontology” Geriatrics May 1959: 339.

⁴⁸ On the notion of immortal life as something merited by intellectual endeavors, Stephens writes: “Men would not be worthy of immortal life, would not be fit for it, if they cannot achieve it for themselves” (117).

emerging from biology to prophecy that science would soon conquer the intricacies of cellular nutrition; in other words, he argued that “science must come to the aid of the organic apparatus” to transform the individual responsibility for health into a simple, fool-proof formula for “natural salvation,” or corporeal immortality (42, 91).

Stephens’ proposal of “natural salvation” and the motivations behind it provide another example of an “authoritative” and universalizing scientific voice rewriting religious authority and morality. As mentioned in this chapter’s introduction, Stephens’ argument was an entry into contemporary debates—following in the wake of Darwin’s theory of evolution and the existential angst it raised—between those who wished to reconcile scientific and religious world views on the question of life after death, and those who saw these two views as irreconcilable and hence discounted one to champion the other. Some of those seeking a synthesis, like the eminent British physicist Sir Oliver Lodge, turned to spiritualism (which had been in vogue in the U.S. for the last half of the nineteenth century), asserting that communication with the spirits of the dead provided scientific “proof” of the afterlife.⁴⁹ Building on the “harder” disciplinary ground of cell biology, Stephens’ contribution was to suggest that we might do away with death entirely. In place of faith and the promise of eternal life after death, Stephens offered “a new hope...to the human heart, the hope of salvation from ‘sin’ and death by natural means: *Natural Salvation*....salvation under nature, accomplished by the growth and conservation of human knowledge” (10). In his grand vision, as human science evolved

⁴⁹ For example, see Sir Oliver Lodge, *Science and Immortality* Fourth Printing, March, 1910 ed. (New York: Moffat, Yard and Company, 1908). Also see the following review article of Lodge’s book, Gerhardt C. Mars, “Science and Immortality” *The North American Review (1821-1940)* 189.DCXL (1909); or this article which discusses Lodge in the context of other thinkers on the subject, Rev. Donald Sage Mackay, “Personal Immortality in the Light of Recent Science” *The North American Review (1821-1940)* 185.DCXVII (1907).

to its preordained apex, the realization of natural salvation would “confirm the doctrine of human brotherhood as taught by the Founder of the Christian religion;” i.e., it would create an ideal sort of heaven on earth in which all the diverse people of the world, “irrespective of race or nation; for science is a common nation, a common country” would be united in the true faith of Christianity (51, 96).⁵⁰

Stephens’ messianic vision was what Rose and Novas would call a “citizenship project” on multiple levels. It was very much about defining—based mostly on biological race—who would be included in this future brotherhood. Part of the very motivation behind his vision was his concern over the growing numbers of immigrants in the United States (those “alien” and “darker races”) and “the existent babel of doctrines” of their many mutually-discrediting religions (9). Out of babel, Stephens envisioned unity, in particular a league formed of educated people—the *Gens Scientiæ et Pacis* (The World-Nation of Science and Peace)—bound by “an engrossing common motive...that of the achievement of greatly prolonged life” and promoting “the union of mankind for the application of all science and all the world’s resources in the coming great struggle to reach the acme of Natural Salvation” (99, 97). Stephens’ enumeration of those who would rightly comprise this league echoes eugenic sentiments of the day; he did not believe “that the suggested league would make much progress with the alien races, save in cases of educated individuals. The burden of all progress and all achievement

⁵⁰ Of the rightness of the Christian faith, Stephens writes: “In [Jesus’s] mind glowed that divine ideal of a ‘kingdom of God’ arising from brotherly love and that mutual cooperation and union of all humanity which alone can insure salvation under nature. Biology endorses with cordial reverence the tremendous efficacy of that ideal and shows it to be in line with the whole progress of life on the earth. Science now labors for the realization of that ideal. Every other doctrine of the Christian faith will fall, its eschatology fade away...[Jesus] identified himself with that universal law of life by virtue of which ion and primeval psychon surrender their self-lives to form the cell life, the cell the human intellect, and by virtue of which still the human life will hereafter live in the grander life of a deathless humanity” (51-2).

will long rest with the dominant race. The lower races, like the lower animals, will of necessity be coerced for the general good and their own good" (97). In similar fashion, natural salvation was also to be a higher moral state, which (harkening back to individual responsibility for health) would only be achievable by those who led moral, disciplined lives. Those who preferred "the purely animal pleasures" and could not look beyond "the brute" within them were not to be a part of this blessed future: "So that it is to few only, a few hundreds, or a few thousands, that my present method of prolonging life will commend itself" (Stephens Natural Salvation 1907 266-7).⁵¹ For those chosen few citizens of the brave new world of natural salvation, Stephens felt certain their "procreative desire" would slacken in the face of "life's higher, more refined pleasures" and hence overpopulation would never be a worry (Stephens Natural Salvation 1905 79). The unified state to arise from natural salvation would thus be peopled by those educated of mind, white of body, thoroughly disciplined of habit, and Christian of faith.

While Stephens' vision of immortal life on earth spanned the globe, the content of his proposals reflected a more national frame of thought. In particular, in his application of "human brotherhood" to the functions of biology, Stephens invoked a quite literalized image of biological citizenship. According to Stephens' understanding of biology, individual cells were sentient units; that is, he believed each cell of the body was a conscious entity capable of feeling and thought. Human beings were the remarkable

⁵¹ The sort of moral fitness one needed to possess in Stephens' view sounds remarkably similar to that promoted by nineteenth century health reformers in general. He writes: "It is doubtless true...as often alleged, that our average contemporary does not care enough for prolonged life to make a sustained effort to live, but prefers the pleasures of food, drink, sex, dress, and recreation of a type better described as dissipation; in a word, for the purely animal pleasures which go, physiologically, with a short lifetime; that mode of living which inevitably runs the organism down in sixty years or less." C. A. Stephens, Natural Salvation: The First Principles of Immortal Life on the Earth, from the Evolution of the Human Brain and the Growth of Human Knowledge (The Laboratory, 1907) 266.

“consentience” of “one larger intelligence” formed from the pooling of many cells’ self-conscious personalities (29). Like holding hands, the cells would “extend filamentous processes” in “a grand surrender” to create “the consentient human personality,” while the cells would yet “remain distinct, separate founts of life” (33, 26).⁵² Such an understanding of biological cooperation and self-sacrifice for the greater good allows Stephens to analogize that “the human organism is to the cell what the city or the nation is to the individual citizen” (Stephens Natural Salvation 1905 178). Thus, the cell’s relationship to the body—one of the self-sacrifice of autonomy for the greater good—becomes a model for the citizen’s relationship to his or her nation.

Extending this analogy even further, Stephens offers a truly bizarre picture of what such a “consentience” of individuals might be like that seems more at home in a science fiction novel than a scientific monograph:

If we attempted to unite or blend a nation of people as a metazoan [a multicellular organism], or even make it resemble one in the matter of consentience, as, for example, the eighty or more millions in the United States, or the forty millions of Great Britain, every person, or citizen, would need to be represented as almost wholly deprived of locomotion, and seated, as if at a desk or table, in one place, where food and the material for his work were brought to him in ducts and tubes. Still further, it would be necessary to conceive of them all as built in and encased by the substances which they manufacture. Further still, and most essential of all to the truth and pertinence of the simile, we should need to depict

⁵² Stephens offers as “the most perfect example of this self-surrender” the brain of man: “Here temporarily during the day some sixty millions of ‘cells’ extend filamentous processes and, all taking hold of hands, so to speak, surrender each its self-consciousness and autonomy to form the human intellect. From this grand surrender, and at the instant it is made, there flashes forth the consentient human personality, the ‘soul of man.’ It is done as if by electric contact. This intellect or ‘soul’ is the union of these sixty millions of brain cell lives; they surrender self to live as one” (33). Continuing his anthropomorphic description, Stephens asserts that each of these constituent cells requires rest and recuperation, hence, the need for sleep: “Suddenly, as suddenly as it began, the brain cells let go hands. The filaments are retracted. Contact is broken. Each cell resumes its individual life, becomes itself again, self-conscious, and attends to its own personal affairs—nutrition, elimination of waste products, rest, growth” (34). At such time, “unconsciousness supervenes” at the level of the human intellect (34). This seemingly bizarre analogy of hand-holding sentient cells provides the basis for Stephens’ vision of progress for civilization—the “hand-holding” cooperation of all the sentient individuals of the world in pursuit of scientific immortality.

every citizen as connected with his neighbors and through them with every other citizen, by cables, bands, or cords of sentient living matter continuous with his own living substance. We must picture, too, the more prominent class of citizens as having thrust forth immensely long tentacles, forming nets of this same sentient matter, extending long distances from their bodies, and lying in close contact with similar tentacles belonging to hundreds of their fellows, in order that they may feel and literally *sense* all that they do or think.

If this condition of things existed throughout the nation, we should undoubtedly find the individual citizens living as one enormous National Person. In place of eighty millions of individual men and women, we should see them unified in a self-conscious national life. Such a nation would act and conduct itself among other nations as a Personal Being. (48)

What do we make of this unique illustration? Stephens acknowledges that such actual biological connections between humans would be “physical impossibilities,” but he nevertheless ascribes the very progress of civilization—from the coordinated hunting of primitive man to “the development of the nation from the tribe and the clan”—to “the advantages which come from union and organization” (49-50). In this image of the National Person is encapsulated not only Stephens’ idea of the ideal nation—one where all citizens’ share both sentience and sentiments, attuned to the same thoughts, feelings and “tastes” (those of the “more prominent class”)—but also his prescription for how to reach this ideal: sacrifice of the individual for the greater good of the nation.

Thus, at stake in this vision of biological citizenship—in the idea of a “National Person” united by the “engrossing common motive” of seeking a scientific solution to the problem of aging and mortality—is yet another shift of the responsibility for the “problem of aging” back onto individual citizens. Although government-sponsored scientific research into prolongevity might be the logical solution to the nationalized problem of aging (once the fallibility of individual will and “self-care” has been recognized), the

impetus behind Stephens' vision of "human confraternity" still rests with individuals, who—following the example of the cells of their own bodies—must be willing to sacrifice, to "be made the unit of a greater system, even as the cell has been the unit of the animal body" (54). Stephens identifies the "obstacle[s] to progress" as "the *lack of the spirit of cooperation, lack of confidence and good-will, lack of understanding of the real situation*" (56, original emphasis). He chides "many millions of our fellows" for their blinding "self-love....Selfishness is retrogression. The way to enduring life is through consecration of self to the common good. This is the lesson from the cells. This is the method of nature. By following this method...man....may live forever" (56-7). At the heart of this messianic message lies the familiar doctrine that longevity and unproblematic aging are once again "proof of correct living"—whether through self-care or selfless sacrifice to the greater cause—and that such "correct living" is the responsibility of all good biological citizens.⁵³

The message that I see at the heart of Stephens' vision of *Natural Salvation*, as well as spread throughout the pages of *The Youth's Companion* at the turn of the century, is one that calls upon all individuals who wish to recognize themselves as "good citizens" to manage their aging bodies as a duty to the nation. Citizens should practice moderation in all things; they should refrain from, and police themselves for, excess; and they should make these sacrifices in the name of the greater good of the national

⁵³ While Stephens most often talks in terms of longevity and immortality, his notions of aging lie behind these ideas. To Stephens, aging causes such enfeeblement that it depletes a person's personality; without this sense of "self," the older person has nothing to offer to the greater good (i.e., no role to play in the National Person). Aging is thus commensurate to mortality for Stephens: "In extreme old age, when the progressive enfeeblement of the neurons has become marked, at ninety or a hundred years, the personality dwindles to so feeble a flicker as scarcely to enable the person to be self-recognizant, or perform the most habitual acts. It can hardly be termed personality, since there are constantly recurrent lapses to self-forgetfulness. *Pari passu* with the cell exhaustion, personality slackens and deliquesces to the vanishing point, giving that surest of physiological evidence that intellect has its source in the cells, shines forth from them, and disappears as these fountains of life grow dry" C. A. Stephens, *Natural Salvation: The Message of Science, Outlining the First Principles of Immortal Life on the Earth*, *The Literature of Death and Dying* ed. Robert Kastenbaum (New York: Arno Press, 1977) 173-4.

collective. If you have but “one life for your country,” then let that one be young, healthy, well-maintained and dedicated to the pursuit (individually or collectively) of the scientific conquest of aging and mortality.

CHAPTER TWO

Efficiency, Obsolescence and the Human Scrap Heap

Fixing the Value of Old Age

On February 22, 1905, renowned physician William Osler delivered a farewell address to the Johns Hopkins University Medical School. At the age of 56, Osler was “retiring” from the medical school that he had helped bring to prominence in order to take a faculty position at Oxford. Osler’s address, titled “The Fixed Period,” spoke to the “very serious matter in our young universities” of having “all of the professors growing old at the same time,” a situation which he felt could only be saved by “an epidemic, a time limit or an age limit” (Osler 381). Ostensibly speaking to the benefits of mandatory retirement, Osler justified the need for this practice with “two fixed ideas:”

The first is the comparative uselessness of men above forty years of age. This may seem shocking, and yet read aright the world’s history bears out the statement. Take the sum of human achievement in action, in science, in art, in literature—subtract the work of the men above forty, and while we should miss great treasures, even priceless treasures, we would practically be where we are to-day....

My second fixed idea is the uselessness of men above sixty years of age, and the incalculable benefit it would be in commercial, political and in professional life if, as a matter of course, men stopped work at this age. (381-2)

Osler believed the danger of an older professoriate lay in older men’s declining productivity and creativity—their inability to perform “the effective, moving, vitalizing work of the world” (381). This sanction of mandatory retirement and declaration of older men’s obsolescence was controversial enough in 1905 when few pension systems existed and most men still worked up until the point they were physically unable to continue. However, it was Osler’s next remarks that led to what history has dubbed “The Fixed Period Controversy.”

Osler described the plot of Anthony Trollope's "charming novel" *The Fixed Period*, from which he borrowed the title of his speech, as "[hinging] upon the admirable scheme of a college into which at sixty men retired for a year of contemplation before a peaceful departure by chloroform" (382).¹ Neglecting to mention that the successful thwarting of this "admirable scheme" forms the novel's climax, Osler continued: "That incalculable benefits might follow such a scheme is apparent to any one who, like myself, is nearing the limit, and who has made a careful study of the calamities which may befall men during the seventh and eighth decades" (382).² After reasserting that teachers should work only until sixty, "at which age I would have [them] retired on a double allowance," Osler quipped: "Whether Anthony Trollope's suggestion of a college and chloroform should be carried out or not I have become a little dubious, as my own time is getting so short" (383).³ The copious public and professional reactions to Osler's remarks provide illuminating access both to widespread concern in early-twentieth-

¹ In Trollope's 1882 novel, it is actually at age sixty-seven, not sixty, that the citizens of "Brittanula"—an island colony recently freed from British sovereignty—are sent to the college of "Necropolis" for their year of peaceful contemplation before death by chloroform. In the book, the first citizen to reach this age, who ironically happens to be in fine health, is just being sent to the college when the British come en force and take power once again, abolishing the controversial and unpopular Fixed Period Law. Trollope himself was sixty-seven years of age when he wrote the satire.

² More than just "calamities" befalling them, Osler heaped even greater sins upon older men, saying that the benefits of the chloroform plan are "still more [apparent] when [one] contemplates the many evils which [men in their seventh and eighth decades] perpetuate unconsciously, and with impunity. As it can be maintained that all of the great advances have come from men under forty, so the history of the world shows that a very large proportion of the evils may be traced to the sexagenarians—nearly all the great mistakes politically and socially, all of the worst poems, most of the bad pictures, a majority of the bad novels, not a few of the bad sermons and speeches" (382-3).

³ Osler follows this remark with a parenthetical comment that was included in all printed accounts of his speech, although—as his wife had warned him the night before that the point might be controversial—it is unknown whether or not he actually included it in the speech he delivered: "I may say for the benefit of the public that with a woman I would advise an entirely different plan, since, after sixty her influence on her sex may be most helpful, particularly if aided by those charming accessories, a cap and a fichu." This comment, in addition to illustrating the devaluation of women's labor, whether in professions or in the home, also shows how older women were often stereotyped as repositories of tradition and moral virtue, bringing the influence of an earlier century (via the "cap and fichu") into the modern world.

century America about the value of old age and of an aged population, and to how this value was increasingly assessed through the sole criterion of productivity.

Osler's speech caused a popular sensation. It was widely reported upon, and a long excerpt including his "fixed ideas" and his joke about chloroforming men at sixty was printed verbatim in the *New York Times* ("Fixes Limit"). While Osler's assertions about the uselessness of older men were, perhaps, to have a more lasting effect on Americans' perceptions, his jesting endorsement of chloroforming older men became an instant byword; the verb "to oslerize," meaning to kill by chloroform, even experienced a brief vogue.⁴ Editorial cartoons and articles lampooned the idea, and several comical poems such as "We Are Chloroforming Grandpa" and "The Chloroform Reform" were published in the popular press.⁵ Businessmen were jokingly invited to the chloroforming of their colleagues, men were sent bottles of chloroform as a prank for their sixtieth birthdays, and as many as twenty actual or attempted suicides were linked to press reports of Osler's address.⁶

Osler's remarks also received significant attention from practitioners of medicine and science, where they were taken by some audiences as jest, but by others as fact.

⁴ For discussions of the use of the word "Oslerize," see "Sir William Osler Dead at Oxford" *New York Times* Dec 30 1919; and Henry Dwight Chapin, M.D., "Is Life Worth Prolonging?" *Forum* Jan 1928.

⁵ For examples, see Adrian Ross, "The Chloroform Reform" *Eclectic Magazine of Foreign Literature* Nov 1905; "If Dr. Osler Had His Way" *Life* Mar 9 1905; "Shall We Chloroform Our Sexagenarians?" *Puck* Mar 15 1905; A. F. D., "The Summer Girl to Dr. Osler" *New York Times* Mar 14 1905; Wallace Irwin, "We Are Chloroforming Grandpa" *Life* Mar 30 1905; "Poem 1 -- No Title" *Life* Sep 2 1909; and Uncle Walt Mason, "Uncle Walt. Warbler." *Los Angeles Times* Apr 26 1910.

⁶ See "Chloroform for Murphy" *Los Angeles Times* Feb 26 1905; "Dr. Osler Sent Chloroform" *New York Times* Jan 29 1908; and "Dr. Osler's Little Joke" *The Washington Post* Jan 29 1908. Thomas Cole cites that press reports of Osler's address were linked to as many as twenty suicides. Cole, *Journey of Life*, p. 171. For example, Sherman W. Link, an "aged scientific student," killed himself less than a month after Osler's address; a clipping of Osler's lecture was found next to the empty bottle of chloroform. "Suicide Agreed with Osler" *New York Times* Mar 1 1905. Even many years later, suicides by chloroform and suicides motivated by feeling "useless" in one's aging were linked to Osler's remarks within the popular press. For example, see "A Word Too Much" *Los Angeles Times* Aug 11 1913; and Chapin, "Is Life Worth Prolonging?" .

While physicians toasting Osler's departure at banquets in Chicago and New York spoke jocularly of chloroform and somewhat more seriously of the age limits of a man's "usefulness," at least one group of physicians in Menominee, MI earnestly endorsed what they saw as Osler's theories; they passed a resolution stating that their association would "take up the consideration of the law proposed in Ohio for doing away with all incurable invalids"("Indorse Osler's Theory").⁷ Attributing the status of a natural law to Osler's assertions, a curator of the Bronx Park Zoo argued that "the principle attributed to Prof. Osler, that old age had better be avoided by chloroform, is put into practice by the prairie dogs." The *New York Times* article reported that crowds at the zoo watched in fascination as an old prairie dog was attacked by younger dogs, and then aided his executioners by crawling into a hole they had dug and lying still as they buried him alive. Reflecting on the dogs' behavior, the curator said: "I have heard of a race of men in the wilds of Africa who have for many generations been putting their old men to death when they are unfit for work and are only in the way" ("Prairie Dogs"). Such reporting shows that "Oslerization" was understood by some as merely a modern reiteration of a natural, if primitive, method of ensuring the social good, a method that was based upon the inherent and now naturalized assumption of the obsolescence of old age, and a method that might merit the serious consideration of progressive science and medicine.

The public reaction to his speech, especially the apparent seriousness with which some took his joke about chloroforming old men as evidenced by the linked suicides, led Osler to try to clarify his remarks. He affirmed that his comment about "chloroforming men at sixty...was only a pleasantry" ("Osler Writing Essay"). The press, too, also tried

⁷ See also "Indorse Osler's Views" [The Washington Post](#) Apr 3 1905; "Echoes and News" [Medical News](#) 703-10 1905; and "The Osler Dinner" [Medical News](#) May 6 1905.

in several instances to rectify the mistaken impressions they themselves had helped to generate; several papers and magazines printed “corrections” of his remarks, or acknowledged that he had been generally misrepresented and misunderstood.⁸ However, even in these attempts to establish the frivolity of his chloroform remark, Osler was simultaneously very earnest in reasserting that he “meant just what [he] said” about the need for men to retire by the age of sixty, and “that men under forty have done the best and the largest part” of “the work that counts”(“Osler Writing Essay”).⁹ It was on this ground—the presumption that older people no longer had anything of value to contribute to society—that Osler’s comments would have their most lasting legacy, in part because of who Osler was and how he was regarded.

Osler was an eminent physician speaking with the authority of the medical establishment, addressing an audience of his learned peers at one of the nation’s foremost medical institutions. This prominence made it difficult for any would-be critics to dismiss Osler’s views out of hand. One commentator, remarking on how “the funny fellows had a great time” over Osler’s remarks, called to his readers: “But let us bethink ourselves. A man whom Johns Hopkins University placed on its faculty of instruction

⁸ For example, see “Article 3 - No Title” Life Mar 16 1905; “What Dr. Osler Really Said” Scientific American Mar 25 1905; “The Osler Misquotation” New York Times Apr 4 1905; Day Allen Willey, “Osler” The Critic May 1905; “Says It’s a Joke” The Washington Post Dec 16 1906; “Genius and Old Age” New York Times Apr 2 1908; Charles H. Grasty, “Men Who Defy the Age Line” New York Times May 13 1917; and “Sir William Osler Is Dead” Los Angeles Times Dec 30 1919.

⁹ Osler’s elaborations reinforce his belief that age brings obsolescence: “After forty a man can lead a useful life as a citizen and he can make money, but making money is not the great work that tells. The creative mind seems not to care to make money. The work that counts is the essential, fermentative, vitalizing creations of the mind, and history shows that men under forty have done the best and the largest part, in fact, nearly all of that.” “Osler Writing Essay on Man’s Crisis at 40” New York Times Feb 25 1905. These views were in keeping with Osler’s longtime championing of the idea of retirement. For example, at an 1895 meeting of the American Medical Association, Osler famously stood on a chair and demanded the retirement of the elderly Dr. Atkinson because “he is not an efficient secretary of this Association.” Morris Fishbein, A History of the American Medical Association 1847 to 1947 (Philadelphia: W. B. Saunders Company, 1947). Intriguingly, Osler himself never retired; he may have considered himself one of the great, productive exceptions to the rule.

and who is in high favor with a great English university, cannot be a born fool." He goes on to suggest that perhaps Osler's language was "bold and trenchant and a bit hyperbolic," but what he was really "trying to say" about a man reaching his prime in his fortieth year "does not seem absurd" (Crane). Another reporter agreed, noting that "coming from Dr. Osler, [his remarks] came with authority, even though they were by no means so seriously spoken, or intended, as taken" ("Article 3 - No Title").¹⁰ Thus, although widely criticized for his remarks, Osler was also lauded for his skills as a physician, and it was particularly noted that he was famous for his "power of correct diagnosis"(Willey). Many believed he had brought that power to bear accurately on the malady of aging.

Partly in deference to Osler's reputation, those who sought to refute Osler on the question of the utility of older men met him on his own battleground—that of empirical science. Scientists and reporters alike tried to prove Osler wrong by presenting particularly remarkable older individuals as anomalies to his assertions and by compiling long lists of names of older men and their late life accomplishments.¹¹ The most

¹⁰ This reporter interestingly pins the misinterpretation of Osler's remarks on the general public's lack of sophistication and intelligence: "The thought that comes uppermost now as the result of Dr. Osler's experience is what an awful thing it is for a thoughtful man—and especially for a doctor—to have deliverances intended for the consideration and entertainment of an intelligent, picked audience, pitchforked up and down the land to furnish a sensation for the multitude." "Article 3 - No Title" . The *New York Times* makes a similar point. In its efforts to "correct" mistaken assumptions about Osler's speech, one article suggests: "It requires no great imagination to discover in this a strain of humor which, before such an audience as would gather at commemorative exercises in Johns Hopkins University, would run very little risk of being misunderstood." "The Osler Misquotation" Such remarks highlight the authority attributed to those in the scientific and medical community at the same time that they draw a clear line between this community and a larger "public" presumably not sophisticated enough to distinguish between the uselessness of older men and the need to euthanize them.

¹¹ For examples, see "Current Comment: 'Chloroform at Sixty'" *Ohio Farmer* Mar 25 1905; "Old Men Still in Request (Topics of the Times)" *New York Times* Jun 8 1905; "Man's Right to Live 100 Years" *New York Times* Aug 13 1905; "American Physique 1" ; "Dr. Osler Is Back Again" *New York Times* Dec 25 1905; "Attention, Dr. Osler!" *Los Angeles Times* Jan 15 1907; James Herbert Morse, "According to Osler" *The Independent* Mar 18 1909; "Bigelow Vs. Oslerism" *The Washington Post* Mar 20 1909; "Julia Ward Howe Refuted Dr. Osler" *New York Times* Jan 10 1912; "Wasting Good Men" *The Independent* Jan 25 1912; "Tell

thorough such response was by physician W. A. Newman Dorland, who spent three years investigating the accomplishments of “Four Hundred Immortals”—or four hundred of the world’s “chief workers and thinkers”—to determine the duration of each person’s “mental activity” and the age at which they generated their “magnum opus”(Morse).¹² Osler’s typical response to such arguments was: “ I know there are exceptions, but they only serve to illustrate the rule...” (“Osler Writing Essay”). Other critics accepted Osler’s negative assessment of old age at present, but called upon faith in the power of science to change the nature of old age. Five months after Osler gave his address, the eminent British physician Sir James Crichton-Browne delivered an oration before the Royal Institute of Public Health on “The Prevention of Senility.” With undisguised distaste for Osler’s remarks and the utter devaluation of older people they propounded, Crichton-Browne supplied not only the typical counter-examples of productive older men but also opposed Osler with optimism about the power of science, particularly new discoveries in the field of hygiene, to extend not only lifespan but the span of productive life through “obedience to the laws of health” (R. M. G.).¹³ Others looked to the work of

It to Dr. Osler" Wall Street Journal Apr 5 1912; "Wiley Age of Most Usefulness Exemplified by Men above 60" The Washington Post Sep 22 1912; "Chloroforming the Veterans" Los Angeles Times May 4 1915; Chapin, "Is Life Worth Prolonging?" ; "Old-Age Limit" Los Angeles Times Dec 8 1929; R. M. G., "Review: 'the Prevention of Senility and A Sanitary Outlook' by Sir James Crichton-Browne" The American Journal of the Medical Sciences Oct 1906; and G. Stanley Hall, Senescence: The Last Half of Life (New York: D. Appleton and Company, 1922) Chapter 1.

¹² Dorland published these investigations under the title *The Age of Mental Virility* in 1908, and his work, or summations of it, appeared widely in the mainstream media. "Another of those ready to break a lance with Dr. Osler over the question of the usefulness of old men" was Col. Nicholas Smith, who less than a year after Osler’s speech published *Masters of Old Age*, a book examining American men of letters and their work in relation to their age. "Staying in Harness" New York Times Sep 9 1905.

¹³ Referring obliquely to Osler’s remarks, Crichton-Browne observed that “the logical outcome of theories that one hears mooted with more or less seriousness in certain quarters” is the cutting-off of “old age as one of those superfluties with which shortsighted nature has endowed us;” this, in turn, he warned, would lead to

microbiologist Elie Metchnikoff—who claimed he had discovered the cause and the cure for the “disease” of old age—to counter Osler’s dismal condemnation of older men with the vision of a future without old age.¹⁴ One such article referencing Metchnikoff’s theories argued that “Professor Osler...is far behind the science of the times” (“A Cure for Old Age”).¹⁵ Whether through presenting “evidence” of anomalies to disprove Osler’s theories, or by countering with more optimistic visions of a scientifically-altered old age, Osler’s critics across the board accepted Osler’s pronouncements as a scientific assessment of old age.¹⁶

the presumed need for a “scientifically constructed lethal chamber” in which “our social rubbish may be consigned,” the old along with the criminals. “Man’s Right to Live 100 Years” .

¹⁴ For more on Metchnikoff and his theories of the cause and cure of aging, see Chapter 3, “Disease or Decay?: The ‘Nature’ of Old Age and What to Do About It.”

¹⁵ Another source compared Osler with Metchnikoff: “If it is the belief, however whimsical, of Dr. Osler that there would be much virtue and gain in chloroform for the man of forty, it is the belief of Dr. Elie Metchnikoff that what this world chiefly suffers from is human immaturity! In an age which for long enough has been proclaiming the inestimable value of the young man, he congratulates himself that through medical progress the balance of power may be given to those whom we now call the old....Above all, indeed, does this Russian wonder-worker hold to the thought that longer life will have its highest value in the restoration of the old man to his rightful position in the world.” (Arthur E. McFarlane, “Prolonging the Prime of Life: Metchnikoff’s Discoveries Show That Old Age May Be Postponed” McClure’s Magazine Sep 1905.) Dr. Harvey Wiley, known to history largely for championing the FDA’s 1906 Pure Food and Drugs Act, also opposed Osler’s views with optimism that “scientific facts and developments give assurance that the average human life of usefulness will be increased to seventy years instead of forty and that the maximum of ordinary activity will be increased from the present threescore years and ten to ninety years.” “Prolonging Useful Life to 90” New York Times Mar 24 1905.

¹⁶ It is interesting to note that even those who countered Osler’s pessimism with the vision of a better old age made possible through science also typically admitted that such an old age was not available for everyone; rather, this new version of old age had to be earned through a lifetime of hygienic living and beneficent heredity, echoing the emphasis on individual responsibility for one’s condition in old age as seen in *The Youth’s Companion* (as explored in the preceding chapter, “Natural/National Salvation: Aging and Biological Citizenship”). For example, the *Washington Post* reported on the Rev. M. Ross Fishburn’s sermon, delivered in response to Osler, in which he provided numerous biblical examples of productive old age, but then warned that there is also “an old age that is greatly to be dreaded, an old age that is joyless and filled with care. There is a pessimistic old age, which continually bemoans the fact that the world is rushing headlong into ruin. There is an old age that is cheerless and hopeless. We must admit that, but we should with equal candor admit that there is an old age that is serene, beautiful, and of inestimable value. Such gracious age, however, does not come by chance; it must be earned. Old age is harvest-time, and

The most remarkable thing to note about what was intended to be a valedictory address to his colleagues and students is not who agreed or who disagreed with Osler's views, but that virtually everyone who responded to Osler took it for granted that "usefulness" in old age should properly be reckoned as a matter of productivity, efficiency, creativity and accomplishment. For the gifted writer or artist, this could mean the generation of new works. For the laborer, this could only mean "work." Those who were not actively working and producing—actively being "useful" in this narrowly defined sense of the term—were obsolescent. Thanks in part to the publicity that attended Osler's remarks, these notions of uselessness and obsolescence became tied within the popular imagination to the advance of chronological age, such that age came to be accepted as a proxy for determining one's capacity for productive labor. This is the idea at the heart of what I call the cultural narrative of aging as obsolescence; it is the assumption—circulated through many different spheres and advanced with multiple nuances until it became a commonplace—that one's advancing age was a sign of one's decreasing value.

The narrative of aging as obsolescence emerged to prominence in the first decades of the twentieth century. Like Osler's recapitulation of it, many of its early iterations were made in the voice of authoritative science and social science, diagnosing the impact of age on the value of an individual throughout his or her life course. This narrative would gather explanatory power and find outlets for affecting real-world

what a man is from sixty-to eighty is the sum of what he was from sixty back to six." "Man's Useful Years" The Washington Post Mar 20 1905. See also "Prolonging Useful Life to 90" .

practices as it was joined to other professional and popular narratives circulating in the cultural sphere. Some of these narratives promoted the idea that the decline of productivity with increasing age was a natural law, true for human and animal and visible in other spheres, like the world of economics. Many, instead, explained the phenomenon as a particular consequence of the modern world; they saw it as the inevitable outcome of industrialization and modernization. The narrative of aging as obsolescence merged with other narratives of the modern world: concerns that the world was “speeding up,” worries that machines were making human workers obsolete, and calls for the need for greater “efficiency.” In particular, in the context of Frederick Taylor’s promotion of “scientific management” and the “efficiency craze” it helped to engender—not only in the world of work, but also in the “management” of domestic spaces and in the evaluation of individual bodies—the narrative of aging as obsolescence found concrete scientific grounding for judging older bodies to be inefficient and obsolete. Theories about the nature of aging also were used to reinforce the narrative of aging as obsolescence in a modern world; aging was regarded as the body depleting its fixed stock of vitality, and the modern world was blamed for increasing the rate of that depletion. Stories that pictured a pre-modern “golden age” of productive and useful older people in rural settings only reinforced the notion that modernity was to blame for this inevitable shift in the value of the elderly.

As the narrative of aging as obsolescence circulated throughout a variety of professional and popular spheres, it wrought multiple consequences. The perceived obsolescence of older workers in the modern Machine Age was linked to discriminatory hiring and firing practices. Practices of mandatory retirement, the development of pension plans, and ultimately Social Security drew heavily upon this narrative—as well

as upon the culture of scientific management and the push for efficiency—to justify the need for their existence. And the “obsolescent old,” those older workers thrown on the “industrial scrap heap,” were identified as a needy population, especially visible in the increasing numbers of older people in poorhouses.

As an aging person, there were few healthy ways to respond to this narrative. Efforts to remain young in appearance went hand in hand with the perceived age-related job discrimination. In a culture dedicated to the ideals of efficiency embodied in Taylor's system of scientific management, one solution was to try to manage and control the aging body through whatever techniques, technologies and therapies were available. This chapter concludes with a reading of Edith Wharton's 1927 novel *Twilight Sleep* which satirizes an America that has adopted the doctrine of scientific management. The novel shows how far the narrative of aging as obsolescence traveled, well-beyond Osler's professional sphere and the realm of industry into the homes, bodies and psyches of the American public. *Twilight Sleep* also reveals how, as the narrative of aging as obsolescence was internalized by individuals, the “obsolescence” the narrative described came to connote much more than just one's potential for productivity; it helped to correlate aging with a loss of value that included social roles, sexual desirability, interpersonal relationships and one's relationship to one's own body.

The Rise and Fall of Aging Workers

Osler was not the first professional to singularly frame the value of old age as a measure of productive work capacity. It is the American physician George M. Beard who, in the words of Thomas Cole, “deserves the dubious distinction of being the first to scientifically legitimate the reduction of human beings to their productive capacities”(Cole 168). Perhaps most famous as the neurologist who penned *American*

Nervousness (1881), Beard also wrote *Legal Responsibility in Old Age* (1874). In this book, he derived the “Law of the Relation of Age to Work” in which the peak of an individual’s capacity for production occurs at forty and declines sharply and continuously thereafter (see Figure 1). “Seventy per cent of the work of the world is done before 45, and eighty percent before 50,” Beard concluded, based on detailed studies of the biographies of distinguished men and women of every age (Beard "Legal Responsibility" 7). Thus, he labeled the decade of most productivity, that between 30 and 40, as the “golden decade.” He further argued that “the same law applies to animals” as evidenced, for example, by the egg laying capacity of hens (Beard "Legal Responsibility" 9). In effect, Beard asserted that this law was a *natural* law, true for all living beings. Not only did actual measures of people’s productivity over time show evidence of this decrease in useful output, but it was a corresponding natural fact that people’s *capacity* for productivity, on average at least, decreased after the age of forty.

Unlike Osler, Beard did not say that older people were useless, but he did suggest they were redundant:

The creative period of life, it will be observed, is limited to fifteen years, between twenty-four and forty. A considerable amount of work is done before twenty-four, and a vast amount is done after forty; but at neither period is it usually of the *original* or *creative* sort that best measures the mental forces. The work done before twenty and after forty is usually work of imitation or routine. In early youth we follow others; in old age we follow ourselves. (Beard "Legal Responsibility" 26)

Osler’s declaration of “uselessness” for those above forty was a harsher version of Beard’s characterization of old age as an “imitation” of one’s prime; both men, however, distinctly evaluated age on the basis of work capacity, and concluded that the latter half of the life span was characterized by inevitable decline in one’s faculties.

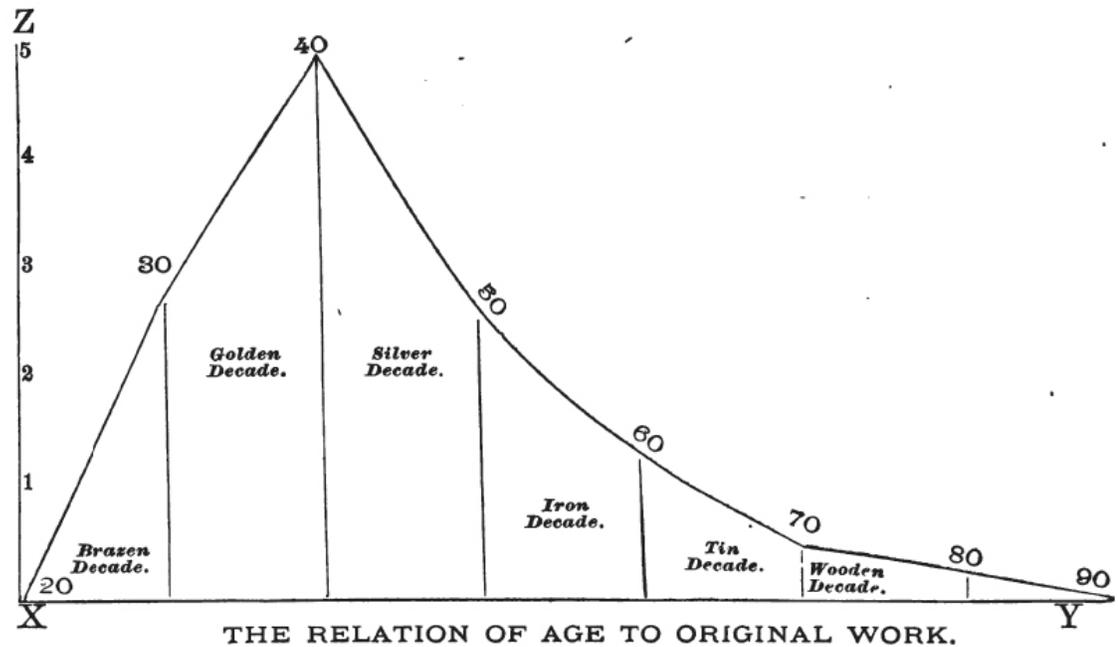


Figure 1: Beard's "Law of the Relation of Age to Work"¹⁷

Picturing the life course with an apex in middle-age was a well-established tradition centuries before Beard or Osler entered the scene. Looking at visual depictions of the life course throughout history, Thomas Cole notes that whereas in medieval times the “wheel of life” or the “wheel of fortune” were typical depictions—suggesting a cyclical, “ashes to ashes” vision of the life course—by the early modern period and through the 19th century, the life course was more typically depicted as a staircase representing the ages of life, with a rise from birth to the apex of middle age (often 50), and then a parallel descent into dotage (see Figure 2). Productive roles might still be represented such as the man as a soldier or the woman as a mother, but the focus was on “the normal life course” (Cole 114).

¹⁷ George M. Beard, American Nervousness. Its Causes and Consequences: A Supplement to Nervous Exhaustion (Neurasthenia) (New York: G. P. Putnam's Sons, 1881) 223.

Beard's late nineteenth-century graph parallels the basic stair step shape of the ages of life, but "the peak of life has been reduced from fifty to forty...the decline is both steeper and longer...[and] the rise and fall of productive capacities [has become] the sole criterion of meaning and value" (Cole 164-5). Osler's verbal description portrays a similarly declining scale: comparative uselessness after forty, absolute uselessness after sixty. Notably, in Beard and Osler's characterizations, bodies are absent as well. While the physical changes of aging may well be part of the reasoning behind the obsolescence they ascribe to aging, these changes are not represented, only implied. Age alone is criterion enough for determining value. Gone is any notion of roles appropriate to various stages in the life course or the value such roles might add to the life course. Instead, the only role evaluated is that of worker, producer, contributor, and it is only measurable contributions—"the sum of human achievement"—that factors into their calculus of value.

The idea of aging as a process of accruing obsolescence was subtly pervasive in early twentieth-century America. It informed the very way that Americans perceived the world around them and how they ascribed personal fortunes and failures. One particularly rich example of the narrative of aging as obsolescence writ large is offered in Theodore Dreiser's *Sister Carrie*. First published in 1900, five years before Osler's infamous address, *Sister Carrie* was not widely received by audiences until it was republished in 1907 and 1912.¹⁸ The novel tells the story of the young country girl

¹⁸The book's initial poor reception was largely due to the reluctance of the novel's original publishers, Doubleday, Page and Co., to market the novel, which one of the senior partners (Doubleday) decided was "immoral" after the company had made an initial contract for publication. Lacking the publisher's support, the 1900 edition sold only 456 copies. Dreiser himself arranged for a reprint of *Sister Carrie* by a remainder house in 1907, and this was followed by a second reprint by Harper and Brothers in 1912. James L. W. West, III [The Composition and Publication of *Sister Carrie*](#) 2000 Dreiser Web Source, U of PA Library

Carrie Meeber who moves to the big city to realize her American Dream. It was controversial because of the “immorality” of Carrie’s out-of-wedlock relationships, for which she is not punished (as the novelistic conventions of the day would have it) but rather finds success—fame and financial security—through stage acting. The “fall” in the novel belongs instead to George Hurstwood, Carrie’s second lover, whom she later marries and then leaves when he fails to be a successful financial provider.¹⁹ Although Hurstwood, too, is “immoral” for stealing ten thousand dollars from his Chicago employer (most of which he is later forced to return), the novel is not one in which moral judgment dictates the characters’ fates.

Clare Virginia Eby has argued that by juxtaposing “Carrie’s economic rise and Hurstwood’s economic fall,” Dreiser illustrates “that social mobility entails movement not only up the ladder of success but also down it” in the capricious turn-of-the-century America ruled by Darwinian blind chance. Invoking the poor immigrants depicted in Jacob Riis’s 1890 *How the Other Half Lives*, Eby argues that Dreiser’s purpose is to show “through Hurstwood’s fall that the unfortunate ‘other’ could in fact be any one—even a man of affluence and reputation” (Eby). While chance may rule some of fate’s fortunes within the novel, the world of *Sister Carrie* is one in which the stair-steps of the

Available: <http://www.library.upenn.edu/collections/rbm/dreiser/scpubhist.html> Jul 26 2008. Many passages were cut from Dreiser’s original manuscript in order to make the book more “suitable” for publication by Doubleday. In 1981, the University of Pennsylvania published an edition based principally on the handwritten first draft of the novel before Dreiser’s revisions and excisions. The Norton Critical Edition, which I am using here, is based on the original Doubleday edition but additionally includes a selection of the passages cut from the original version. When I quote from those excised passages, I will refer to them as Dreiser’s “original manuscript.”

¹⁹ Carrie’s marriage to Hurstwood is in appearance only; they are not legally wed, further perpetuating accusations of “immorality” to the book.

life course very clearly dictate who will rise and who will fall. The age difference between Carrie and Hurstwood is not incidental; Carrie's youth is explicitly part of Hurstwood's attraction to her, and Dreiser makes it clear that Hurstwood's age guarantees in a Social Darwinist "survival-of-the-fittest" way that Hurstwood will neither thrive nor survive.²⁰

In seeking to represent, and offer some logic for, the volatility and shifting fortunes of the turn-of-the-century American economy, Dreiser finds the arc of the life course—with its ascent to the apex, followed by imminent descent—a fitting metaphor. Dreiser equates the tides of fortune to the lifespan of man, giving the former the coherence and predictability of Beard's law and making obvious how thoroughly the latter was calculated in terms of value, quite literally. Hurstwood's passage through middle-age is the fulcrum point of his shifting fortunes, marking the beginning of his downfall. Dreiser describes Hurstwood during his and Carrie's early years in New York City:

During all this time—a period rapidly approaching three years—Hurstwood had been moving along in an even path. There was no apparent slope downward, and distinctly none upward, so far as the casual observer might have seen. But psychologically there was a change, which was marked enough to suggest the future very distinctly indeed. This was in the mere matter of the halt his career had received

²⁰ Dreiser explains to the reader that an age differential lies at the very basis of Hurstwood's attraction to Carrie. In a passage from Dreiser's original manuscript, the narrator explains to the reader the worldly principle behind the older man's predilection: "To understand the power of Hurstwood's affection one must understand the man of the world. He was no longer young. He was no longer youthful in spirit, but he carried in his memory some old fancies which were of the day of his love time....In Carrie he saw the embodiment of old experiences and old dreams. There was in her fresh cheeks something of the old garden of spring....Here was something which was new, something which took him back." Theodore Dreiser, Sister Carrie, Norton Critical Edition ed. Donald Pizer Second ed. (New York: W. W. Norton & Company, 1991) 377. It is not simply that Hurstwood is attracted to Carrie because she is young (and pretty, as we are so often told), but it is because, in embodying youth, Carrie embodies for Hurstwood the hope of maintaining his own youth, the hope of "taking him back" to his own spring days of "love time." Such, we are to understand, is the true nature (and desire) of "the man of the world." And such is one of the key differences that guarantees Carrie's eventual rise and Hurstwood's eventual fall.

when he departed from Chicago. A man's fortune or material progress is very much the same as his bodily growth. Either he is growing stronger, healthier, wiser, as the youth approaching manhood, or he is growing weaker, older, less incisive mentally, as the man approaching old age. There are no other states. Frequently there is a period between the cessation of youthful accretion and the setting in, in the case of the middle-aged man, of the tendency toward decay when the two processes are almost perfectly balanced and there is little doing in either direction. Given time enough, however, the balance becomes a sagging to the grave side. Slowly at first, then with a modest momentum, and at last the graveward process is in the full swing. So it is frequently with man's fortune. (Dreiser 239)

In Dreiser's portrait, we see echoes of the shape of Beard's "Law of the Relation of Age to Work." A "man's fortune" is either clearly ascending to the prime of manhood, or clearly descending into the feebleness of old age; "there are no other states."

Hurstwood's fate in the rest of novel is "suggested... very distinctly indeed" here; his fall is effectively predetermined not by his actions, but by the marked psychological change which signals the beginning of his "sagging to the grave side" in the balance of life. That Hurstwood will end up on a "graveward" slide is inevitable as determined by his aging, but it is unclear exactly what has tipped Hurstwood's scales. The question is left open whether this marked psychological change is the result simply of Hurstwood's aging, or of his particular situation, "the mere matter of the halt his career had received" after he stole the money and fled.²¹

²¹ Dreiser describes just how intimately age and business prowess (especially as measured by fortune) are connected: "A fortune, like a man, is an organism which draws to itself other minds and other strength than that inherent in the founder" (240). The living fortune, however, is not guaranteed the same fate as the man: "If its process of accretion is never halted, if the balancing stage is never reached, there will be no toppling. Rich men are, frequently, in these days, saved from this dissolution of their fortune by their ability to hire younger brains. These younger brains look upon the interests of the fortune as their own, and so steady and direct its progress" (239). In Dreiser's worldview, only youth may accrete fortune, only "younger brains" are competent to mind the interests of a fortune. Age faces inevitable dissolution—of person if not of fortune. Thus, a fortune, if removed "beyond the special care of the founder," may continue to grow, while "the man wanes" (140). Men whose fortunes are tended by "younger brains" and therefore continue to accrete may never need to "recognize the turning in the tide of their abilities" (140). Such is the best scenario that Dreiser offers for the aging businessman; his abilities will surely dwindle, but if he has entrusted his fortune to others, he need not acknowledge his own diminishment.

It is, perhaps, not necessary to answer that question, as Hurstwood's character, abilities and career situation are all dictated to some extent by his aging. Dreiser shows Hurstwood re-evaluating his own worth as he ages, while Carrie simultaneously ascribes Hurstwood's failings to his aging. We are told that, "set down under new conditions," Hurstwood "was in a position to see that he was no longer young" (240). Unable to fully analyze the changes "taking place in his mind, and hence his body," Hurstwood nonetheless "felt the depression of it....In the course of time it told upon his temper. His eye no longer possessed that buoyant, searching shrewdness....His step was not as sharp and firm" (240). Carrie, in turn, begins to regard Hurstwood differently when his business ventures begin to sour, necessitating a move to a smaller flat: "she began to see that he was gloomy and taciturn, not a young, strong and buoyant man. He looked a little bit old to her about the eyes and mouth now, and there were other things which placed him in his true rank, so far as her estimation was concerned. She began to feel that she had made a mistake" (243). Hurstwood's failure to "produce" results in Carrie's *seeing* Hurstwood as a man past his prime; she effectively reads Beard's "Law of the Relation of Age to Work" in reverse, ascribing Hurstwood's age to his (lack of) output. Additionally, both Hurstwood's and Carrie's careers are portrayed by Dreiser as dependent upon their ages. Hurstwood, at 43, is turned down for a job for which he is overqualified because the man interviewing him wanted "some one young, active, and glad to work actively for a moderate sum," not "an old man" (254). Carrie, however, quickly secures a job, and as she judges Hurstwood's failure—"If I can he surely ought to. It wasn't very hard for me."—the narrator reveals what Carrie is not in a position to see: "She forgot her youth and her beauty. The handicap of age she did not, in her enthusiasm, perceive" (279).

The “handicap of age” leads to Hurstwood’s social emasculation. Carrie becomes the breadwinner while Hurstwood does the shopping. Dreiser’s original manuscript ended with Hurstwood’s suicide in a flophouse, his final graveward slide down the steep decline of Beard’s version of the stages of life. In the first published edition of *Sister Carrie*, we end instead with Carrie, who takes no note of Hurstwood’s ignominious death as “his nameless body” is borne away “to the Potter’s Field” (369). We leave Carrie in her rocker, ever the dissatisfied and endlessly desiring consumer, ever lonely, and yet she remains young and beautiful and still able to dream. While aging may not be the only force that influences Hurstwood’s fall and Carrie’s ascent, it is the language and idiom through which Dreiser chooses to signal the inevitability of Hurstwood’s fall. Chance is not blind to individuals’ aging; rather, in line with Dreiser’s naturalism, aging is the underlying force that both influences the characters’ perceptions and determines their fates. *Sister Carrie* illustrates how the narrative of aging as obsolescence circulated influentially far beyond Beard’s and Osler’s professional decrees.

The perceived connections between productivity and age—as presented in *Sister Carrie*, in Osler’s address or in Beard’s Law—provide little explanation for what, specifically, about aging leads to this inevitable decline in capacity. As these notions of the obsolescence brought on by aging circulated through the popular press and professional discourse of the first decades of the twentieth century, they were often joined with other commentary about the modern world: observations that the world was “speeding up” as it entered the Machine Age in search of ever greater efficiency, and concerns that the Machine Age would exact untenable “human costs.” These latter contexts added explanatory power to the narrative of aging as obsolescence, helping to

create a more complex cultural narrative—that of aging as obsolescence within the modern world—that both explained and justified the shrinking roles of older workers and the rise of pension systems and retirement practices, and contributed to the perception of the aged as a burden on family, community and nation.

Taylorism, Efficiency and the Human Scrap Heap

The perceived “speed-up” of industry was part of the process of creating greater efficiency—both greater output for the amount of energy input, and in particular, greater profit in return for costs expended. One contributing factor to the speed up was the shift to the shorter working day; this was a work-sharing program supported by both capital (which foresaw greater efficiency) and labor (which foresaw more leisure for workers and more work to go around), but which intensified pressures on workers to produce at higher speeds for these shorter periods of time (Graebner 24-7).²² Upton Sinclair’s muckraking meat-packing exposé *The Jungle* (1906) offers an insightful glimpse into how this “speed up” was realized within the meatpacking industry and what consequences this held for laborers. Through the eyes of Lithuanian immigrant Jurgis Rudkus—a strong, young, strapping man—we learn how the plant bosses picked “pacemakers” whom they paid high wages and changed frequently in order to “[speed] up the gang” to a faster pace (Sinclair 71). The pace is maniacal; Sinclair describes the women making sausage links as “racing with death,” and the men doing piece-work at

²² In his discussion of the shorter work day, Graebner argues that, “By inviting the speedup in return for the shorter working day, labor organizations bargained away the job rights of older workers who could not produce at higher speeds and of the unemployed, who could be absorbed only if output levels remained stable.” William Graebner, *A History of Retirement: The Meaning and Function of an American Institution, 1885-1978* (New Haven: Yale UP, 1980) 27. Problematically, perhaps, Graebner’s argument rests on the assumption that older workers were, in fact, unable to produce at higher speeds—an assumption that, as it is unquestioned, reproduces many of the troubling and unsupported beliefs about aging that were prevalent at that time.

the Harvest Trust as “toiling like one possessed by a whole community of demons” while the “jubilant captains of industry would boast of it in their banquet halls, telling how our workers are nearly twice as efficient as those of any other country” (164, 243).

As the boasting of the captains of industry suggests, the Efficiency Movement was in full swing in the early twentieth century in America. From economy to government to society, the perception was that waste abounded and that increasing efficiency was the solution. In his study of the efficiency movement in America, Samuel Haber writes that “an efficiency craze hit America....like a flash flood:”

At its height the efficiency craze exhibited many forms. Efficiency appeared as a refurbishment of the commonplace exhortations to virtue and duty, as a means for the transference of personal morality to society, and as a means for the control of society without specific reference to morality. In one or more of these forms it appealed to a huge public. Champions of specific reform measures turned toward it. Church leaders, educators, home economists, a bewildering variety of people found uses for it. (S. Haber 52)

Efficiency, which became “a buzzword in its own time,” was seen as a virtue and was frequently paired with moral terms like “character, competence, energy, hard work, and success.” The term “efficiency” was applied everywhere “from Sunday schools to baseball. [It] appeared in advertisements for dishwashers and touring cars (just as ‘waste’ was an advertising copywriter’s favorite for the sales promotion of hot water heaters and ironing machines)” (S. Haber 81).

While the “efficiency craze” that was an essential element of the Progressive Era extended far beyond the workplace, its most emblematic presentation was in Frederick Winslow Taylor’s *The Principles of Scientific Management*. Taylor and his program of “scientific management” were already household words by the time Taylor published his book in 1911, thanks largely to the notoriety of the railroad Eastern Rate Case of 1910. In this case, Taylor helped to block an increase in railroad rates by claiming that his

system of scientific management could save the railroads a million dollars per day.²³ At the basis of Taylor's system of scientific management lay the idea that it behooved both workmen and management to pursue "the training and development of each individual in the establishment, so that he [could] do (at his fastest pace and with the maximum of efficiency) the highest class of work for which his natural abilities fit him" (Taylor 3). The key to achieving this "highest class of work" within Taylor's system lay in analyzing and then standardizing every minute physical action of the laboring man. The scientific manager determined the most effective movements for any given task; it was then up to the laborer to repeat those movements accurately and quickly. Under such a system, notions of "expertise" or "knowledge" were meaningful only on the side of management; the years of training behind a "first-class mechanic" were perhaps more of a hindrance than a boon as each worker must be retrained to move and work most efficiently, and the "change in the mental attitudes and in the habits" was the most difficult change of all to effect (50-1).

While experience and knowledge were downplayed, scientific management placed great value on "natural abilities." In describing his interventions with the girls working in the country's largest bicycle ball factory, Taylor explains:

Some individuals are born with unusually quick powers of perception accompanied by quick responsive action. With some the message is almost instantly transmitted from the eye to the brain, and the brain equally quickly responds by sending the proper message to the hand.

²³ In *Shifting Gears*, Cecilia Tichi summarizes the stakes of the Eastern Rate Case: "In brief, in 1910 the Eastern railroads sought a rate increase from the Interstate Commerce Commission in order to pay promised higher wages to workers. But the shippers filed suit to block the increase. They hired the attorney Louis D. Brandeis to represent them, and he won the case with testimony from Taylor's new apostles, who gave the name Scientific Management to their mentor's system and who argued that the railroads could be run so much more efficiently that they could save one million dollars per day." Cecilia Tichi, *Shifting Gears: Technology, Literature, Culture in Modernist America* (Chapel Hill: U of NC P, 1987) 79.

Men of this type are said to have a low “personal coefficient, while those of slow perception and slow action have a high “personal coefficient.”

Mr. Thompson soon recognized that the quality most needed for bicycle ball inspectors was a low “personal coefficient.” Of course the ordinary qualities of endurance and industry were also called for.

For the ultimate good of the girls as well as the company, however, it became necessary to exclude all girls who lacked a low “personal coefficient.” And unfortunately this involved laying off many of the most intelligent, hardest working, and most trustworthy girls merely because they did not possess the quality of quick perception followed by quick action. (45)

This clear shift to the exclusive value of “speed” over the values of skill, intelligence, diligence, experience and even trustworthiness provided a new basis for judging the potential of prospective employees; speed, and for some tasks, strength, became the sole criteria for “the scientific selection of the workers” (49). The laying off of those “who lacked a low ‘personal coefficient’” and who “failed to rise to a certain standard” in order to admit “a fresh supply of carefully selected men” became a key step in increasing business efficiency (8).

Amid this “speed up” of industry and the constant emphasis on greater efficiency—both key components of the mass production of the Machine Age—there was concern raised over the “human costs” inherent in such a system. Jurgis in *The Jungle* is emblematic of this human cost. Although young and healthy at the outset, Jurgis has an accident and thus falls prey to the pressures of the system: “In the beginning he had been fresh and strong, and he had gotten a job the first day; but now he was second-hand, a damaged article, so to speak, and they did not want him. They had got the best out of him—they had worn him out, with their speeding up and their carelessness, and now they had thrown him away!” (153). The terms “industrial scrap heap” and “human scrap heap” were frequently invoked to describe the fate of those like Jurgis whose body was worn out by the quickened pace of machine-driven labor or

whose job was made superfluous by machines. For example, this vivid metaphor was used in a 1904 piece in *McClure's* to describe the fate of a Russian-Jewish cap-maker: "In Russia he might have lived in comparative comfort to a green old age; in America, caught in the wheels of a 'cold, universal, laissez-faire,' he was wrung dry, worn out in half a dozen years, and flung upon the human scrap heap;" the "industrial tyranny of America...robbed him of...his life"(R. S. Baker). In 1929, before the Black Tuesday stock market crash, President of the American Federation of Labor William Green widely campaigned with the promise that the federation "would not tolerate a 'human scrap heap in America'" brought on by "advances in labor-saving machinery;" he made especial appeal on behalf of "the skilled workman 40 years and over who had given his entire life to his calling, and who suddenly found himself compelled to seek employment because his job was abolished by the onward march of the machine" ("Green Pledges Aid"). These sentiments only intensified during the vast unemployment of the Great Depression. Amid talk of recovery, the *New York Times* noted in 1933: "People are angry with the ruthless methods of technology. They speak about machines and the human scrap heap" ("Negroes under the NRA"). Even the Baptists railed against the way society "burns men out in the fiery furnaces of a new mechanized industry and throws them on a human scrap-heap" ("Baptists Demand"). There was a simmering fear that all workers might become obsolete in a world of mechanized mass-production.²⁴

²⁴ This fear of obsolescence for all workers was also explicitly connected to the "speed up" of industry, brought on by the shortened work day. A 1916 article in *Current Opinion* on the "8 hour day peril" raised the question: "But how about the workers, who can't stand high pressure and high speed? And their name is legion mentally and physically...." Referring to Henry Ford's system for "weeding out on trial the unfits, the slows, the thick-heads and clumsy handed," the author again asks: "What does he propose doing with the rejects if we are entering on an era of high speed, high pressure and shortened hours of labor?" The author compares this prospect of the shorter day to Australia's institution of a minimum wage law, under which employers "could not afford any but the best workers." The consequence for both these situations, the author predicts, will be "that the second rates and the third rates and the no rates at all [will be] relegated to

However, while the threat of the human scrap heap and the narrative of rapid technological change making workers obsolete ostensibly applied to all laborers, the older laborer was seen as particularly displaced by—and out of place in—the machine era. The narrative of aging as obsolescence was reinforced by these narratives of the modern world as a place that was speeding up, in need of greater efficiency, and leaving a human scrap heap in its wake. Older workers were perceived as slower and less capable of adapting to change, unable to keep up with the speed of modern machinery, and thus an impediment to progress. A 1908 article on “The Superannuated Man” in *McClure’s* stated this quite bluntly: “The things that most promote the welfare of the wage-earning class militate most against old age employment....The old man today...slow, hesitating, frequently half-blind and deaf, is sadly misplaced amid the death dealing machinery of a modern factory” (Achenbaum Old Age qtd on 197). These perceived qualities of old age were also ones which merited a high (negative) personal coefficient in Taylor’s system. Beyond positive valorization of the “young,” Taylor never specifically mentions age. And yet with the emphasis on speed and the devaluing of skill and experience—typically the qualities of older employees who had accumulated years of practice and knowledge—older workers had the most to lose by the wholesale adoption of scientific management methods. This, certainly, was the overwhelming public perception of such changes. Typical of the narrative of the “human cost” of this

the human scrap heap and to the starveling attic.” “Has the Eight-Hour-Day Peril Come to All Industry?” Current Opinion Oct 1916.

machine-age quest for maximum efficiency is the following excerpt from a 1928 article in

Forum magazine:

Some thirty year ago when industry was still young, the assets of the older workman made him indispensable and he was a risk worth while at any age. When he reached forty, a worker had acquired skill and experience, which were essential to an industrial plant....Today, all this has disappeared. With the introduction of new machinery, skill and experience are no longer of importance. Each new invention and the introduction of each new machine diminishes the value of the old mechanics' experience and renders it worthless. Only the young, the adaptable, and the supple of limb are desired....Industry is organized primarily for production and efficiency; it must of course select the most proficient workers, casting the others aside. So long as the labor supply is ample, no amount of moralizing or preaching will induce an industrial corporation to employ the less efficient or the less adaptable. (Epstein 267-8).²⁵

This depiction highlights not only the devaluation of experience as a workplace value and the general association of adaptability and suppleness with youth, but also reveals how thoroughly the mantra of scientific management had infiltrated every quarter, for “industry... *must of course* select the most proficient workers, casting the others aside.” Correspondingly, the metaphor of the human scrap heap—which was used early in the century to connote many forms of dependency such as pauperism, insanity, criminality and disability—over time was increasingly used to signal the kind of dependency that came with old age. Even when used to indicate a threat applying to all laborers regardless of age, the idea of being thrown on “the human scrap heap” connoted an

²⁵ Another example from a 1938 *New York Times* article: “Before the Machine Age the craftsman of 40, 50 or 60 had an assured position...The young were apprentices...the old, masters and teachers.... The modern factory, with its emphasis on efficiency, subdivision of labor, mass production, created the problem of the jobless, propertyless man over 40.” Waldemar Kaempffert, “The Man over 40: A Machine-Age Dilemma” *New York Times* Mar 6 1938.

inherent obsolescence and worn-out-ness that was coming to be closely associated with aging.²⁶

The description of older people as less capable of adapting and as less efficient was often built into the very understanding of what separated old age from other periods of life. For example, Dr. N. S. Davis in a 1901 article in the *Los Angeles Times* explained, matter-of-factly, that human life consists of three periods, youth, maturity and old age: “The first is preeminently the period of adaptability or adjustment to its surroundings or environment; the second is one of comparative stability and efficiency in the prosecution of some chosen line of work, while the third has little capacity for adjustment to new environments or new lines of labor, and is prone to cling to previous habits or lines of work, with annually decreasing efficiency until compelled to cease” (Davis). Such perceptions became truisms as they were repeated over and over until even those sympathetic to the employment problems of the middle-aged and desiring to alleviate the “human scrap heap” of obsolescent older workers would take it for granted that whatever else might change, the old were stuck in their ways: “For this is an age of swift and sudden changes; the world has known no era in which there have been more rapid and more astounding changes along social, industrial and economic lines. Unfortunately, to the man of middle or old age the old way is the right way—the one way. Instead of being adaptable he is static, and he grows more and more so as he approaches the age of limitations” (Crissey and Wilhelm 764). It was widely accepted

²⁶ For example, the following quote shows a typical usage of this phrase: “Old age has not its reward in jobs to be given or retained in this time of stress or afterward. The endless belt of life moves on in every community, carrying to the scrap pile those old and worn-out parts of the social mechanism which can be replaced by newer, sturdier human material.” Elwood Street, “The Ragged Army: What Shall We Do About Chronic Unemployment?” *Forum and Century* Jun 1934: 368.

that older people were more likely to be “stuck in the past” and unable to “keep up” with modern times.²⁷ Such perceptions connoted a general “slowness” characteristic of old age, which industrial psychologists in the 1930s were quick to quantify, measure and affirm was indeed the case.²⁸ Painted in such hues, older workers were antithetical to Taylor’s ideal of “men of unusual energy, vitality and ambition who naturally choose the fastest gait” (Taylor 6). Thus, the very qualities that were quintessential of the modern world—speed, efficiency, vitality, energy—were the qualities that were seen to diminish as one aged; this narrative of the pressures of the modern world grounded and reinforced the narrative of aging as obsolescence.

One additional perception that contributed to the narrative of aging as obsolescence had to do with the general view of aging as a loss of vitality. It was

²⁷ It was a common trope of literature in the early twentieth century to portray old age as a time when one gets “stuck in the past.” For instance, the storyteller “old Julius” in Charles Chestnutt’s *The Conjure Woman* (1899) is so tied to the past that, although a freed man, he is unwilling to leave the plantation on which he spent most of his life as a slave. This trope is especially strong in some of Willa Cather’s writing, such as *The Professor’s House* (1925) and *Death Comes for the Archbishop* (1927). The first of these features the aging Professor Godfrey St. Peter whose family has bought a new house and has left to travel Europe for the summer, but who cannot bring himself to move out of their old house and instead spends the summer in isolation reliving his youth. The second features Bishop Latour who is nearing death and finds himself constantly slipping into memories of his past, again to the point of isolation from the people of his present. That being “stuck in the past” and unable to adapt to new realities were qualities looked down upon is made clear in F. Scott Fitzgerald’s *Tender is the Night* (1934). Thirty-nine year old Dick Diver tries to impress young Rosemary Hoyt with a feat of strength (lifting Rosemary in the air while water skiing) but is unable to do this trick which he had performed two years ago. Unwilling to accept that he is no longer as strong as he once was, Dick tries three times and nearly receives a head injury; he becomes an object for scorn, or, at best, for silent pity, to his wife Nicole and to Rosemary herself. This fall in the eyes of the women in his life is emblematic of the greater fall of his life which the narrative traces.

²⁸ Laura Davidow Hirshbein writes about the role of psychologists and psychiatrists in establishing old age as a time of life “characterized by mental deficits and disability” (214). She upholds the “Stanford Later Maturity Studies” as indicative of the explorations of old age in the 1930s: “Between 1930 and 1932, W. R. Miles and C. C. Miles collected a population of 1600 people, 800 of each sex, in the age distribution of 6 to 95 years, and tested these individuals in half hour sessions to evaluate vision, perception, motor abilities, recall, comparison and judgment, and imagination. These studies demonstrated, at least to the satisfaction of the principal investigators, that there was significant decrease in ability over the life span, beginning after age 30, in perception, motor ability, learning ability, and imagination. According to their measurements, average adults declined in mental age by 3.3 or 25 IQ points between the ages of 30 and 80” (224). Often such tests had been developed for children, and the emphasis was on speed; as these professionals administered these tests to older people, their interpreted their results as proof “that older people were in fact inefficient” (229). Hirshbein, “Transformation”.

common to hear the body described as possessing a finite amount of vitality, the expenditure of which resulted in aging and eventual death; such a view lay behind the typical references to men being “burned out” or “used up” by the high pace of industrial life.²⁹ This loss of vitality was believed to be linear—“For the person engaged in active work eight or ten hours of the day undergoes more waste of his tissues than when he works only five or six hours” (Davis)—but also to be dependent on the nature of one’s work; thus, one 1913 article claimed: “Preachers, consulting physicians and school teachers live longer than newspaper writers, bartenders and busy practicing physicians, because the former are slow to exert themselves, quiet and lazy in their accumulation of energy, in contrast to the latter group, who are live wires, making and using up energy as rapidly as they can” (“Real Secret”). In concurrence, the eminent psychologist G. Stanley Hall, writing in 1911 on “The Age of Efficiency,” declared it “almost a tragic fact that in so many industries involving hard physical labor a workman at forty begins to lose his power, and is quite past his prime at forty-five, and that many employers have an even lower age limit beyond which no new men are employed” (G. S. Hall “Age of Efficiency”). The result of such views was that, while those in skilled professions or management might be perceived to pass relatively unscathed into middle- and old-age, more common laborers were seen as used up and prematurely aged by the speed and pressures of industry.

²⁹ Scientific optimists promoted the idea that “if the loss of the living body caused by exertion can always be met and equaled, or neutralized by the correct amount of mental and physical fuel, there will be no decay—and with no decay there can be no death.” “Real Secret of Longevity: How Scientific Management of the Body Will Ward Off Ravages of Old Age” *The Washington Post* Jul 27 1913. For more on this view of aging as a loss of vitality which might possibly be countered, see chapter 3: “Disease or Decay?: The Nature of Old Age and What to Do About It.”

In one sense, this view of aging—as a loss of vitality related to one’s vital expenditures—supported the idea of aging as a natural process of increasing obsolescence; one’s vitality declined with age, and thus a worker’s advanced age could actually be taken as a sign that he had little energy and vitality left to give to his job. The wholesale association of aging with inevitable decline in *Sister Carrie* is an example of this view of aging as natural obsolescence. In another sense, however, the idea of aging as vital loss blamed the obsolescence of aging on the modern system of labor which prematurely drained this vitality from its overtaxed workers; the old might not be useless were they not part of the “human costs” of the modern world. Ultimately, whether the obsolescence of aging was viewed as something innate to the aging process or as something brought on by the modern world, the end result was the same: older workers were undesirable. But blaming the system for this obsolescence at least allowed for the imaginable possibility of a different, and useful, old age under a much-changed system.

The Jungle, with its heavily didactic promotion of socialism at the novel’s end, is a text that points the finger of blame at the system rather than the aged themselves. In so doing, it offers a counter-narrative to *Sister Carrie*’s presentation of fortunes which inevitably decline with the graveward slide of the life course. We see the devaluation of the older worker through the character of Dede Antanas, Jurgis’s father. We are told Antanas is “not more than sixty years of age, but you would think that he was eighty;” his six months in America have “not done him good” (13). While the rest of the family finds employment, Antanas has no luck—a situation portrayed as a burden on himself, his family and on Jurgis; it was “the chief problem that worried his son” (55). It is not a matter of will or even ability: “Old Antanas had been a worker ever since he was a child”

(73). Rather, we are told that age discrimination is the way of business in the machine of Packingtown: “For everyone that Jurgis spoke to assured him that it was a waste of time to seek employment for the old man in Packingtown. Szedvilas told him that the packers did not even keep the men who had grown old in their own service—to say nothing of taking on new ones. And not only was it the rule here, it was the rule everywhere in America so far as he knew” (55).

Antanas, left without means to support his family, is emasculated and adrift, “with no more place in the world than a sick dog” (73). It is at this moment that he is approached by a man who offers to get him a job in the pickle rooms at Durham’s, “provided that he were willing to pay one-third of his wages for it” (73). Despite the corruption in the system which such an offer shows, Antanas’s circumstances reveal that the labor of older people, even when perfectly competent, was considered like that of underage children, to be worth far less than that of men and women in their prime. Antanas is the first of the family to be beaten and eaten by the corruption of Packingtown, but Sinclair paints him as a noble figure when he describes Antanas’s downfall: “Yet Old Antanas would not quit; he saw the suffering of his family, and he remembered what it had cost him to get a job. So he tied up his feet, and went on limping about and coughing, until at last he fell to pieces, all at once and in a heap, like the One-Horse Shay” (95). This reference to Oliver Wendell Holmes’ 1858 poem “The Deacon’s Masterpiece; or, The Wonderful One-Hoss-Shay” clearly suggests it is the work which has conquered Antanas, not his age. A common metaphor at this time used to describe an ideal old age and death, “the one-hoss shay” was so logically built it functioned perfectly until it reached its absolute limit; it “breaks down, but doesn’t wear out,” as the poem says. Through Antanas, Sinclair speaks to the brutal toll and the

unfair age discrimination of the turn-of-the-century system of labor; unlike Dreiser in *Sister Carrie*, he does not condemn the actual abilities of the aged themselves.

Jurgis, too, is portrayed as a victim of the system. He is optimistic and naïve at the novel's opening: "Jurgis talked lightly about work, because he was young. They told him stories about the breaking down of men, there in the stockyards of Chicago, and of what had happened to them afterwards—stories to make your flesh creep, but Jurgis would only laugh. He had been there four months, and he was young, and a giant besides. There was too much health in him" (27). After Jurgis' accident, his fortunes spiral downward alongside his health, despite the fact that he has aged a relatively short number of years during this time. Similarly, "Little Kotrina...like most children of the poor" is "prematurely made old" (162). Both Jurgis and Kotrina serve as examples of vital life sacrificed to the demands of industry. In the end, Jurgis is saved by Sinclair's pedantically didactic Socialist ideologues who preach the value of cooperative labor versus the obsession with profit (which, within the scheme of scientific management, is the ultimate goal of increased efficiency). Fundamentally, Sinclair's novel lodges a protest against the kinds of labor practices that "speed up" in a constant drive for greater profit, both figuratively and literally sacrificing workers to the machine(s) of labor along the way.³⁰ However, he does not automatically cast the older worker onto the human scrap heap. By showing strapping, young Jurgis fall prey to the pressures of the abusive modern labor system, Sinclair reveals Antanas—who withstands this pressure until the moment he drops—to have surprising stamina; like the One-Hoss-Shay, Antanas is in

³⁰ In several places, Sinclair describes the actual sacrifice of human life to laboring machines, such as the men who fall into the vats of lard, or the two workers on whom a furnace blows a load of molten steel, or when little Stanislovas falls asleep in a corner and while locked in the factory overnight is eaten by rats.

many ways the model of efficiency. If older workers are obsolescent, *The Jungle* suggests it is only because the system makes them so. Sinclair believes the system must be challenged in order to combat the human scrap heap; specifically, he believes it is up to Socialism to save the “hundred thousand old people, cast off and helpless, waiting for death to take them from their torments” (371).³¹

While Sinclair ascribes the obsolescence of aging to the modern world itself, he doesn't truly offer a vision of what a different old age might look like. That sort of vision was typically left to regionalist fiction. *Sister Carrie* and *The Jungle* are set in the urban-industrial cityscapes of Chicago or New York, where the Machine Age was in full swing. In regionalist fiction from the same time period, however, there is a different vision of vital aging set against a distinctly un-modern rural landscape. Sarah Orne Jewett's *The Country of the Pointed Firs* (1896) provides a very rich example in its portrayal of the old Mrs. Todd and her even older mother Mrs. Blackett in the little fishing villages along the Maine coast. Our younger narrator visits Mrs. Blackett's island home with Mrs. Todd; when walking up the island hill, she finds she is less hale than her older escorts: “I was glad to stop, being more out of breath than either of my companions” (Jewett 38). We

³¹ That Sinclair blamed the larger system, and the values of Scientific Management in particular, is evidenced by an open letter that he wrote to Frederick Taylor asking “some pointed questions in ‘elementary political economy.’” As recapped by the *New York Times*, “Mr. Sinclair has great sympathy for the workingman who, he suspects, is overdriven by the new system, and asks what becomes of the workmen who lose their jobs because others can work faster. Are they always employed elsewhere and, if so, is the phenomenon of overproduction just a delusion?” Taylor's reply merits more copy than Sinclair's objection: “In reply Mr. Taylor remarks that as to the men losing their jobs the same objection was originally urged against the introduction of machinery. In these cases the benefit to the people as a whole—the third great party in every transaction—must be taken into account. As for the men themselves, he points out that they do not actually ‘produce’ all that they make. Under the new system a great part of the increased production is due to the teaching and direction of the management. ‘It is a significant fact,’ he adds, ‘that those workmen who have come under scientific management in the last thirty years have been invariably satisfied with the increase in pay, while their employers have been equally pleased with their increase in dividends.’” To this reader, at least, it appears that Taylor is merely skirting the question of the fate of individual workers. “Among the Authors” *New York Times* Jun 24 1911.

learn that Mrs. Blackett performed the laborious task of “turning” the living room carpet with just her son’s help, which prompts Mrs. Todd to say: “‘There, what do you think o’ havin’ such a mother as that for eighty-six year old?’” (40). Mrs. Todd is described as “standing before us like a large figure of Victory,” while the eighty-six-year-old Mrs. Brackett “took on a sudden look of youth; you felt as if she promised a great future, and was beginning, not ending, her summers and their happy toils” (40). This very positive portrayal of an old age still with “a great future” of “happy toils” ahead is striking when compared to that of Hurstwood in *Sister Carrie*, written just four years later about a man half Mrs. Blackett’s age. And unlike Dede Antanas in *The Jungle*, Mrs. Blackett’s labor seems fully valued, and is productive enough to maintain her independence. The sort of “productivity” involved in these various portrayals— remunerative labor vs. the kind of labor required to live independently—certainly differs and is not entirely comparable; nevertheless, the narrative of aging as obsolescence is much tempered within the rural setting.

This vision of an independent and useful old age possible within a particular kind of “rural life”—evident in Jewett’s stories and in others by writers like Mary E. Wilkins Freeman—was part realistic, and part nostalgic.³² There is some evidence that different cultural perceptions, and perhaps realities, existed in more rural areas. Carole Haber argues that farmers remained “employed” longer than their urbanite peers; by 1940, “on the farm, the majority of workers aged sixty-five to seventy-four remained in the labor

³² As another example, in Mary E. Wilkins Freeman’s story “A Mistaken Charity” (1887), two old sisters, Harriet and Charlotte Shattuck—although one is blind, the other deaf, and both extremely poor—manage to resist being relocated to the “Old Ladies Home” through the garden they tend and the generosity of their neighbors. Theirs is hardly an ideal old age, but it remains a self-sustaining one, which was important when obsolescence was becoming associated with dependency (see the section on “The Burden of Age”).

force (69.5%), while in the city only a minority of the same group could retain their employed positions (46.2%)” (C. Haber "Mandatory Retirement" 78). She explains that although cities actually offered up numerous employment opportunities that demanded far less physical strength than pre-industrial trades and crafts, these jobs were more often filled by women and children; the elderly were “increasingly phased out and replaced by new sources of labor” (78). Moreover, in moving from the farm to the city, migrants also left behind them the power and prestige inherent in the ownership of land and goods, as well as family and community structures and the county of their residency—all likely sources of support in old age (79). As the historian of retirement William Graebner has written: “Retirement to the family farm was one thing; retirement to a New York City tenement another” (Graebner 14).

Whatever the actual state of affairs for older people laboring in the countryside versus the city, the visions of old age that circulated through the public sphere associated aging in the city with inefficiency and poverty, and sometimes romanticized a vision of self-sufficient and productive old age in the country. There has always been a tendency to create nostalgia for a Golden Age in which old age was once revered, and was not seen as obsolescent. However, as historians consistently emphasize, there “never was a ‘golden epoch’ in the history of old age” (Achenbaum Old Age 4). Moreover, “the coming of industry cannot be shown to have brought economic oppression and exploitation along with it. It was there already” (Laslett 4). The power of the myth of a Golden Age, however, lies not in its authenticity, but in its hold on the cultural imagination. And the vision of a productive old age lived well-beyond the reaches of the modern city served as a foil for the narrative of aging as obsolescence in the modern world; it emphasized what was perceived as having been “lost” in the

transition to modernity. Taken together, these narratives comprise what social historians call a “traditional account” of modernization. According to such a traditional account, the devaluation of the older worker came about through the shift from an agricultural to an industrial economy; in the former, the aged were seen to have more access to and control over their (often self-) employment, while in the latter, “the specialization, speed, and strain of the new industrial order forced many older men out of work and onto the ‘industrial scrap heap’” (Carter and Sutch 6).³³

In their efforts to provide a more accurate rendering of the retirement practices and labor patterns of older adults in the early twentieth century, several social historians have challenged this traditional account of modernization. They have, for instance, asserted that an ideological shift—the growth of ageism in the workplace and on a wider social level—preceded the economic and demographic changes in older workers’ actual levels of (un)employment.³⁴ Beard’s and Osler’s insistence on the obsolescence of aging lends support to such revisionist accounts. Whether, in fact, ideological changes or economic/demographic changes were the primary catalyst for changing labor patterns of older adults, it is evident that the American public explained and justified these changes to themselves as the natural, albeit troubling, by-product of the modern machine age with its emphasis on scientific management and its quest for ever-

³³ For various descriptions of this “traditional account” of the effect of modernization upon older workers, see Susan B. Carter and Richard Sutch, “Myth of the Industrial Scrap Heap: A Revisionist View of Turn-of-the-Century American Retirement” *The Journal of Economic History* 56.1 (1996); Brian Gratton, “The Labor Force Participation of Older Men: 1890-1950” *Journal of Social History* 20.4 (1987); Robert C. Atchley, “Retirement as a Social Institution” *Annual Review of Sociology* 8 (1982); Achenbaum, *Old Age*; and Graebner, *History of Retirement*.

³⁴ For examples of these revisionist accounts, see Achenbaum, *Old Age*; David Hackett Fischer, *Growing Old in America* (New York: Oxford UP, 1977); Atchley, “Retirement as a Social Institution”; and Carter and Sutch, “Myth of the Industrial Scrap Heap”. Many scholars also argue that there is convincing evidence that farmers voluntarily retired at older ages as well, weakening the assumption that older men and women worked up until the point when they were physically incapable of working any longer.

increasing efficiency. The narrative of aging as obsolescence within the modern world held persuasive explanatory power, and as it circulated across industry, government and through individuals' lives, it also held troubling consequences.

“Only Persons Under Forty Need Apply”

One of these consequences was age discrimination in employment. Although some critics, in challenging the traditional account of modernization, assert that age discrimination in hiring and firing did not have significant impact on the actual demographics of history, the issue was a common topic of concern in the first decades of the twentieth century. We see this reflected in the fiction of the time, such as when old Antanas must actually pay part of his salary in order to get a job in *The Jungle*. This experience of the aging common laborer is mirrored by that of the white collar businessman in *Sister Carrie*, when Hurstwood—whose “clothes were very good and his appearance still excellent”—applies for a sales position well beneath his level of skill and experience, and is turned down by an employer looking for someone younger who is willing to work hard for less money (251). Numerous newspaper articles chronicled experiences like Hurstwood's where a competent or even overqualified older worker was turned down for a job, and the blame for this rejection was attributed to age. One 1914 article tells of a coffee salesman in Boston who had held the same job for twenty years and “was suddenly, out of a clear sky, notified that his services were no longer required. There was no complaint as to his work or as to the manner in which he performed it. He was told frankly, 'You are too old, that's all.' He was confident he could get other work at once, but he is still fighting persistently but fruitlessly for another position” (Crissey and Wilhelm 763). A long article that ran in *Forum* in 1928 with the threatening title “You After Forty” describes the gradually lowering “deadline of employment” thusly:

“Only persons under forty or forty-five need apply,” is a frequent injunction not only in the “help wanted” columns for manual workers but even in the case of higher professions such as those of engineers, accountants, auditors, and the like. Practically all railroad corporations and many industrial concerns have now the established and formal rule not to engage for permanent positions any skilled workers over forty-five and unskilled laborers over thirty-five. In many instances these age limits are set even lower....A well known restaurant chain considers women waitresses past the age of twenty-five “too old” and will give them no employment. A number of my engineering friends, none of whom is above the age of forty-two, tell me that they always discount some years of their life when applying for a job. (Epstein)

Thus whether or not age discrimination in hiring and firing was actually a problem of significant proportions, it was certainly seen to be one. The idea that men past forty were unemployable and as a result not valuable was very much in the public eye; along with articles like the above, it was also the subject of lampoons and editorial cartoons.³⁵

The Great Depression would only exacerbate this job discrimination. As one 1938 *New York Times* article complained: “There are few enough 'help-wanted' advertisements in any paper, but these few leave little doubt that middle age is economic old age, that industry is creating a human scrap heap, that business in hair dyes must be good” (Kaempffert "The Man over 40" 109). This same article turns to Solomon Barkin, head of the New York Commission on Old-Age Security, to report that “discrimination against the ‘older person’ hedges 89 per cent of the jobs available” (110). In contrast, some commentators of the time—as well as contemporary social historians—sought to dispel the idea that age discrimination actually impacted hiring and firing practices.³⁶ For instance, a 1936 *New York Times* article reports on “the problem, much discussed even

³⁵ For examples of such cartoons, see Achenbaum and Kusnerz, *Images* 33,36.

³⁶ See, for example, Carter and Sutch, "Myth of the Industrial Scrap Heap" ; and Gratton, "Labor Force Participation" .

before the depression, of the superannuated workers whom industry tossed on the scrap-heap at the age of 40. When the facts were examined, there was really no evidence of men of 40 going to the scrap-heap in sufficient numbers to constitute a problem; nor yet of men being scrapped at 45, or at 50, or at 55, in anything like the numbers implied. Only as we got well beyond 60 did we find men and women retiring in sizable numbers from industry" ("Some Remarkable Changes"). However, again, whether or not older men and women were actually being "scrapped" because of their age, this was widely *perceived* to be the case. As such, aging was seen to bring with it obsolescence, and growing old meant losing cultural capital, if not fiscal capital. This association of aging with economic insecurity and dependency—and the resulting association of an aged population with a burden on the family, economy and nation—was another consequence of the narrative of aging as obsolescence within the modern world.

The Burden of Age

The very fact that the 1938 article mentioned above included the line "middle age is economic old age" suggests that, by this time, there was a solid association in place between aging and economic insecurity. Laura Hirshbein argues that "Prior to the 1930s, there was no necessary relationship between old age and economic problems. While some people required pensions later in life, this was explained by their specific economic circumstances, not as an inevitable feature of aging" (Hirshbein "Transformation" 208-9).³⁷ While there may not have been a "necessary" relationship

³⁷ She continues: "By the early 1930s, however, especially in the wake of the Depression, commentators and policymakers began to claim that poverty would be an inevitable byproduct of old age if older workers did not receive pensions."

between old age and economic problems before the 1930s, there was at least a strong associational relationship in place well before then, evidenced by such examples as Dreiser's view of fortune's life course, discussions of the employment problems faced by older workers, and the cultural cliché of going "over the hill to the poorhouse" in one's old age. Shortly before the Depression, one commentator wryly observed: "Not only are the aged increasing in number but the very measuring rod of old age is no longer the traditional one of bodily decrepitude. The Biblical three score and ten years are no longer the criteria of old age. To-day it is economic senility which determines whether one belongs to the party of the 'old' or the 'young.' The ability to hold a job or to secure employment after the thirty-fifth or fortieth birthday decides one's 'youthfulness' or one's 'age.'" (Epstein 265). This comment references age discrimination in hiring and firing, but it also suggests that financial hardships—"economic senility"—were coming to be part of the very definition of what it meant to be "old" even during the height of the economic prosperity of the 1920s. What was the nation to do with all its obsolescent older workers?

Pensions, and the practice of mandatory retirement, grew rapidly in the late nineteenth and early twentieth centuries in response to that question, although not necessarily out of the sorts of motives we might today imagine.³⁸ As Robert Atchley notes, a "new social ideology of retirement" was developing elsewhere in the world, primarily in Europe with Germany in the vanguard, wherein it was recognized that "the

³⁸ Achenbaum notes that "the first federal retirement measure became law in December 1861" when a Congressional act required naval officers of sixty-two and above to resign their commission. However, the private sector, far more than the federal government, was where retirement policies burgeoned in earnest. According to Achenbaum's research, "eight companies instituted programs between 1874 and 1900, twenty-three others began policies between 1901 and 1905, and twenty-nine more offered employee retirement pensions between 1906 and 1910. Ninety-nine additional corporations initiated policies between 1911 and 1915." Achenbaum, *Old Age* 48-9.

legitimacy of the state in industrial societies depended in part on support from the working class and that a nationally legislated retirement system” was one important way in which the state could, in turn, display its capacity to act on behalf of workers (Atchley 268-9). By World War I, Germany, Austria, England, France and Sweden had developed national retirement systems, but such a system was not instituted in the United States until the Social Security Act of 1935. In America, the practice of retirement was growing not from government encouragement, nor at the demand of employees, but rather through the actions of charity reformers, large industrialists and social and economic analysts (C. Haber "Mandatory Retirement" 78). Carole Haber argues that charity reformers were the first to attempt to develop a “systematic approach to the problems of the aged,” largely in response to growing numbers of older persons on outdoor relief or in almshouses (C. Haber "Mandatory Retirement" 79).

These charity reformers found unusual allies in the large industries. By the late nineteenth century, capitalism had changed from small-scale business units to large corporations, and a large, industrial, and bureaucratic working class had been separated from the home and removed to the factory and the office (Graebner 13). Such large-scale businesses meant the standardization of jobs in America’s factories and offices, which reduced the capacity of supervisors to adapt jobs to aging workers; the accompanying large-scale bureaucracy made the institution of policies like mandatory retirement more impersonal and thus easier to institute (Atchley 270, 74). As part of the increased pressure on workers to retire, industries began to institute pension systems: first the railroads, followed by other transportation firms, companies in mining, manufacturing, banking and steel. Like the railroads, the industries at the forefront of offering pensions were those that typically faced strikes or were concerned about the

stability of their workers. Pensions were seen, by industry, as a way to regulate employees' conduct; not only did they encourage workers to stay put and discourage strikes, but some early pension systems also regulated employees' freedom to marry, hold other jobs, or other restrictions with the threat of forfeiting one's pension for not complying (C. Haber "Mandatory Retirement" 82-3).

Pensions were also seen by industry as a way of increasing efficiency, and it was in this manner that social and economic analysts lent their support to the growing ideology of retirement. Pension proposals were in keeping with the ideas being advanced about aging in the social and medical sciences of the late nineteenth and early twentieth centuries: by the theory of limited vitality, older workers—by the very process of becoming old—were understood as necessarily less productive than their younger counterparts. Retirement, in turn, became “part of the medically-endorsed prescription for conserving the elderly’s rapidly dissipating strength.....Thus, when economic authorities recommended the mandatory elimination of the old from the job market, they relied upon the authority of medical science, incorporating the language of the physician into their discussions” (C. Haber "Mandatory Retirement" 86). By this rationale, weeding older workers out of the workforce seemed a sure way to improve overall workers' efficiency.³⁹ So thoroughly was “efficiency” the driving motivation behind industry, and the removal of superannuated workers a means of achieving that goal, that one 1915 article discussing “Efficiency in the Factory” could claim the necessity of old age

³⁹ The rationale that pensions were being instituted as a means of reaching higher efficiency was explicitly conveyed to the American public. For example, one 1913 *Washington Post* article stated: "Twenty-two railroad companies in this country and more than 100 of the industrial corporations and many commercial institutions have within the past ten years instituted pension systems for their superannuated employees. This system has proved an excellent investment. It has brought adequate return in the shape of greater efficiency." "Harmony among Employees" *The Washington Post* Feb 16 1913.

pensions, among other incentive systems, for any would-be “modern” factory: “A business that pays nothing but wages is found wanting by modern efficiency standards” (Purinton). With the twentieth century and the rise of scientific management, the push for greater efficiency became an additional rationale that supported and legitimated the mandatory retirement of older workers, just as the “speed-up” of industry was itself redefining older works as inefficient.

As many historians point out, Social Security and mandatory retirement, in their inception, had “little to do with the concept of individually initiated retirement as a reward for long service” that characterizes them today (Atchley 271). Instead, although industry often emphasized their charitable motives in instituting pension systems, increasing efficiency was the prime goal. As Graebner summarizes:

When management discussed the pension, and labor [discussed] the pension and old-age home, their reference points were organizational and financial, their interest focused on efficiency and control. For the corporation and the union, the pension was a device for recruiting and holding personnel and for prosecuting the ongoing struggle for survival and dominance within the capitalist system. Social justice—the relief of old age dependency—appears to have been singularly unimportant in motivating the corporation and only one of several goals for the union. The unemployed middle-aged worker, technologically but not physically superannuated, was an embarrassment to all concerned. (Graebner 149)

Such a view of the rise of wide scale pension and retirement systems is not limited to hindsight. For example, shortly before Social Security was enacted, an article in the *North American Review* asserted that while the “general adoption [of old age pensions] might well be urged on humanitarian grounds, their economic advantages are no less compelling:” “Industry would be cleared of superannuated workers and its efficiency increased to that extent, while the continued purchasing power afforded by pensions would materially assist in maintaining the necessary market for agricultural and industrial products. Estimates suggest that through this means a million and a half or more

workers could be retired from the ranks of those dependent on employment” (Carter).⁴⁰ Pensions and mandatory retirement arose as a multi-faceted solution to many concerned parties’ problems: they “promised work to the young, seniority to the unions, efficiency to the engineer, stability and discipline to the employer....[but] basic to every aspect of the pension system was a conception of the old as incapacitated, inefficient, and above all, the most powerless sector of society” (C. Haber "Mandatory Retirement" 89). Whether retirement mandates and pension plans ultimately served the interests of older workers is debatable, and that only so because the ideology of retirement as a boon and as a valued lifestyle has developed so pervasively in the wake of these policies.

Although companies and even labor to some extent may have seen retirement and pensions as a positive move, for the older worker in the early decades of the twentieth century, leaving the work force was generally *not* seen as a positive thing. Graebner suggests that Osler was the first to promote an “implicit vision of retirement as a form of leisure, earned in the world of work but separate from it” (Graebner 10). But as Graebner further notes, “In 1905 this idea was at odds with both the level of opportunity in the society and prevailing notions of work”(10).⁴¹ Until the ideology of retirement as

⁴⁰ A much earlier article from 1916 in *The New York Times* expresses very similar sentiments. Speaking positively of older workers as adding stability to the workforce, the article promoted pensions as the key to both stability and efficiency, as “stabilizing labor is just as much an efficiency operation as anything else in connection with industry.” The author notes: “The employee is vitally interested in but two things, so far as work is concerned, his pay envelope and protection against time of need. The employer is interested in but one thing, efficient service on the part of his labor. The time-of-need protection can come only from provision long in advance. The efficient service can come only with long and continuous service in the same place. The pension that will provide for the workman’s future and make the workman willing to stay with his employer is the one thing that will bring about these three things.” “Pension Systems That Stabilize the Worker” New York Times Sep 10 1916.

⁴¹ Graebner argues that “Thirty-five years later, with work increasingly scarce, especially for the old and middle-aged, and pensions, public and private, more readily available, this conception of retirement [as

earned leisure came to hold sway in the late 1930s and 1940s, retirement and pensions carried much more negative connotations for the aging worker. Achenbaum notes that the meaning of the word “retire” was shifting at this time, from its primary sense “to withdraw from public notice,” to the meaning: “to cause to retire, specifically to designate as no longer qualified for active service.” Similarly, the verb “superannuate” took on the additional meaning “to give pension to, on account of old age, or other infirmity” (Achenbaum Old Age 50). As Achenbaum points out, both of these newly developed connotations conveyed a derogatory attitude toward old age, one that portrayed older workers as no longer qualified for gainful employment because of age, much like disability might disqualify an individual. Who would willingly wish to acknowledge their own obsolescence?

Instead, popular advice counseled that one should perhaps conserve and cut back on work hours, but still continue working.⁴² Work was, after all, essential to a worker’s masculinity. Where nineteenth century ideals of masculinity had emphasized individual achievement and independent work, Laura Hirshbein argues that workers in the increasingly large, impersonal work environments of the early twentieth century instead emphasized “prowess in business efficiency to compensate for a lack of control

earned leisure, first promoted by Osler] would fuse with social security and become a dominant ideology” (10).

⁴² One article might counsel the need for caution: “When a middle-aged man feels he is becoming less efficient in his business he is likely to be overcome by a panicky determination to submerge himself in work, to attempt to accomplish in more hours what he was once able to do in less time. This is a fatal mistake. Rather, his primary need is more rest and relaxation.” (“Play, Sleep and a Hobby Antidotes for ‘Slipping’” New York Times Jul 6 1924.) On the other hand, one should certainly not stop working entirely, for those who “suddenly commence their period of expected ease are generally the most unhappy and short-lived of all the aged persons we meet.” Dr. N. S. Davis, “The Times’ Current Topics Club: The Art of Living A Hundred Years” Los Angeles Times May 23 1901.

in the work place” (Hirshbein "The Glandular Solution" 286). Working, and working efficiently, were essential components of masculinity. A short fiction story published in *The Youth's Companion* in 1918 nicely illustrates how these messages about masculinity and work and the threat of aging and obsolescence were understood by the American public. Winifred Kirkland's "The Girl from the Young Women's" tells the story of Charlotte, a boarder, who helps to transform the family with whom she boards. Pa has experienced business failure after failure, so Ma must work along with their three girls while Pa cooks and cleans: "He was not a man in his own house; he was just maid of all work" (Kirkland 487). Pa's failure to provide for his family is emasculating; he answers to Ma for everything. Charlotte secretly teaches Pa some cooking techniques and then finds him a place assisting at a local lunch spot, where the owner/chef eventually takes him on as a partner. The transformation in Pa is dramatic: "Pa was sixty years old. It was the first time he had ever been successful. He grew younger daily"(487). The story ends with Pa surprising Ma with his tale of success by renting a house in the country where she and her girls can now live in leisure. "I can take care of you again now," he tells her (488). For Pa, the return to productive, remunerative work restores both his masculinity and his youth. In accordance with the values illustrated in this story, to retire and to accept a pension was to acknowledge one's inability to provide for one's family and to risk becoming, instead, a burden upon them.⁴³ Even if pensions were a solution to the problem of what to do with the obsolescent old, and even if

⁴³ A long article published in 1914 examining age-related job discrimination singled out this particular problem, noting "the fact that when a father or mother is unable to work and becomes melancholy or disagreeable in consequence, if the family needs the earnings of the parents they are apt to be considered undesirable members of the family....Thus the problem of disposal of the aged unfit is a vital one that goes straight to the rockbed of family and industrial life."Forrest Crissey and Donald Wilhelm, "The Human Scrap Heap" *Technical World Magazine* January 1914: 764.

pensions did provide for older workers, they also reinforced the narrative of aging as obsolescence and conveyed upon their recipients all of the narrative's negative connotations; this was a hard pill for aging workers to swallow.

The association between elderly people and dependency—the aged as “a burden”—increased during this time just as did the associations between aging and obsolescence, and aging and economic insecurity. Jacob Riis' sweeping documentation of the lives of poor immigrants of the New York tenements, *How the Other Half Lives* (1890), captures these associations in a telling way. Riis' book explicitly focuses on the poor (those already “dependent”) and implicitly divides the poor into two categories, those “deserving” help, and those who were “undeserving.” The old, when he deigns to address them, fall into the latter category, alongside the criminals and the insane.⁴⁴ In his text, Riis calculates the high sums required to maintain these unproductive populations in the penitentiary, the workhouse and the almshouse, and then appraises the particular situation of older immigrants: “When it is known that many of these old people have been sent to the almshouse to die by their heartless children, for whom they had worked faithfully as long as they were able, their growling and discontent is not hard to understand. Bitter poverty threw them all ‘on the county,’ often on the wrong county at that. Very many of them are old-country poor, sent, there is reason to believe, to America by the authorities to get rid of the obligation to support them” (Riis 202). Riis

⁴⁴ For example, in his chapter on “The Wrecks and the Waste,” Riis portrays older immigrants as idle and complaining: “Rows of old women, some smoking stumpy, black clay-pipes, others knitting or idling, all grumbling, sit or stand under the trees that hedge in the almshouse, or limp about in the sunshine, leaning on crutches or bean-pole staffs.... They grumble and growl from sunrise to sunset, at the weather, the breakfast, the dinner, the supper; at pork and beans as at corned beef and cabbage; at their Thanksgiving dinner as at the half rations of the sick ward; at the past that had no joy, at the present whose comfort they deny, and at the future without promise. The crusty old men in the next building are not a circumstance to them.” Jacob A. Riis, *How the Other Half Lives: Studies among the Tenements of New York* (New York: Dover, 1971) 202.

makes this comment on the apparently unremarkable assumption that the old are so undesirable, such a drain on a country's resources, that not only have their "heartless children" pushed them off onto state resources (the almshouse), but that they are burden enough to constitute a fit tool for international sabotage.⁴⁵

Riis' vision of the indigent old—abandoned by their children to the poorhouses—resonates powerfully with other depictions circulating in America in the decades around the turn of the twentieth century; however, most of these depictions are much more charitable to the elderly themselves. In 1872, the poet Will Carleton penned his most famous poem, "Over the Hill to the Poorhouse," depicting an elderly woman whose five children, for various reasons, refuse to take care of her and "put [her] on the town," meaning they consign her to the town's charity via the poorhouse. The older woman who is the subject of the poem is a very sentimentalized and sympathetic character; the poem reads as a moral reminder of the importance of filial piety. Carleton's protagonist faces hard times because of her ungrateful children, not because of her own lack of industry: "I am ready and willin' an' anxious any day / To work for a decent livin' and pay my honest way; / For I can earn my victuals, an' more too, I'll be bound, / If anybody is willin' to only have me 'round" (Carleton). The woman blames her age for her rejection, recalling that once she was young and handsome, "And I can't remember, in them days, of hearin' people say, / For any kind of a reason, that I was in their way!...And nobody ever hinted that I was a burden then." The poem was so popular that it inspired at least

⁴⁵ Riis' text also takes the obsolescence of old age as a truth. For example, he describes the plight of two older sisters, increasingly disabled, who now face the choice between starvation and the poor-house: "These were old, with life behind them. For them nothing was left but to sit in the shadow and wait" (189). An adjacent photograph entitled "Sisters" accompanies this verbal portrait. It visualizes the same objectification and erasure that Riis' text performs; the faces of these two women are heavily blurred in relation to the otherwise focused picture, denying them any identity other than "old" (188).

three songs and four movies, the last of these over half a century later in 1931.⁴⁶ The subject matter clearly resonated with the American public, and it has been suggested that this poem was part of the impetus for Social Security, a moral rally to the need to care for the nation's old people (with the implicit presumption that they were unable to care for themselves) ("The Will Carleton Poor House"). The poem suggests the poorhouse was held out as the worst-case scenario for the victims of aging as obsolescence: it is referred to as "a pauper's shame," and we are told "charity ain't no favor, if one can live without." Thus, the poorhouse—the ultimate symbol of the dependent aged population as a burden on the state—was another answer to the question "what should we do with our obsolescent old?" It provided a vision of desperation, despair and of duty that helped to make the vision of retirement and pensions much more acceptable.

Historians tell us that despite the ever-prominent threat of the poorhouse as the fate of the obsolescent older person, the actual number of older people living in poorhouses was relatively small, although the proportion of older people versus other poorhouse inmates was, at the same time, noticeably increasing. Achenbaum reports that throughout the nineteenth and into the first decades of the twentieth century, the family was the aged's primary source of consolation and assistance, and in fact some states enacted laws to make family members legally responsible for their poor and infirm kin (Achenbaum Old Age 75-6). The local community also generally assumed

⁴⁶ See "The Poorhouse in Word and Song" on the Minnesota Public Radio website (http://news.minnesota.publicradio.org/features/200207/29_gundersond_poorfarm-m/). These songs included: "Over the Hill to the Poorhouse," "They Have Taken Him Out of the Poorhouse," and "Out from the Poorhouse." The Internet Movie Database lists four movies as inspired by Will Carleton's poem: "Over the Hill to the Poorhouse" (1908) directed by Stanner E. V. Taylor, "Over the Hills" (1911) directed by Joseph W. Smiley and George Loane Tucker, "Over the Hill to the Poorhouse" (1920) directed by Harry F. Millarde, and "Over the Hill" (1931) directed by Henry King.

responsibility for relieving their needy, typically in the form of almshouses, although less than 2% of the entire population over sixty lived in poorhouses at any moment. While this figure remained fairly constant, the relative proportion of older people to other inmates *within* the poorhouses rose substantially (Achenbaum Old Age 80). Before the Civil War, the percentage of people over sixty years old in a given poorhouse ranged from 16% to 25%. Around the turn of the century, local and state governments erected a large number of asylums and other buildings for their society's criminal, dependent and incapacitated populations, but they did not establish any public facilities expressly to care for the aged.⁴⁷ This, in turn, caused a sharp rise in the proportion of the elderly within poorhouses. By 1910, although the old made up only 4.3% of the population of the United States, they constituted about 33% of the national almshouse population (C. Haber "Mandatory Retirement" fn25). By 1920, approximately 45% of all native born and 70% of all foreign-born inmates of almshouses were sixty or over (Achenbaum Old Age 80).

Although the government was not allocating money directly for the elderly, a vast number of private institutions were developed between the Civil War and World War I specifically for the aged (Achenbaum Old Age 80). Charitable organizations were thus the first group to systematically attempt to meet and solve the problems of the aged, though in their efforts to garner support they often focused upon the strong correlation between age and dependency, making the elderly's advanced years the key factor for allocating assistance: "Like the blind, the deaf, or the orphan, the old were perceived to

⁴⁷ One notable exception, also indicative of the rising numbers of aged inmates in poorhouses, was the renaming of one New York City almshouse to the "Home for Aged and Infirm" in 1903. Achenbaum, Old Age 80; Carole Haber, "Mandatory Retirement in Nineteenth-Century America: The Conceptual Basis for a New Work Cycle" Journal of Social History 12.1 (1978): fn25.

be a unique class, whose needs and abilities could be clearly differentiated from other types of paupers” (C. Haber "Mandatory Retirement" 79).

Old age homes for women were a special focus for such groups, in large part because there were many middle-class widows and spinsters—unused to the struggles of poverty (and, thus, part of the “deserving” poor)—who found themselves without support in their old age. The figure of the widow on hard times and in need of benevolent charity was a common one in fiction of the time. For example, Mary Wells’ “Grandmother’s Old Lady,” published in *The Youth’s Companion* (1911), tells the story of Mrs. McDiarmid, “the dearest, sweetest, most pathetic old lady in existence,” who has been widowed penniless and is beset by rheumatism (Wells). Grandmother’s largess secures Mrs. McDiarmid a place in the county’s Old Ladies’ Home—which is, in this story, a very nice and respectable establishment—and Mrs. McDiarmid is appropriately grateful. Other stories were not so sentimental—depicting the poorhouse or “Old Ladies’ Home” as a dreary place indeed—but they all typically presented the older characters’ at their center as pathetic figures, that is, figures that aroused the pathos of the reader.⁴⁸

⁴⁸ For example, Mary Wilkins Freeman’s short stories offer a less positive outlook on poorhouses. In “A Mistaken Charity” (1887), two old sisters, Harriet and Charlotte Shattuck, although “poor and coarse and common” all their lives and living in a house described as a “natural ruin,” conspire to run away when places are purchased for them in the “Old Ladies’ Home” by a benevolent, if bull-headed, neighbor (315). Although one is blind and the other deaf, they fiercely insist on living independently; the worst threat Harriet can raise to Charlotte is “Do you want *to go to the poor-house?*” (318). The “Old Ladies’ Home” is not the poor-house, of course, and Harriet and Charlotte only maintain their independent living by the generosity of their neighbors, but the story clearly paints such old age homes as a miserable form of charity. Mary E. Wilkins Freeman, “A Mistaken Charity” *American Women Regionalists: 1850-1910* eds. Judith Fetterley and Marjorie Pryse (New York: W. W. Norton & Co., 1992). The same holds true in “Sister Liddy” (1889), which describes an “ideal” almshouse: “The village took pride in it: no town far or near had such a house for the poor. It was so fine and costly that the village did not feel able to give its insane paupers separate support in a regular asylum; so they lived in the almshouse with the sane paupers, and there was a padded cell in case they waxed too violent” (323). Such tongue-in-cheek language points to the reader’s expected understanding: charity, while important, may be misplaced, but nothing is worse than being on the receiving end of it. The elderly women residents sit around and cattily reminisce about the fineries they possessed in a long gone past: “Their present was to them a state of simple existence, they regarded their future with a vague resignation” (330). The story hinges on the tales of Polly Moss, who had never had any possessions in her whole life, and so told grandiose stories of her fortunate (and entirely fabricated) Sister Liddy as a way

Readers were not invited to identify with these figures (certainly a reader would much rather imagine herself a Grandmother than a Mrs. McDiarmid); rather, they were taught the importance of well-placed charity at the same time that they were encouraged to distance themselves from the object of that charity. This was the case, too, with the Old Ladies' Homes themselves, as Carole Haber notes. The charity organizers founding these homes "only further underlined the nonproductive status of the old;" in their efforts to convince the public that they were not pauperizing their recipients, "they portrayed the aged women as the most helpless and needy members of society" (C. Haber "Mandatory Retirement" 81). Thus, while the actual percentage of destitute older people in poorhouses and Old Ladies' Homes may have been relatively low, this group nonetheless became a more visible social presence around the turn of the twentieth century. As a result—both perpetuated and reflected in the literature of the day—the associations between aging and poverty, dependency, and infirmity—and behind all of these, obsolescence and unproductiveness—were increasingly being made within the public imagination.

As troubling as was the question of what to do with the nation's obsolescent old, even more troubling was the experience of becoming part of that problem population. The common counter-measure described in newspaper coverage of job discrimination was the "business in hair dyes" and other attempts to remain "young" in appearance for as long as possible. As early as 1904, one of the "sterner sex" wrote in to a beauty

of holding her own; these stories were all that Polly had, and as such, poignantly depict the bleakness of life in the poorhouse. Mary E. Wilkins Freeman, "Sister Liddy" *American Women Regionalists: 1850-1910* eds. Judith Fetterley and Marjorie Pryse (New York: W. W. Norton & Co., 1992).

column in the *Los Angeles Times* complaining of his gray eyebrow hairs: "this annoyance is more than I can bear and puts a ban on my usefulness!" (Symes). A 1906 article proclaimed that "Youth is Essential: So Trained Nurses and Other Women Who Work Use Hair Dye." The article explains that both sick people and physicians prefer young nurses, believing their interest and enthusiasm to be greater. "The nurse's term of usefulness is short enough as it is," one physician remarked, "If they feel that gray hairs...are going to make the term of their best days even briefer, they are driven to hiding those traces of time and overwork by the use of hair dye, and the very number that do make use of it is very much larger than anybody supposes" ("Youth Is Essential"). This was not just limited to nurses, either, the article suggested as it posed the question: "Where are all the gray-haired chambermaids?" ("Youth Is Essential"). By 1936, the *New York Times* could ask, "But who really is old today? Who looks old today? Almost no one. Men and women at 60 look fifteen years younger" ("Grow Old Fast"). "Pretty soon," the paper jokingly observed, "there will be no more middle-aged people left in this country" because "everybody will remain young as long as he can" ("Some Remarkable Changes"). Faced with the spreading influence of the narrative of aging as obsolescence and its dismal consequences, it seemed a healthy response to try to disguise one's aging or to avoid aging in the first place. That latter prospect wouldn't seem a genuine possibility until the idea of scientific rejuvenation took hold of the public imagination in the 1920s, but—as evidenced by the messages about the moral responsibility to care for oneself in one's aging explored in the previous chapter—

the idea of “control” over the aging body held a particular appeal in the efficiency-crazed era of Taylorism and scientific management.⁴⁹

Taylorizing the Aging Body and Twilight Sleep

Like the buzzword “efficiency” and the “efficiency craze” that swept the nation, “Taylor” and “scientific management” also became household terms and influential concepts across a broad range of spheres. Taylor himself believed the “fundamental principles of scientific management [were] applicable to all kinds of human activities, from our simplest individual acts to the work of our great corporations” (Taylor 7). And the American public agreed with Taylor’s vision. As Martha Banta writes in *Taylorized Lives*, her exploration of the infiltration of scientific management into everything from ready-made house plans to immigration policies, Taylorism was “an extended narrative structure and discourse system, one that extend[ed] far beyond the factory floor to encompass every aspect of cultural existence” (Banta 4). That included, Banta argues, the vigorous application of Taylorism within the home: “We do not want to say that *even* domestic life [was] affected by the vagaries of the culture of management. Rather, it [was] *especially* family living that the ethos of good management wishe[d] to commandeer” (10). Newspaper and magazine articles instructed housewives how to manage their housework more efficiency, and Charlotte Perkins Gilman even claimed scientific management as part of the modus operandi of modern feminism: “[Feminism] is going to remodel the home, take it off man’s shoulders, bring it up abreast with our scientific management, set free four-fifths of its labor, reduce its outrageous cost,

⁴⁹ See Chapters 3 and 4 for more on the ideas behind, and the impact of, the concept and practice of scientific rejuvenation.

improve its methods" (C. P. Gilman).⁵⁰ So thoroughly were the values behind Taylor's system embraced that in 1915, one Alma Whitaker would write in the *Los Angeles Times* that the modern world had "adopted a new god—efficiency:" "Organization, scientific management, the highest percentage of results, the elimination of all needless waste of both time and material, labor and equipment—these are the modern ideas, not only in commerce, for they are rapidly spreading through every department of life, in sport, in pleasure, in social affairs, yea, even unto matrimony and the management of the home" (Whitaker).

Edith Wharton's 1927 novel *Twilight Sleep* provides a cutting satire of this culture of scientific management writ large. Far removed from the industrial scene, even far removed from the classes that actually "labor" for a living, Wharton's novel shows how thoroughly these ideals permeated all strata of society as she portrays—and pokes merciless fun at—the upper crust of 1927 New York society who have taken the gospel of efficiency and the doctrines of Taylorism to heart. Her novel follows the life of the Manford family, headed by middle-aged matriarch Pauline, whose narrative viewpoint we share most frequently. The rest of the Manford family is comprised of Pauline's very sensible daughter Nona; Pauline's second husband and Nona's father, the self-made man Dexter Manford; Pauline's former husband Arthur Wyant, a throwback to New York

⁵⁰ As one example, a 1911 article describing the Barnards—a couple in rural Connecticut who were exemplars of new domestic scientific management methods—extolled the virtues of alcohol stoves and hot water heaters to save fuel and conserve homemaker's energy: "What with the small, scientifically arranged kitchen, with the fireless cooker doing the work for soups and roasts that the gas stove has started, with the steam cooker preparing the other things without danger of their burning, and saving the washing of pots, and the alcohol gas stove doing all that is required of it, the Barnard kitchen is a little wonder." We are also told that the Barnards do not use a broom—"that implement...[of] the Middle Ages"—but rather a vacuum cleaner, and Mrs. Barnard does not scrub the floor on her hands and knees, but rather uses a mop, that can also be interchanged with a "dustless duster" attachment. "An Experiment Station for Making Housekeeping Easy" *New York Times* May 7 1911.

of old (affectionately referred to as “Exhibit A”); the son that Pauline had with Arthur, Jim Wyant, who is passive and a bit archaic like his father; and Jim’s young, glittering, jazzy wife Lita. Several contemporary reviews of the novel cast these characters as “types,” perhaps denying their complexity but acknowledging Wharton’s satire.⁵¹ Pauline in particular is a “thoroughly American type” who represents the “older generation.”⁵² She is also a caricatured spokeswoman for the cult of the “god of efficiency.”

We get a clear sense of Pauline in the novel’s opening paragraphs, as Nona speaks with Pauline’s secretary, Miss Bruss, trying to gain an audience with her mother. To show how difficult it would be to arrange such a thing, Miss Bruss hands over Pauline’s schedule:

7.30 Mental uplift. 7.45 Breakfast. 8. Psycho-analysis. 8.15 See cook. 8.30 Silent Meditation. 8.45 Facial massage. 9. Man with Persian miniatures. 9.15 Correspondence. 9.30 Manicure. 9.45 Eurythmic exercises. 10. Hair waved. 10.15 Sit for bust. 10.30 Receive Mothers’ Day deputation. 11. Dancing lesson. 11.30 Birth Control committee at Mrs. — (Wharton 9-10)

The absurdity of this schedule is a clear reflection of Pauline’s lifestyle; she manages her time down to 15 minute intervals, squeezing commitment next to commitment with no thought for the contradictions between championing both unlimited maternity and birth control in her quest to most efficiently fulfill her “duties” and “responsibilities.”⁵³ Nona

⁵¹ For example, see Isabel Paterson, “The New Sin” *Edith Wharton: The Contemporary Reviews* eds. James W. Tuttleton, Kristin O. Lauer and Margaret P. Murray (Cambridge: Cambridge UP, 1992); Percy A. Hutchison, “Mrs. Wharton Tilts at ‘Society’” *New York Times* May 22 1927; L. P. Hartley, “New Fiction: *Twilight Sleep*” *Edith Wharton: The Contemporary Reviews* eds. James W. Tuttleton, Kristin O. Lauer and Margaret P. Murray (Cambridge: Cambridge UP, 1992); and Naomi Royde-Smith, “New Novels” *Edith Wharton: The Contemporary Reviews* eds. James W. Tuttleton, Kristin O. Lauer and Margaret P. Murray (Cambridge: Cambridge UP, 1992).

⁵² See Royde-Smith, “New Novels” ; Hartley, “New Fiction: *Twilight Sleep*” ; and Hutchison, “Mrs. Wharton Tilts at ‘Society’” .

⁵³ Pauline’s motto, ironically offered in the context of Pauline not always being able to make time for her family, is: “There’s a time for everything” (10).

and Dexter, too, are caught up in a mania of activity—from social occasions to social causes—largely at Pauline’s behest.⁵⁴ Pauline’s ceaseless activity is performed in the pursuit of efficiency, and to the point of absurdity (Pauline at one moment wants to put concave tiling in every cove and angle of Dexter’s new office “so that there [would be] no corners anywhere to catch the dust”).⁵⁵ Even when Pauline gazes upon her rural estate, Cedarledge, and pictures retiring there year round with Dexter “like an old fashioned couple,” her “practical imagination” instantly interrupts this pastoral reverie and begins to apply scientific management principles to the farming possibilities, envisioning “up-to-date” methods of chicken farming and “really scientific methods of cheese and butter-making” (222).⁵⁶ Pauline is the exemplar of Taylorism translated to “all kinds of human activities.” But Wharton with her constant satire shows this approach to life to be pointless, fruitless, and ultimately unproductive, a commentary that the novel’s reviewers readily picked up on, describing the characters as “too busy to live.... They are strivers in a strife that has no importance and no goal; they are as active as squirrels in cases,

⁵⁴ Pauline, in the words of one reviewer, “shifts the gears, steers the lives of all the others.... She makes activity an aim in itself.” (“Anachronism” *Time* June 6 1927.) And, indeed, we see Nona and Dexter living at the same pace, whether or not that is their wish. Nona finds her own time “being—through force of habit rather than real inclination—...fully taken up with exercise, athletics and the ceaseless rush from thrill to thrill which was supposed to be the happy privilege of youth” (11). And Dexter, too, ascribes to this belief in “activity as a virtue in itself:” “He had been brought up to think there was a virtue in work *per se*, even if it served no more useful purpose than the revolving of a squirrel in a wheel” (12).

⁵⁵ Pauline further thinks that “People’s lives ought to be like that: with no corners in them. She wanted to de-microbe life.” But Dexter had resisted, and “now, he understood, the fad had gone to the scrap-heap—with how many others!” (55).

⁵⁶ The momentary vision of peaceful retirement is, in the context of the book, nothing short of a joke. Pauline is so dedicated to “endless activity” that when she finds herself with “an hour of unexpected leisure,” she is “painfully oppressed” by it: “Now that she had one [hour] to herself, for the first time in years, she didn’t in the least know what to do with it....She had taken plenty of rest-cures, of course; all one’s friends did. But during a rest-cure one was always busy resting; every minute was crammed with passive activities; one never had this queer sense of inoccupation, never had to face an absolutely featureless expanse of time” (116-7). Pauline’s equation of a rest cure with being “always busy resting” satirizes both her fathomless need for activity as well as the sorts of institutions that would offer “rest cures” and the rich women who took them (whose self-enforced “labors” that necessitated “rest” were a mockery of those of women who actually had to work for a living).

and make no more progress. They live lives of active uselessness” (William Lyon).⁵⁷ In other words, the god of efficiency, according to Wharton, was a prankster, and had had his joke on the American public.

With the values of Taylorism applied so broadly, it is no surprise that the body, too, came under the scrutiny of scientific management methods. “Everybody has the ambition to make of himself the finest physical machine possible,” declared a 1912 *Washington Post* article describing the quest of one man to train his daughter—2 years and 2 months old Margaret Terry Hudson Grant of Minneapolis—“to be a ‘perfect woman,’” which apparently included teaching her to swim at 8 months “and numerous other accomplishments” (“The Perfect Woman”).⁵⁸ In his study on *Modernism, Technology, and the Body*, Tim Armstrong argues that the period of modernism is “characterized by the desire to *intervene* in the body; to render it part of modernity by techniques which may be biological, mechanical, or behavioural” (Armstrong 6). He describes a shift from early nineteenth century views of the body as an impassable boundary housing the self, to an early twentieth century understanding of the body as penetrable “by a barrage of devices: the stethoscope, ophthalmoscope, laryngoscope,

⁵⁷ Wharton suggests that part of what is wrong with Pauline’s “Taylorized” life is that her “scientific management” strategies ultimately boil down to rampant consumerism. When Pauline contemplates her country estate, Cedarledge, she does so in terms of the 75,000 bulbs planted on the sprawling estate: “Twenty-five thousand more bulbs than last year...that was how she liked it to be. It was exhilarating to spend more money each year, to be always enlarging and improving, in small ways as well as great, to face unexpected demands with promptness and energy, beat down exorbitant charges, struggle through difficult moments, and come out at the end of the year tired but victorious, with improvements made, bills paid, and a reassuring balance in the bank. To Pauline that was ‘life’” (214).

⁵⁸ The article, which ultimately ridicules the extremeness of the fathers’ efforts, captures the feeling of the times: “This is neither the steel age, nor the electrical age, but the age of efficiency...The business man has the fever, and hires experts to teach him how to run his office or shop according to the approved modern method. The matron of 40 keeps herself young by dressing in the hobble skirts of the high school girl, and parents, not content with attaining perfection themselves, begin with their offspring when they are yet of a tender age...” “The Perfect Woman” *The Washington Post* Oct 13 1912.

speculum, high-intensity light, X-rays.... Other technologies were applied to it: drugs, inoculation, electricity; as well as various external regimes designed to improve its make-up, shape, and the flow of energies through it" (2). As the body was penetrable, so was it threatened by pollutants, and in the late 1910s and 1920s, "a new advertising pattern emerged" that described the bodily threats people faced—"crowsfeet, bromodosis (smelly feet), comedones (blackheads), sour stomach, office hips, perspiration"—and the new products and technologies to which people might turn to combat these disasters (Armstrong 99). In short, the body was promoted as a potential source of excessive waste and embarrassment that needed to be monitored, treated, and—like little Margaret Terry Hudson Grant—trained to perfection.

In such a cultural milieu, the body's aging was perceived as adding yet another dimension to the corporeal hazards threatening the pursuit of management, control, progress and efficiency. As we have already seen, older workers were not desirable from the purview of scientific management: they offered "useless" experience instead of speed and strength; instead of being adaptable, industrial psychologists argued "older people could not function in a technologically sophisticated world because of the changes that had occurred since their own childhood;" and their age was already proof of how little vital energy they had left to offer (Hirshbein "Transformation" 235). Influencing all of these considerations was the perception of aging as a process that threatened to permanently diminish the body's receptiveness to any sort of management tactics. In a rather striking passage in *Senescence: The Last Half of Life* (1922), eminent psychologist G. Stanley Hall describes "old" bodies, a group in which he includes his own body, as "prone to develop peculiarities:"

There are faults in table manners.... Mastication may be noisy or otherwise subtly disagreeable, or there is slobbering, clumsiness, or

neglect of common conventionalities once observed. The toilet may be neglected, the attire soiled or spotted or imperfectly put on, and so a look-over needed before we go out. We do things or make noises in the presence of others that once we only permitted ourselves when alone and there is a new indifference to personal appearance. The voice is impaired...;our face or form are no longer aesthetic objects; we mislay things and invoke those about us to help find them; and are tediously slow in mind and body.... On all such matters we should make frequent self-surveys. (G. S. Hall Senescence 371-2)

Hall's description invokes not only the pervading sense of aging as decline and obsolescence (he tellingly opens *Senescence* by recounting Osler's "Fixed Period" speech), but also positions the aged body as a threat to "common conventionalities," "aesthetics" and "the presence of others." The language he uses—"neglect" and "we do things...in the presence of others that once we only permitted ourselves when alone"—leaves open the question of whether it is the old body itself, or a lapse in mental or moral self-governance, that has failed with age. Either way, aging is the culprit, and Hall's call for "a look over" and "frequent self-surveys" suggests that that disorderliness of aging requires (and yet defies) management and control strategies for even the simplest daily tasks.

Would not the simpler solution be the careful management of the body so as to prevent aging in the first place? The far-reaching influence of scientific management did, in fact, spread to the prevention of aging. Hygiene and preventive health measures to increase the life span and the health span were promoted with an emphasis on increasing the body's efficiency (for more on these topics see the following chapter). The idea of aging as a loss of vitality also entered into the application of scientific management to the aging body. A 1913 article in *The Washington Post* titled "How Scientific Management of the Body Will Ward Off Ravages of Old Age" circulated the ideas of German physiologist Max Rubner who was very interested in these rate-of-living

arguments. "The secret of eternal life," as reported in this article, "is to balance the outgo of work by the storage of energy and the intake of work-making material as to maintain their equilibrium" ("Real Secret"). Explained in the dominant metaphor of the Machine

Age:

The plan, then, for everybody to follow, if you desire to increase the span of three score years and ten, is to start with the new scheme of scientific management of the bodily organs. The human machine is much the same in analogy to artificial machines. The real causes of old age, decay, degeneration and death are either a poor machine to begin with...or gritty, thick clogging oils and fallacious, destructive fuels, which gradually wear out by friction; waste products and plugging, all of the delicate joints, hinges and vital parts.

Thus, Rubner suggests, to conserve one's vital parts, one should economize one's energy and exert oneself efficiently with a "saving of every action, every idea, every muscular or nervous movement."

When every action, idea and movement demands conscious attention, the potential to take such self-monitoring to the extreme is clear. In the face of such an overwhelming task of self-management, it was tempting to seize upon the new techniques and technologies that promised to help regulate and reorganize the body, externally and internally. There were an almost infinite variety to choose from: "In the first decades of this century, the British or American enthusiast for bodily reform could choose among a vast array of methods, ranging from mind-cure techniques to mechanical manipulation: Christian Science, New Thought, Alexander Technique, Fletcherism, the Culture of the Abdomen, colonic irrigation, electric therapies, among numerous eating and exercising regimes, gland treatments, and mechanical devices" (Armstrong 106). Many Americans ate these up, as one article observed: "We devour with avidity all that is printed concerning health and how to obtain it, and swallow the rankest absurdities if they but seem to show us how we may live forever" ("The Perfect

Woman"). In other words, Americans were primed to bite whatever magic bullet promised the remedy to aging.

In *Twilight Sleep*, Wharton's critique of the culture of scientific management extends to the management of the body and the many techniques, technologies and therapies—which we might simply call fads—that the American public adopted so readily. Aging is a motivating force in the text; it is both the threat which compels many of these bodily regimes, and the process whose visible signs these regimes seek to minimize. Pauline's adherence to Taylorism extends to her own person; she seeks to control the shape, appearance and function of her body and mind. Her constant busyness leaves her vulnerable to worry and fatigue, whose outward manifestations she measures by the wrinkles that appear on her face. Thus, effectively, it is her physical aging that Pauline seeks to control, or more accurately, to stave off. She is always in search of "all sorts of promised ways of prolonging youth, activity and slenderness" (83). In a moment of disappointment, Pauline questions: "Nervousness, fatigue, brain-exhaustion... had her fight against them been in vain? What was the use of all the months and years of patient Taylorized effort against the natural human fate: against anxiety, sorrow, old age—if their menace was to reappear whenever events slipped from her control?" (98). These quotes show how securely Pauline associates aging with negativity, depletion and a state of being worn-out; "nervousness, fatigue, and brain-exhaustion" are equivalent to "anxiety and sorrow," and all are ultimately equivalent to "old age." We see the narrative of aging as obsolescence at work here, and yet in Pauline's worldview, the functional and physical aspects of age are intimately bound up in one another; looking old is being old, and the state antithetical to old age is one characterized by "activity" and "slenderness," another equation of acting and looking as criterion of one's age. Thus, Pauline seeks to "control"

all the negativity she associates with age by monitoring its visual appearance. In so doing, she is driven by the belief that “the natural human fate”—old age—can be avoided by her careful “Taylorized” effort. And where such efforts threaten to fail her, she is open to whatever new gurus the culture of the magic bullet has to offer.

Pauline’s “patient Taylorized efforts” take many forms, virtually all of them associated with fads of the 1920s. At times her effort seems nothing more than belief in her supreme will and in the power of belief to overcome all things. For example, Pauline catches her reflection in a mirror and notices fine wrinkles about her lids, lips and between her eyes: “She would not permit it; no, not for a moment. She commanded herself: ‘Now, Pauline, *stop worrying*. You know perfectly well there’s no such thing as worry; it’s only dyspepsia or want of exercise, and everything’s really all right—” (27). Upon a second look, she “fancied the wrinkles were really fainter, the vertical lines less deep...” (27). Reviewers connected these moments in the novel with the contemporaneous popularity of “mind cure” movements, of which Christian Science was an example. As one reviewer put it, Pauline is an “amplification of the doctrine of Mrs. Eddy and all her disciples and imitators: ‘There is no such thing as Pain,’ they chant. ‘Poverty, Disease, Wrinkles, Fatigue, Misunderstanding are all False Claims. Illusions—you only have to say they don’t exist and they are gone’” (Royde-Smith).

But instead of believing in a one, true way, Pauline hedges her bets and is “always dancing attendance upon Faith-Healers and purveyors of Eastern mysticism” (Hartley). Where faith fails, Pauline’s solution to all ills is consumption, whether of gurus, treatments or commercial goods: “If American civilization is, as charged, the apotheosis of materialism, Pauline Manford is an appropriate figure to epitomize this cult of temporal well-being” (Paterson). Pauline buys spiritual salve, first in the form of the Mahatma,

whose “wonderful mystical teachings” are less miraculous than his “eurythmic exercises...(‘holy ecstasy,’ he called them) which had reduced her hips after everything else had failed” (23). After the Mahatma becomes steeped in scandal, she turns to Alvah Loft, a Messiah who has managed “to reduce his message to tabloid form;” with “no eurythmics, gymnastics, community life, no mental deep-breathing, or long words to remember.... [He] simply took out your frustrations as if they’d been adenoids” through five minutes of silent communication for twenty-five dollars, or a “triple treatment” at a hundred dollars “which was only three minutes longer than the plain one” (120-1, 270).⁵⁹ Wharton’s satire makes it clear to the reader that Pauline is as gullible as the Emperor with his new clothes, and the trappings of her own search for relief from anxiety and aging are as dismally inadequate. But Pauline’s search is not entirely about avoiding frustration and worry; as with the Mahatma and the way his exercises reduce her hips, Pauline seeks to sculpt her aging body as well. In this quest she consumes whatever new technological or scientific products and treatments promise to hold back the worry and the years and make her desirable to her husband. Her huge bathroom looks “like a biological laboratory, with its white tiles, polished pipes, weighing machines, mysterious

⁵⁹ Wharton shows that Pauline is so dedicated to efficiency that the absurd simplicity of Loft’s promises are exactly what appeal to her: “The very brevity of the treatment, and the blunt negative face and indifferent monosyllables of the Healer, were subtly stimulating after the verbiage and flummery of his predecessors. Such stern economy of means impressed Pauline in much the same way as a new labour-saving device; she liked everything the better for being a short-cut to something else, and even spiritual communion for resembling an improved form of stenography. As Mrs. Swoffer said, Alvah Loft was really the Busy Man’s Christ” (153). Pauline eventually grows dissatisfied with Loft, too, and seeks out the next, new messiah, whom we are told will be a “Scientific Initiate...[who has] a new panacea for the mind as well as for the epiderm” (263). Pauline’s friend Mrs. Swoffer reports on Sacha Gobine, this new scientific Russian Initiate, that “It’s eternal rejuvenation just to sit and listen to him.” These are magic words to Pauline’s ears: “Rejuvenation! The word dashed itself like cool spray against Pauline’s strained nerves and parched complexion. She could never hear it without longing to plunge deep into its healing waters. Between manicure and hair-waver she was determined to squeeze in a moment with Gobine” (271). This passage again confirms that combating aging—and all the negatives with which Pauline associates aging (pain, anxiety, obsolescence, loss of sexuality)—lies at the base of her efforts.

appliances for douches, gymnastics and ‘physical culture’” (22). We glimpse here the remnants of Pauline’s years of bodily experimentation; the consumer products and self-disciplining attempts to which she has turned when her “moral uplift” has failed her.

At the heart of all these efforts, we see Pauline’s driving desire to remain useful and to remain attractive to her husband, revealing Pauline’s perception of aging as the bearer of both social and sexual obsolescence. Not only do fatigue and brain-exhaustion threaten her adherence to her carefully planned schedule with its 15-minute intervals, but she perceives the physical aspects of aging as threatening her attractiveness to her husband, Dexter. For example, when Pauline grows continually discouraged with Dexter’s straying attention, she reflects: “Of what use were eurythmics, cold douches, mental deep-breathings and all the other panaceas? If things went on like this she would have to have her face lifted” (101). Face-lifting, that ultimate technology of restoring the appearance of youth, is Pauline’s idea of the logical next step toward resolving the problem of Dexter’s wandering affections. This quote also speaks to how open Americans in this “culture of the magic bullet” were to bodily interventions; the range of such interventions that Pauline is willing to make upon her body flows, without critical distinction, from casual exercise to the surgeon’s scalpel. Dexter, too, is portrayed as excessively concerned with his own physical appearance of age, always studying himself in mirrors as he contemplates the attentions of his young typist, and convincing himself as he courts the much younger Lita that he is not a paternal figure for her, more her “elder brother; and his looking-glass told him that he didn’t look much too old for the part...” (216). If he were to look “too old for the part,” then his efforts would become ridiculous, not just adulterous. Age threatens to make one undesirable and ineffective, showing that the narrative of aging as obsolescence—like the values of Taylorism—

reached beyond evaluations of “usefulness” and “productivity” to mark all areas of social, domestic and personal life.

Twilight Sleep's satire, then, is aimed at the cult of efficiency and at “a world which believe[s] in panaceas,” revealing at the same time the wide reach of the narrative of aging as obsolescence and the desperation it entailed (Wharton 51). If we take the novel’s reviews as evidence, Wharton hit her targets. Reviewers remarked that her “exceedingly cruel” satire was “unsparing to the ageing woman” (“*Twilight Sleep*”). That the public recognized their own cultural sentiments and practices in this satire is also evident from these reviews: “Mrs. Wharton knows how to disclose the middle-aged woman as none other author writing in America” (“*Twilight Sleep*”). Wharton’s send up of the cult of efficiency was equally recognizable. Reviewers described the novel as “a deliberate ‘showing up’ of all the absurdities of modern American ‘fast’ life,” and “a horrified forecast of what the world may be coming to.”⁶⁰

In the face of this satiric jab at American life and values, one reviewer proposed a solution to the modern ills Wharton so thoroughly exposed:

In chapter after chapter they lounge on divans, ring bells, give orders, go—without interest—in cars like furnished houses, from places which bore them to other places which bore them rather more. If they would grow a potato, get in their own winter logs, do the household washing—how it would save them! (Webb)

This call for “real” labor evidences nostalgia for pre-modern, rural life, when one’s labor was aimed toward production rather than consumption. The emptiness of modern labor is echoed in the very title that Wharton chose for the novel. “*Twilight sleep*” referred to an

⁶⁰ See Mary Webb, “Irony and Mrs. Wharton” *Edith Wharton: The Contemporary Reviews* eds. James W. Tuttleton, Kristin O. Lauer and Margaret P. Murray (Cambridge: Cambridge UP, 1992); and Hartley, “New Fiction: *Twilight Sleep*” .

obstetric technique in vogue in the 1920s that involved injecting child-birthing women with a combination of morphine and scopolamine, the first to reduce pain and the second to induce memory loss of any pain that did occur. The resulting effect was to remove all labor from childbirth. In the novel, Pauline installs Lita in “the most perfect ‘Twilight Sleep’ establishment in the country.... Lita drifted into mother-hood as lightly and unperceivingly as if the wax doll which suddenly appeared in the cradle at her bedside had been brought there in one of the big bunches of hot-house roses that she found every morning on her pillow” (18). Wharton makes it clear that we are meant to connect this “advance” in the labor of childbirth with other forms of modern labor. For example, Pauline asserts her continual escapist mantra that life should hold no pain, only Beauty, “in that bright efficient voice which made loveliness and poetry sound like the attributes of an advanced industrialism, and babies something to be turned out in series like Fords” (18). The mention of Ford here evokes the quintessential “assembly line,” a symbol for modern, Taylorized labor wherein each laborer is confined to one specialized movement and that labor—out of context of the rest of the line—is meaningless, producing nothing. Life lived according to the dictates of “advanced industrialism,” Wharton suggests, leaves little to differentiate between the value of poetry and babies and that of cars; all have been reduced to commodity status, much like Taylor’s workers were reduced to “personal coefficients.” But what is the alternative?

The same nostalgic cry for “real” labor made by the reviewer is echoed within the novel. Dexter—although he has shown anxiety at his own aging and waning sex appeal—questions the value of Pauline’s obsessive efforts:

Why did she want to stand it? All those rest-cures, massages, rhythmic exercises devised to restore the health of people who would have been as sound as bells if only they had led normal lives! Pauline ... never walked upstairs, and then had to do gymnastics, and have osteopathy, and call in Hindu sages, to

prevent her muscles from getting atrophied ... He had a vision of his mother, out on the Minnesota farm ... kneading, baking, cooking, washing, mending And there the old lady sat ... in her hale and hearty old age, built to outlive them all. (70)

Part of this critique is a class critique, certainly; it was only to a selective, fortunate portion of society that “modern living” could be so devoid of manual labors. It is telling, though, that Dexter’s vision of an older, better world involves a vision of a better old age, “hale and hearty... built to outlive them all.” In this portrait of a rural, pre-modern old age, the older person’s labor and role were clearly defined. This nostalgia reflects a larger anxiety of the narrative of aging as obsolescence in the modern world, anxiety that modernity held no roles for the aged or aging, and that the increased productivity of machine labor was encroaching upon the productive possibilities of the older members of society.

Ultimately, however, the novel suggests that such nostalgic visions of meaningful labor and hale old age will never be more than fantasies. Dexter tries to picture himself in that rural world: “Wasn’t that perhaps the kind of life Manford himself had been meant for?” (70-1). However, he can’t get away from the values that rule his world: efficiency, productivity, progress. His picture turns to “farming on a big scale, with all the modern appliances his forbears had lacked, outdoing everybody in the county, marketing his goods at the big centres, and cutting a swathe in state politics like his elder brother” (71). Dexter can’t maintain the vision; it becomes the mirror of his current life, intimating that this *is* reality and that visions of “simpler” existences will never be realized, will only ever be nostalgic: “What sort of life, after all, if not this one? For of course that dream of a Western farm was all rubbish” (71). Dexter has no alternatives, and at the end of the novel—after Dexter and Lita’s affair has been revealed in dramatic fashion, and Nona has unfairly taken the bullet meant for Dexter in her arm—Dexter is looking “sallow and

autumnal. ‘What people call looking one’s age’” (280). Pauline chooses willful oblivion, and applies “skilful make-up” to the “permanent web about her...lips and eyes” (307). And Nona, the sensible young one, craves only escape, declaring in the novel’s closing that she wants to go to a convent, but the kind “where nobody believes in anything” (315). Wharton leaves us feeling that this dream of a world beyond belief in panaceas is just as wishful as Dexter’s nostalgia.

For all that it mercilessly pokes fun of the middle-aged woman grasping for any promise to reduce her hips and disappear her wrinkles, or of the middle-aged man looking to reassure himself of his virility through dallying with younger women, *Twilight Sleep* offers no alternative to the threats its characters associate with aging. The narrative of aging as obsolescence in the modern world is too intrinsic to the world Wharton satirizes to picture any alternative but a nostalgic one of a golden era gone by. Her text shows just how far this narrative traveled: beyond Osler’s context of retirement in the professoriate, beyond Beard’s “natural law” regulating creative output, beyond the system of scientific management regulating the productivity of industry, all the way into the homes, the bodies and the psyches of the American public. *Twilight Sleep* also shows that this narrative came to encompass much more than just an assessment of one’s usefulness; it helped to correlate aging to a loss of value that included social roles, sexual desirability, interpersonal relationships, and one’s relationship to one’s own body. Just as the novel’s vision cannot move beyond the narrative of aging as obsolescence, so, too, the novel suggests the American public will always be looking for that magic bullet to conquer aging. As we will see in the next chapter, this would become even more the case when the language put to that quest—developed first in the professional

spheres of medicine, government and public health and later spreading to more common usage—became that of “curing” the “disease” of aging.

CHAPTER THREE

Disease or Decay? The 'Nature' of Old Age and What to Do About It

Disease, Degeneration and Disciplines

Many critics date the official establishment of gerontology as a field of scientific inquiry in the United States with “the production and publication of Edmund Vincent Cowdry’s highly respected handbook, *Problems of Ageing*” in 1939 (Achenbaum Crossing Frontiers 22). This handbook gathered experts from a variety of scientific and medical disciplines to produce chapters on many aspects of aging, including a history of longevity, aging in animals, detailed discussions of aging in many different human organ systems, and even some cultural and psychological aspects of aging. At the same time that it reflected the multi-disciplinary nature that gerontology continues to claim for itself, the handbook, like the field today, had its heaviest investment in the natural sciences. The book’s foreword was written by Lawrence K. Frank, who was a pioneer in the field of child development as well as an employee of the charitable Josiah Macy, Jr. Foundation, under whose aegis Cowdry’s handbook was published.¹ Frank wrote that, as of 1939, there was not one consensus theory of aging; rather, aging was being approached from two predominant frameworks:

Two conflicting views are held today by students of ageing in man. One considers ageing as an involutionary process which operates cumulatively with the passage of time and which is revealed in different organ systems as inevitable modifications of cells, tissues and fluids; the other view interprets the changes found in aged organs as due to infections, toxins, traumas, and nutritional disturbances or inadequacies which have forced cells, tissues and fluids to respond with degenerative

¹ For more on the role played by the Macy Foundation in catalyzing disciplinary gerontology, see Achenbaum, Crossing Frontiers Chapter 2.

changes and impairments. It appears, however, that at least some of these changes serve to maintain functioning and are therefore protective. The issue becomes sharply focused upon the possibility of distinguishing between the cumulative but physiological involutions that inevitably take place in all individuals as they grow older, and pathological changes that occur in ageing individuals as the result of adverse environmental conditions. (Cowdry xiii)

In other words, seen from one perspective, aging was, to “at least some” extent, the result of pathological changes brought on by environmental factors resulting in disease; seen from the other, aging was a natural progression of degenerative changes occurring inevitably over time.

At stake in these “conflicting views” was the question of what might conceivably be done to affect aging. From the first perspective—that of aging as disease—one should be able to avoid some if not all of the changes of age by controlling the environmental factors (infections, toxins, traumas, and nutritional disturbances or inadequacies) that led to these changes; effectively, this perspective suggested that what we called “aging” could, in fact, be both prevented and treated. From the second perspective—that of aging as natural degeneration—there was little hope for prevention and treatment of aging; the only possible change lay in science’s discovering, and manipulating, the physiological mechanisms of aging. The collective enterprise that drew gerontologists from both viewpoints was the “crucial issue of how to distinguish between normal senescence and the pathology of old age” (Cowdry xviii).² The agreed upon overriding goals were to “prolong human life” and to “lessen, if not eliminate, those malfunctionings and disturbances which impair the existing lifetime of so many older

² For an extended discussion on how the normal, physiological changes of age were described as a *pathological* progression, and on the subsequent problematic role of distinctions like normal and pathological in gerontology, see Chapter 1: “Natural/National Salvation: Aging and Biological Citizenship.”

individuals” (Cowdry xviii). In effect, all of the changes of age, whether degenerative or pathological, were regarded negatively, and gerontology emerged as a discipline ostensibly seeking to make redundant its very subject of study.

The conflicting views enshrined in Cowdry’s seminal text are a product of the circulation of two dominant scientific narratives about the nature of aging during the opening decades of twentieth-century America. Closely mirroring the conflicting views that Frank delineates, one narrative framed aging as the result of adverse environmental conditions (such as infection, trauma, nutritional failures, etc.) that were manifested pathologically. While only a few who held this view actually categorized aging itself as a disease, those who viewed aging from this perspective universally claimed that aging was the result of disease, and was therefore amenable to prevention and treatment. If the adverse environmental conditions could be alleviated or controlled, the pathological changes of aging were not inevitable; in other words, at least some aspects of aging could be “cured” in the here and now. This narrative was typically promulgated by popular purveyors of health advice and high-profile practitioners of somewhat “unorthodox” science and medicine; while few of these proponents went so far as to say that people need not age at all, or that death could be avoided, they were almost universally optimistic about the possibilities of postponing the onset and improving the quality of old age.

The other narrative—most commonly disseminated by more “traditional” practicing physicians and the scientists retrospectively considered the “forefathers” of gerontology and geriatrics—framed aging as a natural progression of degeneration; given time, these degenerative changes were inevitable. From this view, while science might one day be able to learn the mechanisms of aging and intervene with the aging

process, there were no “quick fixes” on the horizon for the problem of old age. Those who promoted this narrative typically saw aging as a distinct part of the life course that merited unique scientific and medical approaches, just as the specificities of children’s physiology had necessitated the development of pediatrics. This narrative was instrumental in justifying the formation of gerontology and geriatrics as independent disciplines. These two opposing viewpoints—of aging as disease and of aging as natural degeneration—were neither monolithic nor unvarying in early twentieth-century accounts of science, medicine and health. Nonetheless, through their repetition, their uptake by other scientists and their presentation to the lay public, these opposing viewpoints emerged as distinct and conflicting scientific narratives about the nature of aging.

As these narratives circulated through the wider public sphere, they were available to serve as explanatory models and strategic justifications for parties looking to solve the social and economic “problems” they saw encapsulated in obsolescent older citizens.³ In all of the spheres through which these narratives about the nature of aging circulated—scientific, governmental, commercial and popular—each narrative held different stakes for the interested parties: earning disciplinary legitimacy, ensuring the “vitality” of the nation, securing the authority and business domain of traditional medicine, and assigning responsibility for problematic aged citizens. The explanation of the nature of aging these parties drew upon influenced the way they defined the very “problem” of aging. This definition, by extension, determined what interventions were possible, practical and even imaginable in individual lives and in national populations.

³ For more on perceptions of older Americans as “obsolescent” and a national “problem,” see Chapter 2: “Efficiency, Obsolescence and the Human Scrap Heap.”

Each narrative viewpoint also entailed and promoted a different vision of older people themselves: as responsible for their own failures, or as helpless in the face of them.

This chapter explores some of the most prominent and influential theories of aging presented in the early twentieth century by key figures in science, medicine and popular health. Each theory is an adaptation of the narrative of aging as disease or of aging as natural degeneration, and taken together they show how each narrative entailed very different visions of what might be done to impact aging in the present, what might be possible in the course of time, and whether or not one could rightfully place blame for the larger “problems” of aging on aged individuals themselves. The narrative of aging as disease was promoted directly to the public and became “popularized” in a way that the narrative of aging as natural degeneration would never truly be. However, the narrative of aging as disease was also often ensnared by other stories about aging: mythic legends of the fountain of youth and illustrious examples of health quackery. These associations tainted the “authority” this narrative conveyed, and it would ultimately be the narrative of aging as natural degeneration that would be most central to the emergence of gerontology as a field of study and to its struggle to become a legitimate discipline in the 1940s.

The wide circulation of the narrative of aging as disease, along with the optimism it conveyed for realizable change, made this narrative both available and appealing when the government set out to consider what could be done to make aged citizens contributors to “national vitality” rather than a drain upon it. Prominent economist and popular health reformer Irving Fisher was commissioned by President Roosevelt in 1909 to write a *Report on National Vitality* exploring ways to conserve and promote America’s human efficiency. Whether or not old age was a disease did not matter as much within

Fisher's calculations as what might be done to change the inefficient practicalities of old age; but that question of possible avenues for change was deeply embedded in the debated nature of old age. The narrative of aging as disease offered both the promise of effective interventions against aging, and—by representing aging as a condition avoidable through dedicated attention to personal hygiene—allowed responsibility for “the burden” of old age to be placed on the individuals who allowed themselves grow old in the first place. Fisher's *Report* and his particular uptake of the narrative of aging as disease reflect how scientific theories about aging were incorporated into a primarily economic vision of aging, and how this vision was then institutionalized through policy recommendations and the reach of government.

After penning the *Report on National Vitality*, Irving Fisher carried his ideas about the nature of aging into the corporate realm as he assumed the helm of the health-prevention company Life Extension Institute (LEI). The LEI encouraged regular medical examinations (especially through their affiliated practitioners) to catch disease in its early stages. As part of their extensive advertising campaign, promotional materials and the health journalism of the prestigious figures who headed the Institute, the LEI circulated to an extensive audience their distinctive version of the narrative of aging as disease. Aging was not a function of time, they said; rather, what people called “aging” was actually the progression of disease, and diseases could be prevented or treated if detected early enough. The LEI implied that the fountain of youth was attainable for those willing to undertake periodic health exams and follow the health advice they were given. Through the reach of their influence, the LEI spread the narrative of aging as disease to vast numbers of American citizens, and along with it, the hope that old age

might be effectively “cured” through modern medical intervention and the idea that it was an individual’s moral responsibility to seek such a cure.

The ideas and services promoted by the LEI clashed with ones being advanced by more traditional practitioners of medicine, especially as represented by the American Medical Association (AMA). The AMA was working to standardize medical education, stamp out fads and quackery, and generally improve the authority and practice of medicine. They fought, and ultimately won, a territory struggle with the LEI in the 1930s over who legally could and rightfully should provide medical advice about preventive health care. While the “business” of medicine was at the heart of this conflict, the clash between the LEI and the AMA was also fueled by the opposing visions of the nature of aging that each promoted. Traditional medicine, like the emerging discipline of gerontology, leaned toward the narrative of aging as natural degeneration; this narrative legitimated and necessitated medical experts who could discern treatable pathologies from the normal pathology of aging and could help patients manage their aging. The narrative of aging as disease—especially as promoted by the LEI with its implicit promise of keeping aging at bay indefinitely—was too far implicated in the realm of fads and quackery for the AMA. It was the narrative of aging as degeneration, championed by the AMA, which would ultimately prevail within established medicine. However, the narrative of aging as disease, typically spread through more “popular” than authoritative channels, would continue to circulate in the public imagination in ways that still today inform lifestyle choices, sell billions of dollars of nutritional supplements, and influence scientific research agendas.

Strange Bedfellows: Disease and Optimism

While I have suggested that the figures who championed the narrative of aging as disease were often considered somewhat “unorthodox” from the perspective of the scientific and medical establishment, the most prominent articulator of the first narrative—who was also one of the few who explicitly named aging a disease—is also a very well-known and respected personage in the history of science. The Russian microbiologist Elie Metchnikoff is perhaps most famous for sharing the 1908 Nobel Prize in Medicine with Paul Erlich for work on the immune system (for Metchnikoff in particular, this was based on his work on phagocytosis). Though he lived and worked in France, Metchnikoff was known around the world; he was a recognized figure in both America’s scientific and medical presses, and in popular newspapers and magazines. Metchnikoff argued that aging was the result of autointoxication, wherein harmful bacterial flora propagating in the large intestine damaged the “higher cells” of the body (brain, muscle, nerve, etc.).⁴ In keeping with his work on the immune system, he believed that these damaged cells were then destroyed by macrophages (the “sentinels” of our immune system which, among other things, devour our own damaged tissues), resulting in a gradual replacement of these “higher elements” with fibrous, connective tissue of a lower order and function (Metchnikoff The Prolongation of Life 35). With this theory, Metchnikoff could conveniently explain how, in senescence, the skin loses elasticity,

⁴ Metchnikoff’s theory of autointoxication was in line with another of his guiding scientific principles, the idea that, through the process of evolution, parts of the human organism were no longer well-adapted to the existing environment, resulting in “disharmonies.” He felt the greatest disharmony in the human constitution was the large intestine, an organ he believed had historically developed to give mammals an evolutionary advantage, as “by storing the products of digestion, it allowed them to run long distances without stopping. In modern man, however, the large intestine had become the haven of bacterial flora and was “the source of many poisons harmful to the body.” “Elie Metchnikoff, The Nature of Man: Studies in Optimistic Philosophy, trans. P. Chalmers Mitchell (New York: G. P. Putnam’s Sons, 1903) 252.

sclerosis builds up in the arteries, mental function tends to diminish, and even how the hair turns white. Based on this belief that autointoxication from the large intestine resulted in the pathological changes of aging, Metchnikoff called “old age...a chronic malady” and an “infectious chronic disease.”⁵

As he saw old age as a disease, so Metchnikoff believed “it is plain that, perhaps before very long, it will be possible to modify old age. Instead of retaining its existing melancholy and repulsive character, it may become a healthy and endurable process; it may also be that the duration of life will be prolonged” (Metchnikoff The Nature of Man 262). Metchnikoff even went so far as to say that death was not a natural, inevitable process inherent in all organisms; very few humans ever die a “natural death,” he believed. Instead, he felt that if it were possible to remove all the pathological aspects of old age resulting from autointoxication, then a true physiological old age would result in “natural death,” a phenomenon he described as the appearance of a “death instinct,” or a wish to die amid a sense of satiety of life, at the end of a long period of old age in active and vigorous health (Metchnikoff The Nature of Man 263, 39). Metchnikoff named this theory “orthobiosis,” indicating with the prefix “ortho” that this ideal, natural death would be the result of correct living, both hygienically and morally, a responsibility which

⁵ The first quote comes from Metchnikoff, The Nature of Man 244. Historian W. Andrew Achenbaum offers the second quote from a 1904 report on “Old Age” that Metchnikoff wrote for the Smithsonian Institution’s annual report: “The theory of old age and the hypotheses which are connected with it may be summarized in a few words: the senile degeneration of our organism is entirely similar to the lesions induced by certain maladies of a microbic origin. *Old age, then, is an infectious chronic disease* which is manifested by a degeneration, or an enfeebling of the noble elements, and by the excessive activity of macrophages. These modifications cause a disturbance of the equilibrium of the cells composing our body and set up a struggle within our organism which ends in a precocious aging and in premature death, contrary to nature.” Achenbaum, Crossing Frontiers 30, my emphasis.

naturally fell to the individual.⁶ To aid in this correct living, Metchnikoff promoted the idea, based on his observations of the long-lived, yoghurt-eating Bulgarians, that “the slow intoxications that weaken the resistance of the higher elements of the body and that strengthen the phagocytes may be arrested by the use of kephir, or still better of soured milk” (Metchnikoff The Nature of Man 255). His widely publicized ideas sparked “an international sour milk craze” (Cole 189). This included the production of soured milk on a commercial basis by a Parisian factory, marketed as the “sole provider of Professor Metchnikoff” (Trimmer 89).⁷ Additionally, Metchnikoff’s renown gave new life in both scientific and lay circles to the ancient theory of “autointoxication” as the conjectured cause of aging and a host of other bodily ills; it was “treated” by hygienists, physicians and surgeons through many means (including the surgical removal of portions of patients’ large intestines), it was reported on in newspapers and magazines, and it found its way into fiction.⁸ In so doing, the circulation of this narrative of aging as a disease brought on by autointoxication ensured that those who prescribed to this view saw aging as a condition amenable to change by individual effort, with the assistance of scientific insights, products and operations.

⁶ The prefix “ortho” signifies “straight, right, upright, correct, regular,” as in “orthodox” (conforming to the established, accepted or traditional faith or religion) or “orthodontics” (the branch of dentistry dealing with the prevention or correction of irregularities of the teeth).

⁷ Surveying the media attention given to Metchnikoff and the soured milk fad, Achenbaum reports: “Some physicians and scientists derided the old man as ‘the modern Ponce de Leon searching for the Fountain of Immortal Youth and finding it in the Milky Whey.’” Achenbaum, Crossing Frontiers 31.

⁸ In his history of *Rejuvenation*, Eric J. Trimmer notes that “as early as 1913 the Royal Society of Medicine held a six-meeting symposium on the subject [of autointoxication], in which no fewer than fifty speakers put [forth] their points of view” (89). He notes that it was also in vogue for a period for surgeons to remove portions of patients’ large bowels as a treatment for “intestinal stasis.” The “most notable advocate” of this procedure was the Scottish surgeon W. Arbuthnot Lane, for whom the “Lane operation” (extirpation of the colon) was named. Eric J. Trimmer, Rejuvenation: The History of an Idea (New York: A. S. Barnes and Company, 1967) 90. In terms of fiction, Metchnikoff’s theory of autointoxication provides the rationale for extreme longevity—and for de-evolution consequent to the hubris of overreaching the natural life span—in Aldous Huxley’s *After Many a Summer Dies the Swan* (1939).

In Metchnikoff's articulation of this cultural narrative, as in almost every other, old age itself held a tenuous status. On the one hand, there was reason to be optimistic about the future of old age: "Scientific study of old age and of the means of modifying its pathological character will make life longer and happier," he promised, and "although modern knowledge is still imperfect, there is no reason to be pessimistic on the subject of old age" (Metchnikoff The Nature of Man 261). On the other hand, because he optimistically believed "the physiological old age of the future assuredly will be very different," Metchnikoff reinforced the negative character of old age in the here and now: "Old age is repulsive at present, because it is an old age devoid of its true meaning, full of egoism, narrowness of view, incapacity and malignancy" (Metchnikoff The Nature of Man 294). While an individual could achieve a better, healthier old age through orthobiotic living, the ultimate redemption of old age in Metchnikoff's view lay in the hope that science would find a cure for this "infectious chronic disease."⁹

It is in great part this insistence on science as *the* way to achieve a better old age, both in the here and now with proper diet and in the future with anticipated discoveries, that has helped Metchnikoff to remain a canonical figure, albeit a troubling one, in the history of gerontology. He was, in fact, the first to coin the word *gerontology* in 1903, and in his work he called for "a systematic investigation of senescence [to] be made in institutions for the aged" (Metchnikoff The Prolongation of Life 5).¹⁰ However, while his optimism about the possibilities for aging, and his faith that science will

⁹ Metchnikoff closed his 1903 tome on *The Nature of Man* with this conviction: "And if it be true, as has been asserted so often, that man can live by faith alone, the faith must be in the power of science." Metchnikoff, The Nature of Man 302.

¹⁰ In *The Nature of Man*, Metchnikoff writes: "I think it extremely probable that the scientific study of old age and of death, two branches of science that may be called *gerontology* and *thanatology*, will bring about great modifications in the course of the last period of life (297-8).

someday discover (and manipulate) the mechanisms of aging, have been adopted into the field that he named, Metchnikoff himself is typically presented somewhat at a distance from the field, as a modern “Ponce de Leon” figure who called aging a disease, who spread the hope for a quick (albeit scientific) “cure,” and who, through his sour milk endorsements, commercialized an “anti-aging” product, the common sin of charlatans and quacks; these are all familiar parts of the narrative of aging as a disease that the field of gerontology has historically positioned itself against (Achenbaum Crossing Frontiers 25).

Like Metchnikoff, John Harvey Kellogg was a very well-known figure who promoted the idea that aging was the result of autointoxication. While his most lasting legacy may be the cornflakes he developed with his brother Will, Kellogg was nonetheless a famous physician, surgeon and eugenicist in his own right who prolifically published health advice to the general public. In his 1918 tome *Autointoxication or Intestinal Toxemia*, Kellogg claimed that Metchnikoff had “discovered the cause of old age, the secret of great longevity,” but that his “great mistake was in imagining that Nature had blundered in giving man a colon, whereas man is the blunderer in putting his colon to a use for which it was never intended and neglecting to supply it with the conditions necessary for its proper functioning” (Kellogg Autointoxication 307, 13). Thus, where Metchnikoff sought to right what he saw as a disadvantageous evolutionary by-product (the large intestine), Kellogg sought “right living” through vigilant hygiene and individual moral responsibility, a vision of orthobiosis less focused on reaching a natural death than on dictating, in excruciating detail, what correct living entailed.¹¹ At his Battle

¹¹ For more on Metchnikoff’s view of the large intestine as a disadvantageous evolutionary by-product, see footnote 4.

Creek Sanitarium, run strictly on Seventh-day Adventist Church principles, Kellogg assigned to his rich and famous patients a variety of vegetarian diets, regimens of exercise, artificial sunbaths, strict abstinence, and—for all—regular enemas, both with water and with yogurt, to cleanse the bowels and ensure only healthy intestinal flora.¹² While Kellogg's claims were more about the longevity and quality of life possible through "biological living," rather than about old age per se, he clearly promoted the idea that all *pathologies* of old age were the result of improper, or un-biological, living. Correct these and you could live, healthily and heartily, to 100.¹³ The alternative was a clearly *unhygienic* and therefore immoral old age, one in which "the wastes of the body are greatly increased" in ways "offensively injurious" to one's neighbors (Kellogg Plain Facts 616).¹⁴ Thus, in Kellogg's articulation as well as Metchnikoff's, old age was, optimistically, a pathological condition that might be avoided if an individual lived responsibly, but was at the same time a highly negative condition whose presence proved an individual's moral failure to care for him or herself.

¹² Kellogg's eccentric character has been well-documented. He spoke and wrote widely against all sexual activity, including masturbation, and although married for 40 years, maintained a separate bedroom and claimed never to have had sexual intercourse with his wife. All of their children were adopted. Kellogg and his Battle Creek Sanitarium were fictionalized in T. Coraghessan Boyle's 1993 novel *The Road to Wellville*, later turned into a film starring Anthony Hopkins as the eccentric Dr. Kellogg.

¹³ Kellogg himself died at 91, just 9 years short of the century mark he had set for himself.

¹⁴ Kellogg's rhetoric when writing on "The Hygiene of Old Age" evokes decrepitude and disgust: "...in old age the wastes of the body are greatly increased. The discharges from all the outlets of the body are more heavily laden with organic impurities than during youth and adult age. The breath is laden with the poisonous products of disintegration, and the perspiration with effete matter. It is for this reason that a sudden obstruction of any of these outlets is so speedily followed by fatal results. If frequent bathing is neglected, the skin becomes obstructed, and the kidneys are overworked. The urine becomes irritating in character, and inflammation or congestion of the bladder is likely to be the result....Old persons should recollect, that the bath is particularly necessary for them as a sanitary measure. As the waste of the body preponderates over the repair, the skin, if unwashed, soon becomes covered with a film of the most intensely poisonous and readily decomposable matter. A few days' accumulation is enough to produce a condition not only in the highest degree detrimental to the individual himself, but offensively injurious to all persons of acute olfactory sensibilities who may be closely associated with him." John Harvey Kellogg, Plain Facts for Old and Young: Embracing the Natural History and Hygiene of Organic Life 5th ed. (Burlington, IA: I.F. Senger & Co., 1891) 616.

One final promoter of the “aging is disease” narrative—and another well-known figure who, like Metchnikoff and Kellogg, was no stranger to the popular press—was Sanford Bennett. An “Everyman” who “at fifty...was physically an old man,” Bennett turned later in his life to “Nature’s principal methods of inducing health—sunlight, pure air, pure water, nourishing food, cleanliness and exercise” (Bennett 17, 19). In his widely popular 1912 book *Old Age, Its Cause and Prevention: The Story of an Old Body and Face Made Young*, republished at least 3 times in the span of 15 years, Bennett was able to “extend this message of hope” to his many readers: “Follow my example and success will be yours. I have been an old man, and now at over ‘three score and ten,’ I am a young man again, and look it” (Bennett 20).¹⁵ Bennett’s book is a long personal testimony of exercises developed to improve every part of the body, from the lungs and liver to the eyes, hair, cheeks, etc. In this attention to individual lifestyle as the arbiter of old age, Bennett resembled Metchnikoff and Kellogg. However, instead of blaming autointoxication for the pathologies of old age, Bennett believed such maladies were the result of arteriosclerosis, or “a clogging up of the arteries by chalky deposits:”

What we know as old age is a disease, and like many other diseases it is progressive. For as we advance in years the primal cause increases; this being due to sedimentary deposits in the arterial and venous structures. If the formation of these deposits is not checked, other parts of the system will later directly suffer, and a general physical deterioration indirectly results. Under these conditions, the elasticity of youth gives place to the inelasticity of old age....If it is possible to eliminate those sedimentary clogging deposits, the body will regain its elasticity and to a great extent become young again. (Bennett 49-50).

¹⁵ This book was popular enough to be republished at least three times, in 1919, 1921 and 1927. Bennett was also known for his 1907 book *Exercising in Bed: The simplest and most effective system of exercise ever devised*. Many of the exercises Bennett recommended and illustrated in *Old Age* could also be performed while lying in bed.

Although Bennett had no qualms about calling old age a disease, he was more cautious in asserting that aging itself was entirely avoidable: “We cannot finally defy old age, neither can a very old body be transformed into a very young body; but age can certainly be deferred” (Bennett 50).¹⁶ And like Metchnikoff and Kellogg, Bennett was bleak about the alternative: growing old. In addition to offering stereotypically repellent descriptions of his own former “old” body as motivation for following his example, Bennett also suggested that society at large looks down upon the old; he pointed out the “unfortunate fact that the appearance of facial age is a detriment and lessens your value as an employee. Therefore, look young. It may require some time and exertion to do so, but it will pay you” (Bennett 40).¹⁷

Metchnikoff, Kellogg and Bennett are representative of those turn-of-the-century figures who both held, and widely promoted to the general public, the view of old age as a pathological condition that could be alleviated in the immediate present by one’s willingness to follow certain proven regimes; however, these three differed on the exact role science was to play in such regimes. Where Metchnikoff believed that all of man’s faith should be put into science, Bennett believed that no medical preparations could have any impact on old age beyond what man could achieve by following Nature’s methods; Kellogg came down in between the other two. However, all were in agreement

¹⁶ Bennett was not as optimistic as Metchnikoff on the prospect of extending life significantly to the point of “natural death.” While Bennett himself confidently expected to live to 100 (the biblically predicted number of a man’s days), he believed—illogically, he admitted—that death was inevitable: “And why, if the process of repair and elimination can be kept upon an equilibrium, is it not possible to live to double that age? My answer is wholly illogical and without explanation: Because there seems to be an occult law preventing such extraordinary longevity of human life.” Sanford Bennett, Old Age--Its Cause and Prevention: The Story of an Old Body and Face Made Young (New York City: The Physical Culture Publishing Co., 1912) 227.

¹⁷ Bennett describes himself while “old” at fifty: “...wrinkled, partially bald, cheeks sunken, face drawn and haggard, muscles atrophied, and thirty years of chronic dyspepsia finally resulted in catarrh of the stomach, with acid rheumatism periodically adding its agonies.” Bennett, Old Age 18.

that old age was a thoroughly undesirable condition, and that it, or at least its most negative aspects, could be avoided; their negative views of old age went hand in hand with their optimism that this negative stage could be changed, delayed, or prevented entirely. Their narrative of aging as a treatable disease reached a wide public; Kellogg and Bennett wrote directly for a lay audience, and Metchnikoff's ideas and theories were regularly featured in the popular press. Over time, the health regimes these figures promoted would become grouped into the history of "rejuvenation fads;" a history to which disciplinary gerontology has always been closely tied, and from which it has always tried to distance itself. At the same time, their optimism about the possibility for avoiding growing old has remained a palpable motivation behind gerontological research.

The Paradox of Natural Degeneration

Historically, however, disciplinary gerontology and geriatrics have more closely aligned themselves with the other prevailing view of aging in the early twentieth century; proponents of this view believed aging was a natural part of the life course. At the same time that aging was physiological (or part of the "normal functioning" of the organism), however, it was also recognized as pathological, effectively making senescence a naturalized and normalized period of decline and disease.¹⁸ The practitioners who held and disseminated this view are typically claimed as the "forefathers" of gerontology and geriatrics; their writings are considered canonical to the directions in which these disciplines developed. One of the first physicians to attempt to truly "scientifically" study

¹⁸ For more on the "paradox" of normalized pathology that accompanied the "medicalization of old age," see Chapter 1, section 4 on "*The Youth's View of Old Age*."

aging was the famous French neurologist and anatomical pathologist, Jean-Martin Charcot, who is most remembered for his work on hypnosis and hysteria, and for molding such students as Sigmund Freud, Alfred Binet and Georges Gilles de la Tourette.

Based on his clinical studies of the largely female and indigent elderly population at the Salpêtrière hospital in Paris, Charcot catalogued the diseases of old age into three categories: 1) diseases unique to old age (dependent at least in part on the general, physiological changes of age which have taken place within the organism); 2) diseases which present a special character when manifest in old age versus other parts of the life course, and; 3) diseases to which the old appear to be immune (Charcot 32).¹⁹ He maintained that there were “anatomical or physiological modifications which the organism undergoes by the mere fact of old age,” but also that “these changes, when they have reached so pronounced a degree, pass the limits of the physiological state, since they are themselves capable of producing functional troubles which may be extremely grave” (Charcot 27, 30). Thus, in his view, the physiological manifestations of old age gave rise to the pathologies of old age, in such a way as to make the normal changes of aging rather indistinguishable from the pathological.²⁰ He believed that only medical professionals were capable of making the clinical distinctions necessary to know

¹⁹ Achenbaum notes that Charcot’s work “was not a radical departure from existing ideas about diseases in old age,” but his work was, nonetheless, highly influential. Achenbaum, Old Age 42. For more on the gender and class aspects of this early aging research, see Stephen Katz, “Charcot’s Older Women: Bodies of Knowledge at the Interface of Aging Studies and Women’s Studies” Figuring Age: Women, Bodies, Generations ed. Kathleen Woodward vol. 23 Theories of Contemporary Culture (Bloomington: Indiana UP, 1999).

²⁰ Charcot writes: “The changes of texture impressed on the organism by old age sometimes become so marked, that the physiological and pathological states seem to merge into one another by insensible transitions, and cannot be clearly distinguished.” Jean Martin Charcot, Clinical Lectures on Senile and Chronic Diseases, trans. William S. Tuke, Aging and Old Age ed. Robert Kastenbaum (New York: Arno Press, 1979) 27.

the exact nature of the diseases plaguing the elderly, and thus what options for treatment were available, if any. Drawing attention to the rise of pediatrics as a specialized field of medicine, Charcot argued for the need for similar attention to be paid to the later end of the life course: "It is agreed...that if the pathology of childhood requires clinical consideration of a special kind, and which it is indispensable to be practically acquainted with, senile pathology too has its difficulties, which can only be surmounted by long experience and a profound knowledge of its peculiar characteristics" (Charcot 24).

Charcot's influential text, *Clinical Lectures on Senile and Chronic Diseases*, was first published in French in 1867, came out in a second edition in 1874, and was translated into English in 1881; the American physician Alfred Loomis added various essays and lectures to the text that helped to popularize Charcot's ideas in the United States (Katz Disciplining Old Age 82). While Charcot's text had a long reach within the scientific and medical community, it was not consumed by the lay public in the same way that were Kellogg's, Bennett's or even Metchnikoff's writings. Charcot wrote for an audience of his peers; while his work on hypnosis and hysteria was reported upon in some American newspapers, his work on aging was never featured in the popular press. Nevertheless, Charcot's was the first European work of its kind on old age to be translated into English; this, as historian Andrew Achenbaum notes, "gave Charcot's work an importance as a model for future research in the United States far beyond its actual merits," for it coincided with advancements in American science and medicine that created a favorable reception for the text (Achenbaum Old Age 42-3). American physicians and scientists were ready to embrace the difficulties of determining what part of the degeneration of old age was "normal" from what was "pathological." They were

also open to the call for a new medical and scientific specialty, one that would invest in them the authority to make those determinations about the nature of old age.

Building on the work of Charcot, Ignatz Leo Nascher, an Austrian-born American physician, is credited with naming the field of “geriatrics” in a 1909 article in the *New York Medical Journal*.²¹ In that article, and in his 1914 monograph *Geriatrics*, Nascher, like Charcot, advocated for the development of a “special branch of medicine” devoted to the “distinct period of life” constituted by old age, just as pediatrics had been developed to address the unique features of children: “We cannot understand the *senile organism* unless we study it as a physiological entity apart from maturity. The physician must look upon old age as he does upon childhood.....These conditions are natural and normal at that period of life although they are unnatural, abnormal and pathological in maturity (Nascher 11). In keeping with these paralleled claims for childhood and old age, the introduction to Nascher’s 1914 monograph *Geriatrics* was written by Abraham Jacobi, widely credited as the founder of American pediatrics.²² As part of these assertions for the need for Geriatrics, and in arguing that old age was just as distinct a phase of the life course as childhood, Nascher had to justify the relative “neglect of senile diseases” in

²¹ Nascher’s original article, entitled “Geriatrics,” was published in the *New York Medical Journal*, vol. 90 (1909): 358. In the preface to his 1914 book *Geriatrics*, Nascher explains the origin of the term he coined: “This term which has been generally adopted is derived from the Greek, *geron*, old man, and *iatrikos*, medical treatment.” I. L. Nascher, *Geriatrics: The Diseases of Old Age and Their Treatment* (Philadelphia: P. Blakiston’s Son & Co., 1914) vii.

²² Jacobi noted the paucity of work on old age, particularly American work, and credited Nascher with “the first modern comprehensive book on the normal and the morbid changes of old age.” Abraham Jacobi, “Introduction” *Geriatrics* ed. I. L. Nascher (Philadelphia: Blakiston’s Son & Co, 1914) xvii. For more on the many connections between the field of pediatrics and geriatrics, see Laura Davidow Hirshbein, “‘Normal’ Old Age, Senility, and the American Geriatrics Society in the 1940s” *Journal of History of Medicine* 55 (2000): esp. pages 341-2. As Hirshbein notes, referencing several advertisements from the earliest issues of the journal *Geriatrics*, first published in 1946: “At times the analogy between childhood and old age became extremely close, as when products such as Gerber’s baby foods were advertised as beneficial for older people” (342).

scientific and medical literature. He did so by arguing, almost viciously, that this neglect stemmed from the general, negative mental attitude toward the aged: "While the dependence of the child arouses sympathy, in the aged the repugnance aroused by the disagreeable facial aspect and the idea of economic worthlessness destroys the sympathy we bestow upon the child and instills a spirit of irritability if not positive enmity against the helplessness of the aged" (12-13). Instead of attempting to counter any of this "repugnance" for the aged, Nascher instead argued that although the physician experiences "a natural reluctance to exert oneself for those who are economically worthless and must remain so, or to strive against the inevitable," these considerations are "paltry when applied to the physician's self-imposed obligation to relieve distress and prolong life" (v-vi).²³ This overwhelmingly dismal view of old age is one that gerontology and geriatrics would struggle against for decades to come.

²³ It would be hard to exaggerate the negativity of Nascher's descriptions of old age. In explaining the "general mental attitude toward the aged," he notes of America: "The spirit of veneration of ancestors and the aged, such as exists in China, does not exist among us. The sentimental interest in the aged is confined to the immediate family of the individual and there the interest is often less sentimental than dutiful. We realize that for all practical purposes the lives of the aged are useless, that they are often a burden to themselves, their family and to the community at large. Their appearance is generally unaesthetic, their actions objectionable, their very existence often an incubus to those who in a spirit of humanity or duty take upon themselves the care of the aged. Those who would deny that this is the usual attitude toward the aged need but compare the treatment of the uncared-for child with the treatment of the uncared-for old man, the asylums for children with the asylums for the aged, the treatment in the home where children and their grandparents entail burdens upon the family" (v-vi). Nascher later focuses closer attention on the specific characteristics and physical aspects of old age, with equal aversion: "The mental depression and the lack of interest in things beyond the ego of the aged individual contribute to the general feeling of repulsion and all these factors accentuate the disagreeable tout ensemble of old age. The countenance is either expressionless, indicating mental weakness, or there is an apathetic moroseness indicative of helpless resignation, or else there is the anxious look associated with a haunting fear. The skin is dry, lusterless, darker than in maturity, often pigmented, loose and thin, showing varicose veins and tortuous arteries underneath. In some localities the skin lies in folds producing coarse and fine wrinkles....The attitude of age is well described as a slouch....The most prominent mental characteristic in old age is an over-whelming interest in self, as selfishness which gradually subordinates every other interest in life to the welfare of the individual" (12-14). That such ideas were presented as "scientific fact" speaks both to attitudes about aging and to the (im)precision of scientific inquiry in the early twentieth century.

Like Charcot, Nascher focused on providing a differential diagnosis between the “normal senile conditions,” which were degenerative, and the “pathological conditions which they simulate:”

Disease in old age must be looked upon not as a pathological process in an organ or tissue such as we find in maturity complicated by senile degenerations, but as a pathological process in a normally degenerating body, and the perversion of function is not a perversion from the normal functions of maturity but a perversion from the functions that are normal to the degenerating body. (Nascher vii, 51)

Such a view of a “normally degenerating body” was clearly at odds with a vision like Metchnikoff’s, which ultimately blamed all degeneration on a specific cause.

“Senescence is not due to any one cause,” Nascher proclaimed, discounting Metchnikoff’s theories of autointoxication and tissue phagocytosis along with other causal theories of aging such as arteriosclerosis (the view held by Sanford Bennett), glandular degeneration, the loss of some “vital principle” and the popular idea that the body became “worn out like an old engine” (47, 39).²⁴ Instead, Nascher advanced a theory of tissue-cell evolution: “in the constant waste and repair of tissue the newer cells differ from the earlier ones” such that, increasingly over time, fewer and more imperfect cells are formed, leading finally to failure of organ function and the cells’ inability to further reproduce (2). The language of his theory describes cells at the later end of the

²⁴ Though he acknowledged that “the most prominent theory of ageing today is Metchnikoff’s theory or rather theories, of tissue phagocytosis and autointoxication,” Nascher discounted these theories because tissue destruction was known to happen independently of macrophages, and intestinal absorption took place throughout the lifespan without producing senile changes (41). He refuted theories that change is due to arteriosclerosis on the basis that arteriosclerosis on its own doesn’t cause such changes as occur in old age (40-1). In response to theories that aging is due to degeneration of the thyroid gland (such as Sir Victor Horsley’s) or other ductless glands (such as Arnold Lorand’s), he responded that these theories do not account for “the cause for the senile degeneration of these glands,” and moreover, “ageing may occur without demonstrable changes in these glands” (42). The theories based upon the assumption of the existence of a vital principle, he simply discounted: “This assumption has no demonstrable basis” (41). He similarly argued that “the old idea that the body becomes worn out like an old engine and the tissue wastes just as the material wears away in machinery or goods, is a fanciful simile without a basis of fact...Neither does the body become worn out through activity...” (39).

life course with the same negativity and judgment as he described the uselessness of older people themselves: they are “imperfect,” “poorly fitted for the conditions under which they exist,” and “cannot perform their functions.”²⁵ With such an understanding of the life course as a gradual process of natural degeneration, Nascher could claim that death, too, was natural, and that disease was not “a causative nor even an essential factor in physiological death” (49). In so doing, he flatly contested all those (like Metchnikoff, Kellogg and Bennett) who held that lifestyle changes could impact one’s longevity: “Sanitation, hygiene and dietetics serve to prevent disease but they have no influence in prolonging life aside from the prevention of disease” (49). Nascher did, however, offer guarded optimism that recent investigations into the causes and results of senile changes “give promise of ultimate success in discovering the fundamental causes of senescence. Perhaps there may be controllable causes or causes which can be minimized so as to defer senility and prolong life to its physiological end” (vi). In general,

²⁵ Nascher further explains his theory: “The theory of tissue-cell evolution which I advanced as the fundamental cause of ageing is based upon some facts and some assumptions. I believe that there is a progressive evolution in cell life; that newer cells differ from their predecessors; that at one stage of this evolution the cells are most perfectly adapted to their surroundings and their available nutrition; that at this time the cells are in the most perfect condition to perform their functions; that later cells are less perfectly adapted to the conditions under which they exist; that under these circumstances fewer and more imperfect cells are formed; that finally the cells are so imperfect and so poorly fitted for the conditions under which they exist that they either do not reproduce or else the organs which they form cannot perform their functions. Furthermore, different kinds of classes of cells have different stages or periods of evolution, but tissue cells of the same kind pass through the same stages.” Nascher, Geriatrics 43. In a move reminiscent of C. A. Stephens’ attribution of sentience to individual cells, Nascher, too, goes to lengths to explain the continuity of personality on a biological basis given this constant evolution of cells. While “in advanced life none of the early cells are left,” and “the aged individual is in fact an entirely different individual from the one who was formed from the ancestors of the late cells,” the key is the special nature of brain cells: “The only connecting link between the child organism and the senile organism is the brain, as it is believed that brain cells do not regenerate themselves, that the old cells were all present at birth though changed in structure and perhaps in composition in the process of development and senescence. There is still the same personality, modified by intelligence, education and the acquisition and suppression of traits. Continuity of activity is maintained by retention of sentience in the original cells, instead of by transmission from generation to generation of cells as in other tissues. Like the old vessel which has been repeatedly repaired until not a splinter of the original timbers is left, the individuality and the name remain.” Nascher, Geriatrics 2-3.

however, Nascher naturalized the pathology of old age at the same time that he thoroughly pathologized—from the physical to the psychological to the social—the nature of old age itself.²⁶

In a contemporaneous text, the American zoologist Charles Manning Child demonstrated that one could hold a similar view of the degenerative nature of senescence without pathologizing senescence itself (or the senescent themselves). In *Senescence and Rejuvenation* (1915), Child argued from his vast experiments and observations across many members of the animal kingdom that biological senescence and rejuvenescence occur constantly in all organisms:

Senescence is then a necessary and inevitable feature of growth and differentiation, while rejuvenescence is associated with reduction and with the various reproductive processes in which more or less differentiated parts of the organism undergo dedifferentiation...

Viewed from this standpoint, life is then really a cyclical process as it appears to be. The organism grows, differentiates, and ages, and these processes lead, usually in nature through reproduction of one kind or another, to reduction, dedifferentiation, and rejuvenescence. No part of the organism remains perpetually undifferentiated and perpetually young. The young organism arises from the old, not from a self-perpetuating source of youth, which is itself always young, and the young becomes old again. (Child 59)²⁷

²⁶ Especially versus Metchnikoff's "optimistic philosophy," Nascher has little but pessimism to offer. His vision of old age and its possibilities is dismally bleak: "Notwithstanding all the optimistic platitudes of philosophers from the days of Cicero to Metchnikoff, notwithstanding the inbred resignation of the fatalists, the ready submission to the inevitable of the materialists, notwithstanding the promise of heaven, bliss and light and life everlasting, made by theologians of all ages, man looks forward to death with dread and indignation. And the nearer he approaches the abyss beyond which, he is told, lies eternal life, the greater his dread, the more profound is his sense of impotence, the more depressing is his resignation" (14-15).

²⁷ This view was different from that held by Nascher, who saw inevitable decline where Child saw a cycle. Nascher writes: "Senility is often called *Second Childhood*. A comparison of the organism in childhood with the organism in old age will show that there is not an organ or tissue, not a function, mental or physical, identical at the two periods of life. Vitality, metabolism, even instinct differ. *The process of senescence is progressive, not retrogressive, there is no reversal in the order of development and not a single tissue reverts to an earlier type.*" Nascher, *Geriatrics* 1. In Child's view, rejuvenescence—or "retrogressive senescence"—was a constant feature of life; what mattered was its balance with the process of senescence.

To Child, the lines between old and young were not as clearly drawn as they were for Nascher. From Child's perspective, "aging," as we might think of it, was a matter of balance between senescence and rejuvenescence; in the lower forms of life, senescence "may be more or less completely balanced by rejuvenescence...so that there is little or no progressive senescence from one generation to another" (461). When senescence outweighs rejuvenescence, the result is physiological or natural death (i.e., death from old age). In the higher forms of life, such an imbalance becomes inevitable as the organisms' physiological demands outweigh its capacity for rejuvenescence: "For his high degree of individuation man pays the penalty of individual death, and the conditions and processes in the human organism which lead to death in the end are the conditions and processes which make man what he is" (309).

Like Nascher, Child debunked Metchnikoff's views, along with others who viewed senescence as something "secondary or incidental" to an organisms' development (182). Instead, he solidly maintained that "both senescence and rejuvenescence are necessary and inevitable features of the life cycle" (183).²⁸ Moreover, he believed this was what "most" responsible men of science believed.²⁹ However, based in part on the balance, and therefore lack of death, achievable by some lower organisms, Child surmised, cautiously, that man might one day achieve the same sort of longevity as seen in the lower animals: "The advance of knowledge and of experimental technique may make it possible at some future time to bring about a greater degree of rejuvenescence

²⁸ He continues: "Certainly the worn-out organs of old animals cannot be repaired by an extended period of starvation, nor is the elimination of toxic metabolic products likely to be assisted by the structural degeneration of parts which occurs in various cases of reconstitution" (183).

²⁹ Child writes: "Most of those who have considered the problem of age from any general viewpoint have maintained that the conditions which determine senescence and death are found in the physiological constitution of the organism" (436).

and retardation of senescence in man and the higher animals than is now possible,” although, in considering the millions of years of evolutionary equilibration that have led to contemporary humans, he felt “we cannot but admit that this task may prove to be one of considerable difficulty” (309-10).

Thus, Charcot, Nascher and Child were all in consensus that senescence was a natural condition, inherent in every organism. Although they proposed different models for how and why senescence happened, they agreed that it was normal for organisms to undergo pathological changes towards the end of their lifespan. They also agreed that, because of these changing bodily norms, senescence was a distinct phase of the life course worthy of its own dedicated study (and, for physicians like Charcot and Nascher, worthy of its own special branch of medicine). Their advocacy for scientific and medical specialties in aging helped to insure that once gerontology and geriatrics were established, they were disciplines that promoted this view of aging as a natural, albeit pathological, process. The optimism that a better old age (or better yet, no old age at all) was possible—shared by Metchnikoff, Kellogg and Bennett—was not completely absent in the work of those who viewed aging as an organism’s natural degeneration; it was, however, far more cautious and focused on a different goal. Nascher and Child, at least, thought it might be possible to increase longevity and affect aging, but to do so would require science learning the mechanisms of human aging in order to manipulate the natural order of things. Instead of offering hope that it was possible to augment one’s longevity or the quality of one’s aging in the here and now, “hope” in their narrative of aging came from investing in the increasing omniscience of science and acumen of medicine. In addition to these differing time frames in which change was seen to be possible, another key difference between the narrative of aging as a disease and the

narrative of aging as natural degeneration was whom it empowered with the capacity for changing the negative reality of old age; the former granted individuals the power to impact their own aging and longevity, the latter left all potential for change within the hands of professionals. It is not surprising, then, that those who formalized the study and treatment of aging would favor, and promote, the latter narrative of aging: the one that while it treated aging as a disease, called it a “natural” process.

The larger social and cultural impact of this narrative of aging as natural degeneration is made apparent in the work of one final figure in the pre-history of gerontology, the American psychologist G. Stanley Hall. Most famous for his 1904 tome *Adolescence* and for his writings on education, he produced a parallel tome on *Senescence* in 1922, two years before his death at the age of seventy-eight. Considered side by side, these two works bear witness to the carving up of the life course in professional discourse (and into specialized disciplines) by Hall and others in the early twentieth century, such that adolescence was to be considered distinct from both childhood and young adulthood, and likewise senescence was to be viewed as a unique stage beyond maturity. Unlike Metchnikoff, Nascher and the others, Hall did not advance an actual biological theory of aging. He did, however, devote over 120 pages to medical views and treatments of old age, and to the contributions of biology and physiology to the study of old age—this amid a *mélange* that also included historical thoughts about old age, literature by and about the aged, statistics of old age and its care, the compiled results of a questionnaire, a brief survey of the history and psychology of death, and his personal observations. While he did not support any one particular theory of aging, his text makes several things apparent. First, despite the broad multidisciplinary for which gerontology so firmly praises and claims his work, Hall,

too, felt that “it is to biology, not to theology or philosophy, that we must look for our most authoritative and normative ideas of both life and death” (G. S. Hall Senescence 314). Additionally, like many of his contemporaries, Hall was pessimistic about the nature of old age, and cautious about the possibilities that that nature might ever change substantially. In contemplating glandular therapy, at its vogue in the early 1920s, he guardedly suggested: “The only practical hope of easement from the hardships of senescence and for the postponement of death now tenable is that now arising faintly and tentatively that, some day, some mitigation of the terrors of old age and death may be found by glandular implantation or perhaps even by the injections of the secretions of certain glands” (G. S. Hall Senescence 317).³⁰ Thus, in addition to promoting biology and scientists as the ultimate authority on the nature of old age and death, Hall’s text also reflects and promotes the belief that the only “hope” for changing the nature of old age was a future-focused faith in the power of science and medicine.

It is particularly interesting that Hall championed the future of science as the path to a better old age, because the main thrust of his text as a whole was, in fact, a reclamation of purpose for old age: “the main thesis of this book...is that intelligent and well-conserved senectitude has very important social and anthropological functions in the modern world not hitherto utilized or even recognized” (G. S. Hall Senescence 405). Ultimately, however, Hall saw these “social and anthropological functions” arising from biology learning how to “well-serve[] senectitude” (405). Moreover, in Hall’s argument, the very motivation to change the nature and function of old age came from his conflation of the perceived biological pathology of aging with a generalized social

³⁰ For more on glandular therapy, see Chapter 4: “The Glandular Grail: Scientific Rejuvenation and the ‘Cure’ for Old Age.”

pathology of aging. The need to recoup the value of old age existed not so much because of negative individual experiences of aging, but because of the threat of senescence for the nation and for the race.

Hall was known for supporting the theory of recapitulation, or the idea that “ontogeny recapitulates phylogeny,” basically—in Hall’s sense—that growing children move through the evolutionary stages of our species’ development. Now, in a sort of reverse recapitulation, Hall worried that civilization, our species, was evolving into the final stage of pathological senescence. Pointing to others like H. G. Wells who had expressed similar views, Hall warned that “the human race....has reached the ‘dangerous age’ that marks the dawn of senescence;” and he suggested that unless “we develop...a new social consciousness, and a new instinct for service and for posterity, our elaborate civilization with all its institutions will become a Frankenstein monster escaping the control of the being that devised and constructed it and will bring ruin to both him and to itself” (G. S. Hall Senescence 30). Senescence, thus, threatened dissolution not only of the individual, but of the human race as a whole, thanks to a translation of the “natural” biological pathology of old age into the “social pathology” of an aging civilization. The solution to these wider scale problems, in Hall’s assessment, was “Progressive eugenics, radical and world-wide reeducation, and the development of a richer, riper old age;” these were the “only sources of hope for we can look to no others to arrest the degenerative processes of national and individual egoism” (30). As senescence was not a treatable disease, the only hope for an aging civilization lay in changing the very nature of senescence itself, hence the thrust of Hall’s text. And yet, Hall ultimately placed the power to make that change into a realm of expertise beyond his own, the realm of science, resulting in a tension between the desire for positive

change and few practical prospects for action to be taken. The resolution to this tension—in keeping with the discourse of moral responsibility placed on citizens for their own aging (see Chapter 1) and in spite of the discounting of solutions in the “here and now”—was to urge the aged themselves to reclaim the nature of old age. Thus *Senescence* concludes: “I hope and believe that the data I have gathered and presented in this volume may contribute its mite to make the status of the old more interesting to themselves and to increase the sense that they still owe important duties to a world never more in need of the very best that is in them” (G. S. Hall *Senescence* 516). While the “hope” for a better old age ultimately lay in scientific discovery, the responsibility for the negatively perceived nature of old age was—yet again—placed upon the aged themselves.

These figures— Metchnikoff, Kellogg, Bennett, Charcot, Nascher, Child, and Hall—were all forerunners to modern gerontology. Their debates over the nature of aging—as inevitable natural degeneration or as pathology capable of being alleviated—and what might be done about it were still very timely when the (multi-)discipline of gerontology began to formally coalesce in the 1940s. As we saw in Cowdry’s *Problems of Ageing* (1939), professionals at that time were still trying to distinguish what aspects of old age were the result of disease (and therefore susceptible to treatment or prevention), and what level of degeneration was simply “natural.” The idea that aging itself might be an unnatural disease, as promoted by Metchnikoff and Bennet especially, was gone, and with it much of the belief in possible “cures” in the present. The real hope for aging now required faith in the scientific process to separate the physiological from the pathological changes, cure the pathological changes, and discern the mechanisms behind the physiological ones so that they, too, could be manipulated and alleviated.

However, an overwhelmingly negative view of the aged themselves—one that was heavily influenced by the primacy given to biology and physiology in defining the nature of aging—resulted in tensions between the desire to effect positive changes and the denial of the possibility for immediate change, which led, as we see in Hall’s text, to the responsibility for the negative “nature” of old age being pushed back onto aging individuals. Although the narrative of aging as a disease was professionally discounted, it lingered in the professional gaze which continued to treat the aged as diseased, and in the hope for possible “cures” in the present, maintained by aging individuals if not, on some level, by some professionals themselves.

The Thin Line Between Hubris and Quackery

The “true nature” of aging was certainly not wholly decided in the first few decades of the twentieth century. It is, perhaps, even more heavily debated today, especially as the narrative of aging as a disease has re-emerged with scientific legitimacy in contemporary attempts to locate, and thus hopefully therapeutically alleviate, the genetic “causes” of aging. This brief survey reveals, however, that our ideas about disease and what is “natural” have influenced not only how we view the condition of old age and who has the authority and power to define and impact that condition, but also the way we think about the possibilities of rejuvenation, extreme longevity and immortality. To those like Metchnikoff, Bennett, and (to a much lesser extent) Kellogg, who saw aging as disease, and thus an unnatural phenomenon, death itself became suspect.³¹ If death was unnatural, wasn’t it justifiable to aspire to avoid it?

³¹ Kellogg was an ardent Seventh Day Adventist, thus religion provided much of the foundation for his views about longevity and death.

Metchnikoff noted: “We are so accustomed to look upon death as something natural and inevitable, that it has long since come to be regarded as inherent in organisms. However, when biologists investigated the matter more carefully, they failed to discover any proof of the accepted doctrine” (Metchnikoff The Nature of Man 263). Yet, despite this rationalization for natural immortality, Metchnikoff postulated the idea of “natural death,” where one would truly be ready and want to die. Similarly, Sanford Bennett noted that, given his view of aging as a disease, it was “wholly illogical and without explanation” to put a cap on the human lifespan, though he did so nonetheless. What they struggled against was not only the longstanding record of human mortality, but also the longstanding record of human attempts at immortality; the narrative of aging they championed had to contend with another cultural narrative that had much deeper roots. From the *Epic of Gilgamesh* to the myth of Tithonus to Adam and Eve and The Fall, Western civilization has been full of apologist mores about seeking “unnatural” eternal youth and immortality.³² The view of aging as a disease, and especially of death as an unnatural phenomenon, ran counter to these longstanding mores, and Metchnikoff’s and Bennett’s ultimate acquiescence to the inevitability of death reflected their acquiescence to the power of these apologist narratives. In a similar way, however, those who championed the view of aging as natural degeneration also had to contend with these

³² In the words of Gerald Gruman, “apologism condemns any attempt by human action basically to alter earthly conditions.” Applied specifically to the desire for prolongevity—“the significant extension of the length of life by human action”—apologism “may be defined as the belief that prolongevity is neither possible nor desirable.” Gruman, A History 3,9 As examples, Gilgamesh’s multiple failures to obtain the secret of immortal life suggest that man should submit to, rather than rebel from, the will of the gods that men remain mortal. Tithonus is condemned to endless senility when he asks the gods for eternal life but forgets to ask for eternal youth as well; his fate warns not only that it is unnatural and dangerous for mortals to attempt to evade death, but also that the desire to prolong life can lead to prolonged infirmity and misery. In the story of the fall, mortality is the result of original sin; it is the punishment that comes when God banishes Adam and Eve from the Garden of Eden and they are never again allowed to eat of the fruit of the tree of life, which conferred eternal life.

apologist narratives. The “hope” of discovering and scientifically manipulating the mechanisms of aging present in their theories invoked the hubris of “tinkering with nature” (an apologist trope that still heavily accompanies discussions of scientific research into rejuvenation and longevity today); this was one reason for the caution and guardedness by men like Nascher and Child when talking of these future possibilities.

Throughout history, those who have sought to defeat death and old age and who have spread the hope that such a defeat was possible, have been—if not the victims of apologist tales—consigned to the rank of charlatans. This was the narrow tightrope the early theorists and researchers of old age walked as they negotiated the place of death and the “naturalness” of aging within their views: unacceptable hubris on one side, and quackery on the other. Achenbaum suggests that throughout the early formation of gerontology, “The specter of Ponce de Leon, quacks, and alchemists dogged investigators.” In response, “some of gerontology’s founders called for uniformity of purpose; others tried to ‘prove’ the scientific merits of their efforts by showing how it was grounded in Baconian principles or Darwinian theory” (Achenbaum Crossing Frontiers 22). In short, in their attempt to gain disciplinary credibility, early gerontologists had to steer as far clear from the Fountain of Youth as possible. The debates over the role of the glands in aging in the 1920s and 1930s and the sensational headlines which the accompanying experimental treatments evoked (the subject matter of the following chapter) would play a significant role in pushing gerontology further and further away from any approach to aging which promised a return to youth or the ultimate avoidance of growing old. Likewise, the narrative of aging as disease would ultimately not serve the purpose of those who wished to develop professions around aging, even if the desire for a more immediate solution to the “problem” of aging remained. The tensions created

by these conflicting narratives are still a part of gerontology today. Few people explicitly call aging a “disease” these days, and yet our newspapers routinely report on the search for its “cure.” We dismiss the idea that a Fountain of Youth exists, but this idea sells millions of consumer products every year. While the view of aging as a “natural,” albeit pathological, phenomenon officially reigns in medical and gerontological education, the search for ways to interrupt and eliminate the process of aging remain part of the mandate of these fields. Further, the hope that such discoveries will be made “just on the horizon” and “in our lifetime” shapes the media coverage that the science of aging often receives.

The conflicting narratives of aging as disease and aging as natural degeneration circulated through scientific spheres with consequences for reputations, disciplinary formations, and the perceived possibilities and assessed responsibilities for the nature of aging. However, these scientific narratives also circulated into other spheres of discourse with different consequences for perceptions and experiences of, and policies around, old age. At the same time that these scientific and medical narratives of aging were emerging, the United States’ government, as part of its larger conservation efforts, was assessing the resources represented by its citizens and planning how best to preserve and increase this human capital. Through this assessment, the aging population—pathologized and regarded as useless—was figured as a threat to America’s national vitality. In the government’s assessment, the actual cause of aging was less important than what aged individuals might or might not be capable of given various interventions, but the types of interventions imagined and proposed for policy and action depended on how old age was understood; this was where the conflicting narratives about the nature of aging came into play. Irving Fisher’s 1909 *Report on*

National Vitality, commissioned by President Roosevelt, is full of the optimism of immediate possible change that accompanied the narrative of aging as disease. Fisher himself would champion this narrative through much of his life's work in political, commercial and social scientific realms. This narrative brought with it optimism for changing the nature of old age for the better, but it also placed the responsibility for this change on aged individuals themselves and helped to confer the stigma of disease onto the experience of growing old in America.

***The Negative Net Worth of Old Age:
Irving Fisher and the Report on National Vitality***

As a leading economist and prominent health reformer, Irving Fisher (1867-1947) was perfectly poised to recognize—and develop—the many truths behind the maxim that “Health is Wealth.” Fisher was a Yale man; he completed his B.A. in 1888, received the first Yale Ph.D. in economics in 1891, and continued to teach there for the rest of his career. Fisher’s father, a teacher and a Congregational minister who instilled in his son a desire to strive for the betterment of society, died of tuberculosis when Fisher was just starting his undergraduate work at Yale. Fisher himself caught the disease in 1898 and spent 3 years in various sanatoria; this experience in particular set him on his path as a health campaigner.³³ In addition to his position as Professor of Political Economy at Yale, Fisher served as President of the American Association of Labor Legislation where he pushed for health insurance laws, he founded the Health and Efficiency League of America with Horace Fletcher (proponent of the health fad of thorough mastication of food, or “Fletcherism”), and later in life served as the inaugural president of the American

³³ In the three years of leave Fisher had to take while recovering from tuberculosis, he stayed in sanatoria in Saranac, NY, Colorado Springs and Santa Barbara, CA. "Irving Fisher" Dictionary of American Biography, Supplement 4: 1946-1950 (American Council of Learned Societies, 1974), vol.

Eugenics Society.³⁴ When the American Association for the Advancement of Science founded the Committee of One Hundred for National Health in 1907 to help push for a national health department, Fisher was called upon to serve as the president. In 1914, along with the wealthy contractor Harold Lay, he founded the Life Extension Institute (LEI), a business venture intended to promote periodic medical exams and preventive health. Along with the LEI's medical director, prominent physician Eugene Lyman Fisk, Fisher co-authored a popular and widely circulated personal hygiene guidebook *How to Live* in 1915. In short, Irving Fisher was a man of many causes, connections and investments and was in a position to influence public thinking about matters of health, of which aging was a small but intriguing part.

In his capacity as president of the Committee of One Hundred for National Health, Fisher wrote the 1909 *Report on National Vitality: Its Wastes and Conservation*. This was the concluding piece of the larger *Report of the National Conservation Commission* authorized by President Roosevelt. The project as a whole was an inventory of the nation's national resources done in the interest of conservation. The

³⁴ Horace Fletcher (1849-1919), nicknamed "The Great Masticator," was a well-known and influential food and health faddist in early 20th century North America. Fletcher became a world traveler, millionaire businessman, amateur painter, speaker, author and self-taught nutritionist who perfected and fanatically distributed his doctrine of "Fletcherism," for over two decades, beginning in 1895 and lasting until the end of his life. The dogma of Fletcherism taught that all food must be deliberately masticated (ideally thirty-two times per mouthful) and not swallowed until it turned to liquid. Fletcher believed that prolonged chewing precluded overeating, led to better systemic and dental health, helped to reduce food intake, and consequently, conserved money. People were cautioned not to eat except when they were "good and hungry," and to avoid dining when they were angry or worried. They were also told that they could eat any food that they wanted, although Fletcher himself was a vegetarian, and also recommended against coarse, fibrous foods—a point which often resulted in constipation for many Fletcherites, and which brought vociferous rebuttal from other health campaigners like John Harvey Kellogg who firmly believed in the necessity of regular bowel movements to prevent "auto-intoxication" of the colon. Regardless of the food, chewing was the important point: "Nature will castigate those who don't masticate." Among those who were proponents of Fletcherism at one time or another were John D. Rockefeller, S. S. McClure (of *McClure's* magazine), Bernarr Macfadden (publisher of *Physical Culture* magazine), Henry and William James, Upton Sinclair, and Sir Arthur Conan Doyle. For more on Fletcher and Fletcherism see Whorton, [Crusaders for Fitness](#) Chapter 6 and Green, [Fit for America](#) Chapter 11.

importance of conservation, in turn, was, in the words of President Roosevelt, its role in “another and greater problem to which this nation is not yet awake, but to which it will awake in time, and with which it must hereafter grapple if it is to live—the problem of national efficiency” (Fisher "Report" 636). According to Fisher, national efficiency was a matter of the conditions of the physical environment, the social environment and human nature. It was these conditions that the report set out to measure, and it was to the last of these that Fisher addressed his particular report, endeavoring to review “American vitality, contrasted with the vitality of other nations; to show the extent to which it may be increased; and to point out the value of such an increase in years of life, enjoyment of life, and economic earnings” (636). This condition of “vitality,” which Fisher called “the measure of life itself,” was evidenced in part by longevity statistics, but also incorporated a more qualitative dimension that modified the importance of length of life: “Everyone recognizes that the life of a valetudinarian or an invalid, however long, is but a narrow stream. We may therefore conceive, besides the dimension of length, another dimension of life which may be called its ‘breadth.’ By the breadth of life we mean its healthiness. Just as length of life is limited by and opposed to mortality or death, so breadth of life is limited by and opposed to invalidity or illness.” (636, 655). Much like the messages about health and aging spread through *The Youth’s Companion* (see Chapter 1), the goal—presumed and promoted as entirely possible—was not only the extension of life expectancy, but a longer life free of invalidity and illness, and thus free of any sort of aging connected with these states. Harkening back to the discussion of the previous chapter, “breadth of life” also served as shorthand for capacity to contribute, signaling a functional definition that based the value of old age on the labor still available in the aged body.

In its promotion of the possibility of life extension, and in keeping with the logic of the aging as disease narrative, the report was based on the rationale that “contrary to common impression, there is no iron law of mortality” (623). In place of “the old fatalistic creed that deaths inevitably occur at a constant rate,” adherents of modern hygiene instead adopted Pasteur’s motto: “It is within the power of man to rid himself of every parasitic disease” (624). Certainly, recent triumphs of public hygiene had supported this conclusion, particularly concerning diseases like tuberculosis, typhoid and yellow fever. Citing pages of statistics, the report claimed that “fifteen years at least could be at once added to the average human lifetime by applying the science of preventing disease,” and that of the nation’s cases of serious illness at any given time, “fully half of this illness is preventable” (623). These calculations of the possible benefit of public health measures were optimistic but hardly overreaching. Where the report and the envisioned outcomes of its recommendations were particularly interesting—and particularly relevant to public perceptions of aging—was in its attempts to fit the rising cases of degenerative disease into the idea that there was “no iron law of mortality.”

By 1909 the United States, like many other industrialized countries, was experiencing an “epidemiological transition” wherein the primary causes of mortality were shifting from acute to chronic diseases.³⁵ As the germ theory of disease spread,

³⁵ The concept of “epidemiological transition,” first advanced by Omran in 1971 and based primarily on the mortality statistics of England, Wales and Sweden, posits a three stage shift in causes of mortality from pestilence and famine to receding pandemics and finally to degenerative and man-made diseases (such as those attributed to smoking). This sequence represents “an important tradeoff between mortality and morbidity as a result of the interaction between epidemiological and demographic processes. On one hand, decreased child and maternal mortality resulting from declining infectious diseases resulted in an overall increase in population size. On the other hand, a subsequent increase in life expectancy entailed an aging population with increasing mortality because of chronic degenerative diseases associated with the later years of life.” Ronald Barrett, Christopher W. Kuzawa, Thomas McDade and George J. Armelagos, “Emerging and Re-Emerging Infectious Diseases: The Third Epidemiological Transition” *Annual Review of Anthropology* 27 (1998): 249

public health efforts based on this theory led to significant reductions in mortality.

However, these reductions primarily benefited infants, children and those in middle age.

As Fisher pointed out, there was, in fact, “an increased mortality beyond the age of 50” (647).³⁶ While one might assume this increased mortality in later years was simply the inevitable result of more people living to these ages, Fisher contended, most explicitly in his later book *How to Live* co-authored with Eugene Fisk, that this increased mortality in later life was a uniquely American trend not being experienced by other nations:

This latter phenomenon, a rising mortality in elderly life, is something almost peculiar to the United States. It is not exhibited in the mortality statistics of the leading European countries. In those countries the fall in the death rate has not been due solely to a reduction of mortality in infancy and adult life through the conquest of diseases of children, tuberculosis and other communicable diseases. England and Wales, Denmark, Norway, Sweden and Prussia show improved mortality at every age period. (Fisher and Fisk 281)

Fisher and Fisk posit that the reason for America’s singular increase in death-rates from chronic or degenerative diseases is that “individual hygiene...has been greatly neglected, especially in the United States” (Fisher and Fisk 159). They remark that Sweden, whose “death-rate is declining at all times of life,” is a country where “individual hygiene is more generally applied” (159).

Behind these statements lies a key assumption, drawn from the logic of both the narrative of aging as disease and the narrative of aging healthily as a moral responsibility and a national duty discussed in the first chapter; this assumption was that adherence to personal hygiene would guarantee a healthy old age free of chronic or

³⁶ In the explanation of his conservative table on “*Possible Prolongation of Life*,” Fisher explains that of the 14 years of possible prolongation, “4.4 would be caused by reducing infant deaths under or near 1 year, 1.51 by reducing mortality from children’s diseases, 6.82 by reducing the diseases of middle life, especially tuberculosis and typhoid, and only 1.33 by reducing the mortality of diseases the deaths from which usually come after 50 years of age” (724). Among those “causes of death” considered un-“postponable” were a variety of cancers, softening of the brain, and old age.

degenerative conditions. This assumption, in turn, attributed the responsibility for achieving a good old age to individuals' adherence to personal hygiene; the decrepit aged were thus individuals who had failed in their hygienic self-care. Fisher enforced the notion that the infirmities of old age were susceptible to the influence of hygiene by drawing on the example of famous centenarians and other exemplary models of hygienic living. Citing the sixteenth century Venetian nobleman Cornaro (author of *How to Live 100 Years*, *The Art of Living Long*, and several other treatises on health and aging) who drastically revised his eating habits at age forty and lived more than six more decades, Fisher claimed that observation revealed "that many, possibly most, of the world's most vital men and women have virtually made over their constitutions from weakness to strength," and that "Centenarians have usually been persistent followers of some rule or rules of rational hygiene, even though unconsciously" (Fisher "Report" 704). He also described a 50-year-old who took up systemic physical training with notable improvements, which he cited as evidence of "the physical development possible in a man of middle age" (713). Adherence to hygienic living, then—in the areas of environment (air, soil, dwelling, and clothing), nutrition, activity, sex and drug avoidance—could counter old age, initiated at any point of the life course (705).

To justify this chain of logic, Fisher drew on the narrative of aging as disease by citing the "authority" Elie Metchnikoff. Although Fisher shied away from explicitly calling aging a disease, he regularly turned to Metchnikoff's work to suggest that very thing. For example, when arguing that his estimate of a possible 15-year extension of life through hygienic measures was really quite modest, he explained this estimate did not take account of possible future medical discoveries nor of the cumulative influence of hygiene. Pointing to the way science was delving into diseases like cancer, previously

presumed unalterable, he wrote: “Likewise ‘old age’ has been assumed as unpreventable. Yet Metchnikoff maintains with reason that this is a malady which can be postponed” (731). Where the median age for death from old age was cited as 83, Fisher again pointed to Metchnikoff, whom he said “shows the error of assuming present old age to be normal. We may conclude that the normal life exceeds 83” (734). Hedging his bets on whether or not “old age” would be proven a preventable disease, Fisher pointed back to individual vigilance as the key: “Certain diseases late in life are now taken to be unpreventable or only slightly preventable on the assumption that people reach those ages in their present degree of more or less imperfect health. But on the assumption that personal hygiene had been practiced since birth, the vital resistance, which is always a deterrent of disease, would have been strengthened” (731). Here, even the nature of disease itself—preventable, slightly preventable, or unpreventable—ultimately rested on individual citizens’ hygiene practices and the bodily conditions those practices ensured “late in life.”

By this logic, not only was old age evidence of individual failure in personal hygiene, but it was also—in the context of national vitality—a failure of citizenship: “As President Roosevelt has said: ‘The preservation of national vigor should be a matter of patriotism.’ Some persons would even make it a matter of religion” (673).³⁷ To be a citizen decrepit with age was, effectively, to have failed in devotion to your country, if not in devotion to an even more sacred ideal. This failure of citizenship, and the “problem”

³⁷ As an example of how Fisher framed hygiene as a national duty, he upheld the high value of bodily care in Japan as both an example and a warning to Americans: “The high esteem entertained in Japan for physical training and for hygiene as a guarantee of the fighting power of the country, constitutes an object lesson, if not a warning, to Americans who wish their country to be the peer of the best” Irving Fisher, “Report on National Vitality: Its Wastes and Conservation.” Report of the National Conservation Commission with Accompanying Papers ed. Henry Ganett vol. 3 (Washington: Government Printing Office, 1909) 673.

that aged citizens posed for “national vitality,” were measured through the direct translation of health to wealth. National vitality was effectively a measure of the potential and actual productivity of American citizens. The *Report* began “by showing the relation between the conservation of health and the conservation of wealth. The broadest view of this relation is, as Emerson has said, that ‘Health is the first wealth,’ and as such it is treated by many economists” (746). Certainly this was true of Fisher. Once it established that health could be measured in economic terms, the *Report* put a specific monetary value on human life in order to make its calculations: “The actual economic saving annually possible in this country by preventing needless deaths, needless illness (serious and minor), and needless fatigue, is certainly far greater than one and a half billions, and may be three or more times as great” (742).

However, while the *Report* made such calculations based on the “average value of a person [then] living in the United States” as being \$2,900, this value changed over a person’s lifetime (634). The *Report* measured the economic value of a person’s life—and of this life’s potential increased duration—through a calculation of the person’s earning power: “the discounted value of its future earnings estimated on its probable life less the discounted value of the cost of rearing it during the period of dependence and of maintaining it when helpless through old age” (740). The *Report* included the following table showing the average person’s “net worth” over his or her lifetime (740):

Table 1: Minimum Worth of the Average American Life at Different Ages

<i>Age</i>	<i>Net worth of a person, in dollars</i>
0	90
5	950
10	2,000
20	4,000
30	4,100
50	2,900
80	-700

This table both evidences and advances—in the voice of scientific authority and the official parlance of government—several assumptions and attitudes about the nature of old age, the elderly themselves and their value to the nation. For instance, drawing on the narrative of aging as obsolescence, it clearly highlights the threat to national vitality posed by older citizens; not only were they not productive, but in their dependence, they were in fact a drain on the national economy. Whereas newborn babies had earning *potential* for the lifetime ahead of them, and thus although dependent were still national “assets,” those who reached “old age” were only seen as liabilities. This break down of net worth by age interestingly erased the productivity of a person’s past: no matter if he had contributed a lifetime of assets to the nation which, taken as a whole, might offset his years of dependence; it was only his “future earnings” that mattered. Such a narrow view helped to translate the “aged,” as a cohort, into a “burden” on and a “problem” for the nation at the same time that it made maintaining one’s occupational capabilities both the duty of responsible citizens and the desire of any person not wishing to be thought of as a national liability. In a culture where economic terms were used so broadly to indicate value in relation to a wide variety of subjects (for instance, see the discussion of economic metaphors of longevity in Chapter

1), there was little room for any positive interpretation of a negative net worth in old age. By extension, there was little room to view the elderly themselves as valuable members of the nation.

This economic valuation of life, coupled with the implications of the narrative of aging as disease, interestingly shifted responsibility for maintaining national vitality—at least where the question of health in old age was concerned—away from the federal government. In addition to making individuals responsible for their personal hygiene, the *Report* also indicated that—because health translated so readily to wealth—businesses, too, should care about health promotion. According to the *Report*, businesses that provided physicians for their employees found this “to be a ‘paying proposition’ to the employer because of the resulting enlarged efficiency of the workers” (689). Similarly, insurance companies were called upon to take an active role in health promotion to benefit their own financial motives: “Mr. Hiram J. Messenger, actuary of the Travelers Insurance Company, of Hartford, has constructed and sent me a table showing that life insurance companies could probably make money now by taking a hand in the public-health movement, with the purely commercial object of reducing their death losses” (745). Through this equivalency of health and wealth, health promotion could be advanced as a legitimate business strategy, if not the responsibility of patriotic businesses. And while the logic of the aging as disease narrative was primarily drawn upon in Fisher’s *Report* to offer optimism that longer, healthier lives were possible, it also—by making individuals ultimately responsible for their failing health in old age—relieved the nation itself of the burden of responsibility for this problematic stratum of its citizens. While city, state and national governments, along with businesses, schools and other institutions all had their roles to play in promoting hygienic living, it was ultimately

the individual who must adopt hygienic living practices and whose public opinion informed the work of all these governmental and other institutions.³⁸ Old age marked personal failure in this hygienic duty, and hence the aged could be classed along with the paupers, criminals and insane as a “recalcitrant” segment of the population.

Alongside this dismal indictment of old age as personal failure and \$700 national burden, the *Report* held out the optimistic vision of an extended life of youthful health, replete with continued productivity and thus national contribution—the vision made possible by the narrative of aging as disease. Referring to Metchnikoff’s “noble dream” of finding a scientific intervention into aging, Fisher reasoned that “the lengthening of human life would at once decrease the burden on the productive period” (733).

Additionally, increasing the breadth of this lengthened life would counter the

38 To be more precise, on the larger question of preserving national vitality, Fisher enumerated several “methods of conserving life” which included governmental intervention; structurally and rhetorically, however, he emphasized personal hygiene as the most important method available, and the one on which all other efforts depended. Fisher suggested the nation’s human resources depended “on two primary conditions, heredity and hygiene, or conditions preceding birth and conditions during life” (622). For the first of these, conservation through heredity, Fisher looked to the new science of eugenics and encouraged the government to consider “offering...prizes or bounties to couples who conform to certain standards” and “prevent[ing] marriage alliances among criminals, paupers, and the feeble-minded” (622). Far more than heredity, Fisher’s Report was focused on the interventions available through hygiene. He divided hygiene into three categories: public, semipublic and personal. In the first category, the responsibility of municipal, state and federal governments, he called for improved city sanitation, regulation of women’s and children’s labor, inspection and quarantine of immigrants, pure-food laws and meat inspection, and cooperation at all levels of government in fighting infectious disease. In the category of semipublic hygiene—that relating to the medical profession, institutions, schools, businesses and the public press—Fisher called for increased medical research and education, greater segregation of defective and diseased populations through institutions and hospitals, improved physical conditions and medical inspections in schools, and greater participation from businesses, community and labor organizations and the public press in improving ventilation and sanitation in buildings and advocating for health interventions. It was the third category, however, that Fisher saw as “the most important subject of all, personal hygiene” (704). He noted that the individual may be at the mercy of the shortcomings of public and semipublic hygiene, but “his own personal interest is necessary in order to form the public opinion which alone can result in effective public and semipublic hygiene, while that interest is still more necessary to make such hygiene apply directly to his own person.... Thus at every point of hygienic progress, there must be individual cooperation with public efforts” (704). Among the personal hygiene duties the individual was called upon to perform were improving ventilation in his living environment, avoiding constrictive clothing, balancing work, play and sleep, thoroughly masticating rather than “bolting” food, attending to proper nutrition through “domestic science,” not using alcohol or tobacco, regularly exercising body and mind and avoiding sexually transmitted diseases.

obsolescence of old age, while at the same time taking advantage of the “accumulated experience” of older workers and turning them from a liability into an asset: “The principle which leads to the choice for members of the judiciary of men of ripe years and knowledge will apply to every field of human activity, even those fields which are now preempted by young men because of the necessity of utilizing their vitality....It will give to society a body of old yet hale men of experience, whose influence and worth can not be measured” (733).³⁹ Fisher concluded his section on the “need” for lengthening life by quoting at length from Metchnikoff’s book *The Prolongation of Life*:

Old age, at present practically a useless burden on the community, will become a period of work valuable to the community. As the old man will no longer be subject to loss of memory or to intellectual weakness, he will be able to apply his great experience to the most complicated and the most delicate parts of the social life.

We may predict that when science occupies the preponderating place in human society that it ought to have, and when knowledge of hygiene is more advanced, human life will become much longer and the part of old people will become much more important than it is today. (733)

Here, finally, was a positive image of old age; or, at least, of the *potential* of old age. It was an optimistic vision in which everyone—the nation, the government, the elderly themselves—benefited. But as it was precisely a *vision*, it reinforced the notion that old age, at present, was “a useless burden” on national efficiency. The very possibility of “old yet hale men of experience,” at the same time that it promised reclamation of obsolescent old age, reinforced the idea that contemporary old men were not hale and their experience was useless because they lacked the vitality to apply it.

The impending consequences of *not* achieving this optimistic vision of old age, Fisher suggested, were grave. He noted that “the further off the burden of old age is

³⁹ Written before the 1910 Eastern Rate Case, or Taylor’s 1911 *Principles of Scientific Management*, Fisher still identifies a clear and valued place for “experience” within the quest for industrial efficiency.

shifted, the easier it is for society or the individual to accumulate the wealth to provide for it. At present the burden of helpless old age is extremely serious, as those countries are beginning to realize which, like Denmark, Belgium, Germany, France and recently England, have enacted laws to provide old-age pensions" (733). A national old-age pension was the embodiment of the threat contained in the table of a person's net worth by age; it marked the moment where the symbolic liability of the aged turned into a literal financial burden on the nation. America was not yet at this point, but the threat was imminent, Fisher implied.

Discerning the "true nature" of aging was certainly not the goal of Fisher's *Report on National Vitality*. He was more concerned with providing an economist's view on the relationship of citizens' health to national vitality; this entailed exploring the problematic relationship of aging citizens to the nation and defining the condition of and the possibilities for aging itself. Understanding aging as a "disease," especially in the context of so much effective public health prevention and treatment of communicable diseases, made it a more manageable, quantifiable and controllable phenomenon. The political and economic value of a "treatable" old age was the difference between citizens remaining productive throughout the life course versus becoming the financial liabilities represented by the old-age pension. The "redemption" available through thinking of aging as a disease was a social redemption as well as a physical and economic one; such was the promise of the vision of "hale, hearty old men." At the same time, naming aging as a disease (even obliquely suggesting it might be a disease) invoked a particular way of thinking about the aged themselves. If "disease" invoked the need for "control," then the aged, as "diseased," were potentially an unruly segment of society. Old age itself was the visual evidence of recalcitrance in the citizen's duty to personal hygiene.

The narrative of aging as a disease—with its optimistic vision of a productive old age and its burden of responsibility on the individual—fit the needs of a government looking to increase its nation’s international stature. It left a legacy of viewing the aged as diseased, and of blaming them for growing old in the first place.

The *Report on National Vitality* reached a limited audience beyond the halls of government. It was briefly summarized in most of the major papers, but it was not a document intended for mass public consumption. The ideas that lay behind it were to reach a much larger audience through Irving Fisher himself, particularly through his associations with the health-prevention company Life Extension Institute (LEI), founded in 1913, and his published writings, such as the hygiene guide *How to Live* that he co-authored in 1915 with the LEI’s medical director, prominent physician Eugene Lyman Fisk. This widely popular book went through 21 editions by the late 1930s, was translated into multiple languages, and was used as a personal hygiene textbook in high schools and colleges into the 1950s (Hirshbein "Masculinity" 99). In keeping with the views on aging expressed in the *Report on National Vitality*, *How to Live* clearly laid out the problem posed by increasing mortality after age 50 and promoted the basic principles of personal hygiene that would add vitality to the later years.⁴⁰ However, Fisher’s particular uptake of the narrative of aging as a treatable disease would find its most explicit public circulation in the purpose and promotion of the LEI itself. In addition to spreading the logic of conservation wherein human life was calculated as a monetary

⁴⁰ For a sample list of those “basic principles of personal hygiene,” see footnote 38. In keeping with the view of aging as a disease, and still following Metchnikoff’s theories, Fisher and Fisk would assert in *How to Live* that “Poison, therefore, is the main factor in causing old age and death not directly due to injury.” Irving Fisher and Eugene Lyman Fisk, *How to Live: Rules for Healthful Living Based on Modern Science* 9th ed. (New York: Funk & Wagnalls, 1916) 65.

resource, through the public outreach efforts and advertising of this crusading health-prevention company, the idea of aging as a disease, the hope that old age might be effectively “cured” through prevention, and the individual moral responsibility for seeking such a cure were conveyed to vast numbers of American citizens.

Instituting Life Extension: The Fountain of Youth in One Annual Exam

A December 30, 1913 article in the *New York Times* announced the opening of the Life Extension Institute (LEI) with its stated goal of “conservation of human life by the systematic application of modern science” (“National Society”). Harold A. Ley, the Springfield, Massachusetts construction executive who provided both the impetus and the initial capital for the LEI, received only a brief mention. Instead, the article spent several paragraphs listing the more prominent public figures involved, a veritable “who’s who” of public health, first among them ex-President William H. Taft who was Chairman of the LEI’s board of directors. Professor Irving Fisher (whom Ley had early convinced to sign on to the endeavor, bringing with him his influential coterie of health, government and business contacts) was named as chairman of the LEI’s Hygiene Reference Board, and Dr. Eugene Lyman Fisk, well-known for his writing on hygiene, was named as the Medical Director. Other administrators and Hygiene Reference Board members were listed at length; many of these names would have been familiar to readers as illustrious personages “already identified with civic and philanthropic work” and “men of large affairs.”⁴¹ Throughout its years of operation, the LEI would depend heavily upon the

⁴¹ Among the particularly notable names were E. E. Rittenhouse, the Conservation Commissioner of the Equitable Life Assurance Society, who was President of the Institute, and the Hygiene Reference Board’s chief sanitation consultant Col. William Crawford Gorgas, who was famous for containing the threat of yellow fever in Havana and the Canal Zone, making possible the completion of the Panama Canal. The sheer amount of space on the page devoted to listing the names of the people involved with the Institution reflects both these figures’ importance, and the importance of these figures to the LEI’s venture and public image.

reputation of the people associated with it, featuring their names prominently in every ad as a measure of the company's legitimacy and importance. As one ad's narrator recounts after reading an LEI booklet given to him by a friend: "One of the first things that caught my eye was the list of officers. The moment I read that list I was convinced of the genuineness of the Institute's services" ("The Man in the Gray Coat").

The "services" provided by the LEI were preventive medical exams, intended to detect developing diseases in time to successfully intervene. In the first few months of the LEI's operation, the Institute placed a handful of ads in the *New York Times*. These early ads promoted both the LEI's group and individual services, specifically addressing "Employers" with the promise to discover the "impaired group" among their employees, and "the average person" with the message that "it is your duty" to keep alive and well, and hence to get yourself checked out "before it is too late."⁴² The LEI's decision to

Among the Board of Directors, as listed in the article: "William H. Taft, Chairman; Harold A. Ley of Springfield, originator of the plan; Prof. Irving Fisher of Yale, E. E. Rittenhouse, Robert W. De Forest [President of the Metropolitan Museum of Art and Trustee of the Sage Foundation], Frank A. Vanderlip [President of the National City Bank], Dr. E. R. L. Gould [President of the City and Suburban Lands Company, which erected many large model tenements in New York City], and Charles H. Sabin [Vice President of the Guarantee Trust Company] of this city, Francis R. Cooley of Hartford, Conn, and Henry A. Bowman of Springfield, Mass [both bankers]." The article additionally copies in full this public statement by Irving Fisher: "The institute has a Hygiene Reference Board of nearly a hundred leading experts on various subjects pertaining to health. The purpose of this board is to help determine the truth on hygienic questions referred to it. The board includes Dr. Lee K. Frankel, head of the extensive social service of the Metropolitan; Dr. Burnside Foster, who was the first to advocate free medical examinations for policy holders; Walter H. Page, United States Ambassador to England, who has been especially active in the movement to exterminate the hook-worm disease; Dr. Alexander Graham Bell, inventor of the telephone and a deep student of eugenics; Dr. C. B. Davenport of the Eugenics Records office; Dr. George H. Simmons, Secretary of the American Medical Association; Dr. William J. Mayo, the celebrated surgeon; Dr. William H. Welch of Johns Hopkins University; Prof. Russell H. Chittenden, Director of the Yale Sheffield Scientific School; President David Starr Jordan of the Carnegie Peace Foundation; Miss Mabel Boardman of the Red Cross; Dr. Wickliffe Rose of the Rockefeller Hook-Worm Commission; Dr. Harvey W. Wiley of pure food fame; Dr. William H. Tolman of the American Museum of Safety, and some seventy others, mostly technical experts in scientific hygiene." "National Society to Conserve Life" *New York Times* Dec 30 1913.

⁴² These ads appeared in *The New York Times* on Mar 23, Apr 8, Apr 9, and Apr 10 of 1914. After this date, their direct-to-consumer advertising stopped for nearly four years until Jan 20, 1918.

place only a few direct advertisements corresponds to perceptions of advertising in the early twentieth century. At a time when health-focused advertising was almost exclusively for patent medicines or other panacean nostrums, it was not considered “respectable” for doctors or reputable health organizations to appeal directly to potential patients; furthermore, the practice was banned by the American Medical Association.⁴³ In place of direct advertising, the LEI instead issued a flood of pamphlets and other informational material giving advice on a variety of health topics, describing the Institute and its services, and stressing the LEI’s status as a “self-supporting philanthropy” as well as the illustrious members of its Boards. These mailings, distributed by the millions, were sent to individuals, schools, clubs, societies, business organizations and insurance companies (Daniels 34). The LEI was also brought to the public’s attention through articles written by its Board Members, and through the frequency with which these Board Members were quoted as experts in health-related newspaper articles. As Patricia Daniels notes, “If there was a health topic, there was a quote from Life Extension Institute. It was always in the public eye” (56). News of the LEI and its agenda was spread even further with the publication of Fisher and Fisk’s public hygiene manual *How*

⁴³ The official history of the Life Extension Institute (Patricia Daniels’ *Life Extension Institute at 75* published in 1988) neglects to mention these few early ads. Through the book’s attention to the “respectability” of health advertising, however, one might infer that early pressure was brought to bear against this practice of direct advertisement, as would happen four years later when the LEI began to advertise widely. Chapter II, Article I, Sec 7 of the AMA’s “Principles of Medical Ethics,” adopted in 1903 by the House of Delegates, forbids the use of public advertising by those in its “profession:” “It is incompatible with honorable standing in the profession to resort to public advertisements or private cards inviting the attention of persons affected with particular diseases; to promise radical cures; to publish cases or operations in the daily prints, or to suffer such publications to be made; to invite laymen (other than relatives who may desire to be at hand) to be present at operations; to boast of cures and remedies; to adduce certificates of skill and success, or to employ any of the other methods of charlatans.” Principles of Medical Ethics May 16 1903 American Medical Association Available: <http://www.ama-assn.org/ama1/pub/upload/mm/43/1903principalsofethi.pdf>. This clause had disappeared by the 1957 version of the Principles of Medical Ethics (see http://www.ama-assn.org/ama/upload/mm/369/1957_principles.pdf). Direct-to-consumer advertising of pharmaceuticals, among other medical services, has become widespread over the past decade.

to Live, which contained not only a list of all the members of the Hygiene Reference Board, but 11 pages full of their portraits as well. *How to Live* was still so widely popular by its 20th edition (1938) that it was distributed by the Literary Digest, which promoted it to 15 million subscribers (Daniels 72). If not a universal household name (for the LEI focused the majority of its appeals and materials on middle- to upper-class businessmen), the LEI—and its health messages—were certainly widely recognized among a significant proportion of American society.

However successful such informal advertising was at garnering name recognition for the LEI, it did not pull in enough customers to maintain the “self-supporting” nature of the philanthropy. Thus by 1918, against the opposition of the current president of the Institute, E. E. Rittenhouse, who elected to resign, Harold Ley decided to reach out to individual subscribers through “a campaign of paid publicity along health educational lines” (qtd. in Daniels, 45).⁴⁴ While the LEI placed direct advertisements in a few other national media, they almost exclusively devoted their advertising dollars to ads in the *New York Times*.⁴⁵ It was not unusual, however, to see the LEI cited as an authority in advertisements for other products—such as Nemo Corsets, Dr. Lyon’s Tooth Powder, Ivory and Lifebuoy Soaps, and the Liberty Life Insurance Company—in publications like *The Los Angeles Times*, *The Washington Post*, *The Youth’s Companion* and *The*

⁴⁴ Rittenhouse’s tenure as president lasted only four years. He resigned over the LEI’s decision to focus its advertising directly on American consumers, something that “medical” practitioners were still banned from doing by the American Medical Association, and something he saw as unlikely to produce results. Ley accepted Rittenhouse’s resignation, personally paid out his contract, and assumed the office of president without salary, which he would continue to fill until he retired at age 74 in 1948. Patricia Daniels, *Life Extension Institute at 75: It’s Great to Be Alive and Well* (New York: 1988) 45, 80

⁴⁵ Among the few non-*New York Times* advertisements searchable through the Proquest database, one finds ads in *The Independent* (April 20, 1918), *Outlook* (November 6, 1918), *The Wall Street Journal* (August 5, 1926) and *Life* (August 26, 1926).

Chicago Defender.⁴⁶ Although their headquarters were located in New York City, ten years into operation their ads would note that examining physicians were available “in every leading city and town in the United States and Canada” (“How to Defer”). By 1925 they could claim that “Over 300,000 men and women have already taken the Health Services of the Institute—more than 250 concerns have extended the service to their executives and employees. Forty life insurance companies offer a service of the Institute to over two million policyholders” (“Do You Live”). By 1932, they could claim that “more than 100,000 men and woman receive the benefit of the Institute’s examinations every year” (“The Turning Point in Life”). Clearly, the advertising worked.

Together, the appeals in the LEI advertisements and materials provide a distinctive narrative about the nature and value of old age, one that is highly indebted to the narrative of aging as disease.⁴⁷ Starting from the very first ad, placed January 20, 1918 in the *New York Times*, these advertisements addressed themselves to the average middle-aged business man (through the voice of the same), and appealed to his sense of duty (to family, business and nation) and to his fear of growing ineffective:⁴⁸

“I guess I am what you would call the average man. Forty years old—earning a pretty good salary—a wife and two children. And I just

⁴⁶ For examples, see “Beauty Is Fragile” *The Youth's Companion* May 14 1925; “A Real Training Help That's Good Fun, Too” *The Youth's Companion* Mar 1928; “19 in 20 Mouths Are Safe!” *Los Angeles Times* Apr 20 1927; “Do You Know Why ‘the Life Extension Institute’ of New York Favors Corsets?” *The Washington Post* Mar 20 1921; and “Four Unusual Triumphs” *The Chicago Defender* May 5 1923.

⁴⁷ These ads additionally draw upon the narratives of aging as obsolescence—appealing to the businessman’s fear of growing ineffective with age—and the narrative of aging healthily as a moral obligation and national duty.

⁴⁸ Almost all of the ads were aimed explicitly at men, calling upon their obligations to their business, their families and their nations and establishing health as an individual duty. Some ads did mention that just as men could prolong their vigor and reserves through periodic health exams, so women might retain their charm and vivacity. Many ads also mentioned that “there is a special department for women at the Head Office of the Institute in which both men and women examining physicians are in attendance and where women subscribers can be examined either by a man or a woman physician, as they prefer.” As Daniels notes of the LEI, however, “there were very few [women] among its early clients” (53).

can't afford to get sick. My family needs me—my business needs me—
and I need myself.

“I want to live to be seventy, anyway, but I don't want to live that long if it means years of ill health and premature decline. I want to be strong and healthy and happy for years and years, for only then can I get the most out of life and do my best work...” (“A Health Examination”)

Much like the *Report on National Vitality*, this testimony evinces a dichotomy between a healthy old age of continued productivity and a degenerate old age unable to fulfill basic needs. Reflecting the -\$700 net value appraisal of those over 80, the narrator implies that infirmity is worse than death.

The businessman goes on to recount the death of a friend, “a famous athlete in his day...who thought he was in good health” but developed pneumonia and died four days later. The family physician describes the death as “just like the breaking up of a ship when it hit the rocks. Nothing could save it then. But with the proper care all along the voyage, those hidden dangers would have been mapped and charted—known and understood—and therefore easily avoided” (“A Health Examination”). His friend's death inspires him to make an appointment at the Life Extension Institute, an organization he feels secure about based on the list of its prestigious founders. At the LEI, he experiences an examination so thorough they “didn't miss a single part of me....literally made a map of my body and entire life.” The thoroughness of the exam assuages his fear of sudden obsolescence from age and disease: “I know now the dangers of middle age, but I am facing them neither blindly nor with fear. I know where my body is strong and where it is weak. I know the hidden dangers and the rocks, and I tell you very frankly that my ship will never go to pieces from dangers that I know nothing of.” This was the most basic and least ambitious of the claims about aging that the LEI made in its advertisements: it promised that those who used its services would be able to *manage* their aging by seeing the physical changes that lay ahead, preventing them in

many cases, minimizing their impact where prevention wasn't possible, and averting unforeseen health catastrophes.⁴⁹

According to the LEI's advertisements, the key to being able to assert control over one's aging lay in changing people's mistaken notions of what aging actually was. Aging was *not* a slowing down that happened as one left one's youth behind; in other words, aging was not a natural process of degeneration. Rather, the changes that people mistakenly referred to as the result of "aging" were actually due to encroaching disease.⁵⁰ Aging, the ads told readers, was not something that happened inevitably in the course of time:

As a man's hair whitens and his features become furrowed, his back bent and his girth unduly expanded, we say "he shows the mark of time." Time, however, has nothing to do with such things.

"Old Age" is not a matter of years. It is a matter of health—of the condition of the body mechanism. Growing old is simply a process of physical deterioration. A man of 35 and a man of 75 may die of the same kind of "old age." ("How to Defer")

The message "old age is not a matter of years" was repeated ad nauseum in LEI ads in a variety of rhetorical and metaphorical formulations.⁵¹ Fisk perhaps put it most bluntly

⁴⁹ A subtle rhetorical move in one of the ad's paragraphs gestures towards some of the grander claims about aging the LEI would later make: "Taft got interested in this thing when he saw the veritable miracles performed by scientific medicine in eliminating age-old plague from the tropics. He believes that through the Life Extension Institute the death rate from chronic disease can likewise be cut down by detecting and preventing it at the outset." By setting up an analogy—the LEI will eliminate chronic disease like scientific medicine has eliminated age-old plagues—and through the suggestive use of *age-old* as a descriptor of one of the terms, the ad very subtly implies that the LEI will eliminate the plagues of old age.

⁵⁰ For example, one ad warned: "There are literally thousands of men and women who go about with an exalted sense of well-being, well-groomed and apparently healthy, yet all the time some unsuspected disease is making headway inside. These people experience no pain, and although they tire easily, they attribute that fact to the passing of the exuberance of youth." "The Rational Means of Preventing Premature Breakdown" New York Times Apr 7 1918. Their mistake is in assuming that it is natural for "the exuberance of youth" to pass and for people to tire more easily over time; instead, the ad tells us, these signs we take for aging are really the symptoms of developing disease.

⁵¹ "Age is Not a Function of Time" was the blatant title of one ad. ("Age Is Not A Function Of Time" New York Times 1932.) Several ads pointed out the relativity of age: "You know some men who are old at forty. You know some who are *young* at sixty. It all depends on the man." ("At What Age Does A Man Grow Old?"

when he opened a 1920 essay in *The North American Review* with the question: "Is old age a disease? No, it is not a disease, but it is disease. Neither old age, middle age nor youth are functions of time" (Fisk 51). As one LEI ad explained, aging was "an expression of neglect—scientific neglect to search out and find the causes of disease and physical breakdown, individual neglect to ascertain the physical condition and endeavor to apply such scientific knowledge as we now have" ("Fit to Fight"). In other words, in keeping with the narrative of aging that Fisher championed, aging was preventable disease.

This message that aging was both unnatural and preventable was the primary appeal through which the LEI ads reached out to readers. In attributing the "failing health and disabilities of middle age and elderly life...to...infections and poisons and other definite physical causes," they stressed the unnatural, causal nature of "old age;" by implication, old age itself was an unnatural state ("What Were You"). Even the surface appearance aspects of aging, for women in particular, were attributed to presumably manipulable causes; in the words of one particularly fervent 1920 ad: "It is a delicate matter to discuss, this matter of the waning charm, or physical failure of women as age advances, but perhaps in no other way could the *needless ravages of physical neglect* and the *preventable physical degeneration* of the body—*mistakenly ascribed to*

New York Times Feb 23 1919.) Other ads employed a variety of metaphors to express this same idea. For example, that "More people 'rust out' than 'wear out'" ("Want To Live A Hundred Years?" New York Times Dec 21 1919) or that "The human clock usually breaks down instead of 'running down'" ("Neglect of the Human Machine" New York Times Dec 28 1919). Beyond the LEI ads, this idea was widely spread through Eugene Lyman Fisk's numerous published writings and quotations. For example, a 1923 article from *The Washington Post* reported on Fisk's humorous suggestion of "the passing of a constitutional amendment abolishing birthdays, or at least limiting the number to the original one" as birthdays negatively affect the way we think and feel about our age, and contribute to our blind acceptance that time is the cause of old age. "Yes, We Have No Birthdays" The Washington Post Oct 7 1923.

time—be more vividly portrayed" ("When Is a Man Old?" my emphasis). In promoting this causal, malleable vision of aging, the LEI was siding with those like Metchnikoff, Kellogg and Bennett who viewed the pathology of aging as having identifiable and adaptable causes, and siding against those like Charcot, Nascher and Child who viewed degeneration as a natural function of time. As a consequence of this alignment, the LEI publicly but subtly positioned themselves in opposition to, and as a needed correction for, "traditional medicine." In a long 1920 essay in *The North American Review*, Fisk noted that "so powerful is the influence of mere terminology and of allegorical conceptions of natural processes that even the pathologist dealing with visible evidences of infection and poison in the tissues of the elderly talks about 'conditions normal to the *time of life*'" (Fisk 51). Fisk's article was, effectively, a polemic against the accepted "terminology and allegorical conceptions" of established medical practice that correlated aging with time and that cited aging as a cause of death. The LEI's questioning of traditional medicine's definition of aging, and its decision to advertise its services directly to the public, would later come back to haunt them.

The LEI's promotion of the narrative of aging as disease brought with it into public circulation several other assumptions about the value of the aged, the power that medical science could offer to aging individuals, and even the (in)evitability of death. In keeping with the ideas expressed in the *Report on National Vitality*—that aging was a condition amenable to personal hygienic intervention, and therefore, by implication, the aged were people who had failed in their hygienic duties—the LEI promoted the condition of being old as universally repugnant while it upheld youth as the natural and ideal state of being. One 1920 ad demonstrates these ideas with particularly clarity and force. Its long headline reads: "When Is a Man Old? When Is a Woman Old? What Is

Old Age? Is It Possible to Fight or Postpone It? Is It DESIRABLE to Fight or Postpone It? Can We 'Fly in the Face of Nature'?" The article opens by stressing the magnitude of these questions, and their answers, for the very roots of human misery and human happiness:

Few more important questions than these could possibly confront the human race. These questions deal with matters at the source of human happiness and satisfaction in living. The answer to these questions, the solution of these problems, touches every important problem—political, financial and social—that now confronts a distracted world, yet some of these solutions are extremely simple. This knowledge translated into action would correct much human misery and lift many human burdens. ("When Is a Man Old?")

The very foundation for the promotion of the LEI was the assumption that old age was at the source of "much human misery" and behind "many human burdens"—a "problem" across realms "political, financial and social." As presented in this ad and many others, the only unproblematic age was youth. Middle age was regularly presented as a "dangerous age."⁵² Youth stood uncontested atop the hierarchy: "We read a great deal about woman being at her best in the forties, etc. These are pleasant things to say, but they are not true in a physical sense. Youth is youth, and you cannot get away from this truth" ("When Is a Man Old?").⁵³ "Giving in" to aging was portrayed as pathetic and embarrassing: "It is often pitiful to note the futile efforts of women to conceal the so

⁵² For example, one ad that ran multiple times, glumly titled "The Tragedy of Middle Age," featured a large pie chart showing that "Out of every 100 healthy men, 25 years old today, ...by age 65," 36 of them are dead and 53 are dependent on relatives or charity; only 6 are self-supporting and 5 are well-off." "The Tragedy of Middle Age" New York Times Nov 10 1918. Another ad was simply titled "Middle Age Is the Dangerous Age" New York Times May 30 1920.

⁵³ The same ad was slightly kinder to men, but once again reaffirmed that there is no substitute for youth: "There are those among men as there are those among women who proudly assert that at 40 they are better physically than they were at 20, but in the mass this is not true."

called ravages of time, efforts that take more time and money than would real fundamental corrective measures,"("When Is a Man Old?").

However, the very negativity with which the LEI promoted old age as a misery-inducing burden was a foil for the reassurances the LEI could offer. "The period of the physical charm of youth may be prolonged," the same ad promised, through the miracles of modern science:

We make this assertion on the basis of well-tested scientific evidence: The period of youth can be prolonged, and to some extent lost youth can be regained. The so-called ravages of time can be halted and retarded not by magical elixirs, beauty preparations, wonderful systems of diet and exercise, or other get-well-quick quack or pseudo-scientific remedies but by methods well known to science, applied after a thorough overhauling of the life and body of the individual has disclosed the particular needs. ("When Is a Man Old?")

Here, then, was the promise of a scientific fountain of youth, available to the "average" man (and woman) at an affordable price through nothing more onerous than getting a regular, periodic physical exam and following through on the doctor's recommendations. While always careful to distinguish themselves from quacks and fads, the LEI ads nevertheless made repeated allusions that called upon the age old appeal of the Fountain of Youth. As a character from one ad, found by the narrator to look "ten years younger" than he had previously, jocularly put it: "No, Frank - I didn't find the Fountain of Perpetual Youth in Florida. But I do think I found the way to it in that little magazine coupon [attached to the bottom of every LEI ad]" ("The Man in the Gray Coat").⁵⁴ It was with ads like these that the LEI's efforts towards "life extension" and increasing the "breadth" of life ventured into the mythic realm of the quest for the fountain of youth.

⁵⁴ As another example, one 1921 ad featured a successful businessman who five years ago had a "near scrape" with his health, went to the LEI, and now looks better than the ad's narrator, ten years his junior. "John Morgan's Fountain of Youth" New York Times 1921.

Like the lesson learned by Tithonus, the LEI ads suggested that a longer life was only worthwhile if it were a healthier and younger life as well—a possibility the LEI claimed to be able to offer.

As part of this message that aging was preventable and youth maintainable the LEI ads also promoted the idea that there was “no iron law of mortality,” or, more particularly, that death itself was not “natural” and that preventing death was ultimately a matter of scientific progress. In so doing, they incorporated into their narrative of aging as disease the latest science of the day, portraying the possibility of scientific intervention into aging and death as but one logical link away. One 1919 ad replied to the question “Why Do People Die?” by offering: “So far as science can reveal, there seems to be no principle limiting life” (“Tell Me, Doctor”). Referencing the success of Alexis Carrel in keeping animal tissue cells alive outside of the body, apparently immortal, the ad surmised: “If we could at intervals thoroughly wash man free of his poisons and nourish him, there seems to be no reason why he should not live indefinitely” (“Tell Me, Doctor”).⁵⁵ In these assertions, men such as Fisk were looking to the field of biology where profound changes had been made in the lifecycles of some organisms. In addition to Carrel’s work, John Howard Northrop and Jacques Loeb had shown that lowered temperature could extend a fruit fly’s lifespan 900 times. Changing the nature of aging and death, so the narrative went, was merely a matter of applying modern scientific expertise to human lives; just as eugenics was creating a stronger,

⁵⁵ To be fair, the article is quick to temper this claim: “That is theoretical, of course. It is the impossible that will never happen. And yet, within reasonable limits, it is possible to add ten or fifteen years to the life of the average man or woman.” More than control over death itself, the LEI implicitly promised that those who partook of their services would be able to control the timing of death and the quality of the years before it: “Within certain limits you should be able to decide today whether you are going to die at 40, 45, 50 or whether you are going to get by the danger period of middle age, and live your allotted three-score-years-and-ten.” “The Growing Movement to Prolong Human Life” New York Times Jul 27 1919.

better race, so, with attention to lifespan, could “man...take up the work where nature laid it down and by directing natural forces, deliberately mould a higher type of organism” (Fisk 56). The LEI and its directors promoted the idea that nothing was beyond the reach of empirical science; conquering “disease, old age and death” was merely a matter of breaking these down into their definite and specific causes and directing the enlightening beam of science towards finding the solution for each cause.⁵⁶

Thus, not only did Fisher, Fisk and the LEI promote the idea that aging was a matter of treatable disease, not a function of time, they also harnessed the growing authority of the biological sciences in order to offer the public the optimistic vision of the quest for the Fountain of Youth turned into a valid scientific enterprise. Where “in earlier times....Some mysterious and marvelous elixir or charm was sought that would enable mankind to withstand the so-called ravages of time,” now science had “gained more light and divested itself of the superstitions and crudities of the alchemist and the medicine man,” and was ready to tackle the goal of eternal youth with empirical accuracy and scientific legitimacy (Fisk 53-4). This narrative of the scientific search for the Fountain of

⁵⁶ In a long essay in *The North American Review*, Fisk wrote: “Barring accident or injury, all organisms die through fault in their structure or their adaptation; because they are poisoned, infected or deprived of essential factors that maintain life. These definite causes of disease, old age and death can actually be grouped under definite categories that will include all possible factors yet to be discovered that could influence the life cycle of man. These categories are as follows: Heredity, Infection, Poison, Food deficiency, Food excess, Hormone deficiency...., Hormone excess...., Physical injury or strain, Psychic injury or strain, Physical apathy, Psychic apathy.... Science fully informed as to the means of protection against the adverse factors named or yet to be named under these categories could indefinitely prolong human life—and more—indefinitely expand its power. This, of course, is a mere presentation of a principle and not a prediction” (55). On a similar and even more optimistic note, Fisk writes in his concluding thoughts: “The many examples of profound physical and psychic changes resulting from variation in the supply of hormones or other specific substances, indicate the possibility of ultimately acquiring knowledge that will enable us to administer combinations of substances that will maintain life and health indefinitely, barring accident or physical and mental strain and injury, although these may conceivably be successfully combated to a certain degree by specific means. Carrying these speculations to their ultimate implication, we find a number of alternative destinies confronting mankind” (61). Once again, careful not to “predict” or to promise, the message is nevertheless clear that aging and death are, in “principle,” merely the effects of poison, infection and deprivation, and thus, are theoretically within the realm of science (and the individual, through science) to control. Eugene Lyman Fisk, “On Prolonging Human Life” *The North American Review* Jul 1920: 55.

Youth had its own life and circulation far beyond its uptake by the LEI.⁵⁷ It was not unusual, for example, to see an article in *The New York Times* import into its descriptions of scientific advances the language and optimism of the Fountain of Youth story: "Fresh achievements such as the discovery of insulin by Dr. Banting are being made, and slowly, very slowly, the approach is being made toward the goal sought by Ponce de Leon and others who would retain life at the period of exuberant vitality. Perhaps some day science may in fact bring within the realm of possibility a new age of Methuselahs" (Chenery).

With its wide distribution of educational materials, the reach of its advertising and the prolific public lives of its directors, the LEI was responsible for circulating the narrative of aging as disease—and the accompanying narrative of a cure for aging possible through modern science—to a broad public audience. These narratives have remained a part of the American popular imagination and a part of the public understanding of the purpose of the science of aging, to a greater or lesser degree, throughout the Twentieth Century and into our own. While the LEI's narrative placed broad faith in the biological sciences and was, in even its simplest representations, intended to encourage people to regularly visit doctors, it also ran counter to the narrative of aging being promoted by the "traditional" medical establishment. Traditional medicine had for the most part adopted the narrative that aging was a process of natural degeneration; by extension, this narrative promoted the need for qualified medical authorities able to distinguish what aspects of a person's aging were normal degeneration and what were treatable pathology. In the view of the medical

⁵⁷ For more on this, see Chapter 4.

establishment, not only was the LEI promoting a different vision of the nature of aging, they were also making medicine a commercial enterprise and treading dangerously near the territory of snake-oil salesmen peddling the Elixir of Life. Most importantly, they were cutting into traditional medicine's business. Traditional medicine fought back.

Dueling Narratives: The LEI vs. the AMA

Both private physicians and “organized medicine” brought complaints against the LEI from the late 1910s through the early 1930s; they claimed that the Institute’s advertising was unethical and that the Institute was “practicing medicine” illegally (Daniels 54). The LEI, in promoting the relatively new field of “preventive health,” walked a very fine line. From their very first ad, they were careful to claim all throughout their literature that “the Life Extension Institute gives no treatments, and does no doctoring. It simply looks you over as an expert accountant would examine a set of books—to find the mistakes that would not be apparent to the ordinary observer” (“A Health Examination”). The LEI was also careful not to suggest they were the only ones qualified to offer such services. Many ads featured framed “Important” notices announcing: “The Life Extension Institute was founded for the public good. It would not be fulfilling its highest obligations if it said to you selfishly that you cannot get a thorough physical examination anywhere else but at the Institute. That is not true....Go to your physician or come to the Life Extension Institute—it makes no difference. But get that health examination before it is too late—that’s the big thing” (“The Value”).⁵⁸

⁵⁸ The elided section of the quote is a good example of the LEI’s rhetorical appeals. They were both humble (“There are thousands of physicians who are fitted by experience and training and who have the time and inclination to do this work and do it well.”) and yet managed to extol the prestige of their leadership and the scope of their philanthropy: “The Life Extension Institute is just a central organization to which one hundred of the leading medical men of the country have dedicated their advice that the value of periodic health

Nevertheless, in 1922 and 1923, a group of doctors petitioned the Committee on Civic Policy of the New York County Medical Society to conduct a formal investigation into the charge of practicing medicine illegally in the hopes of revoking the Institute's charter. The charges were ultimately dismissed as unfounded.

Cheekily, the LEI would then claim in their advertisements that "This principle [of periodic health exams], which was advocated by the Life Extension Institute group more than ten years ago, is now accepted by the American Medical Association and its constituent bodies, the county medical societies. The Life Extension Institute has no relationship with treating agencies or physicians. An absolute neutrality is observed in such matters..." ("The Conquest"). Not neutral enough, for the New York physicians launched yet another investigation by the County Medical Society in 1928, which, again, was ultimately dismissed. This second investigation prompted an impassioned defense by Dr. Fisk published in *The New York Journal of Medicine* in which he defended the value of advertising and insinuated that the AMA's stance against advertising was itself a disservice to public health: "The majority of those who come to the Institute through our advertising would not seek an examination unless thus prodded...but they might well fall into the hands of quacks and charlatans or cults and isms. The Institute is advertising for the whole medical profession. We believe that for every person induced to come to the Institute, a hundred have gone to their family physicians as a result of the money we have spent on advertising" (Daniels, qtd on 58). Whether or not this attempt to paint

examinations may be impressed upon thousands and hundreds of thousands of men and women instead of just a few." "The Value of Periodic Physical Examinations" New York Times Sep 22 1918.

their advertising as something done for the public good was convincing, the medical establishment remained opposed to the LEI whom they saw as encroaching on their rightful territory.

Although the LEI and the medical establishment cooperated on various public health education campaigns throughout these years, and although many on the LEI's Hygiene Reference Board were members of good standing in the AMA, the conflicts between these two organizations were nonetheless in the public eye. In 1925, *Time* magazine reported several times on the American Medical Association's disapproval of "middle medical men," or corporations practicing medicine like the LEI.⁵⁹ Dr. Morris Fishbein, editor of *JAMA* and outspoken antagonist of quacks and fads, was quoted denouncing the LEI as a "middle man" responsible for the commercialization of medical practice. Fisher responded with a letter to the editor hoping to correct the "misrepresentations;" once again, he wheeled out the long list of prestigious names associated with the Institute and stressed its philanthropic nature (Fisher "Letter to the Editor"). So vituperative were the claims against the LEI that when Irving Fisher and Harold Ley visited England to investigate the possibility of starting something like Life Extension there—a moment which happened to coincide with the opening of George Bernard Shaw's play *Back to Methuselah*—one London newspaper actually accused Shaw of "staging his satirical fantasy on the scientific prolongation of life to serve as advertising for Life Extension Institute" (Daniels 60). The "image" of the LEI was at stake in these disputes, and with it some notion of what scientific and medical respectability the goal of "life extension" would have in the public imagination.

⁵⁹ For example, see "Life Extension" *Time* Dec 14 1925; and "A.M.A." *Time* Jun 8 1925.

In a third attempt to dismantle the LEI, the Attorney General of New York in 1934 lodged a formal complaint against the organization, again, for practicing medicine when they were not legally empowered to do so. The instances cited were of “half-a-dozen individuals who had been found, in their examinations, to have minor ‘defects;’” the legal argument was that citing “defects” amounted to giving a diagnosis and therefore was an inherent part of practicing medicine (Daniels 68). After two years and several hearings, the judge appointed to the case made a ruling that did not change the basic work of the Institute, but caused it to reorganize completely; in 1937, the LEI became two institutions: Life Extension Examiners, comprised of physicians who performed the examinations and wrote the reports, and Life Extension Institute, which ran the laboratory, X-ray section, and provided office and business staff (Daniels 69). That same year, Dr. Harry Johnson took over as Medical Director of the LEI (Eugene Lyman Fisk had died in 1931); among the many changes he instituted was his decision to end the LEI’s practice of advertising. This decision brought to a close nearly two decades of direct to the public advertisements which had effectively sold the idea of a scientific fountain of youth for the price of a medical check-up.

The AMA’s battle with the LEI was primarily about authority over the domain of medicine; it was a dispute over who should rightfully be allowed to offer medical services (and be paid for them), who should have the authority to “diagnose” (to say what is or is not disease, and what should be done for any given condition), and how that service should be offered. Despite their condemnations of the LEI’s practices, the AMA was wholeheartedly behind the idea of regular physical exams; they simply preferred to “let the family physician carry on this work” (“A.M.A.”). The AMA explicitly opposed what they saw as the ‘middle medical man,’ interfering with and commercializing the

relationship between patient and doctor. Implicitly at stake was the authority to name for the public what, like aging, was or was not a disease and how best to treat it. While the LEI's advertising may not have been at the heart of the charges brought against it by the AMA, the claims made within the advertisements ran afoul of the image the AMA was seeking to construct for the medical profession. The AMA at this time was working to regulate medical education, to set standards for drug manufacturing and advertising, to discredit patent medicines and quackery, to secure their influence through local medical societies nationwide, and to distinguish the field of medicine from other "irregular" practices and practitioners. Practitioners who advertised, and who even hinted at the possible delivery of a "fountain of youth," as did the LEI, were sure to find opposition from the AMA.

The AMA's strong stance against non-traditional medicine was made, in large part, by the infamous and influential Dr. Morris Fishbein, who served as editor of both the *Journal of the American Medical Association* (JAMA) and *Hygeia* (the AMA's family health magazine) for 25 years beginning in 1924 ("AMA History 1921-1940"). During his long career, this "spokesman for medical orthodoxy" published prolifically, writing primarily for a lay audience on topics covering adoption, obstetrics, hygiene, diseases, famous doctors, home medical advice, how to interpret medical advances, marriage and family living ("June 21, 1937").⁶⁰ He also penned a history of the AMA, and wrote several influential texts focused on publicly debunking medical fads and quackery,

⁶⁰ A list of some of his many titles gives a sense of both the breadth of his purview and his intended audience; for example: *The Care of the Skin and Hair* (1927), *The Human Body and its Care* (1929), *Frontiers of Medicine* (1933), *Syphilis* (1937), *Your Diet and Your Health* (1937), *Modern Home Medical Adviser* (1937), *Medical Uses of Soap* (1945), *Doctors at War* (1945), *Successful Marriage* (1947), *Joseph Bolivar De Lee; Crusading Obstetrician* (1949), *Children for the Childless* (1954), *New Advances in Medicine, and What They Mean to You* (1956), *Modern Marriage and Family Living* (1957), and *Birth Defects* (1963).

among them *The Facts About Rejuvenation* (1926), *The New Medical Follies* (1927), and *Fads and Quackery in Healing* (1932). A 1927 review of *The New Medical Follies* written by the physician Van Buren Thorne and published in the *New York Times* gives a sense of the power Fishbein wielded and the sort of normativity that he and his organization were seeking to impose on the field of medicine. The review opens:

Wielding the “big stick” of the American Medical Association and backed by the power and prestige of nearly 100,000 organized “regular” physicians, Dr. Morris Fishbein in “The New Medical Follies” gleefully re-enters the lists to joust once more against the myriad cults and quackeries which, with certain divagations from regular medicine, furnish to the United States a vast army of “irregular practitioners.” (Thorne)

The author’s use of scare quotes and his rhetoric (“certain divagations,” “big stick”) suggest subtle criticism of the hierarchies Fishbein and the AMA were working to establish and the methods through which they accomplished such work.⁶¹ This intimates that the AMA had not yet fully won over public opinion.

As part of this assertion of hierarchies, Fishbein—and through him the “big stick” of the AMA—came down squarely against all practices that promised “rejuvenation.” In the context of the gland-related rejuvenation procedures of Voronoff and Steinach (see

⁶¹ The review ends on a similarly subtle critical note: “Dr. Fishbein, who is editor of *The Journal of the American Medical Association* and also of *Hygeia*, the health magazine published by the same association, records in this volume what he says is one of the marks of the charlatan in medicine. ‘The true medical scientist has no secrets that he guards from other physicians; his knowledge is broadcast through the medical periodicals so that physicians everywhere may use it in alleviating the ills of mankind.’” By positioning Fishbein’s quote after the revelation of his broad editorial command of the leading “medical periodicals,” Thorne once again leaves open to interpretation the justness of Fishbein’s power over the field of medicine. Although his name lives on in the Morris Fishbein Center for the History of Science and Medicine which he endowed at the University of Chicago, in more recent years Fishbein has been at the heart of criticisms leveled against the AMA for things like suppressing alternate therapies (such as the Rife Beam Ray for cancer treatment, chiropractic, etc.), accepting money in exchange for the “AMA seal of approval” for untested products, and more general “conspiracy” charges like racketeering and working to protect organized medicine, not patients. For examples of contemporary “conspiracy theory” criticisms of Fishbein on the internet, see Jessica Fraser [What the American Medical Association Hopes You Never Learn About Its True History](http://www.newstarget.com/008845.html) June 23, 2005 News Target.com Available: <http://www.newstarget.com/008845.html> May 23 2007; and Bob Wallace [Morris Fishbein: AMA Enemy of American Health](http://www.rense.com/general19/enemy.htm) 2002 Rense.com/LewRockwell.com Available: <http://www.rense.com/general19/enemy.htm> May 23 2007.

the next chapter for more on these), Fishbein is quoted as declaring that “when all of the evidence is assembled and considered en masse, it becomes apparent that there is not as yet any actual proof that rejuvenation has been accomplished in a single individual, or any basis for the belief that it will ever be accomplished” (Thorne). Similarly, Fishbein is reported in *Time* magazine, at a 1929 AMA Convention, as having “vigorously thwacked the widespread idea that operating on the gonads or any other procedure will prolong life. Said he: ‘A tissue that has died can no more be restored to life than can new elasticity be put into a pair of worn-out suspenders’” (“A.M.A. Convention”). With such appeals to the empirical nature of “real” medicine and to the commonsense “wearing out” theories of aging, Fishbein forcefully declared rejuvenation to be a medical farce and the province of charlatans. What could one do to prolong one’s life, according to Fishbein? In a speech made before the Empire Club in Canada in 1937, Fishbein suggested that the only actions one could take were to avoid being overweight and to avoid worry: “All would like to be rejuvenated. I am sorry to say scientific method does not know today any way human beings can be rejuvenated and reactivated as they get older and as they pass the maturity of their middle years. All we can say is that the average human being should try to live out his declining years with the greatest amount of usefulness he can” (Fishbein “The Prolongation of Life”). To drive home his point, he concluded his speech with a mention of the “apotheosis of American quacks,” John R. Brinkley, who “transplant[ed] the glands of goats;” Fishbein reaffirmed that there was not the “slightest scientific evidence” to support the notion that such transplants offered any improvement to patients. In concluding his address on “The Prolongation of Life” with this reference to Brinkley—whose massive radio advertising and complete lack of scientific credentials were a caricature of the scientific earnestness of some of the other

practitioners of glandular therapy (like Eugene Steinach)—Fishbein equated all glandular therapy, and all such medical efforts to “rejuvenate,” with flagrant quackery.⁶² Promising a lengthening or a restoration of one’s youth was decidedly not the province of legitimate medicine. Aging was *not* disease according to the medical orthodoxy; rather, it was a natural process of degeneration, one that required (conventional) medical expertise to discern from other treatable pathologies and to manage.

It would be wrong to conclude that one narrative about the nature of aging triumphed—or remained in circulation—while the other faded into obscurity. The narrative of aging as natural degeneration may have been promoted through disciplinary gerontology and the medical establishment, but as Edmund Vincent Cowdry’s *Problems of Ageing* (1939) reveals, at least where the “science of aging” and final answers remain uncharted, the two narratives could operate, perhaps with some modifications, quite comfortably together. In the popular imagination, certainly, both narratives have continued to circulate. On the one hand, aging as natural degeneration is the orthodox view; we all grow old and die. But the optimism behind the narrative of aging as disease contributes to hope that a “cure” looms on the immediate horizon—or, at least, that individual actions and the latest scientific interventions may defer old age—boosting nutritional supplement sales into the billions and making books that promise the secret to growing older without aging into national bestsellers. The narrative of aging as disease has been institutionalized as a government “solution” to the “burden” of aging, has been codified in the economic language through which we appraise people’s societal “value” as a function of age, and has been incorporated into successful business models and

⁶² For more on the nature of Steinach, Voronoff and Brinkley’s work and reputations, see Chapter Four: “Into the Twilight: Science and the ‘Cure’ for Old Age.”

advertising campaigns; the promise it offers is one that sells. More particularly, while most of us would not call aging a disease, our society often regards older people through the stigma of disease: discounting them, discrediting them and discriminating against them. Interestingly, the narrative of aging as disease has also in recent years come back into vogue in “legitimate” scientific fields, as searching for a “cure” for aging now drives the agendas of researchers investigating genetic causes of aging and involved in regenerative medicine (stem cell research). To be re-established within scientific orthodoxy, the scientific quest for the fountain of youth has had to overcome the lasting disgrace of glandular therapy in the 1920s. The story of how a widely popular scientific theory turned into the now-stigmatized quackery of monkey glands, testicle transplants and x-rayed ovaries is the subject matter of the next chapter, “Scientific Rejuvenation and the ‘Cure’ for Old Age.”

CHAPTER FOUR

The Grandular Grail: Scientific Rejuvenation and the 'Cure' for Old Age

Fads, Frauds and Physicians

Far more than the Life Extension Institute, if Morris Fishbein, quack buster and campaigner for the AMA, had a favorite exemplar of medical folly, it was John R. Brinkley. Sporting a medical degree from the unaccredited Eclectic Medical University of Kansas City (exposed by Fishbein as a diploma mill), “Doc” Brinkley developed a headline-earning international career. He established a hospital in Milford, Kansas in 1917 and within weeks of setting up shop, the patient who would become one of Brinkley’s most famous examples—forty-six-year-old farmer Bill Stittsworth—came to Brinkley troubled by impotence and infertility. At the urging of his patient (or so Brinkley would claim in his ghosted autobiography), Brinkley grafted testicles from a goat onto Bill’s own. The operation was a success and “Mrs. Stittsworth insisted on a matching set of goat ovaries” (Brock 30). “A year later I delivered [Mrs. Stittsworth] of a fine baby boy,” Brinkley recalled (Hamilton qtd. on 38). The baby, appropriately, was named Billy, perhaps after the animal who symbolized sexual prowess and stamina and to whose glands were credited the miracle of his birth.

Over the course of his long and colorful career, Brinkley would operate on more than 16,000 men and women, promising them not only restored virility, but also a restoration of the energy levels of their youth. These two things were intimately tied together, Brinkley told potential patients, compressing the story into two pithy phrases: “A man is as old as his glands” and “All Energy is Sex Energy.” He reinforced these ideas by emphasizing the difference between the cock and the capon, the stallion and

the plodding dray horse (Carson 64). Among his most distinguished patients (and most publicized operations) were Harry Chandler, editor of the *Los Angeles Times*, and J. J. Tobias, Chancellor of the Chicago Law School (Hamilton 99). In a press conference after the procedure, seventy-one-year-old Tobias enthusiastically told the crowd: "I feel twenty-five years younger. I am a new man, full of pep, strong, healthy, ready to go on with my work. I was ill, old and played out, but the operation has revived me" (Brock qtd. on 48). The patients came in droves, and—charging \$750 per goat gland transplant (and \$2,000 for the rare human testis transplant) and performing 25-50 operations a week—Brinkley raked in millions.

Brinkley's business boomed even more when he started up Kansas's first radio station, KFKB ("Kansas First, Kansas Best") in 1922; by 1930 it was recognized by *Radio Digest* as America's most popular radio station (Brock 135). In addition to launching the careers of many country music stars and other entertainers, amid advertisements for his gland transplants, Brinkley also started the wildly popular show "Medical Question Box," where listeners wrote in with medical complaints, and Brinkley diagnosed and prescribed for them on air.¹ By starting his own line of outrageously overpriced pharmaceuticals, which he distributed through drug stores all over the Midwest, Brinkley amassed even more millions (and without a doubt contributed to hundreds if not thousands of deaths). Not only was Brinkley selling the fountain of youth in a goat gland, but he was making a mockery of medical diagnosis and treatment. Morris Fishbein was incensed. Fishbein's zeal carried over to his friends H. L.

¹ Among the acts which "made it big" thanks to KFKB or Brinkley's successor station XER(A) in Mexico were Roy Faulkner (a.k.a. The Lonesome Cowboy), Patsy Montana, Red Foley, Gene Autry, Jimmie Rodgers, Cowboy Slim Rinehart, the Pickard Family and the Carter Family.

Mencken—who published several anti-quackery articles by Fishbein and others in his magazine the *American Mercury*—and Sinclair Lewis—whose 1926 Pulitzer Prize-winning novel *Arrowsmith* featured an idealistic doctor protagonist who stood in strong opposition to commercial medicine and science, most especially quackery.²

In 1928, Fishbein published an article in the *Journal of the American Medical Association* titled “John R. Brinkley—Quack, The Commercial Possibilities of Goat Gland Grafting” in which he denounced Brinkley’s operations and unearthed information about Brinkley’s early days of swindling small towns as an electro-medic. Knowing the general public did not subscribe to *JAMA*, Fishbein reprinted his expose as a pamphlet and distributed it by the thousands (Brock 119). Fishbein again attacked Brinkley in *JAMA* in April of 1930, around the same time the *Kansas City Star* newspaper (which happened to own a radio station in direct competition with Brinkley’s) ran a series of articles exposing Brinkley’s vast wealth and including commentary from his dissatisfied patients and even death certificates of patients who had received his Compound Operation. Brinkley’s response was to buy a double-page ad in rival newspaper the *Kansas City Journal Post*, file a \$600,000 damage suit against Fishbein, and broadcast over his radio station referencing the AMA as the “Amateur Meatcutters Association” and Morris Fishbein as “Little Old Fishy” (Lee 89).

Fishbein’s efforts to quash Brinkley were ultimately successful. In 1930, the Kansas State Medical Board revoked Brinkley’s license to practice, and the Federal Radio Commission refused to renew his station’s broadcasting license; Brinkley sued,

² For more on Fishbein’s relationships with Mencken, Lewis and other literary figures of the 1920s, see Pope Brock, *Charlatan: America’s Most Dangerous Huckster, the Man Who Pursued Him, and the Age of Flimflam* (New York: Crown Publishers, 2008), especially chapters 11, 13 and 17.

and lost. Not a man to be kept down, Brinkley, in response, entered the race for governor of Kansas late in the campaigning season as a write-in candidate, and due to his vast popularity, wide-renowned and vigorous campaigning, would likely have won were it not for a technicality.³ Proving that you can't keep a good quack down, Brinkley moved his hospital to Del Rio, Texas in 1933, and started up XER (later re-formed as XERA), the first "border blaster" Mexican Radio station.⁴ This new radio station, like Brinkley's hospital operation, was eventually shut down. In 1938, Brinkley made the mistake of suing Morris Fishbein for libel over a two-part article titled "Modern Medical Charlatans" that Fishbein wrote for the A.M.A.'s magazine for lay people *Hygeia*, in which he called Brinkley "a blatant quack...whose professional record reeks with charlatanism of the crudest type" (Brock qtd on 224). Brinkley lost the suit; he also eventually lost his medical practice, faced multiple malpractice lawsuits, was indicted for mail fraud by the United States Postal Service and investigated by the Internal Revenue Service. He ended up bankrupt, dying in 1942 of heart failure at the not-so-ripe age of 67. His legacy is legendary and complex. In the words of one "anonymous geezer" upon recalling Brinkley: "I knowed he was bilking me, but...I liked him anyway" (Brock qtd. on 273).

³ Fearing Brinkley's widespread popularity, the Kansas election board decreed just three days before the election that only votes written specifically for "J. R. Brinkley" would count; votes for "Doctor Brinkley" or "Doc Brinkley" would not be counted. In the end, Brinkley tallied 183, 278 votes to the winner's 217, 171 votes. The *Des Moines Register* reported on the election that "were it not for the fact that one out of six of his supporters failed to write his name correctly on the ballot, Dr. J. R. Brinkley, the goat-gland specialist whose license was revoked in September by the state medical board, would today be governor-elect of Kansas." Brock, *Charlatan* qtd on 162. Brinkley ran again in 1932, but did not win, though he garnered ~31% of the popular vote.

⁴ Pope Brock writes that XERA's clear air waves "reached Alaska, skipped across to Finland, [and were] picked up by ships on the Java Sea. In later years Russian spies reportedly used the station to help them learn English." Brock, *Charlatan* 176.

Brinkley is one of the more flagrantly fraudulent figures in American medical history, and from our twenty-first century vantage point, it may seem hard to comprehend how so many thousands of people could be convinced that having goat testicles or ovaries stitched into their bodies would return them to a vigorous and virile state of youth. It is true that the general populace's pervasive familiarity with legends of the "fountain of youth" has provided a rich resource for quacks and charlatans throughout the centuries. Patent medicine panaceas peddled by snake oil salesmen, many of them promising "restoration" and "rejuvenation," are a colorful part of history. And there have always been suckers. But Brinkley's racket was no mere Medicine Show. His "Compound Operation" was no \$10 bottle of colored water; it was a relatively expensive and moderately invasive operation involving transplanted tissues from another species. In our retrospective wisdom, we know such tissues were guaranteed to be rejected by the hosts and, especially given that antibiotics had yet to be discovered, could potentially lead to many fatal infections. How then could so many thousands of people fall for Brinkley's bunk?

The desire for a "solution" to the growing "problem" of aging was clearly one factor. The notion of "obsolescence" was becoming associated with aging, and this threat added a particular urgency to the always unquestioned desire for perpetual youth. As was detailed in the preceding chapters, old age was coming to be perceived as a burden on individuals, on their work prospects, their families and the nation at large. At the same time, youth was the real focus of the day: "In the 1920's, youth appeared suddenly, dramatically, even menacingly on the social scene" (Fass 6). Like the old, the young were most often perceived as a social "problem:" this was the decade of the flapper, of youth running wild and threatening the traditional social and moral order. The

portrayals of youth, particularly from the traditionalist perspective, were generally caricatures, but these caricatures “depended on a constant series of comparisons between young and old,” for example, on the stock character of the old fogey to balance that of the flapper (Hirshbein "Transformation" 167). While the youth tended to be represented as either “damned” or “beautiful,” “the perception of youth’s vital relevance was never misplaced” (Fass 14). The young may have come to represent the unhinging of the social order, but they also represented potential in need of harnessing. They were raw forces unleashed from social restraints, and “youth” became synonymous with “energy.” In the quickly changing modern world, “the young could adjust, were forced to adjust, and were eager to adjust” (Fass 368). In contrast, the fogey was the epitome of being “stuck in past,” unable to adjust, out of fashion. Even if youth was problematic, the closer one was to young, the more energy and potential one had to be a force in the modern world.

But desire to retain the lauded energy and effectiveness of youth was only one part of the equation. Brinkley’s innate charisma and unrelenting salesmanship were certainly another part. Brinkley made grandiose claims—that he was “fifty years ahead of the times [in] curing insanity [and the] diseases of old age,” that he would soon be able to cure the blind, that after his visit to Japan, goat gland transplantation had been made “compulsory in order to rejuvenate aged charity patients”—but behind these claims, and harder to see from our contemporary vantage point, was an aura of legitimacy.⁵ This legitimacy came not from Brinkley himself (though he exploited it fully) but from the field of glandular science which seemed, in the twenties, to promise the

⁵ Brock, *Charlatan* 69, 50, 83.

answers for all the world's ills. The mysterious workings of the endocrine system, especially the role of hormonal secretions, were coming to light. Front page news articles explained to the American public what their ductless glands were and how they worked, and speculated on how they might be the key to curing everything from idiocy to criminality to old age.

The fountain of youth story may always have been in the charlatan's repertoire, but this story took on new dimensions in the twenties. No longer about a mysterious ingredient with magical or divine properties, turned up in the far reaches of the earth, now—so the narrative went—the “fountain of youth” was the province of legitimate science. Empirical research had determined that aging was a “deficiency disease” corresponding to decreasing levels of bodily hormones, particularly those of the reproductive glands. Now that science had discovered the mechanism behind the aging process, the next step was logical: reinvigorate these glands and reestablish this hormonal activity and one could return to youth itself. The scientists and physicians who developed procedures to do that had the world's eyes focused upon them: among them Europeans Serge Voronoff and Eugen Steinach, Americans Frank Lydston, Leo L. Stanley and Harry Benjamin. The fountain of youth was now something discovered in the laboratory and administered by expert practitioners; it was one more triumph of science in service of the Progressive Era.

This new narrative of the fountain of youth was—as the story always has been—retold in apologist versions which questioned both whether such miracles were possible, and, if possible, whether moral or desirable.⁶ Now, however, the narrative took on a

⁶ In his discussion of the history of prolongevity—or the history of attempts to prolong life—Gerald Gruman distinguishes between two main approaches to the topic, apologetism and meliorism: “Where meliorism

new veneer; instead of framing the pursuit of extended life or renewed youth as a transgression against the natural order, it was framed instead as only natural that the power of science be applied to the “problem” of aging. This reformulated version of the fountain of youth narrative was received with optimistic fervor and scientific certitude. The phenomenon of glandular rejuvenation inspired novels, films, plays, popular science books and extensive journalistic coverage. Many of the fictional renderings drew on titillating moments of animal/human hybrids and the frisky, giddy escapades of the rejuvenated. One novel in particular captured the optimism and imaginative possibilities of glandular rejuvenation at the same time that it firmly established appropriate and inappropriate motivations for rejuvenation and shifted the gender focus of these procedures to include as many, if not more, women than men. This novel—Gertrude Atherton's *Black Oxen*—portrayed a society woman's remarkable rejuvenation; it was the bestselling novel of 1923, outselling Sinclair Lewis' *Babbitt*, and was turned into a Hollywood blockbuster featuring Clara Bow the following year. Atherton's novel reveals the power and persuasiveness of the new narrative of the scientific fountain of youth as well as the widely held perception that such revolutionary potential needed to be harnessed for the right reasons, in service of the right causes and the right people.

As this fountain of youth narrative moved from the province of legend to the legitimacy of the laboratory and circulated through American popular culture, it created several lasting effects. It reinforced negative ideas about aging as a time of

implies that human effort can and should be applied to improving the world, apologism condemns any attempt by human action basically to alter earthly conditions....Apologism may be defined as the belief that prolongevity is neither possible nor desirable.”

obsolescence, one opposed to the productivity and efficiency of youth. At the same time, aging was also defined against ideals of gender. True masculinity and femininity lay in the virility and reproductivity of youth; growing old implied a move towards androgyny. The narrative's circulation also left a lasting perception of aging as a deficiency disease. The practice of "treating" menopausal women with hormone replacement therapy, based on the understanding of menopause as an aging-related deficiency disease, is a direct legacy of the rejuvenation research (and its gender assumptions) of the twenties. Finally, in promising a scientifically-discovered fountain of youth as the solution to the "problem" of old age, glandular rejuvenation helped to securely frame the root of the problem as the biological phenomenon of aging itself. Thus, rather than rethinking the social contract to view the role of the elderly population as something other than a dependent burden, or rather than investing in ways to change work place practices to make older workers more efficient and useful, this frame suggested that efforts and expenditures would best be put toward "solving" physiological senescence itself. The "problem" lay firmly in the province of the individual; the "solution" now lay on the horizon of scientific discovery.

Glands of Destiny

Part of the general public approbation behind the idea of glandular rejuvenation was the larger acceptance of, and belief in, the possibilities of glandular science itself. While most relevant glands had been long identified by early anatomists, the understanding of glands as organs secreting essential substances did not develop until the mid- to late-nineteenth-century. Endocrinology as a field tends to distance its canonical history from many of the speculations and practitioners who pursued the idea of glandular rejuvenation. Official histories will often mention Charles-Édouard Brown-

Séquard, the 19th-century Mauritian neurologist who was among the first to postulate the existence of substances secreted by glands into the bloodstream to affect distant organs, which we would later identify as hormones. However, if such histories discuss Brown-Séquard's late-life foray into rejuvenation science, they do so derisively. In June of 1889, at the age of 72, Brown-Séquard announced to the French Society of Biology that he had successfully rejuvenated himself by a series of injections of a fluid prepared from the testicles of guinea pigs, to the point where, as he indiscreetly announced, he was able to renew amorous affections with his young, new wife (Trimmer 124). The reaction to his announcement was sensational; Parisian newspapers initiated a subscription to erect an Institute of Rejuvenation, while Americans, reading of this miracle elixir in newspaper headlines, flocked to physicians' offices in hopes of treatment (Cole 179-80). Within months of his report, Brown-Séquard's formula appeared on the market as "Pohl's Spermine Preparations," followed by many similar extracts from dogs, monkeys and the like (Achenbaum Crossing Frontiers 40). The hubbub was short-lived, however, perhaps lasting no longer than the placebo effects of the injections. Nevertheless, the world of science had seized upon the idea of organotherapy (treating disease with endocrine extracts), and the world at large had shown its hunger for a scientific solution to senescence.

While the study and practice of glandular rejuvenation would chart a very particular and sensational course through the 1920s, it did so amid a much wider popular and scientific fascination with glands and the influence they were thought to have on the individual body, the personality, and ultimately the body politic. Competing and mingling with popularized Freudian notions of personality typing, lingering echoes of phrenology, and growing interest in eugenics, gland science offered a new, physically-

based explanation for everything from criminal tendencies to the Napoleon complex to the division (and hierarchy) of the races. Books by “experts” written to explain the findings of gland science to the masses were widely reviewed and advertised on the pages of publications like the *New York Times*, *Bookman* and *Life*. A 1924 feature in *McClure’s Magazine* claimed that there was “no other subject of current biological investigation that has aroused more intense public interest” than glands and listed several recent books “which have especial interest for the layman” such as Dr. Benjamin Harrow’s *Glands in Health and Disease* and Dr. Louis Berman’s *The Glands Regulating Personality* (“Some Recent Books”). Berman’s book—first published in 1921 and popular enough to require at least 4 printings and a revised 1928 edition—was one of the earliest of such tomes intended to bring gland science to the masses; it reveals many of the assumptions about glands and their function that were widely circulating in the twenties (“Display Ad 191”).

Berman’s wide-sweeping introduction explores “the case against human nature” with post-war pessimism. He bemoans the natural effects of slavery in breeding inferiority and the “careerist’s” complete suppression of “true personality” in his blind climbing, and then turns to science to ask: “Can Fate’s stranglehold upon us be broken?...Can Science change the texture of the slave and careerist if they represent the subnormal and the abnormal?” (Berman 17). Amid “the promises of eugenics” (which lie “a long, long way” off) and the “new psychology” of the Freudians (which offers no solutions to the original problem of human nature), Berman asserts that “we may now look forward to a real future for mankind because we have before us the beginnings of a chemistry of human nature. The internal secretions...have been discovered [to be] the

real governors and arbiters of instincts and dispositions, emotions and reactions, characters and temperaments, good and bad” (18-22).

In much the same way that the findings of genetic science today have permeated the public imagination and led to blanket attributions of behavior and character to genes—“Blame it on my genes”—so, too, did the findings of glandular science permeate the public imagination in the 1920s. Glands were offered up as “the real” explanation for all the mysteries of personality, as the physical foundation for the workings of the unconscious and as a rationale for the evolution of the races. Stemming from the biological determinism that often accompanies such explanatory paradigms, gland science also offered the public—through organotherapy—the imaginable potential to intervene in human nature and ensure racial stability. In his text, Berman elaborates notable personality types based on the dominance of one gland in the life history of an individual, such as adrenal personalities and pituitary personalities. After lengthy explanation of the physical and mental attributes of such “types,” he discusses races in terms of these types, concluding that deficiencies in internal secretions among Negroes and Mongols constitute “the essence of the White Man’s burden” (327).⁷ He closes with a fervent plea to pool more investigators and resources into the study of the endocrines: “If we could not obtain Utopia then, we might, at least, by abolishing the subnormals and

⁷ Berman’s summary of racial types gives a good sense of how he aligns characteristics with endocrines: “There is every reason, then for believing that the white man possesses more pituitary, adrenal, gonad, and thyroid internal secretions as compared with the yellow man or black man. And since these endocrines control not only physique and physiology-nomy, anatomic and functional minutiae, but also mind and behavior, we are justified in putting down the white man’s predominance on the planet to a greater all-around concentration in his blood of the omnipotent hormones. While the Negro is relatively subadrenal, the Mongol is relatively subthyroid. Their relative deficiency in internal secretions constitutes the essence of the White Man’s burden” (326-7).

abnormals who constitute the slaves and careerists of society, render the human race less contemptible and more divine” (329).

The rampant biological determinism in Berman's popular text, which “invoked the traditional prestige of science as objective knowledge, free from social and political taint,” was in keeping with the contemporaneous spread of intelligence testing as a means of determining superior heredity and the popular eugenic idealism of the 1920's (Gould 20). The American Eugenics Society was conducting Fitter Family Contests at agricultural fairs across the Midwest and Margaret Sanger's birth control movement was reaching out to the masses with an increasingly eugenic message (Haller 173, 92). What gland science added to the messages of biological determinism and popular eugenics was both the potential and promise that character (body and mind) could actually be altered, not just measured, and that this alteration and control of character (on a population scale) could happen in the immediate present rather than in future generations. Under the assumption that glands played a key role in evolution, glandular therapies were thought to hold the key to our Nietzschean future: “If the genes of the anthropoid were accidentally juggled so that some glands became more active, with the result that a super-anthropoid was created, why should it not be possible to evolve out of man a glorious superman by the same process?” (Kaempfert "The Superman"). While the impulse towards social hierarchies and human enhancement was in place long before the rise of gland science, glands offered a new explanatory paradigm for these impulses, one that—with its potential for actually *changing* the biological substrate—fired the popular imagination with the possibility of perfecting the human race.

The eugenic possibilities of gland science were perhaps most apparent in the many speculations made about the possibility of “curing” certain social ills through

glandular therapy. The idea of treating cretinism with thyroid extracts had been around since the late 1890s, and the success of such treatments (for cretinism is now defined as congenital hypothyroidism) inspired other speculative treatments ("Thyroid Timeline"). For example, as early as 1911, the *New York Times* reported that Dr. George Robertson of the Royal Edinburgh Asylum for the Insane had cured two cases of insanity using preparations from the thyroid gland of a sheep ("Cases of Insanity"). The most sensational claims, however, centered on the possibility of curing the criminally insane. In 1924, a Dr. Bailey, Director of the American Endocrine Laboratories in New York invoked the illustrious case of well-heeled murderer Harry K. Thaw to suggest that medical experts, not a jury of laymen, should judge such cases: "We know that a few minutes ionization a day of Thaw's thyroid, and some other complementary endocrine radiation, would transform him into a useful citizen" ("Says Gamma Rays").⁸

Glandular science did, in fact, move into the courtroom with the widely publicized trial of Nathan Leopold and Richard Loeb, two wealthy University of Chicago students who were accused of murdering 14-year-old Bobby Franks in 1924. The boys pled "guilty" and their defense—masterfully presented by Clarence Darrow—was built on the claim that the boys weren't completely responsible for their actions, but were rather the products of their environment and heredity. Alienists were enlisted to provide testimony to the boys' "glandular irregularities" ("Leopold Suffers").⁹ The prosecution, in turn,

⁸ Harry Kendall Thaw, son of Pittsburgh coal and railroad baron William Thaw, murdered the architect Stanford White by shooting him three times in the face in front of a watching crowd in Madison Square Garden in 1906. Thaw's trials, in which he pled insanity, were widely covered in national newspapers, as were his aberrant sexual proclivities which emerged through these trials (horsewhipping his wife and young boys).

⁹ The defense called upon a Dr. Hulbert, who used X-rays to illustrate abnormalities in Leopold's pineal, pituitary, adrenal and thyroid glands which he argued were responsible for "Leopold's admittedly far-

sought to discredit this new science as a field that “has been exploited by romantic writers, charlatans and others not to be classified as scientists” (“Picture Normality”).¹⁰ While these testimonies would ultimately have little impact on the judge’s sentence of life imprisonment, their inclusion in a court of law, and the front page headlines they received, speak to the sway that endocrinology held over the popular imagination.¹¹ So deep was the belief in the glandular basis of the criminal impulse, in fact, that in 1928, one Stanley Trott was saved from serving jail time by being released into a doctor’s custody for a thyroid gland operation to cure his criminal tendencies (“Operation Saves Thief”).

The explanatory paradigm of gland science and the possible treatments it offered swept through the public imagination. The envisioned outcomes were not always positive, of course. After all, glands were the source of ills as well as cures, and

advanced intellect and the stalling of his emotional growth after the age of seven or eight years.” “Leopold Suffers Gland Disorders, Alienist Declares” New York Times Aug 10 1924.

¹⁰ The prosecution called in a Dr. Woodyatt who compared this “new chemistry of character” to “Darkest Africa before the explorer Stanley entered there.” “Picture Normality of Franks Slayers” New York Times Aug 16 1924.

¹¹ Judge Caverly did raise the question of the boys’ physical and mental condition in his decision, if only to ultimately disregard it: “The court...feels impelled to dwell briefly on the mass of data produced as to the physical, mental, and moral condition of the two defendants. They have been shown in essential respects to be abnormal; had they been normal they would not have committed the crime. It is beyond the province of this court, as it is beyond the capacity of humankind in its present state of development to predicate ultimate responsibility for human acts. At the same time, the court is willing to recognize that the careful analysis made of the life history of the defendants and of their present mental, emotional and ethical condition has been of extreme interest and is a valuable contribution to criminology. And yet the court feels strongly that similar analyses made of other persons accused of crime will probably reveal similar or different abnormalities. The value of such tests seems to lie in their applicability to crime and criminals in general. Since they concern the broad question of human responsibility and legal punishment and are in no wise peculiar to the individual defendants, they may be deserving of legislative but not judicial consideration. For this reason the court is satisfied that his judgment in the present case cannot be affected thereby.” Douglas O. Linder Famous Trials: Illinois V. Nathan Leopold and Richard Loeb 2008 U of MO-Kansas City Law School Available: http://www.law.umkc.edu/faculty/projects/ftrials/leoploeb/LEO_DEC.HTM May 14 2008.

glandular interventions might lead in either direction. Writer J. G. Hawks drew on this potential for corruption when he wrote the screenplay for the 1922 silent film *A Blind Bargain* starring horror great Lon Cheney.¹² Hawks adapted the screenplay from a 1897 novel by Barry Pain, *The Octave of Claudius*, about a penniless young novelist, Claudius Sandell, who accepts a great sum of money from the mysterious surgeon Dr. Lamb, under the condition that he will have eight days in which to spend it however he wishes and then he must afterward submit to an experiment that will “benefit mankind.” Claudius becomes wildly successful, falls in love, but returns to Dr. Lamb like an honorable man; just as Claudius is about to be submitted to Dr. Lamb’s mad and surely fatal experiment, the Doctor is murdered by his long-abused wife. When Hawks wrote the screenplay 25 years later, he was heavily influenced by contemporary media coverage of gland science and the chimpanzee to man gland transplants being conducted by Serge Voronoff, one of the most well-known rejuvenators. The somewhat ambiguous experiment’s goal was now a clear attempt to prolong life and create a superior human being by means of transfusing ape and human tissues.¹³ In Hawks’ version, Doctor Lamb had tried this twice before, once creating an ape-man hunch back

¹² The movie was directed by Wallace Worsley and released by Goldwyn Pictures. No copy of the film is extant, but many of its stills and the story of its production have been recreated in Philip J. Riley, *A Blind Bargain (Film Reconstruction)*, Ackerman Archives Series vol. 2 (Atlantic City: Magic Image Filmbooks, 1988).

¹³ In Riley’s film recreation book of *A Blind Bargain*, it is not wholly clear if the movie specifically indicated a gland transplant or a blood transplant between ape and human. However, included in the pressbook prepared for the film’s publicity campaign was a promotion letter intended for “physicians, surgeons, medical students, etc.” that quite clearly, if rather incorrectly, indicates that the movie was about a glandular rejuvenation operation. (The letter mentions Steinach, but Steinach’s method did not involve using chimpanzee glands. More correctly, the letter should have referred to Voronoff.) The letter read: “Dear Doctor: You will doubtless be interested to know of an exceptionally interesting photodrama built around the fascinating subject of renewed youth through the agency of the Steinach gland operation which we take pleasure in presenting at the Alamo Theatre next week. This absorbing mystery play, “A Blind Bargain,” was adapted from a short story by Barry Pain and concerns the efforts of a great imaginative surgeon to tear back the veil of human origin and by radical experimentation to prove it is possible to alter human forms by the grafting of glands from an anthropoid ape....” Riley, *A Blind Bargain* 98.

(Lon Cheney played both this character and the mad doctor), and once saving a man “one hour from death, a wasted maniac and [giving] him the life and virility of a powerful animal” but in the process creating something so bestial it must remain caged (Riley 80). Claudius is a more “perfect subject,” meant to succeed where the others failed. The doctor promises: “You will have the strength of twenty men. You will have 150 years yet to live. Your bodily appearance will not change as theirs has” (Riley 169). Again, before he can attempt the experiment, the doctor is killed, this time at the hands of his own beastly creations.¹⁴ Although it bore many similarities to Mary Shelley’s *Frankenstein*, *A Blind Bargain* was nonetheless a story of its own day; it invoked the same apologist morals about the hubris of science transgressing the natural order of life, but it rewrote this story in the scientific lingua franca of the day: glandular rejuvenation.

A Blind Bargain was more the exception than the rule, however. As gland science swept into the public imagination, it usually bore with it great promises, and the heralding of these promises tended to outweigh public skepticism about their feasibility. The message of gland science was clear, encapsulated in the title of another book on the endocrines written for the lay masses: *The Glands of Destiny* (Cobb). “Your glands make you what you are! A Beauty ~ A Criminal ~ A Millionaire,” rang the headline of one 1925 full-page advertisement for gland physician Dr. Wheeler of California, posing as an informational article. This was the promise of glandular science at its most hyperbolic: “Success in life, perfect health, beauty, imagination, freedom from nervous diseases,

¹⁴ In the film’s conclusion, before the Doctor can attempt the experiment, the hunchback releases the man beast and the beast snaps the doctor’s backbone in half, then falls upon the mangled body dead from the doctor’s bullets. The apologist moral here is clear; the profane mingling of man and animal creates unspeakable horrors, and the hubris of the scientist leads to his demise at the hands of the horrors he created. While the “rejuvenation” sought in this story is never achieved, the man-beast’s vast power interestingly supports that this science *is* effective in some way; it holds powerful potential, for good or evil.

wealth, courage, long life, rejuvenation and the desire to attain leadership... are within the grasp of all" ("Your Glands"). Authors invoked gland science to explain the motivations of their characters, fictional detectives used gland analysis to track down criminals, and George Bernard Shaw theorized that Oscar Wilde had been led astray by a glandular anomaly.¹⁵ Critic H. L. Mencken, in reviewing Gertrude Atherton's *The Crystal Cup* (1925) and comparing it to the Rev. Thomas Dixon's *The Love Complex* (1925), referred to a new "Gland School" of literature in which glandular conditions were replacing psychological factors as the seat of characters' motivations. (Mencken).¹⁶ Advertisements promised readers they could counter obesity by taking Arbolone Tablets, which would adjust their thyroid gland functioning, a common cause of "overfatness" (L. Baker, M. D.). Some physicians, like Dr. Selleck of Las Angeles, claimed his "advanced gland treatment" could cure everything from fatigue, constipation, high blood pressure and asthma to paralysis, paranoia and drug addiction ("Display Ad 37"). Pebeco toothpaste was even sold as "a tooth paste that restores the normal actions of the mouth glands" ("Display Ad 13"). Whatever the biological or social ill, the cause—and cure—was believed to be in the glands. It was no far leap, then, to imagine that glands might hold the key to solving the "problem" of aging.

¹⁵ For example, author May Sinclair declared that Dr. Berman's book on glands and personality threw "considerable light on the chief character in her novel, 'The Romantic.'" "Books and Authors" New York Times Apr 16 1922. In *Charlatan*, Pope Brock offers a passage from a story by Mignon Eberhart where his detective reasons out his criminal's glandular constitution. Brock also cites Shaw's remark about Wilde in a footnote. Brock, Charlatan 93-4, fn291.

¹⁶ Mencken observed that each novel had a heroine "who has something the matter with" her glands and who "succumbs eventually to a surgeon with a taste for discussing endocrinology. And in each all the old hocus-pocus of romance is thrown overboard, and the transactions dealt with are depicted in terms of scientific austerity. Both go far beyond Freud. There are no complexes in any of [the characters]. There are only hyper- or hypoemias of the glands, especially, as I have said, those of a delicate and secret character [relating to the sex glands]." H. L. Mencken, "The Gland School" The American Mercury November 1925: 249.

You're Only as Old as Your Glands

In order for glandular rejuvenation to be imaginable, aging first had to be understood as the product of one's glands. It would eventually become a widely repeated aphorism—by Brinkley and by the popular press—that “you are as old as your glands.” But establishing these connections between aging and the glands in the first place required several scientific leaps of faith. The first such leap was faith that bodily tissues could be rejuvenated, as a precursor to the larger rejuvenation of the organism; this leap was made possible by Alexis Carrel's headline-meriting experiments in tissue culture. Starting in 1912, Carrel maintained “living” tissue in a flask cultured from an embryonic chicken heart for 20 years, far longer than the lifespan of a chicken, a feat which secured his becoming the first American to win the Nobel Prize for Medicine that same year.¹⁷ The possibility of maintaining living tissues in vitro was an important step in imagining the possibility of organ transplantation (a field Carrel would significantly advance in the 1930s with his invention of the perfusion pump), as well as the possibility of rejuvenating tissues in vivo. One 1913 full page homage to Carrel in the *New York Times* grandly announced “Carrel's New Miracle Points Way to Avert Old Age;” not only had Carrel been able to make tissue live permanently outside an organism, but he claimed he was “now able to prepare the medium in which it grows, so that he can actually regulate that growth” by adding “embryonic juices,” much like thyroid pulp applied to a dog's wounds had been shown to promote healing at an astonishing rate.

¹⁷ “Dr. Carrel's Miracles in Surgery Win Nobel Prize” [New York Times](#) Oct 13 1912. It is now currently accepted that differentiated cells have a finite lifespan, a set number of divisions they can undergo before cellular senescence. This is known as the “Hayflick Limit” after researcher Leonard Hayflick. Modern scientists speculate that Carrel may have been introducing new living cells to the allegedly immortal culture in his daily feeding of nutrients.

“The problems of senility,” Dr. Carrel conservatively admitted, “may now be profitably investigated” (“Carrel's New Miracle”).

With faith that aging bodily tissues could be rejuvenated by a process of *adding* needed nutrients, the next step in connecting aging to glandular therapy was redefining organismal aging as not only a glandular process, but specifically as a “deficiency disease.” Cretinism and diabetes were well-known examples of deficiency diseases upon which glandular therapy—particularly in the form of applications of isolated hormones—had been shown to produce miraculous effects. Thyroid extracts had been used successfully to treat thyroid disorders since the 1890s; when the hormone thyroxin was discovered in 1914, and first successfully synthesized in 1926, such treatments became even more widespread (“Thyroid Timeline”). Similarly, Canadians Banting and Best first isolated insulin in 1921, a discovery that created quite a sensation, especially as some patients in diabetic comas made miraculous recoveries (“Discovery of Insulin”). Similar successes had been achieved with pituitary gland extracts in correcting conditions like “feeble-mindedness, dwarfism and giantism” (“Glands Used”). As these discoveries allowed for the successful treatment of “deficiency diseases,” it was not a far leap for scientists and the lay public to imagine that other glandular hormones might hold the cure for other “deficiency diseases.” Here the medically unorthodox but still widely popular notion of aging as disease had a remarkable heyday. Aging could now be understood as the result of glandular failure over time; it was caused by hormonal deficiencies. This redefinition of aging as a deficiency disease, the successes of glandular therapy with other deficiency diseases, and the “proof” from Carrel’s work that bodily tissues could be kept alive indefinitely under the right circumstances, together

promised that aging could be scientifically combated. It was now just a matter of understanding *which* failing glands were resulting in aging.

In this question, Brown-Séquard had already shown the way. His testicle extract injections may have been discredited by the scientific community at large, but many scientists and physicians felt he was on the right track by targeting a “deficiency” in the gonads as the cause of aging. Such thinking was in keeping with the nineteenth-century theory of “spermatic economy,” or the idea that “men had only a finite amount of energy, and excessive sex or masturbation would deplete that energy” (Hirshbein "The Glandular Solution" 278). For empirical evidence, scientists pointed to eunuchs, castrated as children and thus deprived of the influence of the testes and their hormones, as examples of premature aging. Well-known rejuvenator Serge Voronoff described eunuchs in 1920:

Most of them are fat, with rounded outlines and, in many cases, voluminous breasts. Their flesh is flabby and their muscular development curtailed....Their bodily vigor being much diminished, they are incapable of doing work which calls for any extended effort....In short, a physical decline seems to have stricken every organ, and one is confronted with fallen, languishing creatures whose vitality has been sapped in every respect. Their intellectual and moral falling away is no less marked....They age prematurely. At thirty or thirty-five, their skin loses its suppleness and grows spongy. After forty, the circle of senility of the cornea is permanent. They rarely live to an advanced age....When their sex gland ceases to function, when they have lost the ardors of affection, a characteristic modification of their physical, moral, and intellectual condition takes place, which their families and friends are quick to note. (Voronoff 54-5)

Voronoff's description reveals how ideals of masculinity were tied into the negative associations of old age. Eunuchs, as examples of “premature aging,” were effeminate with their “voluminous breasts” and their “lost...ardors,” and were ineffective with their “curtailed muscles,” “diminished vigor” and “intellectual and moral falling away.”

Historian Laura Hirshbein argues that, in the twenties, masculinity was defined in

opposition to the decrepitude of old age, revealing the rejuvenator's logic that since "puberty was the blueprint for masculinity, and old age was its reverse (with loss of hair, loss of figure, and loss of sexual desire)" then where the "sex glands became active to produce a man, they must have become inactive in order to produce an old man" (Hirshbein "The Glandular Solution" 290). Thus, the cause of aging was identified as deficient activity of the sex glands. This understanding of aging established close links between restoring youth and restoring manhood that would become manifest in the public narratives surrounding rejuvenation science. However, the solution to either restoration was clear: find a way to reinvigorate the glands or replace them.

The Youth Doctors

Enter the striking figure of Serge Voronoff, a Russian-born French scientist who began making front page headlines in 1914 by doing successful bone grafts on soldiers during the first World War (using Carrel's methods), and by treating cretinism not with thyroid extracts, but with thyroid gland grafts using glands obtained from monkeys.¹⁸ Five years later, at the tail end of 1919, Voronoff would again make headlines, this time by describing his successes in rejuvenating aged goats using testicular grafts from younger goats. The public—primed to perceive aging as a glandular deficiency and glandular therapy as a real possibility—took no time at all to begin speculating about the possibility of grafting new testicles onto old men.

¹⁸ See, for example, "Bone Grafting in Army" New York Times Dec. 4 1914; "Cured by Monkey's Gland" New York Times July 1 1914; and "Monkey's Gland Cures Idiot" The Washington Post July 5 1914.

“Surgeon Finds Youth’s Secret,” promised the *Los Angeles Times* on October 12, 1919.¹⁹ Two days later, a less hyperbolic article in the *New York Times* reported on Voronoff’s “hopes of restoring youth” based upon his promising experiments with goats. Voronoff described his experiments in layman’s terms:

In the human body we have glands which secrete liquids controlling the leading organs....When you take these glands out of a living body the organs they control stop working....If you take out the interstitial glands that form part of one of man’s principal organs his ordinary strength diminishes and he becomes more and more feeble. So I thought that the grafting of new interstitial glands on an old body might restore vigor to it....On May 7, 1918 I grafted on [a decrepit goat which could hardly stand and was about to die] interstitial glands which I took from a healthy young he-goat. Two months later the animal appeared young and vigorous again. ("Tells of His Hopes")

Voronoff went on to describe how he removed the grafted glands, and the animal again “lost his vigor,” but with another graft the animal “was young once more.” Voronoff stated his intention to try his grafting experiments on men, though he planned to use monkey glands, since finding human source material posed several quandaries. The fervor had already begun, according to the article: “He has been bombarded in the last few days with letters and telegrams from England and America, especially. All sorts of people ask him for details concerning his discovery and some even demand to be treated immediately.” Voronoff and his monkey glands became an overnight sensation.

¹⁹ This remarkably inaccurate piece of reporting not only stated that Voronoff was formerly connected with the Rockefeller Institute (he was not) but also reputedly directly quoted Voronoff as stating he had taken “an interstitial gland from a young and vigorous chimpanzee [and] grafted it onto a man 80 years old who was virtually in a state of decrepitude.” This operation resulted in a “complete change” to “the physical and mental powers of a man only 30 years old,” and Voronoff was said to “have continued these experiments with other men with results that were astounding.” “Surgeon Finds Youth’s Secret” *Los Angeles Times* Oct 12 1919. In reality, Voronoff did not conduct his first monkey to human gonadal gland transplant until 1920. The “enthusiasm” of this article is indicative both of the sort of hyperbole that accompanied many popular depictions of glandular rejuvenation, but also of how Los Angeles in the early decades of the twentieth century was an Eden for charlatans with a “vast sucker pool...of...thousands of retirees and fresh starters.” Brock, *Charlatan* 57.

As surgeon Max Thorek recalls in his memoirs, “dinner parties and cracker barrel confabs and sedate gatherings of medical elite were alive with the whisper—‘Monkey Glands!’” (Thorek 168).

Of all of the “legitimate” rejuvenators, Voronoff’s claims for the possibilities of glandular rejuvenation were the least guarded and the most grandiose. He widely predicted “that the grafting of glands will become an everyday procedure.... [and that] human life may be extended much beyond the present limits” (“Voronoff’s Own Account” 836). He was credited with suggesting that nature intended that everyone alive “should live to be 140 years old,” and those years should be of “a vigor and strength which youth never knew before;” he was effectively envisioning “the beginnings of a race of supermen” (Norris).²⁰ This innate hubris, coupled with the sensationalism of such an early foray into xenotransplantation at a time when the theory of evolution was still fairly controversial, made Voronoff a media darling; put simply, he made good press.²¹ Although Russian by birth, Voronoff was French by nationality and was married (until her death in 1921) to a wealthy American socialite, Evelyn Bostwick. He was a professor at the esteemed College de France (in a position once held by both Brown-Séquard and the highly respected Claude Bernard, who was also an influence on early endocrinology). The French government, for a time at least, also saw Voronoff as a boon. They constructed a park area in Africa for the breeding of chimpanzees, and put the Castle Grimaldi and its parklands along with \$25,000 in monkeys at Voronoff’s

²⁰ Years later, Voronoff would back down from some of his earlier claims. In one 1940 article, he “denied that he had ever pretended ‘entirely to suppress old age’ in those whom he has treated. ‘But,’ he added, ‘I succeeded in reducing considerably its power.’” “Voronoff Corrects His Critics” New York Times Aug 25 1940.

²¹ Although Darwin’s theories were widely known at this time, evolution was still a controversial doctrine. The famous Scopes trial concerning the teaching of evolution in schools would take place in 1925.

disposal.²² Over the course of his gland-grafting career, Voronoff was rumored to have grafted such notable figures as “Emperor William of Germany, Clemenceau of France, Lloyd George of England...Dr. Lorenz of Austria” and the “Turkish President Mustapha Kemal Pasha” (“May 'Rejuvenate' Kemal”).

As word of Voronoff’s proposals spread throughout the United States, reactions to it from the scientific and medical community tended towards two diverse responses. The first of these was dismissal. Several august institutions and practitioners of science and medicine were reported as saying they had never heard of a Dr. Voronoff and would not even know where to find the “interstitial glands.”²³ This outright dismissal of glandular rejuvenation as a European fancy and disclaimer of all knowledge of the interstitial glands—in light of the fact that the “interstitial glands” would become bandied about in newspaper articles and best-selling novels—was perhaps, in retrospect, something of an embarrassment. Nevertheless, this vein of “scientific skepticism” accompanied discussions of glandular rejuvenation throughout its entire heyday, and the

²² See “Voronoff and Steinach” Time Monday, Jul. 30 1923; and “Secret of Long Life” The Washington Post Jan 7 1928. Voronoff was also provided with facilities for large scale gland-grafting experiments to improve livestock in the French colony of Algeria. David Hamilton, The Monkey Gland Affair (London: Chatto & Windus, 1986) 94. It was reported by Paul Niehans, who would continue gland extract treatments under the name of “cellular therapy” well into the 1960s, that Voronoff’s prized colony of chimpanzees became infected with syphilis, resulting in several of Voronoff’s transplant patients entering his castle-clinic “in perfectly good health... but...leaving it victims of mankind’s ugliest, most insidious venereal disease.” Patrick M. McGrady, The Youth Doctors (New York: Ace Publishing Corporation, 1969) 58. Interestingly, in the 1990s, it was speculated that HIV might have originally entered the human population through Voronoff’s monkey to man transplants. For more on this, see, for example, EM Cuperschmid and TP de Campos, “Dr Voronoff’s Curious Glandular Xeno-Implants” Historia, Ciencias, Saude-Manguinhos 14.3 (2007); F Augier, E Salf and JB Nottet, “Dr. Samuel Serge Voronoff (1866-1951) or ‘the Quest for Eternal Youth’” Histoire des sciences medicales 30.2 (1996); and Jim Scanlon Did Transplanted Chimpanzee Testicles Start Aids Epidemic in 1920s? 24.6 (June 1), 1999 Coastal Post Available: <http://www.coastalpost.com/99/6/9.htm> Sep 5 2008.

²³ The referent “interstitial glands” more properly referred to the testosterone-secreting Leydig cells which are found adjacent to the seminiferous tubules *within* the testicles. While it became common to refer to the reproductive glands, and specifically the testicles, as “interstitial glands,” this designation was peculiar to this moment of glandular rejuvenation science. For examples of scientific authorities disclaiming knowledge of the interstitial glands,” see “Fountain of Youth Still a Fairy Tale” Los Angeles Times Oct 24 1919; and “The Dourters” Los Angeles Times Oct 30 1919.

skeptics were eventually vindicated as glandular rejuvenation was shown to be physiologically ineffective and fell out of favor in the 1930s. Throughout the duration of the glandular rejuvenation fad, these skeptics played an important role in determining what “proper” science and scientists “should” look and act like. As we saw with the AMA’s reaction to the LEI in Chapter Three, physicians were not supposed to self-promote or advertise; they were not supposed to make over-reaching claims. These distinctions would eventually help determine which of the glandular rejuvenators history would hold up as “genuine” scientists who advanced scientific knowledge and which rejuvenators would be remembered as misguided fools if not outright quacks.

The second type of reaction to Voronoff’s ideas was to claim that he was not actually offering anything “new,” that several Americans had been conducting such experiments for years already. The headlines claiming that “America was First in Gland Grafting” usually referenced two American physicians: Dr. G. Frank Lydston in Chicago, and Dr. Leo L. Stanley at San Quentin Prison in California.²⁴ Lydston was Professor of Genito-Urinary Surgery and Syphilology at the State University of Illinois. He claimed he had conducted his first human gland transplant in 1914 (using a human cadaver’s testicle with himself as the recipient), had conducted many transplants on both sexes since, and pointed out that he had published his work in respected journals.²⁵ The surgeon Max Thorek, in his memoirs, recounts a day in 1919 where Lydston took him

²⁴ For examples, see "Chicago Discredits Paris Youth Secret" Los Angeles Times Oct 16 1919; "Convict Given Youth Secret" Los Angeles Times Oct 18 1919; "Gland Surgery Opens New Field of Research for Criminologists" The Washington Post Nov 9 1919; "America Was First in Gland Grafting" New York Times Aug 15 1920; and W. A. Evans, Dr., "How to Keep Well" The Washington Post June 12 1923.

²⁵ For an example of Lydston speaking about his pioneering work in gland grafting directly to the press, see "America Was First" .

aside, undressed before him, and showed him a third testicle sutured to his genitals.²⁶

Lydston claimed such transplants were effective not only in retarding senility and increasing longevity, but also in correcting for defective sexual development and in some cases of chronic skin disease like psoriasis ("America Was First"). Despite Lydston's likely rightful claims to priority, Voronoff stole most of the limelight, a fact for which Lydston was bitterly jealous of Voronoff up until Lydston's death in 1923.²⁷

Dr. Leo L. Stanley, a physician at San Quentin Prison, also made headlines claiming to have already ventured where Voronoff was just now contemplating going. Stanley, too, used human cadaver glands for his transplants, with a ready supply of both cadavers and captive subjects in the prison population. His experiments concerned both the possibility of glandular rejuvenation as well as glandular rehabilitation ("curing" criminality). These two objectives had a united focus on remaking convicted felons into "useful" citizens once again; the very nature of Stanley's experiments drew upon and reaffirmed the association of old age with obsolescence and with a national burden. Stanley claimed great results for gland treatments in conditions ranging from asthma to diabetes to dementia, paranoia and general asthenia (weakness/lack of energy).²⁸ His experiments also drew ethical criticism. Some objected to the idea of extending the

²⁶ See Max Thorek, M.D., *A Surgeon's World: An Autobiography* (Philadelphia: J. B. Lippincott Company, 1943), especially pages 179-81.

²⁷ Lydston was, in fact, so jealous that when Voronoff came to the US in 1921 to speak at Columbia University, and then accompanied Max Thorek back to Chicago (Lydston's hometown) to demonstrate his technique, Lydston refused to attend the demonstration even though Voronoff wrote Lydston personally begging the honor of his presence. In his memoirs, *A Surgeon's World*, Thorek includes a copy of Voronoff's letter to Lydston and recounts in detail this moment when Lydston was "too embittered to do the right thing" (184).

²⁸ For reporting of Stanley's claims, see "Felons Aid New Cures" *Los Angeles Times* Apr 29 1931; Edward Boyden, "Thousand Convicts Take Goat-Gland Treatment" *Los Angeles Times* Dec 10 1922; Edward Boyden, "Criminality Is Cured" *Los Angeles Times* Dec 11 1922; and Edward Boyden, "Knife Vs. Needle" *Los Angeles Times* Dec 12 1922.

lifespan of inmates sentenced to life in prison as this was unjustly extending their sentence.²⁹ One mother sued Stanley for using her dead (criminal) son's glands without her permission.³⁰ Such criticisms were based on the presumption that Stanley's rejuvenation experiments were both effective and valuable.

Although Lydston and Stanley, at least, were quick to claim primacy for America in gland grafting, glandular rejuvenation was more typically perceived by the American public as a European innovation; this was especially the case when Eugen Steinach entered the scene in 1920, slightly less than a year after Voronoff first made rejuvenation headlines. Steinach was an Austrian physiologist who had long been experimenting with sex gland manipulation in animals. Beginning in 1924, Steinach conducted numerous experiments to determine the role of the sex glands on the development of secondary sexual characteristics. For example, he castrated rats and implanted ovaries in them, and removed young rats' sex glands replacing them with one ovary and one testicle, observing in these experiments, respectively, the feminization of the rats, and the production of "all varieties of hermaphrodites and homosexuals" (Haire 36). Not only did Steinach attribute all secondary sexual characteristics—from physiology to behavior to sexual orientation—to the effects of the internal secretions of the sex glands, but he also believed that by stimulating the interstitial cells of the sex gland, he could produce "hypermasculinised" or "hyperfeminised" animals.³¹ Steinach equated the strength of

²⁹ See Walter Duranty, "Denounces Voronoff Test" New York Times Oct 22 1919.

³⁰ See "\$50,000 Suit Caused by Gland Operation" The Washington Post 1928 and "U'ren Pressing Gland Charges" Los Angeles Times May 16 1928.

³¹ To determine this, he castrated rats and then implanted testes into them. He observed that the seminal cells of the graft would atrophy, but the interstitial cells (those responsible for producing the internal secretions) would proliferate. He noted that "As a result, the sexual characters of the animal reach a development which equals that of the natural male, or may even exceed it. The manifestation of the sexual

such gender expression with “the vigour of the individual,” leading him to believe that in revivifying the ageing puberty-gland, it might be possible to rejuvenate the individual (Haire 37). Here again, the idea of glandular rejuvenation relied upon drawing parallels between adolescent sexual development into manhood or womanhood and an aging descent into androgyny. Notions of ideal masculinity and of “properly” channeled, fully-functional sexuality were important foundational assumptions defining the “problem” of aging.

The “Steinach” method of glandular rejuvenation, like Voronoff’s method, still focused on the interstitial cells, but instead of grafting glands, Steinach developed a minimally invasive method. For men, the “Steinach method” was, at its most basic, a vasectomy; the rationale was that tying off the vas deferens would lead to a build up of the spermatic secretions which in turn would create pressure within the generative gland. The more sensitive generative tissue would give way to this pressure, and the hardier interstitial tissue would proliferate (Kammerer 70-1). Steinach’s initial claims for glandular rejuvenation, as presented in the popular press, were somewhat zealous: “I can rejuvenate men and women; I can transform old people into young ones. Not only in looks, in appearance but I can restore them to all the glory of their youth” (Brook qtd in). However, thanks in great part to the efforts of New York physician Harry Benjamin—the most well-known practitioner of the Steinach operation in America—Steinach was soon shown in the press to be making much more modest claims, repeatedly asserting that

impulse is similarly affected. Thus the animal may not only be remasculinised, but even ‘hyperm masculinised.’” Norman Haire, *Rejuvenation: The Work of Steinach, Voronoff, and Others* (New York: The MacMillan Company, 1925) 37. Steinach found the same results in female rats, and believed that “hyperfeminisation may also be brought about by X-radiation of the ovaries” (37).

“within modest limits the process of becoming senile can be influenced” and using the word “restitution” or “reactivation” in place of the more highly charged “rejuvenation.”³² This cautious approach would serve him well in the end; of all the rejuvenators, he was the most respected at the time, and is the most favorably remembered by posterity. Many notable figures were “Steinached” in their day, including the poet William Butler Yeats, father of psychoanalysis Sigmund Freud, the writer and critic H. L. Mencken (who had the procedure done in 1936, despite his high-profile siding with Morris Fishbein against the possibility of glandular rejuvenation), and the American author Gertrude Atherton.³³

Amid this sea of practicing “youth doctors,” there were also, of course, the charlatans. John R. Brinkley with his goat gland grafts was far and away the most visible of such quacks, but there were many, many others who made millions offering glandular rejuvenation to the masses. You could usually identify a quack by his advertisement, as the A.M.A. prohibited physician advertisements. These advertisements were often couched as informative news pieces, reporting on the latest scientific advances, and often referencing Voronoff and Steinach; not until the end did they reveal the address to which you could apply for more information or treatment.³⁴

³² See, for example, “Youth of Dr. Lorenz Renewed by Operation” The Washington Post Feb 8 1922; “Dr. Steinach Coming to Make Old Young” New York Times Feb 9 1922; and “Voronoff and Steinach” .

³³ For an account of Mencken’s relationship with Fishbein and role in Fishbein’s anti-fraud work, see Brock, Charlatan .

³⁴ For examples, see “Your Glands Make You What You Are!” Los Angeles Times Feb 22 1925; “World-Known Gland Surgeons Disagree on Definite Benefits of Rejuvenation--Dr. Clayton E. Wheeler Vs. Dr. Serge Voronoff” Los Angeles Times Oct 23 1927; “May ‘Rejuvenate’ Kemal ” Los Angeles Times Apr 22 1928; “Marvels of Science” Los Angeles Times Aug 16 1931; and “Miraculous Performance of Glandular Therapy” Los Angeles Times May 24 1931. It is no coincidence that all of these examples come from the *Los Angeles Times*. Certain publications were far more open to accepting physicians’ advertising, and the *Los Angeles Times*—owned by Harry Chandler who himself underwent Brinkley’s goat gland graft—was at

Again, according to the medical “establishment,” there was a right and a wrong way to conduct science and perform medicine. Those who, like Brinkley, shamelessly solicited clients through the mail and over the air waves were clearly in the wrong, and Brinkley died in ignominy. Eugen Steinach, with his much more moderate claims and continued participation in the orthodox scientific community, would die in 1944 remembered as someone who got it wrong, but who was nonetheless “a pioneer,” “an authority” and “one of [the scientific world’s] most courageous and outstanding personalities.”³⁵ Serge Voronoff, with his grandiose claims and his nature-defying “monkey-to-man” transplants, would find himself in a more ambiguous position in the history of science. He was often criticized for presenting his discoveries directly to the world rather than pushing them through the channels of scientific validation.³⁶ Upon his death in 1951, few papers ran his obituary (Hamilton 141). Of those that did, the *New York Times*’ obituary, buried on page 27, not only misspelled his name (“Voronov”) and remembered him as “a modern alchemist,” but also—apparently forgetting that he had made headlines on their own front page many a time—reported that “few took his claims or his predictions seriously” (“Dr. Serge Voronov”).

the forefront of such advertising (earning it a spot as one of the least respected major newspapers of this time period). For more on Chandler and the *LA Times*, see Brock, *Charlatan*, chapter 10 especially.

³⁵ See “Dr. Steinach Dead; Gland Authority” *New York Times* May 15 1944; “Dr. Eugen Steinach” *New York Times* May 16 1944; and Harry Benjamin, M.D., “The Late Professor Steinach” *New York Times* Jun 3 1944.

³⁶ For example, in 1920, just before Voronoff was set to present his “first collection of grafts to a surgical congress in the grand amphitheater of the Paris Faculté de Médecine,” the assembly president brushed him aside and addressed the group: “Gentlemen, our colleague Dr. Voronoff was supposed to deliver a paper. But I think that we have been adequately apprised by the articles published in this morning’s newspapers.” McGrady, *The Youth Doctors* qtd on 56. Patrick Grady suggests that “because of his unorthodox means of presenting his work to the public, the once-esteemed insider rapidly became a pariah” (56).

To embark on the “scientific” quest for the fountain of youth required vigilant attention to one’s reputation. In the realm of the “youth doctors,” the lines between the genius and the charlatan were uncomfortably ambiguous. Besides invoking fruitless medical alchemist quests for the “elixir vitae,” the reputation of the glandular rejuvenators was also in jeopardy because their practice involved—in very explicit and titillating ways—the sex glands. In the scientific evaluations of rejuvenation experiments, in the advertisements and public promises which sold rejuvenation, and in the minds of the American public, rejuvenation was inextricably linked to ideals of masculinity, femininity and sexual behavior. By the same token, the accepted understandings of what distinguished “young” from “old” were similarly caught up in gender and sexual ideals in ways that remain very familiar to us today.

Manly Monkey Men

From the earliest animal rejuvenation experiments, the descriptions used by rejuvenators like Steinach and Voronoff to identify “young” and “old” animals and to evidence “successful rejuvenation” were heavily coded with gender and sexual behavior expectations. For example, Voronoff describes the results of grafting the testicles of a young ram onto a ram of 12 or 14 years of age (“which corresponds to the age of eighty or ninety in man”) who was “in a deplorable condition” (Voronoff 73). Two months after the graft, the animal “was completely transformed. His urinal incontinence had disappeared, so had the trembling of the legs, and he no longer looked afraid. His bodily carriage had become magnificent, he behaved in a lively aggressive manner” (74). While this description posits the typically masculinized traits of courage and aggressiveness as markers of “youth and vigor,” the confirming evidence for Voronoff of successful rejuvenation is that the ram “was isolated in a small stable, together with a

young ewe-lamb, which afforded an opportunity for observing not only the awakening of his sexual instinct, which he had lost years ago, but also the following more tangible result: the ewe-lamb covered by him in September, 1918, dropped a vigorous lamb in February, 1919" (74).³⁷ Virility, specifically in a procreative capacity, became the very definition of what it meant for a man to be young. Conversely, the threat of aging became the threatened loss of such masculine characteristics.

The promise of rejuvenation and the idea of renewed virility were certainly tied together in the public imagination. This is especially evident in some of the popular references to rejuvenation procedures that involved animal gland grafts, from Brinkley's continual upholding of the birth of little Billy Stittsworth as evidence of successful rejuvenation, to the Marx Brothers' revision of Irving Berlin's son "Monkey-Doodle-Do" (1913) for their 1929 film *The Cocoanuts*, which now included the line: "If you're too old for dancing/Get yourself a monkey gland." As early as 1908, a short fiction story published in the *Washington Post* connected both the ideas of animal organ transplants to rejuvenation, and rejuvenation to restored virility.³⁸ "The Rejuvenation of Bellamy

³⁷ In his further writing, it becomes obvious how much Voronoff relied upon this act of reproduction as "proof" of the efficacy of his experiments. Anticipating critics who will say these results are biased, Voronoff offers: "I know that inventors readily confuse their desire with realization, and that in all sincerity, by a sort of auto-suggestion, they behold as fact what, actually, has only transpired in their imagination. This, however, cannot be the case here. The dropping of a lamb in a stable where for a year and a half an impotent old ram, tottering on its legs, suffering from urinary incontinence as a result of extreme old age, has been shut up with a young ewe cannot be regarded as auto-suggestion, any more than the disappearance of the ram's urinary incontinence and the trembling of his legs" (81). Voronoff additionally directly connects this act of animal reproduction to the condition of human male aging, suggesting that sexual activity, if not actually fathering children, will be a measure of successful rejuvenation in human men: "There is nothing in the fact [that the rejuvenated ram sired a lamb] to cause surprise. Old animals, like very aged men, occasionally still possess spermatozooids which are altogether alive, but it is the atrophy of the internal secretive cells which prevents their experiencing the sexual appetite and manifesting their virility" (74-5).

³⁸ Although this story appeared over a decade before glandular rejuvenation came into the public eye, it was nonetheless inspired by scientific advances that fired up the public imagination. An editorial note accompanying the story reads: "Dr. Simon Flexner, the famous New York pathologist, declares it is possible to transplant and successfully graft on man the vital organs of lower animals. His announcement has

Grist," written by Edgar Jepsen, is a farce: a famous, aging poet receives a transplanted monkey's heart which rejuvenates him. To his daughter's horror, Bellamy Grist not only transforms in personality, writing new poems like "Ode to a Ripe Banana," but more troublingly begins to chase after "simian type" mulatto women, and eventually runs off to Paris to marry one of these women. While the story clearly plays on Grist reverting to "monkey type," it also frequently references Grist's return to "boyishness," and key to both this animal reversion and rejuvenation are Grist's lustful pursuits.

The association of aging with demasculinization in the context of glandular rejuvenation was not solely focused on the loss of virility, however. Laura Davidow Hirshbein, examining the writings of rejuvenators like Harry Benjamin and Eugen Steinach, argues the descriptions of "old men" these rejuvenators offered "emphasized their inability to function: they could not concentrate or exert themselves. Even worse, these men lacked the abilities that the rejuvenators had emphasized in rats: they could not compete nor have sex" (Hirshbein "The Glandular Solution" 290). While some descriptions of human male rejuvenation did focus on changes in appearance—hair growth, hair color change, a reappearance of muscular physique—the focus on restoration of *function* and the ability to *compete* was much more common. Drawing on the work of Michael Kimmel, Gail Bederman and other historians who have traced changing ideas of masculinity, Hirshbein places this attention to function in the context of rapidly shifting ideals of masculinity in the early twentieth century. She argues that

startled the scientific world. What will surgery do next?" Edgar Jepsen, "The Rejuvenation of Bellamy Grist" The Washington Post Jul 5 1908.

nineteenth century ideals of masculinity, which “emphasized individual achievement and independent work,” no longer fit the social and economic circumstances of the early twentieth century, where men worked “in increasingly large, impersonal environments” (286). Instead, the search for true masculinity “involved a striving for personal improvement through emulating such energetic figures as Theodore Roosevelt,” and “emphasized prowess in business efficiency to compensate for a lack of control in the work place” (286). Thus, in addition to its ties to reproductive heterosexuality, ideals of masculinity were also tied to “the language of efficiency” and the pursuit of “greater efficiency through good health” (286-7).³⁹

That the larger public understood rejuvenation as a restoration of masculinity in all these senses is evidenced by yet another work of fiction, Bertram Gayton’s 1992 novel *The Gland Stealers*. Widely reprinted in the United States, the novel focuses on the American Gran’pa who has come to live with his adult grandson (George) and great-granddaughter in Britain. Gran’pa reads about Voronoff’s gland grafting in the newspapers, and finds a scientist willing to graft onto him the glands of a gorilla. The mere thought of rejuvenation is enough to transform Gran’pa from a “poor, doddering old man, mumbling incoherent nothings and drowsing his life away by the fireside” into “a fellow-creature whose brain was afire with vivid thoughts and memories—a living soul, even though it was caged in a dying and encumbering body” (Gayton 15). After the operation, his appearance comes to match his actions and feelings, and in keeping with the idea of restoration of virility, Gran’pa goes off to court his old sweetheart Sally, whom he convinces to undergo the treatment as well. The novel’s rhetoric is not subtle in

³⁹ For more on the ideal of “efficiency” as it impacted perceptions of aging, see Chapter 2: “Efficiency, Obsolescence and the Human Scrap Heap.”

positing old age as a loss of masculine efficiency; at one point as George muses about fighting “the insidious Monster of Old Age,” he says of this foe: “Its victims clogged the wheels of industry and progress, hampered politics, handicapped art, fostered wars which were fought by others, and scoffed at romance” (275). The promise of rejuvenation in the novel is the promise of being “a fellow-creature” once again, once more a part of active humanity, and an efficient participant in the quest for progress.

The novel's plot follows Gran'pa as he is philanthropically inspired to take a hundred venturesome old men to Africa with him to capture enough gorillas to rejuvenate them all. Interestingly, for these men, as for Sally, rejuvenation is fleeting and old age once again “[overtakes] them by leaps and bounds” (313). George offers here the novel's take-home moral; he recognizes that a rejuvenated Sally is “impossible, absurd” but a “gracious, white-haired, old lady” Sally is “lovable—a work of art, hallowed and moulded and softened by the hand of Time. To tamper with such a masterpiece was sacrilegious, profane” (312). George comes to see old age not as “a tragedy or curse, but...a sort of blissful and holy peace” (312). Thus the novel concludes with the age-old apologist message that one should not tamper with the Natural order. However, Gran'pa remains “young (in the true sense of the word)” at the novel's close, leaving the hope and possibility open for the public imagination that rejuvenation might be genuinely effective in the right circumstances. Sally identifies these right circumstances, insofar as they have made Gran'pa the exception, as Gran'pa's “wonderful faith....He's been like that all his life—an American through and through” (314, 310).

This fictional moment linking rejuvenation with national identity was not without precedent. Where rejuvenation was associated with a virile, productive, useful masculinity, this potential increased usefulness and efficiency was, in turn, often sold as

a national good. Many nations were looking to glandular rejuvenation as a way to rebuild after the loss of so many young men in World War I.⁴⁰ So convincing was this notion that Brinkley's publicity machine (he actually had men planted in different towns whose sole job it was to promote him to the world), upon Brinkley's trip to Asia, planted a story in the newspaper with the headline: "Gland Transplantation Now Used by Japan to Put Aged Infirm Back at Work! High Class Goat Prices Soar" (Brock qtd on 83).

Although the story was wholly invented, it shows that in the public imagination, rejuvenation offered the possibility of turning charity patients into productive wage earners once more. The Nazis, too, took a particular interest in rejuvenation science. Although they shunned the work of Steinach (who was a Jew), they attended to Voronoff who, in the late twenties, announced that he was turning away from his concern with the old in order to focus on the young, suggesting that, through glandular therapy, he held the key to creating "a race of supermen" (Norris). While the Nazis were not known to have experimented with gland transplantation, they did work to isolate testosterone as an explicit means to rejuvenation and producing maximum fitness among its troops (Brock 191-2).

For the United States, however, it was suggested that rejuvenation was both particularly characteristic of, and particularly important for, this young nation. Laura

⁴⁰ David Hamilton, medical historian and transplant surgeon, writes about the particular timing of the rise of interest in glandular rejuvenation: "The intensity of interest in rejuvenation at this time is striking and contrasts with the lack of interest in transplantation in general. It may simply have been one of the periodic bouts of interest in attempted rejuvenation to which mankind is prone, but the fact that the monkey gland enthusiasm appeared just after the First World War and was centered on Europe suggests that social factors were at work which made the public receptive to the idea—the most obvious of which was that Europe had lost a huge number of young men in the First World War....The well-off families of Europe had lost their sons, and older men grudged their age more acutely than usual. Not only that, but from 1880, the birth rate had been going down in Europe, families had become smaller, and by the 1920s, governments were urging their people to increase the size of their families. The War was blamed for Britain and France's slower rate of population growth, and in both countries patriotic fears were raised of a loss of Empire through depopulation of the Mother Country." Hamilton, *The Monkey Gland Affair* 27.

Hirshbein argues that rejuvenators like Voronoff, Steinach and Benjamin “proposed their procedures as a way of supplying additional youthful energy to the nation,” and told the American public that “they should have a special interest in European rejuvenation procedures since American national identity revolved around youthful efficiency and energy”(Hirshbein "The Glandular Solution" 298). Not only was America a youthful nation, but it needed rejuvenation to *stay* young. In the United States, rejuvenation was pitched to both working-class and professional men, promising the former “physical energy” and the latter “mental and emotional improvement;” though Hirshbein notes that the rejuvenators preferred to operate on professional men and social elites, making explicit value judgments about what sorts of men and vocations were most valuable (291). For men of any class, however, rejuvenation held out the promise of renewed masculinity at the same time that it reinforced the threat of lost masculinity with age. Masculinity became coupled with youth, efficiency and energy, and old age served as a foil for all of these qualities.

Feminine Forever

“They Roentgen-rayed her ductless glands—
And lovely Mary Zattiany
Returned with all that Youth demands,
Though old enough to be your granny.”⁴¹

While masculinity became tied to the aging process and the idea of rejuvenation, and while men were the initial focus of the rejuvenators’ practice, femininity and women had their own rather complicated relationship with the rejuvenation fad. For all the rejuvenators, glandular rejuvenation for women was a more complex situation. For

⁴¹ From A. G., "Rhymed Reviews: Black Oxen" *Life* Apr 5 1923.

instance, Laura Hirshbein notes that it was complicated to define “the cessation of sex gland function (or menopause) as the beginning of old age...since women obviously lived many years after menopause” (Hirshbein "The Glandular Solution" 294).⁴² Another contributing complexity was that women’s reproductive glands were simply more difficult to access. Voronoff and Steinach both did gland transplant experiments with female animals, but far fewer with actual women. Voronoff did, to great publicity, graft human ovaries into chimps. His experiments with Nora the chimpanzee—in whom he grafted a human ovary, and then attempted to inseminate the chimp with human sperm—made headlines and inspired a French novel, though Voronoff was not known to have grafted many chimp ovaries into women.⁴³ Stanley claimed that his attempts to graft glands into women produced almost universally disappointing results.⁴⁴ (This was surely in part because cutting a woman open to get to her ovaries in the pre-antibiotics 1920s was significantly more invasive than slicing open a man’s scrotum.) Lesser-known and quack rejuvenators offered glandular extract injections, but of the headlining practitioners, it was Steinach who again developed a less invasive procedure. Working with the idea that the interstitial tissues must be “stimulated,” he believed he could accomplish this stimulation using Roentgen rays; put simply, he x-rayed women’s

⁴² I might suggest that this definition is only problematic where old age is closely identified with approaching death. If aging holds its own fears beyond the question of mortality, then menopause simply signaled a very clear beginning to a lengthy term of aging.

⁴³ For more on the sensationalism of Voronoff’s experiment, see the discussion of Félicien Champsaur’s novel *Nora, la guenon devenue femme* provided in Brett A. Berliner, "Mephistopheles and Monkeys: Rejuvenation, Race and Sexuality in Popular Culture in Interwar France" Journal of the History of Sexuality 13.3 (2004); or Susan Merrill Squier, "Incubabies and Rejuvenates: The Traffic between Technologies of Reproduction and Age-Extension" Figuring Age: Women, Bodies, Generations ed. Kathleen Woodward (Bloomington: Indiana UP, 2004).

⁴⁴ See, for example, "Gland Grafting on Women" New York Times Nov 28 1922; "Many Women Given Glands" The Washington Post Nov 28 1922; and "Glands Tried Upon Prisoners" The Chicago Defender Dec 30 1922.

ovaries. With the arrival of Steinach's method, glandular rejuvenation became as reasonable (as any rejuvenation procedure might be) for women as it was for men. It also became just as, if not far more so, popular a procedure among women as it was among men, thanks in large part to the author Gertrude Atherton. Atherton's novel *Black Oxen* not only popularized the idea of glandular rejuvenation for women, but also spurred public debates about what motivations for seeking rejuvenation were "acceptable," and about what rejuvenation might mean for women, for society and for the nation.

Black Oxen was the bestselling novel of 1923, outselling Sinclair Lewis's *Babbitt*. It was first on the list of books "most in demand in America's public libraries" and remained on *The Bookman's* Top 10 list for fiction until September of 1924.⁴⁵ It generated controversial headlines that extended well beyond the realm of literary criticism, so much so that it was banned from the Monroe County (NY) libraries at the insistence of the Women's Christian Temperance Union.⁴⁶ It was made into a Hollywood film that same year, featuring "It girl" Clara Bow in the minor role of flapper Janet Oglethorpe. The movie, too, was "one of the most sensational popular hits of the season," so much so that it was reported there was "at all hours such a mob trying to get in [to see the film] that the struggle [was] terrible and the waiting long."⁴⁷ The book and

⁴⁵ See "The Bookman's Fiction Report" Los Angeles Times Mar 30 1924; and Frank Parker Stockbridge, "The Bookman's Monthly Score" The Bookman; a Review of Books and Life Sep 1924.

⁴⁶ The WCTU charged the book with being "unfit for young minds," though the reporter suggested that "the majority of readers must have questioned its science rather than its morals." See "Censorship up in Far Monroe" New York Times Oct 4 1923; and "Rejuvenation Novel Barred in Libraries" The Washington Post Oct 2 1923.

⁴⁷ See "Famed 'Black Oxen,' Corinne Griffith, at the Metropolitan" The Washington Post Jan 13 1924; and Helen Klumph, "Many Drift Eastward" Los Angeles Times Jan 13 1924.

movie take their title from a passage by poet William Butler Yeats, himself a recipient of the Steinach treatment who credited it with bringing him a “second puberty,” re-energizing his literary and sexual expression: “The years like great black oxen tread the world/And God, the herdsman goads them on behind/And I am broken by their passing feet.”⁴⁸ The novel, based loosely upon Gertrude Atherton’s own experiences in taking the Steinach treatment from New York physician Dr. Harry Benjamin, sold to a very receptive public the promise that it was indeed possible, and desirable, to escape the tread of those black oxen years.

Black Oxen tells the story of the beautiful and striking Countess Marie Zattiany of Austria’s arrival on the New York High Society scene. Marie causes quite a sensation as she closely resembles Mary Ogden, a former resident of New York who moved to Europe years ago, and whose niece Marie claims to be. The 34-year-old, eligible bachelor Lee Clavering, journalist and novelist, is one of the men who falls under Countess Zattiany’s spell; she, in turn, is surprised to find herself falling for him. Over the course of the novel, it is revealed that Countess Zattiany is, in fact, Mary Ogden. Mary is 58, but having undergone the Steinach treatment in Vienna, she is described by one society voice as not looking “a day under twenty-eight” (Atherton *Black Oxen* 9). The novel’s plot centers around society’s reaction when Mary’s rejuvenation is made public, Lee’s reaction to this news of his lady love, and the choice Mary faces in whether to follow her heart and marry Lee, or to return to her home in Europe to use her reestablished energy and resources to help rebuild war-torn Austria. The choice Mary

⁴⁸ For a thorough discussion of Yeats’s Steinach operation and London physician Norman Haire who performed it, see Diana Wyndham, “Verse-making and Lovemaking--W. B. Yeats’ “Strange Second Puberty”: Norman Haire and the Steinach Rejuvenation Operation” *Journal of History of the Behavioral Sciences* 39.1 (2003).

ultimately makes, and discussion of the motivations which impelled Mary to seek the Steinach treatment in the first place, together offered the American public a powerful commentary on what rejuvenation could, and should, mean to American women and to the American nation.

In *Black Oxen*, as in virtually all of the fiction, film, popular and scientific journalism inspired by the glandular rejuvenation fad, the basic desire to remain young or to return to youth was unquestioned. However, the value of youth was often presented differently for men and for women. There was frequently an implicit assumption that men would want to retain their youth in order to maintain usefulness and efficiency (and masculinity), whereas women would want to retain their youth primarily to retain their beauty and attractiveness to men (their “usefulness” or “power” in a patriarchal society). Certainly women were invested in trying to maintain a youthful appearance; readers regularly wrote into newspaper columnists for advice on hair dying and wrinkle treatments, and it was not uncommon to find gossipy reporting on rich women’s beauty treatments discussing these treatments in terms of their rejuvenating effects on appearance.⁴⁹ But the desire to “look younger” was not, in and of itself, a wholly accepted reason to seek rejuvenation.

Laura Hirshbein suggests the rejuvenators were very “dismissive of women who wanted rejuvenation only for increased physical attractiveness” (Hirshbein “The Glandular Solution” 297). Yet some rejuvenators, like Voronoff, understood this as the

⁴⁹ See, as some examples covering the years, Mrs. Henry Symes, “Some Good Health and Beauty Hints for Many Correspondents” Los Angeles Times Mar 13 1904; “Hetty Pays to Be Fair: Richest of Women under a Beauty Doctor’s Hands” The Washington Post May 28 1908; Miss Sydney Ford, “Facts, Features and Fancies, for Women” Los Angeles Times Feb 10 1910; and “Ganna Walska to Open Beauty Shop in Paris; Voronoff Will Give Monkey Gland Treatment” New York Times Apr 13 1927.

obvious reason why women would seek the procedure: “Old age holds greater terrors for [women] than for us....Plastic surgery...has made such progress that it is easy for us to repair the outrages which the years have committed upon the faces of our friends. The only women who keep their wrinkles are those who are ignorant of the resources which surgery has placed at their disposal, or those who have lost the instinct to please” (Voronoff 113). Voronoff saw rejuvenation as offering the possibility for restoring not only “the face of twenty years ago,” but also for “preserving the vital energy which, in the case of woman, shows itself in bodily suppleness and grace of movement” (113-4).⁵⁰ With these words, Voronoff invoked a certain version of femininity—one about instinctual and aesthetic pleasing (suppleness and grace)—that he saw as threatened by aging, and as maintainable by rejuvenation. In 1923, he announced to the International Surgical Congress that in a matter of months he “expected to be able to announce the secret of everlasting girlhood” (“Famed Doctor”). It was in the public reaction to announcements such as this one that the disapproval over women’s motivations surfaced. For example, the article reporting on Voronoff’s announcement quoted a prominent London social worker: “What the doctors should do is to find some means of preserving the strength of women of 70 so that they could give the benefit of their ripe experience to those in need of it...There are women who would give anything to have their lost beauty and youth restored, but they are of the selfish type” (“Famed Doctor”). In comments such as this one and Voronoff’s, there were separate ideals of femininity

⁵⁰ Voronoff had not yet tried gland grafting on human women at this point in 1920. Still speaking theoretically, he advised that women should *not* undergo the graft of the male sex gland; they might acquire new vigor, but “what they might gain as regards strength they would lose in grace,” along with “perversion of the maternal instinct” (114). Such comments reveal the perception of “essential” femininity as grace, implied beauty, and reproductive and maternal duties.

being invoked; one ideal involved physical beauty intended to “please” others (men), the other advanced a model of service, women should offer “the benefit of their ripe experience” and act unselfishly. Both of these were ultimately about the benefit of others, but they could be construed, like they were in the social worker’s comment, as mutually exclusive. Thus, rejuvenation was promoted to women as a means of maintaining or restoring their femininity, but the essence of that femininity was not necessarily fixed. Certainly, some versions of femininity, and by extension some motivations for seeking rejuvenation, were—at least within the realm of public discourse—more acceptable than others.

In *Black Oxen*, Atherton weighed in on these debates about which motivations for seeking rejuvenation were acceptable for women, and which were not. She makes the question of Mary’s motivation a prime focus of the text: did Mary, as she claims, rejuvenate herself to “[reenergize her] worn out mind and body” because she has “still much work to do in distracted Europe” helping the war-ravaged Austrian children (137)? Or did she do so because “she took growing old very hard,” especially when “men left her for younger women” (47)? The novel upholds the first of these as an admirable motivation, the latter of these is presented as understandably tempting, but ultimately abominable. The reader’s judgment is guided in making these assessments by the presentation of two women in the text who contemplate the value of potential rejuvenation: Jane Oglethorpe and Miss Trevor.

Jane is Mary’s friend from their girlhood; she is a well-respected society matron of 68 years, who—having spurned all those “well-known feminine concessions” to beauty in her lifetime—retains “not a trace of [the] handsomeness” of her youth (186). Jane confides to Lee Clavering that in the 18 years since her husband’s death, she has

fallen in love four times with younger men, dreaming “as ardently as in [her] youth...that these clever intelligent men would look through the old husk and see the young heart and the wise brain,” but she has realized that “if beauty is only skin deep the skin is all any man wants” (195). Being around Mary made Jane feel young again, at least until she looked in the mirror (192-3). She admits: “I’d give my immortal soul to be thirty again—or look it” (196). But when Lee suggests she undertake the procedure, she responds: “Ha! With twenty-three grandchildren. I may be a fool but I’m not a damn fool” (193). She recognizes that if she tried to make a man fall in love with her today, she would be “rushed off by [her] terrified family to a padded cell” (194). The character of Jane Oglethorpe represents the old guard, those who have always seen growing old “as a natural process that no arts or dodges could interrupt,” those who have the social power to determine what constitutes acceptable behavior (194). Coming from such a respectable and sympathetic character, Jane’s admissions make the reader understand that the wish to be sexually desirable (which is synonymous with “young” here) is a natural one for all aging women, but rejuvenation is not always an acceptable recourse. The desire to be desired is not an adequate reason; it is a foolish one.

This message is reinforced by the character of Miss Agnes Trevor, a 42-year old spinster involved in settlement work who comes to Mary desperate for a husband. Agnes is nearly hysterical as she explains: “Oh, I tell you that unless I can be young again and have some man—any man—I don’t care whether he’ll marry me or not—I’ll go mad—mad!” (264). The narration cruelly depicts Miss Trevor—now sprawled on the couch—as “a debauched gerontic virgin” (264). Mary counsels Agnes that she can have the procedure, and the effects will be gradual enough that she can lie about it to those who would judge her for vanity after all her charity work. But while Mary is

outwardly sympathetic, Miss Trevor raises feelings of violent revulsion within her: “She felt as if there had been an earthquake in her own soul and its mud were riding the surface. She loathed herself and all women and all men” (265). After Agnes leaves, Mary calls Lee Clavering to cancel their evening together, then hurls a vase to the floor, smashing it to pieces. The violence of Mary’s reaction in this scene is unique in the book; it is a reaction to the possibility that some of Miss Trevor’s desperate and pathetic desire for sex might lie behind Mary’s own decision to undergo the Steinach treatment. This moment of self-revulsion signals an important transition for Mary; even before she has consciously made up her mind whether to pursue love or politics, she has already realized that she will not be able to respect herself if she lets sexual desire influence her choice. The message to the reader is clear: rejuvenation for the purposes of sexual desire and sexual desirability is “debauched” and despicable.⁵¹ It is evident that this scene effectively reached its audience; one book reviewer regrets the inclusion of the “very ugly episode of Agnes Trevor” in the novel as “it nauseated the Countess Zattiany, and has much the same effect upon the reader” (“Latest Works of Fiction”).

So, then, what does *Black Oxen* offer its readers as an acceptable motivation for a woman to pursue rejuvenation? Through the choice that Mary ultimately makes between two men—Lee Clavering and Prince Hohenhauer—the reader is shown that rejuvenation should ideally be undertaken in service of one’s society or country. Lee represents the possibility of love for Mary. Despite the realization of their age difference,

⁵¹ According to Laura Hirshbein, this negative identification of rejuvenation with sexuality was partly a matter of national identity. She notes that practitioners Dr. Harry Benjamin explicitly contrasted “Americans’ interests in improving business efficiency with Europeans’ interest in rejuvenation because of sex” (298). This contrast was a factor which ultimately helped to discredit glandular rejuvenation; Benjamin noted that “Americans did not easily cope with public discussions of sexuality” and felt that “the embarrassment caused by the connection with sex was the principal reason for opposition from the American Medical Association” (298).

Lee wants to marry her, though any envisioned future has complications (such as living half the year in New York, half in Austria). Prince Hohenhauer, a figure from Mary's European past as the Countess Marie Zattiany, also wants to marry Mary; he offers not love, but great power and the opportunity to combine their "two strong brains and characters with similar purpose" towards saving and ruling Austria (320). It is Hohenhauer who fully calls Mary to her senses: "Youth – real youth – and the best years of maturity are the seasons for love. You and I have sterner duties. Do you suppose that I would sacrifice Austria for some brief wild hope of human happiness?...Nothing can alter the march of the years. Moreover, you owe to Austria this wonderful rejuvenescence of yours. Steinach is not an American" (321). Hohenhauer not only stirs Mary's sense of duty, but will not let Mary hold on to the illusion that a rejuvenated woman is capable of the genuine love of youth: "Do you—*you*—fail to recognize the indecency of a woman of your mental age permitting herself to fancy that she is experiencing the authentic passions of youth? Are you capable of creating life?No, Marie. Your revived glands have restored to you the appearance and strength of youth, but...you have no more illusion in your soul than when you were a withered old woman in Vienna" (321). Finally, speaking of an old mutual acquaintance who has taken the treatment, Hohenhauer says dismissively: "She is still forced to employ artifice, but she has lovers again, and that is all she did it for. Vienna is highly amused. No doubt all women of her sort will take it for no other purpose. But many of the intellectual women of Europe are taking it, too—and with the sole purpose of reinvigorating their mental faculties and recapturing the physical endurance necessary to their work" (325). Hohenhauer here very clearly distinguishes between respectable and non-respectable reasons for seeking rejuvenation; Mary's decision to leave Lee and return to Austria with

Hohenhauer marks her—and Atherton’s—endorsement of this distinction. Thus, despite the love story that has been the focus of the novel, it is ultimately “revealed” to Mary, and to the reader, that the possibility of rejuvenated love is nothing but an illusion; she can reproduce neither children nor the amours of youth. She can, however, in an intriguing version of biological citizenship, serve Austria. It is, in the telling words of one reviewer, “an *honest* but not a ‘happy’ ending” (Boynton my emphasis).

As with the implications of rejuvenation for masculinity, here, too, we get a feminine version of the proper sort of “productivity” which rejuvenation might restore. For women, productivity was often equated with *reproductivity*, and here glandular rejuvenation found a sticking point. While quacks like John Brinkley may have claimed their gland transplants could restore women’s reproductive functions, the “legitimate” rejuvenators acknowledged that their treatments could do nothing to make post-menopausal women fertile once more. For men, in general, if rejuvenation affected their reproductive capacities, it was intended to improve these capacities, as the quacks made blatantly clear. Even though the Steinach operation (a vasectomy) rendered men sterile, this was usually only done on one side of the vas deferens at a time; a male who had received only one Steinach operation could therefore still be fertile. For women, however, reproductivity could not be restored past menopause, and the x-raying involved in the Steinach treatment would more likely make a woman sterile if she had not been before. The idea of reproductivity was important, however, in assessing the value and place of rejuvenation as a practice. Atherton makes this clear when she gives to a very respectable, albeit somewhat jealous, young woman the following lines to deliver to Lee Clavering: “She [Mary] has regained the appearance—and—*possibly*—the real feeling of youth, with all its capacity for enthusiasm and unworn emotions....but the

whole thing is made farcical by the fact that she can never have children. And what else does youth in women really mean?" (223). Mary, as a rejuvenated woman and our heroine, is *not* farcical, but the book makes it clear that she indeed risks this if she chooses to pursue love and romance with Lee. Moreover, because of the impossibility of reproductive function, rejuvenated women—if they should pursue romance—are portrayed as a threat to the social order. Upon learning of Mary's rejuvenation at a luncheon, one of the ladies remarks: "I don't suppose any of us would mind if you didn't look younger than our daughters" (143), implicitly suggesting here that the real fear—as figured in Mary's relationship with Lee Clavinging—is that Mary will marry one of their sons. The underlying threat is the interruption of the social order; their good sons will not have any progeny to carry on the line.

In place of reproductivity, Atherton's novel makes clear to her wide readership that women who seek rejuvenation should aspire to other models of productivity: to service for the state such as Mary chooses when she leaves with Hohenhauer, or to service of society for those women whose intellectual talents and charitable energies might be renewable. This is certainly the frame through which Atherton presented her own decision to take the Steinach treatment, with her mode of service being the production of novels for the populace. In her memoirs, she describes a "sterile period" where she had no ideas for a novel on her mental horizon; she was "in perfect health... but [her] mental dynamo refused to tune up" (Atherton Adventures of a Novelist 553-4). At this point, she read a newspaper article about the famous Viennese orthopedic surgeon Dr. Lorenz, who had lost his wealth, his practice and his health in the war. Originally a skeptic of rejuvenation, he eventually underwent the Steinach operation and then moved to New York, where he now "sometimes worked fourteen hours a day, and

hardly knew what it was to feel fatigue” (556). When the paper mentioned that a former associate of Steinach, Dr. Harry Benjamin, was now practicing in New York, Atherton knew she had both the solution to her writing block and the theme for her next novel. After X-Ray treatments three times a week, eight in all, Atherton recalled a month where her “brain was torpid” and she slept “sixteen hours out of twenty-four,” and then: “Torpor vanished. My brain seemed sparkling with light...I wrote steadily for four hours... It all gushed out like a geyser that had been ‘capped’ down in the cellars of my mind, battling for release” (558). She composed her novel in an unprecedented short span of five months, followed with five more novels in rapid succession, and claimed that her “renewed mental vitality and neural energy [had] never been affected” (562).

It is this mental fecundity, and the physical vigor to apply oneself to one’s work like Dr. Lorenz, that Atherton promoted—both in her interviews and in her novel—as the reason one should pursue rejuvenation. Commenting on the field of “reactivation” in 1939, Atherton was still insisting that the senescence, weariness and memory loss of once brilliant persons was “the real tragedy of age; not the loss of potency, such visibilities as white hairs and wrinkles” (Atherton “Second Youth” 17). Moreover, she suggested that the public concurred. In describing the “avalanche of letters that followed the publication of *Black Oxen*,” she noted that “women seldom expressed a desire to take the treatment from motives of vanity. Hard mental or physical work had worn them out, illness, grief, worry. All they asked was renewed energies—most of them were self-supporting—that they might be as efficient as in their prime” (Atherton “Second Youth” 20).

Atherton, who was 65 at the time of treatment, mentions nothing in her memoirs about changes in her own appearance resulting from the procedure. Mary’s dramatic

change in appearance is a fictional device that—by offering Mary a field of much more tempting choices—allows Atherton to illustrate more clearly the uses to which rejuvenation should and should not be put. Interestingly, as much as Atherton tries to insist that the desire for increased usefulness and mental function can be entirely independent from the desire to *look* young again, these potential motivations become complexly mixed within *Black Oxen*. For example, in proposing to Mary, Prince Hohenhauer explains that he did not propose to her earlier (before her rejuvenation) because she could not “have been of the same service to [him].” “Even if your fatigued mind had been refreshed, by your stay in Hungary, you had lost the beauty and the energy, the power of ardent interest in the affairs of state, which have now been restored to you” (323). While Mary’s energy and interest are essential to the power she might wield, so, too, Hohenhauer suggests, is her beauty. As much as Atherton wishes to show a “pure” version of women’s motivations for rejuvenation—one that is about mental power and political agency, rather than sex appeal and appearance—the product of her own fecund mind undermines this effort. A 1924 article in *Time* magazine follows suit; the article notes that the majority of Dr. Benjamin’s patients are “school teachers and nurses who feel the need of renewed energy to carry on their work,” but then follows that sentence immediately with the observation that “In many cases hair which turned gray is supplanted by hair of the original color.” One might draw from these examples the conclusion that in the public imagination, energy and efficiency were inextricably associated with youth, and youth for women was inextricably associated with beauty and sexuality.

This was perhaps especially true in the roaring twenties amidst the “sexual liberation” of the flappers. And while Atherton may not be able to separate youth from

beauty and sexuality, she does at least, through her novel, authorize a certain ideal version of youth while discounting others. In keeping with the “youth culture” of the twenties, youth is prominent within *Black Oxen*; Clavering declares in the opening pages: “The world was marching to the tune of youth, damn it” (3). Clavering and Mary (still Madame Zattiany at this point) discuss in detail how “the whole country has gone crazy over youth,” including the ironic observation from our heroine that “even in the best authors I find nearly all of the heroines too young” (44). The roundest, and certainly the most vivid, of the younger characters in the book is Janet Oglethorpe, granddaughter to Jane Oglethorpe. Through her caricature of Janet, the flapper, described by one reviewer as “one of the best portraits thus far achieved within the type,” Atherton expresses rather traditionalist criticism of the day’s youth (Boynton). Janet is described within *Black Oxen* as “a greedy child playing with life,” an “odious brat” with “truly atrocious manners,” a “little vulgarian,” and as being “detestable in her flapperhood.”⁵² Clavering compares Mary to Janet: “They didn’t breathe the same air, nor walk on the same plane. Who, even if this little fool were merely demi-vierge, would hesitate between them? One played the game in the grand manner, the other like a glorified gutter-snipe” (101). Janet is not the ideal woman or girl; rather, the ideal is the energy and potential that Janet represents, harnessed by a mature wisdom. This was surely the meeting ground of desire for traditionalists and progressives in confronting the “problem” of youth in the twenties; if only that raw power of youth could be constrained by the accumulated experience and acumen of the traditional social order. An article in *Time* the following year made much the same point: “I’ll admit that I do not care for the flapper

⁵² See, respectively, pages 99, 101, 109 and 106.

grandmother; but the dignified preservation of a youthful viewpoint cannot be questioned. The wisdom of age combined with the enthusiasm of youth and a tolerance which is characteristic of no time of life but is, perhaps, a God-sent gift somewhat akin to second sight, is a state of bliss for anyone to contemplate" (F.). Rejuvenation, as portrayed by Atherton, offered to the public imagination a solution to both the "problem of age" and the "problem of youth" in one fell swoop.

It was an appealing solution. Even the magazine columnist who condemned Atherton's book as being on "the brink of the ridiculous" conceded, "Nevertheless, I suppose *Black Oxen* will turn a lot of women's minds towards Vienna" (Warwick). It did. The public speculated about whether Atherton herself had or had not taken the treatment.⁵³ In her memoirs, Atherton recalls how "women from all over the English-speaking world wrote to me wanting to know if my book were a fairy-tale or if it were really true they might hope to renew their youthful energies" (560). Feeling as though she "had 'started something,'" she "answered all of them," recommending the New York physician from whom she had sought treatment: "Poor Dr. Benjamin! I nearly ruined him! Women besieged him, imploring him to give them the treatment free of charge or at a minimum price. It was the first time they had seen a ray of light in a future menaced with utter fatigue and the clutching of younger hands at the jobs that were wearing them out" (560). Rejuvenation had become a fad, suggested the *Los Angeles Times*, reporting that "more than seventy New York women, some of them well known in society, on the stage and in the arts, [had] recently had the rejuvenation treatment that was the basis of Gertrude Atherton's 'Black Oxen,'" additionally, word of the treatment

⁵³ "Has Gertrude Atherton or hasn't she? New York's eternal question..." opened one 1924 article. Mrs Anonymous, "Boudoir Mirrors of America" *Los Angeles Times* May 25 1924.

was “being whispered around from mouth to mouth” and women were “taking [it] in increasing numbers” (“Rejuvenation Lure Is Fad”).

Thanks largely to Atherton’s novel and the subsequent film based on it, the glandular rejuvenation fad in 1920s America reached out to women equally as it did to men, offering them its complicated promises of restored energy, beauty and sex appeal. Where the discourse surrounding glandular rejuvenation posited masculinity as the firm province of youth, and thus old age as a time of demasculinization, it was not made quite so clear whether or not aging signaled the loss of femininity. Feminine “virtues” still included nurturing motherhood and selfless servitude, and while loss of energy might affect these, they were not inherently threatened by advancing age. However, other aspects of femininity—specifically sexuality, beauty and fertility—were explicitly associated with youth in this decade of flapperdom. Aging was undoubtedly seen as a threat to these qualities, and although it may not have been socially acceptable to seek rejuvenation in order to preserve one’s feminine allure, it was nonetheless understood both that the desire to retain these qualities was a common and natural one, and that glandular treatments could offer limited restoration of them.

Just as Atherton was not wholly able in her narrative to separate rejuvenation from a quest for restored beauty and sexuality, so too within the public imagination did glandular rejuvenation for women become interestingly tied to the new practice of face-lifting. New techniques for reconstructive surgeries of facial wounds during World War I contributed to the growth of plastic surgery as a medical specialty in the post-war years. As summed up by Max Thorek, a surgeon noted for his forays into both glandular rejuvenation and aesthetic surgery: “If soldiers whose faces had been torn away by bursting shell on the battlefield could come back into an almost normal life with new

faces created by the wizardry of the new science of plastic surgery, why couldn't women whose faces had been ravaged by nothing more explosive than the hand of the years find again the firm clear contours of youth?" (Thorek 164). Like rejuvenation, plastic surgery was making news in the 1920s; "Americans learned...about Fanny Brice's nose job and the alleged face-lifts of the Dowager Duchess of Rutland and her daughter, Lady Diana Manners" (Haiken 12). Gertrude Atherton, as Sander Gilman points out in his book on aesthetic surgery, presents glandular rejuvenation as a solution that circumvents any need for plastic surgery (S. L. Gilman 302). Describing the sensation within the fictive world of *Black Oxen* caused by the public revelation of Mary's rejuvenation, Atherton writes: "Beauty doctors gnashed their teeth, and plastic surgeons looked forward to the day when they must play upon some other form of human credulity" (215). Despite this, journalistic discussions of *Black Oxen* described glandular rejuvenation and face lifting as parallel endeavors, lumping these different versions of restoring youth into a similar category.⁵⁴ By 1935, a reporter could speak of "the very latest younger generation, who regard rejuvenation, face-lifting, reactivation and the other names given to physical rehabilitation by scientific aid as almost household words" ("Writer Rejuvenated at 78!"). What is important to note here is how rejuvenation/reactivation and face-lifting were associated through the category of "physical rehabilitation by scientific aid." This was a relatively new area of knowledge: the scientific restoration of the functionality and/or the appearance of youth. The discussions linking such practices as face-lifting and glandular rejuvenation were both contributing to, and arising from, a popular and quite familiar narrative of (anti-)aging that

⁵⁴ See, for example, Anonymous, "Boudoir Mirrors of America" ; and "Writer Rejuvenated at 78!" The Washington Post Dec 8 1935.

was taking on a distinct new form in these first decades of the twentieth century: the quest for the fountain of youth rewritten as a story of scientific discovery and progress.

From Myth to Medicine: The Scientific Fountain of Youth

Legends of Ponce de Leon's search for the fountain of youth have circulated in Western culture since the early 16th century. These legends, in turn, have been traced back to ancient origins in stories of the Hindu Pool of Youth and the Hebrew River of Immortality, dating back to 700 BC and to Biblical times respectively (Gruman *A History* 35-7). The fountain of youth theme has surfaced in the writings of ancient Greeks and Romans, in Arabic legends of el Khidr, and in the twelfth-century *Romance of Alexander*, among others; "by the time of Ponce de Leon, the fountain-of-youth idea must have become familiar to everyone in Western Europe" (Gruman *A History* 38-9).⁵⁵ Although narratives of the fountain-of-youth—and I am using this category loosely to denote not just the idea of miraculous waters, but the discovery of any substance with the property of significantly prolonging life—have circulated in popular culture throughout the centuries, in the early twentieth century, these narratives took on a new form.⁵⁶ The

⁵⁵ In tracing *A History of Ideas About the Prolongation of Life*, historian Gerald Gruman categorizes several types of longevity legends—or legends about the quest to prolong life—of which the "fountain theme" is only one subset. The other themes Gruman identifies are the Antediluvian Theme (the theme that people lived much longer in the past, such as the biblical patriarchs) and the Hyperborean Theme (the idea that in some remote part of the world there are people who enjoy a remarkably long life, such as the Celtic's legend of the earthly paradise known as *Tir na nOg*).

⁵⁶ I borrow this definition of fountain-type legends as those which describe the discovery of a substance with the property of significantly prolonging life from Gerald Gruman. He suggests that the "substances" in question might be substances with divine properties (which often exist in the hazy area between the natural and supernatural), substances with magical qualities, or substances with empirical qualities (which, existing in nature, have been "found to work"). Gruman, *A History* 39-40. Based on the ubiquitousness of the idea of the fountain of youth in our popular culture, and based particularly on the essential idea of the fountain—the idea that some discoverable substance might be capable of prolonging life—I believe the fountain theme is the obvious point at which longevity legends intersect with the scientific quest to "cure" the disease of aging. The fountain theme invokes the ideas of quest, discovery and application, which neatly mirror the processes of scientific experimentation.

scientific investment in “curing” aging of the early twentieth century, and the glandular rejuvenation fad in particular, generated a new version of the “scientific” fountain-of-youth narrative that has become very familiar to us today.

The most obvious novelty to this narrative was that the quest for the fountain of youth was now understood to involve not an expedition to exotic lands or the discovery of rare flora, but rather an empirical search through the bodily tissues and systems conducted in the laboratory. Restored “youth” was no longer a miracle; it was measurable and manipulable. More subtly, and more importantly, however, this new narrative of the scientific fountain of youth espoused a different relationship between man and nature, and adopted a very different tone. Many traditional versions of the fountain of youth tale or other prolongevity legends share an apologist tone; that is, they ultimately promote the idea that extending one’s life and/or youth is neither possible nor desirable, and that human action should not seek to alter earthly conditions (Gruman A History 9). In *The Legend of Gilgamesh*, Gilgamesh’s rejuvenation-giving plant is stolen by a serpent and Gilgamesh is forced to accept the inevitability of death. In Greek mythology, the goddess Eos asks Zeus to grant her mortal lover Tithonus eternal life, but Tithonus is not granted eternal youth and thus lives eternally in decrepit old age, once again pressing the point that it is unnatural and dangerous for mortals to attempt to evade death. Ponce de Leon’s infamous quest is, of course, not only unsuccessful, but is also frequently depicted as the foolhardy expedition of a senile old man looking to cure his sexual impotence.⁵⁷ These varying versions of a fountain of youth narrative function as moral stories: they tell human beings that only harm will come from interfering with

⁵⁷ This sort of account, for example, surfaces in the writings of Hernando d’Escalente Fontaneda and Gonzalo Fernández de Oviedo. See Gruman, A History 36.

nature, and they have no choice but to come to terms with their aging and mortality (while at the same time these narratives are generated by the very hope of denying those realities).

The explosion of glandular rejuvenation in the popular imagination of 1920s America in many cases emerged with the same apologist veneer as traditional fountain of youth legends. The film *Blind Bargain* (1922) is a classic example, where the mad scientist who tries to prolong man's life and create a superior human being by transplanting ape tissues—transgressing not only natural mortality and the limits of humanity, but also the human/animal divide—dies at the hands of the beast man he has created. In the same vein, Sir Arthur Conan Doyle wrote a Sherlock Holmes story, “The Adventure of the Creeping Man” (1923), featuring an aging professor, engaged to a young lady, who attempts rejuvenation using the “serum of a langur” (a large, climbing monkey) and suffers brutish changes in behavior which lead to his near fatality. Conan Doyle makes his moral clear through Holmes' voice: “When one tries to rise above Nature one is liable to fall below it. The highest type of man may revert to the animal if he leaves the straight road of destiny” (Conan Doyle 70).⁵⁸ Gayton's *The Gland Stealers* (1922) also explicitly adopts this apologist tone: “Why had we tried to patch up and renovate Nature's old masterpieces?,” George asks referring to their attempted gorilla transplant rejuvenations of the old men (311). As a result of this folly, “Old age did not creep stealthily upon [the old men], as Nature normally arranged; it overtook

⁵⁸ Holmes reinforces the undesirability of this new type of science by framing it as a “danger to humanity:” “When I have written to [the scientist providing the serum] and told him that I hold him criminally responsible for the poisons which he circulates, we will have no more trouble. But it may recur. Others may find a better way. There is danger there — a very real danger to humanity. Consider, Watson, that the material, the sensual, the worldly would all prolong their worthless lives. The spiritual would not avoid the call to something higher. It would be the survival of the least fit. What sort of cesspool may not our poor world become?” (70).

them by leaps and bounds” in a horrifyingly rapid aging-as-punishment that echoes Oscar Wilde’s *The Picture of Dorian Gray* (1891).⁵⁹ Interestingly, all of these particular examples share two notable characteristics. First, they are inspired by the idea of Voronoff’s gland transplants, not Steinach’s non-invasive methods. As such, those attempting xenographic transplants or treatments are transgressing the natural order two-fold, both by both attempting to defeat mortality and by profanely mixing human and animal. Second, unlike Ponce de Leon’s fruitless quest, these stories uniformly assume that, at least to some degree, these therapies actually *do* work. The apologism surfaces in the transgressions against the natural order involved in the procedures; it does not assume the procedures themselves or the goal they seek is futile. And thus, even in these apologist stories, we begin to see a shift in the fountain of youth narrative; the extension of life becomes a “real” possibility, but is it a desirable one?

Both *Black Oxen* and Gertrude Atherton answered that question with a resolute yes. At the same time, they promoted a different attitude toward the relationship between human endeavor (exemplified by science) and the natural order. It was no longer a transgression of nature to seek to prolong life; instead, it was now only natural that science would and should come up with a solution to the problem of aging. Mary is the character in *Black Oxen* who makes this argument most strongly. When Mrs. Ruyler, one of the society matrons who have just learned of Mary’s rejuvenescence, interjects that she doesn’t believe in “interfering with the will of the Almighty,” Mary responds: “Then why hire a doctor when you are ill? Are not illnesses the act of God?”

⁵⁹ Other worldly works of fiction with plots wholly or partially inspired by the glandular rejuvenation craze that adopt this apologist tone include Mikhail Bulgakov’s *A Dog’s Heart* (1925) and Dorothy Sayer’s *Unpleasantness at the Bellona Club* (1928).

They certainly are processes of nature” (143). Moving smoothly from a suggested transgression of divine will to a transgression of the natural order, Mary argues that such “transgressions” are only a matter of convention: “Is it merely that you are so accustomed to the convention of calling in a doctor that you have never wasted thought on the subject? But is not medicine a science? When you are ill you invoke the aid of science in the old way precisely as I did in the new one. The time will come when this treatment I have undergone will be so much a matter of course that it will cause no more discussion than going under the knife for cancer—or for far less serious ailments” (143). Through this line of reasoning, Mary suggests that rejuvenation seems transgressive only because it is new.⁶⁰

The logic of Mary’s claims both relies upon, and reinforces, the supposition that aging is an illness. Throughout the novel, Atherton makes a point of portraying aging as a solely physical process: “People growing old are condemned for prejudice, smugness, hostility to progress, to the purposes and enthusiasms of youth; but this attitude is due to aging glands alone, all things being equal. They *cannot* dig up the sunken tracks from the ruts in their brain and lay them elsewhere” (140). Mary certainly understands her own aging experience as an entirely biological phenomenon. Speaking of her mental lassitude before the treatment, she had “thought that [her] condition was psychological,”

⁶⁰ Atherton makes this exact same point in her memoirs. Speaking of those who stand in the way of scientific progress, she writes: “Steinach had suffered from this tribe in Europe. As long as he confined his experiments to rats and guinea pigs, and was unknown save as a distinguished biologist, he was an admirable and original scientist, but when he restored vital energies to human beings and became famous overnight, he not only aroused the jealousy of his confreres...but clergymen thundered that to interfere with the processes of nature was an insult to Almighty God, and saw to it that he was denied the Nobel Prize. If he had condescended to answer he might have asked why did these righteous men call in a doctor when they were ill, take tonics for failing energies, have old teeth replaced with new, put delicate babies in incubators, favor operations for cancer, and palliatives for the diseases of old age? All of which might be regarded as interfering with natural processes and the will of Almighty God. A doctor is always fighting these ‘natural processes,’ even to keeping aged patients alive far beyond the Biblical span, and frowned upon when he fails too often.” Gertrude Atherton, *Adventures of a Novelist* (New York: Liveright, Inc., 1932) 561-2.

but she knows now “that the condition was physical, the result of the degeneration of certain cells” (174). Even the crankiness ascribed to old people, Mary asserts, is caused by “atrophying glands” (176). With aging established as a now readily understandable biological phenomenon, Mary can present as entirely obvious the conclusion that science should seek a biological solution, just as it has in so many other cases:

‘Science has defeated nature at many points. The isolation of germs, the discovery of toxins and serums, the triumph over disease that once wasted whole nations and brought about the fall of empires, the arrest of infant mortality, the marvels of vivisection and surgery—the list is endless. It is entirely logical, and no more marvelous, that science should be able to arrest senescence, put back the clock. The wonder is that it has not been done before.’ (176)

Nature, in this presentation, is no longer sacred or divine; rather it is something in need of correction, a foe we must “defeat.” By placing the potential defeat of aging alongside the arrest of infant mortality and the marvels of surgery, Mary emphasizes that aging is not just biological change, it is pathologic disease. Aging is not nature’s will; rather, it is nature’s “dirty trick” (196). By unsettling the idea that aging is part of the “natural order,” and buoyed by Progressive Era faith in the power of science to rightly correct nature’s (and society’s) ills, it becomes “entirely logical” that science should work to cure aging.

In fact, as both Mary and Atherton argue, it would be wrong-headed *not* to pursue the scientific conquest of aging. Atherton speaks most strongly to this in her memoirs: “We live in an age of scientific marvels, and those who do not take advantage of them are fools and deserve the worst that malignant Nature can inflict upon them” (Atherton Adventures of a Novelist 562). Interestingly, Atherton—both in her own words and through Mary—portrays the “foolishness” of disdaining “scientific marvels” as a particularly American fault. In *Black Oxen*, Mary is surprised that the women to whom

she reveals her story have not heard of the treatment, but then explains their ignorance away as the symptom of a larger, national reluctance to accept the progress of science: “I have been told that America never takes up anything new in science until it has become stale in Europe” (135). Mirroring this fictional moment, Atherton herself is surprisingly vehement in her memoirs when she discusses the skepticism expressed toward glandular rejuvenation by parts of the American public:

But, of course, anything so radical was bound to meet with disapproval in a country which dismissed professors for teaching the doctrine of evolution. The world, and the great and free United States in particular, is full of narrow-minded, ignorant, moronic, bigoted, cowardly, self-righteous, anemic, pig-headed, stupid, puritanical, hypocritical, prejudiced, fanatical, cocoa-blooded atavists, who soothe their inferiority complex by barking their hatred of anything new. The very word Science is abhorrent to them, and, if they ruled the world, progress would cease. (561)

There is more at stake here than just the approval or disapproval of scientific rejuvenation. Atherton is railing against those who would set the United States off of its proper course—the course of Science and Progress wherein anti-aging is pro-evolution of a powerful, vigorous nation state. It is not surprising that in 1924, Atherton made headlines by suggesting that “Germany will again make herself predominant by having her supermen subjected to the Steinach treatment.”⁶¹ In Atherton’s mind, as within the representations she put before the public, supporting rejuvenation and supporting nation-building were one and the same effort.

In this sense, scientific rejuvenation was one element of a larger vision of Science as the solution to a whole host of social ills; it was not only parallel to things like the eugenics movement, but a tool for them. As Julie Prebel notes, “Rejuvenation

⁶¹ See “Mrs. Atherton Causes Amusement in Berlin” New York Times Apr 6 1924; and “Plan to Revitalize Teutonic Superman Amusing to Berlin” The Washington Post Apr 6 1924.

discourse emerged in the 1920s and 1930s as another solution for social decline, but Steinach's treatment, rather than focusing on birthrates and breeding, offered a way to *restore* the 'fittest' stock to physical and mental health." (Prebel 308). This is certainly the vision of scientific rejuvenation—applied on a grand scale—espoused within *Black Oxen*. Atherton uses Lee—who has just learned of Mary's treatment—to speculate about what glandular rejuvenation writ large might mean for the United States, or for humanity:

It might be the greatest discovery of all time, but it certainly would work both ways. While its economic value might be indisputable, and even, as [Mary] had suggested, its spiritual, it would be hard on the merely young. The mutual hatreds of capital and labor would sink into insignificance before the antagonism between authentic youth and age inverted. On the other hand it might mean the millennium. The threat of overpopulation—for man's architectonic powers were restored if not woman's; to say nothing of his prolonged sojourn—would at last rouse the law-makers to the imperious necessity of eugenics, birth control, sterilization of the unfit, and the expulsion of undesirable races. It might even stimulate youth to a higher level than satisfied it at present. Human nature might attain perfection. (180)

Atherton, via Lee, notes the dangers inherent in scientific rejuvenation—of generational warfare, of overpopulation, of the "wrong sort" of people receiving treatment—but also advocates its great promise. Taking this step down the road of Science as Progress would reveal "the imperious necessity of eugenics," and by bringing this necessity to realization, might lead to the perfection of human nature. This rather grandiose vision was one Atherton championed both in her fiction and through her public persona.

Julie Prebel reads *Black Oxen* as effecting "a conversion of the American public to a belief in the promises of scientific rejuvenation" (309). Certainly, when Lee Clavering states that "There was no precedent in life or in fiction to guide him" as he reacts to Mary's revelation, it is evident that Atherton is self-consciously setting this precedent for the American public (177). In the precedent she establishes, the quest for

the fountain of youth stands squarely beneath the mantle of scientific legitimacy. Time would show that this position was a tenuous one, and the quest for rejuvenation—or at least the practice of glandular rejuvenation—would lose much of its scientific legitimacy in the 1930s. However, while the practice of scientific rejuvenation may have found only provisional acceptance, the narrative of the quest for the fountain of youth was firmly established in its new form. Gone was any veneer of apologism. It was now not only desirable, but logical and even “natural” that science should correct nature’s mistakes and cure the disease of old age. Within this new narrative, the search for the scientific fountain of youth was driven not only by the age-old desire to evade old age, but also by a deep faith in science as the route to progress, a re-writing of humankind’s (and science’s) relationship with nature, and a vision of building better and brighter national citizens.

The scientific community recognized this novel form of the traditional narrative and took Atherton’s fictional story as evidence of the scientific revolution they were bringing about. In his book introducing the successes of the Steinach operation to the lay population, Paul Kammerer compared the idea of rejuvenation to that of evolution. After opening with a brief nod to the impact of the idea of evolution on “all the other realms of human knowledge and accomplishments,” Kammerer announces that we are once again at the beginning of a similar paradigm shift in which “the idea of rejuvenation—germinating from the theory of evolution to which it is closely related—is...in spite of all opposition, forging ahead on the road to victory” (Kammerer vii). As evidence for the realization of this new paradigm, he points to Atherton’s novel:

What seems farther removed from applied science than the fine arts? Nevertheless, shortly after Darwin’s imposing appearance, literature developed a distinctly new form in the so-called Evolution Novel. Exactly analogous to what happened then, our present time has brought forth the

Rejuvenation Novel of which Gertrude Atherton's remarkable book, "Black Oxen," is an example within closest reach.(Kammerer viii)

While the Rejuvenation Novel may have been a relatively short-lived form, the scientific rejuvenation narrative continues to circulate to our present day; Atherton's novel is, in fact, both example and expedient of that narrative shift. Glandular rejuvenation was instrumental to the development of that new narrative, inspiring in the public imagination the possibility of social, political and scientific revolution. And for a while in the 1920s at least, it inspired genuine hope in a significant portion of the American public that the fountain of youth was now a scientific reality. Even as the revolution fell short and failed miserably in the 1930s, the narrative of the scientific fountain of youth and the hope inspired by glandular rejuvenation had lasting consequences.

Into the Twilight

By the late 1920s, fervor for glandular rejuvenation was beginning to flag. In part, this was because many of those who had received glandular rejuvenation treatments were themselves beginning to flag. Newspaper headlines reported that "new glands last only [a] few years," and that gland operations could provide only "transient regeneration" and "temporary effects."⁶² Both Steinach's and Voronoff's methods were picked apart and discredited by "eminent physicians;" it was argued that vasectomies had never produced—before or after Steinach—any rejuvenating effect, and that monkey gland grafts could only fail because glandular tissue from animals could not

⁶² See "New Glands Last Only Few Years" Los Angeles Times Jan 22 1928; "Declare Rejuvenation Still Baffles Science" New York Times Jan 22 1928; and "New Old-Age Check Found" Los Angeles Times Jun 9 1929.

survive when transplanted to human beings.⁶³ Alexis Carrel definitively stated in 1931: "It goes without saying that no senescent organism has ever been rejuvenated by the procedures of Steinach and Voronoff" ("Carrel Is Dubious"). Ever the vocal critic Morris Fishbein wryly observed that "those wishing for renewed youth suffer inordinately with the will to believe" ("Dr. Steinach Dead; Gland Authority").

With the phenomenon of rejuvenation dismissed as a placebo effect, the medical and scientific establishment next went after the rejuvenators themselves. One lengthy exposé of the "miracles" of glands presented condemnatory evidence from many scholarly journals and scathing quotes from such well-known physicians and scientists as Max Thorek, C. P. Snow, and Alexis Carrel addressing the efficacy of rejuvenation science and the failure of the rejuvenators to "submit to the rigid code followed by every ethical scientific observer and reveal [their] human clinical findings to competent authority for investigation" (Strongin 242). Despite the fact that glandular rejuvenation was in part inspired by Alexis Carrel's work in tissue culture, Carrel was particularly outspoken in criticizing the rejuvenators for failing to scientifically verify their results ("Charting the Course"). Although few if any called men like Steinach or Voronoff quacks, they were quick not only to criticize the rigor of their research, but also the manner in which they brought that research to the public:

The sensationalism of Voronoff's and Steinach's announced discoveries...captured the imagination of the press and won a public eager to believe it could grow old youthfully. It was equivalent to a 'gold strike' to the charlatan and the twilight-zone man. Knowing that it is the essence of publicity to keep people talking about the subject you want to interest them in, they immediately set about getting favorable publicity. A mountain of ballyhoo was created out of a molehill of dubious clinical

⁶³ For a lengthy discussion of the failures of these methods, see Herman F. Strongin, "Can We Postpone Senility?: 'Miracles' in Glands" Forum and Century Apr 1936.

facts. The very candor of scientific medicine has aided the charlatan, because, where the scientific physician admits his inadequacy, the charlatan is most positive. (Strongin 239)

Perhaps even more than the legitimacy of scientific rejuvenation, the fall of glandular therapy was about the right and wrong way to do science. Whether the blame was to be thrown at the rejuvenators themselves, or at the sensational nature of their work, Voronoff, Steinach and their brethren had simply gotten it wrong.

As glandular rejuvenation fell out of favor, belief in the possibility of scientific rejuvenation wavered as well. Critics evoked alchemy and Ponce de Leon to put glandular rejuvenation on the level of historical curiosity: "The search for the elixir of youth is as old as human history and modern scientists who have sought to rejuvenate the aged by such means as equipping them with 'monkey glands' have met with no more success than the ancient Egyptians and Romans who tried it with their weird rites and strange potions" (Talley). In place of scientific rejuvenation, these skeptics returned to the importance of heredity, of hygiene and lifestyle, and of "not deserting your ideals of youth...keeping up your confidence in life, your hopes, imaginations, and curiosities" (by). In other words, they revisited the time-worn aphorisms of "right living," tinged with the flavor of eugenics.

Nevertheless, proponents of scientific rejuvenation continued to circulate optimistic announcements of new possibilities, speaking back to their critics. Professor Theodor Bauer of Vienna announced a new method of glandular rejuvenation in 1929 and the newspapers grabbed eagerly at it (if with dismal syntax): "The fact that a noted pathologist and professor like Dr. Bauer, who is chief surgeon in one of the leading hospitals of the city himself, vouches for each detail, that this particular operation is no longer guess work, which characterizes rejuvenation treatments by other eminent

surgeons, makes it even more important to science" ("New Old-Age Check Found"). Steinach and Voronoff, too, kept their names in the headlines long past their heyday. In 1936, Steinach announced the results of new experiments which he said "held out definite hope for effective rejuvenation" ("Aging Is Reversible"). That same year, Voronoff announced that in the future, man would live to "the ripe old age of 140:" "Today's dotards of 70 will be mere striplings in tomorrow's world" ("Voronoff Says Life Span"). And thus, despite criticism from many within the scientific and medical communities, the narrative of the scientific fountain of youth continued to circulate hopefully within the popular imagination: "Must [man] die? No, the new bioscience whispers, he need not" (Newman). In words eerily reminiscent of contemporary discussions of stem cells and regenerative medicine, a 1937 article discussing Nobel Prize winner Hans Spemann's work on embryonic induction predicted:

Granted that our ability to keep human tissues alive and proliferating in laboratory cultures has progressed apace, by 1987 we may be haltingly inducing the emergence of mere portions of human organs—perhaps, say, out of cancerous tissue and still (of course) only in the 'test tube.' By 2037, we may have whole eyes or spleens assuming shape and ready for transplantation into injured humans. Then also we should be beginning to find how to renew the growth of defective or aging organs—activate their repair while in the very body. (Newman)

Even if glandular rejuvenation was but a passing fad, the imaginative possibilities of scientific rejuvenation remained strong and compelling.

And glandular rejuvenation did not pass as thoroughly as one might think. By the 1930s, gland science was shifting to a new level—hormone science. Voronoff and Polish Biochemist Casimir Funk announced in 1929 that they had isolated the male hormone, although the isolation of testosterone is more generally credited to a team of Dutch scientists headed by Ernst Laqueur in May 1935 (Shaplen). Testosterone was first synthesized in August of that same year, earning Adolf Butenandt and Leopold

Ruzicka the joint Nobel Prize in Chemistry in 1939. Estrogen was isolated even earlier, in 1929, and progesterone was isolated in 1932 (Houck 21). The first orally active estrogen, branded Emmenin, was marketed in the United States in 1934 (Houck 22). Thus, by the mid-1930s, it was possible not only to readily measure the presence of hormones as an empirical support for arguments about the decline of sex hormones with age, but also to directly administer dosages of these hormones to aging patients. A 1930 article recapping a meeting of the American Chemical Society described numerous experiments that the Society's members had been conducting with glandular secretions; the consensus was that these secretions could and should be directly substituted for the same purposes as gland grafting: "Their experiments have barely touched upon human uses yet, but indicate a field of human application like that of other medicines in curing the sick, alleviating premature age or aiding subnormal youth" (Blakslee). By 1932, Gertrude Atherton, in talking up reactivation treatment to the public, could write: "Sex-gland treatment has been replaced by deficiency-gland treatment....in other words, hormone solutions" (Atherton "Second Youth" 18). Rejuvenation was certainly among the large-scale applications that were envisioned once hormones were successfully synthesized. Shortly after announcing his successful synthesis of testosterone in 1935, Ruzicka told the *New York Times* that tackling aging was first among the "main lines of investigation" he planned to pursue with his discovery: "If [it] proves to be true [that old age is connected with atrophy of the male hormone], we may be able through injections of synthetic hormones to produce some degree of rejuvenation, or perhaps it would be better to say we may postpone old age for some time" ("Slower Aging Seen"). Synthesized hormones opened the door to new and simplified treatment possibilities, but

many of the foundational assumptions behind glandular rejuvenation remained even as the science marched ever onward.

The identification of aging as a “deficiency disease” remained and continues to inflect several prominent theories of aging and to justify hormonal treatments even to the present day. While many contemporary theories of aging are built on the idea of genetically programmed decline or of accumulated damage or wear over time, some theories still operate on the idea that if we can provide the body with the substance(s) in which it has grown deficient, we will have found the scientific fountain of youth. Even the idea of cellular senescence—such as the Hayflick limit which states that after a certain number of divisions, cells will enter a state in which they no longer proliferate and DNA synthesis is blocked—is, in part, a deficiency theory; it is believed that telomerase, an enzyme present in cancer cells that allows cancer cells to proliferate indefinitely, might somehow be harnessed to give normal cells immortality ([Aging under the Microscope](#) 13, 16). Hormonal deficiency certainly remains a prominent theory of aging, and hormone replacement experiments happen in NIH laboratories, just as human growth hormone (hGH) is regularly hawked through e-mail spam. Physician Ronald Klatz, co-founder of the American Academy of Anti-Aging Medicine and author of the layman’s guide on how to *Grow Young with HGH*, wrote in 1997 that hGH was “for the first time in human history,” “the first medically proven age-reversal therapy” (Klatz 15, 315). As Carole Haber points out, Klatz’s claims are hardly as “new” or as “revolutionary” as he would have his readers believe (C. Haber “Life Extension” 515). Voronoff and Steinach would certainly object. Although such “anti-aging medicine” tends to ride the ever fine line between cutting-edge science and quackery, the ever-secure notion that aging is a deficiency disease inspires the sale of billions of dollars worth of nutritional and

pharmaceutical (neutraceutical) supplements every year, promoted by organizations like the Life Extension Foundation.⁶⁴

As with aging, the glandular rejuvenation fad also contributed to a lasting definition of menopause as a deficiency disease. Susan Bell argues that, on the conceptual level at least, the medicalization of menopause—wherein menopause became defined and treated as a disease—took place in the 1930s and 40s (Bell 45). In order for menopause to be labeled a disease, it had to have an identifiable etiology, and this was made possible by the paradigm of sex endocrinology; hormone levels could be measured and menopause came to be understood as the result of hormonal deficiency. With this understanding in place, replacement therapy became the obvious, if not the obligatory, solution, for once menopause was defined as a deficiency disease, its treatment with hormone replacement therapy (HRT) was not only legitimate, but responsible and expected for women (Bell 57). Susan Squire, writing about the confluence of reproductive technologies and rejuvenation therapy in the early twentieth century as linked interventions into the beginning and end of the life span, notes that instead of the grand consequences that people imagined might emerge from rejuvenation therapies, “between 1935 and 1985, society quietly assimilated hormone replacement therapy for women into normal medicine, framed less as a *rejuvenation* strategy than as a ‘treatment’ for the female menopause” (Squier Liminal Lives 160). HRT has been considered standard treatment for menopause for decades, although this

⁶⁴ The Life Extension Foundation—not to be confused with the long-defunct Life Extension Institute—is ostensibly a non-profit organization dedicated “to finding new scientific methods for eradicating old age, disease and death.” It is funded partly by revenues from the Life Extension Foundation Buyers Club and the circulation of its Life Extension Magazine, both of which solely function to “promote, sell and distribute some of the purest, scientifically advanced health supplements on the market.” See <http://www.lifeextensionfoundation.org/> for more on the neutraceutical market.

has been changing within the last six years as large studies have produced controversial findings and as feminists have spoken out against HRT.⁶⁵ And yet while HRT, as Squier notes, is rarely framed as a rejuvenation strategy, it has historically been sold as a way of keeping women “girl-like;” helping them to “retain the face and figure of their child-bearing years, and protect against their aging processes” (Haseltine). This is perhaps most blatantly evident in the book that started HRT’s “heyday,” Robert Wilson’s *Feminine Forever* (1966). Wilson defined menopause as “the stoppage of female sexual functions in middle life,” implying that not just reproductive function ceased with menopause, in *middle* life, but that a woman’s sexuality ceased as well (Wilson 16). As his title suggests, Wilson promoted HRT as a way for women to “remain fully feminine...for as long as they live,” able to retain their “sexual appeal along with [their] sexual vitality throughout later life” (15-6). If aging had at one point not been as closely associated with the loss of femininity as it was with the loss of masculinity, that was no longer the case after the HRT revolution. Aging carried the threat of androgyny for both men and women, and by 1975, estrogens were the fifth most frequently prescribed drug in the United States (Bell 57).

Beyond these lasting understandings of aging and menopause as deficiency disease, perhaps the most crucial legacy of the glandular rejuvenation fervor is that it installed in the public imagination more thoroughly than had any preceding “discovery”—and to a degree that C. A. Stephens could not imagine even a decade earlier—a belief in the promise of a scientific fountain of youth. The narrative of the scientific fountain of

⁶⁵ In response to this controversy, The National Institute on Aging has begun to refer not to Hormone *Replacement* Therapy (HRT) but to Menopausal Hormone Therapy (MHT), indicating that hormone therapy is now associated specifically with the event and “symptoms” of menopause rather than with a long-term strategy for “replacing” deficient hormonal levels in post-menopausal women.

youth remains evident throughout our contemporary culture from discussions of stem cells to the latest discoveries about Alzheimer's disease. The wholesale acceptance of this narrative has had multiple effects. One is that it has conditioned the American public to believe that the cure for old age lies in the next scientific discovery. So believing, we are more amenable to the "latest" health or anti-aging advice. From avoiding saturated fats to avoiding trans fats, from the evils of alcohol to the benefits of a drink per day, from an aspirin a day to an anti-oxidant-rich diet, Americans are primed to preach and practice the latest expert advice. Glandular rejuvenation was most certainly not the first example of scientific faddism, nor even of scientific rejuvenation faddism, but it was a notable event within this history. Edith Wharton's *Twilight Sleep*, penned just a few years after *Black Oxen*, satirizes this pervasive American willingness to invest in whatever new "scientific" cure or treatment comes along, what I call the "culture of the magic bullet" (see Chapter 2). Pauline Manford is a caricature of such a believer; she invests her time and money in a string of faith healers, polices her every wrinkle, considers getting a face-lift, and has a bathroom that looks "like a biological laboratory" filled as it is with the remainders of all the health fads she has adopted in regular succession (Wharton 23). She is, effectively, conducting her own scientific rejuvenation investigation "with her body as the experimental subject" (Zak 117). For Pauline to be a caricature, there has to already exist a "type" recognized enough to be caricatured. Already by 1927 the curious indistinction between rejuvenation science and rejuvenation charlatany had created a culture of acceptance for the next, new rejuvenation fad which remains all too familiar to us today.

A yet more troubling effect of our wholesale acceptance of the narrative of the scientific fountain of youth is the way that this narrative—in promising a scientifically-

discovered fountain of youth as the solution to the “problem” of old age—securely frames the root of the problem as the biological phenomenon of aging itself. Both glandular rejuvenation and hormone replacement depend upon a view of the aging body as a “deficient” body properly belonging to the province of medicine. As Bell notes, the medical model of menopause “risk[s] reducing the problems faced by aging women to biologically determined ones and reinforcing the traditional view of women as biologically different and inferior. Further, the biological model locate[s] the problem and the solution in the individual....Simply put, the biological model individualize[s] women’s experiences” (Bell 54). Similarly, the idea of a scientific fountain of youth, depending as it does upon the idea of a deficient, aging body, reduces the problems faced by aging people to biologically determined ones. As the problem rests in the individual body, so too must the solution, and as Squier notes, the focus of that solution keeps moving “from external to internal fixes, from the macro to the micro, from grafting to gland therapy, to injections, and finally now...to genetic manipulation” (Squier Liminal Lives 161-2).

With our gaze burrowing ever deeper, we locate the “problem” of aging in the bodies of the elderly themselves. Viewing these bodies collectively, we see the problem of aging on national and global scales, in terms of population, economics, health care costs. But the ultimate solution we seek is a solution for that individual body, a “cure” for the biological “problem” of aging. Even the mission of the National Institute on Aging supports this priority, putting the need to understand “aging processes” at the top of their list above “age-related diseases” and “special problems and needs of the aged.”⁶⁶ In individualizing and biologizing the experiences of aging people, we obscure the ways in

⁶⁶ See <http://www.nia.nih.gov/AboutNIA/>. Accessed July 20, 2008.

which aging is also a social phenomenon, a problem “of” the system as well as for the system, arising from the very definitions, ascriptions and associations we give to aging and old age. We place the burden of the failure of old age on the aging individual with such pressure that many aging individuals are all too ready and willing to take any proffered step towards the ultimate solution, searching the headlines and sucking down the neutraceuticals. If Brinkley were alive today, he’d be selling caplets of Horny Goat Weed and goat milk proteins, and he’d be making a fortune.

CONCLUSION

The Scientific Fountain of Youth through the Twentieth Century and Beyond

As Brinkley already knew in the 1920s, the narrative of the scientific fountain of youth has the power to indoctrinate converts, shape scientific research agendas and government policy decisions, and rake in billions—and it has been doing just that throughout the twentieth century and into our own. We may snicker at Brinkley's goat testicle transplants or Pauline Manford's reliance on eurythmic movements and faith healers, but I would submit that injections of neurotoxin into facial muscles, regimens of Human Growth Hormone, "ageless" lifestyle coaching, or any of the other "prescriptions" for youth you might receive at any one of the thousands of "Anti-Aging" Clinics and Longevity Centers across the U.S. are simply more of the same. Americans have avidly pursued the promise of scientific rejuvenation throughout the past century as it has manifested in scientific discoveries, "miraculous" new quack treatments, and brave new lifestyle recommendations.

Scientists today still don't agree on when senescence begins—at birth? age 20? 30? 40?—let alone what causes it. There have been and currently are numerous biological theories advanced to explain how and why we age, and with each new "discovery" about the science behind senescence throughout the twentieth century, the narrative of the scientific fountain of youth has been invoked to describe its importance to the American public. At times this invocation comes from reporters' rhetoric as they distill the science for the lay public; for example, when new vitamins were shown in 1941 to have an effect on the graying of hair, newspapers reported to the public that "Science Foresees 'Fountain of Youth' Tablet" (Lal "Science Foresees"). Sometimes the scientists themselves draw on the trope of the Fountain of Youth to describe their

discoveries. For example, in 1958 when a particular hormone was found to play an important role in the metamorphosis from caterpillar to moth, it was named by scientists the “juvenile hormone” and the “Peter Pan hormone;” this naming prompted the reporter to query: “Can we look forward to a chemotherapy for aging and senescence?” (Laurence "Science: Insect").

Certainly whenever a discovery about the mechanisms of senescence has suggested an obvious countermeasure, it has readily been taken up in further research and has been adopted by the “anti-aging” market as the new “fountain of youth.” For example, the “free radical theory” of aging, first proposed by Denham Harman in the 1950s, has led in recent years to a huge consumer market for products and foods containing anti-oxidants, from pomegranate, acai berry and dark cocoa to skin lotions and even pet foods (Agnvall). Even in the absence of specific discoveries, the public has been kept well informed about new theories of aging, with popular metaphors of the “biological clock,” “wear and tear” of the body, and a “genetic program” for obsolescence widely used to convey to the lay audience how science understands the biological mechanisms of age.¹ These metaphors have taken hold in the popular imagination, and bookstore shelves are full of titles promising to “slow down,” stop,” or “wind back” the clock for “a younger, sexier, happier you,” telling you how to find “super protection” and

¹ Many newspaper articles throughout the twentieth century, for example, have tried to distill “all” of the reigning scientific theories of aging into one article. To offer up just a few examples over a span of years (after the establishment of the National Institute on Aging in 1974, this type of attention to the science of old age became even more common), see Frank Zala, “Science Grapples with Process of ‘Growing Old’ in Hope of Checking It” The Washington Post May 19 1935; G. B. Lal, “Science Begins Investigation of Diseases of Old Age” The Washington Post Apr 12 1942; William L. Laurence, “Science in Review: Heredity’s Role in Aging Process Gives Clues to the Resistance to Disease” New York Times Dec 20 1959; Irving S. Bengelsdorf, “Of Atoms and Men: Science Probes the Mysteries of Aging” Los Angeles Times May 10 1962; Harry Nelson, “Delaying Old Age Seen Science Goal” Los Angeles Times Aug 1 1966; Walter Sullivan, “Can We Control Aging?” New York Times Jul 7 1968; and George Alexander, “War on Aging: Science Fights to Stretch out the Good Years” Los Angeles Times Mar 24 1973.

“prevention” against “wear and tear” through supplements, and revealing how to “break the aging code.”²

Alongside these outgrowths of mainstream science, less “legitimate” scientific discoveries—also boldly promising the scientific fountain of youth—have received plenty of attention in the popular press as well. Many such “fads” focused on the aesthetics of aging, which is surely no surprise given the current ubiquity of Botox, anti-aging creams, and other cosmetic “treatments” for aging. The late 1950s witnessed the hey day of Royal Jelly—“that very special natural substance manufactured...by the worker honey bee and fed exclusively to the queen” bee who is larger and lives longer than the rest of the colony (“Age-Old Secret of Bees”). It appeared in cosmetic products like “Super Royal Cream,” and inspired at least one science fiction B-movie, Roger Corman’s *The Wasp Woman* (1959).³ Newspapers also reported on hormone creams and “deep

² To offer up just a few such contemporary titles, see: John J. Medina, *The Clock of Ages: Why We Age, How We Age, Winding Back the Clock* (Cambridge: Cambridge UP, 1997); Isadore Rosenfeld, *Live Now, Age Later: Proven Ways to Slow Down the Clock* (New York: Warner Books, 1999); Ronald Klatz and Robert Goldman, *The New Anti-Aging Revolution: Stopping the Clock for a Younger, Sexier, Happier You* 3rd ed. (New Bergen, NJ: Basic Health Publications, 2003); Bob Arnot and Robert Burns Arnot, *Wear and Tear: Stop the Pain and Put the Spring Back in Your Body* (New York: Simon & Schuster, 2003); Health Books Prevention ed., *Prevention’s Best Anti-Aging Secrets: Hundreds of Secrets to Staying Young, Feeling Fabulous and Looking Your Best!* (New York: Rodale, 2001); Vincent C. Giampapa and Miryam Ehrlich Williamson, *Breaking the Aging Code: Maximizing Your DNA Function for Optimal Health and Longevity* (North Bergen, NJ: Basic Health Publications, Inc., 2004) and Vincent C. Giampapa, Frederick F. Buechel and Ohan Karatoprak, *The Gene Makeover: The 21st Century Anti-Aging Breakthrough* (Laguna Beach, CA: Basic Health Publications, Inc., 2007).

³ *The Wasp Woman* tells the story of Janice Starlin, the magnate of a large cosmetics company whose aging “face” is no longer selling the products. Janice invests in the research of a scientist who has extracted enzymes from the royal jelly of the Queen Wasp (far more powerful than the Queen Bee!) that he believes will reverse the effects of aging. Displeased with the slowness of the results, Janice clandestinely injects herself with the enzyme. She becomes young and beautiful once again, only occasionally turning into a queen wasp who murders at random. A year after *The Wasp Woman*’s release, Edward Dein directed another B-movie on a similar theme. The plot of *The Leech Woman* (1960) again hinges on a rejuvenated woman turned unmanageable murderess, but this time the “magic ingredient” is Nipe—pollen from a rare orchid that grows only in a certain part of Africa ruled by the Nando tribe—which must be mixed with secretions from the pineal gland of a man (the obtaining of which kills the man) in order to create a dramatic, but only temporary, rejuvenating effect. For an excellent discussion on the portrayal of aging in these films, see Vivian Sobchack *The Leech Woman’s Revenge: On the Dread of Aging in a Low-Budget Horror Film* 1994 University Website. Available: <http://www.cinema.ucla.edu/women/sobchack/default.html> Nov 9 2008.

tissue” creams—forerunners to today’s moisturizers which contain ingredients like collagen, elastin, retanoids, Vitamin E, Green Tea and other anti-oxidants—not to mention the continued popularity of royal jelly and other honey-related products.⁴ Cosmetic surgery expressly to lessen the visual impact of aging experienced a significant rise in popularity following World War II.⁵ Both the numbers of those seeking cosmetic procedures, as well as the variety of procedures offered, only continues to grow.

Alongside such surface “anti-aging” efforts, there have been other products and treatments coming from the “fringes” of science that have promised the scientific fountain of youth on a more holistic level. In the 1950s and 1960s, newspapers reported on “the seemingly miraculous effects of Novocain on old and crippled patients” as administered by Romanian Dr. Ana Aslan (Franklin). Though Dr. Aslan was widely discredited, you can still in 2008 buy her preparation of Procaine Gerovital H3 from numerous internet sellers. With the publication of *The Prospect of Immortality* in the early 1960s, Robert Ettinger launched the cryonics movement which—while not offering the hope for rejuvenation in the immediate present—was explicitly focused on the idea of

⁴ For example of early versions of such products, see Lydia Lane, "Young at 60: 'Fountain of Youth' Found in Cosmetics" Los Angeles Times Feb 15 1949 and "Science Proclaims Victory against Ugly Aging Skin with New Deep Tissue Cream" Los Angeles Times Nov 12 1958.

⁵ In her history of cosmetic surgery, Elizabeth Haiken argues that this rise in cosmetic surgery following WWII came in part because the techniques had improved so drastically, but also that “face lifts” were especially sold to middle-class women as “a sensible, practical, and relatively simple solution to the social problem of aging” (136). Haiken argues this was part of the “therapeutic ethos” of postwar American culture, which was “geared toward helping people feel better about their place in the world rather than changing it” (135). Evidencing the continued potency of the narrative of aging as obsolescence, Haiken also reveals how face lifts were promoted as “an economic necessity;” because of “rebuff in work applications,” aging was described as an economic problem, and face-lifts were promoted as simply a practical step toward solving that problem (147). Elizabeth Haiken, *Venus Envy: A History of Cosmetic Surgery* (Baltimore: The Johns Hopkins UP, 1997) esp Chapter 4 “The Lifting of the Middle Class: Aging in Post-World War II America”.

suspending the human body (or sometimes just its head) at freezing temperatures until the day comes when science has really and truly discovered the fountain of youth; Ettinger himself is one of the few hundred people currently in “cryonic suspension” awaiting the realization of the narrative’s promise.⁶ Far more ubiquitous than either of these examples is the consumer market for nutraceuticals—“natural substances” found to have medicinal properties which can be obtained through diet or nutritional supplements—that has become a multi-billion dollar industry. When Durk Pearson and Sandy Shaw published their best-seller *Life Extension: A Practical Scientific Approach* in 1980—which they billed as a “practical how-to-do-it-yourself book on life extension”—they gave a huge boost to the dietary supplement market (Pearson and Shaw xxx). That same year, Saul Kent founded the Life Extension Foundation which currently claims to be the “world’s largest organization dedicated to finding scientific methods for addressing disease, aging, and death” and is certainly one of the largest sellers of nutraceuticals like Human Growth Hormone, DHEA, melatonin, and Coenzyme Q10 (“What Is the Life Extension Foundation?”). With the ubiquitous consumption of multi-vitamins, anti-oxidants, fatty acids and green tea, it is difficult to imagine there are many Americans completely unfamiliar with the “anti-aging” supplement market.

Many of these latter “supplements” have become so accepted they are simply part of the “healthy lifestyle” choices Americans are encouraged to make. Throughout the twentieth century, the American public has also been kept well-informed about how their lifestyle choices may well be the secret to the “scientific fountain of youth,”

⁶ Ettinger distributed *The Prospect of Immortality* among his friends in 1962, but it reached a much wider audience when it was picked up for publication by Doubleday in 1964. Ettinger’s book is available free for download: Robert Ettinger [The Prospect of Immortality](http://www.cryonics.org/book1.html) Nov 9 2008 1964 Cryonics Institute Available: <http://www.cryonics.org/book1.html>.

particularly their diet. As one 1938 article advised: “Old Ponce de Leon should have stayed home and watched his diet instead of traipsing over the world looking for the fabled fountain of youth.” (Kain "Ponce De Leon"). Americans were told about the need to include in their diets “‘protective foods,’ [like] fruits, vegetables and milk in their various forms” (Laurence "Chemist"); but they were also told about the great lengthening of life shown when lab rats were “underfed with a greatly reduced intake of calories” (Bengelsdorf). They were told that “exercise...stimulates the circulation—your real fountain of youth,” but also that the real key to “staying young after 65” was to be an “active, interested, busy” person, because “people whose way of life brings little mental exertion tend to ‘go to seed’” (Kain "Exercise"; Gibson). One 1957 quiz, developed “with the help of a psychologist, a sociologist and a geriatrician,” promised to help the reader determine “how young in heart you are—or aren’t;” a necessity because while “modern science has made it possible for all of us to live longer and look younger,” there is nonetheless “a considerable amount of evidence to show *that we aren’t doing as much for ourselves*” (Jhan and Robbins my emphasis). As the quote suggests, the narrative of aging healthily as a moral responsibility and national duty has remained in steady circulation throughout the century.

Today, however, the narrative of the scientific fountain of youth most readily flourishes in “regenerative medicine,” a still emerging field that focuses on the repair or replacement of bodily tissues and organs using (stem) cells, genes and other biological building blocks along with bioengineered materials and technologies. While the possible interventions of stem cell research, genomics and new biotechnologies are many and varied, the ultimate goal of regenerative medicine is defeating mortality, and thus aging along with it. Recent books like *Merchants of Immortality* and *Rapture: How Biotech*

Became the New Religion, both published in 2003, chronicle the near religious fervor for scientific immortality that has driven much of the mainstream scientific research on cloning and stem cell applications.⁷ Science and medicine that explicitly declare themselves as “anti-aging” are still somewhat suspect (recall from the introduction the dubious status of A4M), but scientists like Aubrey de Grey—the British biomedical gerontologist who has proposed SENS (“Strategies for Engineered Negligible Senescence”) and whose Methuselah foundation runs the “Methuselah Mouse Prize”—hovers somewhere between being suspect and being respected.⁸ As Susan Squier notes, “with the growth of regenerative medicine...new strategies are emerging, applied with increasing efficacy, that resituate the marginalized project of rejuvenation within orthodox medical practice” (Squier Liminal Lives 167).

More so than it ever did during the glandular rejuvenation of the 1920s, the narrative of the scientific fountain of youth is driving research agendas and structuring research funding for individuals, universities, companies and the government. Why does it matter that this narrative is flourishing and circulating through all spheres of American life? It matters in part because the narrative of the scientific fountain of youth draws its strength from the other narratives I have explored in this project: the narrative of aging healthily as a moral responsibility and a national duty, the narrative of aging as obsolescence, and the narrative of aging as disease. As I have shown in the preceding

⁷ See Stephen S. Hall, Merchants of Immortality: Chasing the Dream of Human Life Extension (Boston: Houghton Mifflin Company, 2003) and Brian Alexander, Rapture: How Biotech Became the New Religion (New York: Basic Books, 2003).

⁸ SENS—or “Strategies for Engineered Negligible Senescence”—is a medical proposal for periodically repairing all of the age-related tissue damage to the human body, thereby effectively “curing” human aging and indefinitely extending the human lifespan. De Grey’s Methuselah Foundation is a non-profit organization in the U.S. whose major activity is to fund the Methuselah Mouse Prize—or the M-Prize—which awards monetary prizes to researchers who stretch the lifespan of mice to unprecedented lengths.

chapters, all of these narratives have had negative consequences for the way we think and talk about aging and old age, as well as the aged themselves. This negativity is what makes the hope and optimism of the narrative of the scientific fountain of youth so compelling. But this narrative also leads us to deny age, and to deny our own aging. It is so overpowering that it blinds us to other ways of talking, thinking and speaking about aging and growing old; ultimately, it keeps us from telling other stories that might offer different resolutions.

The Denial of Age

As many scholars have noted, the ubiquity of the narrative of the scientific fountain of youth, and the “anti-aging” fervor it has helped to inspire, have had wide and consequential effects for American culture, public policy and medicine. On the level of culture, Betty Friedan has identified one such effect as the creation of an “age mystique,” or a dread association with aging that has led to a widespread denial of age. Friedan opens the first chapter of *The Fountain of Age*—her 1993 follow-up to her feminist classic, *The Feminine Mystique*—with an informal survey of media images:

On the one hand, despite continued reports of advances in our life expectancy, there was a curious *absence*—in effect, a blackout—of *images of people over sixty-five*, especially older women, doing, or even selling, anything at all in the mass media. On the other hand, there was an *increasing obsession with the problem of age* and how to avoid it personally, through diet, exercise, chemical formulas, plastic surgery, moisturizing creams, psychological defenses, and outright denial—as early and as long as possible. And there seemed to be a *growing impatience for some final solution* to that problem—before the multiplying numbers of invisible, unproductive, dependent older people, unfortunately living beyond sixty-five, placed an “intolerable burden” on their families and society with their senility, chronic illnesses, Medicare, Meals on Wheels, and nursing homes. (Friedan 35, original emphasis)

Taken together, she argues, “the blackout of images of women or men visibly over sixty-five, engaged in any vital or productive adult activity, and their replacement by the

'problem' of age, is our society's very definition of age. Age is perceived only as decline or deterioration from youth" (40-1). Faced with such negativity attached to aging, we deny our aging as the only "healthy" response, as a "defense mechanism to avoid the negative role of senior citizens" (66). Friedan points out the many cultural conventions through which we express this denial, from Clairol slogans like "You're not getting older, you're getting better" to catchphrases like "50 is the new 40" or "30 is the new 20." The un-healthy part of this response, however, is that "such denial accepts, and in the end reinforces, that dread mystique of age as isolated, helpless, an inevitable decline into senility:" "As long as we do 'pass' for young, the increasing millions of us who are, in fact, moving vitally through our later years will not alter people's negative image of age" (66, 64). What is ultimately denied by our denial of age is "our drive for continued involvement in life" (67). We never "let ourselves see new possibilities, new qualities emerging and evolving in ourselves that might be different from 'young'" (62). In short, when we deny age, we do nothing to change its dread mystique, only further perpetuating the "healthy" need for denial. Thus, Friedan argues, "it is time we start searching for the fountain of age....time to look at age on its own terms, and put names on its values and strengths as they are actually experienced, breaking through the definition of age solely as deterioration or decline from youth" (69).

While Friedan calls for the "fountain of age" in order to shift focus away from deterioration and decline, in the arena of public policy bioethicist Daniel Callahan has argued that our denial of age actually makes us fail to acknowledge deterioration and decline in important ways. With the publication of *Setting Limits: Medical Goals in an Aging Society* in 1987, Callahan initiated public debate about the value of rationing health care for older people. In the face of rising health care costs and predictions about

the aging baby boomer population, Callahan was essentially arguing against the use of high-cost and high-tech interventions to extend the lives of individuals who had reached the end of a “natural life span.”⁹ He was also, however, advocating for greater resources to be put towards nursing and long-term care. In response to critics, Callahan argued that his proposal was not endorsing euthanasia or assisted suicide, but rather was an effort to give meaning and significance to old age. In effect, he was advocating not only for a “full reform of the system of health care,” but also for a realignment of the goals of medicine and the values of our culture, particularly our “defiant battle against death and decline”—itself a product of our investment in the narrative of the scientific fountain of youth (Callahan 318, 16). In order to give meaning and significance to old age, Callahan argued that we need to acknowledge and accept decline and death:

We require...an understanding of the process of aging and death that looks to our obligation to the young and to the future, that recognizes the necessity of limits and the acceptance of decline and death, and *that values the old for their age and not for their continuing youthful vitality*. In the name of accepting the elderly and repudiating discrimination against them, we have succeeded mainly in pretending that with enough will and money the unpleasant part of old age can be abolished. In the name of medical progress we have carried out a relentless war against death and decline, failing to ask in any probing way if that will give us a better society for all. (Callahan 320)

Like Friedan would six years later, Callahan was calling attention to the need to value older people “for their age” rather than for how “youthful” that age might be. He was not just proposing a way to cut costs; he was arguing that our culture’s denial of age—and

⁹ Callahan was not willing to attach a definite chronological age to the definition of “natural life span.” He defined it rather as “one in which life’s possibilities have on the whole been achieved and after which death may be understood as a sad, but nonetheless relatively acceptable event” Daniel Callahan, “Why We Must Set Limits” *Aging: Concepts and Controversies* ed. Harry R. Moody (Thousand Oaks, CA: Pine Forge Press, 2006) 317.

hence propensity to extend high-cost life saving measures to those at the end of life—was damaging economically as well as psychologically.

“Rationing” is typically used as an epithet in discussions of health care; it is an accusation of misplaced ethics, if not of crime. Correspondingly, Callahan’s proposals met a vehement reaction, and were often placed on par with Colorado Governor Richard Lamm’s 1984 assertion that elderly and terminally ill people have a “duty to die and get out of the way” (“Gov. Lamm Asserts”). My interest is not in exploring the pros and cons of age rationing as a strategy to contain health care costs, but rather to note how the narrative of the scientific fountain of youth has helped to frame what is both an ethical and a policy debate. For example, in response to the age-based rationing debate, Daniel Perry and Robert Butler—the latter the man who coined the term “ageism” and who served as the first Director of the National Institute on Aging—wrote an article for *The Washington Post* in which they dismissed age-based rationing as “clearly unfair, unworkable, and unnecessary” and suggested that federal funds would be better directed toward basic aging research, because “if medicine could delay the beginning of decline by as few as five years, many conditions and the costs they incur could be cut in half” (Perry and Butler 325-6). Their proposal was thoroughly rooted in the hope inspired by the narrative of the scientific fountain of youth:

The ability to re-set biological clocks to forestall some of the decline of aging may be closer than anyone realizes, thanks to new knowledge in immunology and in the molecular genetics of aging. Answers may be near...If the U.S. doubles its present meager \$30 million for osteoporosis research, by the year 2010 this condition could be eliminated as a major public health problem.... (326)

To be fair, Perry and Butler’s focus on osteoporosis as a reachable goal is not the same as declaring the imminent possibility of “the ability to re-set biological clocks.”

Nonetheless, their statement echoes many others from the twentieth century: Charles

Asbury Stephen's faith, expressed in 1905, that within a "quarter of a century we shall have penetrated the secret of cell nutrition and growth, and opened the way to a scientific renovation of the tissues" (Stephens Natural Salvation 1905 82); Voronoff claiming in 1928 that everyone then alive "should live to be 140 years old" (Norris); a spokesman for the National Institutes of Health alleging in 1966 that "An understanding of the biology of aging is within reach of this generation" (Osmundsen). Just as tissue renovation, 140 year lifespan and most certainly a full "understanding of the biology of aging" continue to elude us over a century later, so does osteoporosis remain a problem for both older women and men. This is not to say there have not been great discoveries and great "progress," but as regards the science of aging, our optimism often exceeds our eventualities. While such proclamations of an end to decline are hopeful, powerful and tempting, they also enable us to avoid acknowledging the reality of decline, to undervalue and underutilize movements like hospice, and to invest in "cure" at the expense of "care," further perpetuating our "defiant battle against death and decline."

Dr. Muriel Gillick makes these points more fully in her book *The Denial of Aging* (2006); she argues that as a society, instead of confronting the difficult questions of how *best* to approach medical care for those near the end of life, we instead choose "to engage in collective denial of aging" (Gillick 6). Denial can be positive when it helps people to cope with intolerable truths, Gillick submits, but "widespread belief in perpetual youth or eternal life has pernicious consequences:"

If we as a society continue to deny the realities of old age, we will squander our resources on ineffective but costly screening tests and on ultimately futile but expensive treatment near the end of life; we will not have enough money left over to provide beneficial care. If we assume that Alzheimer's disease will be cured and disability abolished in the near term, we will have no incentive to develop long-term-care facilities that focus on enabling residents to lead satisfying lives despite their disabilities. If we assume that diet and exercise will prevent chronic

disease, then we will fail to take seriously the need for a radically new model of medical care that is up to the task of caring for patients with chronic illness. We will not bother to institute a major overhaul of the Medicare program that incorporates the new model. And if we put our faith in drugs to make us immortal, we will neglect to fund research into such prosaic conditions as macular degeneration (the leading cause of visual impairment in the American elderly) and osteoarthritis (the number one medical problem in the elderly and a major source of pain and immobility), disorders that impair the quality of life of millions. (Gillick 6-7)

Gillick is effectively arguing that the narrative of the scientific fountain of youth, and the denial of aging that accompanies it, deflect our priorities in ways that are detrimental to older people. Instead of making a place for old age in our society—one that might, as Callahan argues for, be full of meaning and significance, or as Friedan urges, be full of positive, new visions of what “growing old” can be and mean—we instead deny aging, and look to science and medicine to banish old age forever. Our investment in the narrative of the scientific fountain of youth is costing us both the better old age we might desire, and better care in that old age.

Relocating the “Problem” of Aging

So how do we move beyond the denial of age? One essential step towards this goal is re-thinking and re-defining the “problem” of aging. A redefinition of the “problem” of age is part of what Betty Friedan calls for when she insists on the need to “look at the actuality of our own experience” and recognize that it not simply a story of deterioration and decline:

Only then will we see that the problem is not age itself, to be denied or warded off as long as possible, that the problem is not those increasing numbers of people living beyond sixty-five, to be segregated from the useful, valuable, pleasurable activities of society so the rest of us can keep our illusion of staying forever young. Nor is the basic political problem the burden on society of those forced into deterioration, second childhood, even senility. The problem is not how we can stay young forever, personally—or avoiding facing society’s problems politically by shifting them onto age. The problem is, first of all, how to break through

the cocoon of our illusory youth and risk a new stage in life, where there are no prescribed role models to follow, no guideposts, no rigid rules or visible rewards, to step out into the true existential unknown of these new years of life now open to us, and to find our own terms for living it. (Friedan 69)

Friedan speaks directly to women and men, aging or contemplating their own age, and calls for pioneers. Her call is inspirational—and I whole-heartedly agree that we desperately need visible models of what positive aging and a good old age can be that are not wholly defined by how nearly they resemble youth or middle age—but I also strongly believe that the “problem” of aging is not going to be solved (and should not be re-defined) on the level of the individual.

The cultural narratives of aging I have traced within these chapters reveal some of the historically specific ways in which the American scientific and medical establishment, government, popular press, and individual Americans themselves have located the “problem” of aging within the biological bodies of aging individuals. In turn, this location has motivated the search for a biological “cure” to act upon these individual bodies. This emphasis on the individual also lies at the heart of professional approaches to aging, and has created many blind spots for gerontology and geriatrics, as those in aging studies have pointed out. For example, speaking to the “new gerontology” which—in a commendable attempt to have a more positive focus—heavily promotes Rowe and Kahn’s model of “successful aging,” Martha Holstein and Meredith Minkler argue that this model is normative, univocal and potentially harmful in its emphasis on the individual.¹⁰ They quote Rowe and Kahn who describe successful aging as “dependent upon individual choices and behaviors” and attainable “through individual

¹⁰ For more on the concept of “successful aging,” see Chapter 1, footnote 18.

choice and effort” (Holstein and Minkler 792). This emphasis on individual agency,

Holstein and Minkler argue:

...tends to trivialize the role of gender, race, socioeconomic status, and genetics in influencing both health and broader life changes both throughout life and in old age. At the same time, and precisely through its failure to take into account the unacknowledged role of broader sociostructural and environmental forces, this viewpoint transforms the particular into the universal and absolves social and political institutions of their responsibilities for the health and well-being of residents. (794)

Seen through this critique, the concept of “successful aging” makes ever more authoritative those same messages about aging and behavior that were promoted through *The Youth’s Companion* nearly a century ago. “Successful aging,” like the notion of a “good old age,” is seen to be the result of individual effort and health behaviors; thus, failure to achieve this lofty state can be chalked up to individual failure. This misplaced attribution keeps us from acknowledging class, race and gender concerns and ultimately results in “further marginalizing the already marginalized” (194).

Even beyond the emphasis on “successful aging,” Margaret Cruikshank argues that gerontology has a blinding emphasis on the aging individual. She argues that, while ostensibly geriatrics is the medical study of late-life diseases, and gerontology is a multidisciplinary field that includes the biological, economic, psychological, social and health/fitness aspects of the aging process, the lines between these fields of study—like the distinction between old-age illness and old age itself—is often blurred: “Gerontology has uncritically accepted a medical model of aging....[but] the important problems in aging, rooted in issues of class, ethnicity, gender, politics, economics, and demographics, do not lend themselves to biomedical solutions” (Cruikshank 178).

Drawing on Peter Townsend, Cruikshank points out that “within a biomedical framework, aging problems result from bodily decline or the failure of individual adjustment, not from

state policy, the economy or social inequality” (178). Much as second-wave feminism alerted women that “the Personal is Political”—encouraging them to see problems in their lives as not the result of individual action, but rather of systemic oppression—Cruikshank sees part of the task of aging studies as showing how inadequate individualism is as a model for aging. She offers as an example: “For women in small, rural communities, lack of public transportation may be the single largest impediment to healthy aging, but they must cope with this systemic failure as if it were their individual problem. Have they aged ‘unsuccessfully?’” (190).

The American public has most certainly heard—and internalized—the message that “successful aging” (or “anti-aging”) is to be achieved through individual effort. One of the six major findings of the 2001 National Aging Research Survey was that Americans view staying healthy and living longer as more than a matter of fate: “Large majorities consider eating nutritious foods (87%), having a positive outlook (90%), exercising regularly (86%), keeping stress to a minimum (80%), and getting routine physical exams (79%) as ‘very important’ or ‘essential’ to stay healthy as one grows older. Slightly fewer Americans place this same importance on ‘the genes you were born with’ (70%), and fewer still on avoiding overwork (51%), or having good luck (29%)” (National Aging Research Survey 4). It would seem that most Americans, like some gerontologists, don’t fully recognize that the “good luck” of your socioeconomic status has significant influence over the nutrition of the foods you eat, your ability to keep stress to a minimum or get regular medical care, and thus—according to the survey results—your ability to stay healthy as you age. In correlation with this emphasis on individual agency and the location of the problem of aging in the individual, it is not surprising that Americans also strongly support the need for more scientific research into aging. Nine in

ten Americans agree that “there needs to be more medical and scientific research to find cures for diseases that afflict people as they age,” while 88% support more research into “how the body ages over time” and 81% support research on “aging and the aging process” (National Aging Research Survey 5). The narrative of the scientific fountain of youth seems never far behind the location of the “problem” of age within the biological body of the aging individual.

So how do we move beyond locating the problem of age—and any thoughts of a “solution”—in the bodies of aging individuals? The field of disability studies offers a particularly useful model for the sort of re-framing of the “problem” that is required. Rosemarie Garland-Thomson and Martha Stoddard Holmes have summarized the aims of this field:

The New Disability Studies...seeks to overturn what we call this medical model of disability and to replace it with a social model of understanding disability. This view defines “disability” not as a physical defect inherent in bodies...but rather as a way of interpreting human differences. Within such a critical frame, disability becomes a representational system more than a medical problem, a social construction rather than a personal misfortune or a bodily flaw, and a subject appropriate for a wide-ranging intellectual inquiry instead of a specialized field within medicine, rehabilitation or social work....The New Disability Studies thus explores disability as a historical system of thought and knowledge that represents some bodies as inferior, as in need of being somehow changed, so as to conform to what the cultural imagination considers to be a standard body. (Garland-Thomson and Holmes 73)

While disability and aging are not wholly interchangeable concepts, they function in similar ways and necessitate similar approaches. Our prevailing cultural understanding of both of these concepts is framed by the “medical model” which locates both disability and aging as inherent problems of individual bodies; these bodies are then problematically “labeled” by the interpretive gaze of authoritative professionals as well as by our culture at large. Garland-Thomson and Holmes remind us that we must pay

attention to “the materiality of the body [and] its embeddedness in the world,” yet at the same time the critical impetus works to re-seat the perceived “problem” of disability/aging within “representational” and “historical” systems, that is, within its “embeddedness in the world” rather than within the material body itself (Garland-Thomson and Holmes 73).

Many scholars of age rightly insist upon attending to the materiality of the aging body, but Christine Overall reminds us that even the “biological substratum” of aging is itself socially constructed. “It is almost always taken for granted that the cultural process of aging is founded upon the immutable and objective biological foundation of years lived and life stage attained,” she posits, but “years lived and life stages attained are also socially constructed and interpreted, and there is no definite, biologically given number of years lived that, by itself, constitutes being old or that provides an immutable and inevitable foundation on the basis of which social aging processes are built” (Overall 129). This is not in any way to deny that the process of aging “may entail real suffering, physical and/or psychological,” but it is to acknowledge that “any age, whether it is considered a young age or an old age, is young or old *with respect to* some human environment or some human purpose” (129-30). While the narrative of the scientific fountain of youth is driven by hope and optimism that the problem of aging can be solved, there is a very different—and much more realizable—optimism to be gained from recognizing the social construction, rather than the biological given, of old age: then aging “is a potential site not only for oppression but also for liberation....There is nothing inevitable about ageism or about the ways in which old age is currently constructed” (134).

In appealing to the social construction of old age, I want to be careful not to deny the material reality of the aging body, especially given how deeply that reality can be influenced by socioeconomic limitations or the effects of discrimination based on race, gender or sexuality. Rather, in an effort to move beyond the denial of age, like Gillick and Callahan, I think it is essential to acknowledge the frailty and limitations of the aging body so that we might begin to have earnest public discourse about end of life options and experiences, followed up by the investment of greater resources in improvements in housing, health care and hospice. However, while bodies matter, stories matter, too. The stories we tell about aging and old age influence the way we think about and experience (for long decades of often relative health) our bodily aging, and especially how we regard and treat those whom we identify as “old.”

Writing about menopause in the wake of the “hormone debacle,” Margaret Gullette describes the conflicting messages coming from “Big Pharma” and from feminists about the value of Hormone Replacement Therapy as a “war over midlife narratives” (Gullette “What to Do” 75). She argues that to accept that one *needed* HRT was to accept the decline story of aging, i.e. to accept that menopause was a deficiency disease in need of treatment; it was, in effect, to be “aged by culture.” While “war” is a dramatic metaphor (hearkening back to those disaster metaphors used to describe the aging population which opened this project), there is certainly a great deal at stake in the way we explain experiences like menopause to ourselves and to the world: a disease in need of treatment? the tipping point into a woman’s old age? a natural experience with symptoms that may need managing? a stage of life like any other? The narrative of menopause we “buy into” encompasses corporate investments, professional interests and personal experiences; it impacts how we think about sexuality and femininity in

relation to a woman's aging, how we think about aging in relation to disease, and what sort of "treatment" we think is or is not necessary; it affects how we think and talk about—and represent to others—menopausal and post-menopausal women. Narratives matter, and they are worthy of warring about.

If we continue to locate the "problem" of aging and old age in the bodies of the aged themselves, we will continue to seek our solution to this problem in the laboratory, the operating suite, the gym and the pill bottle. We won't seek out the ways we might reshape our physical environment (for example, implementing universal design principles in all new building projects to accommodate people of differing levels of physical ability) or refashion interpersonal practice (for example, by regularly adding both visual and verbal conversational cues to facilitate meaningful interaction with those who are visually- or hearing-impaired).¹¹ In the words of Anita Silvers, "Aging fairly, and avoiding decline, turns out to be as much a matter of altering our surroundings, our expectations, and our understandings at the present moment as of arresting or overcoming biological deterioration when our years are greatly advanced" (Silvers 223). To this, I add that getting people to recognize that surroundings, expectations and understandings are in need of alteration is, in large part, a matter of helping people find new narratives through which to explain aging and old age. These new narratives must recognize that the "problem" of aging is a culturally- and historically-specific problem of our own construction, and one that is far larger than our individual biology. If we relocate

¹¹ For more on Universal Design Principles, see the publications offered the North Carolina State University Center for Universal Design, available online at http://www.design.ncsu.edu/cud/pubs_p/ppubpdflist.htm. For a longer discussion of how visual and verbal cues might impact interpersonal communication, see Anita Silvers, "Aging Fairly: Feminist and Disability Perspectives on Intergenerational Justice" *Mother Time: Women, Aging and Ethics* ed. Margaret Urban Walker (Lanham, MD: Rowman & Littlefield, 1999) 221-2.

the “problem” of aging from individual bodies to the level of our cultural representations of those bodies and the institutions that perpetuate these, we may find that we no longer need the “hope” that has made the narrative of the scientific fountain of youth so pervasive and powerful because the “dread mystique of age” has itself disappeared.

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Biography

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