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Bodies at War: Bacteriology and the Carrier Narratives of "Typhoid Mary"

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THE FLORIDA STATE UNIVERSITY

COLLEGE OF ARTS AND SCIENCES

BODIES AT WAR:
BACTERIOLOGY AND THE
CARRIER NARRATIVES OF "TYPHOID MARY"

By

TARA ELIZABETH HOSTETLER

A Thesis submitted to the
Department of English
in partial fulfillment of the
requirements for the degree of
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I dedicate this to Dad, Mom, David, and Chris:

for your unflinching support on this journey,

your gracious encouragement,

your consistent love,

and your sweet pride in your daughter and sister.

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ABSTRACT

In this thesis, I explore the carrier narratives of Mary Mallon, or "Typhoid Mary," and their intersections with developments in medical science and immigration policies at the time. To construct this case, I sought texts within the much larger study of the history of science and medicine underway in many different fields—from history to sociology to psychology to literature. From the treatment of the carrier and the implications for modern medical practice and contagious disease to issues with regulating immigration, this analysis confronts issues of persisting relevance. My research, which also falls under the broader umbrella of cultural studies, focuses on how immigrants in general (chapter 1) and "Typhoid Mary" specifically (chapter 2) are constructed in these moments. The texts I gathered for analysis ranged from articles in medical journals to short news stories to statements from health officials, most originally published somewhere between 1900 and 1930.

I discovered that metaphors of the body born in the examination room transcended to the courtroom and the battlefield, and military metaphors and issues of jurisdiction informed the biological descriptions. This was all happening at the same moment that bacteriology was lending a new level of authority to scientific medicine. What sets my analysis apart from previous scholarship on "Typhoid Mary" is that I want to focus more on locating the body in the complexity of metaphors that were perhaps too easily slipping between the medical field and the nation imagined as a body. The description of the individual-body's immune system recognizing and rebelling against "harmful foreign intruders" was also believed to be a "natural response" of the nation-body. As described by Emily Martin, this idea of clearly defined

lines of defense was "written into 'nature' at the level of the cell" (421). Yet I attempt to investigate what happens when these metaphors are revisited in terms of what has more recently been discovered as part of the body's "natural response"–that bacteria and resistance to infection are more cohort than contender.

PERSONIFIED CONTAGIONS: BACTERIOLOGY, IMMIGRATION, AND THE MANAGEMENT OF DISEASE

Introduction

This project began when I stumbled across the *Manual for the Mental Examination of Aliens* (1918) in my research. The manual outlined methods for examining incoming immigrants while meting out snippets of the logic behind these procedures. These snippets were fascinating because of the loathing with which the authors regarded the arriving immigrants. I researched medical practice and immigration policies functioning at this moment and how these affected an immigrant's self-perception. I came across the story of Mary Mallon, more commonly known as "Typhoid Mary." Her story incorporates changing medical practice in the narrative of a woman fighting issues of government jurisdiction over her body. I was especially fascinated by the moxy she showed as an immigrant woman who was willing to take on the courts and the newspapers. The extreme public response (i.e., the quarantine and the dissimilar treatment of other carriers) indicated that there was more to her story than the few people she supposedly infected.

I have spent the past two years on various aspects of this project while anxiously asking myself a question I knew I would not be alone in asking—how does this project fit within the scope of an English Department? Few of the texts I have analyzed for the purpose of this argument are part of any traditional coursework within this discipline, yet the skills I use and some of the theorists I rely upon are part of this framework. This project also falls squarely within the tradition of cultural studies. The medical and

scientific and political discourse of the time can also be textualized and examined as indications of technologies that were functioning on perceptions of race/ethnicity, gender, the individual body, and the body as part of a larger identification.

To construct this case, I sought texts within the much larger study of the history of science and medicine underway in many different fields—from history to sociology to psychology to literature. Researchers from each field bring a different perspective to this discussion. Some sources, such as Judith Walzer Leavitt's text on "Typhoid Mary," deal specifically with the treatment of the carrier and the implications for modern practice and contagious disease. Other sources deal with issues of immigration and disease management and changing medical practices. My research, which also falls under the broader umbrella of cultural studies, focuses on how immigrants in general (chapter 1) and "Typhoid Mary" specifically (chapter 2) are constructed in these moments. The texts I gathered for analysis ranged from articles in medical journals to short news stories to statements from health officials, most originally published somewhere between 1900 and 1930.

I discovered that metaphors of the body born in the examination room transcended to the courtroom and the battlefield, and military terms and jurisdiction issues factored into scientific descriptions of the body. The definitions of certain terms, such as "communication" and "communicable" were able to accommodate many different contexts. For example, "contagion" was used to refer to contagious bacteria or to contagious ("bad") morals. This was all happening at the same moment that bacteriology was lending a new level of authority to scientific medicine.

As I worked through these ideas, two similar trajectories were developing at the beginning of the twentieth century that were too dependent to tell in isolation but too unwieldy to effectively combine. The first trajectory was the story of bacteriology, when an increasing number of immigrants arriving in America often faced vehement opposition and the authority of medical science was increasing exponentially.

Confidence was high in scientific medicine's potential to objectively observe and diagnose distinctions of difference. Departments for Public Health were established and the issues of jurisdiction became problematic. The health officials' influence was rapidly entering the private sphere and operating on the international level. Medical science became the key to "safeguarding" the nation—and many texts from this time, including court cases and legal documents, reflected the specific anxiety towards immigrants.

The second trajectory was the story of "Typhoid Mary" as it framed the increased authority of medical science. Because she was an Irish immigrant woman, it would be easy to limit an analysis to issues of gender and race/ethnicity; it would be a mistake to disregard these issues. What sets my analysis apart from previous scholarship on "Typhoid Mary" is that I want to focus more on locating the body in the complexity of metaphors that were perhaps too easily slipping between the medical field and the imagining of the nation as a body. The description of the individual-body's immune system recognizing and rebelling against "harmful foreign intruders" was also believed to be a "natural response" of the nation-body. As described by Emily Martin, this idea of defense was "written into 'nature' at the level of the cell" (421). Yet I attempt to investigate what happens when these metaphors are revisited in terms of what has more recently been discovered as part of the body's "natural response"–that bacteria and resistance to infection are more cohort than contender.

Primary Examinations: Disease and Medicine

"By virtue of the discoveries upon which [bacteriology] was founded, to which it has led and upon which to-day it rests illustrious and secure, mankind has been enabled for the first time to arrive at an adequate comprehension and understanding of the microscopic world and of many important and familiar natural phenomena hitherto either not understood or misinterpreted" - (1901) William T. Sedgwick, Science (128).

In order to understand the significance of the moment that bacteriology (the study of bacteria in relation to disease) emerged as foundational to modern medical science, it is important to look at previously held perceptions of disease. In an article from 1852, an overview of the "evils and benefits" of "emigration" reveals the following perceptions of the communicability of disease:

> The contagious diseases brought hither by these advancing crowds, threaten, some time, the most serious consequences. The uncleanly habits of some of the lower orders of emigrants, together with unhealthful food, confined air, and crowded accommodations, generate, in the course of a long voyage, that most malignant enemy to human life—the ship fever. Arriving, with this fearful malady in different stages of development […] they are landed on our shores, and wander about in search of shelter—personified contagions—disseminating the seeds of disease on every breeze ("Emigration—Its Evils and Benefits" 2).

In this article, epidemics are connected to groups of immigrants. Immigrant was synonymous with contagion. The practice of bacteriology complicated the general sense that the "seeds of disease" could be spread "on every breeze." Instead, as the "first exact medical science," it completely revised the diagnosis and treatment of disease (Crawford para. 27).

This section will begin with a brief overview of bacteriology and then continue with the social dynamics at play in the early 1900s as any sense of an American identity, the conditions of citizenship, and the jurisdiction of public policy and medical science were in flux. This time, approximately 1900-1930, is significant to this analysis because of the increase in immigration, the developing discourses of medical science, and the changes in public health policy. Understanding the dynamics of this period will also preface the discussion of Mary Mallon, or "Typhoid Mary."

While some of the major contributions to bacteriology date back to even before the 1600's, and Anton van Leeuwenhoek was the first to observe bacteria in 1676. It was

not until the late 1800's that these disparate scientific theories merged under the science of bacteriology. Edward Jenner's contributions (1796) include the development of vaccinations–which preceded any understanding of how bacteria functioned and was based solely on Jenner's observation that "milkmaids exposed to cowpox didn't contract smallpox" (Lederberg para. 5). Efforts to improve sanitation were helpful in treating contagious disease, but these reforms were based on experimentation and not on an understanding of how disease and bacteria function. Louis Pasteur finally pioneered the idea that bacteria "was caused by living agents rather than arising spontaneously" (Crawford para. 25), and it was his research that established the potential use for bacteriology. Robert Koch also made significant contributions regarding the nature of germs in wounds. The contributions of the Scotch surgeon Lister regarding antiseptics revolutionized surgical procedures (Flexner 512). The work of Pasteur and Koch made public the potential of bacteriology to treat disease (Lederberg paras. 6-9).

The advent of bacteriology brought many changes through a medicalization of the social. I will examine what is at stake for an understanding of the body, how the body functioned on an individual and a collective level, and what this meant for the treatment of disease. Early twentieth century technology and communication available to medical science allowed for the creation of an archive of medical knowledge. What assurances were offered by the new science of bacteriology, and what did this mean for medical science and the development of a medical archive of knowledge? This new science called for new practices and procedures in the examination room. How did these changes affect medical practice and the doctor-patient relationship? In what ways did an understanding of the individual relative to the group/nation at this time? How did the increase in immigration affect the way the bodies of immigrants were understood at this time? As the nation used public health policy to take responsibility for its citizens, how did this affect the jurisdiction of public health policy at this time or

even how the "nation" was defined? Finally, what kinds of solutions were necessary for controlling contagion?

This examination of these issues will draw from several key analyses, such as the association of immigration with disease (Howard Markel and Alexandra Minna Stern) and how these perceptions of immigrants became part of the language of immigration law (June Dwyer). The idea of "communicable Americanism" (Priscilla Wald), and specific interpretations (David Armstrong, Thomas Osborne, Nikolas Rose) of Foucauldian theories regarding medical science and examination are also crucial to the construction of this argument. Judith Walzer Leavitt provided a specific interpretation of the historical moment of medical science, especially as related to "Typhoid Mary."

In terms of my methodology, I am attempting to synthesize some aspects of Michel Foucault's insights, and Foucauldian criticism more generally, in the field of medicine. This criticism sees a network of issues related to class, race, and gender as subtle movements connected to larger systems of power. Following Foucault, Nikolas Rose explained in his own analysis that instead of a linear and general "history of medicine," this type of analysis must be willing "to attend to, not to reduce, the *heterogeneity* of the events with which 'medicine' has been engaged" (49). Instead, Rose suggests the following:

> An account of this engagement of medicine with our present would need, first of all, to see clinical medicine as merely one component in a complex of forms of thought and practice which questions aspects of individual and group life from the point of view of health, and in relation to which medical knowledges, medical experts, and medical practices play a variety of different roles (50).

In my argument, I will attempt to avoid limiting the possibilities of these events, but I will try to see these moments as producing many meanings and interpretations for medical knowledge, and especially in the specific case of the healthy carrier.

Diagnosing Disease

By the turn of the century, confidence was high in the potential of the discoveries from bacteriology and the use of microscopy. In 1901, William Sedgwick described the discoveries of bacteriology as creating a science that was "illustrious and secure;" "understanding" and "comprehension" now illuminated topics that were once "not understood or misinterpreted" (128). A new sense of security dominated in the potential of scientific medicine to provide resolutions to the medical problems presented to a nation undergoing massive changes. People were crowding in the urban areas, and resources were often limited. The increase in immigration also brought with it new concerns – some valid, some based on misconceptions. One significant concern had to do with disease, as more people in a smaller area meant increased contact and sharing of resources and an increased risk that disease would spread quickly.

Prior to bacteriology, disease was often dealt with in terms of preventative measures (prior to diagnosis) and symptom management. Too little was known about the nature of disease for effective treatment. This meant instituting general guidelines for sanitation and carefully managing the shared resources. Disease's communicability felt more like guesswork. As the world of the microbial became conceivable, scientists could see some of what had only existed as abstract theory. Some theories were reaffirmed; others were discarded. What developed was believed to be a basic understanding of life itself. Sedgwick writes, "The life of the under world was scrutinized, classified and studied, and has been found to follow in general the same natural laws as that of the upper world" (128). This belief that the two worlds were congruous would have far-reaching implications for an understanding of what was considered to be "normal" behavior.

Sedgwick describes the advent of bacteriology in place of previous theories of medical science as "the fading out of this ancient view of nature and the last traces of medieval ideas of magic, alchemy, and easy transmutation of the elements" (128). There

was believed to be no more magic or guesswork in the practice of medicine; medical knowledge could now be more concrete. Even the idea of the "scientific" began to have a more exacting and authoritative claim to truth and nature. The transition from "alchemy" to a more established science of medicine developed from what was revealed under the microscope. Perhaps this was a move to a medical science that felt it could construct its own archive of knowledge, but it was through the anomalies and the reworking of a normative standard that this archive became more dense and complicated. All activity was believed to be observable, quantifiable, and subject to documentation. Treatment could be standardized.

Even the basic method of inquiry used by science was being reworked. Scientific understanding would now extend beyond the external and internal anatomical features of individuals and would chiefly focus on, as William Sedgwick describes, "the behavior of flocks, swarms, groups, or masses of individuals, and upon these not in a state of nature but artificially massed or cultivated" (126-127). Problems were seen through treatment of the individual, but it was that individual in the context of a larger group. Medical science, aided by the findings of bacteriology, now believed that people could have the potential to live longer, happier, more productive lives. This same potential optimism persisted in 1940, when Winslow described bacteriology as "a science fraught with rich gifts of health and happiness for the human race and one which—unlike many other sciences—has been used by man only for beneficent purposes" (Winslow "The First Forty Years" 125).

The glorified position medical science enjoyed at that time supported its institutionalization and professionalization. David Green writes, "Implicit in this process of institutionalization was the professionalization of scientific activity and the legitimation of those accredited with the possession and control over a specialized body of knowledge" (6). Those controlling the technology for seeing (via the laboratory) and

the background to interpret (via professional medical instruction) were the respected overseers of this new archive of scientific knowledge.

The result of this was that health departments created positions for sanitation engineers and other researchers presented by contagions in response to and anticipating problems of contagious disease. These professionals were responsible for structuring public health policy. For example, Hermann M. Biggs, appointed Director of Bacteriological Laboratories for the Department of Health of New York City in 1892, saw better social organization as the solution to the problem of managing disease. Social organization was seen as capable of preventing "inefficiency, misery, and suffering" in the future. Biggs's motto was, "Public health is purchasable. Within natural limitations a community can determine its own death-rate" ("Models for Public Health Workers" 302). Biggs saw resources as the key to controlling life and death. Biggs outlines the disease as a circumstantial and manageable factor in the following:

> Disease is largely a removable evil. It continues to afflict humanity[…] because it is extensively fostered by harsh economic and industrial conditions and by wretched housing in congested communities. These conditions and consequently the diseases which spring from them can be removed by better social organization. No duty of society, acting through its governmental agencies, is paramount to this obligation to attack the removable causes of disease. The duty of leading this attack and bringing home to public opinion the fact that the community can buy its own health protection is laid upon all health officers […] it means the saving and lengthening of the lives of thousands of citizens, the extension of the vigorous working period well into old age, and the prevention of inefficiency, misery, and suffering. (302)

This is a perception of disease as an unnatural state, as foreign, and as a government imperative. Military language encourages others to join in to "attack the removable causes of disease." Health officers were ordered to attack first, and then use the results

of this attack to "brin[g] home to public opinion the fact that the community can buy its own health protection" (302). Disease was becoming conceptualized as part of policy, and as manageable, predictable, and quantifiable.

Reconstructing the Examination Process

Outside of the laboratory, this changing medical science affected the dynamics of how medicine was practiced. New conclusions about the functioning of the body required revisions in doctor-patient interactions. These changes and the process of archiving medical knowledge created an entire discourse of scientific medicine that was focused through the mechanism of the examination room and the process of examination. A similar shift can be observed in the change from bedside medicine, where the patient was responsible for relaying the symptoms of the illness, to hospital medicine, where the doctor could provide medical interpretations of areas of the body inaccessible to the patient.

According to David Armstrong, this established the dominance of the doctor in the doctor-patient relationship and officially commissioned the new biomedical model of medicine (19). This also made the laboratory crucial to doctor's diagnoses. The laboratory was the sanitary space not accessible by the patient where his or her body was interpreted and a diagnosis was produced. However, Armstrong also argues that the idea of the dissolution of the body through modern medicine assumes that the individual body existed prior to this moment. Instead, following Foucault, Armstrong states that perhaps the hospital actually helped create the individual, autonomous, discrete body. The system which individualized analysis and treatment also recognized discrete bodies with analyzable differences. The individual body became discernable through the sciences. Armstrong writes, "In this way the various clinical techniques which doctors have used to study the body as an object are not merely the symbols of a repressive force but are components in the productive assembly line through which

reality is created" (23). The mechanical tools produced a discourse of the biological. Armstrong continues, "Foucault's major contribution to this line of thought is the insight that individuality was not simply an idea but its concrete realization in the facticity of the body. New knowledges (pathological medicine) serve new social practices (those of clinical medicine), which produce real objects (the body)" (22). Modern understanding of the body in its biological functions was only understood through technological analyses.

The biomedical model also increased the possibilities for experimentation. While both observation and experiment have both been in use for a long time, disease used to only be understood primarily through observation. The employment of the experimental method was credited with helping this medical era "triump[h] gloriously" over all past eras because "the element of control [was] introduced into observation" (Flexner 514). Again, I would assert that this was more of an illusion of control.

Building the Medical Archive

The introduction of bacteriology revolutionized the way scientific medicine was practiced and perceived, allowing for the creation of legislated sanitation policies and changing the dynamics of the doctor-patient interaction. However, this new research required the creation of an archive of observations and interpretations to help standardize diagnosis and treatment. This archive established a scale of normal and abnormal which articulated the individual body. Foucault describes the function of creating a normalizing standard in measuring shades of difference and, even if only briefly, locating bodies in relation to each other and as features of a larger population. He writes,

> In a sense, the power of normalization imposes homogeneity; but it individualizes by making it possible to measure gaps, to determine levels, to fix specialties and to render the differences useful by fitting them one to another. It

> is easy to understand how the power of the norm functions within a system of formal equality, since within a homogeneity that is the rule, the norm introduces, as a useful imperative and as a result of measurement, all the shading of individual differences (184).

These individual differences were being recorded in a growing archive of medical knowledge at this time. Observations from the examination room and from the laboratory were used to help construct this archive.

In the process of removing cells and examining them in the laboratory, the understanding of the body was also becoming segmented. For a brief moment, I want to consider recent analyses of this moment in medical technology. Thomas Osborne describes medical science not as a singular gaze, but as a "discursive constellation of the gaze" that emanates from multiple perspectives and creates multiple interpretations (35). Osborne writes:

> It is this discursive constellation of the gaze that makes it possible for the act of teaching to take place at the bedside. Here, in what might be called the mature clinic, the gaze becomes a form of describing where the act of speaking (teaching) can be mapped onto the acts of seeing (perception) and knowing (clinical discovery). What is at stake in this notion of the gaze thus always seems to be a matter of alignments between different forms of perceptual appropriation (35).

This archive of medical knowledge was predicated upon the reliability of "objective" perception. Osborne describes the dynamics of the clinic as comprising "an assemblage or set of relations, rather than a series of stages, a growth-story, a totality in evolution, or a cosmology" (42). This is similar to how Foucault describes discipline – not as creating fixed positions, but as creating relations that circulate within a larger network.[1]

[1] "Discipline is an art of rank, a technique for the transformation of arrangements. It individualizes bodies by a location that does not give them a fixed position, but distributes them and circulates them in a network of relations" (Foucault 146).

Within this network, discipline becomes self-sustaining. Foucault writes, "Discipline makes possible the operation of a relational power that sustains itself by its own mechanism and which, for the spectacle of public events, substitutes the uninterrupted play of calculated gazes" (177). Discipline connects to medical knowledge in the creation of the archive of relational knowledge. This information is categorized and organized relative to the standards it has created for "normal" and "abnormal" behavior.

Each diagnosis from the examination room and the laboratory became another entry in the medical archive. Over time, this record allowed for a tracking of symptoms for the individual patient while also situating this patient in terms of a greater population of patients. "Doctors could now observe a whole series of instances of any particular condition" (Rose 60). Despite the particularity of these observations, they were often grouped according to similarities and made for generalizations of populations and groups according to certain features.

In her discussion of the medical gaze, Lisa Cartwright explains that these classificatory systems "informed normative models of health in terms of sexuality, gender, and cultural identity" (83). The object of analysis, be it fluid or tissue or other cells, was usually separated from the individual and compared against a classification system. Cartwright explains:

> In fields such as chemical pathology and hematology, the body is segmented, drained, sliced, and otherwise fragmented, the microscope rendering its minute fragments largely unidentifiable except to the specialized viewer. Placing a specimen on the instrument's stage and closing one eye to peer through the viewfinder, the microscopist sees the body in a manner that effectively distances the observer from the subjective experience of the body imaged (83).

While this distancing occurs, an increased awareness of the participation in the body as a whole is also imminent.

Some have argued that the instruments used for analysis also serve a rhetorical purpose. Cartwright's analysis of the microscope explains that "the microscopic gaze has most tidily excised the matter of its own role as an instrument of institutional surveillance and power" (83). In a similar analysis, Armstrong suggests that the stethoscope and an anonymous gaze credited with having "dominated, subjugated and objectified the patient […and with having] had a major impact in celebrating and sustaining the physical nature of the body during the nineteenth and twentieth centuries" (23-24). The importance of the body and the importance of scientific technology used to understand the body (e.g., the microscope and the stethoscope) were elevated in light of examination processes. The efficacy of the technology was promoted, and the biological functioning of the body was established. The body was being integrated into scientific classifications via the technology, yet retaining its separation from technology; and the technology was serving as a method of interpreting the body, yet retaining its role as separate from the body.

In the examination, the doctor or the scientist was always conscious of the politics of his or her position. Foucault describes the process of examination as follows: "The examination combines the technique of an observing hierarchy and those of a normalizing judgement. It is a normalizing gaze, a surveillance that makes it possible to qualify, to classify, and to punish. It establishes over individuals a visibility through which one differentiates them and judges them" (184). It is important to point out that this is not from the position of a fixed, observing hierarchy or normalizing judgment, but more from the technique, or functions, of these operations. The examination also creates a precise archive that constitutes bodies in relation to each other; "the examination that places individuals in a field of surveillance also situates them in a network of writing; it engages them in a whole mass of documents that capture and fix them" (189). The very fixity of these examinations distracts from the fluid nature of

bodies. The measurement of these bodies creates what Foucault describes as a society of surveillance:

> Our society is not one of spectacle, but of surveillance; under the surface of images, one invests bodies in depth; behind the great abstraction of exchange, there continues the meticulous, concrete training of useful forces; the circuits of communication are the supports of an accumulation and a centralization of knowledge; the play of signs defines the anchorages of power; it is not that the beautiful totality of the individual is amputated, repressed, altered by our social order, it is rather that the individual is carefully fabricated in it, according to a whole technique of forces and bodies (217).

The general surveillance of medical science and changing methods of examination created a new sense of the body as it functioned on a microbiological level. This was not isolated to just a scientific understanding of bodies. Now, the individual body was simultaneously seen as discrete, but also as part of the larger social body - a perspective of bodies that had important social ramifications.

Constructing the Social

At the same time that the archive of scientific knowledge was being constructed and reshaped, important changes in the understanding of the social were also occurring. Increased immigration and changes in production and industry in the United States brought many changes to social dynamics. This resulted in a movement to assert a very specific American identity that constructed itself in opposition to these changes, but using medical science as its tool. One indication of this articulation of American identity was the continued prevalence of nativist rhetoric. Marouf A. Hasian, Jr. links nativist rhetoric to Progressive platforms as an aggressive response to immigrants. Hasian writes, "Within the social visions of many Progressives, 'America' was a fragile vessel that threatened to be swamped by the indiscriminate appearance of hordes of

immigrants and foreigners who did not understand what it meant to be civilized" (Johnson 1998 qtd. in Hasian 133). This logic to distinguish between "civilized" and "uncivilized" and to distinguish the "true Americans" was often grounded in scientific concepts. But the concept of the nation was also being defined through the articulation of the limits of citizenship (i.e., "civilized", "immigrants", and "foreigners").

Nikolas Rose argues that "Medicine, for a historian of the present, must be analysed as constitutively social" (54). For Rose, this is not to make medicine's distinction as a result of "social forces," but "that medicine has been bound up with the ways in which, since the end of the eighteenth century, the very idea of society has been brought into existence and acquired a density and a form – society as a domain with a complex and independent reality that has its own laws and mechanisms of disturbance" (54). Therefore, the problems of "society" are often described in total as a body. In texts describing social issues are described in terms of a social body as a single unit, capable of implementing a sweeping, uniform change as a cure. If the technologies of medicine and society are inextricably bound, then an analysis of one must pay deference to both.

They are to be studied together because the way they functioned with regards to bodies was also bound together. Rose describes the use of "statistics" and the use of "administration" as the "two central axes of police" (55). First of all, a population could be understood in terms of statistical data of factors (such as "rates of birth, illness, and death") traceable over several populations and between class, race, gender, and other signifying subgroupings. Then, the way administration functioned in a population was that "administration […] sought to invent mechanisms for regulating events in widely dispersed and heterogeneous locales, forms of conduct and types of difficulty, not merely to avert illness, but to promote well-being" (55). Individuals, identified by their various classifications, made up the distinguishing factors of the social and were formative in its inception as a concept. This system of classification allowed for the articulation of individuality, but only as it was enmeshed in a multiplicity of identities.

This individualization of a larger, singular "social body" became significant for how treatment was conceived and organized. Rose describes the relationship between diagnosing problems and assigning solutions:

> For at least a century, the task of government was thought within a medical vocabulary. Medical rationalities provided the matrix within which government problematized the population – delinquency, criminality, indigence, inebriety were construed as sicknesses afflicting the social body, they were rendered thinkable in medical terms, as so many products of the foul moral miasma circulating at the heart of the great cities. This medicalization of rationalities of government was not merely a matter of metaphors, for it was embodied in a range of programmes of moral hygiene entailing opening up these swamps of vice to the purifying gaze of civilization (56).

The understanding of the individual physical body as synonymous with the functioning of the larger social body came through as part of this moment in history. Solutions were individualized for any problems perceived as prevalent in a larger group. Seeing problems in terms of people-groups and categorizing according to a new understanding of the physical body meant that immigrants were especially subject to this scrutiny and analysis. However, while they were often lumped into the larger social body, their bodies were still marked in some instances as potentially contagious or diseased.

Medical Science and Immigration

Society is understood in terms of the individual, and both are understood in terms of growing medical discourse. I want to briefly examine pseudo-scientific movements that developed from this medical discourse. Some of the emerging medical theories were used to justify racially-based distinctions of superiority/inferiority as innate--much in the same way that physiognomy and phrenology were used in the 19th

century. The eugenics movement, for example, was a scientifically-based extension of nativism that targeted immigration. The findings of the eugenics movement influenced the language of US law to "construct immigrants as deformed, diseased, and deviant" (Dwyer 107). The language used in policies regarding immigrants often suggested "manifestations of a root condition: the mental and physical inferiority of the immigrant body" (108). Howard Markel and Alexandra Minna Stern explain:

> [During the 20th century, d]espite the dramatic changes in demography, the meaning of citizenship and the ability to treat and cure acute and chronic diseases, foreigners were consistently associated with germs and contagion. Anti-immigrant rhetoric and policy have often been framed by an explicitly medical language, one in which the line between perceived and actual threat is slippery and throne to hysteria and hyperbole (757-758).

Fear of the immigrant's body highlighted the precariousness of an American identity relative to constructions of an idealized, stable Americanness. Medical subtexts often shaded aspects of this identity formation. Hysteria and myths about people-groups played an important role in generating support for anti-immigrant policy.

Markel and Stern explain three basic factors that helped create a mythology of immigrants as immigrants arrived in America. First, the immigrant was perceived as an infectious danger, regardless of the actual danger presented by many immigrants. Second, many Americans viewed immigrants who were already settled as having brought their illnesses with them (Markel and Stern 758). Also, because of unsupported evolutionary doctrines, any sign of physical weakness was usually attributed to biological inferiority (761). Third, the labels used to refuse entry to certain immigrants were "strikingly protean medical labels of exclusion" which emphasized such things as "contagion, mental disorder, chronic disability, or even a questionable physique" (758). These negative perceptions persisted despite the lack of substantiation, and informed how immigrants would be perceived for a very long time.

The most difficult thing about disproving these myths was that the threat represented by immigrants was not a complete fabrication. Living conditions "were conducive to the spread of disease," yet the actual threat was still a gross exaggeration (Wald "Communicable Americanism" 665-666). The extent of the threat was irrelevant as long as the association with contagion had been made and became a matter of "profound cultural concern" (665-666). The major concern was over the non-assimilable. As Priscilla Wald explains, the threat of balkanization was perceived to,

> compromise the integrity of the nation [;] on the other hand, absorption of these foreigners, many argued, would make 'America' unrecognizable to itself […] The countless arguments that were framed in terms of a health threat reinforced the vocabulary through which students of the city were shaping their ideas about communication and social existence (665-666).

Once again, the actualization of this threat was irrelevant because the fear and apprehension generated was enough to generate the potentialities of the immigrant's body and the body of immigrants.

If this language had stayed on the platforms of anti-immigration groups or remained the talk in the parlors, then this story might be told a little differently. However, as June Dwyer explains, US immigration law bore "close structural and rhetorical resemblance to the nativist utterances of contemporaneous American writers and thinkers" (105). As if the process of "migration, acculturation and naturalization" was not traumatic enough, the regulations upon an immigrant's arrival helped set the tone for "proper" self-actualization. Therefore, Dwyer continues:

> Both [US immigration law and nativist texts] bristle with emotionally loaded catalogues of negative attributes describing the immigrant body. It seems likely, therefore, that the language and the sentiment of the immigration statutes were fed by nativist rhetoric, and that these statutes, in turn, helped legitimate and perpetuate such prejudices. Immigrant authors, in response, have written in both

> their fiction and their memoirs about how this language has affected the ways that they have imagined themselves as embodied individuals (105).

This resulted in an increasingly unstable understanding of American identity. The immigrant recognized himself or herself as part of America, yet completely separate. When identification with a nation became a legal and procedural distinction (via the process of naturalization), the roadblocks to that assimilation persisted and were then subsumed into the identification as part of the process. American identity became a self-sustaining function – upheld by the very contradictions and awareness of the very limits that demarcated it. Foucault explains self-sustaining power in this way:

> He who is subjected to a field of visibility, and who knows it, assumes responsibility for the constraints of power; he makes them play spontaneously upon himself; he inscribes in himself the power relation to which he simultaneously plays both roles; he becomes the principle of his own subjection. By this very fact, the external power may throw off its physical weight; it tends to the non-corporal; and, the more it approaches this limit, the more constant, profound, and permanent are its effects; it is a perpetual victory that avoids any physical confrontation and which is always decided in advance (202-203).

The dynamism internal to the assemblage of Americanness functioned on understanding the social body in terms strikingly similar to the new understanding of the physical body. The idea implicit in Foucault's use of Jeremy Benthan's panopticon is appropriate here in order to "induce in the inmate a state of conscious and permanent visibility that assures the automatic functioning of power" (201). The self-regulating visibility was important to how many immigrants would formulate their own identities as Americans.

This subjection to a field of visibility can be seen in the introduction to Edward A. Steiner's memoir, *On the Trail of the Immigrant*, which is addressed to "My Dear Lady of the First Cabin." The introduction describes his trip to America, and he addresses the

first class passenger as "you"–which also addresses the audience he hopes to reach with his text. He describes the first class passenger enjoying the sunshine and the music on the ship when "suddenly, you stood transfixed, looking below you upon the deck from which came rather pronounced odours and confused noises. The notes of a jerky harmonica harshly struck your ears attuned to symphonies; and the song which accompanied it was guttural and unmusical" (10). The speaker was among the immigrants on the lower deck, and he voices what he perceives as her negative perceptions of immigrants. He writes, "You were taken aback when I spoke to you. I took offense at your suspecting us to be beasts, for I was one of them" (11). Even though he attempts to dissolve the distance, he is constantly aware of his position as an immigrant traveling in the steerage relative to her position as a first class passenger. He imagines himself as pitiful and inferior when seen through her sympathetic gaze. The gaze of sympathy reinscribes his position relative to her position.

Steiner goes on to tell of his constant awareness of his tenuous claim to Americanness, despite the fact that he has lived so much of his life in America and has become a college professor. He writes, "If I point out some great problems, I do it because I love America with a love passing your own; because you are home-born and know not the lot of the stranger […] I know no Fatherland but America; for after all, it matters less where one was born, than where one's ideals had their birth" (13-14). In this, Steiner demonstrates what Foucault describes above as "the principle of [his] own subjection" (203). He inscribes on himself a sense of identity as an immigrant that takes into account the language of the practices, procedures, and policies that were part of the immigration process.

In other words, medicalized mythologies of immigrants' bodies helped create an American immigrant identity that functioned from the perspectives of a larger social body of immigrants. At the same time, it also inscribed innate inferiority onto the individual bodies of immigrants.

Creating Public Health Policy and Negotiating Jurisdiction

I have discussed how the social and the individual came to be understood in terms of each other and within a specifically medical context. I have also outlined how a similar function of identity – which should be understood as more fluid than fixed – functioned with immigrants and perceptions of Americanness. Now it is important to look at how public health policy was being shaped at this moment. Judith Walzer Leavitt writes, "the rise of bacteriology, which for the first time in human history identified microscopic organisms as the culprits of specific diseases, galvanized existing public health programs and encouraged medical authorities to believe that germs could be contained and controlled through direct intervention" (qtd. in Hasian 124). If disease, illness, and dying could be controlled and if the nation was responsible for the health of its citizens, then it was imperative for the nation to take an active role in the research of bacteriology.

This is the imperative offered by Hermann Biggs, who was appointed to the role of Director of Bacteriological Laboratories of the Department of Health of New York City in 1892. As mentioned earlier, his motto was "Public health is purchasable. Within natural limitations a community can determine its own death-rate" ("Models for Public Health Workers" 302). Just when the nature of understanding disease was forming through the emerging discourse of bacteriology, a method for controlling it had to be created. Ultimately, this burden was to rest upon the shoulders of public health officials who would act as guardians of public health. These "removable causes" of disease were not explicitly laid out here, but the effects of this type of vigilance were elucidated in utopian terms, through the belief that "inefficiency, misery and suffering" could be eliminated.

Understanding the "removable causes" required a broader program of medical surveillance. To facilitate this, the federal government merged some local and state public health agencies under the much larger United States Public Health Service.

Markel writes, "Politicians and physicians alike began to consider a comprehensive public health apparatus as essential to making America a modern nation and inoculating the future of the country against unwanted germs from both within and without (Rosen 1993)" (761). Again, the perception of the "health of the body" was seen in terms of protection of individual bodies against disease and the social body against its enemies.

All of these practices, protocols, institutions, subject positions, and dominant histories figure into a discursive practice of public health. Dr. Alvah H. Doty, Health Officer of the Port of New York, was responsible not only for determining the protocol for the inspection of the bodies of the passengers entering the United States through the port in New York, but also for generating a history of contagious disease for each foreign port. The policies he established reflected his attitude towards the arriving immigrants. He referred to immigrants as "an extremely undesirable class" and said that it had become "necessary to prepare for the reception of these persons in such a manner that they cannot act as a menace to the public health" ("Quarantine Methods" 204). Any "undesirable" immigrants whose bodies carried the threat of disease – by displaying symptoms or originating from an area where disease had been reported – were often placed in quarantine stations until they could be treated or the disease ran its course. His plan was to ensure that the quarantine stations in the United States were the best equipped in the world. He felt that the success of the United States' quarantine stations was partially due to the fact that "the needs of the service are better appreciated and the obstruction of commerce less; and although there is some want of harmony in the details of the work, it is rapidly becoming uniform under the influence of the accumulating facts resulting from scientific research" (204). Public health was being systematized against the epidemiological archive. Doty ends by explaining that successful application of these principles initially would ensure continued and increasing public support for the programs (216).

The border became a highly protected and contested space. Physical and mental examinations were rigorously enforced at places like Ellis Island and Angel Island in an attempt to deter the admittance of any immigrants whose presence could prove to be detrimental to the larger public. Initially, data indicate that the total percentage of those excluded for medical reasons is small; however, the percentage of immigrants excluded solely for medical reasons increased over time. While the number of people rejected for medical reasons (1891 to 1924) was not significant overall, when looking at percentages within the total number rejected, the number is still significant. In 1898, 2 percent were rejected for medical reasons. This number had risen to 69 percent by 1915. Partially responsible for this change was the "growing list of ailments, physical disabilities, and, over time, determinations of moral status." The list of excludable ailments grew and the definition of "illness" began to change (764). Markel and Stern explain,

> In other words, the creation and application of categories of medical exclusion outpaced the actual presence of disease among the newly arrived, reflecting the shift away from acute and short-lived ailments, such as typhoid and cholera, to chronic, mental, or moral conditions, such as feeblemindedness, constitutional psychopathic inferiority, or hookworm, which began to be interpreted as likely to make an immigrant a 'public charge' and an economic and social drain on the nation (764).

Over the years, the "associations between immigrants and disease remained intact" (768). This misconception continued to shape public health policy.

Controlling Contagion

The changing scientific medicine required a public policy that reconsidered jurisdiction. But what is jurisdiction? Even this term was undermined by the transcendent nature of this new field of science. Jurisdiction took on new forms. Sometimes, it was determined through specific situations. For example, in the case of

Jennie Barmore, a boardinghouse owner who was discovered as a healthy carrier of typhoid bacilli, the following opinion was used in her proceedings:

> Authorities cannot interfere with liberties until danger exists. Health authorities cannot promulgate and enforce rules to prevent contagious and infectious diseases which are not founded upon an existing condition or upon a well-founded belief that a condition dangerous to public health is threatened, and cannot interfere with the liberties of a citizen until the emergency actually exists (*People v. Robertson*).

A law enacted did not mean it was necessarily practiced; a new policy for sanitation or hygiene did not have any real bearing. Through these shifts, social jurisdictions were being reconstituted. One example is the way public health campaigns "sought to make the family into a quintessentially 'private' space, yet ensure that it accepted its responsibilities for securing the 'public' objectives of the social health" (Rose 66). Rose explains,

> Medical expertise here reveals its capacity to act as the relay between political objectives and individual desires and responsibilities, thus constructing 'private' spaces that will simultaneously come to secure social goals: acting as an exemplar for all those other forms of expertise that will follow, and which will ensure that, in a liberal society, individual well-being will assume an inescapably social form (66).

Building off of the previous discussion regarding examinations, this bridge between the private and the public was first articulated for many immigrants with their first experiences upon arrival. After they have made the treacherous journey but before they can begin the process of becoming incorporated into American culture, they often had to endure a rigorous examination. For the immigration officials, the immediacy of this examination after the immigrant's arrival is crucial. The Manual for the Mental

Examination of Aliens was used at Ellis Island to instruct immigration officials on the proper examination of arriving immigrants. The manual states:

> This primary mental examination represents, of course, the first contact with the alien, and is of supreme importance. It is, indeed, the critical point. Once it is passed and the immigrant is allowed to go on his way, he will never again be seen, unless he be apprehended and returned by municipal or State authorities (12).

This initial contact is important to these officials not just because of its possible diagnosis, but because of its value in establishing the tension of the immigrant's position. The immigrant is attempting to assimilate at the same moment that his or her body is being examined in terms of its innate difference. The immigrant's admittance is predicated upon passing tests for physical, emotional, and intellectual abilities.

The manual presents the decreasing importance of the immigrant's understanding of his or her own health. The examination often overrides any narration of symptoms or history provided by the immigrant. The manual states, "immigrants knowing the purpose of the examination have an added motive for concealing the truth. Some of them are too ignorant to give satisfactory histories, even when they try to" (20). Because their physical health is part of their admittance, any information they could provide is immediately discredited because of motives. Any incriminating evidence provided by the family would be used, while any exonerating information would be disregarded as biased.

Along with the official medical examinations, all immigration personnel are instructed to unofficially observe each immigrant's conduct. These examinations are to be conducted by "immigration inspectors, interpreters, matrons, and other employees", who were to "return to the medical department any alien whose language or conduct appears to be different from what they regard as normal" (42-43). The power to distinguish normal behavior is now divested in every immigration employee, resulting

in a constant surveillance of the immigrant populations. An earlier section of the manual also instructs officials to diagnose mental defects based on "[the immigrants'] appearance, attitude, and conduct" (13). The mass accumulation of data "after several weeks' observation on shipboard and at the immigration station" determines the immigrant's fate, and adds to the growing archive of scientific research (13).

In this case, it is a physical subject, an amalgamation of cultural and sociological tendencies and shifts, that is both made different through the acquisition of data, and made inferior through the interpretation. The negative perceptions of the immigrant's prior existence, as demonstrated in the following quote, use a sliding scale of feeblemindedness to ascertain the immigrant's abilities:

> It is almost impossible for Americans to realize the narrowness of the lives of some of the poorer classes of the countries in Europe. Many of these people live a life of sordidness and [end p. 22] hard-working monotony almost beyond belief, resulting in mental equipment which is correspondingly limited and stunted[…] His possessions, his ideas, his vocabulary, and his experiences are all extremely limited, and he must be judged and measured accordingly. Thus in determining feeble-mindedness in foreign races by measuring the amount of an alien's acquired knowledge, a great deal of time and energy must be expended in deciding what are normal standards for each race and also for the various social and geographical classes in each country (22-23).

This creating a graduated scale of intelligence and aptitude that further reinforces the need to develop a standardized defining function.

The extended borders of the examination room and the terms of jurisdiction brought many changes through a medicalization of the social. Medical science allowed for the development of what was perceived as a stable medical archive of knowledge that could be used to standardize diagnoses and treatments. This gave more authority to the doctor in the process of examination, and the doctor more frequently used the

laboratory to diagnose. The body was broken down into fluids, cells, and testing samples positioned within the "discursive constellation" of the medical gaze. The language used to describe the body in this capacity was also extended to the idea of a "social body." Therefore, in this moment, the individual began to be understood as separate from yet constituting the collective social body. This also meant a change in the treatment of "the body," as the language became prescriptive and used medical terms for the body and within public health policy. The increasing jurisdiction of public health policy combined with the interpretive capacity of medical science. Specific ideas about the diseased immigrant body persisted and were promulgated by immigration law and policy. Part of the problem of controlling contagious disease was also an issue of how the body of the immigrant was treated.

In many of the issues addressed in this section, disease was recognized as communicable and as contrary to the health of the body. What happens to the history of the medical gaze when a major player defies the methods of examination set forth? What happens if a body does not reject the foreign bacteria, but incorporates it as part of the body's productive processes? What happens when the understanding of the body's functions, as established in bacteriology, is defied?

DISCIPLINED BODIES AND THE CARRIER STATE: "TYPHOID MARY" AND CHANGING PERSPECTIVES OF DISEASE

"Disease, for the clinic, no longer has an objective essence but is now grafted onto the very structures of the body. Configuration and localization become one. Hence the notion of the lesion – organic damage; disease as less an entity attacking the organism than a phenomenon of the organism itself. Part of what is at stake here is a certain sensitivity on the part of clinical consciousness to individuality – not just to the individual person, but to the individual fact, singularity, particularity" (Thomas Osborne, *Reassessing Foucault* 40)

Establishing the Plague

In *Discipline and Punish*, Michel Foucault writes, "in order to see perfect disciplines functioning, rulers dreamt of the state of plague. Underlying disciplinary projects the image of the plague stands for all forms of confusion and disorder" (199). After examining the creation of an archive of medical knowledge and the function of medical science at this time, it is imperative to focus on the "image of the plague"– how specifically it was created and in what ways was it counteracted. Disorder must be imminent for the disciplining technology to function. In looking at the development of medical science, the project of establishing the plague was the control of contagious disease, specifically typhoid fever and the curious case of Mary Mallon, otherwise known as "Typhoid Mary."

The questions most important to this critique involve function and movement. How did these discourses of medical science and public health policy develop and function at this time? In what ways did they converge and diverge at different moments? More specifically, how does disorder/the plague function in constructing medical discourse? The subject of this analysis is the "discovery" of Mary Mallon as a

healthy carrier of the typhoid bacilli. A healthy carrier was capable of carrying and communicating a disease without feeling the effects of the actual disease. The existence of carriers complicated the developing perceptions of disease. How did carriers and their corresponding narratives operate/function figuratively? How did they function practically? What is the relation between Mary's story and constructions of the nation? How is the nation being constructed in relation to contagion, race, and public health policy? How are these things being constructed in relation to the nation? What does the story of Mary have to do with a history of the medical gaze, and how does her story help to bring a gendered perspective to this history? In what ways was medical science and knowledge a result of performance? What does the story of Mary tell us about the twin apparatus of prevention and pre-emption that marks the history of biological forms of state power? How are normality and mutation managed as threats to the integrity of the nation?

This will continue the analysis of contagious disease, but will focus on the particulars of the situation presented by typhoid fever and by Mary Mallon. Prior to this moment, typhoid was only understood in terms of its communicability associated with practices of hygiene and sanitation. In 1885, the journal *Science* described the following causes:

> Unfortunately the identification of the typhoid germ has not yet been satisfactorily determined, and until it is we can hardly expect the mystery now surrounding the production of the disease to be cleared away. In regard to the means by which the fever spreads, there is more unanimity of opinion. The water of wells which has become impure from the leaking of vaults and cesspools has been shown over and over again to have caused typhoid epidemics ("Typhoid Fever and Its Prevalence in Autumn" 374).

Milk was also many times believed to be "the medium through which the typhoid poison has been disseminated," because contaminated water was often used in the

dairies (374). The spread of typhoid from person-to-person was believed to be "extremely rare." It also was believed to occur more frequently in the autumn, associated with the decay of vegetation. At this time, disease was most often associated with decay, impurity, and filth (374-375). Therefore, one method of prevention was to eliminate impurity and filth. Since these areas were usually the poorer sections of the city, this is where the efforts were directed.

However, the association of contagious disease, specifically typhoid, with filth was complicated by the number of wealthy individuals contracting the disease. In general, diseases – especially ones communicated via bacteria or virus – do not recognize race or class or gender as they move from person to person. Therefore, the "fashionable watering places" frequented by the wealthy were seen as the cause of the spread of bacteria – specifically typhoid. "The crowding of human beings in such places, with the consequent accumulation of human waste, would, it would seem, help to account for the large representation of typhoid fever victims in the ranks of their patrons" (374-375). Oftentimes, the terms used to describe the conditions surrounding a person's health were more related to class issues than anything biological. In this example, "crowding" would more often be found in poor, urban areas. That the wealthy contracted it was considered to be a consequence of allowing themselves to be put in a situation where crowding occurs. Trying to establish "health" in terms of conditions of class made the factors of disease seem manageable.

This article also included imperatives for public health professionals. "We must in our endeavor towards prevention and restriction pay strict attention to cleanliness in all its forms, and especially to the thorough disinfection of the discharges from patients" (375). The theories about transmission were considered to be nothing more than conjecture, and general sanitation and hygiene initiatives were undertaken to prevent the spread of disease. Overall, this moment was about trying to create a state of disease, and trying to prove that the circumstances that were often of class were also

causative in the spread of disease. However, the non-discriminatory nature of contagious disease directly contradicted any element of control. Marouf A. Hasian explains that the legitimization of bacteriology required a reworking of the definitions of "illness" and "health." Legitimizing bacteriology meant that it needed to become foundational to the operations of scientific medicine and that its precepts could transcend public policy and become part of everyday practice. The body's operations on a microbiological level meant that the threat posed was not immediately evident.

Discovering Carriers

Bacteriology needed specific cases of its value, where its tenets successfully eradicated disease. It needed validation, or the state of the plague. From 1900-1907, anywhere from 3,500 to 4,000 new typhoid cases were reported each year in New York City alone. City-wide initiatives for "cleaning up" were implemented to stop the spread of disease. Hasian writes, "In order for the new bacteriological approaches to receive any type of cultural currency, promoters needed proof of the efficacy and practicality of public health measures that focused on individual 'carriers'"(Hasian 125). This branch of medical science was built upon understanding the nature of disease and regulating its movement in populations. Thus emerged the idea of a person as a "carrier" of a disease, or what was often referred to as "the carrier state." These individuals carried the bacteria and were capable of communicating the disease to others.

The complication that typhoid presented in the history of communicable diseases was the issue of the healthy carrier. It made sense that those diagnosed with typhoid fever would be capable of transmitting the bacteria. With the healthy carrier, it was believed that a person could transmit the infectious bacteria without ever having displayed symptoms of the fever. If disease is seen as foreign to and opposed to a healthy body, what then becomes of the healthy carrier whose body assimilates and produces the bacteria without calling on the defenses of its own immune system? This

generated apprehension because it required a revision of newly implemented procedures and programs regarding contagious disease. In 1912, *The New York Times* described typhoid carriers as "at present terrifying, if unwitting enemies to society" ("Typhoid Carriers" [1912] 8). The idea that people could be contagious without displaying any recognizable symptoms of disease was contrary to the process of examination that was being standardized at the time. The healthy carrier was threatening because it represents the body's capacity to function normally while carrying and possibly transferring the foreign cells.

The healthy carrier and bacteriology each articulated the limits of the other. Using the doctor, bacteriology and medical science could compare the results from the laboratory and the symptoms of the patient against the developing medical archive to diagnose someone with a disease or an illness, or to declare them healthy. A patient would usually seek out a doctor as symptoms developed for diagnosis and treatment. However, because the healthy carrier did not develop symptoms, he or she would not approach the doctor for assistance. Identification of the person carrying the bacteria required visibility of the physical symptoms on the body; the body of the healthy carrier usually showed no visible markings of the disease. It defied the discursive system that wished to capture it. Yet, in carrying the foreign cells, it had the capacity to spread the bacteria to others. The body of the carrier bypassed contemporary scientific understanding of the function of bacteria and disease; it highlighted its weaknesses. Any precautions that would be used to isolate a person with a contagious illness would not have been used with a healthy carrier. Unaware and unchecked, the healthy carrier would often continue to spread the disease. The healthy carrier complicated the understanding of illness and disease that was foundational to bacteriology. The carrier's power was in his or her ability to change the nature of bodies in the community through contact. Instead of reproduction, the carrier's body produced cells for other bodies and changed the production capabilities of those other bodies. The idea

of patrilinear reproduction was undermined by the body that created other carriers. The carrier could not control this transmission.

The discovery of the healthy carrier had significant ramifications for medical practice and social policy because the problem could not be handled through careful surveillance alone. "At the base of this discovery is a healthy human being turned pathogen" (Wald "Cultures and Carriers" 182). These carriers were most often understood through stories told about their discovery and the number of bodies they had unwittingly infected. These stories were called "carrier narratives," and they blurred the lines between scientific evidence and narrative. Priscilla Wald writes,

> The story recounts how experts—typically scientists and public officials—track the spread of the disease back to its source, an unrecognized infective agent; these experts, moreover, make visible the cause of a problem in terms that lead directly to, and therefore justify, their particular solution. Typically, the story poses social problems in scientific language (182).

The purpose of these narratives was to persuade, to entertain, and to educate. Even though medical terms were often incorporated into narratives, they were not reliable for their scientific accuracy. These narratives were not explicitly laid out in one authoritative text. Instead, bits and pieces were told from several different sources. That there were several authors writing in different contexts led to a sort of "truth" of her story through several consistencies of her account – just like several eye witnesses to an event would reinforce the truth of something through the consistencies in their stories.

However, it was more than just a general consistency of the story of the carrier. The narrative form also allowed for the introduction of certain claims that would have been ludicrous had they been explicitly stated. For example, the narratives of Mallon often made "innocent" reference to certain things that would have been considered questionable about her morality and her physical appearance. This was in an effort to make her less of a sympathetic character, and these things could not be stated explicitly.

Confronting Mary Mallon

We will focus on the story of Mary Mallon, more commonly known as "Typhoid Mary." Through various accounts, there is "no single truth about [Mallon]. Instead, there are various stories about her and multiple productions of her different meanings" (Leavitt 231). The specifics of this strange case have to be understood in connection with the history of contagious disease that preceded Mallon's story. The possibility of controlling contagious disease through bacteriology was empowering medical science and the discovery that there could be healthy carriers transmitting dangerous bacteria seemed to run counter to these ideas. The carrier's body complicated the idea that the state of disease is contrary to a healthy body. Wald writes,

> The story of "Typhoid Mary" represents a collaboration between the medical community and the media to support a theory that would become a scientifically based social policy. The transformation of Mary Mallon into "Typhoid Mary" was the U.S. archetype, as well as the most sensationalist manifestation, of the carrier narrative ("Cultures and Carriers" Wald 182).

The different versions of Mallon's story were constructed within medical subtexts and class issues, the details of which were often echoed throughout her narratives to construct a very specific image of "Typhoid Mary."

Before continuing into the specifics of Mallon's carrier narrative, I think it is important to look critically at the other factors that will not be incorporated into these accounts. J. Andrew Mendelsohn explains the problems with creating what some call "the carrier state," where there is a heightened awareness of the potential for carriers and a determined protocol for dealing with them. He explains that focusing on this state "extended the bacteriological method, and, while bringing more individuals and their lives into the purview of public health, diverted attention from social factors. It thus nuanced and at the same time empowered germ theory" (274). In other words, while it prescribed a solution that was one way of controlling infection and could prove to be

effective, it also ignored other possible origins and the evidence to support the carrier was often weak.[2] He continues, "Some even disputed the evidence that 'Typhoid Mary' had caused the disease outbreaks from which she was traced. […] Habitual appeal to the role of carriers in spreading disease, instead of acknowledgement of epidemiological unknowns, threatened to become a 'doctrine of 'carriers'" (Mendelsohn 274). This statement is controversial because most people have based their justifications for the treatment of Mallon, and other "carriers" who followed her, on the premise that she was indubitably a carrier. This battle was won too easily and ended too quickly.

In order to understand how the carrier narratives of "Typhoid Mary" were constructed through contemporary texts (from roughly 1909 until her death in 1938), I will examine several articles from *The New York Times*, the journal *Science*, and various publications written by Dr. Soper and other health professionals at this time. First, it is important to understand a possible basic plot of her story. Not much is known about this Irish immigrant, except for the details repeated in a constant refrain in her accounts. Most often, the details were in an attempt to discredit some aspect of her character completely unrelated to her health. For example, she was rumored to spend her evenings at a boarding-house with another single gentleman named Briehof. David Rosner explains, "The new generation of public health people had a kind of condescension to the poor. You have this kind of mix of a belief in bacteriology, a belief that there are germs there, and embedded in that is a belief that the immigrant is kind of a source of real infection and danger" ("The Most Dangerous Woman in the World"). One account states that Mary Mallon was born in County Tyrone in 1869, but most accounts speculated about her age. It is believed that she moved to America when she was a teenager and moved in with her aunt and uncle, who died shortly thereafter.

[2] For example, one account that remains suspicious is the incident at Sands Point, where Mallon was blamed for transmitting the fever. The laundress had been employed by the family for ten days before the outbreak. Only the servants became ill, even though Mallon had worked for the family for nine months. (*Carrier State* 2021).

"Typhoid Mary" was "discovered" by sanitation engineer Dr. George Soper. Soper, a freelance civil engineer, was hired by the Thompson family to determine the source of typhoid fever at their house in Oyster Bay ("The Most Dangerous"). He used the situation with Mallon as cultural currency to create a public response that connected race with class with health with threat and gave him the power to mediate this threat. "The story of how Dr. Soper pieced together the fragments of Mary Mallon's history and fitted them into a vague and, at that time, unaccepted theory concerning the transmission of typhoid, reads like a Conan Doyle creation" ("'Typhoid Mary' Has Reappeared" SM3).

As a female Irish immigrant, Mallon was already faced with many negative stereotypes: "stupid, drunken, dirty, that they were unfit for participation in the American sort of mainstream" ("The Most Dangerous Woman"). Yet the role of "cook" was the "highest rung of the pecking order among servants. And she was often not just cook, but she was really the kind of manager of the entire enterprise, and would have been the most trusted member of the staff" ("The Most Dangerous Woman"). Mallon was respected in the households where she worked, and if members of the family became sick, she also served as the nurse. The accounts do not report Mallon having many friends, but it would not have benefited Soper to present Mallon as an active part of a community. The parts of her story that were repeated in circulation support negative perceptions of her.

Mallon successfully worked as a cook for many wealthy families in New York City before being accused by Dr. George Soper of infecting others with typhoid. Mallon refused to submit to testing. In 1907, he constructed enough of a case to receive permission for a mandatory quarantine on North Brother Island to test Mallon. During this time, Mallon fought for her release to no avail, including filing a writ of habeas corpus. She was finally released, and one year later, she sued the city for damages. The case did not continue, and Mallon disappeared for several years until she was accused

of causing an epidemic at a New York City hospital. This time, in 1915, she was returned to North Brother Island. She died on the island in 1938.

Beyond the basic plot, the investigation of Mary Mallon reveals changing methods of medical examination and the agency Mallon could exercise by denying the doctor access to her body. When Soper first became suspicious that the case of typhoid fever he had been hired to investigate was being spread through a human carrier and not through some other means, he realized that he would need to test Mallon to see if she carried the bacteria.

Once Mallon was finally located, the problem became her refusal to submit to testing. The avenues for diagnosis taken by Soper in this situation reveal the changing dynamics of the doctor-patient relationship. She refused to submit to a scientific gaze. Prior to this, doctor-patient relationships relied on a physical examination of the surface of the body and a reliance on the patient's testimony of symptoms. Soper's focus was to understand Mallon through the laboratory. When she denied him this, he resorted to constructing her history through the testimony of others. At this moment, the body of the patient and the story it could tell was given a stronger claim to truth than the patient's testimony.

Because he did not have access to Mallon's body, Soper had to find another way to convince the Health Department that Mallon posed a threat to her community. Soper explains, "It became necessary to work out the cook's history without her help" (Soper, *The Carrier State* 2021). He used her employment records to link Mallon to the outbreaks at Oyster Bay (summer 1906), Sands Point (summer 1904), and Dark Harbor, Maine (summer 1902). This is what Judith Walzer Leavitt referred to as "prebacteriological methods" because it relied on employment accounts, etc. to construct his case for Mary. In 1907, Soper presented his case to Dr. Hermann M. Biggs, medical officer of the New York City Department of Health. (*The Carrier State* 2022). The laboratory became very important at this point. "Finding and isolating Mary Mallon represented the scientific

optimism of the early twentieth century and the faith that science would serve humanity by curbing disease" (Leavitt 38).

Eventually, the case was strong enough that legal access to Mallon's body would be granted to Soper. Soper received permission to force Mallon to be tested, despite her protests. These cases were used to support the possibility that Mallon was carrying and transmitting the typhoid bacteria. Soper presented his case to Biggs on March 11, 1907 with the request that "the woman be taken into custody by the department and her excretions made the subject of careful bacteriological examination" (*The Carrier State* 2022). Prior to this, only a theory of circumstantial evidence existed to make the case that Mallon was infecting others with typhoid. Scientific evidence was needed.

For the Health Department, the threat posed by Mallon was imminent and required quarantine. Once Biggs was convinced that Mallon could have been responsible for infecting others with typhoid, Mallon was sent to North Brother Island in March of 1907. At the time, the Health Department declared that she was "a walking repository of typhoid germs, and although immune from the disease herself, possessed the power of communicating the fever to others" ("Typhoid Mary Must Stay" 3). Disease and communicability were seen in terms of their affect on a community.

Once Mallon was finally tested, Soper felt that the tests revealed what he had suspected – that Mallon was a healthy carrier of typhoid. Mallon was sent into quarantine and was forced to continue testing. Soper reported on the testing conducted by Dr. M. Goodwin under the direction of Dr. William Park. Mallon's urine and stool were inspected, but only the stools contained the germs. Soper explains, "Daily examinations made for over two weeks have failed only twice to reveal the presence of the bacillus typhosus, and on these occasions the sample taken was perhaps too small to reveal them. The blood gave a positive Widal reaction. The cook appeared to be in perfect health" (*Carrier State* 2022). However, at the same time, Mallon used a trusted courier to send her specimens to Ferguson Laboratory in Manhattan. Surprisingly, the

results often contradicted the Health Department. The Health Department denied that these tests could be valid, and even though she attempted to fight science with science, this did nothing to help Mallon's case ("The Most Dangerous Woman"). Her body was understood in terms of its biology, and in the diagnosis of its fluids. It belied and invalidated her own perceptions of who she was and what was understood about her body.

The way Mallon's story was narrated in the newspapers reflected changing perceptions of healthy carriers. The following brief rhetorical analysis of how she was described should only be applied insofar as this can be indicative of perceptions of disease and the carrier. At first, references to "Typhoid Mary" described her as "possess[ing] the power of communicating the fever to others" ("The Andrew J. McCosh" 16). Descriptions of Mallon are largely pejorative. She is described as "a menace to every person with whom she came in contact" (16). In another article less than a month later, she is again described as "possess[ing] the power to communicat[e] the fever to others" ("'Typhoid Mary' Must Stay" 3). She was also described as "a walking repository of typhoid germs" (3). In another account, she was described as a "peripatetic breeding ground for the bacilli" ("'Typhoid Mary' Has Reappeared" SM3). Her body was seen in these terms as productive, and its ability to spread disease as willful.

The New York Times reported on Mallon's requests to leave North Brother Island, and the decision by Justice Erlanger that "her release would be dangerous to the health of the community. The court therefore, said the Justice, did not care to assume the responsibility of releasing her" and would not honor her attempts to free herself by suing for a writ of habeas corpus ("Typhoid Mary Must Stay" 3). While this account seems to sympathize with her by mentioning the ill treatment she feels like she has received in quarantine, it also sets forth what was then only conjecture as being

established fact in this instance, despite the complicated circumstances and mitigating factors (as discussed by Mendelsohn).

The period between Mallon's release and her recapture was filled with the tension of inevitability. "'Typhoid Mary,' has now been lost sight of. The authorities cannot tell where she is. Will they find her again when she becomes the centre of another epidemic?" ("Typhoid Carriers"[1914] C2). This article outlined the problem presented by the carrier in this way: "The recent findings of sources of serious typhoid epidemics in healthy persons acting as 'typhoid carriers' prompts anew the question whether this community is properly guarded and whether its authorities exercise due care to detect and segregate such cases" (C2). The first premise of this idea is that these people identified are "acting" as carriers–no longer is it a label or a definition that is placed upon them, but now they are exercising a sort of agency. The second premise is calling for an active authority to regulate this threat. Despite repeated reports that isolation is not an appropriate response to these carriers, that the only threat they may pose is when they are handling food, the idea is still actively set forth that these people must be segregated.

In the reappearance of "Typhoid Mary," Mallon is described as having an "inexhaustible supply of typhoid bacilli" and as "dispensing germs daily with the food" ("'Typhoid Mary Has Reappeared" SM3). This is reminiscent of the pre-bacteriological perceptions of disease transmission from 1852 (see section 1). However, according to this account, of the 281 persons who ate her food in the Hospital, only 25 actually came down with typhoid fever. It is important to examine how Mallon's role as a cook and within the home revealed other points of vulnerability within the social structures of the time – specifically, the family.

Mallon as Cook

One early cartoon of Mallon when she was first discovered is of "Mary before a huge frying pan, tossing a typhoid germ in the air like a flapjack" ("'Typhoid Mary' Has Reappeared" SM3). I want to use this to discuss her gendered position, especially as laid out in the analysis by Priscilla Wald. Mallon's role as a cook has to be understood in terms of women's roles in general at this time. Wald uses the Home Economics Movement in 1909 to outline the role women were supposed to play alongside health professionals in guarding their households against disease. Housework was becoming a science, and, as explained by Wald:

> [The] curricula invariably included bacteriology, and their graduates were trained to run a disease-free as well as an efficient house. The leaders of the movement did not expect their graduates, in most cases, to spend their time actually performing housework; rather, they were expected to know how to run a household, and they were to understand that household as their responsibility, if not always as their sole domain. This widespread and successful movement articulated the terms of social responsibility for white middle-class American women ("Cultures and Carriers" 203).

The healthy carrier that could serve as the personal cook represented the inability of these women to guard their homes against disease. First of all, once it was discovered that food-handlers who carry the typhoid bacilli put their customers/clients at risk, new strategies for managing the kitchen were proposed. For example:

> Now, the remedy is obvious. No servant of any sort, but more especially a cook or nurse, should be taken into a household without sufficient investigation being made of her medical history to give reasonable assurance of safety. In the second place—and this is vital—cooks should be scrupulously clean about their persons, and the kitchen should be kept clean, not because a vague, aesthetic standard demands it, but because cleanness is indispensable to the health of the family.

> The kitchen should be the lightest and brightest and cleanest room in the house and the cook should keep it so ("'Typhoid Mary' has Reappeared" SM3).

At the time, American women were admonished to regain control of their kitchens and to maintain them to the standards of hygiene they were being taught as part of their role as ad hoc health professionals. Even though Jacques Donzelot's *The Policing of Families* is set in 19th century France, some of the ideas are relevant to the discussion here. In his introduction to the text, Gilles Deleuze explains that "the rise of the social and the crisis of the family are the twofold political effect of these same elementary causes" (xi). The idea is that the state and the family are not discrete organisms, but function in relation to each other. Donzelot shows how "at each intersection of these causes, mechanisms are assembled to function in such and such a manner, slipping into the interstices of bigger or older apparatuses, which then undergo a mutation as a result" (xi). The problem created by the introduction of the healthy carrier to the home outlined the breaking of what Donzelot calls "the privileged alliance between doctor and mother [to] serve to reproduce the distance, originating in the hospitals, between men of learning and the level of execution of precepts that was assigned to women" (18). This same sanctity of the role of the mother was true in 20th century American homes. In fact, Donzelot argues that this role allowed the doctor to "furnish her with social status" (21). To tie the two together, the woman was given these tasks in her association with the doctor. The potential for the wife to hire a servant who could possibly make her family ill meant that the wife was contradicting that very imperative. Instead of protecting her family against the spread of disease, she was making them vulnerable to its transmission.

The Health Department presented the general threat of transmission of typhoid; they could not initially anticipate the widespread possibilities with the healthy carrier – but why was Mallon's role as the cook especially under fire? The same body played double-service. It could be used to incriminate or to liberate, based on the context in

which it was used. Her body was productive in her role as a cook, yet the restrictions put on her post-diagnosis made her body incapable of production. Priscilla Wald suggests that Mallon's role as cook was especially threatening because of the domestic role she played. She entered the home, made the food, and assisted with the running of the household. Also, "What complicated matters in Mallon's situation is that Typhoid Mary seemed to represent a type of woman who threatened the status quo" (Hasian 133). She performed her assigned roles, but beyond what she could control, she was still perceived as a threat.

The cook's role in the household is also demonstrated in the following comment by a medico-legal specialist: "If the Board of Health is going to send every cook to jail who happens to come under their designation of 'germ carrier,' it won't be long before we have no cooks left, and the domestic problem will be further complicated. What would the poor jokesmith do then for his stories about the cook who rules the house?" ("'Typhoid Mary' Asks $50,000" 9). This highlights the role that the cook played in wealthy households, where the women would have been educated to this danger. As we explained earlier, the cook often served as household manager, which only highlighted the inadequacies of American women in fulfilling this role at this time. Part of the excessive response to Mallon was not just the capacity of her body to communicate disease; Mallon drew attention to potential neglect in certain aspects of American family life.

Mallon in Court

Any sense of Mallon's agency came through wresting the discourse used against her as her own weapon. When she was being physically pursued by Soper, she put up a fight. Soper writes, "The department acted favorably on the suggestion and caused the cook to be removed to the Detention Hospital. She reached there March 19, 1907, after a severe struggle in which she showed remarkable bodily strength and agility" (2022). At

first, her battle was physical. After she was quarantined at North Brother Island, her battle became more scientific and legal. While the physicality of her battle never ended, its physicality was displaced into a struggle that still argued for the rights of her body, but used scientific and legal arguments in her defense. Even though she did not win her court case, she was emphasizing a truth about her body in this moment.

Mallon first sought a legal solution to her problem by filing for a writ of habeas corpus, which became a negotiation over the jurisdiction of her body. As reported in *The New York Times*, "[Mallon was] denying that she had the power of communicating the fever and alleging that she was treated like a leper" ("'Typhoid Mary' Must Stay" 3). Several accounts include her complaint that her dog was her only companion, and that even the nurse who brought her food did not interact with her, but hurried away after dropping off her food (3). She lost this plea, but she persisted – arguing that the isolation she suffered on the island was inhumane.

Public support for Mallon continued to decrease when she decided to sue the New York Health Department for her imprisonment. Part of Mallon's release required that she not take another position as a cook – her sole source of income. With this loss, Mallon was financially devastated. She still contested that she was not a typhoid germ carrier, and she blamed the water supply on the transmission of typhoid in the areas where she worked. To compensate for the loss of her livelihood, Mallon sued the Health Department for $50,000. Mallon lost the case, but she still asserted her rights as a citizen and demanded compensation. This indicates her perceptions of herself as a citizen, and of her rights to pursue an occupation which would provide her with an income for survival. Mendelsohn describes Mallon's role as important for justifying bacteriology:

> In sum, Mary Mallon's resistance helped justify the intensification, not the moderation, of bacteriological hygiene. This intensification and its particular character need to be explored more fully if we are to understand what kind of model New York City provided for the role of the laboratory in public health. Its

> health department not only pioneered municipal disease control in the United States but may well have approximated Robert Koch's ideal of bacteriological police more nearly than any other city in the world in the early twentieth century (272).

For Mendelsohn, what seems to be especially important is not any battle she might have won, but the very fact that "it is without historical importance for the definition of state powers in public health" (276). Mendelsohn continues, "It is unsurprising that Mallon's plea for release from incarceration, though unprecedented in issues of fact, had no impact on public health law, indeed was never recorded for legal reference. The whole episode lay forgotten in the archives of the New York county clerk and the pages of the press" (276). The battle over the government's jurisdiction in this issue was never even brought to light. The general apathy regarding this aspect of the situation was even more resounding than a loss, because there was not even a fight to preserve the rights of the person who had been classified as a carrier. When it comes to governing the social, at what point do these rights end?

Instead, what became significant for Mallon was the ways in which this lawsuit was described in relation to her. One account of this lawsuit emphasizes her robustness of frame. The article states, "The physicians of the Health Department have never been able to discover that Mary herself ever had typhoid. She is described as a robust woman, and weighing about 190 pounds. The Doctor suggested that she undergo an operation. To this she would not submit. In fact, she always insisted that she never gave typhoid to anybody, but that the water was at fault" ("'Typhoid Mary' Asks $50,000" 9). Her frame or size was immaterial to the validity of her case, but for this audience, it was important to constructing Mallon as neither feminine nor weak and also not as a sympathetic character. . This account also discusses her confinement and her subsequent "contest of physical strength with five policemen" (9). It also focuses on Judge Giegerich's refusal of the writ of habeas corpus and his insistence that she "was a

menace to the community" (9). The article ends with the reiteration that Mallon has promised not to take a post again as a cook. Nothing is said of the status of this case nor any legal responses to it. Instead, it sets Mallon's case against the facts that are known about her – her physical appearance, her recalcitrance, and the fact that she is believed to have spread typhoid.

When discussing the validity of Mallon's case against the City and the Health Department, the article revisited the circumstances under which Mallon was discovered and used these to frame the issue in terms of her guilt or her innocence. It also begins to describe her in terms of her physical strength and the bulk of her frame. That she was seen as a physically strong or weak character influenced other perceptions of her. The legal precedents or background of the case are not given much attention. The case was being tried in the general court of public approval.

Three years later, a general discussion of typhoid carriers revisits the account of Mallon's lawsuit against the city. "A suit for damages was at length filed against the city by her lawyer, and, while the action was not pressed, the segregation was ended upon her promise to observe special precautionary rules and to report to the department periodically" ("Typhoid Carriers" [1914] C2). The chronology used here is interesting, because other accounts have her suit following her release; her release was not a result of her filing the lawsuit. Because the "action was not pressed," the conclusion would be that she did not have a case. The legality of her confinement stands, and she was released on strictly probationary grounds.

When an epidemic was discovered on Hart's Island, the story of "Typhoid Mary" was again dredged up as such: "That the woman was a carrier was discovered in 1906 by Dr. George A. Soper, sanitary expert of the city, and in 1907 she was made a prisoner on North Brother Island. She protested and sued the city for her freedom and damages of $50,000, but she was helpless against the facts of science" ("Typhoid Epidemic on Hart's Island" 10). Instead of focusing on Hart's Island, more than half of this short

article focused on the story of "Typhoid Mary," yet the ambiguity of her case is now gone. The sympathetic accounts have been replaced by conclusive statements of her guilt; she was "made a prisoner on North Brother Island" (10). The failure of her lawsuit is dismissed as being an example of how she "was helpless against the facts of science" (10). The article finishes with hearty support for the work of Dr. Soper and Dr. Ogan. It also outlines the importance that science was going to begin to play in litigation.

Even though none of the legal battles fought on her behalf were successful, the fact that she saw herself as entitled to these rights is still significant. Even more, the fact that her rights could be so easily overthrown, or even given the chance to be contested, shows an even more significant shift in public perceptions of policy – especially regarding the writ of habeas corpus. It was also evidence of changing perceptions of the body and how it should be handled in these circumstances.

Spectacular Mary

Mallon became the focus of a media and medical spectacle. What was significant about her story that it became illustrated in such extreme measures? What did this mean for Mallon? Part of the fascination with Mallon and the specifics of her situation were cultivated in the newspaper and media circus of the time. Stylized accounts of "Typhoid Mary," led by William Randolph Hearst, shaped public perceptions of Mallon. Leavitt writes,

> Newspaper writers and editors (and their publishing colleagues) shaped and reshaped the message, through positive and negative representations, through omissions, through an emphasis on her uniqueness, through efforts to arouse emotions, and through language that negated Mallon's humanity. In these ways they created and presented their own perspective on why Mary Mallon's story was significant. In doing so, they influenced public opinion and official actions

> and underscored a potent construction of Typhoid Mary as a woman polluted, a social pariah to be feared and shunned (Leavitt 161).

These constructions of Mallon fed into other troubled but equally potent constructions of immigrants, which were also being shaped by medical science at this moment. Thus far, the causes of disease were being found in issues of the individual, physical body and in the problems afflicting what was seen as the collective social body. The solutions were also being imagined in terms of "prescriptions" to the individual and to the collective, social. Mallon was constructed as the most insidious type of diseased immigrant, because her body did not seem to reject the typhoid bacillus which sometimes proved to be fatal to others. She functioned outside of previous ideas about normalcy and how the body functions.

Not only was Mallon a spectacle for the newspaper accounts; she also served as a medical spectacle. The case of Mary Mallon gave the officials in the Health Department in New York an international stage upon which to present the strategies they had for dealing with this "menace." When narrating this situation to the International Hygiene Council, he does not describe her being sent to an island; she is sent to a hospital. In relaying the details of her case, Dr. Biggs reported that she was sent to a hospital after the cultures were obtained from Mary, and that she was "detained" at that hospital until the New York authorities decided that they could no longer justify her imprisonment. However, Biggs continues, "twenty-one cases of typhoid were traced to her" ("Doctors Describe Disease Carriers" 6). This connection went from conjecture to a statement of fact. When the authorities realized that they could not retain her any longer, she was released. In general, it was argued that it was unnecessary to detain such characters ("'Typhoid Mary' Has Reappeared" SM3). Throughout the debate over several papers from other disciplines, the name of 'Typhoid Mary' was constantly mentioned. Evidently, her case had become known around the world, and Dr. Hermann

Biggs of New York City was called upon for a detailed statement regarding "Typhoid Mary."

In one of her letters, she describes the violation she has felt at the hands of New York State health officials. She writes,

> I have been in fact a peep show for everybody. Even the interns had to come to see me and ask about the facts already known to the whole wide world. The tuberculosis men would say "There she is, the kidnapped woman." Dr. Park has had me illustrated in Chicago. I wonder how the said Dr. William H. Park would like to be insulted and put in the Journal and call him or his wife Typhoid William Park ("Letter from Typhoid Mary").

Mallon's resentment stems from feeling like she has been made into a spectacle. Even in writing this letter, she seems to be using the spectacle created around her to her advantage.

These moments were all crucial to the carefully-constructed carrier narratives. Wald explains, "Carrier narratives inscribed social responsibility as they reinforced both medical authority and empiricism, bearing witness to the crucial role of science in the perception of society. Mary Mallon's recalcitrance is an important part of that story" (Wald "Cultures and Carriers" 193). Had she submitted to the authority of medical science, the story would have turned out very differently for her and for the idea of the carrier. Instead, Mallon was constructed as someone who works in opposition to, and thus defines, the "safety" and "security" that can be provided via medical science.

Other accounts draw attention to Mallon as an aggressive and strong character. One cartoon shows Mallon "before a huge frying pan, tossing a typhoid germ in the air like a flapjack" ("'Typhoid Mary' Has Reappeared" SM3). This image is of Mallon actively distributing the bacteria. The story of capturing "Typhoid Mary" was often told in fantastic detail about the "considerable skirmishing" required to "land" "Typhoid Mary" in confinement, against which she "vigorously protested." When she was first

captured in 1907, "she fled over back fences and barricaded herself with barrels, creating considerable destruction before capitulating." Upon her second capture, she "concealed herself in a friend's house in Corona" and was finally captured "by means of a ladder to the second story window" (SM3).

> Patrolman John Begins notified Lieut. Samuel Belton of the Health Squad that a veiled woman, whom he recognized by her walk as "Typhoid Mary," had entered a house in Corona. Lieut. Belton, Dr. Westmoreland of Riverside Hospital on North Brother Island, and several other interested persons hurried to Corona in an automobile ("Hospital Epidemic from Typhoid Mary" 11).

Mallon's battle against the health authorities was described as a fight "for her liberty", and it was only "Thanks to the untiring sleuthing of Dr. George A. Soper, sanitary expert of this city, Mary Mallon's case has been called to the attention of the health authorities and rapidly became famous the world over" ("'Typhoid Mary' Has Reappeared" SM3). In other words, the spectacle around "Typhoid Mary" required the figure of the vigilant health professional to call attention to the problems her role as the carrier has caused.

Yet this image of the plague and people as plague carriers required the rhetorical fabrication of the determined health official against the evasive typhoid carrier. Hasian writes, "Mallon and Soper/Baker thus both became reciprocal typologies, mutually dependent on each other for cultural sustenance and social signification" (127-128). Her actions are described as indicative of feeble-mindedness, "and Mary Mallon is not feeble, either in mind or body" ("'Typhoid Mary' Has Reappeared" SM3). Therefore, again, she must be opposed to the sense of order and logic that was being suggested by medical science. She is described as ignoring the warnings and precautions given by Soper and other health professionals. At this moment when Mallon has re-emerged, her own responsibility in creating her circumstances is reasserted. In this moment, Soper

sees her "liberty [a]s an impossible privilege to allow her" (SM3). The regulations for conferring liberty were being determined in this moment.

The cause of disease is repeatedly believed to be rooted in the social inequality and the conditions of poverty. The solution to a biological problem can then be conceived in a series of social initiatives. For this reason, the problem presented by Mallon was not just in the potential of her body as contagious; it was also in poverty and in an increasingly diverse population.

Carrier Narratives and Battling Bacteria

By 1936, despite the gains made by bacteriology in helping understand and prevent the spread of disease, the death toll was still increasing and disease was still a primary cause of death.

> Deaths of all causes in New York City during the first nineteen weeks of the year showed an increase of 1,938 over the same period of 1935. The figures made public yesterday by Dr. John L. Rice, Commissioner of Health, also showed an increase during the nineteen weeks of 615 pneumonia deaths […] Department hospitals treated 13,203 cases of communicable diseases in 1935 ("City Death Rate Shows Increase" 19).

Communicable disease was not being eradicated, despite improvements in medical science's understanding of its communicability and methods of transmission. At this time (1936), seven typhoid carriers – including Mallon – were being quarantined by the Department of Hospitals. It was still believed that preventing people classified as carriers from coming in contact with the public would prevent an epidemic.

At the time, Progressive and nativist discourse were also built into the discussion of the carrier. As explained by Priscilla Wald, "The polluted fluids of the immigrant body became the polluted fluids of the body politic. The threat of national disaster, articulated in the language of nativism, constitutes a consistent refrain in the typhoid

literature of the period" ("Cultures and Carriers" 193). When the spread of disease was seen as a national crisis, it also became a government imperative. It was not just about the physical threat of a carrier; it was about not being able to distinguish the carrier.

While the responsibility of health organizations was to make the carriers aware of their potential to communicate disease, a greater mechanism had to be in place.

> The machinery of every city is sufficient to do the work, provided it is backed by the cooperation of the public. […] But that machinery must be set to work in directions other than those of water supply and milk supply. The problem of eliminating typhoid is more than one of general city sanitation; it is a problem of individual cleanliness, and until that side of the problem is attacked typhoid will remain with us a remnant and reminder of those dark ages of ignorance and filth before science showed how wasteful and needless was disease ("'Typhoid Mary' has Reappeared" SM3).

Yet the apprehension regarding Mary Mallon was "a momentous event, one in which the new science of bacteriology played a heroic role […] Mallon's example demonstrated the vital importance of the laboratory as a supplement to or even a substitute for physical examinations" (Leavitt 30), for her "condition" was only discernable through the laboratory's manipulation and analysis of the fluids produced by her body.

Within several years of Mallon's initial imprisonment, most typhoid outbreaks were reported with a carrier as the suspected mode of transmission. One article recounts the situation in Elgin, Illinois where an outbreak of typhoid among over a dozen children in one neighborhood had the authorities puzzled. The Commissioner of Health (for the area) explained, "The only logical inference is that a typhoid carrier exists, some one who has or had had the fever and in whom the germs still exist, and that this person is spreading the fever probably by an insignificant means" ("Like 'Typhoid Mary' Case" 7). A carrier is still seen as the culprit, despite the shared

resources and other similarities of experience within a community that could reveal other methods of transmission.

Another carrier narrative was the account of "Typhoid John," who was accused of disseminating the typhoid bacilli at the camp in the Adirondacks where he worked as a guide ("Guide a Walking Typhoid Factory" 6). Once several people came down with typhoid, an investigation into the cause of the fever discovered that the bacteria was being disseminated through the milk supply. The dairy that produced the milk used sanitary procedures, so an unsanitary agent must have handled the milk before it was distributed. The unsanitary link was the guide, who was tested and classified as a carrier of the typhoid bacilli. He was dubbed "Typhoid John." The article continues, "The State Health Department was notified and asked what was to be done, since it was clearly a menace to public health to let the man loose. Commissioner Porter responded that there was no State law by which a human carrier of typhoid bacilli could be kept from spreading contagion and disease" (6). "Typhoid John" is praised for willingly submitting to treatment, "unlike 'Typhoid Mary' who had to be removed by force for treatment" (6). Ultimately, the cry from this article and many others seems to be that no law exists for restraining these individuals.

Almost twenty years later, attitudes toward typhoid carriers were much more sympathetic. In 1928, when a typhoid carrier was located and the man isolated at a hospital, the article explains "One cannot but feel sympathy for a man on whom disease has left this unusual and mysterious curse. His is the very antithesis of the healing touch; thirty cases of typhoid have been traced to the present victim" ("Topics of the Times" 28). Instead of seeing this as something he is responsible for actively disseminating, it is seen as a "curse," and he is seen as a victim. Yet this article also expresses "indignation" that this man had been informed of his ability to transmit the bacilli fourteen years prior, and he was instructed to never again serve as a food handler. This time, he was caught because he had been serving ice cream. "The

authorities usually keep close tabs on these carriers. Last year the Health Department listed 188 of them in New York State" In general, the attitude began to change towards typhoid carriers, and specifically Mallon, to a mixture of sympathy and indignation. The sympathy was because of how she was ostracized; the indignation was because she knew she was a carrier yet she continued to choose occupations in which she would handle goods that would go to the public (Wald "Cultures and Carriers" 182).

Part of what became important to this explanation of disease was how it affected one's perceptions of himself or herself in relation to disease. Sander Gilman's contribution to this discussion has to do with the articulation of a self in terms of an "other" that is always conscious of tenuous distinctions between the two and "was articulated through an explanatory model of human pathology" (214). The self was constantly aware of the potential for the loss of power in being identified as an "other." Gilman explains the setup of this anxiety in the following terms:

> The magic of any overarching explanatory model such as degeneracy disguises, but does not eliminate, the potential loss of power. The only buffer 'science' could provide against the anxiety remained because of this inherent flaw, the fear of oneself eventually being labeled as degenerate, was to create categories that were absolutely self-contained. Thus disease-entities were invented which defined a clearly limited subset of human beings as the group solely at risk. For such diseases were labeled as inherited to one degree or another (Gilman 214-215).

While the nature of contagion made these specific diseases unlikely to be tied to a specific immigrant group, the connection of contagion to immigration in general and to poverty specifically was enough of a "buffer" to safely situate the cause of disease.

In an interesting twist, one article reported on the Health Department's refusal to import oysters from the local Jamaica Bay–not because of something in the water that

was affecting the local population, but because the population of the area was believed to be contaminating the water. The problem is outlined as a result of the following:

> the growing population along its shores [which] has become an added source of pollution […] Dr. Copeland said that an additional menace to the waters of the bay was the fact that there are several known typhoid carriers near the confines of the bay. As illustrating this danger he pointed to the case of "Typhoid" Mary, who is said to have been responsible for sixty cases of the disease and twenty deaths ("Jamaica Bay" E1).

This perception of transmission is completely different from the circumstances surrounding Mallon's case. In pre-bacteriological theories of transmission of typhoid, it was believed that stagnant, contaminated water was primarily responsible for communicating typhoid. In this example, the carriers are believed to be contaminating the water. Not only are they affecting healthy individuals and contaminating food, but their presence is affecting production. The carriers present a threat not just in preparing food, but now in their proximity to food sources.

In addition to this, the body of the healthy carrier became "problematic" because of "the representation of the healthy carriers who, often unbeknownst to themselves as well as others, literally embodied disease" (Wald "Cultures and Carriers" 184-185). The body of the carrier problematized what was perceived as the battle of disease – between parasite and man. In Darwinian terms, one or the other was bound to triumph in the struggle for existence. Yet, as described by Major Henry J. Nichols of the US Army Medical Corps, "there may also be a draw with the production of a carrier […] The higher stakes evoked by the Darwinian model intensifies the language of demonization" (184-185). This also meant a reconfiguration in how "personhood was conceived in the United States (and elsewhere in the West) at the turn of the century." For Nichols especially, routine medical examinations were necessary to determine carriers because we "view the individual as a social being" (185-186).

The rhetorical understanding of "Typhoid Mary" was also being negotiated as new carriers were found, and agencies were increasingly used to mediate the private and the public arenas. Through the case of Lola Tarr in 1909, a "Typhoid Mary" came to include someone who had been pronounced as "cured" by her doctors, yet continued to exhibit the symptoms in brief intervals. This led to the child's removal from the home, "in spite of the protests of her parents. Mr. Tarr said he would ask the Society for the Prevention of Cruelty to Children to get his child out of the hospital" ("Navy Won't Change Sutton Case Ruling" 3). In this situation, a series of agencies mediate the private and the public arenas. The health department could use the threat of an epidemic to invade the private space, and another agency was called in reclaim those rights for the Tarr family. This is similar to the situation facing Mallon, except there was no agency to intervene on her behalf. Responsibility for controlling the disease was laid upon the shoulders of the public administrators and the expanding number of health and sanitation professionals.

It was not enough just to avoid those who were recognizably sick. One specific example was Frederick Moersch, who also lived on North Brother Island and "had broken parole and endangered about three times as many New Yorkers as did Mary Mallon, but he had never attracted an emotional response from the public media" (Leavitt 157). In general, the response to Mallon's case seemed to be unwarranted by the specifics of her circumstances.

Carrier Solutions: Surveillance and Disease Control

In 1900, prior to the discovery of "Typhoid Mary," John H. McCollum outlined general perceptions of the scope of hygiene as the principal roadblock to advances in preventative medicine. At this moment, hygiene was a term "almost always used to apply to structural works (for example, water-supply and draining)" (41). In order to

make any headway in the battle against communicable disease, hygiene had to be understood as a problem of people.

One of the biggest problems presented by typhoid is that it required a multi-faceted solution that considered disease from a social, scientific, and legal standpoint. While it could spread through contact, it could also spread through the food and water supply (Wald "Cultures and Carriers" 190). Soper explained that a "cure" was not the answer to the problem: "The campaign against typhoid will have to be attacked from two sides: first the bacillus carrier must be induced to avoid infecting those with whom he comes in contact, and, secondly, the public must be induced to protect itself against the bacillus carrier" ("'Typhoid Mary' Has Reappeared" SM3). What type of a situation did the carrier present in the early part of twentieth century America? The complications of the rights of the city and the rights of Mallon are explained by Hasian as follows: "Macro and micro explanations for the spread of disease made it difficult for human beings to discern the difference between the disease itself, nationalities, races, genders, and classes. The power to define and label became a political, medical, and legal act" (133). Yet the jurisdiction provided by the political/medical/legal distinctions was not clear.

Mallon's actions and the Health Department's response to her helped establish procedures for regulating healthy carriers. Unable to sustain a livelihood in other professions, Mallon assumed an alias and returned to her role as cook at a local hospital. When several people were identified as having typhoid fever at this hospital and it was discovered that Mallon had returned to cooking, she was immediately sent back to North Brother Island. Dr. Goldwater decided that carriers should be watched vigilantly, required to check in with the Health Department, and not permitted to "engage in occupations in which there may be danger of passing the infection to others – at least, until it has been definitely determined that the carriers are well rid of the offending germs" ("Hospital Epidemic from Typhoid Mary" 11). The problem is that

few occupations could offer these carriers compensation comparable to the cook's salary, and no program was established to assist the carriers until they could be declared no longer contagious.

It was believed that science made this new danger apparent, especially because the communication of disease by bacteria generally does not discriminate based on race or gender or class. Any person could communicate the bacteria and the danger would be so inconspicuous that by the time the symptoms would appear, it would be practically impossible to ascertain the carrier.

The system of social reform to deal with the problem of the carrier included increased surveillance on a national scale. If everyone became aware of the danger presented by carriers and could recognize the issue, then a general system of policing could be implemented.

> Across the United States after 1915 the 'lookout' for typhoid carriers was declared, as state sanitary codes were amended to encourage and even to require citizen 'complaint' of 'suspected' carriers to health officers. If the programs developed by health departments were continuous with anything in the past, they had less in common with sanitation and social reform than with medical police –that is, with the use of bacteriology, in the unsettling words of its German founder Robert Kock, to 'lay bare the intercourse of human beings in all its finest ramifications' (Mendelsohn 271).

Mallon's case was about more than preventing a few families from contracting typhoid fever; it was about creating a fear of the carrier. According to Soper, "There are numerous typhoid carriers who never had typhoid fever, but through contact with infection became bacilli carriers. Probably at least one in every five hundred adults who never knowingly had typhoid fever is a typhoid bacilli carrier" (982). This created a fear of one's own body and its capabilities for producing other carriers and spreading disease.

The only way to monitor the changing dynamics of one's body was more strict policing. Major Nichols was calling for an increasing socialization of medicine to mirror what he explained as the understanding of the individual as "part of higher units[…] Hence, medically as well as biologically, the interests of the whole […] are greater than those of the individual parts. On the other hand, it is the individual who, in the long run, profits from the welfare of the group" (qtd. in Wald "Carriers and Cultures" 190). There was a continual collapse between the individual in the collective with regards to how one should perceive and approach his or her own health. Wald explains,

Speaking in the language of Progressivism, Nichols clearly marks existence as both a social and a physiological condition.

> Hovering on the border between sickness and health, the carrier turns the focus on the other borders as well: the porous and permeable borders of the body and the equally permeable borders between social units—among classes, neighborhoods, municipalities, and even nations. At the same time, the carrier is a demonstrable fact of medical science, a creature empirically determined to be a threat to public health. The carrier state represents a mutually defining transformation in both scientific and social discourses, and the carrier narrative negotiates as it marks that transformation (Wald "Cultures and Carriers" 185-186).

The response to Mallon's return to confinement was increased surveillance. Within one year, a general system of regularly testing the urine, feces, and blood of "some ninety thousand cooks, waiters, and other food handlers in the city" was implemented. Mendelsohn explains that Mallon was "strik[ing] again" by being linked to the epidemic at Sloane Hospital was the ultimate motivation for this program. "In the previous eight years, between the first apprehension of Mallon in 1907 and the maternity hospital outbreak, the department had deemed systematic testing on such an

unprecedented scale neither practicable nor justifiable. Now it appeared to be urgent and unavoidable" (270).

This surveillance increased in the organized, instructive space of the school and in the social arena. In general, a system of identification and accountability was suggested for all known "germ-carriers […] so that they cannot escape proper surveillance, and that they shall be obliged to report to the Health Department at regular intervals for examination" ("Typhoid Carriers" 8). Other measures to be taken were more vague, but, in general, this "machinery" was being put into place through systems of public health instruction.

At a medical conference in 1912, the case for medical surveillance in the school system and "hygienic teaching" was justified by saying, "There are a few classes which have not the stupid, the dull, the backward, and the sick […] We do not claim that the call to the doctor to stand beside the teacher can accomplish everything, but it can help. Medical inspection at the schools is one of the signs of the times" ("Doctors Describe Disease Carriers" 6). The pedagogy of public health and hygiene was becoming part of the governance of the home and the instruction in the school.

The fear presented by the carrier warranted social reform and the institution of government programs directed at hygiene and prevention. At this same medical conference, it was decided that carriers residing in the country presented a greater threat than those living in the city. Therefore, preventive measures should be directed towards typhoid carriers living in the country. It was decided that "These typhoid hosts are a public danger only as long as they are dirty. Effective hygienic teaching makes them, with rare exceptions, harmless." ("Doctors Describe Disease Carriers" 6). Public instruction on hygiene was invested with the responsibility for solving the problem of communicable disease.

With regards to public policy, this was ultimately not just an issue of disease. It was an issue of jurisdiction being worked out through how disease was maintained.

The limits of the state government and the federal government were being decided. Some opposed the intrusion of the Federal government in what was seen as a localized, State issue. Others felt that any given State lacked the resources to adequately respond, and that the citizens would suffer. Doty supported the supervision of all state boards of health by the federal government, and he criticized the prioritizing of the State's rights over what he perceived as the well-being of its citizens. He explains, "A State's rights are more precious than the lives of its people, and though all should die, yet must not the assistance of the other States of the Union be accepted by the afflicted one, because their power can be exerted only through the common central government" (Doty and Girdner 734). Doty used the failure of the State and local authorities to quell a yellow fever epidemic as justification for federal intervention. He writes,

> It is no reflection on these afflicted States that they failed, and were obliged to ask aid from other sections of the country. Similar failure is liable to be the experience of any State when attacked by an epidemic disease, because no State can have at hand proper resources in money and organization to repel promptly and effectively an extensive invasion of disease germs, any more than it can be expected single-handed to repel an invasion of its territory by a foreign army (734-735).

These metaphors of war conflate the protection of borders as what is at stake in the battle against epidemics. According to this idea, it is only the collective power of the general governing body that can effectively expel disease. Public health officials, like Doty, were to see the changing state of disease as concomitant with the authority to be given to the federal government.

Bodies at War

To discuss these specific metaphors requires a discussion of metaphors and stereotypes in general. Sander Gilman describes the "systems of metaphor" that are

used to analogize representations of reality and create a "system of mental representation." First of all, the world is divided "into categories in accordance with stereotypical perception. All experience can thus be measured against this 'reality'" (21). Gilman also describes "patterns of association" as based on "a combination of real-life experience (as filtered through the models of perception) and the world of myth, and the two intertwine to form fabulous images, neither entirely of this world nor the realm of the myth" (21 Difference and Pathology). I want to look at the function of several metaphors of the body as they highlight systems of representation.

In 1908, military terms were being used to describe bacterial infections; military officers were set up to safeguard the public by being vigilant and using public force to isolate the bodies. As the enemy became interior, in undetectable fluids carrying bacteria, the borders of institutional control also increased. This process was unfolding and functioning at multiple levels that were differentially related, that functioned at key moments, and were connected in this functioning. It is not a singular movement, nor were these directly relatable to each other.

These metaphors of the bodies at war were used to perform and construct the body as a biological system within larger systems. By 1938, one article used the idea of a theatrical performance to describe health officials' daily response to medical dilemmas. A fictional character, "Uncle Sam, M.D.," stands as the role of the government health official alongside the family doctor.

The dramas in which "Uncle Sam, M. D.," plays the star role are, therefore, quite different from the life-and-death scenes whose hero is the family doctor. They have the human interest not of characters but of situations, and add up into something like a war with many fronts—a humane war against countless infinitesimal enemies (Brennar 96).

The city health department is seen as the "front line" of defense. This article also describes the function of medical science through the dissemination of information via the radio, and the "complex machinery [that] is functioning" behind that voice (96). It

acts to inform the doctors of the details of the epidemic at the same time that it alerts the public of its existence. The "machinery" is also:

> in contact with every hospital, collecting blood and distributing serum. Its specialists, drafted from among the top men in public and private medicine, are on call. Its research departments are in touch with the laboratories and foundations where the disease is being investigated. Its clerks and statisticians keep day-to-day records of the geography of the disease (96).

This type of "medical performance" uses systems of communication to construct an archive and to police the general population regarding disease. Even combating plagues, which were at the time considered to be "obsolete," is "part of the daily routine of every public health agency in the country. The methods are something like scouting and something like detective work, with elaborate charting and mapping added" (Brennar 96). The medical technology functions as a performance and as an active agent. On the one hand, the government health official's role is seen as a performance. On the other hand, it is seen as part of a field of skilled professionals on the defensive against the "enemy" of disease. This article describes the role of the doctor/scientist bent over a microscope as especially unromantic yet dramatic.

> But behind it there is an intricate organization of doctors, technicians, bureau people, painstaking and disciplined. They make and distribute the sera through the city health depots. They inspect and assist hospital trying and serum laboratories. They trace the distribution of the disease and try to get at its causes, which seem to be bound up partly with poverty and in housing (Brennar 96).

In trying to state how "unromantic" (synonymous with "scientific") this role is, it ends up becoming romanticized both in their methods and in the heroism of their cause.

Returning to the time of Mallon (1908), Dr. Alvah H. Doty, Health Officer of the Port of New York, outlines the process used to guard the borders not *necessarily* against the arriving immigrants, but against the germs their bodies may unwittingly transport.

The article refers to the potential for contagion as a "battle" and Germany and Japan specifically are described as teeming with germs and disease. In order to guard the American border – which was a geographical border and the perceived borders of individual bodies – Doty constantly watches for any diseases that develop in other countries. He assigns "a sentinel on duty…at every big port in the world, and that sentinel's duty is to keep a close watch on the situation there and to watch every single ship that passes on her way to American waters" ("How Plagues Are Watched" SM5). He thoroughly examines each passenger and, if the temperature is a little too high or the passenger seems at all ill, he or she is subjected to a more rigorous medical inspection. The examination does not stop at the passengers, "for the water and the food and the clothing are inspected just as closely as are the passengers and the crew, for the admission of a single germ might mean the infection of New York" (SM5). These same sentinels are required to examine each passenger before they even boarded a boat for America, and similar sentinels are assigned to examine passengers upon their arrival in America. Usually, there is a history of disease emanating from a specific region that precedes each passenger ship. These passengers are examined in light of symptoms the health professionals expect them to demonstrate. The system of surveillance is part of the war strategy against contagion.

Just months after the United States entered World War I, David John Davis was writing in *The Scientific Monthly* about how the political war in Europe was negligible compared to the war on disease.

> And finally let me say that while no doubt in a relatively short time this great war among nations will cease, the great war against the countless hordes of disease-producing germs will go on for ages yet to come. […]While the contest between man and man may be more spectacular and may involve greater destruction in mass, the assault by the microbes is far more insidious, more elusive, and on the whole far more deadly. […]The great armies of men, women

> and children that are destroyed every year by bacterial diseases make the destruction of life in Europe seem almost trivial (399).

These functions of war and the two different attacks on the body – the physical body and the body politic – were seen as similar, yet Davis argues that the attack on the physical body is greater than the attack on the body politic. He believes that the money and energy spent on the international wars should be directed towards "microbic warfare," against "that triple alliance between the plague bacillus, the rat and the flea, upon which the disease depend for existence" (399). This made the enemy palpable. He continues, "We know enough about several of our diseases and have for years known enough to render them extinct. But we do not yet know how to execute this knowledge and to make it bear fruit as it should. This is not primarily a bacteriological or medical problem, but a social one. Indeed it is one of the great problems of democracy" (399). Framing this as a national imperative, again, outlines the changing jurisdictions and responsibilities of government agencies. When the body politic is viewed as inflicted and subject to the same type of treatment as the physical body, and populations are understood as focusing around certain basins of attraction, yet also being composed of individualities; these boundaries become more unclear at the very moment they are being defined and defended.

Part of the definitions of these boundaries had to do with the language being used to describe them. Priscilla Wald discusses the importance of the developing lexicon of social texts and bacteriology. While the metaphor implicit in "moral contagion" had been around for a long time, the development of bacteriology altered the way contagion was understood. The complexities of the metaphor were changing. Wald writes, "technological and scientific discoveries involving microbes in the latter half of the nineteenth century were in the process of changing both the scientific understanding of disease transmission and, with it, the metaphorical use of the term" (Wald 654). This meant that the ways of understanding the formation of communities

were also changing. "New theories about social responsibility, social relations, and space grew out of these methods of analysis" (Wald "Communicable Americanism" 654-655). The lines between the social and the scientific became permanently breached, as the control of the micro became part of the safety of the macro/the social. In a similar analysis, Wald states, "Carrier narratives called forth the new authority of science to substantiate the danger and entrust the health and well-being of the nation to social engineers like George Soper" ("Cultures and Carriers" 183). The narratives were often constructed by the same people who needed the support they could provide.

Wald also explains that the understanding of some terms, such as "communication" and "communicable," were being used to discuss bacteriology and social processes, and the use of these terms in one discourse, for example, was dependent upon and constantly changing in light of use in the other. Wald explains,

> The discoveries of bacteriology led to theories of the role of disease in the formation of communities and the expression of culture to which anthropologists and sociologists contributed. The metaphors were inseparable from the theories, which the evolution of the terms reflected. I am concerned here with that disciplinary common ground as it found expression in Park's work and that of his students and colleagues in urban sociology (Wald "Communicable Americanism" 657-658).

It was that both ideas were developing concurrently and dependent on each other. Another example given by Wald is the idea of "moral contagion," as bacteriology was "reanimating" the idea of "contagion." Wald writes that the negative connotations of the term are a recent development. Specific scientific discoveries were traceable to shifts in the understandings of these terms and the way these terms were used and the perceptions of the reality they conveyed (654-655). Methods used in bacteriology were also being used by students studying communities, and new theories and solutions were being suggested in this manner of reanimation. These metaphors existed as more

than just explanatory models; they were constructive for the modes of thought for the time.

In "Toward an Anthropology of Immunology", Emily Martin describes the possible effects of specific metaphors that have been used in popular and scientific descriptions of the immune system as "the body as nation state at war over its external borders, containing internal surveillance systems to monitor foreign intruders" (410). These descriptions reflect a general trend in how the functioning of microorganisms is being taught in the classroom and narrated in popular texts in the United States. Martin writes,

> As immunology describes it, bodies are imperiled nations continuously at war to quell alien invaders. These nations have sharply defined borders in space, which are constantly besieged and threatened. In their interiors there is great concern over the purity of the population—over who is a bona fide citizen and who may be carrying false papers. False intruders intend only on destruction, and they are meted out only swift death. All this written into 'nature' at the level of the cell (421).

In other words, the body is seen to act in terms of an aggressive treatment of foreign bodies. Her argument regards the functioning of the language, and how that affects cultural understanding of biological processes. In some ways, this is about a culture's specific understanding of biological processes creating a mythology of "natural" functions.

Martin uses several examples published around the same time as her article (roughly 1985-1990) to describe these metaphors as being relatively recent, beginning with the inception of the idea of an immune system (1960s) and the university's development of departments of immunology (1970s) (Martin 417). She has explored this topic because she speculates that "one kind of ideological work such images might do is to make violent destruction seem ordinary and part of the necessity of daily life.

Perhaps when the texts slip between warfare and ingestion they in effect domesticate violence" [3](Martin 417).

While the understanding of an immune system may be relatively recent, the metaphors of warfare and the body have a much longer history. Now, I want to conclude by briefly discussing Melinda Cooper's application of the principle of emergence in cellular production. Cooper writes,

> While many leading infectious disease specialists continue to see microbial resistance as a form of (highly accelerated) Darwinian evolution (Lederberg et al., 1992), a growing body of new research is suggesting that bacteria don't even have to wait around for random mutation to confer resistance; they can share it amongst themselves. The new microbiology is discovering that, for bacteria, resistance is literally contagious (116).

If resistance to bacteria is just as contagious as the bacteria itself, the ideas of how the warfare of the body is executed become much more complicated. The body is not reducible to a whole being, resisting foreign bacteria. The foreign bacteria becomes part of its own production processes – which is exactly what we see in the biology of the healthy carrier. In the same way, we are also discovering the body's capacity for the "immunological self [to] misrecogniz[e] itself (auto-immune disease)", and "our most promising cures (antibiotics) were provoking counter-resistances at an alarming rate" (Cooper 114). As this basic understanding of the body's functioning shifts, the responses and procedures for treatment, and even the conception of "treatment," must also be revised.

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[3] NOTE: Martin resolves the issue in this manner: "If the view that microorganisms serve as food for macrophages were given prominence, we could see this process as a food chain, linked by mutual dependencies. Instead of a life and death struggle, with terrorism within and war at the borders, we would have symbiosis within a life unit that encompasses the body and its environment, where all organisms are dependent on others for food. None of these alternative metaphors would be sufficient by itself to encourage use to image—let alone bring into existence—different forms of organization in our society than those that now exist. But at least they can serve to add substance to the question: are there powerful links between the particular metaphors chosen to describe the body scientifically and features of our contemporary society that are related to gender, class, and race?" (Martin 421)

Prevention and Preemption

The shades of difference between "prevention" and "preemption" are crucial for a singular understanding of either term. Prevention can be understood as normalization prior to the fact of a contagious event. Preemption is about using contagion itself for continuous control. Both tend to be aggressive. These two concepts return as the response to the starting point of this discussion – the plague. Prevention and preemption have slightly different responses to the sense that the plague exists, yet they constantly work by creating a fear of the threat and by articulating a response.

Bacteriology was able to actively function in shaping ideas of populations and disease because of how well it used prevention and preemption as tactics. Part of the effectiveness of bacteriology came in its ability to cultivate a hyper-awareness of the conditions of disease and to insist upon the constant threat of its emergence. In this sense, bacteriology could be considered "effective" because it sets itself up in opposition to disease and contagion, and, in general, the people supported its goals and incorporated it as a function of their own processing.

The strategies of bacteriology and within medical science were often delivered as simple imperatives for sanitation and hygiene. Dr. George Soper writes,

> We must, therefore, as before, turn to the more general methods of preventing infection, such as safeguarding our food and water, not only chiefly when typhoid fever is present, but at all times, for we now know that in every community, whether it be large or small, unsuspected typhoid bacilli carriers may always be present (982).

Preventing disease required constant vigilance and surveillance and an active awareness of potential threat. The success of strategies of prevention and preemption could be measured in the absence of disease following preventive measures.

The nature of the threat of disease is crucial to understanding the role of prevention and preemption. A recent analysis of war and preemptive measures is

essential to framing this situation with disease. Prior to the Second World War, biology saw humans and microbes interacting in a "merciless war; a struggle for survival from which only one of us would emerge victorious" (114). Melinda Cooper continues,

> Only after the Second World War, however, would public health institutions have the confidence to declare that the war was almost over; that infectious disease would be conquered once and for all, sequestered, quarantined, eliminated even, first in the 'developed' world and later in the 'developing' world, through the classic public health strategies of quarantine and immunization as well as the massive use of the new generation of antibiotics and vaccines (114).

Setting the scene for a battle with obvious good guys/bad guys and victories/losses creates a manageable potential for dealing with disease.

This analysis by Cooper is developed from Rene Dubos's theory of emergences. For Dubos, an "emergence" was "the relentless, sometimes catastrophic upheaval of entire co-evolving ecologies; sudden field transitions that could never be predicted in linear terms from a single mutation" (116). The predictability that became part of the confidence of scientific medicine is undermined by the process of emergency. Dubos argues that "there can be no final equilibrium in the battle against germs […] because there is no assignable limit to the co-evolution of resistance and counter-proliferation, emergence and counter-emergence" (116). There is constant motion and rupturing in movement, and predictability is impossible. Even the "resistance" is seen as an emergence, so that, as Cooper describes:

> Dubos's theatre of war presupposes a co-implication of human, bacterial, and viral existence; a mutual immersion in the conditions of each other's evolutions. It is inevitable – he argues – that our most violent efforts to secure ourselves against contagion will be met with counter-resistance of all kinds. Microbial life will 'strike back' and yet we can never be sure when and how it will happen: 'at

> some unpredictable time and in some unforeseeable manner nature will strike back' (116-117).

It is not just a lack of predictability, but an overwhelming unpredictability and aggression that seems to characterize microbiological emergences. This awareness regarding the possibility of biological counter-attack calls revisions of the way disease is controlled and understood. Dubos calls for "'alertness to the advent of the unpredictable'; a responsiveness to the threat that is merely felt or apprehended" (qtd. in Cooper 117).

In light of Dubos's theory, Cooper calls for a response that is always conscious of the potential of the emergent; she describes war as "necessarily preemptive, as much an attempt to resist the counter-contagion as a creative reinvention of the conditions of human existence, beyond whatever actual limits we might have adapted to in the present" (117). The answer to emergences seems to be one of two postures of preemption – passive and active. In the passive posture, anything that could present a risk is stopped. It is a sense of precaution which stops innovation and "criminalize[s] the slightest acts of deviance" (119). The aggressive pre-emptive posture is an "aggressive counter-proliferation, where the point is no longer to halt innovation on the mere suspicion of its incalculable effects but precisely to mobilize innovation in order to pre-empt its potential fall-out" (120-121). In the case of the healthy carrier, specifically with "Typhoid Mary," It was not just responding to the potential threat of Mallon's body, but it was about constructing policy and health practices that would work against the possibility of the creation of a carrier. What did this practically look like?

In order to mobilize a society to aggressively pursue the counter-proliferation, health officials had to create a sense of fear. For example, with the cholera epidemic, the evidence used to create the fear of infection was largely based on what was seen in other areas where basic sanitary and living conditions were different from what was

seen in most areas of America. There was no solid evidence that this type of epidemic could occur. The article states,

> This belief is without any reasonable or logical foundation whatever, and it may be safely stated that where modern sanitary regulations are in force such conditions will never occur. On the contrary, in the absence of a general infection cholera does not extend rapidly and where proper sanitary regulations are in force should soon disappear ("How We Guard…" 1).

Doty and other health officials endeavored to create a sense of security and responsibility for the protection of the communities where they worked. Doty explained that the cholera epidemic supported the importance of the "presence in each town and city of a health officer or health officials who are practically as well as theoretically familiar with infectious disease" in controlling outbreaks (1). The presence of the disease validated their professional existence, and successful prevention and preemption further proved their value, even when the disease did not appear.

One method of dealing with typhoid that had been relatively successful was the "protective vaccination" often used in the military. This, in addition to educating others on how typhoid was disseminated, also became important to preventing the spread of disease and it was met with a modicum of success.

> What further proof is necessary to show that now typhoid fever or at least a large part of it in our country and elsewhere is entirely unnecessary. The problem has been solved from the standpoint of scientific medicine. It is now a public health and social problem. In other words it is squarely "up to the people" as to whether or not they wish to use what the contributions of medical science have given them (Davis 391).

This thinking sets up disease in general as either "necessary" or "unnecessary", and it places responsibility for the maintenance of this program on the shoulders of the public. This could function because it was laid out in practical terms of hygiene and health.

Military procedures began to reflect bacteriological concerns. The soldiers were seen as the front line of defense for defending geographical and bacterial borders. Now, it was also being seen as the first line of defense against the invasion of bacteria. More than that, the instruction of these soldiers in proper sanitation and hygiene was also part of a successful program of medical surveillance and instruction. "The value derived from the physical examination, the military training, the careful supervision exercised in the army over the general health and hygienic environment of the solider will be of first importance in raising the resistance of the men to the invasion of bacteria of various kinds" (Davis 397). The soldier's role became even more important in battles over geographical and physical borders.

In part of a preface to one of Soper's articles, a military official explains that an understanding of typhoid through "Typhoid Mary" was essential to creating methods for dealing with the disease. He explains that it was only through attention to sanitation and inoculation that United States troops were able to successfully battle typhoid. However, another factor in diminishing the threat presented by typhoid fever was the process of "examining cooks and other food handlers for the carrier state in order that no person such as 'Typhoid Mary' might be allowed to spread infectious material even among those who were immunized against it" (Soper "How We Guard…" 1-2).

For Soper, Mallon's case has been indispensable in setting up public health policy and procedures for dealing with the issues of the carrier. Soper claims that the "immense importance" of Mallon's case is important for every country "where effective public health work is done and in every army where communicable disease has been brought under control" (1-2). Mallon presented the problem that her body, her biology, threatened the concepts of medical science and bacteriology. It was not just in the ways that she was different, but in the ways that she affected bodies around her.

Part of the strategy for dealing with the problems presented by typhoid was to institute quarantine at home, but also overseas. In an address before the American Medical Association, Dr. Wyman said,

> This is a new departure in quarantine—quarantining in foreign lands—and the ultimate result may be looked for with great interest. Whatever the result may be, certain it is that the presence of these officers in European ports has diminished in a great degree the danger of the introduction of cholera and other diseases from those ports. Their relations in one or two instances with foreign governments were in danger of being strained, but this danger has been averted both by their tact and good judgment, and because of the all-powerful United States law, which practically says to foreign officials that should they object to the official acts of these officers, the alternative is the refusal of the bill of health and the cutting off of all commerce between their ports and the United States ("The National Quarantine").

Now, legal jurisdiction of the body led to jurisdiction in foreign lands, which led to the right to levy commercial trade as a consequence of violating this jurisdiction. The blanket issue of "national security" became the justification for bypassing all sorts of policy. The article pleads, "American security depends upon the vigilant application of scientific precautions, and there is every reason to believe that such are now being taken" ("The National Quarantine"). As the biological threat became more pressing, government attempts to control the biological became more fervent.

The idea of quarantine and policing the border spaces was not new. Quarantine had actually been a part of policy and practice as early as the 1750's, when the first quarantine law required all vessels with certain diseases on board to be quarantined at Bedloe's Island ("Quarantine at New York"). Over time, these holding facilities began to include hospitals and other structures to help manage the individuals quarantined there. Beginning in 1801 and continuing through the next sixty years, a board of Health

Commissioners controlled the quarantine station at Staten Island ("Quarantine at New York"). What changed by the beginning of the twentieth century was the understanding of how disease was spread and an understanding of what lengths needed to be taken to prevent the spread of disease.

Fear was the main operative. The new field of [study of disease] generated fear to create respect for its role as guardian of the "security" of the United States. In 1866, the only right not granted the State Board of Health (who had "extraordinary powers") was the power of quarantine. Quarantine Commissioners were charged with the task of operating locations for quarantine ("The Cholera and the Quarantine"). Limited facilities available for quarantine (and limited options for treatment for a long time) meant that some policy had to be put in place for curbing the issue before the quarantine stations became exhausted from a lack of resources. While inspections were already occurring once boats arrived, this did not satisfy the aims of the public health administration. Instead, the borders for the system of surveillance were increased.

Vigilant communication with foreign offices and establishing foreign officers overseas allowed for the establishment of a system of monitoring diseases around the world. On visiting Doty's office, one would see a carefully plotted map of the world, which included tacks to indicate the diseases reported in that area. Any ship carrying passengers from almost any area of the world, Doty would know the specific threat of disease. Confidence was high in Dr. Doty's methods. The international board of medicine was created that could track these diseases over time. A reporter for the *New York Times* writes,

> But great and thorough as is the work of American medical authorities, they are ably seconded by the work of the foreign departments, and to-day every citizen of every part of this country owes a debt that can never be paid to the splendid men of Germany and Japan whose work holds in check the spread of the cholera

and the plague – one guarding the western world and the other the eastern frontier against the advance of diseases. ("How Plagues Are Watched…" SM5)

As was discussed earlier, an international system of "watching" was created, with a sentinel on duty at every port whose job was to examine every ship that was headed for America ("How Plagues Are Watched…" SM5).

The fear presented by the carrier warranted social reform and the institution of government programs directed at hygiene and prevention. Suddenly, the threat of typhoid meant the personal practices of grooming and hygiene could be institutionalized. These had to be standardized and taught as part of general school curriculum.

The only way to encourage compliance with a general regimen of hygiene was to generate fear. Weakly substantiated fear and apprehension played a pivotal role in gaining public support for increased government authority to intervene in private matters. The systems of surveillance and policing ports overseas were all part of responding to contagion before it could emerge. Even if the danger does not come to fruition, the efforts towards prevention seen to demonstrate commendable foresight.

Conclusion

Finally, early 20th century understanding of bacteriology and medical science created its own theories of the operations of the body (on several different levels). The body was seen as a space with borders that were to be carefully guarded against foreign intruders. Now, understanding that these borders are not as clear as might have once thought and that the body can turn on its own systems of defense or incorporate "foreign" bacteria into its own methods of production means it is time to revise the systems of production and defense that we have heretoforth normalized and used as the basis for our systems of thought.

In tracing this development, we began and ended with the articulation as the plague. It was the plague as an abnormal to create a sense of what was normal. As medical science credited itself with the authority to distinguish between "normal" and "abnormal," trust in its discriminatory power increased. It became the key to managing and understanding disease and health, and an archive of medical knowledge was slowly constructed. This archive was used to standardize the practice of health professionals and its findings changed the dynamic of the doctor-patient relationship. The knowledge created inside the examination room became part of practices of sanitation and hygiene outside of the examination room. People became aware of the symptoms of disease, and began to examine others for the signs of disease.

Part of the problem with this system is that it feigned objectivity. In reality, much of the language of medical practice and public policy regarding health care at this time was thick with racist and classist language that used nativist rhetoric to describe biological issues. Through this, and because of the intense scrutiny that was occurring at the border stations (Ellis Island, Angel Island, etc.), perceptions of immigrants as diseased and harbingers of germs were rampant. This affected general perceptions of immigrants right when immigration was high.

The biological understanding of the body also had strong implications for how the individual was conceived against/within the social. These blurred distinctions also became part of how public policy was instituted. The jurisdiction of the federal government with regards to health and disease was debated and new methods were implemented. This entire process became the problem of understanding the nature of contagion and attempting to control it through creating an archive of knowledge and a series of practices.

The tenuous control on contagion was called into question with the situation of "Typhoid Mary." Disease control was understood in terms of practices and managing an environment, until the case of the healthy carrier with Mary Mallon. In the

newspapers, in the medical reports, and in the illustrations, she was depicted as much more than just a "carrier" of the bacteria. Her role was seen as villainous. She "distributed" and "disseminated" the bacilli. The treacherous nature of her body was not only in its capacity to communicate bacteria, but also in establishing a sense of its depraved nature. She was described as "robust" and she fought against the authorities when they attempted to arrest her. Her gait was distinctive. She was an Irish immigrant of "questionable morality." All of these things played into how her body was interpreted within the structures of American culture of that time.

She was quarantined at North Brother Island from 1907-1911. She fought being detained, and when she was released, she sued the city. Then, she disappeared. When she emerged again, it was as the accused in a typhoid epidemic at a hospital. She was readmitted to North Brother Island in 1915, and she died there of complications from a stroke in 1938. Mallon represented the ways that disease and medicine were performed, she represented a threat to the home and the family by the domestic role she played, and she also represented the attempts to call upon the laws of the nation that claimed to protect her, only to be met with disappointing apathy. She was a medical spectacle, and the unbalanced and extreme response to her situation was enough to point out the shifts that were occurring regarding the body, medicine, race, and contagion.

The issue presented by the healthy carrier – that a body could function normally with no effects from the disease it was carrying and producing - challenged the basis of medical science. It set up a conflict between the rights of the individual and the rights of the collective.

This slipping between the biological and the social was fairly prevalent not just in medicine. The way the nation imagined itself was often in terms of a unified "body" fighting against foreign intruders. The rhetoric of contagion and of biology proved to be very amenable to other areas of thought. People could be seen as a collective "body", and "prescriptions" could be given for fixing that collective body. The nation saw itself

unified against foreign cells. The imperative of the nation became to guard ideological and biological borders against any dangers.

On a more basic level, what was emerging through this was not an understanding of science that was cause and effect or action and reaction, in a linear fashion. Instead, the body was functioning in different capacities and emerging against the resistance and efforts to contain it presented by medical science. The effort was constantly to prevent the spread of disease through practices and procedures.

When prevention was not enough, what emerged against this was a preemptive defense against disease. Instead of just trying to prevent disease, it became an aggressive counterattack against infection. Danger must be deterred, and anything that would prove dangerous must be eliminated from existence.

What is at stake in this analysis is not just this historical account, but the way these systems function in general and may continue to function. Even functionality is conditional. This understanding of the body requires an awareness to the particulars of each situation that can see the transcendent qualities between the social and the biological. These ideas are not permanently isolated in any specific discipline, but function to move between disciplines and to create constructive metaphors that shape the way we perceive and record and transmit perception. It requires a willingness to examine presuppositions. The metaphors for the body that normalized a unified body against foreign agents were undermined by the capacity of the body to perform against these metaphors. With an understanding of how these metaphors for the body have historically affected policies in the social body, we can enter a new phase of thinking about what we have seen as simple biological processes. It is a more complicated perspective, but it also offers exciting alternatives for the future.

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BIOGRAPHICAL SKETCH

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