

Emerging Data Cultures:
Writing the Datafied Subject in Whitman and Melville

by

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Abstract

This dissertation reads the informational ethos of authors Herman Melville and Walt Whitman through the lens of critical data studies and surveillance studies, examining how emerging data cultures in the nineteenth century gave rise to new subjectivities. The study situates these authors at a critical juncture in the ascendance of data: when the small-scale grassroots data activism carried out by reform-era citizen scientists began to be displaced by the large-scale, professionalized and bureaucratized information gathering practices of the state. The political and cultural tensions of this shift are captured in Whitman's journalism and early versions of *Leaves of Grass*, as well as Melville's south seas novels and *Moby-Dick*. In placing these literary works in conversation with newspaper reports, census tracts, maritime employment contracts, and whaling charts, the study describes the ways in which subjects have historically been constituted as data, in turn, and how those subjects resisted and remade those datafying systems. The study, moreover, draws attention to the role of art and literature in the data assemblage, not only in the dissemination and interpretation of data, but in the construction and dismantling of the mythologies that surround and uphold these systems, including presumptions of neutrality and objectivity.

Acknowledgements

Graduate work can be isolating at the best of times: during a pandemic, the feelings of being adrift, cut off from the world, can be overwhelming. While in lockdown over Christmas in 2020, I was bemused to discover that sea shanties were trending on social media. These nineteenth-century sailor songs about maritime work, one of the topics I happened to be researching at the time, found new resonance in times of quarantine. As observed in the coverage by *Vox*, *The Guardian*, *Slate*, and other media outlets, with much of the world trapped at home, people found comfort in these stories about the hardships and loneliness of life on the high seas.¹

One of the reasons the shanty went viral was TikTok's 'duet' feature. As it turned out, the ability for users to record responses to other videos and then layer those recordings on top, was perfectly suited to the "call and response" format of the maritime folk genre (Piscioniere). As such, what started with a single video of an amateur folksinger in Scotland thumping his fist on the table, grew to include a dozen or more people, different voices and instruments (including an "electro shanty" variation with a thumping baseline) combined in harmony (Heffler).²

Finding a sense of togetherness and community, even while in isolation, has been integral to my academic experience. Throughout this process, my colleagues, friends, and family kept me motivated and made feel supported, even from hundreds, sometimes thousands of miles away. My supervisor Michael O'Driscoll has been a continued source of encouragement, always eager to hear my ideas, offer advice, and, in general, steer me towards the finish. In addition to Mike, I am grateful for the other academic mentors in my

¹ See Jennings; Hunt; Piscioniere.

² See Evans; ARGULES.

life, Geoffrey Rockwell, Oliver Rossier, Susan Brown, Kim Martin, Maciej Eder, and others, who created opportunities for me to grow as a scholar, teammate, and leader.

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Introduction

The seven millions of distinct families, and the same
number of dwellings—Always these and more,
branching forth into numberless branches;
Always the free range and diversity! Always the
continent of Democracy! (Whitman, *Leaves of Grass* 1860, 159)

In Walt Whitman’s poem “Chants Democratic,” published not only on the outset of the Eighth National Census of 1860 but on the eve of the Civil War, there is a pointed tension between what can and cannot be counted. The Census Bureau had then-recently made the switch from household-based to individuated data. By markedly increasing the level of subject detail, researchers could for the first time discover associations between numerous phenomena, such as occupation and mortality rate or place of birth and immigration status. With the addition of time, data became narratological, capable of showing, for instance, the westward emigration of populations across America. At the same time, researchers experimented with new ways to communicate their findings, and this period saw the establishment of now-familiar data tropes. These included not only new ways of visualizing data, such as charts and graphs (see Hedley), but also worldviews, such as sociologist Adolphe Quetelet’s notion of the “average man,” a concept that I argue Whitman repeatedly invokes in “Chants Democratic,” as detailed in Chapter Two. Another striking feature of Whitman’s poetry is how numbers and stats – three and a half millions, eighteen thousand, thirty thousand – are set against the “numberless” (Folsom 162). In this case, the innumerable “branches” refers to genealogical branches, but also modes of categorization, and the infinite ways of combining data to reveal hitherto unseen connections between variables. As I posit in my dissertation, *Leaves of Grass* is a transgressive vision of an America that exceeds its boundaries and cannot be contained. Yet, it is also a reflection on how data are conceived as

the unfathomable and the sublime, as that which finally exist at a scale beyond human comprehension.

In the fall of 2020, artist Trevor Paglen debuted a piece titled *We...*, as part of the hybrid online and in-person exhibition *Bloom* hosted by Pace Gallery in New York. Paglen's artistic practice, as described in his bio, draws upon the real-world "computing systems that collect, interpret, and operationalize data that define and track identity, movement, and habits" (Pace Gallery). Though *We...* was composed nearly 150 years after Whitman's *Leaves of Grass*, the two works draw upon similar themes, asking how collective identities are shaped by technologies of information management. Paglen's piece is comprised of a large white sheet, roughly 6 by 4.5 feet in size, displayed in a plain, white frame. The paper is scrawled with hundreds of lines of cramped, handwritten text: the same sentence repeated over and over. The penmanship varies enough in style – larger or smaller, neater or messier, a heavier or lighter hand – to make obvious that the sentence was written by many different people. In fact, the text itself is the "raw" data from an AI study conducted by the National Institute of Standards and Technology (NIST), a branch of the US Department of Commerce concerned with cybersecurity, in the 1980s. The object of the study was to teach computers to recognize handwriting. Researchers asked the test subjects, a group of high school students, to write out the preamble to the Constitution of the United States. By repurposing the data, Paglen calls attention to the irony of using a document that promises to protect the rights and freedoms of American citizens to develop technology to monitor our behavior. Indeed, another recent NIST-funded project is the development of facial recognition technology by the company ID.me, which is contracted by state and federal agencies to verify the identity of citizens applying for government aid. Under this "rapidly growing" program, which has been adopted by twenty-five states and counting, American residents are required to submit a video selfie to a face matching database to qualify for healthcare and unemployment benefits (Metz).



Fig. 1. Trevor Paglen, *We...*, 2020, pigment print on archival paper, 72" × 56", Pace Gallery, New York.

...STITUTION FOR THE UNITED STATES OF AMERICA.
es of America. We, THE PEOPLE OF THE UNITED STATES, IN
f The United States, in order to form a more perfect Union,
UNION, establish Justice, insure domestic Tranquility,
TO FORM A MORE PERFECT UNION, ESTABLISH JUSTICE
more perfect Union, establish Justice, insure domestic Tranquility, provide
domestic Tranquility, provide for the Common Defense,
domestic Tranquility, provide for the common
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be common Defense promote the general Welfare and

Fig. 2. Trevor Paglen, *We...* [detail], 2020, pigment print on archival paper, 72" × 56", Pace Gallery, New York.

HANDWRITING SAMPLE FORM

NAME	DATE	CITY	STATE	ZIP
[REDACTED]	8-3-89	MINDEN CITY	MI	48456
<p>This sample of handwriting is being collected for use in testing computer recognition of hand printed numbers and letters. Please print the following characters in the boxes that appear below.</p>				
0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9		
0123456789	0123456789	0123456789		
87	701	3752	80759	960941
87	701	3752	80759	960941
158	4586	32123	832656	82
158	4586	32123	832656	82
7481	80539	419219	67	904
7481	80539	419219	67	904
61738	729658	75	390	5716
61738	729658	75	390	5716
109334	40	675	4234	46002
109334	40	675	4234	46002
gyxlakpdsbtzirumw fqjenhocv				
9YXAKPdSbtZirUmWf9Jenhocv				
ZXSBNGECMYWQTKFLUOHPIRV DJA				
ZXSBNGECMYWQTKFLUOHPIRV DJA				
<p>Please print the following text in the box below:</p> <p>We, the People of the United States, in order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common Defense, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our posterity, do ordain and establish this CONSTITUTION for the United States of America.</p>				
<p>We, the people of the United States, in order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common Defense, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our posterity, do ordain and establish this CONSTITUTION for the United States of America.</p>				

Fig. 3. A sample of a completed form collected for The National Institute of Standards and Technology's handwriting recognition study from: NIST Special Database 19, National Institute of Standards and Technology, Gaithersburg, MD.

As captured in the work of these two author-artists, the history of data is bound up with the history of America. In fact, the United States National Census is as old as the nation itself, having been written into the constitution at its founding. Yet, in different ways, data collection in America has also been resisted. As Paul Starr points out, the story of data, as not just a technique of research gathering but a philosophy, from its origins centuries ago to the present day is not one of continuous unchecked growth. Rather the “enthusiasm” for social statistics “rises and falls” (25). As shown in my dissertation, the treatment of data and of numeracy in the literature of the nineteenth century reflects these cycles of what Starr terms “faith and skepticism” (25).

In the mid-nineteenth century, data science, then known as “social physics,” was mainly concerned with “small data,” or the collection of data for a specific purpose (though it could be, and was, repurposed). Involving a “targeted” approach, small data research tends to be “inflexible” in terms of its lines of inquiry, but also durable in its ability to “tell nuanced and contextualized stories” that “focus on specific cases” (Kitchin, *Data Revolution* 27, 29). Unlike the focused, contextualized data studies of the past, Big Data are “exhaustive” in scope, which means that they are more “flexible and scalable in their production,” but also must be continually updated to stay relevant (Kitchin, *Data Revolution* 27). These characteristics of Big Data have interesting implications for the datafied subject, or as Kevin Haggerty and Richard Ericson term it the “data double” (611). Rather than capturing the “whole picture” of the subject, the individual is repeatedly instantiated, on a need basis (Kitchin and Lauriault 9). There is, moreover, a distancing of the datafiers from the datafied, which makes those who collect data less accountable for gaps and mistakes (Dalton, Taylor, and Thatcher 5).

Craig Dalton and Jim Thatcher point out that the ascendance of Big Data puts data (and the ability to determine “fact” and “truth”) in the hands of corporations, as most “research” at

that scale is conducted through social media platforms and search engines (5-6). Companies like Google, Amazon, and Facebook, in this way, become the gatekeepers of these new knowledge regimes, with the ability to not just interpret but “actively shape” human behavior (Zuboff 339). The monopolization of data creates a feedback loop that reinforces data’s discursive power, while foreclosing opportunities for critique. As Rob Kitchin and Thatcher put it,

On the one hand, private regimes of data and analysis seek to remake the world in the image of their own algorithms, less interpreting than “actively fram[ing] and produc[ing]” (Kitchin, Lauriault, and McArdle 7). On the other, researchers are limited to the “data fumes” given off by these corporations; at an extreme, ceding the limits of research to what is given off from black-boxed data-banks through corporate APIs. (Thatcher, *Living on Fumes*; qtd. Dalton and Thatcher 5-6)

Further to this point, corporate-run training programs, such as Facebook University, are a mark of how post-secondary institutes are being forced out of the conversation, as academia struggles to compete with corporations, in terms of access to datasets and to talent (“Facebook University”; Gelernter).

Indeed, unlike the students in the handwriting study or the citizens who take part in the National Census, today many of us are subject to “research” without our knowledge. In 2012, for instance, Facebook conducted an experiment involving some 151 million users that tested how “emotions spread” through social networks; another study from 2010 centred on mobilizing voters (Hill). As of 2018, Facebook had published 180 papers about artificial intelligence (Weise and Frier; “Facebook Research”). These are only the studies that we know about, and even as Facebook subjects its users to surveillance, the corporation has clamped down on independent research into its surveillance methods, limiting its exposure to outside scrutiny (Bobrowski).

Of course, our “data shadows” are not only cast by social media, but by our internet browsing habits, credit card transactions, and even the “smart” devices in our homes (Zook et al. 169). Rita Raley argues that digital technology has not only increased the scale of surveillance but changed its character: “Dataveillance in the present moment is not simply descriptive (monitoring) but also predictive (conjecture) and prescriptive (enactment)” (Raley 124). In other words, the goals have shifted from *decoding* the present to *encoding* the future. On the expansion of surveillance systems Paglen observes, “We’re seeing the establishment of norms, of classifications, and categories... The question then becomes, what kinds of judgements are built into technical systems, why are they made that way, who are they benefitting, and at whose expense do they come?” (“Bloom” 2:40-3:07).

Project’s Questions, Goals, and Texts

While questions of “Big Data” are commonly associated with the modern, computer era (and, indeed, are at the centre of many of the most pressing intellectual questions of the twenty-first century), many of our key precepts regarding data, in which data are situated as neutral and objective, are challenged by the plurality of ‘data’ and of data practices that existed in the nineteenth century, prior to data’s naturalisation. Whitman, trained as a journalist, reinvented himself as a poet at the same time as research practices were being transformed. With the professionalization of the social sciences, the grassroots data activism of the reform era was displaced by the large-scale projects overseen by governments and corporations (Keeney 123). Since then, the reification of Big Data over small has erased the heterogenous multiplicity celebrated in the work of Whitman in favour of what Linnet Taylor calls the homogenous “we” (4). To better understand the deep and abiding roots of how we think about the management of information, my dissertation explores reform-era American literature in the context of the rise of complex systems of data management and information

processing and the subsequent emergence of various iterations of the datafying and datafied subject.

In recent years, a number of scholars have used new media theory as a basis for reexamining the foundations of information science in the nineteenth century: Lisa Gitelman (*Paper Knowledge*) explores the history of documents; Markus Krajewski (*Paper Machines*) studies card catalogs; Bernhard Siegert (*Relays*) investigates the postal system; while Ben Kafka (*Demon of Writing*), Cornelia Vismann (*Files*) and JoAnne Yates (*Control through Communication*) turn their attention to bureaucratic communication. Rather than centre my research on a specific apparatus, my dissertation will instead explore a practice, that of datafication. To datafy is to render information into a structured, and thus material, form. In other words, it is a process through which we make sense of the world. As I argue, data influence our thinking and “extend” into human culture, to borrow a concept from Friedrich Kittler (*Discourse Networks* 284), much like the technological apparatuses described in the aforementioned studies.

The emergent fields of critical data and critical code studies—led by Rob Kitchin, Gitelman, Matthew Fuller, Craig Dalton, Jim Thatcher, Linnet Taylor, Wendy Chun, and others—have sought to understand data as not just a “tool” but a cultural force (Kitchin *Data Lives* 5).³ The ways in which my study engages with the history of information science is indebted to their work. However, it also departs from previous research. First, by unpacking the informational ethos of the current Big Data era by excavating its “small data” origins in the nineteenth century. Second, by approaching the concept of data from the perspective of literature, specifically the reform-era literature of mid-nineteenth century America, in order to understand how data have historically shaped our worldview and given rise to new subjectivities. My study focuses on Herman Melville and Walt Whitman, authors for whom, I

³ For an in-depth discussion of the “sociality” of data, see Kitchin, *Data Lives*.

argue, reconceptualizing literature as data inspired unique experiments with form. In some ways, what we recognize as innovative or modern in these canonical works are the premonitions of our own data-driven era. Yet, as suggested in these opening pages, they also cast light on the ways in which our perception of data and their function in society has changed.

Daniel Rosenberg is of the opinion that, although usage of the term data “expanded constantly within certain domains” in the nineteenth century, the notion of data “played only a small role in the general culture” (34). In fact, he argues that the concept of data went through a “long period of latency,” and it was not until the arrival of computers that it acquired cultural traction (34). Mary Poovey likewise excludes the possibility of a cross-over between scientific and creative practices, arguing that the rise of quantitative evidence within the sciences marked a turn away from metaphor, and, thus, contributions of literature would be minimal (26). Recently, however, there have been forays into how authors might have engaged with the concept of data. Data theorists like Johanna Drucker argue that data are fundamentally rhetorical in the sense that they are, by definition, that which are gathered in support of a theory and would not exist without this prior intent (Drucker, *Graphesis* 70).⁴ Building on this assertion, one could argue that the notion of data is concerned not just with rhetoric but with narrative. Data and story are mutually generative, each shaping one another. When we collect, refine, and structure datasets we are, in a sense, engaged in meaning-making.⁵

For Lev Manovich, a database is not unlike narrative in terms of its historic pull on the human imagination. In Manovich’s view, datafication is an innately human drive, a “creative impulse” or “way of responding to the world,” rather than a form connected to any

⁴ As a way of challenging the “givenness” of data, Drucker proposes the alternative term “capta,” which means that which is “taken and constructed” (“Graphical Display”).

⁵ The iterative aspect of data practice and how it bears on Whitman’s poetic practice, in terms of his list-making, is further explored in Chapter Two.

specific technological advances (*New Media* 233). He regards the database as a tool for structuring not just information but “our experience of ourselves and of the world” (*New Media* 219). Using the computational art of the 1990s as a case study, he argues that the database in effect opened up the possibility for “new kinds of narratives.” In this way, “the logic of a computer... bec[ame] the logic of culture at large” (*New Media* 236).

At the same time, Manovich asserts that narrative and data produce meaning in radically different ways: narratives are linear or cause-and-effect oriented, while databases are not. As such, for Manovich, the two forms are fundamentally opposed; he goes so far as to declare them “natural enemies” (*New Media* 225). Even though he posits their relation as adversarial, Manovich acknowledges that the structures that govern datasets are not necessarily distinct from narrative, and one often contains “traces” of the other (*New Media* 234). In a rejoinder to Manovich, Katherine Hayles argues that data and narrative are “natural symbionts” rather than “enemies,” with narrative as the “necessary other to data’s ontology” (“Narrative and Database” 1607). Most tantalisingly, Ed Folsom in “Database as Genre,” posits a rethinking of genre to include other “organizing principles,” using the “catalogic” elements of Whitman to make an argument for the author as an “early practitioner... of the database genre” (1575). Folsom draws primarily upon his experience constructing The Walt Whitman Archive (www.whitmanarchive.org) and as such overlooks the socio-political framework of nineteenth century data practice that I hope to foreground in my study, but he nonetheless he offers important insights into the “rhizomatic” element of Whitman’s work (1573), of which more is said in Chapters One and Two. Building on the foundational work of Hayles and of Folsom, I set out to investigate how the rise of data led to the production of “hybrid” literary forms and in this way rethink the relation between narrative and database as generative rather than oppositional. As my research progressed, my focus expanded to include not just narrative but subjectivity. This, in turn, raised new questions, such as: How

has “database logic” transformed not only our democratic and social institutes, but our perception of the world? How, moreover, did the “data narratives” (Schmitt) of the social reform era function as part of the data assemblage, not just passively responding to but actively resisting and, in turn, remaking these systems?

My dissertation begins by locating the literary works in my archive within a pivotal moment in the history of information technology. In *The Control Revolution*, James Beniger describes how the industrial revolution was followed by a crisis created by the excess and unwieldiness of ‘too much’ data. To manage the explosion of information, various modes of datafication—from oceanographic data to taxonomy systems to the state census—arose during the 1850s and 1860s (Beniger 427). These information machines functioned as part of a larger system whose smooth operation depended on the exchange of knowledge as energy between mediums. In this sense, the free flow of data was the engine of modernity, with units of knowledge existing in a constant state of translation and transformation (Beniger 193).

My research extends beyond what is commonly thought of as ‘information processing,’ exploring the relationship of economic and sociological data storage systems to the realm of literature and the structure and storage of words. My archive centres on two American authors, Melville and Whitman, whose revelations in style and form, I argue, were responding to innovations in information processing that took place during the same period. These authors were embedded within these emerging information systems and, in their literature, speak from this position of embeddedness, as both subjects and agents of datafication: Whitman in his capacity as an editor and journalist, whose reform-era reporting was informed by the phenomenon of “moral tables,” and Melville through his experience as a whaler and Navy seaman. For these authors, I posit that “hacking” these information systems meant repurposing systems of datafication and ultimately reimagining them as other than tools of industry and commodification.

Critical data theorists like Kitchin and Lauriault have pointed out how information systems are supported and shaped by various social, legal, and cultural apparatuses, including, as shown in this study, literary works. Through these “engines of discovery,” as Ian Hacking calls them, data are analysed, processed, and interpreted (“Kinds of People” 293, 305-306). These are the means by which data become knowledge, and “do work in the world” (Kitchin and Lauriault 13). The texts in my archive were chosen, not as paradigms of datafication per se, but as evidence of the tensions at the heart of data: between the datafiers and the datafied, between the double and the original, and, ultimately, between the capacity and inability of data to capture reality. My archive includes not just literary works, but legislation, newspaper reports, employment contracts, census records, maritime logbooks, and ‘moral tables.’ However, given my focus on subjectivity, studying data through the lens of literature has special value. In writing from the perspective of the subjects and agents of datafication, these authors provide insight into how data reshape our reality. In this way, my study recovers the social and political contexts of data’s rise and reorients the technologies of datafication within cultures of data and anti-data resistance.

A New, New Media Theory

My theorization of data is informed by the work of Friedrich Kittler, one of the foremost scholars of new media theory, a subset of material culture studies that explores how technologies of communication shape our perceptions. According to Kittler, media serves as both “model and metaphor” for the ways in which human beings interpret the world (Kittler, *Optical Media* 34).⁶ For Bernhard Siegert, Kittler’s media theory is best understood as a methodology rather than a set of objects. In Siegert’s words, Kittler was primarily concerned not with media per se but with changing the “frame of reference” (*Relays* 2). By seeking to

⁶ See also Kittler, *Discourse Networks 1800/1900*; *Optical Media*.

understand literature and philosophy through the lens of non-traditional objects, Kittler and his followers strategically disrupted the assumptions of the established hermeneutic approach. Kittler shares with poststructuralists like Jacques Derrida and Michel Foucault an emphasis on how interpretation is mediated, not just by cultural tradition and individual experience, but by discourse. Yet, unlike the latter, the German media theorist rescues discourse from “abstraction” through his “insistence on materiality,” reconceptualizing it as a “network of technologies and institutions that allow a given culture to select, store, and process relevant data” (Partington 55, *Discourse* 369).

However, Kittler’s detractors argue that as media theory gained prominence media itself “became as much a reified or ossified concept as the humanist concepts it was deployed against” (Winthrop-Young). Perhaps in response to accusations of “hardware fetishism,” media theory since Kittler’s death has been marked by a certain distancing from the fixation on devices and a return to or perhaps reconsideration of the core premise of culture as technologically mediated (see, for instance, Siegert, *Cultural Techniques*). Fuller is amongst those who have called for a re-examination of what constitutes media theory by expanding the definition of the term ‘apparatus’ to include entities such as databases (Fuller 108). Geoffrey Winthrop-Young sums up the theoretical turn as an “analytic descent onto the level of smaller operations” coupled with “a corresponding ascent into more explicitly philosophical considerations” (Winthrop-Young).

An epistemic approach to media theory that investigates the history of an idea as opposed to a device is, thus, very much on the cusp of these developments. In *Gramophone, Film, Typewriter*, Kittler himself characterizes each of the forms – acoustic, optical and written – as “data flows,” suggesting that data underlie all mediation (xxxix). However, he tends to prioritize technological devices over written or inscribed technologies (like a table or chart). The emergent fields of critical data and critical code studies, as led by post-Kittlerian media

theorists like Fuller, has instead sought to invert Kittler's core concept of mediation by foregrounding the role of computation. In this formulation, data operate as the ghost in the machine, a largely unacknowledged but ever-present force in Kittler's work, with data processing as the shadow system of media discourse.

As discussed further on, data are never frameless. Yet, their presuppositions are not always apparent. One of the reasons is because it is difficult to represent ambiguity and uncertainty as data. Unknown values, for instance, cause databases to malfunction, "spreading through" the system like a virus (Hayles, "Narrative and Database" 1605). Multiple meanings or those that are context-specific are also hard to translate, in a sense, existing outside the frame. Data, thus, tend to be presented as objective, even while erasing nuance and difference, which has led some humanists to test new ways of modelling information.⁷

The symbiotic relationship between data and media is comparable to that of hardware and software in that the production of events is a matter of dynamic interaction. At the same time, the 'rules' encoded within data, in terms of how their organizing structures shape interpretation, are not necessarily made explicit in the same way as computer algorithms. In fact, by their very implicitness the dissemination of power enacted through data's organizing structures become naturalized in ways that overt rules do not.

To be clear, this is a function of form, not of digitization, as not all data are digital. In fact, the positing of paper-based media as necessarily more transparent and hackable, in contrast to the closed system of computer algorithms, is forgetful of the way in which information systems, long before the computational era, functioned to conceal.⁸ Foucault famously demonstrated how the 'order of things,' rather than the thing itself, enacts power

⁷ See Drucker, "Performative Materiality," "Humanities Approach"; Brown and Simpson, "Curious Identity"; Rodighiero, *Mapping Affinities*; and Korenblat, "Tender Empiricism."

⁸ For Martin Heidegger, the organizing structure of information systems, which conceal as they reveal, embodies the essence of modern technology (Heidegger 18-19).

(see *The Order of Things*). Gitelman has similarly argued that there is no separating the data from itself; because the way in which the data instructs our gaze is embedded in its form, we cannot apprehend the data without looking through it (‘*Raw Data*’).⁹ As such, data always function in a performative capacity in that they do not just describe but act upon the world (Drucker “Performative Materiality”).

Yet, there is a risk that by positing data as actants, one downplays the human decisions and decision-makers that underlie these systems. In other words, the fetish-object merely transfers from hardware to software. In foregrounding subjectivity, apprehending data through the art and literature produced at a critical moment in data’s ascendance, my study invites alternate readings, not just of data, but of literature. Rather than suggesting that humans have always already been computational, as posited by information theorists like James Gleick (see *The Information*), my work underscores the ways in which computing is rooted in the human.

Before we go further, however, we must first clarify what we mean by ‘data.’

Defining Data

The word ‘data’ is defined differently according to different fields of practice. Yet, across disciplines data are commonly understood as products of datafication, the process of rendering information into a structured form, which follows a recognizable pattern. These patterns are the result of recursive processes, or “looping” as Hayles terms it (*My Mother* 3): in other words, processes of datafication, which are often but not always carried out by machines.

⁹ Gitelman’s discussion of the transformative powers of data relates to Heidegger’s theorization of information, in which he states that modern technology is not defined by individual products, which are mass produced and devoid of unique character, but rather the rules of production, in other words, technology’s underlying organizational structure. Humans are, moreover, subject to this “mode of ordering,” in that it has an effect on our experience of the world (Heidegger 18).

Some contend that datafication, as defined through recursion, is not a human invention, and can be observed in the natural environment. Those who adhere to what Hayles terms the “Computational Universe” model understand all phenomena as informational phenomena, with life itself generated through the “processing, storage, and making” of information (*My Mother*, 3). From this perspective, “computation can take place in a variety of milieu and with almost any kind of material substrate” (Hayles, *My Mother* 17). One oft-cited example from information studies is that of tree rings, with the growth and health of the tree recorded in the pattern of the concentric circles (Floridi 31). Another example is DNA, which as others have pointed out operates like a computer program: only, instead of ones and zeroes, genetic instructions are recorded using one of four nitrogen-containing nucleobases (cytosine [C], guanine [G], adenine [A] or thymine [T]). Indeed, our capacity to encode GIFS and even music in cellular DNA is evidence of the kinship between biological and digital “data” (see Hogan and Verhoeven).

However, not all data fall under the same category. Luciano Floridi distinguishes between “environmental” data, which are produced “independently of an intelligent producer/informer,” and “semantic” data, which are purposefully produced. This second type of data is the purview of critical data studies and that to which I refer when I invoke the term “data” in this study. Semantic data are not just “well formed,” in that they adhere to a given syntax or structure, but “meaningful” (Floridi 31). The emphasis on meaning implies that data of this kind are not just read, in the unambiguous way that cells read genetic instructions, but interpreted at a high level. Indeed, Floridi posits that “semantic content” is the basis of all knowledge-creation (49). By the same token, Dalton and Thatcher emphasize how critical data studies draw upon the tradition of “situated knowledges” in positing a “social theory of information,” which foregrounds the “circumstances of production and positionality of those creating that knowledge” (Crampton; Haraway; qtd. in Dalton and Thatcher 3).

The notion of what counts as data—which information is included and excluded by the (human) datafier—lies at the heart of the argument for data as other than neutral, which is the position I take in my dissertation. Rather than encapsulating an objective reality, data are sets of observations that represent a *perspective* on a research object, whose “framework” is determined by the datafier (Gitelman ‘*Raw Data*’ 5). “Data require our participation,” as Gitelman says, adding, “Data need us” (‘*Raw Data*’ 6). The “participatory” aspect of datafication, which determines the data’s limitations, does not discount their potential usefulness. Nonetheless, that data are “framed and framing” must be taken into account when considering the connotations of putting them to work in the world (Gitelman ‘*Raw Data*’ 5). As I hope to show, conceiving of data as both process and as “work” carried out by datafiers can help one realize how it comes to be enacted and sustained by the larger technological assemblage, and why, moreover, we might think of a dataset as being not only “well-formed” information, but also that which is evidence-based, “selective,” and material (Kitchin, *Data Revolution* 3). Deconstructing data, and in turn challenging the possibility of their “pure” existence, can in this way act as a starting point for reconsidering data’s relation to narrative.

Data, as produced by and conceptualized within human society, are often thought of as computational. However, recent studies of the history of information science have shown how the datafication drive far predates the invention of computers. Manovich is among those who detach data from their association with specific technological apparatuses, instead positing data as a conceptual framework with origins in the nineteenth-century (*New Media* 233). Rosenberg argues that the term “data” has even earlier origins, dating as far back as the 1700s (21-22). He shows how for centuries data was a rare word, most often used by theologians to describe “given” values or those which were “beyond argument” (19-20). It was not until the 1800s, when the concept of data became an important notion within empirical sciences, that the term became popularized. The change in contextual usage also

triggered a shift in meaning, and it was during this time that data were redefined in relation to “evidence gathering” as opposed to “scriptural truths” (Rosenberg 33). Today, a dataset is better understood not as that which is “given” but that which is “taken” or “selected” in order to craft an argument (Rosenberg 18; Kitchin, *Data Revolution*; Drucker, *Humanities Approach*; Leonelli “Philosophy of Data”).¹⁰

A number of scholars have argued that data, due to their evidentiary function, are never neutral. Gitelman, for one, asserts that “data are... never entirely ‘raw’” (2). To use her analogy: just as a photographer must make decisions about “what falls within the frame” in order to generate the final image, so too are figures and stats the product of choices (*Raw Data*’ 5). Data, then, are dependent on interpretation and must be “imagined” into existence (*Raw Data*’ 3). What, however, determines the limitations of the imagination, in other words, the conditions of possibility? All of the elements of the aforementioned scene—the camera, the camera operator, and the subject of the photograph—operate within certain institutional frameworks. As Kitchin points out, ultimately what is selected as data is shaped by these pre-existing power structures. In this sense, data function as part of a larger socio-technological machinery, or the “data assemblage.” The assemblage is representative of the fact that data cannot “exist independently of the ideas, instruments, practices, contexts and knowledges used to generate, process and analyse them” (Kitchin, *Data Revolution* 2). As such, my study contextualizes the emergence of data within the social reform movement of the mid-nineteenth century and considers, as well, how datafication was fueled, not just by communication technologies, but also by changes in bureaucratic and legislative practices, which produced data as a by-product.

¹⁰ As mentioned, different fields hold different assumptions regarding data. James Bogen and James Woodward, who are trained in both philosophy and physics, disagree with the notion of data as relational. They argue that data can in fact be “straightforwardly observed,” even if these inferences are shaped by prior theoretical assumptions (Bogen and Woodward 305; Woodward 173). Ian Hacking is another scholar who “deemphasizes” the notion of data as evidence, instead defining data as “marks produced by human interactions with research instruments” (Hacking, “Self-Vindication” 48).

Data are also framed in more immediate ways. Databases are “means of structuring and storing data” that facilitate “multiple queries,” in which the user can retrieve different combinations of variables in order ask questions of the dataset (Kitchin, *Data Revolution* 21). These queryable datasets are considered “self-describing” in that their organization is “contained within the database itself” (Kroenke and Auer 2011). For Hayles, this is a point of contrast between database and narrative: the former is self-contained, while the latter guides one’s apprehension of the text through the inclusion of paratextual materials such as the title, attributions, chapter divisions and other features (“Narrative and Database” 1604). Yet, Hayles overlooks the comparative role of metadata: information that, like paratext, serves to contextualize. That the value of data to researchers often depends on the quality of the metadata supports the argument for the necessary overlap between the two forms. Database is, moreover, never without its paratexts, in the sense of the rules and standards, as established through mechanisms like style guides, that undergird the database’s structure and inform the way in which we interact with it.

The crossover between database and narrative also manifests in the way in which information is organized. On the surface, traditional narratives are entirely unlike databases in that their structure is fixed and linear. A narrative has an identifiable beginning and end, while a database does not; rather, databases can be accessed in multiple ways, allowing for various modes of ordering to exist simultaneously. Certain schools of literary criticism call attention to how the instability of meaning generates multiplicities of texts. Hayles’ response to these critics is that these other narratives exist only in the “virtual” sense. By contrast, in a database these “paradigmatic possibilities,” as she terms them, are “actually present” (“Narrative and Database” 1606).

For Hayles, hybrid genres like hypertext are revolutionary because, unlike traditional narratives, they challenge the linearity of narrative in manifest ways (“Transformation of

Narrative”). Yet, databases existed before computers, and “database logic,” as Manovich terms it, is not unique to new media objects (“Database as Symbolic Form”). Literary forms like poetry, in some cases, rely more on spatial organization than linear and may have more than one point of entry.¹¹ Gilles Deleuze, for one, has remarked on how American literature is characterized by “fragmentary writing,” which presents the “world as a collection of heterogenous parts” (56-67), in what Fuller terms an “aesthetics of multiplicity” (14). Brad Rittenhouse’s work draws closest to my own, and he similarly asserts that authors of the American Renaissance developed a unique “data-driven” style (3). However, in his case, he reads the texts through the lens of genre studies, with a focus on how encyclopedic literature responds to the information-saturated “urban, consumerist” spaces of America (3, 14). Pointedly, Rittenhouse tends to present Whitman and Melville as embracing the “rationalist” push towards “efficiency” and “user friendliness” (i, 2-3), which overlooks the histories of counter and anti-data resistance within which I argue they were embedded.¹² As discussed further on in the chapter summaries, my own reading of these authors, which draws upon Raley’s concept of “mirror worlds” in surveillance art (135), looks instead at how simulating processes of datafication, through techniques such as “doubling” and recursion, functions not just as an aesthetic practice, but a critical one.

One final point of comparison between data and narrative is that of data’s materiality. As Hans-Jörg Rheinberger points out, data are characterized not only by the ability to be reorganized, but also stored and retrieved. These qualities, in turn, necessitate data’s “durability” (Rheinberger 344). Narratives, unlike data, can exist in immaterial forms, such as when transmitted orally. Data, however, must have a stable presence; they must always be

¹¹ For a comprehensive discussion of the pre-1900 history of visual poetry, see Higgins, *Pattern Poetry*.

¹² See Chapter One for a fuller discussion of Rittenhouse.

physically stored somewhere, even in the digital era.¹³ In fact, Hayles points out how “material constraints have historically been recognized as crucial to the development of computers,” citing the number of transistors capable of fitting on a silicon computer chip, which has been used as a measure of processing power and technology’s progress more generally, as an example (*My Mother* 43). The materiality of data is not only reflected in their hardware, nor does it only impact the efficiency of the system, as in the energy required to perform operations. Before digital computers, data scientists relied solely on print technologies like logbooks, forms, and card catalogs; and, like digital tools, the design of these information systems, from the size of the paper to the layout of the tables, shaped how the data were gathered, organized, and interpreted (and in some cases, misinterpreted). Bruno Latour refers to these paper-based data stores, which enable information to be exchanged without being “corrupted,” as “immutable mobiles” (8). These technologies have often been studied through the lens of new media theory, which as mentioned is a methodology that plays a central role in my dissertation.

As shown, the crossover between data and narrative reveals the complexities in pinpointing precisely what data are, which is rooted in the tension between data as process and data as material form. The next section delves into the implications of these dynamics for subjectivity.

The Data(fied/fying) Subject

Datafication is generative in more than one sense, producing not only material objects, as per Latour and others, but subjectivities. The datafied subject is theoretically oriented in the overlap between critical code and surveillance studies. Fuller argues that modern surveillance

¹³ The notion of ‘cloud’ storage technologies is deceiving, as evident by the steady creep of server farms, whose energy consumption levels are set to triple over the next decade (Badwin 2016).

“applies very little to acts of seeing” and is no longer characterized by “watching” so much as by datafication (Fuller 149). I would add that the datafier is not just a passive receiver of information, but an active participant in its generation: in processing the object, identifying its “seams” (Fuller 165), the datafier not only makes the object anew, but creates the conditions for endless remakings. Fuller also draws attention to the generative function of modern surveillance, defining it as a “processual dynamic of composition,” which involves breaking down an object into its constituent parts, what Fuller calls “flecks of identity,” and recombining those elements to form new objects. These “flecks” are the “primary compositional element within surveillance systems” (Fuller 148). Indeed, as Fuller, Haggerty and Ericson, Raley, Mark Poster, and others observe, surveillance systems no longer target individuals, in the sense of a whole complete person, but rather the distilled elements or “data flows” that comprise them, such as age, weight, income, steps walked per day, blood type, purchase history, or web page visits (Fuller 152, Haggerty and Ericson 606, 611).

Notably, these flecks are always considered in relation to other flecks, as part of “clusters” or “concatenations of data” (Fuller 148), which orient an object within certain categories or groups. The use of the term orient, rather than sort, is an important distinction, because objects are not always separated into distinct categories and might, instead, be placed on a scale or grid, which makes it possible to determine relative (as opposed to absolute) “conformity or infraction,” as Fuller puts it (Fuller 148). Objects can, moreover, be part of multiple clusters according to different combinations of variables, and while these groupings can shape the limits or possibilities of interpretation, they are not necessarily set or predetermined.

In other words, while data can be collected for specific purposes, the usages to which they are put remain open to reinterpretation. Drucker describes databases as “graphical” in how their “spatial organization structures meaning” (*Graphesis* 96). However, unlike a chart,

which illustrates “information already known,” databases are what Drucker terms “knowledge generators” (*Graphesis* 65). In other words, the meaning or interpretation is generated in the moment, to fulfil different functions. She compares, for instance, a bar chart depicting election results to a train timetable. Unlike the chart, the table is “open-ended,” in that it can be used to extract different types of knowledge according to the specific needs of the user and ways that they choose to combine the variables (*Graphesis* 65). Put another way, the organization of the table is static, but its meaning is dynamic. Databases are similarly unruly because of this potential for reinterpretation, such that the datafied subject is continually regenerated according to different, sometimes opposing, needs. As such, “data are... always in a state of becoming” (Kitchin and Lauriault 9).

As shown in my dissertation, these “becomings” can create the potential for disruption and resistance. Indeed, the encoded self is not necessarily the subjugated self. Datafication has a social function, as a means of identification and individuation, and in this sense is intrinsic to our democratic institutions (Lyon 26, 116). Chapter Two details how data’s rise is historically bound up with emergence of new forms of identity, including notions of “citizenship” and “society.” Moreover, as David Lyon says, technologies of surveillance have in the past “inspire[d] new forms of resistance” (Lyon 117), and Chapter Three delves into how counter-surveillance tactics were used by American workers to resist unfair working conditions.

That said, as Michael Hardt and Antonio Negri point out in *Empire*, hybridization and ambiguity are not counter-productive to the capitalist machine and, indeed, as Nicole Shukin argues in *Animal Capital*, can work to “disguise” its violence (Shukin 6). Likewise, the datafied subject, as eternally unfixed and changeable, makes it an ideal commodity.¹⁴ A multi-billion-dollar industry, which Shoshana Zuboff terms “surveillance capitalism,” has

¹⁴ See *On the Data Trail* and *Back on the Data Trail*.

sprung up around the “capture, analysis, and processing of human behavior” (24). Through datafication, the consumer becomes a “good” one that can be continuously repackaged and resold to companies. Though the value of this data is difficult to assess, a 2019 study by Vox Media estimated that US media companies harvest an average of \$35 worth of data per person, per month (Molla).

Surveillance capitalists exploit the ambiguity of data not only to increase profits, but to evade regulations. Within online environments, the dispersed, disembodied subject becomes increasingly difficult to pinpoint. Writing at the dawn of commercialized service providers (ISPs) in 1990, Mark Poster foresaw the challenge of determining “where the human self is located if fragments of personal data constantly circulate within computer systems, beyond any agent’s personal control” (97-98). Indeed, the “multiplication of the individual” makes it possible to collect data without the knowledge or consent of the subject, since the duplicates can be “acted upon to the detriment of the ‘real’ self without that ‘real’ self ever being aware of what is happening” (Poster 97).

In other words, modern surveillance is not only about the collection of information, but also about its duplication. As Haggerty and Ericson put it, “The result is a decorporealized body, a ‘data double’ of pure virtuality” (611). These duplicates, although imperfect or incomplete copies of the original, can be used to exert power and authority over our “real” selves (Rule 13). Consider, to use Lyon’s example, the numerous identifiers – credit cards, social security numbers, IP addresses, to name a few – which we rely on to interface with and exist in society (Lyon 5).

There is also another sense in which “data doubles” exert power: to predict and modify human behaviour, often with the goal of moulding us into better consumers. As Zuboff says, “it is no longer enough to automate information flows about us; the goal now is to automate us” (17). In other words, through predictive data analytics, the process of mimesis now works

in reverse. For Dalton and Thatcher this distinguishes the datafication of the present from that of the past, as marked by a shift from “interpret[ing]” present conditions to actively “remak[ing] the world in the image of their own algorithms” (Dalton and Thatcher 5-6).

Poster, Lyon, and others argue that, due to the ephemeral and ambiguous nature of data, “rights-based claims to privacy” are ineffective (Poster 71; Lyon 13). Such efforts at combating dataveillance fail because they rely on “outmoded categories,” such as that of the “individual,” the boundaries of which are difficult to define and therefore safeguard, given that the targets of dataveillance are not concrete persons or things, but “mimetic part objects” that are generated through activities or events that occur within complex “media ecologies” compiled of multiple overlapping communications systems (Fuller 152). Consider, for instance, Google’s recent proposal to replace third-party cookies, which are commonly used to track browsing activity, with a new form of “anonymized” data gathering technology called Federated Learning of Cohorts (FLoC), which groups the data of similar users together in a “cohort” (Doffman). As pointed out by the Electronic Frontier Foundation, rather than address and take steps to limit dataveillance, Google instead “reinvented” and rebranded tracking technology under a new name (Cyphers).

If the steady creep of dataveillance and the power it exerts over our lives seems inevitable, Taylor argues this is largely due to its “othering” (5). That the “mythology” of Big Data depends on its “otherness” is evident in the rush to detach it from context, in the process obscuring the role of human analysts and data collectors. In debuting its FloC technology, for instance, Google took pains to emphasize how anonymized data, scrubbed of identifiers but also of context, protects users (Bindra). But what they failed to mention is how it also protects corporations. As Taylor points out, distancing researchers from their subjects makes it harder to hold them to account. The abstraction of data, the need to “sever” them from

narrative, is an attempt by surveillance capitalists to “reign in” data’s unruliness, and to disavow themselves from their real-world consequences.

One way to dismantle the “mythology” of Big Data is to resist the tendency towards technodeterminism and instead to steer the discourse back to the role of human actors. Even within critical data studies, humans are often positioned as objects of datafication, rather than agents. In other words, datafication is characterized primarily as a process, rather than as “work” carried out by human data collectors, programmers, analysts, and distributors. For instance, in his theorization of media ecologies, Fuller describes the effects of colliding media systems as such:

The way in which such relations of force enter into this body are prefigured as “representations” of such interruptions, buffers. But they can also force a choice of either actuating a strict adherence to the initial schema or compositional dynamic and refusing any external disturbance—and hence perhaps ceding the capacity to be sustained in new conditions—or of building within itself the capacity for its own incorporation within the relational fields of other bodies... in order to maintain its longevity such a code needs to incorporate a model of its own breakdown, sequences that allow it to degrade gracefully, to trip into another state or to become fissiparous and allusive—as most successfully does language. (164)

Fuller’s major insight is that code, like language, is not authored in a void, and must interact with and adapt in response to other media systems.¹⁵ At the same time, in describing the evolution of media systems as an “ecological” phenomenon, he also naturalises those systems, and in doing so he downplays the decisions and decision-makers that underlie said systems. For instance, Fuller writes that “code needs to incorporate a model of its own breakdown,” as though information systems arise solely through the interaction between “relational fields,” and are driven by driverless “forces” instead of being authored.

By contrast, Taylor reminds us that the datafied self is also product of human, not just media, interactions. As she points out, the datafiers “shape” or mould the double to fulfill

¹⁵ Wendy Chun, likewise, points out that without updates, media will soon become obsolete: “New media live and die by the update: the end of the update, the end of the object” (2).

specific purposes or needs: “The data double highlights both the negative space between an individual and their digital representation, and how the position and intention of the analyst influences how the double is constructed, what is included or left out and what kinds of action it is shaped to facilitate” (Taylor 4). Building on Taylor, how might artists engage with these processes of subject-creation through duplication, in order to interrogate and disrupt the data(fier/ied) dynamic?

Raley points out that dataveillance has inspired new forms of artistic expression as well as critical practice. By “mirroring back” datafication processes, dataveillance artists remind us of our doubled existence:

Artists who appropriate dataveillance techniques and tools as a medium for creative production inform, enlighten, and help us to imagine otherwise by refusing the fantasy of exodus, a withdrawal from a given political, economic, or cultural system predicated on the notion that there is a neutral external vantage point from which one can begin the work of critical assessment. (135)

Though Raley focuses on contemporary multimedia installations, these “mirror worlds” (135) can also be observed in the surveillance art of the nineteenth century, for instance, in Whitman’s “Song For Occupations,” which plays on the structure of a census questionnaire (see Chapter Two).

Unlike Raley, Shukin approaches “the copy” through a combination of biopolitics and literary-aesthetic theory. In *Animal Capital*, she draws attention to how the representation (and reproduction) of life is not exclusive to art and exists alongside the “economic logics of (capitalist) reproduction,” using the term “render” to signify the link between these two forms of “doubling” (20). Though she does not directly engage with data, she emphasizes that mimesis is not exclusive to the textual or visual realm (20-21). In fact, as I argue in Chapter Four datafication can best be understood as a “rendering,” which, as Shukin posits, is a process that both augments (“interprets”) and reduces (“breaks down”) the original (20).

For now, it suffices to say that if the data-narrative split is, as posited here, ideological, “data narratives” can be a means to interrogate the belief systems that uphold surveillance capitalism and strategically refuse what has been superficially severed. The next and final section outlines my methodology, as grounded in critical data studies and a historicized approach to data as both a media and cultural artifact.

Project Outline and Scope

Data take many forms and distinct cultures of data, each with their own assumptions and concerns, have historically emerged within different communities. I share Gitelman’s view that technological forms—including data—shape meaning in ways that are “nonetheless socially realized” (*Always Already New* 7). However, as Dalton and Thatcher point out, the process also works in reverse, with data arising out of and reflecting their “circumstances of production” (Dalton and Thatcher 3). Ian Hacking, for one, points out that ‘data’ has signified differently according to different epochs and locales (*Taming of Chance* 16), as well as, I would add, different genders, races, and classes. Taylor, likewise, cautions against the “totalizing ‘we’ of big data,” which draws conclusions about the general population based on findings taken from a subset of the population. Here, she distinguishes between the “digital divide,” which looks at how access to technology exacerbates class inequalities, and what she calls the “data divide,” which looks instead at how different communities are represented within the data. As she points out, when these nuances are not accounted for, certain voices are amplified, while others are silenced: “Most people in the world are not digital in similar ways, or may be digital in ways that do not comply with the ‘we’ of current analyses of digital data and power” (Dalton, Taylor, and Thatcher 3-4).

To build on this point, the “largeness” of Big Data, through that concept’s totalizing claims, not only creates the illusion of neutrality, as purportedly nothing is left out, but

justifies the need to indiscriminately ‘capture all’ in the name of accuracy and truth. The very term ‘Big Data,’ moreover, announces its break with the data of the past (and by association its overcoming of past limitations), which as Dalton and Thatcher point out is a narrative that serves to deflect criticism: “‘Big Data’ advocates present it as perpetually new, ahistorical and revolutionary, and... this presentation is hardly accidental and serves industry narratives of disruption. Separated from the past, these technologies and actors are un beholden to the problems, contradictions, and limits that afflicted older forms of knowledge production” (Leszczynski, 2014). In other words, the construction of data as not just apolitical but ahistorical effectively naturalizes data. In this way, data come to be taken as a “prediscursive given,” to quote Judith Butler, one that asserts itself “in and through its effects, where those effects are the dissimulated effects of power” (Butler 251).

What, then, might we learn from a historically contextualized analysis of ‘data’ as media artefact? Rather than map the present concerns and, indeed, conceptions of data onto the past, my dissertation draws attention to the distinctions between them, and moreover, to the variety of data and anti-data activities at work. Once more, it must be stressed, these were indeed information *systems* in the plural, each with its own backgrounds, motives, and practices, which gave rise to various, sometimes conflicting, ‘logics’ of data, and their corresponding applications in and implications for modern society.

As Trevor Barnes and Matthew Wilson observe, the history of Big Data (and, I would argue, data more generally) is not a “single complete history,” but “looser, fragmented, multiple” (1). A historicization of ‘data’ might then begin with an unravelling of the concept’s complex morphology, including the specific conditions under which different systems of datafication arose. I am particularly interested in how these conditions facilitated the intersection of forms. JoAnne Yates, Margaret Cohen, and others point out that the professionalization of disciplines could not have been possible without their technologization,

such that new modes of inquiry arose in accordance with the invention of specialized tools (see *Control Through Communication* and *The Novel and the Sea*). Thus, fields like ‘social science’ emerged into being in congruence with a hardening of data and of what constitutes data practice. At the same time, these alternate forms of ‘data’ were not entirely displaced; and competing versions existed alongside one another. In fact, the mobilization of power under data infrastructures like the US Census Bureau and the Naval Observatory created new opportunities for cross-contamination and interference. Geoffrey Bowker and Susan Starr remind us that we are surrounded by systems for managing information and only become aware of them when they break down (Bowker and Starr 2-3). To utilize a dataset as other than that for which it was intended might then be a means of interrogating and dismantling the ‘will to mastery.’

The transitional period of the mid-nineteenth century, as data were becoming professionalized but before the process was complete, was a particularly fruitful moment for experimentation with novel techniques and paradigms of data. My dissertation explores how, within these circumstances, an author might reimagine techniques of datafication as literary devices and in doing so implant a glitch in the system, unravelling hierarchies of information even as they were being calcified in order to facilitate larger disruptions of power. These disruptions are necessary to the generation of new forms, and indeed genre itself could be considered a mode of ordering that evolves through undoings. As I hope to show, what we recognize (or perhaps misrecognize) as innovative or modern about the works of Melville and Whitman may well be a historically situated attentiveness to the underlying structure of information systems and an approach to the making of texts that engages with what Alistair Crombie calls the “growth of a research mentality” in nineteenth-century America (Crombie 87).

With that in mind, my consideration of data concentrates on the social reform movement of the mid-nineteenth century, contrasting the ‘small scale’ data projects carried out by citizen scientists with the ‘large scale’ projects overseen by governments and corporations. During the Antebellum era, amateur statisticians—some were merchants, doctors, lawyers, and journalists, while others were politicians or homemakers, but all were, in some respect, ‘activists’—collected and published data about a wide range of social issues, including healthcare, education, temperance, labour, and slavery.¹⁶ These studies circulated through newspapers, books, and political pamphlets, with its authors using their findings to advocate for change (Davis 174). In this way, the ‘moral table,’ as the measurement of social phenomena was called, became the way that data were first popularly communicated (Emigh, Riley, and Ahmed 171).

However, after the Civil War, ordinary citizens, who were once active participants in scientific research circles, were increasingly shut out of the conversation. As Elizabeth Keeney explains, the establishment of scientific journals and societies, including the American Statistical Association in 1839 and the American Geographical and Statistical Society in 1851, widened the divide between ‘amateurs’ and professionals (Fitzpatrick 14, 16; Keeney 123-124). At the same time, as data projects increased in scale, they became much more labour and resource intensive, requiring the combined efforts of teams of data collectors, aggregators, and analysts, not to mention the cooperation of human subjects. Kevin Donnelly points out that this shift in practice challenged existing power dynamics within the scientific community, especially in how it seemed to undermine the autonomy and agency of individual scientists. In this way, the ascendance of data practice through its professionalization gave rise to not just a “new science,” but a “new kind of science

¹⁶ See, for example, Sanger; Howe; Weld, Grimke, and Grimke.

researcher” (Donnelly 8), and my dissertation, in part, explores how Melville and Whitman grapple in their work with the political ramifications of this epistemic shift.

My study is further concentrated on Atlantic coast, which was not only the epicentre of what has come to be known as the American Renaissance, but also the site of many important developments in the history of information science: from the establishment of institutions such as US Naval Observatory (1844-1893) and the United States Census Bureau (1790-present, expanded to every household in 1850) to the development of technological apparatuses like the library card catalog (1840, 1853, 1860) and the tabulating machine (1890). As will be shown, these were sites, as well, of anti-data resistance.

My dissertation, thus historically and geographically situated, tracks the rhetoric(s) of data as they circulated through (and were transformed by) literary and non-literary forms. My approach centers on the figure of the datafier, a manager of information and recurrent literary archetype. As I argue, through the dynamics between the surveyor and surveyed, in which the narration itself becomes a form of information processing, the authors in my study make visible the contradictions of datafication, which reinforces hierarchies of power through its structures while at the same times undoing such hierarchies by opening up new ways of seeing. Each chapter considers a different subject—the journalist, the citizen, the worker, and the animal—as they were constituted through the databases and database art of the time. In foregrounding subjectivity, my dissertation draws attention to the constructedness of the data itself. As discussed, those charged with the work of datafication—collection, processing, analysis, and circulation—create the conditions of possibility for the generation of not just new narratives, but new subjectivities. In this sense, one of the central questions my research engages with is: what stories do the data tell about these conditions, and in doing so, about the relationship between the datafiers and the datafied? Furthermore, what can the ‘art’ of

datafication teach us about the different ways in which data infrastructures have historically constituted their subjects and how those subjects resisted and remade those systems?

Chapter One investigates how Whitman's origins in journalism, which includes a prominent position as editor-in-chief of *The Brooklyn Daily Eagle*, introduced him to the world of 'social physiqués' and taught him the power of data as a means of social reform. Whitman's poetry has been noted for its uniquely "arithmetical" quality (Turpin 201). Lists and statistics abound in *Leaves of Grass*, as pointed out by Fuller, Folsom, and others (Fuller 14, Folsom 156). Less attention has been given to how Whitman's affinity for numbers predates his turn to poetry. Not coincidentally, modern news was 'invented' at the same time as social science practice. In fact, journalism techniques that emphasize objectivity—such as conducting human interviews and collecting and analyzing data—are echoed in the methods of early sociologists. Taking a closer look at how data were reported on in the early days of their existence sheds light on media's role in the assemblage, not just as a vehicle for collecting and circulating data, but in mobilizing the data as a social and political force. As I argue, Whitman's research practices, as captured in his reporting on data, are an important framework for the development of his later narrative style. Contextualizing Whitman's later work in this way shows how he came to envision data as a democratizing force, a tool in the fight against elitism and corruption, which gave voice to the 'many.'

Chapter Two shifts from Whitman's journalism to his poetry and from the 'small scale' research activism of the reform era to the 'large scale' data projects overseen by the state. Though, as mentioned, Whitman is often celebrated for his "aesthetics of multiplicity" (Fuller 14), not all his poems are enumerative; nor is enumeration, when used, used to the same effect. This section traces the stylistic evolution of Whitman's *Leaves of Grass*, reading the poet's formulation of nationhood and of 'society' through the lens of America's changing relationship with data. The Seventh National Census of 1850, which was carried out in the

formative days of *Leaves of Grass*, was unparalleled in its scope and ambition, and comparing these two ‘tallies’ of American life reveals the ways in which ‘data’ was, and continues to be, a contested space. As shown, the 1855 and 1860 editions of *Leaves of Grass* capture both the enduring hope of enumeration as a source of national pride and unity and the growing fear of how data can draw attention to and reveal national divisions.

Chapter Three turns from demographic data in Whitman’s *Leaves of Grass* to labour data in Melville’s south seas novels *Omoo; A Narrative of Adventures in the South Seas* and *White-Jacket; or, The World in a Man-of-War*, looking at how nineteenth-century maritime workers used countersurveillance tactics to ‘hack’ information systems. Melville spent four years as a whaler and a Navy seaman, occupations whose day-to-day activities were not only highly regimented, but also carefully documented. In fact, much of what we know about Melville’s years at sea, which has been the basis of multiple biographies, has been gleaned from government records. These details are available precisely because he worked in fields that were subject to extensive datafication (and dataveillance). In the case of maritime workers, this was the result of changes in industry and government regulations, which were purportedly put in place to ‘protect’ the seamen from exploitation, but which, in fact, functioned to uphold these systems of oppression and silence dissidence. On the surface, Melville’s worldview of data appears much more cynical than Whitman’s. Indeed, the ‘total system’ of the man-of-war, in which one’s every move is cataloged, anticipates and warns against the dangers of surveillance society. Yet, Melville also suggests that information systems are not impenetrable, and by ‘mirroring back’ these surveillance tactics, he makes an argument for the ways that tools of datafication can be not only resisted, but redeployed as tools of critique.

From the surveillance of workers vis-a-vis data collection in Melville’s *Omoo* and *White-Jacket*, I finally turn to the surveillance of animals in *Moby-Dick; or The Whale*. As will be

shown, whalers in the nineteenth century increasingly apprehended their environment and the non-human animals who inhabited it through the lens of data. In Chapter Four, Melville's account of whales and whaling is read against the observations gathered by nineteenth-century US Navy Lieutenant Matthew Fontaine Maury, as part of his pathbreaking *Wind and Current Charts*. Maury's oceanographic study, compiled from the 'crowd-sourced' log data of thousands of merchant vessels, not only made visible the "tracks" of the sea, as Maury puts it (23), but also the way in which datafication produces new subjectivities. In *Moby-Dick*, Melville fluctuates between whale as resource, as research subject, and as metaphor. The 'manyness' of the whale, as generated through these contradictory modes of apprehension, seeds tension between the potentialities and the limits of data to 'render' reality. In this way, Melville troubles the notion of data as pure commodity and instead envisages data's generative capacities. Through these chapters, my dissertation foregrounds the contested terrain of 'data,' whose multiple iterations, which often existed in tension, are registered in the literary discourse of the period. In tribute to Whitman and Melville's love of "unfinished" systems (*Moby-Dick* 159), my thesis ends with "An Inconclusion," which briefly reflects on the indeterminacy of data, discussed below.

Given the purview of my project, it seems appropriate to conclude this introduction with a note on data's unresolved grammar. Data, curiously, can be both singular and plural. Data 'is' and 'are': both are grammatically sound, according to the Merriam-Webster and Oxford dictionaries. Etymologically speaking, the Latin origin is plural. However, the mass singular form of data, used the same way as the term 'information,' has in recent decades gained in usage. When Gitelman published *Raw Data' is an Oxymoron* in 2013, she noted that "data is..." retrieved four times as many Google search results as "data are" (9). Writing in 2021,

the singular form of data is now sixteen times as popular (tellingly, the top results for the plural form are think-pieces about the ongoing controversy over usage).¹⁷

As Gitelman observes, our instinct to render data as mass singular, and therefore always already multiple, speaks to its intrinsic relationally. Data, as she points out, are nearly always found in the “aggregate” (“Raw Data” 9). The singular form ‘datum’ is so rarely encountered in normal life that—much like ‘agendum,’ the little-remembered singular form of agenda—the word is becoming obsolete. Even in scientific contexts, ‘data point’ is more common (McAlister). Indeed, though the AP Stylebook recommends that the usage be context-based, with the plural form reserved for “academic and scientific writing” (Easton), these instructions are only appropriate for specific fields. In computer science and engineering the singular form is preferred: data *is* (not are) sorted and mined (McAlister). In fact, a recent editorial in the *Canadian Journal of Surgery* suggests that “academic medicine alone among the sciences has stuck to the plural form” (McAlister 220).

Critical data studies, as it turns out, is another hold out. In keeping with Gitelman and Kitchin—and at the risk of coming across as “hyper-correct, old-fashioned and pompous,” as the style expert for *The Guardian* rather irately put it (Rogers)—I similarly favour the plural form in my dissertation. There are a few reasons for this. Gitelman makes a compelling argument for treating data as plural, not despite but precisely *because* this usage can, at times, feel awkward and ungainly. The “strain” between singular and plural forms, as she calls it, is a testament to our inability to arrest the “relational,” as opposed to collective and “generalizable,” quality of data (“Raw Data” 9).

¹⁷ See, for instance, *The Economist* articles “Data Versus Stadiums, And the Single Panini” and “Data Are? Revisited”; Geoff Nunberg, “The Data Are”; Simon Rogers, “Data Are Or Data Is?”; and Daniel Oberhaus, “It’s Time to End the ‘Data Is’ vs ‘Data Are’ Debate.”

Data's restless grammar encapsulates, as well, a certain uneasiness towards and ambivalence about data, which is the position I take in my work. Data are at once ever-present, in their role in mediating everyday interactions, and difficult to locate, by virtue of their capacity to be repeatedly and endlessly instantiated, including through art and culture. Our unwillingness to put the data is/are debate to rest, to the frustration and bemusement of style guide editors, is part of negotiating our simultaneous proximity to and distance from the data; and, in turn, our positionality in relation to the data, as either/both the datafiers or/and the datafied.

Data are plural in another sense. As detailed in this study, data practice has gone through multiple iterations since the nineteenth century, when 'data' were better known as 'moral science' or 'moral tables' and later 'social physiqués.' While charting this epistemic shift, this dissertation also illuminates how these competing versions of data practice existed alongside one another; and, indeed, continue to exist despite the presentation of 'data' as monolith. In this sense, the plural form signifies not only the relational quality of 'data,' as invoked by Gitelman, but also their *living* quality: the social and cultural connotations of data's myriad and shifting cultures of usage.

Having made the argument for data as plural, I nonetheless posit that there are justifiable exceptions to the rule. Some are rather mundane. In the same way that 'statistics' can refer to not just a "collection" of "numerical facts" but a practice (McConway "Statistics"), the singular form of 'data' is used to refer to data as a professionalized field. The same goes for cases where 'data' stands in for a specific dataset, such as 'the census data was incomplete.' Other exceptions are more pointed. Slippages in data's grammar, when enacted with intention, can be productive. Gitelman, for instance, chose to title her book, whose introduction includes the aforementioned diatribe on the ambivalent grammar of data, '*Raw Data' is an Oxymoron* [emphasis added]. By invoking the singular form, she calls attention to

the seeming universality and self-evidence of data, the “givenness” that her work (and my own) seeks to trouble. In the same spirit, with these chapters my dissertation charts the conflicted valences of data and gestures towards its/their possible futures.

‘Figures Cannot Fib’: Data as Social Reform in Whitman’s Journalism

Intro

In late summer of 1846, Walt Whitman, then-editor of *The Brooklyn Daily Eagle*, was engaged in a bitter public feud with a rival newspaper. He had locked horns with a journalist from *The Ithaca Chronicle* over import tariffs, which Whitman argued would unfairly punish the working class. In the editorial “Figures Cannot Fib” and the follow-up piece “Facts for the Working Folk,” Whitman posits data as the language of the “common man” and attacks the “rhetorical flourishes” of the elite using the “cold certainty” of numbers:

The dealers in Panic are occasionally [sic] brought up with an unpleasant jerk, by the reduction of their rhetorical flourishes to the cold certainty of the numerals. The following statistics, gathered from reliable sources, present a shower bath which, let fall on the ardent tropes of the alarmists, cools them at once... (“Figures Cannot Fib” 2)

Whitman has been called the “most arithmetical” of nineteenth-century poets (Turpin 201). Yet, he received only limited schooling, having dropped out at age eleven to find work, not long after which he became a printer’s apprentice. In fact, Whitman’s primary “education” in numbers—in which he learned how to report on data, using figures to tell stories about the cultural state of America—came from his years in journalism. Before *Leaves of Grass* debuted in 1855, Whitman had already edited or co-edited nine newspapers and contributed to over twenty journals (Bergman et al. xxv). His evolution as a journalist offers special insight into how the rise of data was reshaping journalistic practices. Whitman’s journalism not only demonstrates how statistical thinking was perpetuated in print media culture, but also how data functioned as a powerful rhetorical device, which were deeply political in their deployment as reform-era tool of social change.

The 1830s and 1840s saw the rise of the penny press and the birth of modern “news,” a medium whose practices and modes of delivery, which have today come to be identified as

“journalistic,” were adapted from the “empirically minded social reformers” and the emergent profession of sociology (Anderson 17).¹⁸ For the first time, these publications offered timely, event-based coverage, and made it cheap and accessible to the general public (Schudson 21-22). Along with this, came a thirst for new content, including “human interest” stories, which explore the lives of average, everyday citizens (Schudson 21-22).¹⁹ Though “proudly partisan,” this new brand of journalist was also invested in what Chris Anderson terms the emerging “culture of truth,” defending their political positions by pointing to “the facts,” and in particular to data (Schudson 21-22, Anderson 17). In the years leading up to the publication of *Leaves of Grass*, Whitman rode the wave of this sea change, incorporating statistics and statistical language into his journalistic “voice.” This trend reflects both the changing nature of the news media and Whitman’s politics as a New York Democrat, who often advocated on behalf of marginalized persons, particularly the “working folk,” as reflected in his coverage of social issues like free trade, slavery, corporal punishment, capital punishment, education, and public health.

My analysis focuses on Whitman’s tenure as editor of *The Brooklyn Daily Eagle* (*The BDE*), which lasted from March 5, 1846 to January 18, 1848 (Bergman et al. lxiii). Though he did intermittent freelance work in the years after, *The BDE* represents the pinnacle of his writing career prior to *Leaves of Grass*. During this period, Whitman makes frequent references to numerical data and often uses statistical terminology, with terms like “data,” “computing,” and “aggregation” regularly invoked in his reporting. While he does not abandon the impassioned rhetorical style of earlier years, he increasingly makes claims for social reform on statistical grounds, using numbers as evidence. As I argue in this chapter,

¹⁸ C. W. Anderson in *Apostles of Certainty* locates data journalism’s rise in the social activism of the early twentieth century, though I argue that the connection dates back even further to the mid-nineteenth-century reform era.

¹⁹ For more on the development of modern journalism practices in nineteenth-century America, in particular its emphasis on the notions of truth and ‘objectivity,’ see Mindich.

Whitman's engagement with social data or 'moral tables' in his reporting is an important framework for his later poetry and the ways in which he continued to grapple with how best to represent the "multitudes" of America. Indeed, Whitman's "certainty" in numbers, expressed so confidently in the opening paragraph, contrasts with the more suspicious stance towards data collection he takes in his later post-war poems, and the emergence (and later collapse) of his information ethos is the subject of the first two chapters.

Of late, there have been important new studies that interrogate the numerical and data-driven character of Whitman's poetry and prose, though none that take into account his journalistic practices. As in my own work, Brad Rittenhouse situates his reading of Whitman within the nineteenth-century information overload. For Rittenhouse, however, Whitman's "information aesthetic" is primarily a "respon[se] to the overabundance and overstimulation of urban America" (483). As he explains, cities had become so crowded with "people, products [and] print" that navigating these "materially dense" environments was often overwhelming (483). Notably, Rittenhouse neglects to consider nineteenth-century approaches to information management, instead focusing on the ways that Whitman's work anticipates "future techniques" (484). In doing so, he opens up a new understanding of the function of lists. In Rittenhouse's view, Whitman utilizes series of items much like a computer programmer: as pieces of information that are stored and are awaiting retrieval. The poet can then call on these lists "like a variable," in order activate an "emotion, theme or topic" (506-507). It is a wonderful analogy, but one grounded in modern computational methods and, as such, overlooking how datafication, as both a practice and an ideology, was historically contextualized.

We might instead think of cultural *histories* of data in the plural, as processes that are developed and deployed within specific communities of practice. In that respect, the studies in the recent special issue on "Whitman and Mathematics" in *Walt Whitman Quarterly* come

closer to my own methodology. The collection takes the “arithmetization of America,” through the nineteenth-century public education system, as one of its core frameworks (Bronson-Barlett 110). In the three main articles, Ed Folsom, Stefan Schöberlein, and Matt Cohen and Aaron Dinan examine how the “pragmatic” teaching practices of the Jackson era, which sought to produce more “productive” and democratically engaged citizens, shaped Whitman’s calculating mind (Schöberlein 77; Cohen and Dinan 138). The authors then excavate Whitman’s manuscripts for “numerical traces” (Bronson-Barlett 111). As the scholars show, Whitman’s notebooks contain not only rough drafts of poetry, diary entries, addresses, and sketches,²⁰ but also everyday calculations of the sort taught in mathematics textbooks from the period. Schöberlein observes that the manuscript for the first edition of *Leaves of Grass* contains various calculations related to production costs and page estimates (Schöberlein 173). Given Whitman’s experience as a printer, taking a hands-on role in designing the page layouts and “even helping set the type for the first edition” (Folsom “Whitman Making Books”), the poet’s proficiency with numbers is not surprising. More intriguing is the manuscript evidence of Whitman’s lists, or rather “tallies” as Cohen and Dinan term them. As the scholars point out, Whitman kept tallies of various items from cities to geographic features to body parts. To what extent these series are blueprints for future poems, as Cohen and Dinan speculate, is a provocative question (122). In cases where the rough draft of a poem and a tally appear together, as with “I Sing My Body Electric” and the accompanying list of “anatomical parts,” the connection seems clear. However, some tallies appear alone, without an obvious reference. Moreover, as the authors concede, because of uncertainties in determining the date and even authorship of the inscriptions, it is impossible to determine whether a given list preceded its corresponding poem or vice versa (Cohen and

²⁰ Whitman’s notebooks are part of the Thomas Biggs Harned Collection of Walt Whitman Papers housed at the Library of Congress.

Dinan 124). The lists could also serve other purposes: as form of journaling or as research for a newspaper article.

One way to narrow down the timeline of Whitman's writing process is to trace the information to its sources. Whitman amassed large collections of clippings from newspapers, magazines, and almanacs, writing annotations in the margins of the texts. Sometimes he would recopy notable facts and figures into his notebooks by hand. In his study of Whitman's "summing" of the dead in his Civil War writings, which is discussed in more detail in the next chapter, Folsom points out that the casualty numbers are taken from newspaper reports. In fact, entire sentences from the 1872 essay "The Million Dead, Too, Summ'd Up" are lifted directly from the *Washington Chronicle* article "National Cemetery Reports," which Whitman had clipped and saved (Folsom 156). In the following two chapters, I undertake a similar deep dive, tracing his "tallies" of America to their roots in the social reform movement and, later, the US National Census. As I demonstrate, often the terminology and figures Whitman cites, both in his notebooks and published works, are telling in their specificity and can reveal much about how data circulates, amongst not only the press but also citizen scientists, government officials, and even artists and poets.

Notably, in the "Whitman and Mathematics" *WWQ* issue, Whitman's journalism, while often at the periphery, was never brought to the fore. Though Folsom notes Whitman's habit of collecting wartime statistics, often "carefully labelling and saving" relevant articles (156), he does not delve further into how figures factor in Whitman's own reporting. Likewise Schöberlein and Cohen and Dinan source material from *The BDE*, citing Whitman's reviews of math textbooks and his reports on the school system (Schöberlein 171-172; Cohen and Dinan 136), but overlook the numerical, or rather data-driven, character of the newspaper itself. This is perhaps unsurprising, given that in past studies of Whitman's journalistic style, the focus is often on his editorials or on his excursion-based or

“ambulatory” stories (Noverr and Stacy xvi; Fishkin 22-23), a bias that is reflected in anthologies of Whitman’s nonfiction work.²¹ These scholars tend to contrast Whitman’s personalized, first-hand accounts with the trend towards objective, fact-based reporting, even though these styles of journalism arose in congruence and were in many ways complementary. As such, thus far, there has only been limited discussion of Whitman’s use of data in his journalism.

The omission of statistical tables from Whitman’s print material is largely due to a reliance on archival practices that are rooted in literary scholarship and ill-suited to journalistic practices. Consider, for instance, *The Journalism*, volumes I and II, which cover Whitman’s journalistic career from 1834-48. According to the editors, half of these texts had never been re-published, making this the “most definitive and authoritative” collection of materials relating to Whitman’s journalism from this period (xxviii).²² In the preface to the collection, the editors explain how they strove to retain the original flavor of the articles. “Alterations” were “held to a minimum,” with Whitman’s “eccentricities, inconsistencies, and errors in spelling, punctuation, capitalization, italicization, grammar, and syntax” kept intact (Bergman et al. xxix). Even so, closer inspection of the original broadsheets reveals that there were significant changes when it came to the inclusion of numerical data.

As the editors state, their primary focus was on preserving Whitman’s authorial voice. However, this strategy of prioritizing the narrative sections fails to consider the basic principles of news reporting, mainly that journalists craft their stories from secondary material such as interviews and press reports. In other words, much of Whitman’s work as a journalist would have revolved around fact gathering. Undoubtedly, the manner of telling

²¹ See Cohen, Folsom, and Price, “Editorials and Journalistic Articles”; Bergman et al., *The Journalism*, volumes I and II; and Noverr and Stacy, *Whitman’s Selected Journalism*.

²² Whitman continued to publish newspaper articles into the 1850s and 1860s, including pieces in *The York Atlas* and *The Brooklyn Standard*. However, the years from 1846-48 were his most active in terms of the volume of his reporting and offer the most insight into how his journalistic style influenced his creative work (Cohen, Folsom, and Price).

matters, and the penny papers were famous for their editorial flavor. Yet, the sources are still the meat of the story. Overlooking this, the editors of the collection tend to deemphasize “quoted” material. Whitman frequently cites external sources, both directly and indirectly. However, in cases where the editors determined that these sections were “not necessary to understand [Whitman’s] views and comments,” these parts were condensed or excluded (Bergman et al. xxix). As a result, there are multiple instances where statistics or tables are edited out of the final article (see, for instance, fig. 1.1). The anthology’s exclusion of ‘news bites’ further erases the presence of data, as Whitman often selected stories with provocative statistics for reprint.

The focus on Whitman’s editorials is understandable given the practical and logistical considerations of anthologizing the author’s extensive portfolio of media material. Naturally, the editors of *The Journalism* could not include every article and had to be selective about the material. At the same time, the expurgation of data from Whitman’s archived material has skewed our understanding of the poet’s engagement with numbers, which as will be shown long precedes the publication of *Leaves of Grass*. In fact, building on Cohen and Dinan, I argue that Whitman’s tallying began as a *journalistic* practice, from which he acquires his manner of describing and presenting information-as-data.

The Circulation of Data; as Powered by the Modern Press

As editor, Whitman juggled multiple responsibilities: from story assignment to page layout and design.²³ Though he hired at least one staff reporter, he produced much of the content, including the editorials and leading articles.²⁴ Unlike past studies of Whitman’s

²³ In “The Toils of a Newspaper,” Whitman laments that, as editor, “one man has to do so many things” (2).

²⁴ Whitman employed at least one regular staff reporter, in addition to freelance journalists, whom he would assign to cover speeches and local news. In determining authorship, I followed the guidelines of editors of *The Journalism*, who identify articles not authored by Whitman through the presence of special signatures, such as “Communicated,” “Communication,” “*For the Eagle*,” “Furnished by a *Correspondent*,” and the like (Bergman et al. lxiv).

journalistic work, this study looks not to Whitman's narrative style, but his research practices, which reveal much about how data circulated through the media in the mid-nineteenth century.

In the poem "Chants Democratic," Whitman often returns to the question of how particular modes of communication shape the "curious way... we think" (LG 1855 62). Amongst his catalog of technologies, four in particular were integral to his work as a journalist: "the paper I write on"; "the directory, the ledger, the books in ranks"; the "four-double cylinder press," and "the wires of the telegraph" (ibid 62-63, 75). The development of communications technologies in the 1840s, most notably the commercialization of the telegram, greatly enhanced the connectivity of the media. In fact, Brooklyn was one of the first cities in the world to experiment with the "lightning communications" of the telegraph ("Brooklyn: One of First Cities in the World to Use Telegraph" 70). The short piece, "New York and Offing Telegraph Office, Brooklyn.; New York, corner Beaver and Hanover St.," which appeared in *The BDE* in March 1846, announces the arrival of the new technology ("New York and Offing Telegraph Office" 2). The article offers an hourly account of the activities of the Brooklyn harbour, as transmitted through the wires.²⁵

The establishment of telegraph companies, in combination with steam and rail travel, laid the foundation for elaborate communication networks, which seemed to shrink the distance between America's cities (Asmann 11, 16). Papers like *The BDE* could receive news direct from New York, Boston, Philadelphia, Baltimore, Washington DC, and beyond (Reid 117-127 qtd. Noverr xx). As Noverr et al. point out, the telegraph became the "medium through which news *happened*" (xxi). When it came to reporting, there was a newfound emphasis on "breaking" stories. In at least four of Whitman's articles, for instance, he

²⁵ As reported in *The BDE*, at the time, the New York and Offing Telegraph Office had just launched a ship reporting and telegraph service between New York, Coney Island and Brooklyn (see "Brooklyn: One of First Cities in the World to Use Telegraph" 70).

emphasizes that the news had arrived through the wires (ibid). The telegraph not only enhanced the speed with which information travelled, it also made possible new forms of reporting, including war correspondence. The American-Mexican War of 1846-1848, which Whitman reported on while at *The BDE*, was in fact the first armed conflict to be covered in close to real time.²⁶ Never before had readers had access to continuous updates, direct from the frontlines. Such was the reliance on the news wires that, as the story goes, President James Polk only came to learn that America had won a crucial victory at Veracruz through a telegraph from *The Baltimore Sun* (Lande 90).

Greater access to and circulation of data were facilitated not only by developments in communications technology, but also by improvements to the mechanism of the printing machine. In an 1847 editorial, Whitman announced *The BDE*'s "new press," boasting that it was "as pretty and clean-working a piece of machinery as a man might wish to look upon, (with all the 'latest improvements')" ("Our New Press" 2). The steam-powered rotary press, invented by American Richard Hoe and released on the market the same year as Whitman's article, sparked a "revolution" in print culture. These new presses were twenty-times faster than the previous models, capable of churning out over 8,000 impressions per hour (Kilgour 123; Moran 186). With more efficient machinery, newspapers became much more affordable. Once only available through costly subscription, by the 1840s periodicals were sold on the street corner for mere "pennies," hence the nickname the "penny presses" (Schudson 17). These papers no longer served an elite readership, but the masses.

At the same time, there was a widening definition of which subjects were considered print worthy. At the turn of the nineteenth century, most papers were sponsored by political parties. As such, the content was often restricted to manifestos or announcements pertaining to party news. There was, in other words, very little room for local events, which were

²⁶ See "Another Son of Brooklyn!" 2; "Annexation of Mexico" 2.

considered “vulgar” and unsuitable for publication (Schudson 13). Cheaper and faster production changed this, facilitating the growth of the weekly and daily presses, including *The BDE*, which in turn fed the demand for more timely content. Whitman scholars tend to emphasize the turn towards objective or fact-based news, placing Whitman’s editorial work in opposition to this trend. Yet, the rise of “hard news” also coincided with the diversification of media forms and the proliferation of various “newsbeats,” from human interest stories to sports to the stock pages (Schudson 27). Whitman’s journalism was by no means restricted to opinion pieces, and his portfolio of work includes a range of styles and subject matter.

The press also reported on the doings of government. Though this chapter focuses on research-activists, the state conducted data gathering of its own, and these different elements of the data assemblage, while existing in tension, also acted upon one another, shaping not just research practices but ideologies of information. Newspapers were tasked with printing and circulating legislation, and from 1789 onward, a certain number of newspapers in each “state and territory” were “designated” for this purpose (Frankel 78). Journalists also helped disseminate government research, repackaging the lengthy and (increasingly) data-dense findings of its various bureaus and committees into a more consumable format. Because of the journalists’ role in mediating between the state and the public, a relationship that in turn grew the data assemblage, they enjoyed special privileges. Newspapers paid no taxes, for instance. They also benefited from lower postage rates, which they paid through an annual subscription; and editors of different newspapers could exchange publications through the mail at no cost (Frankel 77-78). Government officials, for their part, enjoyed a “franking privilege,” which meant that all postage was free, and they were often eager to distribute copies of state reports to the press and to any other interested members of the public upon request (Frankel 78).

The establishment of more open information channels in combination with technological developments like the steam press had the effect of reorganizing and redirecting the energies of the newsroom. Editors had access to a wide array of print media. With more dependable and efficient machinery, they also had “more time to sift through other newspapers, read the latest telegraph reports, and find that elusive ‘hook’ for a story or leading article” (Noverr xxi). One of Whitman’s duties, for instance, was to scan the national and international headlines for the most enticing stories of the day and repurpose these articles into shorter news bites, to be re-printed on the second page of the paper (Bergman et al. lxiv). These recycled stories, often only a sentence or two in length, have typically been overlooked by Whitman scholars and are almost never included in archives and anthologies of the author’s work. Yet, as editor, Whitman relied on these snappy, attention-grabbing pieces—the equivalent of a modern-day Tweet—to add colour and flavour to the news cycle. Eye-catching numbers were particularly popular and were often “clipped” from the headlines and passed from newspaper to newspaper. A single issue of *The BDE*, for instance, contains stories on the following: the amount of bread eaten by Londoners: 842 pounds or 85 loaves per person each year; the number of newspapers and subscribers in Paris: 396 and 700,000; the barrels of flour imported to New Orleans: 24,247 barrels over two days; the amount spent on cigars by New Yorkers each year: \$730,000; the states’ combined national debt and annual interest: \$206,517,629 at \$10,468,728 in interest; the number of boats being built on Lake Erie: 35 vessels capable of transporting a combined total of 11,000 tons; and the high cost of drinking alcohol: four glasses per day annually being equivalent to “four barrels of flour, four pairs of boots, one-hundred pounds of beef, forty pounds of butter, a new hat and a bonnet for his wife” (see fig. 2). The selection of statistics, taken from cities around the world, is not only indicative of the media’s increasingly cosmopolitan flavour, but also the way in which quantitative thinking permeated all aspects of modern, industrial-era life.

The sheer amount of media consumed by Whitman on a day-to-day basis was perhaps what inspired him to execute a quirky study of media rhetoric. The article “Newspaper Statistics” is a fascinating example of early text analysis. As the author explains, a “calculating youth,” perhaps a newspaper boy, conducted a survey of a “heap of mail papers” in order to determine which phrases were most favoured by newspaper editors. According to the results:

Over two days, newspaper editors: “learn” more than three hundred things and times— “deem it their duty to state” two hundred and thirty-seven— “regret to announce” nearly the same number— “rejoice to add” fifteen—&c. &c. The same papers describe about twenty-eight “heartless wretches”—and any quantity of “monsters in human form.” (“Newspaper Statistics” 2)

Using pointedly measured and pseudo-scientific lingo, Whitman pokes fun at both the media’s purported objectivity and its flair for drama. The method itself is more than a little unrefined—the chosen sample size is a “heap”—and the meta-experiment was more likely undertaken as a curiosity or amusement than as an attempt at serious research. Still, the story is notable for how the author uses *tallies* of words and phrases to capture the linguistic features of the genre, a process that anticipates modern-day forms of computational language analysis. Today, digital humanists use techniques like stylometry to perform the same work, only the process of counting features is automated (rather than carried out manually) and executed on a much larger scale. In the above-mentioned example, the ‘summing up’ of newspaper jargon—noting the high frequency of phrases like “deem it their duty to state” and “monsters in human form”—is meant to capture (and poke fun at) the self-important and theatrical tone of the penny presses, what stylometrists would refer to as the ‘stylistic fingerprint’ of the genre. At the same time, that the ‘sums’ *are* the story is also revealing of how the press used numbers, like language, to add color to their reporting; that Whitman’s readers are meant to be in on the joke speaks to how prevalent the counting craze had become.

The integration of statistics into mainstream culture, however, cannot only be credited to the penny presses. In fact, the rise of the pennies was preceded by that of another medium that relied even more exclusively on numbers and data: the gazetteer and almanac. Among the most well-known were *The American Almanac and Repository of Useful Knowledge* (pub. 1830-1861), *Niles' Weekly Register* (pub. 1811-1849), *United States Commercial and Statistical Register* (pub. 1839-1842), *Merchant's Magazine and Commercial Review* (pub. 1839-1848), and *De Bow's Review* (pub. 1846-1884). These popular reference guides were packed with statistical tables, which in turn would be re-published in periodicals like *The BDE*. In fact, there is ample evidence that Whitman was well-familiar with the leading statistical publications of his day. As discussed further in the next chapter, the author owned heavily annotated copies of Roswell Smith's *Smith's Atlas of Modern and Ancient Geography* (pub. 1854) and S. G. Goodrich's *The World as it Is, and as it Has Been: Or, A Comprehensive Geography and History Ancient and Modern* (pub. 1855).²⁷ Whitman was also in charge of *The BDE*'s literary reviews, and the publications that he chose to critique offer further insight into his sources for data. Amongst the other works in his repertoire were *The American Almanac and Repository of Useful Knowledge*, which he acclaimed for its "immense mass of commercial and tariff statistics" ("Book World" 14 June 1847 2), and Edwin Williams' *The Treasury of Knowledge, and Library of Reference* ("Book World" 21 June 1847 2), whose sections on America's demographics and economy drew heavily from National Census results.²⁸ He also reprinted at least one article from *De Bow's Review*, the popular Southern economic journal headed by editor James De Bow, who was later appointed director of the Seventh National Census of 1850 ("Fireman" 1).

²⁷ The marginalia contained within the Smith and Goodrich gazetteers, which were published in wake of the 1850 US Census and are advertised as containing the 'latest' census data, are discussed further in the next chapter.

²⁸ See Williams.

However, Whitman saved his highest praise for *Merchant's Magazine and Commercial Review*, reviewing nearly every issue in *The BDE*. He held editor Freeman Hunt in special esteem, expressing admiration for his “great research” and “assiduity in collecting facts” (“New Publications” 2). Yet, it was Hunt’s passion for social causes that perhaps so endeared him to the future poet. Hunt was renowned both for his statistical expertise and his activism. As reported in *The BDE*, not only was he a member of the London Statistical Society, he was also the treasurer of the State Society for the Abolition of Capital Punishment and served on the executive for the Irish Relief Fund (“Freeman Hunt” 2; “Capital Punishment” 3 January 1846, 2; “Capital Punishment” 13 February 1846, 2; “Relief for Ireland” 2). Whitman frequently reported on these issues, calling for the abolition of the death penalty and for greater attention to the plight of Ireland’s poor (“Capital Punishment in England” 2; “An Injudicious Decision” 2; “Old World Poor” 2; “Suffering and Death” 2; “More and Worse” 2). What is more, like Hunt, he too made calls for reform by appealing to the rationality of numbers.

‘A Thousand Witnesses’: Data as Political Rhetoric

The connection between social reform and numeracy dates back to the earliest days of demography in America. Thus far, there has been little discussion of Whitman in the context of the rise of social science²⁹ and no mention of the American census. Yet, as I argue, this forms an important framework for *Leaves of Grass*. In fact, as I show, Whitman’s fascination with and documentation of marginalized communities, both in his journalism and in his poetry, speak to the influence of emerging sociology practices such as data collection on America’s collective imaginary.

²⁹ One notable exception is Walter Grünzweig, whose discussion in “O Divine Average!” of how the “normalization” of sociological categories informed Whitman’s embrace of diversity is discussed in the next chapter.

By the 1830s and 1840s, the social sciences were emerging as an important new field of study. Several influential works in sociology were published, including Adolphe Quetelet's *A Treatise on Man and the Development of His Faculties* (pub. 1835), André-Michel Guerry's *Essay on the Moral Statistics of France* (pub. 1833), Harriet Martineau's *Society in America* (1837) and *How to Observe Morals and Manners* (1838), and Alexis de Tocqueville's *Democracy in America* (pub. 1835 and 1840). Of the existing scholarship on Whitman and Tocqueville, the focus has largely been on *Democracy in America* and how Tocqueville "predicted" a new style of poetry that would be uniquely American and democratic.³⁰ Scholars have long noted the thematic similarities between *Leaves of Grass* and Tocqueville's discussion of the poetry of democratic nations. Writing in 1909, Edward Dowden notes that even "before there existed properly any native American literature," Tocqueville anticipates the "spirit" of Whitman's poetry, particularly in its celebration not of an "individual hero" but of a nation (Dowden 495). H. K. Monroe likewise observes how Tocqueville's "hypothetical democratic poet is... uncannily fulfilled in Whitman's performance" (Monroe 53). That said, none have made the link between Tocqueville's understanding of what a new, democratic American literature might be and his work as a social scientist. Nor has there been any exploration of how *Leaves of Grass* engages with the core ideas of Tocqueville and other leading sociologists from the period.

Both Tocqueville's *Democracy in America* and his lesser-known work *On the Penitentiary System* show how America, the first democratic nation of the modern age, was reshaping the notion of what constitutes a "society." The shift to a free-market economy coupled with rapid urbanization meant that for the first time human relations were a "matter of choice," not familial ties or residence (Bradley 333). As the ultimate social experiment, America captured the imaginations of European social scientists, whose researchers were

³⁰ In addition to Dowden and Monroe, see also Matthiessen 533-534; Lawler; Leypoldt.

inspired to visit the nation for themselves and to develop new methods for studying life in a democratic society.

Tocqueville was initially sent to the United States by the French government to conduct a study of American prisons. The final report, *On the Penitentiary System of the United States and its Application to France* (pub. 1833), was one of the first modern social science studies. Part of what made the study so innovative was the researcher's methods of collecting data, both qualitative and quantitative. Tocqueville and his partner Gustave de Beaumont conducted between two and three hundred interviews, not just of officials but also prisoners, workers and other demographics, demonstrating a new awareness of the value of collecting information from various, diverse groups (see fig. 1.3). In fact, they are thought to have "pioneered" the use of questionnaires in social science research (Swedberg 109-111).

As suggested in the introduction, the development of data-based research spurred the generation of new forms and philosophies of writing practice. It is no coincidence that the emergence of the social sciences as a professional field during this period overlaps with the rise of print media and the invention of modern news. In fact, the methods of early sociologists like Tocqueville are echoed in new reporting techniques that utilize scientific methods, such as conducting human interviews and gathering and analyzing data. The subjects that were reported on, particularly the growth of 'human interest' stories that explored the lives of common, everyday people, also speak to the influence of this early research into demography. As Tocqueville said, "there is no man, regardless of where he is in society's hierarchy, who does not have something to teach us" (Tocqueville 100).

Tocqueville also helped introduce America to the practice of moral tables, a branch of social statistics which focuses on "delinquent, defective, and dependent classes" (Davis 172; see also Swedberg 114). These studies sought to combine "compassion" with "fact-finding," with the aim of winning supporters to their cause (Davis 174). The statistical evidence, often

listed in tables, was meant to grab the reader's attention by highlighting a series of riveting numbers and facts (see fig. 1.4). These might be combined with first-hand accounts of poverty, abuse, or other social ills in question. At the time, it was not uncommon to gather and communicate evidence using a combination of qualitative and quantitative techniques, such that tallies and tables might appear alongside interviews and first-person anecdotes. Harriet Martineau and Florence Nightingale's jointly produced *England and Her Soldiers*, which combines Nightingale's statistics and graphs with Martineau's commentary, is a prime example of the mixed methodology approach in action (see Hedley; Magnello; Veysey). Other examples from America include Dorothea Dix's *Remarks on Prisons and Prison Discipline in the United States* in 1845, Samuel Howe's *Report on Idiocy in Massachusetts* in 1848, and William Sanger's survey of NY prostitutes in 1855 (Davis 174). As Anderson observes, early sociology research was not organized around specific "occupations or fields" but rather by a shared sense of cause (Anderson 21), what Patricia Lengermann and Gillian Niebrugge describe as a "desire to use scientific method to solve the social problems generated by American industrialization" (73). As such, the moral table was always accompanied by a call to action, urging the reader to sign petitions, vote for certain candidates, donate, or otherwise contribute to the cause at hand. While the studies might initially be distributed in pamphlet or book-form, key facts were often picked up and reprinted by the penny presses. In this way, moral tables became a staple of antebellum reform culture.

The abolition movement was especially adept at utilizing practices from the social sciences in service of its cause. Groups like the Pennsylvania Society for Promoting the Abolition of Slavery and the Society of Friends conducted surveys of black communities with the aim of exposing the "patterns of residential segregation, educational deprivation, and occupational limitation characteristic of northern cities" (Davis 175). One of the most

innovative cases of citizen science from this period is the Anti-Slavery Society's *American Slavery as It Is: Testimony of a Thousand Witnesses*, published in 1839. In Antebellum America, slave owners would pay bounty hunters to recapture runaway slaves, advertising these jobs in southern newspaper ads (see fig. 1.5). The descriptions of the runaways often contained evidence of the most cruel and gruesome maltreatment. For instance, the advertisement might describe the fugitive as being identifiable by their iron shackles or by their scars from beatings and brandings or by a missing eye or ear. As found in the study, these abuses were borne not only by men but by women and children and the old and infirm. One such advertisement reprinted in the book reads: "Ten dollars reward for my woman Siby, *very much scared about the neck and ears by whipping*" (62). The society collected the evidence from thousands of these bounty ads, publishing their findings in the book, which soon became something of a cultural phenomenon.

Ellen Garvey argues that *Testimony of a Thousand Witnesses* had a "tremendous impact" on the abolitionist movement and marks a turning point in the organization's strategy (89). With the success of the book, which sold 100,000 copies in its first year, the Anti-slavery Society quickly realized that "concrete facts and statistics" could be more effective than "sentiment" in swaying public opinion (Garvey 90). Such was its influence that Harriet Beecher Stowe cited the text as the inspiration for her literary sensation *Uncle Tom's Cabin*, published in 1852 (Yellen 90). Much like Lieutenant Matthew Fontaine Maury's *Sailing Directions*, which is discussed in the section on Melville, *Testimony of Thousand Witnesses* represents a crucial moment in the history of data collection and analysis. The novelty of these studies was in the realization that the uses to which data were put were not predetermined. Data could be mined from existing sources and utilized in ways wholly different from their intended purpose.

Encountering ‘The Other’ in Whitman’s Travelogues

In Harriet Martineau’s landmark study on sociological methods *How to Observe Morals and Manners*, published in 1838, she writes, “There are two parties to the work of observation on Morals and Manners—the observer and the observed” (11). Indeed, the dynamic between the researcher and the research subject, as modelled on the techniques developed by early citizen scientists, offers insight into Whitman’s development as both a journalist and a poet.

Much like the social reformers, Whitman felt it was his “responsibility” as editor to use his “potent influence” to bring about positive social changes (“Ourselves and ‘the Eagle’” 2). An important framework for Whitman’s politics is the economic turbulence of the times. He came of age as a journalist and poet in the midst of the Great Recession, which hit America in 1837 and lasted until the mid-1840s. In fact, Whitman’s induction into the print business came about as a result of financial pressures that caused him to have to drop out of school at age eleven to work as a newspaper’s apprentice in order to support his debt-ridden family (Reynolds 44). As a journalist, his coverage of social issues struck a chord with his readers, those “workers and families of Brooklyn who were hard hit by what became a regular cycle of ‘panics’ and recessions or depressions” (Noverr xxiv). Called the “ideal tramp” and “loafer” (James 644-645), Whitman would eventually incorporate his identification with the working class as part of his poet persona. In its review of *Leaves of Grass*, for instance, the *Washington Daily National Intelligencer* branded Whitman the “‘representative man’ of the ‘roughs’” (“Notes on New Books” 2).

Whitman’s characterisation of himself as not only representing but *representative of* the communities he reported on is in line with the grassroots origins of social science. Oz Frankel describes how early sociologists valued “authenticity,” an embeddedness in their subject groups that gave them access to unique data, over refinement and comprehensiveness, in

terms of rigid methods and access to large datasets: “Social observers incessantly employed the adjectival modifier authentic to describe factual matter... they toiled hard to convince readers that they were presenting facts in their immaculate form, precisely as they were uprooted from their original soil—as if smidges of earth were still hanging from them as a measure of authenticity” (11). For research-activists, “authenticity” was tied to their credibility with and connection to their research subjects, which set them apart from the distanced, objective approach favoured by the datafiers deployed by the state.

Whitman’s earliest forays into journalism are largely devoid of statistics. However, he does show unique awareness of and attention to social categories, especially the “delinquent” sects of society. Written in the travelogue style yet set in the neighborhoods of Brooklyn, these stories capture the experience of living in a large urban centre. City life was still relatively uncommon at the time, representing the experience of only 15.3% of Americans in 1850 (Rees 44). However, with each passing year these numbers increased as people left behind the countryside to work in urban-based factories. Cities were, in this way, hubs for immigration. Given the constant waves of new arrivals, America’s infatuation with the census, which is discussed at length in the next chapter, and with the social sciences at large, was perhaps unsurprising. The United States was a nation that was continually becoming reacquainted with itself and the ways in which it was changing.

Whitman’s walking tales, in which he detailed his travels to Brooklyn’s lesser-known haunts, are similarly preoccupied with questions of America’s shifting identity. Like Whitman himself, whose family moved to Brooklyn from the borough of Huntington, many city dwellers had come from tight-knit towns and suddenly found themselves living amongst “strangers” (Sennett 39; Schudson 59).³¹ These early works by Whitman explore encounters

³¹ Sociologist Richard Sennett famously defines cities as “a human settlement where strangers are likely to meet” (39). Likewise, Michael Schudson points out that with urbanization “human ties” were no longer primarily defined by one’s family and closet neighbors, instead becoming much more a matter of “choice” (59).

between unfamiliar communities in an attempt to redefine Americanness as the “many in one” (LG 1856 180), a collection of multiple, diverse groups. In “A Peep at the Israelites” and “Doings at the Synagogue,” for instance, Whitman describes his visit to a Jewish Synagogue on Crosby Street.

We should be suspicious of the capacity of researchers to speak for (or, more troublingly, as) their subjects, something Whitman himself calls attention to in his later poetry. Though these early sociologists, for the most part, claimed to have the best interests of these communities at heart, there were other motivations, including political clout, prestige, publications, and so forth. The reformers were, moreover, not ideologically united, and, as discussed in the next chapter, data collection was utilized by those on both sides of the political spectrum; in some cases, to justify and facilitate, rather than mitigate, oppression.

At the least, in stories like these, Whitman risks exoticizing his subjects. Nonetheless, he counters the tendency to mastery by marking himself as the outsider. He situates himself as the “stranger” amongst them, self-conscious of his lack of knowledge and anxious about making “awkward blunders” (“Doings at the Synagogue” 2). In positioning himself as part of the minority, Whitman creates the opportunity for greater empathy with othered groups. He expresses his admiration for the Jewish community’s dedication to its faith and traditions, despite its members being “scoffed, scouted, and scorned” (ibid). As noted by Ashland et al., Whitman also draws attention to and challenges cultural stereotyping, contrasting the “lovely” Rebecca in Walter Scott’s *Ivanhoe* with the “malignant” Shylock in Shakespeare’s *Merchant of Venice*, to call for a more complex and nuanced understanding (“A Peep at the Israelites” footnote 9). In the second of his synagogue stories, Whitman notices other non-Jews, fellow “strangers,” watching from the galley of the temple, perhaps also drawn by “curiosity” (“Doings at the Synagogue” 2). As shown in his walking tales, these encounters

with the “other,” while invariably marked by moments of awkwardness and “bungling” (ibid), are also full of the possibility for recognition and greater understanding. Whitman ultimately suggests that these moments of dis/reorientation are integral to the American experience and to the rich tapestry of urban life, and neither should nor can be avoided but instead sought out and embraced.

‘Facts for Working Folks’: The Data-Driven Politics of Whitman’s *BDE*

In his urban travelogues, Whitman’s attunement to the demographic character of society, what Shelly Fishkin calls the “lush density of the world” (17), harkens to the nineteenth-century origins of sociology research in that they are “studies” of othered groups. That said, these works are still first-person narratives, in which he draws from personal experience rather than outside sources to make his claims. Only a few years later, however, Whitman took up a new position as editor of *The Brooklyn Daily Eagle*, and his journalism took a turn, becoming much more explicitly data and social science driven. His newfound role afforded him access to technologies, chiefly the wires and the steam-powered press, which improved the ease with which information—and data—could be collected and shared.

As argued in the previous section, Whitman’s use of statistical evidence is in keeping with the trends of the period, building on the momentum of the reform movement. However, there is another explanation for his newfound penchant for social statistics that is at once personal and pragmatic. Douglas Noverr and Jason Stacy argue that Whitman became fed up with the partisan politics that had come to dominate the penny presses of the 1840s and 1850s.³² In the scholars’ view, Whitman’s disillusionment caused him to experiment with other mediums, eventually settling on poetry (Noverr xxxi). To build on this point, I would

³² During his tenure at *The Brooklyn Daily Eagle*, Whitman was caught up in the rift within the Democratic Party over the Wilmot Provision. He clashed with the owner of the newspaper over his free-soil politics and was consequently fired (Stacy 89-91).

argue that Whitman's frustrations with party infighting may also have pushed him increasingly to use numbers to make fact-based arguments and ground emotionally charged debates in a sense of rationality and reason, though as posited earlier, what constitutes "fact" is a more complex question than it might appear, one that has more to do with "authenticity" than political neutrality.

Take, for instance, Whitman's anti-flogging article "No Cruelty." The story was published in *The Sun* in 1843 and is an early example of how Whitman uses statistics to advocate for social reform. The article covers the trial of Commander McKenzie, who had been accused of abusing his men. Whitman's repeated invocation of numbers drives home the pervasiveness of corporal punishment in the navy and the unfeeling, mechanical nature by which it was doled out. He calculates, for instance, that "in six months *only* two thousand two hundred and sixty-five lashes were distributed among 123 men and boys" (ibid). Quoting from the testimony, Whitman observes how such abuse was normalized, with "101 lashes in two months" considered appropriate treatment for a "smart and active" fourteen-year-old boy. Even men of "good character" were regularly flogged and could at best hope to receive not "more than six" lashes per voyage (ibid). Numbers, here, are crucial in amassing the evidence of the extreme cruelty of the punishment, which was often grossly disproportionate to the offense. In fact, the common practice of logging ship data, which is described in the chapters on Melville, is turned against the captain and used as proof of wrongdoing. As Whitman notes with sarcasm, "These are data by which we may judge of the attractions which our navy in its best arrangements offers to respectable men" (ibid).

In *The BDE* article "Slavers—and the Slave Trade," Whitman similarly uses statistics to drive home the horrors of human trafficking. Though importing slaves had been outlawed in the US and Britain since 1807, domestic slavery continued in the southern states and

helped feed the demand for smuggling. The American Navy worked together with British to search and seize offending ships. However, the countries' efforts failed to end the international slave trade with an estimated 50,000 slaves illegally transported into the US after the ban came into effect (Sparks 80). Indeed, many of these ships were constructed and outfitted in US ports for this exact purpose. As Whitman points out, these ships were built for "speed," in an effort to avoid capture (Cutler 39; Whitman "Slavers—and the Slave Trade" 2). The *Pons*, which was apprehended by the US Navy in the Philadelphia harbour in 1845, was one such American-built and owned slave ship, and the prosecution of the captain is the subject of Whitman's article. In the emotional climax of the story, Whitman details the misery of the victims with unflinching precision:

Imagine a vessel of the fourth or fifth class, build more for speed than space, and therefore with narrow accommodations even for a few passengers; a space between decks divided into two compartments three feet three inches from floor to ceiling—one of these compartments sixteen feet by eighteen, the other forty by twenty one—the first holding two hundred and twenty six children and youths of both sexes—the second, three hundred and thirty six men and women—and all this in a latitude where the thermometer is at eighty degrees in the shade! Are you sick of the description? O, this is not all, by a good sight... Of the 900 negroes, (there were doubtless more,) originally on board the *Pons*, not six hundred and fifty remaind [sic] when she arrived back, and landed her inmates at Monrovia! It is enough to make the heart pause its pulsations to read the scene presented at the liberation of these sons of misery. —most of them were boys, of from twelve to twenty years. ("Slavers—and the Slave Trade" 2)

The day after publishing the "Slavers" article, Whitman reprinted a story from the *Philadelphia Ledger* that describes in further detail the inhumane conditions aboard the ship. According to the reporter, 953 slaves were packed in the cargo area, a space that measured just 80 feet long and 24 feet in diameter. What is more, all but one of the hatches were locked shut, leaving just a single window four square feet in size from which to breathe ("The 'Pons' Slaver" 2).

While at *The BDE*, Whitman repeatedly draws attention to the need for more extensive data collection, particularly when it came to issues of public health and sanitation. He points out, for instance, the high rate of childhood deaths, with “only one half of children born in [the] US surviv[ing] until... adulthood” (“Frequency of Children’s Deaths” 2). He emphasizes that many of these deaths are likely preventable, but that further inquiry into the “causes” is needed to determine the proper course of action (ibid). Improving the quality of vitality statistics becomes one of his pet causes. During his time as editor, the newspaper successfully petitioned the City of Brooklyn to start tracking mortality data. Indeed, Whitman credits the paper with helping to make this information a matter of public record (“Mortality in Brooklyn” 2). *The BDE* would hereafter regularly brief its readers on how many Brooklyn residents had been “interned,” as well as information about gender, general age, and cause of death; all information that could be immensely useful in tracking outbreaks of disease, rates of violent crime, and other social and health-related phenomena. During the week of September 4, 1847, for instance, 67 people were reported dead, of which there were 29 adults and 28 children, 33 male and 34 female, with the most frequent causes being cholera and premature birth (“Weekly Report of Deaths and Internments” 1). On the sanitation side, Whitman likewise used population data to make the case for why the City of Brooklyn should invest in piped water. As he points out, with Brooklyn projected to experience a nearly ten-fold increase in population size over the next forty years, upgrades to the infrastructure were sorely needed. He argues that without investing in modern plumbing, Brooklyn would not be able to keep pace with the development of other mid-sized cities. Boston, for instance, had a comparable population size to Brooklyn and unlike the latter had already acquired a waterworks system (“The Bronx River” 2; “Pure Water” 2).³³ Whitman would continue to

³³ Whitman used a similar tactic in “The City of Dirt.” As he pointed out, Brooklyn had budgeted a mere four thousand dollars, only enough to hire two inspectors, for cleaning an area the same size as New York City: “Is it any wonder that we have such dirty streets?” (“The City of Dirt” 2).

track the development of Brooklyn's infrastructure. In a follow-up piece that ran the next year, he discusses the complexities and costs of various proposed plans for the sewer system using data procured from a city report ("Sewerage in Brooklyn" 2).

Notably, Whitman sometimes published fact-driven articles alongside more subjective editorial pieces in order to build a stronger case. For instance, in the editorial "A Plea for the Stricken Ones!" Whitman implores readers to donate to help those "stricken beings" dying of hunger in Ireland ("A Plea for the Stricken Ones!" 2). The article is bursting with interjections, every other sentence ending in an exclamation point: "Let not *this* occasion be passed over! ...Christians! Need we entreat you?" The imagery is heavy with drama, such as emotionally loaded descriptions of "thin-ribbed poverty, prostrate on a heap of straw" (ibid). At the same time, Whitman concedes that "such pleas for charity are so common in newspapers," that readers were often unmoved by such tactics (ibid). Perhaps with that in mind, he tries another strategy. A related column, titled "Increase in Pauperism," appears on the opposite side of the page in the "Local Intelligence" section ("Increase of Pauperism" 2; see fig. 1.6). According to the article, the local almshouse and lunatic asylum have been overwhelmed with the numbers of poor and destitute, with the almshouse in particular experiencing twenty-five percent more intakes than in the previous year.³⁴ The author attributes the increase to the number of poor immigrants fleeing starvation abroad. Such stats, he writes, should "open the taxpayers' eyes" to the cost of public aid to newly landed aliens (ibid). The connection to the situation in Ireland is implied rather than directly stated with the reader asked to draw his or her own conclusions. Yet, the underlying implication, as underscored by the same-page placement, is that without foreign aid the numbers of new arrivals in need of state assistance would continue to increase.

³⁴ See also "Beauties of Residing in New York City," in which Whitman derides the City of New York for its "filthy" and "wretched" conditions, citing the amount of city expenditures allocated to alms houses and policing (2).

Page layout was not the only way to make meaning from numbers. As mentioned, the release of a government report could generate a flurry of press. By foregrounding certain stats, journalists transformed generalized findings into stories about specific communities and the issues that affected them. Reporters could also make inferences about the cause of social phenomenon, finding links between variables. Because of their role as mediators, data journalists could, in turn, undermine the “unified... voice of the state” (Frankel 4). As pointed out, government offices relied on the print media to publicize their findings, but this also meant that they had to cede control over how the data were interpreted. In some cases, the angle taken by the press contradicted the official narrative. As Frankel observes, “The state could not exercise full mastery over the process of inquiry, the behavior of its emissaries as investigators or authors, or the fate of its printed reports once they were issued and promiscuously circulated” (3-4).

Take, for example, the publication of the *Annual Report of the Superintendent of Common Schools of the State of NY* in early 1847, which fueled a series of articles in *The BDE* on Brooklyn’s education system. These articles illustrate what Frankel calls the “ungovernability” of the social survey (Frankel 4). The original report, though solely attributed to New York State Superintendent Nathaniel S. Benton, involved multiple data collectors, aggregators, and analysts, the “information and statistical facts” having been “compiled” by some 8,000 of the state’s school district trustees and “condensed” into reports by the numerous town superintendents, which were then filed to the state department (Benton 3). The introduction to the report touts the ‘data work’ conducted by the department as the work of modernizing the American education system. Benton boasts of how the department’s restructuring of school districts, based on the data collected from the annual reports, had enabled them to redistribute resources to areas of growth, mainly New York State’s manufacturing towns and cities (Benton 5-6). The superintendent’s endorsement of

information gathering is nonetheless tainted by the revelation that not all of the subjects of the report were cooperative, with some local trustees refusing to comply with the request for data, perhaps in anticipation of being ‘restructured’ out of existence; and Benton does not hold back from castigating those “delinquent” districts, numbering “one in fifty,” who failed to supply the requisite returns (4).

That the various aspects of the data assemblage – which include not just researcher and research subject, but also the third-party disseminators and interpreters of the data – often exist in tension, is reflected in *The BDE*’s coverage of the report. The first article, titled “State of the Common Schools—Synopsis of the Superintendent’s Report,” begins rather benignly. Whitman runs through a series of figures taken from the original report: the number of public school districts; the number of students, further categorized by race into white and “colored”; the subjects taught; the average salary for teachers, categorized by gender; the retention rate for new hires; the total cost of public school.³⁵ Though the article is labelled a “synopsis,” Whitman is not content to merely summarize the report. On the dismal payrate of educators, he remarks, “no wonder the schoolmaster ‘goes abroad’ if this is his best estate” (ibid). He also prefaces certain stats with the qualifier “only,” as in “*Only* 357 [teachers out of 1522] had taught the same school three consecutive years” (ibid; Benton 23). Through these additions to the original text, which in this case draw attention to the high job turnover rate, Whitman guides the reader’s interpretation of the findings. Where Benton emphasizes the benefits of amalgamation, which he claimed could help deliver higher quality education (led by instructors “more apt and learned”) at a lower cost (5), Whitman points out evidence that the system was under strain.

³⁵ There is at least one error in “State of the Common Schools—Synopsis of the Superintendent’s Report,” as shown when comparing it to the original report. For instance, *The BDE* reports the number of children between five and sixteen as 625,399 not 625,899. This mistake is likely due to printing problems in the source text, in which like characters were mistaken for one another (see *Annual Report of the Superintendent of Common Schools of the State of NY*).

In the follow-up stories, which are more investigative in nature, Whitman takes an even more critical stance, characterizing the Superintendent's Office as being desperately out of touch with the communities it purports to represent. In "Brooklyn Public Schools, Statistics and Suggestions," he zeroes in on worrying findings, such as the fact that almost half of the city's children, aged 5 to 16, do not attend school ("Brooklyn Public Schools" 2). He published another article a month later that contrasts Brooklyn's survey results to those of neighboring municipalities. He points out, for instance, that while school children in New York City are provided with books, students in Brooklyn are forced to buy their own, denying them the "necessary materials of learning" and causing "confusion and delay" ("Books Provided in New York City Schools" 2).³⁶ Such comparisons give readers much-needed context and help make the data more meaningful. In this case, because he could point to a clear example of inequalities within the school system, his claims became more persuasive. Along these lines, Whitman took extra care to convince his readers that the data had been carefully vetted. For instance, the day after the story ran, he published a correction, pointing out that while the average number of students is 25,695, the total number is 71,134 ("School Attendance" 2). That the error made it to print at all could be seen as a black mark on the paper's reputation. At the same time, in being open about the mistake, Whitman affirms his allegiance to the "facts" and to the rigorous review of the data.

On multiple occasions, Whitman argues for more nuanced, thoughtful interpretation of statistics. In particular, he warns of the dangers of circulating numbers without proper scrutiny. In "Capital Punishment in England," for instance, he castigates the American press for improperly vetting statistics when it suited a political agenda ("Capital Punishment in England" 2). At the time, Britain was creating a stir in America due to its push to reduce the

³⁶ While at *The BDE*, Whitman also covered the opening of a new public school district that would include schools for both white and "colored" children ("The Public School" 2). In a companion piece, which appeared a few days later, he compares the resources allocated to each demographic in more detail, with reference to an accompanying table ("The Public Schools" 2).

number of capital offences.³⁷ Many American newspapers had reported that the decision to scale back the death penalty had caused an uptick in crime. However, as Whitman points out, this claim originated from a report published in the British Magazine *The Law* that had since been debunked. An investigation by John T. Barry published in the pamphlet *The British Friend* found that *The Law* had misinterpreted the data. Barry showed that an unusual backlog in the courts in 1845 caused a number of sentences to be carried over to the next year. The bottleneck effect of the additional verdicts created the false impression that crime had spiked. To account for this irregularity, Barry recalculated the average number of verdicts using longer intervals, increasing the time period from one to two years. Having thus adjusted the parameters, he found that crime rates had, in fact, not increased, but rather declined (Barry 188-189). Barry's report and table of findings were reprinted in full in *The BDE* editorial. By presenting the reader with the raw data, in effect laying bare the evidence, Whitman hoped to counteract the spread of misinformation and "lay the matter to rest" ("Capital Punishment in England" 2).

In addition to citing crime data from secondary sources, Whitman also carried out his own informal data collection activities. In "An Injudicious Decision," Whitman looks at the effects of capital punishment, not on countries abroad, but directly on the home front ("An Injudicious Decision" 2). In America, support for the death penalty was generally much stronger than in Britain. Yet, some statesmen were beginning to voice their discomfort with the practice and enact legislation to limit its use. In May 1846, the same month that Whitman published the article, Michigan became the first state to do away with the death penalty for all citizen crimes, the only exception being the high crime of treason. In the wake of this

³⁷ Since the 1830s, Great Britain had been taking steps to reduce instances of capital punishment. Where theft and even forgery had been punishable by death, by the mid-nineteenth century the number of capital offences had been drastically reduced, with only the "most serious" crimes still warranting a death sentence (Devereaux 98).

decision, the New York state legislature briefly floated the idea of holding a public referendum on the issue. However, the proposal ultimately failed to pass (ibid).

A vocal critic of capital punishment, Whitman was dismayed. He had hoped that a public vote on ending the death penalty, even if it was unsuccessful, could at least open up a larger conversation about the issue. In his view, Americans were grossly misinformed about capital punishment. As he says in the article, the “masses” little understood the “true points of [the] subject” (ibid) and had been misled about its supposed benefits (ibid). With the aim of correcting these misconceptions, he uses both rhetorical strategies and numerical evidence to undermine the claim that capital punishment serves a social good. In particular, he attacks the idea that “fear of hanging” deters violent offences.

He first attempts to persuade his readers on an emotional level. He strongly contests the notion that social order can only be maintained through fear of punishment. In his opinion, the use of such draconian measures has dragged Western society backwards and impeded progress. Through descriptive language, he paints a picture of a wild and brutal “pastness,” devoid of Christianity, and sets it against the possibility of a more “genial” and civilized future (ibid). The justice system should be ruled by reason, not animal passions, Whitman argues. On the contrary, through capital punishment, our baser instincts, such as cruelty and lust for “vengeance,” are legitimized (ibid). Small wonder then that state-sanctioned executions do not satiate the appetite for violence but feed it.

Yet, Whitman’s argument finally rests on the numbers. At the time, the state did not keep records of crime statistics. The American National Census Board only began collecting incarceration information in 1850, as part of the organization’s growing interest in “social statistics” (De Bow 165-8, Cahalan 1). Because this type of data was not yet part of the public record, Whitman instead scoured newspaper reports for evidence. As mentioned, the tactic of repurposing data from existing sources had been used before to great effect by social

reform groups. Whitman exhibited a similar resourcefulness, compiling his own datasets from archives of published material. His “cursory examination of the prints” revealed that violent crime has not declined and might even be trending upward, with forty murders reported in the past month in addition to fifty-one suicides. Of course, as he points out in the article, the real numbers could be much higher. Whitman’s count was limited to incidents that were reported in the press, and there were “doubtless more” that he had not be able to uncover (ibid).³⁸

Whitman’s approach to data research, while rather hackneyed, is effective in drawing attention to the gaps in the official record, a theme he returns to later in his poetry. The journalist’s unrefined techniques also serve another purpose: if his methods were “rough,” so too was Whitman, the quintessential man of the people. As indicated earlier, “truth,” for the social reformers, was grounded in accuracy, but perhaps even more deeply in “authenticity” (Frankel 11).

Whitman identification with the working-class communities that he researched and reported on shaped his understanding of data, which was deeply politicized. Consider, for instance, Whitman’s reporting on free trade. Some of Whitman’s fiercest public debates as editor of *The BDE* were over protectionism. In “Figures Cannot Fib,” Whitman accuses the editor of *The Ithaca Chronicle* of peddling false facts to generate public hysteria over the threat posed by foreign markets (“Figures Cannot Fib” 2). Four years prior, the Whig President John Tyler had introduced the “Black Tariff,” a controversial tax on British imports.³⁹ Like his fellow Democrats, Whitman viewed protectionist policies as an insult to American industries, believing that such measures showed lack of faith in the strength and

³⁸ See also “Some Little Facts with ‘Powerful’ Inferences,” in which Whitman reports that a recent hanging drew a crowd of five thousand people, one-third of which were women. He goes onto cite examples of witnesses to hangings who went onto commit violent crimes (2).

³⁹ After the Democrats took control of the House and Presidency in 1844, they engaged in efforts to repeal the tax, replacing it with the “Walker Tariff” in 1846, which greatly reduced the rates on imports (Lake 452).

resilience of the nation's economy, and in particular its workers. In the article, Whitman contrasts the logic and rationality of solid statistical evidence against the irrational, emotional-based arguments of his "opponents" (ibid). Whitman goes onto compare the cheap rhetorical tactics of his political adversaries, which lack a foundation in "truth," to "fashion trends." Ideas, thus presented, might at first seem compelling, but soon go out of style, and are in this way as superficial and "ephemeral as the bend of a bonnet" (ibid).

Setting the "fancy dress" of rhetoric in opposition to the plain truth of numbers speaks to how class politics framed Whitman's perception and use of statistics. As shown, Whitman frequently positioned himself as a spokesperson for the working class. Along these lines, he conceives of data as a democratizing force, a tool in the fight against elitism and corruption, which redistributed power by giving the "many" a voice. In "Facts for the Working Folks," for instance, Whitman uses statistics to show how the "common man" is hit hardest by protectionist taxes ("Facts for the Working Folks" 2).⁴⁰ He points out that under the new system of taxation the cost of everyday items of necessity increased by much higher rates in proportion to their base price than luxury goods. For instance, the price of "common cotton goods" rose between 75 and 125 percent, while "fine cottons worn by the rich" rose only 30 percent; and "common glass tumblers" rose 139 per cent, while fine quality plate glass rose 30 percent. In the follow-up article "Impediments to Trade," Whitman once more uses stats to show how excessive import tariffs victimize consumers ("Impediments to Trade" 2). Citing Scottish economist John McCulloch, Whitman points to Spain as an example of how protectionist policies contribute to price monopolies. According to McCulloch's numbers, Spain's two hundred percent tax on iron bars caused an epidemic of smuggling with 100,000 to 150,000 people in the country involved in the black market (ibid).⁴¹

⁴⁰ See also "What Is Best for Workingmen?" 2; "Appalling!" 2.

⁴¹ At the time when Whitman wrote the article, the newest edition of Scottish economist John Ramsay McCulloch's popular gazetteer *A Dictionary, Geographic, Statistical, and Historical of the Various Countries*,

Whitman traded barbs with more than one rival Whig newspaper on the matter of free trade.⁴² In these public spats, which sometimes extended over multiple articles, the penny pundits hurl numbers at one another like so many insults, with each accusing the other of “bad” data (“Figures Cannot Fib” 2). Whitman cites a wide variety of sources, including the New York State Census,⁴³ McCulloch’s *A Descriptive and Statistical Account of the British Empire*,⁴⁴ *Farmer and Mechanic*,⁴⁵ and various Congressional hearings. Yet, Whitman’s interpretations of said data were not always astute, and in some cases, he betrays the same naïveté of numbers of which he accuses his political opponents. In “Productions of the State,” for instance, he points to agriculture, natural resource, and manufacturing data from the 1845 New York State census as evidence of the nation’s prosperity (“Productions of the State” 2). However, he fails to delve into the significance of the numbers on more than a surface level. The sheer variety of products and resources is, for Whitman, testament enough of America’s greatness, with “the unanswerable logic of such tables as above” seen as irrefutable evidence “in favor of that free trade which will give us the market of the world!” (ibid). That *lists* are themselves proof of abundance finally anticipates Whitman’s later affinity for list-making as

Places, and Principle Natural Objects in the World had just been released; this is likely where Whitman acquired the information on Spanish import taxes (see McCulloch 709).

⁴² In “[The Brooklyn ‘Advertiser’]”, Whitman responds to backlash against “Figures Cannot Fib.” He reiterates that the Advertiser must be mistaken about the amount of wheat and wheat products exported from the US to England. As proof, he cites figures that show that daily flour exports nearly as high as what *The Advertiser* alleges annual exports are (“[The Brooklyn ‘Advertiser’]” 2).

⁴³ See “Productions of the State” 2.

⁴⁴ Whitman quotes McCulloch twice, first in “Impediments to Trade,” and once more in “Indirect Taxation” (2). In the latter, Whitman cites McCulloch’s entry on France’s gabelle laws or salt code, for which, according to McCulloch, 4,000-5,000 people were annually sent to prison for not paying taxes on salt (McCulloch 622).

⁴⁵ In “The Last Kick of the Tariff Men,” Whitman once more uses statistics to argue against tariffs. In this case, he is responding to a claim by the lobbyist group, the American Institute of the City of New York for the Encouragement of Science and Invention (1808-1983), that the price of wheat would drastically fall if duties were removed. Whitman accuses the institute of basing their claims on bad “data” that are “utterly incorrect and unreliable.” He points to alternate figures printed in the New York periodical *Farmer and Mechanic*, which suggest that farmers have “no want of government aid” and can bring their wheat to market for cheaper than it can be imported, even without tariffs (“The Last Kick of the Tariff Men” 2).

a form of technopoiesis, of which more will be said in the following chapter on his poetic turn.⁴⁶

As a case study of early data journalism, Whitman's reporting is a reminder of how our conception of data and their function in society has changed. Though Whitman extolled the "rationality" of numbers, for the future poet and cataloger of America, data were never politically "neutral." As argued by Frankel and vividly demonstrated in this study, sociology, journalism, and activism were, in the mid-nineteenth century, fundamentally entwined. Indeed, early sociologists did not strive for neutrality so much as "authenticity," a means to enact social change by giving "voice" to underrepresented groups. That data are inseparable from politics and from their contexts has only in the contemporary era become a radical idea, one that can be attributed to the professionalization of data, which relocates "truth" with objectivity and comprehensiveness rather than the "authenticity" and embeddedness valued by the research-activists of the past.

That such a paradigm shift was indeed already underway was soon fairly evident. Not long after Whitman (rather abruptly) ended his tenure at *The BDE*, there were major changes afoot on Capitol Hill. The newly created Census Board had appointed its first director, the rising star politician-activist (and former journalist) Joseph Kennedy. As with Whitman, Kennedy was captivated by the European concept of "moral statistics" and before long he had a plan to embark on a data collection project of hitherto unseen scope and ambition (Thompson 58; Anderson 42-43). On the eve of these changes, Whitman was perhaps already engaged in a project of his own, one which would in its own way aspire to capture the vast "vista" of America.⁴⁷ A new era in the history of information science had begun. In the next

⁴⁶ See also "Employment" 2.

⁴⁷ See *Leaves of Grass*, 1856 edition, in which Whitman writes "Others take finish, but the republic is ever constructive, and ever keeps vista" (187).

chapter, we thus turn to that bastion of information science and monument to the “multitudes” of America: the Seventh American National Census of 1850.

A ‘Leaf of Voices’: The Demographic Dimension of *Leaves of Grass*

Intro

On July 27, 1850, the Whitman household got an unexpected knock at the door. The family often struggled with money – perhaps they thought it was a creditor? As it turned out, the visitor was not a debt collector, but a census taker, one of thousands who were then being deployed across America. These workers were tasked with carrying out what was at the time one of the most ambitious human data collection plans ever conceived. The census schedule for Brooklyn’s 11th Ward in King’s County, New York (fig. 2.1) offers a rare glimpse of a rather unknown period in Whitman’s life. Precious few details have been recovered about the author’s activities during the early 1850s. As Ed Folsom and Kenneth Price say, it was as though Whitman “retreated from the public world,” removing almost all trace of himself during these crucial years (Folsom and Price). The completed questionnaire contains some insights, though as found the responses are not always easy to interpret. As a record of the Whitmans’ lives, the document is as telling in its exclusions, what the family conceals and leaves unsaid, as what it indicates they chose to divulge.

The Whitman family lived in a modest wood-frame⁴⁸ house in King’s County, Brooklyn. Walter Whitman senior, aged 61, was a carpenter, and married to his wife Louisa, aged 54. Apart from Louisa, the other female residents were their daughter (Mary) Louisa, whose age is incorrectly recorded as 23 not 28, and the 20-year-old Irish-born Mary Fawcett. The only non-family member, Fawcett was likely a maid. The Whitman women may have also held jobs at the time; Whitman’s mother at one point worked as a housekeeper (1860 Census). However, because female occupations were not recorded until 1860, this is

⁴⁸ The New York State census of 1855 included records of the building material. Of the approximately 520,000 residential houses in New York State at the time, seventy-five percent were wood frame, including the Whitman residence as indicated on their return (New York State Census 1855, xlii).

speculation. What *is* known is that Walter Sr.'s sons Andrew, aged 22, and George, aged 20, followed their father into the carpentry business.⁴⁹ Thomas, aged 17, was a printer, a skill he likely picked up from his elder brother Walt Whitman junior.⁵⁰ As Folsom and Price observe, all three were named after revolutionary leaders: Andrew Jackson, George Washington and Thomas Jefferson. Notably, the youngest son Edward, aged 15, bore neither his father's name nor that of an American hero (Folsom and Price). Edward is marked on the schedule as having attended school in the past year. However, there is no mention of his debilitating physical and mental handicap, which required round-the-clock care (Reynolds 17). Rather, the twelfth column, for those classed as "deaf, dumb, blind, insane, idiot or pauper," part of the newly introduced sections for health and mortality data, is left blank.⁵¹ There are other inconsistencies. Whitman, then aged 31, reports his occupation as "editor,"⁵² but he had in fact been rather unceremoniously booted from his position at *The Brooklyn Daily Eagle* two years prior, allegedly for his radical politics (Reynolds 8). According to the census form, the

⁴⁹ In the 11th District King's County neighborhood carpentry and masonry were among the most common occupations (1850 Census NY State 11th District Returns).

⁵⁰ The brothers briefly worked together at the *New Orleans Crescent*, Walt as editor and Thomas as office paperboy. Walt later used his government contacts to help Thomas find work in civil engineering (Waldron "Thomas Jefferson").

⁵¹ The Whitmans do not report Edward's condition in either the 1850 or 1860 National Census. Only in 1865, during the New York State Census, do they officially divulge his status. In the 1880 National Census, in which "idiotic," "insane" and "physically disabled" appear as separate categories, Edward is included in all three. A hand-written comment beside Edward's name describes him as "crippled from infancy" (1880 Census).

⁵² The occupation category on the decennial National Census questionnaire offers some insight into the development of Whitman's authorial persona. Somewhat surprisingly, given Whitman's notorious penchant for self-promotion, he does not class himself as a poet until the late stages of his career. When the Census Bureau begins collecting occupational data in 1850, Whitman at first identifies as an "editor." In 1860, he redefines himself as an "author," a move that reflects a shift in interest away from journalism to works of fiction. Then in 1870, during his years as a government worker in the capital, he abandons the title of "author" and instead refers to himself as "Clerk to the Attorney General." Though "clerk" would have sufficed, the allusion to his employer shows Whitman's pride in his high-ranking position. Finally, in 1880 he reclaims his author status with a new emphasis on poetry, describing himself as Walt Whitman: "Poet *and* Author" [emphasis added]. The 1890 National Census was the last census Whitman participated in before his death in 1891; however, as the 1890 schedules were destroyed in a fire (see Blake), it is unknown if "Poet and Author" remained his chosen title until death.

Whitman property is valued at \$3000.⁵³ Curiously, it is Whitman Jr. who is recorded as the owner instead of his father.

Around this time, Whitman would embark on writing his epic book of poems. But the actual making of *Leaves of Grass* is somewhat of a mystery. Prior to this, Whitman was primarily a newspaperman, though as mentioned he had lost his editorial position and would mainly stick to short-term and freelance journalism gigs from here on out, including a brief three-month stint as a “clipping and rewrite man” with *The New Orleans Crescent* (Reynolds 9). Apart from his journalism work, he had previously authored the temperance tale *Franklin Evans* in 1842, a minor reform-era hit, selling 20,000 copies (Reynolds 25). He also dabbled in poetry, though as other scholars have noted these short rhymes were rather conventional, nothing like the epic, free verse form he would become known for. What inspired this sudden and dramatic shift in style?

Gilles Deleuze characterizes Whitman, and American literature more generally, as “writing in fragments” (56). For Deleuze, *Leaves of Grass* as a “collection of heterogenous parts” is expressive of the “fragmentary” nature of America itself, with its “federated states and various immigrant people” (56). Matthew Fuller, building on Deleuze, homes in on the indexical quality of the poem, pointing out how the structure creates new opportunities for meaning making. Fuller contrasts the organizational system of the index, as utilized in the design of websites and databases, with its creative applications in literature. In the former, the index functions as part of the interface design, “managing” how users interact with the content by guiding them down certain navigational pathways (15). In other words, these

⁵³ The Seventh National Census introduced questions about the ownership and value of real estate. The data for this section was deemed “incomplete” and the results for individual states were not published as part of the official report (1850 Compendium, 191). However, the primary data can still be accessed by consulting the archived forms. The census returns for his district show that most of Whitman’s neighbours were renters. Of the ten dwellings located on either side of his residence, approximately one third housed multiple families. Six families, out of a total of twenty-nine, owned real estate. Four of the properties are valued between \$3,000-\$5,000, one at \$12,000, and one at \$600, which situates the value of the Whitman property within the mean range (see fig. 2.1).

digital environments are strictly “policed,” offering up only a “preformatted pluralism” (ibid). By contrast, the “aesthetics of multiplicity,” as utilized by Whitman, opens, rather than closes off, interpretative possibilities, through its refusal to be contained. The construction of the list format, with each element having equal grammatical importance and, therefore, the potential to be combined in different ways, lends itself to a “virtual syntax” of unstable connections (ibid). Unlike the “real” or fixed connections of, for instance, a hyperlink, the associations between list elements that are made by a reader are “speculative” (14). In this way, the unstable terrain of the literary list, upon which the reader is never quite sure-footed, continually invites new connections and new pathways through the text.

Building on Deleuze and Fuller, I posit that the enumerative quality of Whitman’s poetry is not only an “aesthetic” tool but a critical one, which reflects and challenges the collective “we” of data. Rather than looking to computational technologies like the modern-day application index, my work reads Whitman’s “fragmentary writing” against the nineteenth-century social survey. The following chapter examines the connection between Walt Whitman’s *Leaves of Grass*, as a “tally” of modern American life, and the rise of human data collection. In doing so, it reframes Whitman’s poetic project in the context of the Seventh National Census of 1850, which was carried out during the formative years of *Leaves of Grass* and was a game-changer in both its unprecedented scope and its ambition. As I argue in this chapter, the ‘average man’ of poems like “Song of Myself” and “Democratic Chants” embodies the utopian dreams of the census makers, persons like Adolphe Quetelet and Joseph Kennedy, who argued for the critical role of information management in democratic societies. At the same time, in poems like “Song for Occupations,” Whitman also draws attention to the limits of data and those excluded from the official count; he questions, as well, its presumed neutrality, which marks a departure from his former stance.

As detailed in the previous chapter, the reformers argued that social ills are caused by ignorance. In other words, once equipped with the right information, the public would be spurred to act. In keeping with this belief, during his tenure at *The Brooklyn Daily Eagle*, Whitman penned an editorial that argued that “fancy rhetoric” was not enough to sway readers, who were more likely to be convinced by the “cold certainty of numbers” (“Figures Cannot Fib” 2). At the same time, would a public, who turns away from suffering when encountered with it face-to-face, not also become desensitized to the arms-length evidence of statistics? Who, moreover, are the “askers,” to use Whitman’s term, and how do their own social and political contexts, what Adrienne Rich calls one’s “politics of location” (210-231), colour their line of questioning? Whitman continued to grapple with these questions over the various editions (and fluctuating forms) of *Leaves of Grass*, and as I argue this tension between the contradictory dream of totality and the desire to escape it underpins the informational ethos of his body of work.

Seventh National Census of 1850

The Seventh National Census of 1850 was by far the most comprehensive census the United States had ever carried out, far exceeding the previous ones in terms of its scope and ambition. It was to be the crowning achievement of American statistics. Whitman captures the historic moment in his poem “Chants Democratic”: “The seven millions of distinct families, and the same/ number of dwellings—Always these and more,/ branching forth into numberless branches” (159).

The publication of the Seventh Census results, first the Abstract edition in 1852 and then the Compendium edition in 1854, were accompanied by much anticipation and excitement. As the Compendium introduction proclaims, the government’s hope was that every household in America should have a copy, where it should be the subject of much

“conversation and discussion” (De Bow 11). Upon its initial release, 320,000 copies of the Seventh Census were reportedly already under order (De Bow 11), which if accurate places it amongst the top bestsellers of its day. By comparison, Harriet Beecher Stowe’s mega-hit *Uncle Tom’s Cabin* sold 300,000 copies in its first year, a feat which was itself almost unheard of (Anderson 59, Hart 112).⁵⁴

Given its widespread distribution, it is perhaps no surprise that Walt Whitman is not the only American artist to reflect on how data collection shapes national identity. In 1854, the same year that Whitman debuted *Leaves of Grass*, Francis William Edmonds completed his oil painting *Taking the Census* (fig. 2.6). The painting depicts an enumerator and his assistant collecting household data for the National Census of 1850. As shown in the painting, The Seventh Census of the United States was by far the most inclusive. For the first time, the survey was not household-based, but nominal. In other words, when it came to the national census every individual, regardless of race, gender, or class, counted (1850 Compendium 12). Many Whitman scholars have remarked on *Leaves of Grass* as a celebration of the “immense diversity” of America. As the poet famously announces: “I am large... I contain multitudes” (LG 1855 55). In Edmond’s painting, this newfound inclusivity is similarly reflected in how the figures are staged. The scene takes place in the living room of a decidedly average, middle-class American family. The surveyor makes a note in his book, his young assistant at the ready with an extra quill. The homeowner is joined by his wife, whose infant is asleep in her lap. Two rosy-cheeked children peer curiously around the edge of their mother’s chair. A second woman, whose kerchief and rolled-up sleeves signals her status as a domestic worker, joins them to watch, as does a fourth child, who looks out from behind a desk. The boy raises his finger to his lips, as if to hush his younger sister, but

⁵⁴ These numbers do not include the various other editions of the census, which were produced before and after. The Abstract Edition of 1852, for instance, was released ahead of the Compendium Edition in response to public demand, and sold 100,000 copies (Wright 49).

the mood is anything but sober. On the contrary, there is a general sense of activity and vitality, as shown by the walking stick and hat on the floor and the toy hula hoop clutched in the girl's hand. While some historians have read the scene as ominous or unsettling—Susan Kleep for instance describes the man as “befuddled” by the census-taker's questions (33)—this interpretation does not hold up under scrutiny. The window is thrown open, shedding light on the lives of the nation's inhabitants. The blue skies outside reinforce the survey's spirit of openness, rather than secrecy, as well as the clarity of knowledge that the results would bring. As Thomas Allen observes, far from being a force of oppression, the enumerator has a “kindly,” “paternalistic” air (Allen 100). Though he is an agent of the state, he is not cast as an intruder, but welcomed into the citizen's home.

The painting yields other clues about the changing nature of the census. Not only had the subject group expanded, so had the scope of the survey. The questions had increased in number with new categories related to economics as well as social issues such as literacy and poverty. In this context, the books on the mantle and on the desk signal not just the growing literacy of the nation, but the state's newfound interest in measuring this type of social phenomenon. Numbers, moreover, permeate the scene. The homeowner is counting on his fingers, working out a figure in response to the surveyor's questions, an act which mirrors a similar scene depicted in Whitman's “Song of Occupations.” A clock, symbolic of the rise of logic and positivism, sits on the mantelpiece directly between the citizen and the agent of the state, as if to mediate the exchange. As Allen points out, the specific make of the clock, which is noticeably plain and lacking in decoration, closely resembles the type of mass-produced gadgets that were then being manufactured in New England (Allen 101); its featurelessness is itself a feature of industry and the rise of factory-made goods. Clocks were symbolic of modernity in other ways as well. Standardized time zones, which were later introduced to accommodate train schedules, would have a profound impact on how

Americans lived and worked. Time, no longer local and particular but universal and uniform, was soon to become the organizing principle of modern life, as discussed further on in Chapter Three. Lastly, next to the clock hangs a portrait of the First President of the United States, which harkens back not just to the origins of the nation, but of census-taking. George Washington's presence is finally a reminder to follow his example and "never tell a lie," faithfully answering the enumerator's questions ("Taking the Census," the Met).

Yet, the Seventh National Census was not, as Edmonds' painting suggests, without controversy. The Census of 1850 was an unusual census in many respects. The final report was a massive text: 1,158 quarto pages in total (Wright 48-49). Most of the content is dedicated to data tables and explanatory notes. Yet, the most intriguing and revealing section comes before the results, in the form of a 136-page introduction. Authored by the census director James De Bow, it was the first time that the national census included any type of prefatory analysis or summary, and the material was a substantial addition to the text. The opening pages contain many insights into the workings of the American census, both at the central office and in the field.

De Bow takes pains to emphasize the unprecedented scope of the project. Surveying a nation of over 23 million, along with its various industries and government institutions, was a gargantuan endeavor requiring huge amounts of manpower. Over several months, 3,231 field assistants under the supervision of 45 marshals were tasked with knocking on every door in America, work that sometimes required them to trek across great distances into unruly and dangerous territory (Wright 47; Kennedy *Seventh Census Report* 127). Once completed, the final schedules, weighing over 100 tons and printed on 3,000 reams of "medium-sized" paper, were transported by express mail to the Central Office in Washington (Wright 48; 1850 Compendium 22). At the peak of its activity, the census headquarters, which occupied

four buildings downtown, were amongst the busiest offices in the city, comprising 10 percent of all government workers (Anderson 57).

As in Edmonds' painting, De Bow's detailed documentation was meant to create a sense of transparency by inviting citizens to witness what was a monumental process. Yet, the emphasis on infrastructure also underscores how the relation of data to the public had changed. As I argued in the previous chapter and will again below, Whitman came of age as a journalist in the 1840s during the rise of data, as championed by the social reformers. The mid-1850s, by contrast, marked a turn in how data were perceived. The professionalization of social statistics undoubtedly led to improvements in methodology, but also severed its communal roots and its ties to public activism. Unlike during the reform era, the operations of data collection and analysis were increasingly taken out of the hands of average citizens and became estranged from their day-to-day lives. Data took on a mysterious dimension, an unknowability. At the same time, as America edged closer to civil war, the census took on increasing import. The utopian aspirations of the census makers, who saw moral data as the grand unifier and antidote to America's ills, was at odds with a skeptical public. There were anxieties about the uses to which the data were put, but also what they might expose.

As will be shown, though the national census came to be closely tied to ideas of democracy and of nationhood, data collection was not always welcomed, and at times was even feared. Francis William Edmonds' painting and James De Bow's census introduction smooth over the historically contended and contentious relationship between the American people and census-taking. By contrast, the 1855 and 1860 editions of Whitman's *Leaves of Grass* capture both the enduring hope of enumeration as a source of national pride and unity and the growing fear of how data can draw attention to and reveal national divisions.

‘This Most Curious and Instructive Assemblage of Facts’: Remaking the American Census

The census has a unique history in America, and its story is entwined with the very foundations of democracy in the nation. Prior to the revolution, census-taking was quite contentious. Under the British, enumeration was primarily used as a means of taxation, but it was also a tool of surveillance and control. In 1696, Britain formed the Board of Trade, one of the chief duties of which was to organize regular censuses of its territories (Cohen 78). This Board sought information about “every conceivable matter,” from the waterways and harbours to the number and type of churches to the structure and finances of the local government. It was especially eager to learn about the demography of the colonies, including the number of births, deaths and marriages, and the rates of immigration (Cassedy 66). Data, in effect, gave shape to the empire, transforming it from abstract concept into a reality.⁵⁵ The monarch and his or her advisors interfaced with the territories of the empire vis a vis maps, tables, and graphs. These data models made it possible to manage resources from afar and maintain control over the vast regime.

However, the census takers were not always welcome. The settlers fiercely guarded their independence and were known to be “scornful of officialdom and evasive of the law” (Cassedy 68). They were, moreover, increasingly resentful of British-imposed trade and tax regulations, introduced as a means of paying off the debt incurred by the Seven Years’ War. For these reasons, it was not uncommon for them to “misconstrue or withhold information” (Alterman 174; Clemence 356; Wells 21; Rossiter 3; cited Emigh 150). Despite the unpopularity of the census amongst the locals, as the possibility of a rebellion grew imminent, Britain upped the ante of its data collection and increased its surveillance activities. In fact, almost a third of the censuses of American territories were carried out in

⁵⁵ See Richards for further discussion of information organization in the British Empire.

the final ten years of colonial rule (Alterman 166). During this period, the British Empire amassed perhaps the “most extensive” vital statistics “available anywhere” (Cassedy 188). However, none but a few, mainly the King and his advisors, had access to the reports. Fearing that such information would be used against the monarchy to rally support for independence and coordinate a future uprising, the results of the enumerations were closely guarded. In fact, the data on the colonies were not released publicly until “long after independence,” presumably when the information no longer posed a threat (Cassedy 188).

After independence, the census was not abandoned. In fact, the United States became the first country in the world not only to create a regular national census, but to make it constitutionally mandated. Nineteenth-century French statistician Jonnes de Moreau later remarked on the “unparalleled” nature of the event. As he points out, no other nation’s origin story was so deeply entwined with that of data, “its people [having] instituted the statistics of their country on the very day when they founded their government, and [having] regulated, in the same instrument, the census of inhabitants, their civil and political rights, and the destinies of the nation” (Moreau de Jonnès 191-192).

The national census was originally intended for a single purpose: for determining the number of representatives awarded to each state. Yet, from its inception, there were those who imagined it as something much more. When the first national census came up for debate at the Constitutional Convention in 1790, there was already talk of expanding it beyond its basic function of enumeration. James Madison, then an advisor to President George Washington, had the foresight to realize the crucial role data could play in informing public policy. For Madison, it seemed obvious that in order to build a more democratic political system, the state’s information-gathering apparatus must extend beyond mere population numbers. He believed that government must take further steps to understand the people it purported to represent: Who are they and what are their needs? In Madison’s view, the

national census, this “most curious and instructive assemblage of facts,” was much more than a tool for enumeration (“To Thomas Jefferson from James Madison, 14 February 1790”). He believed data had the power to elevate and enlighten government policy, writing that such information would be “extremely requisite” to legislation (ibid). Not all of Madison’s colleagues shared in his enthusiasm, however. Part of the hesitation to increase the scope of the national survey was rooted in a mistrust of centralized power, but it was also due to a general lack of understanding of the value of data, or even what a dataset was and how to collect it. When Madison proposed adding categories for job occupations he was laughed out of Congress. His fellow representatives seemed frankly baffled by the idea, calling it an “idle hobby.”⁵⁶ The implication was, why bother?

Despite the reservations of some politicians, the census could not *but* take on special import beyond that of enumeration. In fact, the collection and, most importantly, *dissemination* of census results came to play a key role in the fledgling government’s diplomatic strategy. In the years after independence, the threat of external forces, particularly the British, was ever present. In this tenuous post-war period, the census was vital to the nation’s survival. Strong population numbers were not only evidence of the country’s prosperity, but an affirmation of its liberal ideology: proof, in other words, that the system was working. The census results were also used to guard America’s sovereignty, to ward off attack from other nations and bolster its economic power.⁵⁷

⁵⁶ In a letter to Thomas Jefferson written in 1790, James Madison bitterly reproached his fellow politicians for their short-sightedness, lamenting that his proposed additions to the census questionnaire were “thrown out of the Senate as a waste of trouble and supplying materials for idle people to make a book” (“To Thomas Jefferson from James Madison, 14 February 1790”).

⁵⁷ During trade talks with France, Thomas Jefferson used population data to persuade the French delegates of the benefits of an economic partnership, pointing out that if the US population continued to increase at the same rate the demand for French products was sure to “double every twenty or twenty-five years” (“From Thomas Jefferson to Montmorin, 23 July 1787”). Alexander Hamilton likewise used the prospect of a national population count to bolster America’s negotiating power with the British. During a meeting with George Beckwith in 1790, he tacitly reminded the British minister that America was willing and able to defend itself against assault, both military and economic, citing the forthcoming enumeration results as proof of the country’s resilience: “Our government acquires daily strength and consistence in the public mind... I am persuaded when our Census is completed we shall have at least three Millions and a half of people; at

Notably, unlike during the colonial period, when the United States completed its first national census in 1790 the government not only freely published the data, they promoted it far and wide.⁵⁸ According to Ned Landsman, the policy of opening census data to the public helped spur the American people's enthusiasm for statistics (Landsman 31-56). The burgeoning field of social science became a topic of national interest and a cornerstone of political debate. Government officials, journalists, and even popular authors like Walt Whitman increasingly deferred to the authority of numbers, using demographic data as evidence (Cohen 158-159; Davis 156-157 cited Emigh 161). In this way, statistical terminology worked its way into public discourse. Only under these circumstances could a concept like "the average man" become, for Whitman, a powerful allegory for democratic freedom.

For the next thirty years, census reform would occur only at increments. Yet, with each passing decade, the scope of the census gradually widened, with the American government authorizing the collection of ever-expanding categories of information. Then in 1850, the national census underwent a monumental transformation. The US government abandoned any pretence of the census being purely for the sake of enumeration and commissioned one of the most ambitious data collection projects of the modern era. As shown in the next section, the impetus for these sweeping changes came, at first, not from within America, but abroad, with the arrival on the scene of Belgian "moral" scientist Adolphe Quetelet.

this time we are capable of making considerable exertions, even Maritime ones, if from circumstances it became a measure of government to encourage them" ("Conversation with George Beckwith, 15–20 October 1790").

⁵⁸ The results of the First American Census were published in a "modest," fifty-six-page volume that was printed by private companies in Philadelphia and later Washington (Alterman 202). Unlike the 1850 National Census, the data was published unaccompanied by any analysis or explanatory materials. However, many were eager to weigh in on the results, and the First National Census was the subject of several books, including Matthew Carey's *A Brief Examination of Lord Sheffield's Observations on the Commerce of the United States* released in 1791 and Trench Coxe's *Views of the United States* released in 1794 (Cassedy 224). The census also captured the attention of the international community. Two years after its release in the United States, the First Census of America was picked up by a London publisher J. Phillips and reprinted in full, "as if to show the mother country how its sprawling infant had grown" (Alterman 207).

Moral Statistics Come to America

Walter Grünzweig is one of the few Whitman scholars to consider the demographic character of *Leaves of Grass* and its origins in the social sciences. In his article “‘O Divine Average!’: Whitman’s Poetry and the Production of Normality in Nineteenth-Century American Culture,” Grünzweig points out that America, having overthrown the aristocratic elite, had to rethink the notion of cultural norms, and particularly the manner in which they were determined. Under the former system, norms were believed to be fixed or “given” truths, determined a priori, while in the later they became more fluid, able to be redefined in accordance with the shifting values of an ever-changing populace (Grünzweig 27). As a result, normality became much harder to delineate. The new normal, so to speak, was not only more fluid but heterogenous, a tapestry of norms. Grünzweig argues that Whitman, through his catalogs of American society, sought to throw these differences into relief, counteracting the flattening effect of the status quo through examples that showcase variation and diversity. In his words, “[Whitman] is not content with the central segments of the curve” and insists on bringing the outliers into the fold (30).

Grünzweig reads Whitman’s poetry as expression of a cosmopolitan utopia, a “census” or “inventory of American (and world) culture,” in which “data collection” is a way to celebrate social “pluralism” (31). While the scholar’s allusion to the census is most intriguing, apart from a brief mention he does not delve deeper into the project’s unique history and role in American society, which is also true of his consideration of data. As a result, he misses out on certain key connections. For instance, in Grünzweig’s reading, Whitman’s use of the term “divine average” invokes the “supreme” rule of the majority, which had displaced one mode of determining norms by another. Where the elitist normativity of the aristocrats had been legitimized through “religious dogma,” the normality of the average American would be conferred through statistics (Grünzweig 28-29). Notably,

in Grünzweig's understanding, Whitman's invocation of "divinity" is strictly "metaphor" (28), when in fact the term has a specific origin and history of usage within the mid-nineteenth century social sciences.

The phrase "divine average," which appears four times in the 1860 *Leaves of Grass* edition, was coined by Belgian sociologist Adolphe Quetelet, whose work in data collection and analysis was a major influence on the development of the modern American census. Quetelet was instrumental in spreading the gospel of data through America, acting as a close advisor to census director Joseph Kennedy and becoming the first foreigner to be inducted into the American Statistical Association (Thorvaldsen 122; Davis 177). Quetelet is best known for discovering that the characteristics of society mimicked the regularities found in nature, following a pattern known as normal distribution or the Gaussian curve. Normal distribution was, by then, already a well-established concept. Statistics has its origins in the seventeenth century, long before either Quetelet or Whitman's time. Initially, the field had little to do with the study of society. In fact, statistics were first developed for gambling and games of chance as way to predict the most likely outcome (Hacking 106; Gigerenzer 1, 19). In the results of a coin toss, for instance, there is at first a high degree of variability, but as the number of trials increase the distribution of heads and tails will "normalize," approaching fifty-fifty. This simple idea, known as the "law of large numbers," was later adopted by astronomers in the early nineteenth century as a method of error detection (Hacking 106; Porter "Mathematics of Society" 53).⁵⁹

Quetelet was a renowned astronomer, overseeing the construction of the Brussels observatory, which is how he was introduced to statistics. However, he had a myriad of

⁵⁹ In observing the movement of the stars, astronomers found that their measurements were never entirely consistent. The presence of external factors—such as flawed instrumentation, environmental conditions, or human error—meant that a certain degree of interference was unavoidable. What was found, however, was that these mistakes could be mitigated over the course of multiple trials, by using normal distribution to determine the most accurate reading (Porter "Mathematics of Society" 53). For more on the influence of astronomy on the development of normal distribution, see Stahl.

interests, including, as will be discussed further on, a deep love and appreciation for literature. It was perhaps his interdisciplinary background that awoke him to the potential uses of statistical methods in other fields. Quetelet was the first to show that normal distribution could be observed not just in repeated trials of a single event, like the roll of dice, but in collective phenomenon. To test this, he charted the measurements of soldiers' limbs and demonstrated that the results follow the same characteristic pattern (Quetelet *Lettres in S.A.R.* 400; Stigler 206; Porter "Mathematics of Society" 67; Gigerenzer 54). More astounding, the bell curve pattern was exhibited in not only physical but behavioral phenomena. Annual rates of marriages, births, and deaths all seemed to adhere to the same underlying laws. In his study of Parisian judicial statistics, he found that even acts attributed to free will, such as breaking the law, could be predicted with a "terrifying exactitude," such that society seemed to have a "budget" of crime that needed to be filled (Quetelet, "Recherches statistiques sur le royaume des Pays-Bas" 28; Quetelet, "Recherches sur le penchant au crime" 20 cited Hacking 105; Porter "Statistics and Statistical Methods" 241).

Quetelet's critics believed that this new 'moral science' was akin to blasphemy, and his findings ignited debates within the scientific community (and beyond) that lasted for "decades" afterwards (Wetzell 23; Porter "Statistics and Statistical Methods" 241). The Belgian scientist's methodology was itself contentious. He and other moral scientists were, in effect, proposing an entirely new way of conducting scientific research. The rise of large-scale research teams challenged existing power dynamics within the scientific community, especially in how they seemed to undermine the autonomy and agency of individual scientists. As Donnelly says, the scientists "may well have suspected that they were being made into average men" (Donnelly 157).⁶⁰

⁶⁰ Like Lieutenant Matthew Fontaine Maury, Quetelet believed future discoveries would come at hands of "large-scale research projects" rather than "individual geniuses" (Donnelly 8). Yet, Quetelet's calls for not just a "new science" but a "new kind of science researcher," were not wholly welcomed. Some argued that statistics were transforming scientific practice into something "lifeless and mechanical" (Porter "Statistics and Statistical

However, much of the criticism of Quetelet's work centred on its philosophical implications. The ability not just to capture but to predict human behaviour had disturbing connotations. Indeed, the notion of society adhering to "natural laws" seemed to undermine the very possibility of free will (Porter "Statistics and Statistical Methods" 245). Accusations of determinism dogged Quetelet throughout his career and, even today, continue to besmirch his reputation. More recently, however, scholars like Donnelly, Richard Wetzell and others have pointed out that to accuse Quetelet of determinism is to misinterpret his core ideas. After all, Quetelet was, as he repeatedly stated, a firm believer in social reform. In fact, his research was motivated by a desire not just to document human society but to improve it. As he explained in a letter to French physician and fellow statistician Louis René Villermé, "Since crimes . . . seem to be the necessary result of our social organization, and since their number cannot be reduced without their causes being changed, it is the legislator's task to recognize these causes and eliminate them as far as possible. It is the legislator who fixes the budget of crime" (Quetelet to Villermé, "Sur la possibilité de mesurer l'influence" 26). In other words, these phenomena were not random. If one could understand why people engaged in deviant behavior, showing for instance correlations between variables like poverty and crime, such acts could be prevented. Much like James Madison, Quetelet ultimately hoped that moral data could inform state policies as well as measure their effectiveness. Data, in other words, could be a check on government power, a way to hold politicians and lawmakers to account.

The push for social reforms in America arises out of and in congruence with this new field of 'moral science.' As discussed in the previous chapter, in the antebellum era, there

Methods" 245; Porter "Lawless Society" 353). Others dismissed quantitative methods as a pseudo-science, whose claims fell apart under scrutiny. The term "Queteletismuses" even came to be known as an insult (Donnelly 147, Porter, "Lawless Society" 353). In Donnelly's view, the vitriol directed at Quetelet and his methods was rooted in deeper anxieties around how quantitative research was changing scientific practice, with individual scientists replaced by extensive teams of data collectors, aggregators, and analysts (Donnelly 157).

were calls for progressive action on all manner of fronts, including voting rights, health and sanitation, public education, and abolitionism. During the same period, there were numerous studies of the alienated and disenfranchised in America. These studies are not only conducted by professional academics, but also amateurs or citizen scientists. The mathematical techniques employed by these nineteenth-century data enthusiasts were far from sophisticated by modern standards. For instance, the technique of polling representative samples, which is commonly used today, was not invented for another fifty years (Thorvaldsen 116-117, Porter “Mathematics of Society” 57). As a result, much time and resources were wasted chasing bigger and bigger datasets, which researchers did not always have the manpower to process. Still, the methods of gathering data, often from pre-existing sources, are strikingly modern in their innovativeness and resourcefulness. The next section describes how the grassroots origins of human data studies, which were carried out by persons from diverse occupational backgrounds with varying degrees of success (and failure), contributed to its popularization. In this way, the rhetoric of data took hold of the popular imagination and worked its way into various fields, including the arts.

Citizen Science in “Song of Myself”

Much like the moral scientists, in *Leaves of Grass* Whitman is similarly compelled to study and record examples of moral deviance. He examines, for instance, the aftermath of a suicide: “The suicide sprawls on the bloody floor of the bedroom./ It is so... I witness the corpse... there the pistol had fallen” (1855, 26). Whitman places himself at the scene: sole “witness” to an act of violence. An unnamed person shot himself to death in his home. No other people are given as present; no one reacts to the sound of the gunshot or moves to check the body. In entering it into the record, the narrator acts the part of a researcher. His detached and halting manner, “it is so...”, could be indicative of grief or shock. Yet, his depersonalized

approach to “the suicide... the corpse” comes across more methodical. He notes, for instance, where the “pistol had fallen” as though searching for a motive.

Like the protagonist of “Song of Myself,” French lawyer and amateur statistician André-Michel Guerry sought to understand the causes of suffering. Guerry carried out the first formal study of suicide and its social origins.⁶¹ Over four years, he collected and analysed the contents of every suicide note found by the Paris police, publishing his findings as part of a larger volume titled *Essai sur la statistique morale de la France* in 1833. Guerry’s pioneering use of documents as evidence was later emulated by sociologist Émile Durkheim in his famous study *Le Suicide*, published in 1897. Guerry’s follow-up work, *Statistique morale de l’Angleterre compare*, published in 1864, was still more impressive, presenting data from 85,564 suicide records and 226,224 crime reports collected over a fourteen-year time span. The statistical methods also show a higher degree of sophistication, such as the use of multivariate analysis to establish links between variables, which is an indication of how quickly the field was progressing (Friendly 368).

The ‘moral table’ found traction amongst those advocating for social reform in America, with citizen scientists conducting studies of human behavior to call attention to social issues. Examples of human data collection and analysis as social reform from this period include Dorothea Dix’s *Remarks on Prisons and Prison Discipline in the United States*, Samuel Howe’s *Report on Idiocy in Massachusetts*, published in 1848, William Sanger’s survey of NYC prostitutes, published in 1855, and the studies of black communities conducted by the Pennsylvania Society for Promoting the Abolition of Slavery and the Society of Friends, published in 1838 and 1856.⁶² As mentioned in the previous chapter, what is notable about

⁶¹ See also Boismont, *Du suicide et de la folie suicide* (pub. 1856).

⁶² Moral statistics also gained a following in England, with Joseph Fletcher’s *Summary of the Moral Statistics of England and Wales* (pub. 1850) and Florence Nightingale’s *Notes affecting the Health, Efficiency and Hospital Administration of the British Army* (pub. 1858), *Notes on Hospitals* (pub. 1858), and *Notes on Nursing* (pub. 1860) being prime examples. For more on the Victorian’s unique brand of moral science, see Gilbert; Cullen; Cook and Wainer.

these early data studies is the “compassion” with which they approached their subjects (Davis 174). These novice scientists combined fact-finding with a desire to understand and embed themselves in these communities. The notion of ‘society’ also reframed our understanding of criminality. With the rise of ‘moral science’ there was a new emphasis on social causes, with the perpetrator recast as victim of society. As Quetelet said: “The victim on the scaffold is in a certain way the expiatory victim of society. His crime is the fruit of the circumstances in which he finds himself” (Quetelet Letter to Villerme 1832, cited Hacking 114). In this way, through data, moral scientists found new ways to tell stories of suffering. The individual was no longer seen as solely responsible for their actions. Instead, there was new attention to collective causes, beyond a single person’s control.

In *Leaves of Grass*, poems like “Song of Myself” likewise forces us to recognize the deviance that lurks within society and which is, therefore, a part of us all: “What living and buried speech is always vibrating here... what howls restrained by decorum,/ Arrests of criminals, slights, adulterous offers made, acceptances, rejections with convex lips,/ I mind them or the resonance of them... I come again and again...” (1855 26). One can approach this passage as a rumination on the fractured and contradictory psyche, in which the street criminal stands in for the speaker’s repressed desires. In other words, one can read “A Song of Myself” as a study of the self. However, the repetition of “them” also lends itself to a sociological reading, as a comment on the collective rather than the individual. The speaker feels the “resonance” of the many, as though it were reverberating through his chest; it inhabits him. *Leaves of Grass* is, in a sense, a reclamation of deviance. As with Quetelet’s study of the intersections of creativity and violence, which is discussed further on, Whitman troubles neat moral divides. The criminals in his poetry are made of the same stuff as we are. Even the most reprehensible acts are not so far outside our experience as to be beyond comprehension. In one scene, for instance, the speaker inhabits the mind of a murderer: “Hot

toward one I hate, ready in my madness to knife him” (1855 48). The scene is made more unsettling because of the switch from the third person omniscient voice to first person. Through the speaker, the reader feels the compulsion to violence. Our lack of choice, drawn into an act against our will, becomes a way of showing how our stories are shaped by conditions outside our control. The narrative structure models how social forces act upon us: it invokes discomfort because it confronts us with the limits of our agency.

As in the aforementioned ‘moral science’ studies, in “Song of Myself” there is a deep empathy with the pain of others, but especially with those othered by society. Whitman feels acutely the pain of alienation, and his identification with suffering is captured in his intimate portraits of the condemned:

I become myself in prison shaped like another man, and feel the dull intermitted pain.
For me the keepers of convicts shoulder their carbines and keep watch,
It is I let out in the morning and barred at night.
Not a mutineer walks handcuffed. To the jail, but I am handcuffed to him and walk by
his side...
Not a youngster is taken for larceny, but I go up too and am tried and sentenced.
Not a cholera patient lies at the last gasp, but I also lie at the last gasp... away from
me people retreat.
Askers embody themselves in me, and I embody in them,
I project my hat and sit shamefaced and beg. (LG 1855 54)

America is, as Whitman puts it, a “nation of many nations” (LG 1855 23). Yet, some communities are more visible than others. Those categorized as “bad elements” are treated as contaminants, sequestered in prisons and in urban ghettos, which exacerbates the problem. Moral science arose partly out of a desire to find a way into these disenfranchised communities, and in this sense the march of delinquents in “Song of Myself” recalls landmark studies of criminality by Quetelet, Guerry, and others. Whitman himself reported on the conditions of prisoners and advocated for prison reform during his time as a journalist

at *The Brooklyn Daily Eagle*.⁶³ He returns to this setting in “Song of Myself.” The speaker walks with the mutineer, “hand-cuffed” to his side as he is escorted to prison. He feels his fear, the “sweat on [his] twitching lip” (LG 1855 43). In aligning himself with the convict, he reframes crime not as an isolated act but as a collective phenomenon, for which there is a shared responsibility. In another line, one that is reminiscent of Quetelet, the speaker is “tried and sentenced” alongside an incarcerated youth (ibid). In this instance, the age of the accused is meant to give further pause. Can a mere “youngster,” as Whitman calls him, be entirely to blame? Has he, like the lunatic and the prostitute, not also been acted upon—“taken, tried, sentenced”—by the state? The implication is that it is society and its institutions which need to be put on trial and made to “go up” and repent (ibid).

The criminal justice system is not the only institution under scrutiny. Whitman also confronts us with the horrors of disease and poverty. In each case, he questions our inclination to turn away from suffering, as though we have no part in it: “My face is ash-coloured—my sinews gnarl—away from me people retreat” (LG 1855 43). In the poem, the callous response of the bystanders is depicted as being itself a type of moral sickness. Such a notion was in keeping with the social reformers, who believed that the ‘cure’ for a society sick with apathy and indifference was information: collecting evidence of social ills and reflecting on the causes. Indeed, in the final stanza, the narrator transforms into the “asker,” which has a double meaning both as a street beggar and as a literal “asker” of questions: “Askers embody themselves in me, and I am embodied in them” (ibid). With this line he emphasizes the responsibility of the researchers, as the ones who speak for society, to continue to probe and to ask the hard questions.

⁶³ For examples of Whitman’s coverage of prisons in *The Brooklyn Daily Eagle*, see “The Poor Wretches!”; “City Intelligence: Prison Statistics”; “Prison Statistics.”

At the same time, Whitman also questions the capacity of researchers to sum up the lived experience of their human subjects. In an earlier section of the poem, the narrator, surrounded by “askers,” reflects on the “effect upon me of my early life.... of the ward and city I live in.... of the nation” (1855 15). Like a moral statistician, he categorizes himself into various demographics: by jurisdiction (“ward”), by health and crime (illness and “ill-doing”), and by economic status (“loss and lack of money”). Notably, this information is set next to and given equal importance as that which exists outside the purview of a typical survey, a strategy that he replicates in future poems. These missing contexts include shared cultural experiences, such as “The latest news discoveries, inventions, societies authors old and new” as well as the individual experiences, such as “The real or fancied indifference of some man or woman I love” (1855 15). Ultimately, however, the narrator concludes that there is a “Me myself” that cannot be captured, either through data or narrative (1855 15).

As shown in the next section, in his later work Whitman once more turns his inquiring eye on these gaps and absences as well as on the “askers” themselves. In this way, he casts doubt on data’s presumed neutrality, adopting a more suspicious stance that reflects the shift from “small scale” data of the reform era to the “large scale” studies run by the state.

Counting Absence in “A Song for Occupations”

As Paul Starr points out, when it comes to social statistics, the “decisions about what to measure” are not always “rational,” and the development of the national census is a prime example of how these systems are inscribed with “changing political interests and ideologies,” including debates over how data should be interpreted and implemented in society (25). These “cycles of faith and skepticism” (ibid) move through and propel Whitman’s changing relationship with data in the first and second editions of *Leaves of Grass*, released in 1855 and 1860. In the first edition poems, Whitman celebrates the citizen

science of the reform era, but is at times more critical of data collection as a tool of the state apparatus.

The national census was (and remains) a contested and politicized space, and during Whitman's time there were heated debates over which information to include and exclude. The original director of the National Census of 1850 was Joseph Kennedy, a Whig supporter from Massachusetts. Kennedy was dismissed from office just months away from finalizing the census data. The official reason for his firing was for running behind schedule and over budget, both true, but Kennedy had also come under fire for pushing to include more comprehensive data on slaves and slave owners (Thorvaldsen 99). He was succeeded by James De Bow, a statistician and publisher of the popular Southern economic journal *De Bow's Review* (Anderson 57).

Perhaps to counteract his reputation for being the "semi-official spokesman" of the South (Durden 442) as well as an outspoken advocate of slavery expansionism, after being appointed head of the National Census Office De Bow took pains to appear unbiased. In the "Introductory Remarks" of the Seventh Census published in 1855, De Bow emphasizes the need for the census office to remain politically objective and above all to protect the facts. As he says, the record will always be "in some respects unreliable." Yet, he stresses that even imperfect data are better than none: "Is it necessary to grope in absolute darkness because it is impossible to have absolute truth? If the census of a people, for example, cannot be received implicitly, does it become proper and right to have no data whatever?" (De Bow 10).

However, after his tenure as Census Director ended in 1860, with Kennedy returning to the helm, De Bow was apparently no longer content to gloss over the "imperfections" in the official record. In a pro-Southern succession political pamphlet published the same year, De Bow returns to the matter of errors and exclusions in the census data, asking what they reveal about the motives of the datafiers. He casts suspicion on the way the population was

classified, arguing that the survey was designed to minimize the political and economic clout of the pro-slavery voting bloc. The allegation relates to the introduction of nominal (rather than household-based) data in the 1850 National Census, under which nearly all surveyed individuals were named. Enslaved people were the notable exception. Unlike “free” persons, slaves were identified only by number; neither were the slaves’ occupation, education, place of birth, or family status (married or with children) recorded. The little information that was collected—age bracket, gender, “color” (“black” or “mulatto”), and disabilities (“deaf, dumb, blind, insane, or idiotic”)—was added as part of a separate “Slave Schedule,” which remained in use up to and including the Eighth Census, the last national census before the Civil War. These exclusions not only dehumanized the enslaved population but limited the type of analyses about the data that could be made; for instance, making it harder to track the migration (and forced separation) of slave families.

Ignoring that it was *Southern* senators who introduced the amendments to restrict census data on slaves, De Bow insisted that the introduction of the Slave Schedule was a conspiracy against the South: “I have had reason to think, that the separation of the schedules of the slave and the free was calculated to lead to the omission of the single properties” (De Bow 3). He went on to claim, without providing evidence for the specific number, that the number of slaveowners had been undercounted by nearly 30,000, a curious accusation as he himself had, at the time, overseen the counts as Director of the Census Office (De Bow 3). However, he also made the point that if the slaveowner’s *entire family*, rather than just the owner, were counted, then the total numbers of slaveowners would swell from 347, 525 (as per the official count) to 2.25 million or one-third the population of the South (1850 Census 95, De Bow 3).

De Bow clearly had a political stake in the census count. While on one hand claiming that the census data was untrustworthy, on the other hand, when the numbers supported his

position, appearing to affirm the superiority of a unified (white, puritan) Southern culture (Maas 175), De Bow presented the data as indisputable truth. For instance, in the same pamphlet, he boasts that the Southern States had “maintain[ed] a more homogenous population and show a less admixture of races than the North,” concluding simply, and with an air of finality, “*This the statistics show*” (De Bow 8). In *The Southern Quarterly Review*, he went so far as to argue that the census data, which showed a relationship between vitality and ethnicity, was proof of separate, distinct races (De Bow “Unity” 1-50). In this context, De Bow’s previous plea not to return to the “darkness” of the pre-data era, which seemed like a reasonable call for non-partisanship, was not about sticking to the facts, so much as the “right” facts.

That said, De Bow raises valid concerns about the “we” that data purports to represent. As Anderson points out, systems of data collection, including what is left out of those systems, are often windows into the values and anxieties of a particular cultural moment (45). These exclusions, rather than being glossed over, should instead be interrogated, and not only for what they reveal about the datafied but also the datafiers. Recently historian Daniel Fountain revisited the 1860 Census data and found that De Bow was correct that slavery was not only an “elitist” system of a “wealthy aristocratic few,” and that when one includes free members who “liv[ed] and work[ed] in the same household” as part of the cohort of slaveowners, the system’s grip on the Southern states, with entire communities economically dependent on the bondage and forced labour of black people in some way, is shown to be much stronger (Fountain 444). Not only that, in cases where multiple owners “shared” ownership only a single owner was counted, which superficially decreased the count (Fountain 409). Whether these gaps and inconsistencies were due to the census-makers’ ignorance of slavery practices—the original schedule was, after all, designed by Kennedy, a Northerner—or were part of a concerted effort to “defuse tensions” between

slave and free states, in line with political concessions like the Compromise of 1850, the design of the schedules undoubtedly shaped how the census data was (and continues to be) interpreted. The controversy over the Slave Schedule also draws attention to how marginalized communities, including racialized communities, women, and the poor, have historically been represented within data studies, and raises the question of how different identities are instantiated through data and for what purposes.

Notably, in the first edition of *Leaves of Grass*, Whitman also draws attention to the incompleteness of the national record, though unlike De Bow, he argues that it is the heterogenous rather than homogenous character of America that is being suppressed. Whitman's poem "A Song for Occupations," published in the original edition of *Leaves of Grass*, at first reads like a census questionnaire, as though the speaker were himself a census-taker, checking off a list of boxes. Yet, he quickly breaks with protocol. Not content with the given questions, he wanders off script, probing other possibilities, other categories of people not counted. He begins with a survey: "I see not merely that you are polite or whitefaced... married or single... citizens of old states or citizens of new states... eminent in some profession... A lady or gentleman in a parlour... or dressed in the jail uniform... or pulpit uniform" (LG 1855 70). Here, he invokes the demographic categories of marriage status, residence, occupation, and class. The references to "jail uniform" and "pulpit uniform" allude as well to the widening scope of the American census, specifically the state's increasing interest in "social" or moral data. The 1850 National Census, for instance, included new sections on criminality and religious affiliation. At the same time, Whitman draws attention to those excluded, including slaves, indigenous persons ("Iroquois," "Esquimaux," "Bedowee," "tabounschik"), migrant workers ("Chinese"), and those without fixed addresses ("wandering nomad") (LG 1855 58). He resists, as well, the pressure to conform to fixed, stable categories. One of the first additions to the American census beyond population count

were age brackets, this information being especially valuable as it could be used to estimate both economic and military strength.⁶⁴ Yet, Whitman refuses to use these categories, instead opting for familiar terms like “grown, half-grown, and babe” that invoke the family unit as opposed to the state (LG 1855 58). In this way, Whitman critiques the urge to quantify a human being’s or a nation’s worth, pushing back against the desire to “rate” or “reckon” the value of the land and the people in it (LG 1855 60).

Whitman also shows how datafication can encode and replicate systems of oppression. He frequently draws attention to the unequal distribution of power in American society. These scenes of cruelty and subjugation undermine his proclamations of America as the land of equality and brotherhood. Consider the following description of a man being forcibly confined to an asylum: “The lunatic is carried at last to the asylum a confirmed case,/ He will never sleep any more as he did in the cot in his mother’s bedroom” (1855 30). Having been classified as insane, the diagnosis (“a confirmed case”) becomes the man’s identity. In fact, the scene is structured as though madness were his occupation, appearing as it does within a series of other jobs including that of hunter, pilot, carpenter, farmer, spinning-girl, and printer. His forced institutionalization is especially disturbing because it is set against other typical scenes of “work.” The list itself shows how the organization of information both enacts and conceals structures of power. The right classification can legitimize a person’s membership in society, while the wrong one can have the opposite effect. In this case, the title of “lunatic” not only facilitates the man’s segregation from normal society, identifying him as “other,” but also naturalizes it. His institutionalization is framed as an inevitability, inherent to his character: “at last... a confirmed case” (1855 30).

⁶⁴ During the development of the first National Census of 1790, James Madison failed to persuade the Senate to include questions related to occupation. However, a few of his other recommendations *did* make their way into the final survey, including questions about the gender and age of free citizens with males grouped into age brackets of under sixteen and sixteen and over. These divisions, by gender and age, are notable because they could be used to estimate the economic and military strength of the country, sixteen being the approximate years for entering the job market and for being drafted into the military (Eckler 5).

The use of classification to manage and control undesirable elements in society is reinforced by the shift to passive voice: while the other workers are “doers” that sing, dress, ride, heave, brace, retreat, and advance, the lunatic is the “done-to,” acted upon by the state. The “quadroon girl,” also included in the list, is likewise described in passive terms, as “sold at the stand” (1855 21). *Leaves of Grass* in this way pushes back against the bounded categories instilled by the state, but at the same time Whitman’s use of list-making draws heavily from non-literary writing forms, specifically the census directory.

The poem “Song of Occupations” responds to and amends the census category of “occupation,” one of the major additions to the 1850 National Census, by categorizing workers not by their job titles, but by the tools they use. The catalog of occupational tools is expansive, including approximately 175 unique objects, depending on whether you count variations of things (e.g. red and white) as separate objects. The density and richness of the terminology shows how language itself acts as a record or database of society, one that is far more inclusive and dynamic than the census. As Whitman shows, language is a tool for carving out new identities, creating space for emerging communities. American English, in particular, is used as a marker of belonging with certain word-usage indicating membership within a specific class, trade, or ethnic community, a relationship that is enhanced through the use of possessives like “stevedore’s hook,” “dentist’s instrument,” or “saw and buck of the sawyer” (LG 1855 62). Notably, Whitman’s focus is on working class men and women. The upper classes are underrepresented in Whitman’s lists, and only in rare instances does he include markers of wealth, such as the “lady’s wristlet” (ibid).

Stylistically, there are fleeting moments of description, in which Whitman builds a scene around a specific object, such as when he speaks of the “delicate swift-flashing paddles” and the “bonfire of shavings in the open lot in the city” (LG 1855 62, 63). For the most part, however, the word-pictures are formed through the items themselves. As Brad

Rittenhouse and Sudeep Agarwal note, Whitman's poetry is unusually "noun dense" ("Finding Data in a Literary Corpus: A Curatorial Approach"). The objects often stand alone, with few descriptors. Yet, even within the restrictions of the noun class, Whitman finds an immense possibility of forms. In addition to possessive nouns, he also uses object pairings (e.g. "vener and gluepot"), sub-classes (e.g. "pint measure and quart measure," "white and red pork") and parts within the whole (e.g. "column in the news," "walking beam of the steam-engine") to break up monotony and introduce new textures (ibid). The variation of rhythm creates interest and dimension as well as invoking a feeling of largeness and depth with the reach of Whitman's words seeming to extend beyond what is represented on the page. In addition, while the list primarily consists of tools or "things," Whitman also experiments with other modes of categorization. For instance, he shows how occupation can also be classed by action ("milking and herding," "irrigation and draining," "anchoring or mooring") and by space ("workshop, factory, yard, office, store, or desk") (LG 1855 61, 62).

The categories of art and science are, for Whitman, equally fluid. From his tool list, Whitman transitions into a deeper consideration of language. He contrasts the American lexicon with other databases: "the paper I write on or you write on... and every word we write... and every cross and twirl of. The pen... and the curious way we write what we think... yet very faintly;/ The directory, the detector, the ledger... the books in ranks or the bookshelves... the clock attached to the wall" (1855 75). In this way, Whitman aligns writing with other forms of technopoesis such as census-taking, accounting, and time schedules, as represented by the "directory," "ledger," and "clock." The pen and paper are instruments of science, tools not just for record-making, but of discovery.

The section closes with yet another instance of "tallying," but this time in the private, domestic sphere:

The cotton and woolen and linen you wear the money you make and spend;
Your room and bedroom your piano-forte the stove and cookpans,

The house you live in the rent the other tenants the deposite in the
savings-bank the trade at the grocery,
The pay on Saturday night the going home, and the purchases. (LG 1855 63)

Here, the tally itself is upheld as emblematic of modern American life, at level of not just the state but the individual. In the scene from the poem, which echoes that of the counting man depicted in Francis William Edmonds' *Taking the Census*, a worker calculates how much of his week's pay he can put into his savings after deducting expenses. The moment underscores how adept average Americans had become at basic financial calculations, and Patricia Kline Cohen has pointed out the connection between the rise of numeracy in America and the emergence of the free-market economy (Cohen 1999).⁶⁵ The act of calculating a household budget also mirrors, on a small scale, the trend towards data-informed decision-making. Just as the worker tallies his finances, the state enumerates its citizens in order to inform its policies. The closing lines reiterate how the act of tallying, collecting information on the state, can empower the masses and allow them to speak for themselves: "When the psalm sings instead of the singer,/ When the script preaches instead of the preacher" (1855 76-77).

In *Leaves of Grass*, Whitman presents the reader with not just an alternate census but an alternate "America," one that is not part of the official count. That said, Whitman ultimately amends and even extends, rather than rejects outright, the potentialities of data collection. What is more, as shown in the next section, even as he disavows the census, seeing its citizens as "not merely" reducible to quantifiable categories, he invokes the nationalistic and utopian dreams of its makers.

⁶⁵ For an in-depth discussion of the rise mathematics in the early nineteenth-century America, see Cohen.

Interdisciplinarity of Data: Building a Data Utopia

The interdisciplinary potential of data was crucial to the utopic vision of the early census makers, and its core sentiments are echoed in both the poetry and prose work of Walt Whitman. As touched on earlier, before Adolphe Quetelet made a name for himself as a moral scientist, he studied literature and had a passion for writing poetry.⁶⁶ Kevin Donnelly is quick to point out that the quality of Quetelet's creative work was uneven at best, ranging from "deeply moving" to "hackneyed" (Donnelly 44). Still, Quetelet's interest in poetry and literature clearly went beyond that of a mere hobbyist and would inform his later statistical work. For instance, in the poem "La Poète et La Raison," written 1821, Quetelet challenges the dualism between the sciences and arts by questioning whether art cannot also be "rational." Years later, Whitman would express similar sentiments in the essay "A Backward Glance O'er Travelled Roads," published near the end of his career in 1888. Reflecting on the making of *Leaves of Grass*, Whitman writes that modern poetry should "conform with and build upon the concrete realities and theories of the universe furnish'd by science," science being the "only irrefragable basis for anything, verse included..." (Whitman "A Backward Glance" 10). The American transcendentalists, with whom Whitman is sometimes grouped, were much more receptive to science and to positivist methods than their English Romantic predecessors.⁶⁷ Of course, 'moral science' was by then a well-established field. In his own time, Quetelet's interdisciplinary approach was initially met with skepticism. Upon release of Quetelet's *Recherches Sur le Penchant au Crime* in 1831, critics were keen to point out the limitations of his methods. One particularly harsh reviewer wrote that social statistics could never be applied to fields like art and philosophy, as artists look to what was "exceptional"

⁶⁶ Quetelet had a reputation for "carous[ing]" with artists and playwrights, even joining a literary society (Mailey 170-171). He also created art of his own, authoring forty poems and sixteen opera librettos (Donnelly 52).

⁶⁷ For a discussion of science and technology as a framework for American Transcendentalism, see Walls.

rather than what is “average” for inspiration ([Anon] ‘Review’ 188). Quetelet was apparently “stung” by this claim, as the use of averages to analyze the arts was “one of his strongest hopes” (Donnelly 137).

Not to be dissuaded by his detractors, four years later Quetelet published his best-known work, *Sur l’homme*, whose full title was translated to “On Man and the Development of his Faculties, or Essays on Social Physics.” *Sur l’homme* was the text in which Quetelet debuted his theory of the “average man,” a prototypical subject that embodies the mean physical and social characteristics of society. Significantly, the treatise also marks a return to the themes of his earlier poetry, in which he first proposed that reason and art might be natural companions. Here, Quetelet experiments with using statistical methods to answer humanistic questions. Most intriguing is his study of French and English playwrights, in which he attempts to characterize not the average but the exceptional elements of society (see fig. 2.7). Quetelet cross-references the age of the playwright with their publication rate, concluding that literary output peaks between ages 30 and 50 (Quetelet *On Man* 75). He further hypothesizes that artistic genius reaches its apex at the intersection of two traits: the ‘passions,’ which he linked to crime, and ‘reason and imagination.’ He notes, for instance, that criminal activity reaches its highest level, in terms of the age of the individual, just before that of literary output (Quetelet *On Man* 116, 133).

Quetelet’s experiments with measuring creative output demonstrate his insight into data’s “universalizing” power. Datafication, as he realized early on, makes information transferable, such that it can be cross compared between fields. Statistical methods, in other words, can transcend disciplinary boundaries. In the early 1960s, cybernetician Gordon Pask posited that bits and bytes provide a descriptive language for any measurable phenomenon, from the physical to the social, such that the same models can be applied to the “spread of disease” as to the “spread of rumours in a community” (Pask 32). Pask was speaking in

reference to the modern computational era, yet his theory holds true not just for computer languages but for the language of data at large. Geoffrey Bowker has argued that the advent of data marked the creation of a new ur-discipline, a “technology that span[s] all knowledge” (Bowker 84). Quetelet himself had ambitions for a “scientific empire” that would unite all fields (Porter 86), as can be observed in the vast range of subjects covered in *On Man*.

Whitman’s rhetoric, like Quetelet’s, rings with the “dream of a single meta science” (Bower 89). In “A Backward Glance,” Whitman writes: “the Old World has had the poems of myths, fictions, feudalism, conquest, caste, dynastic wars, and splendid exceptional characters and affairs, which have been great; but the New World needs the poems of realities and science and of the democratic average and basic equality, which shall be greater. In the centre of all, and object of all, stands the Human Being, towards whose heroic and spiritual evolution poems and everything directly or indirectly tend, Old World or New” (Whitman “A Backward Glance” 12). As shown in the next section, Whitman’s invocation of “the Human Being,” an embodiment of the “democratic average,” strongly recalls Quetelet’s concept of l’homme moyen, and would become a central motif in *Leaves of Grass*.

‘Leaf of Voices’: The Social Collective in *Leaves of Grass*

Previously, we considered how the speaker of “Song of Myself” functions as a citizen scientist, whose observations of othered communities reflect the reform era culture of research activism. Yet, Whitman also flirts with more grandiose and ‘divine’ visions of data as the cure for America’s widening political divisions, which increasingly threatened to tear the country apart at its seams. *Leaves of Grass*, in this way, captures a transformative moment in the history of data as ‘moral science’ became professionalized through institutions like the US National Census Bureau. The datafier is recast, no longer a common citizen but an extension of the state, who is granted increased powers of surveillance and control.

The utopian aspirations of the datafiers offer a different perspective on Whitman's treatment of deviance. As discussed, for Whitman the inclusion of the alienated and the downtrodden in *Leaves of Grass*—the lunatic, the prostitute, criminal and slave—is a way of bringing them back into the fold. Often his portraits of misery and suffering come across empathetically. Yet, even in the most intimate of moments, he reinforces the divide between surveyor and surveyed. In one scene, for instance, a prostitute is harassed by a crowd. They bait her with insults, her howls of fury only inciting further mockery. As readers, we experience her torment alongside her. We see the details of her existence, her “dragged shawl” and “tipsy and pimpled neck,” while her tormenters are nondescript. In an aside, the speaker stops to hail her: “(Miserable! I do not laugh at your oaths nor jeer you,)” (1855 31-32). The insertion of parenthesis asks the reader, like the speaker, to meditate on her pain, to pause in recognition of it. At the same time, the punctuation further walls her experience off. There is no direct interaction between the speaker and the subject, he speaks of her but not to her. The prostitute remains the subject behind the glass and he (and we as readers) the detached observer. In this poem, and others such as “the Sleepers,” there is also a sense of the intoxicating allure of being the watcher.

Following a change in government, the northern upstart Joseph Kennedy, booted from the Census Bureau in 1854, was once more reinstated as director of the Eighth National Census of 1860. In contrast to the more critical (if contradictory) position of the previous director James De Bow, Kennedy was an idealist. He believed data practice was almost godlike in its powers, in how it gave researchers the ability to capture a snapshot of the human condition. In an 1859 speech to the American Geographical and Statistical Society, he chooses words that reverberate with the divine. With the help of statistics, he contends:

The blind are taught to read; the deaf and dumb to express themselves, while sound mental faculties are restored to the insane; a thousand rills of mercy are put in motion, and the heart of man softened by the misery which is brought to light, appealing irresistibly to his humanity. (Kennedy 8)

‘Moral statistics’ are cast as a doorway to utopia, not just a way of uncovering the truth and bringing “misery... to light,” as Kennedy puts it, but awakening our better natures. In the same speech, the census director quotes Roman playwright Terence: “*Homo sum, humani nihil a me alienum puto,*” which translates to “I am human, and I think nothing of which is human is alien to me” (Kennedy 3). Kennedy believed that data could be used to build a better, more compassionate world, and he and other social reformers saw the census as part of a grander humanist vision.

In Whitman, as well, we see a strong sense of identification with the collective. Other scholars have referred to Whitman’s affinity for a kinship with his fellow men and women as a kind of transcendental spiritualism, but we might also understand it as his fascination with or attunement to this new notion of “society.” In modern times, we take the existence of collective human behavior and culture for granted. Whitman’s *Leaves of Grass* captures this shift in consciousness away from the elite and to the average. In the opening lines of “Song of Myself,” we see the speaker thinking through the concept of the social body. Here, the “limitless leaves” stand in for the collective, and in questioning what it is (“what is the grass?”) he considers what it means to exist within and be shaped by one’s social environment: “Now I make a leaf of Voices” and “what is it in me that meets them all... what is the relation between me and them?” (1860 240-241) The speaker himself is a compilation of shifting identities, an embodiment of society:

I am of old, of young. The foolish as much as the wise...
Maternal as well as paternal, a child as well as a man,
Stuffed with the stuff that is coarse, and stuffed with the stuff that is fine,
One of the great nations, the nation of many nations, the smallest the same, and the
largest the same,
A southerner soon as a northerner. (LG 1860 43)

He moves through various demographics, a veritable kaleidoscope of being. The speaker is a “comrade” to them all, “Of every hue, trade, rank, caste and religion” (1860 44). As poet,

Whitman is a compiler of information harvested from the masses. Much like Kennedy envisioned in his speech, such information endows him with divine powers: “I troop forth replenished with supreme power, one of an average unending processing” (1855 54; 1860 82).

The speaker is, it seems, not just “replenished” but transformed. Subsuming the information triggers a shift in point of view, in which he envisions himself not just as the datafier but the datafied. He becomes the average man that Quetelet spoke of, a composite of all peoples: “common features... common modes and emanations” (1855 55; 1860 83). While the modern definition of “mode,” as the most commonly occurring number in a dataset, had not yet come into being, the word was still used in mathematical contexts to refer to a method of calculation. For instance, American statistician Archibald Russel in his 1842 report to Congress regarding the sixth census writes of “modes of calculating” the proper apportionment of representatives (Remarks on the Apportionment of the House of Representatives 7). In this case, the use of “mode” in combination with the repeated words “common” and “average” underscores the statistical connection. The speaker as proxy for the datafied masses is featureless: everyone and no one: “Who is he? ... some south westerner? Is he Canadian? ...from the Mississippi country?” (1855 55; 1860 83). The emergence of the average man, which marks the birth of “society,” is compared to the coming of the messiah. Foreshadowing Kennedy’s later speech, Whitman describes the miracles of data. The “rising” of numberless corpses (1855 43), for instance, speaks to how mortality data can be used to archive and, in a sense, resurrect a nation’s history as well as predict possible futures.

Average Man as Antidote to ‘Terror’

Scrawled in the upper righthand corner of Whitman’s copy of S. G. Goodrich’s *The World as it Is, and as it Has Been: Or, A Comprehensive Geography and History Ancient and*

Modern (pub. 1855) is the poet's handwritten note to himself: "Look in Census Reports—" ("Cultural Geography Scrapbook" surface 3; see fig. 2.8). As discussed in the previous chapter, Whitman amassed large collections of clippings from newspapers, magazines, almanacs and gazetteers, whose marginalia offers further clues as to the sources of the demographic data in his poetry. Of particular note are Whitman's copies of S. G. Goodrich's *The World as it Is, and as it Has Been* and Roswell Smith's *Smith's Atlas of Modern and Ancient Geography* (pub. 1854), which are part of the "cultural geography scrapbook" collection housed at the Bayley-Whitman Collection at the University of Ohio. The artifacts are remarkable for just how much of Whitman they have absorbed—or rather, the *artifact*, singular. In fact, in a process echoed in the endless iterations of *Leaves of Grass*, Whitman took apart and recombined the almanac texts (and likely others) into a 1000-plus-page behemoth, filling his creation with annotations and supplementary material, including newspaper articles, pamphlets and handwritten notes (Cohen et al.).

The archive, which was assembled at some point between the publication of the first and second edition of *Leaves of Grass* (*ibid*), provides compelling evidence of Whitman's keen interest in the National Census. Both the Smith and Goodrich almanacs feature data from the 1850 census results, as prominently advertised in the book's descriptive blurbs. Inside the front cover of *The World as it Is, and as it Has Been*, Whitman has written a long list of topics, including several closely related to demography, such as language, religion, government, marriage, education, commerce, manufactures, and products. The above-mentioned note, a reminder to check the census reports, which Whitman emphasizes by boxing it off, appears on the same inner flap ("Cultural Geography Scrapbook" surface 3). Indeed, the material traces he left behind in the book strongly suggest that he must have done just that. Not only did Whitman read the reports, but he supplemented them with additional data. He cut and pasted the newspaper article "Statistics of Population and Religion" from

The New York Herald (19 June 1859, p. 5), which lists the populations of nations and of major religions, onto the title page of *The World as it Is, and as it Has Been* (“Cultural Geography Scrapbook” surface 175-176). On another page, Whitman affixed no less than four articles, on the distance between major US cities; the number of American universities, professors and students; the values of American crops; and the size of the US army (see fig. 2.9). The same page has two handwritten notes, “pointing” the reader to additional maps and tables in the back of the book (“Cultural Geography Scrapbook” surface 517-525). Whitman clipped out at least six other news reports on census stats, attaching them like footnotes to the relevant entry on the city, state, or country (“Cultural Geography Scrapbook” surface 401, 449, 699, 703 808, 857).

Whitman’s “cultural geography” marginalia hint, as well, at future poems: poems seeded, as it were, with data. On a page from *The World as it Is, and as it Has Been*, Whitman brackets a section titled “Progress of the United States,” which quotes from Congressman Robert Rantoul Jr.’s 1850 speech to commemorate the 75th anniversary of the American Revolution. Rantoul tallies America’s achievements since independence, including a nine-fold increase in population size and a forty-fold increase in wealth, “ratios of increase” that prophesize seemingly limitless growth. Whitman’s “Proto-Leaf,” which introduces the 1860 *Leaves of Grass*, harkens back to Rantoul’s “report” on progress:

Victory, union, faith, identity, time, the Soul, your-
self, the present and future lands, the indisso-
luble compacts, riches, mystery, eternal progress,
the kosmos, and the modern report (1860 6)

Like Rantoul, Whitman envisions an “eternal progress,” but one borne out through struggle and death, which undercuts its message of expansionism. The verse continues: “This then is life,/ Here is what has come to the surface after so many/ throes and convulsions” (ibid).

Much like Whitman’s scrapbook, which Cohen et al. call “a laborious and sprawling act of

union” (“Cultural Geography Scrapbook”), *Leaves of Grass* is knitted together with facts and figures. Whitman’s poetic assemblage shares, as well, a similar dissonance, its contradictions driving its frenetic energy.

Poems like “Proto-Leaf” and “Song of Myself” are patriotic rallying cries, whose tallies of workingmen and women are testament to the richness and vitality of the nation. At the same time, Whitman’s poems also reveal his anxieties about America’s future. Solomon et al. argue that our actions are primarily motivated by a fear of death. The need to manage and cope with this often unspoken “terror” underlies not just our individual behaviours but larger social phenomenon. When confronted with a threat, human beings instinctively seek out the safety of the group. Proving kinship with the group is a way to ensure protection, and one way to identify ourselves with the collective is by demonstrating that we share in its traditional values. For Solomon et al., this explains why periods of strife are accompanied by a rise in nationalism: “Nationalism acquires a sacred dimension when group identity is strengthened by the sense of being ‘chosen people’ of distinctive character and origin who inhabit a hallowed homeland with a heroic history and a limitless future. And those who die for their country are immortalized in song and story, ceremony and monument” (Solomon et al. 98). In other words, the belief that we are part of an enduring and sacred cause provides relief from anxieties around death.

For the same reason that people gravitate towards nationalism in periods of instability, we also look to “charismatic heroes” for reassurance. In *The Theory Of Social and Economic Organization*, Max Weber writes that in order to assuage our fears we seek out leaders who are “set apart from ordinary men and treated as endowed with supernatural, superhuman, or at least specifically exceptional powers or qualities. These are such as are not accessible to the ordinary person, but are regarded as of divine origin or as exemplary, and on the basis of

them the individual concerned is treated as a leader” (Weber 358-359). In other words, the legacy of the hero is proof that one can live on, which in turn gives credence to our own hopes for a continued existence beyond death. Whitman’s poet-prophet in “Song of Myself” rewrites Weber’s vision of the looked-for savior, with the “ordinary man” fulfilling the role of the “charismatic hero.” Time and time again, the speaker-as-average-man preaches the enduring immortality of the collective: “I acknowledge the duplicates of myself—the weakest and shallowest is deathless with me” (LG 1860 89). He, in turn, entreats the reader to recognize his or her own heroic potential, that she too might take her place amongst the everlasting cosmos: “there is no trade or employment but the young man following it may become a hero,/ And there is no object so soft but it makes a hub for the wheeled universe,/ And any man or woman shall stand cool and supercilious before a million universes” (LG 1860 101-100).

The new leaders of Whitman’s democratic America stand in contrast to the classic “superhumans” of the aristocratic past. Far from being exceptional, the heroes of *Leaves of Grass* are “common” workingmen and workingwomen. According to Weber, charismatic heroes exist outside of the “real of everyday routine.” The “authority” that these figures command is opposite to that of “bureaucratic authority,” in that it defies “intellectually analysable rules” (Weber 361). The “average man,” by contrast, is calculated into existence. As Hacking points out, such an individual does not exist in the world, any more than the average family of 2.52 children exists, only as a concept (Hacking 107). Even so, data command authority. Not only because of their presumed objectivity, but in how they purport to speak for and through the masses.

At one point in “Song of Myself,” Whitman addresses an unnamed you, not the reader in general but the datafied subject, a “tally” or record of society: “sum of all known reverence I add up in you” (1860 149). In invoking the average man, Whitman consciously breaks with

and remakes the charismatic hero, and in doing so forges a new, uniquely American mythology: “All sculpture and monuments and anything inscribed anywhere are tallied in you,/ The gist of histories and statistics as far back as the records reach is in you this hour—and myths and tales the same” (1855 73; 1860 149). Much like Kennedy, Whitman extolls the virtues of datafication using patriotic language. Whitman situates America amongst the great civilizations and, in keeping with a tradition that dates to the early days of enumeration, cites the national census as a “monument” to its strengths.

Yet, the prominence of the charismatic hero in *Leaves of Grass* is also symptomatic of the political turbulence of the antebellum era, which was rooted in a lack of consensus about what America, at its core, stood for. Notably, Adolphe Quetelet’s worldview was shaped by a similar period of national reckoning. Perhaps not uncoincidentally, the field of moral science arose from the ashes of violence, coming as it did on the heels of the French Wars and the Belgian Revolution of 1830. Quetelet’s astronomical observatory was, in fact, stormed during the uprising and was the site of a fierce battle. Historian Theodore Porter argues that the Belgian scientist’s experience with the madness of revolution inspired his theory of the average man, causing him to seek out proof of an underlying social order that would endure even in periods of seeming chaos (Porter *Rise of Statistical Thinking* 56).

Leaves of Grass is also a response to a crisis of national identity. In “Song of Myself,” the sea embodies the anxieties of living in a divided nation. Where the grass is the promise of life-giving order, the ‘multitudes’ of America unified through the social body, the sea is unmanaged chaos and death. In the context of the pre-civil war period, the tumultuous waters are a marker of the growing tensions between the north and the south and a portent of the coming violence: “Sea breathing broad and convulsive breaths! ... Sea of unshovelled and always-ready graves” (LG 1860 51). The imagery speaks to an America grown unsteady, but that was also by its nature inconstant and changeable. Like *Leaves of Grass*, the national

census was record of the country's many faces, proof of the ways in which its demographics were continually evolving, shaped and reshaped by rapid economic changes and by waves of immigration and emigration. "Song of Myself" is in part an anthem for a fractured nation, one that increasingly seemed at war with itself: "Partaker of influx and efflux— extoller of hate and conciliation" (LG 1855 27; LG 1860 51).

At the same time, Whitman shows that to "partake" in democratic society is to embrace its contradictions. The language of give and take—"influx and efflux"—speaks to the political divisions, but also the necessity of negotiation and compromise. American people are, moreover, framed as uniquely adaptable. There is instability, but also a willingness to reinvent oneself. Most important, for Whitman there is still an "enduring" core. In democratic nations, the people are unified on the basis not of religion or politics or aristocracy, but of the notion of society. Society, as "embod[ied]" by the average man, becomes the organizing principle of the nation (Gigerenzer et al. 42-43). Whitman takes his cue from the national census in how he uses the act of tallying to create a sense of unity and build a coherent identity out of these various, contradictory parts. The notion of society becomes, for Whitman, an antidote to death: "It is not chaos or death — it is form, union, plan — it is eternal life — it is HAPPINESS" (LG 1855 54; LG 1860 103).⁶⁸

One of the ways the census works to unify the nation is through the act of collective participation. As Paul Starr points out, the national census remains one of the few activities in which nearly all residents take part (31). The American census is far more inclusive than the right to vote, for instance. This was especially true in the mid-nineteenth century, when suffrage was still largely restricted to white males. Likewise, the endless tallies in *Leaves of Grass* communicate to the reader that she is part of something greater than herself: a citizen of society. At the end of the poem, the reader has been firmly inducted into the collective. For

⁶⁸ The 1860 edition of *Leaves of Grass*, unlike the 1850 edition, prints "HAPPINESS" in all caps.

the speaker, the feeling of “oneness” with America fills her with ecstatic pleasure. As per Solomon et al., to realize that you are part of a larger, enduring cause is to conquer death. In “merging” with society, she experiences a euphoric sense of invulnerability. The turbulent seas, a recurrent reminder of mortality, no longer holds the same terror: “Long have you timidly waded, holding a plank by the shore, Now I will you to be a bold swimmer, To jump off in the midst of the sea, rise again, nod to me, shout, and laughingly dash with your hair” (LG 1855 52; LG 1860 98). The reader can face down death (by leaping into the sea) and laugh, assured that she will “rise again.”

‘America Always!’: The American Census at War

Whitman’s nationalist project helps explain the conservative turn in the 1860 *Leaves of Grass* edition, not just in his treatment of data, but his more restrained poetic form. Consider the aforementioned poem “Chants Democratic,” which was a later addition to the 1860 version:

The seven millions of distinct families, and the same
number of dwellings—Always these and more,
branching forth into numberless branches;
Always the free range and diversity! Always the
continent of Democracy! (159)

As in poems such as “A Song for Occupations,” the diction of “Chants Democratic” is rife with statistical terminology. The term “dwellings,” for instance, refers to the category of “household dwellings,” the unit of measurement by which the census data was collected and grouped on the census forms. The geographic imagery of the passage also reflects the new graphical dimension of the census. The first census map was published in 1854 as part of James De Bow’s *Statistical View of the United States*, which is also referred to as the Compendium edition of the 1850 Census (1850 Compendium 30; see fig. 2.10). The diagram divides America into four regions based on drainage systems: Mississippi Valley, Pacific

Slope, Gulf Slope, and Atlantic Slope. Whitman refers to these regions in the same poem, immediately before the section on populations:

Always the vast slope drained by the Southern Sea
—inseparable with the slopes drained by the
Eastern and Western Seas,
The area the Eighty-third year of These States—the
three and a half millions of square miles,
The eighteen thousand miles of sea-coast and bay-
coast on the main—the thirty thousand miles
of river navigation... (159)

Written in 1859, the “Eighty-third year of These States,” the poem showcases America’s territorial acquisitions: the annexation of Texas in 1845 and Oregon Country in 1846, the Mexican secession in 1848 and the Gadsden purchase in 1853. Though the poem appears to celebrate America’s westward expansion, it also hints at the political crisis sparked by these actions. The addition of these new states ignited a fierce debate between pro and anti-slavery factions over the power of the federal government to restrict slavery. “Chants Democratic” responds to these anxieties with calls for unity. The repeated mantra, “America Always” (LG 1860 159), is reflected in how the census maps are represented. Even as Whitman marks the geographic divisions—the southern, eastern and western slopes—he insists on their “inseparability.”

The politics of the antebellum era provides insight into how Whitman’s conception of data had changed from his journalism days. As discussed in the previous chapter, as editor of *The Brooklyn Daily Eagle*, Whitman celebrated the rationality of data and accused rival papers of fudging numbers for political gain. What then to make of the “errors” and slippages in Whitman’s “Chants Democratic” data? He inflates numbers, adding an additional half-million square miles to the territorial span, to exaggerate the “largeness” of America. Contrary to Whitman’s suggestion, the number of dwellings is also not equal to the number of families, as multiple families, in addition to domestic workers and other non-family

members, might live together in one house.⁶⁹ The Bureau estimates that there are “roughly” six persons per household, from which they approximate that the proportion of families to dwellings is 1.07 to 1 (1850 Compendium 100). Whitman imposes unity onto the data, smoothing over the irregularities. In the same way, in the 1860 edition of *Leaves of Grass* he reins in the more free-wheeling style of the 1855 debut, eliminating the ellipses and grouping the lines into numbered stanzas.

As discussed, the leaders of the reform movement brought social statistics into the mainstream, but also transformed it into an ideological weapon. In the lead-up to the civil war, there were worries about what the census data might reveal. On Capitol Hill, who and what “counts” becomes a point of fierce debate, which culminated in the firing of De Bow’s predecessor Joseph Kennedy at the Census Office just months before publication. When Civil War breaks out in 1861, the Eighth National Census, once more under the helm of Kennedy, was partway complete. For all his proclamations of moral science as a bastion of reason and objectivity, whose insights serve to “alleviate misery” and “elevate humanity” (Kennedy 4), the census became more politicized under his leadership. After Congress passed a “war statistics” resolution in 1862, the Census Bureau becomes an extension of the War Department (Anderson 69). The Northern States exploited their access to the census schedules, using their knowledge of the population and the distribution of resources to plan their attacks (Anderson 68-69). General William Tecumseh Sherman went so far as to state that “no military expedition was ever based on sounder or surer data” (ibid 69). Data visualizations were used not only for military intelligence, but as propaganda tools. Using census data, army cartographer Erwin Hergesheimer created a map of the populations of slaves in the southern states, as pictured in Figure 8. Hergesheimer’s map, which measured

⁶⁹ In the Seventh Census introduction, James De Bow points out that the Census Bureau did not collect data on how household members were related, which he argues was a gross oversight. As a result, it was difficult to ascertain the number of families and average size of the family unit (1850 Compendium, 47).

over two feet across, was sold to raise funds for the war efforts (Hergesheimer). The signed statement from Kennedy, which appears on the bottom left, confirms that the census director himself reviewed the map and attested to its accuracy: “After a careful examination of the above very interesting map I am prepared to state that it not only furnishes the evidences of great care in its execution, but can be relied on as corresponding with the official returns of the 8th Census” (ibid). The dream of the national census as “union” and “plan” had come to pass, but not as its makers had envisioned. Instead of unifying America through appeals to compassion and shared humanity, the census becomes a tool of war and domination.

Ed Folsom argues that Whitman’s experience with the Civil War caused him to become more suspicious of numbers and of positivist science more generally, citing Whitman’s *Drum Taps* as evidence (162). Yet, the range of poetic styles and form on display in Whitman’s 1865 civil war poems collection tells a more nuanced story about Whitman’s break with data. At least initially, Whitman was not averse to statistics, incorporating them freely into his wartime verse. In the opening poems of *Drum Taps*, which describe the marshalling of war, Whitman disbands with the more critical tone of “Song of Occupations,” and evokes the census non-critically as a way to forward his nationalist agenda. In the poem “Banner and Pennant,” the parade of numbers is a demonstration of power: “Over the area spread below, the three millions of square miles—the capitals,/ The thirty-five millions of people—O bard! in life and death supreme.” The allusion to “death” underscores the importance of demography as a tool of wartime propaganda. Much as in the early days of independence, the publication of census data sends a clear message to potential enemies. The numbers are a veiled threat: “we can be terror and carnage also” (*Drum Taps* 13). Likewise, in the poems “Prelude” and “Poet” the lists of geographic places and of occupations are meant to inspire awe and to “[over]whelm” the senses: “Pour in! overwhelm that which asks, which sings, with all, and the yield of all” (*Drum Taps* 14). There is a conformist undertone

to these poems, in which the speaker urges the reader to fall in line and “devote” him or herself unreservedly to the cause: “devoting the whole identity, without reserving an atom” (ibid). The rollcall of states—“my Illinois fields, and my Kansas fields, and my fields of Missouri”—are used to churn up patriotic sentiment as well as to urge the reader to submit to the group ethos, as signified by the towering “CONTINENT,” written in all caps (ibid).

Numbers and lists take on a different significance, however, when the troops face battle and the “terror and carnage,” thus promised, comes home. During the war, Whitman secured a job in the capital, using his free time to volunteer at the army hospital. As a government worker, responsible for copying and delivering reports, reams of data must have passed through his hands. Much like during his editorship at *The Brooklyn Daily Eagle*, when he scouted the wires for breaking news, he was witness to the information machine at work. Yet, during this period, when war statistics were featured prominently in both government reports and the news media, they are conspicuously absent from Whitman’s poetry. In poems such as “The Dresser,” which draw closely upon his experience nursing injured soldiers, Whitman refuses to “count casualties,” instead seeking to convey an unquantifiable depth of loss. He describes passing dreamlike through “rows of the hospital tent... long rows of cots, up and down, each side.” Instead of repeating initial words, as Whitman often did when reciting lists, the repetition is couched within a single line. He talks, for instance, of the “refuse pail.... to be fill’d with clotted rags and blood, emptied, and fill’d again” (*Drum Taps* 32). The internal stammer has the opposite effect of the pulsing grandeur of poems like “Chants Democratic,” the preacher of numbers replaced by a dazed man. Ed Folsom notes how, in drafting his war poems, Whitman “scribbled out” letters and inserted apostrophes, as though consciously marking absence (Folsom 162). These deletions have a dual effect, standing in not just for the “sums” of dead, but as a “summons” or call to “witness this mass death and, grotesque as it may seem, ingest it, live off of it, make a future out of it” (Folsom

158). Parentheses, as well, break open Whitman's prose and collapse time and space. The punctuation signifies the unending demands of the work as well as the way trauma distorts memory: "On, on I go— (open, doors of time! open, hospital doors!)" (*Drum Taps* 32). Within the marked pause the speaker confronts split versions of himself. The moment unsettles our perspective, seeming both to envision the future and to recall the past.

In "Year of Meteors (1859-1860)," one of the latter additions to the *Drum Taps*, Whitman reflects on the poems he wrote at the war's outset. The remarkable poem is a meta-commentary on the rest of the collection that describes the poet re-reading his past verse. As he "flits" through his notebook, he appears struck, among other things, by how the phenomenon of census-taking contributed to a particular cultural moment, capturing the sense of urgency and purpose of the pre-war years:

I would sing in my copious song your census returns of
The States,
The tables of population and products—I would sing of
your ships and their cargoes (*Drum Taps* 51)

Whitman recalls the brilliance of those numbers, which seemed to attest to the enduring and sacred quality of the nationalist cause. Now, he reads them with foreboding, acknowledging that the events that unfolded were not all-glorious, but rather "mottled with good and evil" (*Drum Taps* 52). His disconnection from the optimism of the pre-war era shows in his urge to edit and "patch" over his prior verses: "would I gleam and patch these chants" (*ibid*). By retaining them, however, he tells a truer story of the events that unfolded. Likewise, Whitman's "fitful" and at times contradictory engagement with data reflects America's similarly contentious relationship with the national census, as it underwent a period of expansion.

In the later editions of *Leaves of Grass*, Whitman drifts away from lists and tallies. He retreats, as well, from the use of concrete numbers and stats, with his numeracy and his prose

at large becoming increasingly abstracted (Warren 138).⁷⁰ Whitman's stylistic turn could be, in part, attributed to his experience with the Civil War. Yet, it also reflects an epistemological turn in how data science was being practiced. As discussed, as 'moral science' becomes incorporated into the state apparatus vis a vis the Census Bureau, data increasingly takes on mysterious and unknown proportions; becomes, in a sense, abstracted, a process that manifests in Whitman's idealization of and later estrangement from data. In this way, the material character of *Leaves of Grass*, much like the census documents themselves, speaks to its author's informational ethos. The ever-expanding editions of *Leaves of Grass* are, at once, a transgressive vision of an America that exceeds its boundaries and that cannot be contained. Yet, it is also a commentary on data as the unfathomable and the sublime, as that which finally exists at a scale beyond human comprehension.

Finally, in documenting the "manyness" of American society, *Leaves of Grass* also draws attention to its stratification and, in doing so, to the contradictions at the heart of the reform movement. As detailed in Whitman's "march of the deviants," that some groups benefit from the subjugation of others suggests that oppressive systems are held in place by more than simply ignorance on the part of the oppressors and, thus, that the will to change cannot be mustered through 'studies' alone. Yet, the reform-era hunger for information is alive and well today. Dylan Robinson, in *Hungry Listening*, criticizes the "prevailing atmospheres of reconciliation" regarding settler colonialism, which predicates reform on the "extraction" of indigenous knowledge (14). As Eve Tuck points out, the "extractivist perception" of social change, which I would argue originates in the "moral science" of the nineteenth century, places the agency for change with the oppressors rather than the oppressed (Tuck 160; Robinson 17-18). What is more, it overlooks the ways in which the

⁷⁰ James Perrin Warren argues that in the later editions of *Leaves of Grass* Whitman's diction becomes ever more "archaic, formal, [and] abstract" (138). Warren attributes this stylistic change to Whitman's failed attempt to merge "ancient and modern" forms, in order to better encapsulate the linguistic "ensemble" (ibid).

hierarchies of power, which the reformers claim to oppose, can be written into and reinforced through information gathering methods. With that in mind, the next chapter shifts focus from the citizen-science-led datafication movement to its anti-data counterpart, as captured in Melville's south seas narratives and the counter-dataveillance tactics of maritime workers.

Indiscipline and Punishment Aboard Melville's Man-of-War

Intro

On August 18, 1843, Herman Melville, entered on the crew list as No. 572, boarded the USS Frigate *United States*, the start of his fourteen months of service in the US Navy (see fig. 3.1). The author's first impression of the military, as recorded in his novel *White-Jacket; or, The World on a Man-of-War*, was the disorienting experience of being *encoded*:

White-Jacket, for one, was a long time rapt in calculations, concerning the various "numbers" allotted him by the *First Luff*, otherwise known as the First Lieutenant. In the first place, White-Jacket was given the *number of his mess*; then, his *ship's number*, or the number to which he must answer when the watch-roll is called; then, the number of his hammock; then, the number of the gun to which he was assigned; besides a variety of other numbers; all of which would have taken Jedediah Buxton himself some time to arrange in battalions, previous to adding up. All these numbers, moreover, must be well remembered, or woe betide you. (18)

In the twenty-first century, Melville's experience has become commonplace. As David Lyon points out, from social security numbers to IP addresses, we increasingly live not just in the physical world, but in information systems. To take part in modern society, "we must produce documentary evidence" that proves who we are. As such, in our day-to-day interactions—cashing a check, picking up a prescription, making a purchase, browsing the internet—we leave behind endless 'traces' of ourselves" (Lyon 4). In other words, tracking human behavior through data collection, known as "dataveillance," has been normalized (Raley 124). Surveillance has, in the process, become a condition of participating in modern society. There are, undoubtedly, benefits to monitoring and collecting human data. Surveillance can ensure what political theorist T. H. Marshall calls "social rights," or the "right to share in the full heritage and life of a civilized being according to the standards prevailing in society" (Marshall 8; qtd. Lyon 32). National registry programs, for instance, facilitate enfranchisement, allowing citizens to be treated as "political equals" (Lyon 32). As

explained in the previous section, the notion of data as a democratizing force dates back to the nineteenth-century social reform movement, as expressed in Whitman's poetry of the "multitudes." Yet, Lyon counters that, perhaps because of its benefits, the expansion of surveillance society has gone largely unchallenged and, even, unnoticed (13).

Melville's writings, as with Whitman's, were embedded within the antebellum culture of protest and reform. *White-Jacket* is a social reform novel that is highly critical of the US Navy, particularly the brutal and "inhumane" practice of flogging. In fact, the release of the book was "shrewdly timed" to coincide with a proposed bill that sought to abolish the Navy's use of corporal punishment (Ship Log 7-8; *Anderson Journal* 8). However, *White-Jacket* is not just an anti-flogging novel, but a warning against the emergence of surveillance society. In this, the most modern of his works, the author presents a vision of a dystopian future, in which a person's every move is cataloged and recorded. Similarly, in *Omoo*, based on the real-life mutiny of the *Lucy Ann*, the whalers are treated as prisoners aboard their own ship, and must use their knowledge of maritime law to outwit their superiors.

Documents figure prominently in both works, from the official logs to the consular testimonies and from the Articles of War to the shipping contracts. As Melville shows, these documents functioned not just as tools for collecting and managing information, but also as tools for surveillance. Yet, Melville does not discard or reject these tools, but rather strategically redeploys them, in order to turn the surveilling eye of the state against itself. The exposure of "delinquency from above," as described in Michel Foucault's *Discipline and Punish*, was a core tactic of reform-era workers, who resisted the penal systems imposed by both their employers and the state (287). For Foucault, the panoptic machine continually drives towards not just "amplification" but "*diffusion*" of power, such that it becomes integrated into the social fabric; as such, what seems like "revolt" merely feeds back into the disciplinary system (207, 120). Yet, the crucial question for the reformers, and as we shall see

for Melville, was not how to dismantle these information systems, but what might it mean to democratize them.

Foucault was highly suspicious of the “humanizing” aims of the 1840s reform movement, in which anti-flogging was one of many causes that were taken up. In *Discipline and Punish*, he emphasizes that the goal of moral improvement, or the shift from punishment to “treatment,” justified surveillance. After the mid-nineteenth century, discipline is increasingly enacted not through physical pain or suffering, but rather through an unending series of “judgements” or “examinations,” in which the individual is measured against the norm (184). In other words, the reformers put an end to the spectacle of punishment, in the form of flogging and public executions, but not to punishment itself. Contrary to popular misconception, punishment in “civilized” society has not disappeared, but rather has been subsumed and distributed, with the evaluation and surveillance of the human subject incorporated into the fabric of our social institutions: “The judges of normality are present everywhere. We are in the society of the teacher-judge, the doctor-judge, the educator-judge, the ‘social worker’-judge; it is on them that the universal reign of the normative is based; and each individual, wherever he may find himself, subjects to it his body, his gestures, his behaviour, his aptitudes, his achievements” (304). As such, the punitive system not only acts upon lawbreakers, but rather all persons in society.

However, the totalizing systems proposed by Foucault and other poststructuralists have troubling implications for agency. If we are at all times subject to forces beyond our control, is true criticism or revolt still possible? Indeed, Foucault suggests the carceral system is rarely questioned, not only because of the subtle and diffuse ways in which it is implemented, but also because of the “authority” that science lends it: “That the grip of the prison on the penal system should not have led to a violent reaction of rejection is no doubt due to many reasons. One of these is that, in fabricating delinquency, it gave to criminal

justice a unitary field of objects, authenticated by the ‘sciences,’ and thus enabled it to function on a general horizon of ‘truth’” (255). Foucault here draws attention to the constructedness of scientific truth. At the same time, he does not call for all science (or data) to be dismissed as fantasies or “fairy” stories, as Bruno Latour suggests (237), and to accuse him of being anti-science would be a misinterpretation of his ideas.

As explained in the previous two chapters, the “measurement,” or as I would put it the datafication of human beings as a methodology, results in the creation of various fields of study, including but not limited to sociology and psychiatry. For this reason, Foucault refers to the carceral system as a knowledge-producing machine that drives human progress (27-28). In other words, society relies on the production of “truth” to function. In a 1978 interview, Foucault acknowledges that to topple such a system might, for this reason, not only be impossible, but unwise:

One of the essential sociological features of the recent evolution of our societies is the development of what might variously be called technology, white-collar workers, the service sector, etc. Within these different forms of activity, I believe that it is quite possible, on the one hand, to get to know how it works and to work within it, that is to say, to do one’s job as a psychiatrist, lawyer, engineer, or technician, and, on the other hand, to carry out in that specific area work that may be properly called intellectual, an essential critical work. When I say “critical,” I don’t mean a demolition job, one of rejection or refusal, but a work of examination that consists of suspending as far as possible the system of values to which one refers when testing and assessing it. (Foucault “On Power” 107)

Foucault here suggests that it is, indeed, possible to resist the system from within. Yet, he reaffirms the limitations of critique, given the constraints within which it must operate, and, in turn, shies away from describing its potential shape. One must return to his earlier work to better understand what Foucault means by “critical work.”

Foucault’s position in the 1978 interview appears to represent, not a departure, but perhaps a softening or adjustment of his earlier stance. *Discipline and Punish* is, on its face,

much bleaker. However, in the chapter “Illegalities and Delinquency,” he presents a clearer picture of the “tactics” of revolt, which he terms “indiscipline.” Notably, he looks to revolt, not in the present day, but as it existed in the reform era, during the formation of the carceral system. Foucault explains how workers’ newspapers rebelled against the prevailing narrative of crime, and rather than demonising the poor instead looked to social causes. He points to the crime reporting in the Fourierist newspaper *La Phalange*, in which the criminal is repositioned as the antihero and crime as form of ‘liberation’ from an oppressive system. The tone and style of the story is markedly different from the tabloid-style coverage favoured by the popular media, often packaged as “fait-divers” or “news-in-brief,” which consisted of sensationalistic titbits devoid of analysis. Instead, *La Phalange* chose to print a transcript from a typical court hearing. The accused was on trial for the rather mundane crime of vagrancy; yet the reporter dissects the exchange between the judge and the accused in great detail. Foucault marvels at the “importance” the author bestowed on such an ordinary court proceeding: “The Fourierists saw in such an everyday affair a play of fundamental forces. On the one hand, that of ‘civilization’, represented by the judge, ‘living legality, the spirit and letter of the law.’ It had its own system of coercion, which seemed to be the code, but which in fact was discipline” (291). On the other hand, continues Foucault, was the vagrant, whose transient status refuses categorization, and so is set in opposition to ‘civilization.’

Foucault further notes how the “ruptures” caused by indisciplinary acts inscribe themselves on language. He points out another exchange between a judge and an accused, as recorded in *Gazette des Tribunaux*, in which improper speech becomes a form of rebellion:

Confronted with discipline on the face of the law, there is illegality, which puts itself forward as a right; it is indiscipline, rather than the criminal offence, that causes the rupture. An indiscipline of language: incorrect grammar and the tone of the replies indicate a violent split between the accused and society, which, through the judge, addresses him in correct terms. (291)

As shown in the transcript, the formalities of courthouse are at odds with the brash, almost unconcerned air of the accused. He shrugs off his sentence, “Two years, that’s never more than twenty-four months. Let’s be off, then” (*Gazette des Tribunaux*, August 1840, qtd. 291). In this way, the criminal’s unruly speech confirms his rejection of civilized society and, in turn, his embrace of the “wildness” of liberation. Similarly, the Fourierist newspaper *La Phalange* celebrates “disorder” as a sign of the indomitability of the human spirit: “Through all these minute disciplines it is ultimately ‘civilization’ as a whole that is rejected and ‘wildness’ that emerges: ‘It is work, it is laziness, it is thoughtlessness, it is debauchery: it is everything except order’” (*La Phalange*, 15 August 1840, qtd. 292).

Foucault marvels at the provocative insights of the reform-era publication and, in fact, struggles to reconcile the Fourierists’ hostility to order with the ascendance of the carceral system, which he argues was achieved during the same period. In the end, he regards *La Phalange* as exceptional, an unexplained outlier: “No doubt the analyses of *La Phalange* cannot be regarded as representative of the discussions that took place in the workers’ press at this time on crime and penalty” (291).

On the contrary, I argue that “indiscipline” was integral to the reform movement, and in fact strategic indiscipline, which revolts against the surveilling eye and turns the tools of the datifiers against themselves, was employed both in organized labour and in reform-era literature. Like the vagrant criminal of *La Phalange*, the protagonist of *White-Jacket* refuses to be ‘placed.’ Both his physical location on the ship and his station within the hierarchy of the navy are shifting and indeterminate. Much as in *Moby-Dick*, in his South Seas stories Melville borrows from non-literary genres. The mixed modes function like unruly speech to counteract the ordering influence. Yet, Melville does not wholly cast off these organizational systems, but rather seeks to make them visible and, in doing so, not only draws attention to the “play of forces” but also shifts the playing field.

In taking this position, my approach to surveillance theory departs from Foucault, who is highly skeptical of our capacity to step outside the system, even briefly: counter-surveillance is simply surveillance multiplied. In contrast to Foucault, Anthony Giddens argues that the inescapability of the system is, in a sense, beside the point and does not hinder the capacity of “ordinary citizens” to alter its dynamics:

no matter how imbalanced they may be in terms of power, actors in subordinate positions are never wholly dependent, and are often very adept at converting whatever resources they possess into some degree of control over the conditions of reproduction of the system. In all social systems there is a dialectic of control, such that there are normally continually shifting balances of resources, altering the distribution of power. While it is always an empirical question just what power relations pertain within a social system, the agency/power connection, as a connection of logical entailment, means that an agent who does not participate in the dialectic of control ipso facto ceases to be an agent. (*Dialectic of Control* 199)

In other words, for Giddens, total institutions exist only in theory, as absolute power over another could only be attained if that subject “cease[d]” to be an agent, as in the case of an automaton (*Dialectic of Control* 199). Even in extreme scenarios, the subject is not wholly powerless and can often summon the means to affect her situation and “make a difference in the world” (198).

In *Discipline and Punish*, Foucault is not concerned with the mechanisms of surveillance: the specific technologies or systems of information organization. The panopticon is pure analogy, a “utopia” or “perverse dream” of the perfect disciplinary (or knowledge producing) machine (225). In contrast, the machines of datafication, not in the ideal but rather as they existed, with all the glitches and bugs intact, form the core of my study. Melville’s south seas novels engage and disrupt those machinic operations from within the assemblage of nineteenth-century surveillance systems. The “ruptures” in these systems of data collection — the clumsy and contradictory ways in which they were implemented and the ways in which they were hacked — reveals much about how information systems are

entwined with our social and cultural institutions. As Lyon points out, new technologies can both help and hinder the capacity of citizens to “answer back” and shift the dialectics of power (38, 117). In the current moment, cell phone recordings of police brutality have played a central role in galvanizing the Black Lives Matter movement. As shown in Melville’s south seas novels, in the nineteenth century the sailor’s journal performed a similar function, with seamen subverting their ‘watch’ duties by ‘watching’ and reporting on the abuses committed by their superiors. At the same time, through the melding of fact and fiction, which anticipates the mixed modes of *Moby-Dick*, Melville interrogates the constructedness of data as recorded in the official logs.

Omoo

Published in 1847, *Omoo* is based on the Melville’s experience of the real-life mutiny of the crew on the Australian whaler the *Lucy Ann*. Maritime labour conditions in the nineteenth century were uniquely well documented, in part because it was standard practice for vessels to be equipped with an arsenal of data gathering tools, the most essential of which was the official logbook. Watch duty was shared amongst the entire crew, with the first mate typically responsible for entering the data into the logs. Some of these observations concerned oceanographic and navigational data, such as wind strength, speed, and direction; depth of the water; barometric pressure; air temperature; and distance and direction of the vessel’s travel. Other data concerned the activities of the crew: the reading of prayers; punishments; injuries, illness, and death; and acquisition of new recruits. The logbook was not the only form of record-keeping. Further details of the *Lucy Ann* mutiny can be pieced together from the ship’s articles, crew list, ship register, consular certificates, insurance forms, and seamen’s protection certificates, not to mention the journals and memoirs of crew

members, including Melville's own account. From these documents, one can gather an extraordinary amount information about the labour conditions precipitating the revolt.

These systems for gathering maritime data, particularly as it relates to work conditions, emerged through a series of legislative changes enacted in the first half of the nineteenth century. American vessels were required to collect ever-more extensive data on their labour practices to legally operate (Raffety 75-76). These requirements were couched in the discourse of moral reform. In 1835, the New York Circuit Court announced that it was "the duty of the court to *watch over* and *protect* the rights of seamen" (Cadmus vs. Matthews 229, qtd. Raffety 44). In the ruling, the state is cast as a "protector," whose "duty" is to intervene on behalf of the worker to prevent exploitation. However, as Matthew Raffety points out, curtailing the powers of ship masters and officers also enabled the federal government to increase its control over maritime trade (46). Indeed, though the state's surveillance powers, or the "duty to watch," certainly expanded, the protections the state offered ordinary seamen were sorely lacking, and often served the powers it claimed to be holding in check. Seaman had to instead rely on their own ingenuity and resourcefulness to turn these information-gathering systems to their advantage.

Seamen were the trailblazers of collective action, and the history of labour organization within the merchant and whaling industry dates to at least the 1700s (*cite). In fact, "ritual forms of protest" such as the "Round Robin" petition, which Melville describes in *Omo*, are centuries old (Rediker "Between the Devil" 234-235).⁷¹ In comparison to Melville's first novel *Typee*, the sequel *Omo* is much more focused on labour organization. *Typee* is based on the author's desertion from the New Bedford whaler the *Acushnet*. On his decision to flee, Melville writes that there was no thought of "making a stand against [the

⁷¹ On the history of maritime labor organization in the seventeenth century, see Rediker, "The Anglo-American Seaman as Collective Worker, 1700-1750," 252-286.

captain's] ill usage." The crew members were far too miserable and dejected, not to mention "divided among themselves," to be capable of organizing an uprising (15). As such, the two main characters, Paul and Toby, decide that their only option is to "run away" (14). In contrast, the seamen of the *Julia* in *Omoo*, which stands in for the real-life Sydney whaler the *Lucy Ann*, are far better organized, working together to orchestrate a peaceful rebellion.

Notably, in *Omoo*, the protagonist and his co-conspirator Doctor Long Ghost are educated, which makes them a target of the consul's wrath, but also helps them to navigate maritime customs and law. Though the main character feels that the crew has little hope at "obtain[ing] justice," he "sympathises" with their plight and helps the men build a case for their lawful discharge (99). He convinces the men that the best course of action is to draft a Round Robin petition. As explained in the novel, the layout of the document – with the list of grievances in the middle and the names of the signees encircling the outside – was integral to its political function: "Right beneath the note was described the circle about which the names were to be written; the great object of a Round Robin being to arrange the signatures in such a way that, although they are all found in a ring, no man can be picked out as the leader of it" (*Omoo* 101). The petition not only protected individual seamen from being singled out for punishment but bound the complainants together in solidarity. As Marcus Rediker explains, the Round Robin is an example of how ordinary seamen developed strategies to mitigate the risks of maritime work: "The Round Robin was a cultural innovation from below, an effort at collective self-defence in the face of nearly unlimited and arbitrary authority. The Round Robin eloquently expressed the collective ethos of the seamen's oppositional culture, demonstrating how the equal distribution of risks was often essential to survival" ("Between the Devil" 235).

In the novel, the petition is written on a scrap of paper torn from the imaginary volume *History of the most Atrocious and Bloody Piracies*, which Melville may have based

upon actual books such as 1835's *The History of the Lives and Bloody Exploits of the Most Noted Pirates* (Parker 232). The irony of the scene is that, contrary to the sensationalistic depiction of mutineers in maritime adventure stories, maritime revolts were often nonviolent. When given the option, seamen preferred to express their grievances through peaceful means, waging their battles on paper, through collecting and documenting evidence, rather than through force. Mark Howard argues that mutiny was a form of "collective action," a bargaining chip, through which crew members could negotiate more favourable working conditions, or exit the agreement completely, if necessary:

Whalers had no unions, but informal collective industrial action was common. The large crew of thirty-odd men formed a natural collective, the members of which were ready to unite to uphold their rights. With "forecastle lawyers" in the lead, Sydney whalers practiced a form of industrial democracy, withdrawing their labour in response to perceived wrongs, or terminating an unsuccessful voyage under incompetent leadership. (Howard 8)

In other words, revolting against the captain was a way for ordinary seamen, or "junior partners," to terminate a financial agreement when they judged that it had become too risky and unprofitable. Maritime workers were not the unruly brutes they were depicted as, but rather, as Howard puts it, "economic rationalists" (Howard 9).

Further to this point, mutiny did not arise randomly, but often as a calculated response to unfavourable odds. In the case of the *Lucy Ann* revolt, there were a number of precipitating factors, one of the foremost of which was the precarious financial state of the voyage. The risk might not have been as apparent to the seamen, were it not for Australia's unique method of calculating the lay. In *Omoo*, Melville describes how "American sea captains, in the Pacific, are mortally afraid of these Sydney gentry; who, to tell the truth, wherever known, are in excessively bad odor. If there is a mutiny on board a ship in the South Seas, ten to one a Sydney man is the ringleader" (385). Indeed, in a survey of labour disputes in the Australian colonies, Michael Quinlan found that seamen were "more likely than any

other group of workers” to pursue legal action against their employers. Between 1788 and 1850, maritime and whaling workers in the Australian colonies engaged in 596 strikes, with the annual number spiking in 1841 with 88 strikes (Quinlan 149). The 1840s also saw the highest rates of desertions and of court action in comparison to the previous decades, representing 46 percent and 54 percent of all cases (Quinlan 149, Table 5.1). During this period, American seamen were similarly empowered to defend their rights, in large part due to legislative changes that clarified a seaman’s legal rights and responsibilities. They also engaged in collective and individual resistance in the form of work stoppages, desertion, mutiny, and revolt (Raffety 74-76). However, Australian maritime workers appear to have been uniquely organized, even engaging in large-scale strikes involving “multi-ship networks” (Quinlan 157).

One of the reasons Australian whalers were more effective negotiators was the greater transparency of their payment system. Both American and Australian whalers used the “lay” system, in which crew members received a share of the total net value of the cargo (Hohman 645). However, there was one distinct difference. Unlike American whalers, Australians calculated the lay according to the market value of oil and bone at the outset of the voyage, rather than at the end. The *Lucy Ann*’s shipping papers, for instance, declare that the lay will be paid out according to the following rates: “Forty five Pounds Sterling per imperial Ton for Sperm Oil and Head Matter and Twelve pounds Sterling per Imperial Ton for Black Oil, and Fifty pounds per ton for Whalebone” (“Revolt Documents” 310). In other words, for American seamen, until the ship was safely docked at the home port, the value of the lay contract was always in question. By comparison, Australian seamen could calculate their earnings at any given point in the voyage (Howard 9-10). As a result, they were better able to determine the potential risk or reward.

As illustrated in Melville's south seas novels, whaling expeditions could be hazardous, and accidents, illness, and death were not uncommon. Whaling owners and agents were insured against damages, but ordinary seamen risked life and limb with no guarantee of payout (Levy 36). In fact, seamen's families often relied on benevolent societies, such as The Seamen's Bethel in New Bedford, which is depicted in *Moby-Dick*, to help cover the costs of funerals (Morris 199). For these reasons, Elmo Hohman argues the lay system was characterized by "heartless exploitation," with its unfair conditions forced upon an "unwilling" crew (Hohman 648). However, Lance Davis et al. point out that the lay system was not entirely skewed against the workers. There were some benefits to the crew, who were guaranteed room and board and were also paid a small "advance" fee, based on the projected profits. Seamen, moreover, could and did exploit the system, often by deserting to escape debt (Davis 36).

In the case of the *Lucy Ann*, the crew may have determined that desertion or mutiny was less financially risky than continuing the voyage. Over the first five-month leg of the cruise, the *Lucy Ann* had only acquired 120 barrels of oil (Heflin 158; Sydney Morning Herald, December 2, 1842), about 40 percent less than the average haul for Australian whalers at the time (Howard 6). According to Howard's calculations, at the time of the mutiny, the earnings for able seamen as a portion of the profit worked out to a mere £5 15s, while the ordinary seamen had earned only £4 16s 5d (14). These wages did not cover deductions for advances and for purchases from the onboard slop chest, which could be "considerable," as sailors often paid for clothing, tobacco, soap, and other items at a mark-up (Quinlan 154). Given these costs, most of the original crew members were likely still indebted to the ship owners at the time of mutiny.

Another factor in the *Lucy Ann* revolt was that the lack of officers (*cite). Whaling crews were generally larger in number than those on merchant vessels. In order to man the

smaller boats, which they used to pursue and harpoon the whales, whaling ships required twice as many hands. As such, the captain and mates were often outnumbered by five or six to one. These numbers gave whalers an advantage when negotiating with their commanders for better work conditions (Quinlan 148-149). At the time of the *Lucy Ann* mutiny, the commander, Captain Henry Ventom, was in especially dire straits. The month prior, a third of his crew, mostly skilled seamen and officers, had deserted ship, leaving only a junior mate to help keep order (Heflin 162). Indeed, the shipmaster became so fearful of revolt and further desertions that he at one point requested the help of a French frigate, asking a contingent of armed guards to come aboard to assist with “protection” (Heflin 159-160). To make matters worse, not long after resuming the voyage, Captain Ventom was stricken ill with an abscess and confined to his cabin, leaving the first mate James German in charge. In *Omoo*, Melville describes the crew’s alarm at their “fate” being placed “absolutely in the hands” of the chief mate, renamed “Jermin” in the novel, whom he describes as “reckless” and a “drunk” (69, 25-26). Indeed, German was forced to change the ship’s course to the nearby island of Tahiti, not only to seek medical treatment for Ventom, but to appeal to the British Consul for support in face of a possible mutiny (Heflin 162-163; “Revolt Documents” 320, 323). Soon after reaching the island, the situation became untenable; several of the crew refused to return to work, arguing that the change in command had violated the terms of their contract. As they later testified to the Consul: “We signed under Captain ‘Ventom’ and not under the mate and our agreement is broken” (“Revolt Documents 323”).

The rebellion of the *Lucy Ann* crew can also be attributed to the changing dynamics of the labour force. Over the previous decades, working conditions aboard whaling ships had deteriorated. The introduction of more efficient machinery allowed whalers to process blubber offshore, which increased the size and value of the total catch. Those higher up in the chain of command prospered from these technological advances. Captains and mates saw

their lays increase, securing a higher portion of the profits (Davis “Risk Sharing” 19). However, ordinary crew members did not experience the same benefits, as voyages became lengthier and more hazardous, while their per-month wages decreased (Hohman 652).

The transfer of power to higher ranking seamen reflects the introduction of modern managerial practices. The “authoritarian structure” of whaling ships was primarily enforced, not through harsh punishment, but rather a system of “supervisory oversight” (Quinlan 149) in which every infraction was logged as evidence, to be potentially used against the crew in consul and court disputes. The contract that Melville signed with the *Acushnet*, dated December 30, 1840, is a prime example. Whalemens’ Shipping Papers such as these were standardized legal documents, distributed by the local port authority, to be signed and filled out by the owner, ship master and crew (Stein). The agreement signed by Melville was printed in New Bedford and consist of ten articles, plus a footnote. The contract begins: “1st. IT IS AGREED between the Owner, Master, Seamen, and Mariners, of the _____ now bound from the Port of _____” (*Acushnet* SP). Here, the *Acushnet* is identified as the ship and Valentine Pease named the shipmaster. In terms of the route, New Bedford and Fairhaven are listed as the port of departure. However, the destination is deliberately kept vague, with the preparer of the form stating only that the ship is on course to the “Pacific Ocean or any other Bays or oceans... that the master may wish” (ibid). In other words, the wording of the contract gives the captain permission to modify the route as he sees fit, an important ability, as the lack of a clear end to the contract, with shipmasters apt to repeatedly extend whaling voyages without notice, was often a point of contention with the crew and a major cause of desertion and mutiny.

George Ticknor Curtis, in his 1841 guidebook *Treatise on the Rights and Duties of Merchant Seamen*, commends the New Bedford Shipping Papers as a model legal document: “the best constructed instrument of the kind in use in the United States” (60). Curtis singles

out the “regulations for the health and morals and discipline of the crew” as “deserving of great praise” (ibid). However, much like the failure to place limits on the length of a voyage, these moral clauses created loopholes, which facilitated the exploitation and surveillance of whaling workers. As stated in the *Acushnet* contract, there were two main ways for crew to lose their lay and “forfeit... their respective shares of the net proceeds of the voyage” (see fig. 3.2). First, by “neglecting” or “refusing to perform” one’s duties. Second, by going ashore or onboard another ship without the captain’s permission. However, the contract also forbids other types of conduct. Appended to the end of the ten articles, for instance, is a footnote that forbids the consumption of alcohol:

No distilled Spirituous Liquor will be on board the vessel by the Owner, except for strictly medical use: —and by their signatures the other parties to this contract pledge themselves not to take any of these articles with them as their private Stores, or for traffic, either from this port or any other port or place where they may be, during the voyage. And in the case of a violation of this pledge by the Master or any Officer or Seaman, his entire share of the voyage shall be thereupon forfeited to the use of the owners of the said [*written: ship]. (*Acushnet SP*)

Bringing women aboard the ship “for licentious purposes” was similarly forbidden (ibid).

The footnote, prefaced with a manicule symbol and printed in a slightly larger font, for added emphasis, appears intimidating on paper, but in actuality was not legally binding. One of the ways that whaling owners tried to skirt maritime labour regulations was by inserting clauses like these, which threatened to withhold wages for “moral” infractions or general disobedience. Though these rules were legally unenforceable and, indeed, could be challenged in court, unwary seamen could, in this way, be cowed into accepting unfair working conditions (Raffety 43-44).

“Temperance pledges” and other moral codes were also used to justify closer monitoring of the workers’ behaviour. The surveillance of maritime workers was facilitated by the closed environment of the ship. Shore leave was often tightly restricted. If crew

members left the vessel for any reason, regardless of whether they had permission to do so, the time of their departure and return had to be carefully documented, not only to guard against desertion, defined in the contract as 24 hours without reporting, but to reinforce a culture of obedience.

The shipowners also relied on the logs as evidence in case of labour disputes. Article 3 of the *Acushnet* shipping papers informs the workers who sign the contract that they will be closely watched, instructing the log keeper to document all infractions:

It is further agreed by all parties to this contract, that such regulations as a just regard to the good order, effectual government, health and moral habits of the Officers and Men shall be established and observed on said vessel. And to ensure proper attention to this important object, it shall be the duty of the Officer having the care of the Log Book, to note therein daily all flagrant breaches of the same. (*Acushnet* SP, article 3)

The log keepers collected other types of information related to workplace conditions, such as the distribution of rations and instances of “sickness or infirmity.” The wording of the contract makes it clear that these records were not kept for the well-being of the crew. Rather, the owners would use the logs as proof of misconduct and justification for actions such as refusing pay or refusing to grant a discharge. As stated in the *Acushnet* contract, if a crew member missed work due to accident or illness, the cause needed to be recorded, “especially if it be the consequence of their own misconduct” (*Acushnet* SP). In other words, the log keeper was directed to find fault with the crew rather than the owners.

Still, as seamen felt the squeeze of surveillance, they in turn became savvier at navigating the documentary systems that were the basis of marine law. Take, for instance, the ritual reading of the ship’s articles. The terms of the contract were recited at the outset of the voyage, as a way to “legitimize the captain’s legal authority” (Raffety 43). However, as Raffety points out, this ritual had an unintended consequence. As the contract states, the ship master and owners had their own set of legal obligations. The crew, in turn, were entitled to

certain rights, such as the right to payment if they fulfilled their duties. These rights were expanded in later years to include, for instance, a guarantee that the ship was equipped with medical supplies (Sullivan 26). In other words, the articles pointed out the captain did not have boundless authority over his men (Raffety 43). In this way, the articles empowered the workers to point out if their rights were being abused and to demand change or even refuse to work under those conditions. In *Typee*, for example, the protagonist uses the ship's articles to justify his desertion, arguing that the ship master had not upheld his end of the deal:

When I entered on board the Dolly, I signed as a matter of course the ship's articles, thereby voluntarily engaging and legally binding myself to serve in a certain capacity for the period of the voyage; and, special considerations apart, I was of course bound to fulfill the agreement. But in all contracts, if one party fail to perform his share of the compact, is not the other virtually absolved from his liability? Who is there who will not answer in the affirmative? (14)

The character goes on to list the “numberless... violations” that the captain had committed. Specifically, he charges the commander with “neglect[ing]” the sick, withholding rations, and repeatedly extending the voyage. He also complains that the commander treated his men too severely and would lash out physically if they questioned his orders (14-15). For all these reasons, he deems his contract null and void.

The character's list of grievances reflects then-recent legislative changes, which “further defined what constituted criminal behaviour for both seamen and officers” (Raffety 45). After An Act in Amendment of the Acts for the Punishment of Offenses against the United States was enacted in 1835, seamen were rarely charged with the capital crime of mutiny, which only applied to cases when the shipmaster was “confined.” Instead, the crew almost always faced a less serious charge of “revolt” or “endeavour to make a revolt” (US Cong. Punishment of Offenses; Raffety 45). At the same time, commanding officers became liable for a range of criminal offenses. Captains and mates who “from malice, hatred, or revenge, and without justifiable cause beat, wound, or imprison, any one or

more of the crew of such ship or vessel, or withhold from them suitable food and nourishment, or inflict upon them any cruel or unusual punishment” faced a maximum punishment of a \$1,000 fine or five years imprisonment (US Cong. Punishment of Offenses, Sec. 3; qtd. Heflin 35).

To defend against these criminal charges, commanders had to prove “justifiable cause,” which is why recording infractions and other labour data in the logs became crucial. Sailors, for their part, also became adept at observing and recording. As shown in *Typee* and *Omoo*, would-be revoltors often sought out evidence of violations, with a view to build a stronger case (Howard 9). As such, seamen learned to become keenly aware of both the terms of their work contract and the goings-on of the ship.

As Raffety points out, the popularity of mercantile law guidebooks, whose readership included both officers and ordinary seamen, is indicative of how often these labour disputes were played out before the consuls and before the courts (76). Manuals—such as William Sullivan’s *Sea Life* (1837) and R. Butts’ *Laws of the Sea—The Seaman’s Assistant: Coaster’s and Fisher-man’s Guide, and Master’s and Mate’s Manual* (1849)—outlined a seaman’s legal rights and obligations. These guidebooks were important and oft-overlooked resources for Melville’s south seas novels and exemplify his keen interest in documentary practices. In his guidebook *Sea Life*, William Sullivan advises crew members to keep a cool head if conflicts should arise with the commander: “If any among them can write, he should honestly and truly put on paper, the true facts as they happened at the time, and bring this record home. They will be sure to get justice” (Sullivan 73). In other words, if there is a disagreement with the captain, the seamen should not refuse duty, or worse resort to violence, but rather keep a careful record of the events.

Under the 1803 act, “supplementary to an Act concerning Consuls and Vice Consuls, and for the further protection of American Seamen,” seamen had the right to present their

grievances to the American Consul (Cong. Concerning Consuls and Vice Consuls). However, as shown in Melville's whaling novels, accessing the consul was not always a simple matter. The consul offices – which were responsible for processing discharges and new recruits, caring for sick and injured sailors, and managing labour disputes – were located in the major whaling ports (Busch 85). For this reason, if a commander felt there was discontent amongst his crew, he would often refuse to grant shore leave:

the most unruly seamen can at sea be kept in some sort of subjection; but once get them within a cable's length of the land, and it is hard restraining them. It is for this reason that many South Sea whalers do not come to anchor for eighteen or twenty months on a stretch. When fresh provisions are needed, they run for the nearest land—heave to eight or ten miles off, and send a boat ashore to trade. (*Omoo* 30)

As explained, shipmasters could opt to anchor offshore instead of docking in the port, or stop only at remote, less populated islands. In this way, they both avoided the expensive pilot and harbour fees and made it more difficult for crew members to break their contract, either through appealing to the Consul for a legal discharge or illegally deserting ship (Busch 93).

Such was the situation Melville found himself in when he absconded from the whaler the *Acushnet* in the Marquesas Islands. Because he was hundreds of miles from the nearest American Consul, there was no legal recourse for him to escape his miserable work conditions: “To whom could we apply for redress? We had left both law and equity on the other side of the Cape” (*Typee* 15). Likewise, in *Omoo* the crew are dismayed when the captain docks outside the port, essentially confining them aboard. Some commanders also used intimidation tactics to discourage complaints, warning that troublemakers would be flogged or thrown in the brig (Busch 78). Under these circumstances, seamen were forced to contact the consul in secret (Busch 79). The main character of *Omoo*, for example, must devise a plan to smuggle the Round Robin petition to the consul, sneaking it ashore with the cook (101). Despite the protagonist's efforts, as he soon discovers, even if seamen managed to present their case, the consulates were not always sympathetic to their cause.

The consul officers collected various fees, and because they relied on the ships for income, they were not keen to give the shipmasters a reason to avoid docking at their port. Browne, in *Etchings of a Whaling Cruise*, explains how the relationship of the ship master to the consul was not unlike that of a client or customer:

The consul understands perfectly well that if he interferes on behalf of the seamen, the captain will not deal with him; and the captain knows equally well that if he deals with the consul, that officer will have too much regard for his own purse to make use of his official power to the disadvantage of so good a customer. Consequently, it is all mockery to talk about the protection of the rights of seamen by an American consul. (502-503)

Given the conflict of interest, Browne is skeptical that American crew had a chance at a fair hearing before consul. When a complaint was made, the officer would typically go aboard the ship to gather testimony from sailors (Busch 79). The officer could also request that the captain hand over the ship logs, to be examined as evidence. Crew could be granted discharge for “cruel and unusual treatment” or if the vessel was found “unseaworthy” (Busch 80). However, unless the seamen could prove that specific conditions in the contract had been violated, they had no right to leave the voyage. If they refused to carry out their duties, the consul would often simply order them back to work (Busch 79). Such was the case with the *Lucy Ann* revolt.

The rebels were formally tried before the Tahiti British Consulate (“Revolt Documents” 318, 323). The Acting Consul, Charles Burnet Wilson, had been newly appointed to his position and was himself a former shipmaster, having captained the English schooner *Currency Lass* (Anderson *South Seas* 208), which perhaps made him more disposed to take the captain’s word over the crew’s. During this period, Wilson collected lengthy depositions from Captain Ventom, first mate James German, Dr. Johnstone, and acting third mate Benbow Byrne (“Revolt Documents” 318-319, 329). The Consul Officer also met with and interviewed the other crew members on at least three occasions. However, only the

testimonies of those loyal to the Captain were officially documented, while those of the mutineers and the reasons for their revolt were excluded (“Revolt Documents” 326-329). As such, the mutineers come across as “unruly lawbreakers without just cause” who were by and large “well-treated” (Heflin 168).

As a result of the inquiry, the rebels were sentenced to be “committed to the charge of local authorities for revolt and refusal of duty” (“Revolt Documents” 329-330). Yet the rebellion itself was not a failure. In fact, the version of events that is presented in Melville’s novel, which is supported by closer examination of the revolt document marginalia, suggests that the revolters achieved their main objectives. As Heflin points out, though Consul Wilson testified that the crew had no complaints about the ship command, amongst the consul’s papers there is a “lone, partial note” scribbled beside the list of rebels, which reads “one day’s allowance is stopped” and “Mr. German not fit to take charge for contially [sic] drunkenness,” testimony likely gathered during his initial visit onboard (“Revolt Documents” 316; Heflin 168; see fig. 3.4). Wilson’s timeline of the events also indicates how quickly he lost control of the situation (“Revolt Documents” 318). As depicted in *Omoo*, during the inquiry the rebels were imprisoned: first aboard the French frigate *La Reine Blanche*, and later in a calaboose on the island, under the charge of the local police. Through it all, they did not succumb to Wilson’s threats, and on the contrary the rebellion grew in number from four to ten men (“Revolt Documents” 328-329). Melville himself was a confidant of Henry Smith, one of the leaders of the revolt, and like the main character in the novel, he put his education to use, carrying at least one message to the prisoners in the brig; and the note was preserved together with the rest of the Consul papers. Notably, as indicated in the deposition documents, Melville hesitated to openly renounce his loyalty to the captain, adopting a more cautious and perhaps more calculated position. Heflin suggests that fear of the brig, by all accounts a “grim place,” was a likely motive (167). As communicated in the note, one of the

imprisoned seamen had apparently taken “verry [sic] ill” during his confinement (“Revolt Documents” 315-316). Melville waited until the French frigate departed and the prisoners were transported to the island before declaring his allegiance to the rebels (“Revolt Documents” 318), minimizing the risk to himself. Indeed, by that point, it was clear that the trial was a fiasco.

As shown in the novel, after the seamen remained steadfast in their refusal to return to work, the consul was at a loss for what to do:

handcuffs and stocks, big looks, threats, dark hints, and depositions, had all gone for nought. Conscious that, as matters now stood, nothing serious could grow out of what had happened; and never dreaming that our being sent home for trial had ever been really thought of, we thoroughly understood Wilson, and laughed at him accordingly. (186)

Indeed, if Consul Wilson’s papers are any indication, the foreign consulates were far more effective at collecting fees than enforcing punishments. Revolters could be shipped back home to stand trial, but arranging transportation was a costly and complex process, since few shipmasters were willing to risk bringing accused mutineers on board. The more practical solution was simply to discharge the sailors without pay. Alternatively, the seamen could serve time in the port prison. However, to carry out such a sentence, the consul needed the cooperation of the local authorities (Busch 81-82). As it turned out, Wilson had a fraught relationship with the islanders. His correspondence with the French Council reveals the Haitian chiefs mistrusted the consul officer, accusing him of “hiding” a local girl (“Revolt Documents” 335). As such, when Wilson ordered the islanders to guard the prisoners, they put little effort into the task and after six weeks let the seamen walk free. The French were unwilling or unable to “intervene,” implying that the British Consulate had bungled the

ordeal from the start and should, in essence, clean up their own mess (“Revolt Documents” 336-338).⁷²

For Captain Ventom, the revolt proved to be a costly affair. After failing to force the strikers back to work, the shipmaster had to acquire a new crew for the *Lucy Ann*, which he did at a considerable expense, being compelled to sell 280 gallons of sperm oil to cover the fees, the receipts for which were drawn up by Consul Wilson, who facilitated the transaction (“Revolt Documents” 334). Though Captain Ventom avoided further incidents of mutiny, he was as unlucky as ever in the hunt, returning to port with a trifling 250 barrels of sperm oil (*The Australian*, 22 May 1843; Heflin 168). The revolt, meanwhile, emerged from the ordeal relatively unscathed. Though Consul Wilson would likely have tried to discourage other shipmasters from recruiting the disobedient seamen, Melville was able to find work on the Nantucket whaler the *Charles and Henry*. The six-month cruise ended without incident in Lahaina, concluding his sojourn as a whaler (Heflin 169, 175, 194).

After nearly two-and-a-half years at sea, Melville was considerably wiser in the ways of maritime customs and laws. As shown, his novel *Omoo* foregrounds the role that documentary systems played in maritime labour organization, as well as the complex and contradictory nature of that record, which becomes inscribed with competing histories. In the case of the *Lucy Ann*, the process of gathering evidence and petitioning the Consul may not have changed the outcome of the trial, but it nonetheless energized the revolt, giving the sailors a sense of purposefulness and justice, which may have prevented them from resorting

⁷² After the *Lucy Ann* rebels escaped, Consul Wilson wrote to the Provisional Government of Tahiti to complain about the guards “repeated manifest and wilful neglect.” To drive home the seriousness of the case, he also forwarded the “Documentary Evidence” he had gathered about the mutiny: “I send you for your perusal and further information the Documentary Evidence against the prisoners taken from this office, and request you will transmit me back the same” (“Revolt Documents” 336). The French Council were, apparently, unimpressed, returning the “documents” without commenting on the specifics of the case. Instead, they rather haughtily “inform[ed]” Wilson that they had already taken “all the necessary measures” to assist the British Consulate and expressed “regret” that he did not contact them sooner if security at the local jail was as bad as he claimed (“Revolt Documents” 337).

to more drastic measures. In *White-Jacket*, Melville moves beyond small scale rebellion, demonstrating how counter-surveillance can be used to expose and reform unjust labour laws.

White-Jacket

The same day he boarded the frigate *United States*, Melville witnessed multiple floggings. The incidents were recorded in the official logbook as such: “Punished One Hall ‘O.S.’ with 12 lashes with cats for striking sentry on post, Leo Clark ‘O.S.’ with 12 of cats for smuggling liquor, Bot. C. B. Stanly ‘App.’ with 12 lashes with kittens for fighting, and Wm B Ewing ‘App.’ with 6 for using provoking language” (see fig. 3.5). In *White-Jacket*, Melville describes how, in cases of punishment such as these, the entire crew were invariably summoned on deck and forced to watch:

To the sensitive seaman that summons sounds like a doom. He knows that the same law which impels it—the same law by which the culprits of the day must suffer; that by that very law he also is liable at any time to be judged and condemned. And the inevitableness of his own presence at the scene; the strong arm that drags him in view of the scourge, and holds him there till all is over; forcing upon his loathing eye and soul the sufferings and groans of men who have familiarly consorted with him, eaten with him, battled out watches with him—men of his own type and badge—all this conveys a terrible hint of the omnipotent authority under which he lives. Indeed, to such a man the naval summons to witness punishment carries a thrill, somewhat akin to what we may impute to the quick and the dead, when they shall hear the Last Trump, that is to bid them all arise in their ranks, and behold the final penalties inflicted upon the sinners of our race. (161)

In this passage, Melville captures the horror and the thrill of being witness to an event that is reminiscent of the public execution. As Foucault observes in *Discipline and Punish*, the true aim of these violent displays was not judicial, but political. The “tortured body” of the criminal functioned to “reconstitute” the authority of the ruler, or in this case that of the captain, and through a “policy of terror: to make everyone aware... of the unrestrained presence of the sovereign” (*Discipline* 49). However, there was always the possibility that the condemned man would not repent, but “with nothing to lose” would defy and “curse” the

very institutional powers that the ritual was meant to uphold and so open those powers to being challenged (*Discipline* 60-61). Pointedly, Foucault argues that as the carceral system becomes normalised and diffused, ordinary citizens lose this capacity to “answer back.”

White-Jacket captures the transitional period, in which modern society moved from one penal style to another and the open “display” of punishment was subsumed by more subtle, distributed forms. Indeed, as shown in the novel, the spectacle of flogging is only one aspect of the ritual, with the entering of the data forming an equally important part of the process. The protagonist White-Jacket is himself never flogged, though he comes close to it. Rescued from punishment by a sympathetic officer, White-Jacket is ultimately denied his “gallows speech.” For that reason, some critics argue that he makes for a poorly developed, or at least *dissatisfying*, protagonist. Jack Chase, captain of the top mast and friend and protector of White-Jacket, more closely resembles the charismatic antihero who rebels against the system, and whom Foucault argued we are drawn towards to live out our fantasies of freedom. Anderson, for one, calls Chase the “ideal sailor” and “real hero of *White-Jacket*” (*South Seas* 366). Yet, White-Jacket becomes more than adept at navigating the emerging documentary system and mustering new forms of resistance, demonstrating how emerging technologies give rise to new ways of “answering back.”

Melville was not the only former Navy seaman to speak out against the institution’s inhumane practices, *White-Jacket* coming as it did on the heels of other reform novels like Richard Henry Dana’s *Two Years Before the Mast* (1840), William McNally’s *Evils and Abuses in the Naval and Merchant Service, Exposed* (1839), Solomon Sanborn’s *An Exposition of Official Tyranny in the United States Navy* (1841), and Samuel Leech’s *Thirty Years from Home, or a Voice from the Main Deck* (1847). While some scholars characterize *White-Jacket* as radical and incendiary (see Chapel and Stessel), others argue that its views

are rather conventional or “safe” (Otter 78), and some even deride it as a “bandwagon reform novel” (Anderson, *South Seas* 451).

Notably, the first to recognize *White-Jacket* as a portrait of the “total institution” was sociologist Erving Goffman. Goffman, who was widely praised for *Asylums* (1961), his pathbreaking study of mental institutions, references Melville’s novel fifteen times in his work. Goffman was deeply invested in subjectivity and in understanding the perspective of the patient, writing “my immediate object... was to try to learn about the social world of the hospital inmate, as this world is subjectively experienced by him” (ix). His interest in the inner lives of his patients was perhaps what led him to experiment with unique forms of research-gathering, including studying cultural works like novels, in addition to more traditional forms like direct observation. Literary scholar David Alworth insightfully characterizes Goffman’s unbridled approach to his subject matter as “Melvillian” (225), yet he also dismisses certain aspects of the sociologist’s reading of Melville as naïve: “instead of scrutinizing the opacity, ambiguity, and contradiction inherent in the textual medium, he treats the novel as a source of empirical data, on par with what he had observed during his year of fieldwork” (241). Alworth raises a valid point, yet in accusing Goffman of “excess” and of being a bad critic (256-257), he also reveals his own discomfort in the breakdown of disciplinary boundaries. In fact, I would posit that Goffman’s “Melvillian” approach also represents a return to the grassroots research activism of early sociologists, as seen in his identification with the subject group (in fact, he posed as a patient and conducted his fieldwork undercover) and in his mixing of methodologies. Goffman’s reading of Melville, in this sense, provokes questions about how we determine what counts as research, and what it means to read literature as part of fieldwork. We might, in turn, push back against Goffman’s characterization of the *Neversink* as a “total” disciplinary society. In fact, as illustrated in Melville’s south seas novels (and inadvertently by Goffman himself in his referencing of

these works), maritime vessels were not completely cut off from society. The data assemblage was inherently leaky, not only in terms of the “unauthorized” leaks of sailor’s memoirs, but the myriad “authorized” ways in which information about life aboard these ships was documented and circulated, as was shown in the previous consideration of Melville’s *Omoo*. As illustrated here, what sets *White-Jacket* apart from other reform-era anti-flogging novels is its unique attention to the emergence of dataveillance, in terms of the role of informational systems and how they bear on the lives of ordinary seamen.

Leech’s memoir, which covers the events of the War of 1812, is oft-cited as an inspiration for *White-Jacket* (Anderson, *South Seas* 119). On the surface, there are obvious similarities. Much like in Melville’s novel, the American officers in Leech’s work are portrayed as tyrannical. Captain Porter, the commander of the frigate *United States*, seems to delight in wielding the cat-o-nine tails, never passing up a chance to dole out a punishment and to harass and insult his men. The crew feel no admiration or loyalty towards their leader, only fear and rage, feelings which threaten to erupt into violence: “If such officers could only apprehend the profound contempt and bitter hatred with which they are regarded by their maddened crew, they would both tremble for safety, and despise their own littleness of soul” (Leech 164). Likewise, in Dana’s *Two Years Before the Mast*, Captain Thompson is portrayed as a sadist. The antagonist of the story, the commander’s actions are so incomprehensibly vile that he veers on caricature: “[the Captain] began laying the blows upon his back, swinging half round between each blow, to give it full effect. As he went on, his passion increased, and he danced about the deck, calling out as he swung the rope, —‘If you want to know what I flog you for, I’ll tell you. It’s because I like to do it!’” (Dana 109).

In *White-Jacket*, the crew of the *Neversink* are also terrorized by their commanding officers. However, Melville places much more emphasis on unjust laws than on demonising those in charge. Leech mentions the Articles of War, the American Navy and Military’s

disciplinary code, only once in his entire memoir (Leech 167). As Tony Tanner observes, Dana shares Melville's love of "facts and figures," remarking on "the weather, the sails, the different jobs, the shipboard routine, the latitude and longitude," as though compiling an "itemized report" (xi), or rather, I would say, filling out a logbook. Yet, like Leech, while Dana alludes to shipping articles in general (366), he does not delve into the specific laws that uphold them. By comparison, Melville references the Articles of War forty-one times in *White-Jacket*. He also cites "Congress" a dozen times and "law" and "lawfulness" nearly one hundred and fifty times, with the author calling repeatedly for reform. These reforms extend beyond corporal punishment to working conditions more generally, from the disruptive shifts to the lack of shore leave. Writes Melville, "health and comfort—so far as duly attainable under the circumstances—should be legally guaranteed to the man-of-war's-men; and not left to the discretion or caprice of their commanders" (104). In this way, he contextualizes the campaign to end flogging in the Navy within the larger push for labour reform, of which more will be said further on.

The Articles of War are not only invoked in the abstract: the textual document figures prominently in *White-Jacket*, with Melville calling attention to its role in the rituals of war and in the monitoring of workers. As shown in the novel, at the "monthly muster" on the first Sunday, the sailors present themselves for inspection to the captain. The main event is the reading of the articles. The sailors listen, hat in hand, as the captain's clerk runs through the long list of offenses, thirteen of which are punishable by death. That sentence—*shall suffer death!*—is repeated five times (341-342). Such scenes demonstrate the power of the document and the way in which it figured in the lives of the sailors, not only as a reminder that the servicemen were subject to constant scrutiny, but as a standard or ideal against which their behavior was measured.

The logbooks, as records of discipline, played an equally important role in enforcing those standards by identifying those who deviated from the norm. Yet, these catalogs of punishment and of other aspects of life as a man-of-war's man also provide insight into the norms and values of the Navy Command at large, as well as the inconsistencies in its code. In this way, the record books inadvertently exposed the system to critique, as became clear in a dramatic fashion during the anti-flogging debates.

Melville's novel was released in 1850, just as a controversial proposal to ban flogging in the Navy was being debated before Congress. During the session, New Hampshire Senator John P. Hale rose from his seat, holding aloft a copy of Exec. Order. 51, or as he called it the "Chronicle of the Cat-o'-nine tails." In a thunderous speech, he then proceeded to show how, "this evidence, accumulating upon [our] tables every year," presented a compelling counternarrative to the picture presented by the Naval Command (*Congressional Globe*, 31st Cong., 1st Sess., 2057-2058). As shown in the previous section, maritime logbooks were not just records of the crew's activities, but tools of surveillance. However, as ordinary seamen had long realized, these same informational-gathering techniques could be turned against those in command. For naval reformers like Hale, who sought to put an end to corporal punishment, the logs were records of oppression and abuse of power. In fact, during the Congressional debates over naval reform, the quantitative evidence contained in these returns was instrumental in securing the votes to ban flogging.

Hale was not one to shy from controversial issues. Known for his progressive politics, he was the first Senator to win a seat on an anti-slavery platform (Langley 171; Glenn 419). In 1848, he introduced a bill to abolish the use of corporal punishment in the US Navy (*Congressional Globe*, 30th Cong., 1st Sess., 983; *ibid.*, 2d Sess., 488, 506). Though the motion did not garner enough votes to pass in the Senate, Hale's fellow representatives were,

nonetheless, moved to inquire further into the subject and subsequently ordered the Navy to turn over its data on internal discipline (Langley 171). The final report, titled Exec. Doc. No. 51, was a record of every punishment dispensed during the years 1846-1848. The quarterly returns list the name of the culprit, date, rank, offense, and the method and severity of punishment, as well as the name of the ship and its commander. These annual reports on disciplinary action in the US Navy were incorporated into the Navy Appropriation Bill and henceforth mandated by law (*Congressional Globe*, 30th Cong., 2nd Sess., 506; Langley 171).

Hale's efforts were supported by growing public opposition to flogging, particularly in the Northern States, where the issue was tied to slavery (Glenn 419-421).⁷³ In the six months prior to the vote, there were 271 petitions and three public meetings in favour of a ban on the practice in the military (Langley 185). Even so, Navy Command remained staunchly opposed to reform. In January 1850, the Secretary of the Navy, William B. Preston, solicited naval officers for their input on the subject, and of the eighty-four who replied only seven were in favour of ending the practice (Langley 180-181). Based on these testimonies, the Senate Naval Committee determined to strike the provision on flogging from the Naval Appropriation Bill (*Congressional Globe*, 31st Cong., 1st Sess., 2057). As Senator Mason, speaking on behalf of the Naval Committee, reported, "It would be utterly impractical to have an efficient Navy without this mode of punishment" (*Congressional Globe*, 31st Cong., 1st Sess., 2057).

In response, Hale presented the results of the inquiry. Hale's attentiveness to the rhetorical power of data is shown in his choice of words. He refers to Exec. Order 51 as "chronicles" as opposed to returns or logs (Exec. 51 2058), which is indicative of how the use case for the data had shifted. For marine commanders, the ability to record the data and

⁷³ For more on how whiteness and blackness are inscribed in Melville's *White-Jacket*, see DeLombard; Otter. DeLombard argues that Melville problematizes the tendency to conflate unfair working conditions with slavery and instead calls attention to the "gradations" within systems of oppression (57).

retrieve it at need was enough; the mere existence of the logs, as reinforced through the ritualized reading of infractions at the monthly musters, reminded the crew that they were being watched, and so served its chief purpose, as a method of imposing order. The reformers, on the other hand, realized that the aggregation of data opened the possibility for further analysis, the ability, in other words, to extract meaning or “chronicles” from the numbers.

The act of “watching” takes on a different aspect in Exec. Order 51. As discussed in the Whitman section, there is a certain unruly quality to data, in how they open not only the datafied but the datafiers to inquiry. What is included and excluded, even with respect to the categories themselves, is often quite telling, in terms of revealing the values and biases of the data gatherers. In this case, some of the log keepers were surprisingly forthcoming and even collected additional data not required by the Congressional order. Commander Stephen Champlin of the steamer *Michigan*, for instance, gathered information on the sailor’s age, city of birth, and date and place of enlistment. Other commanders were more sensitive to how the data would be interpreted and took steps to reign in the data and take control of the narrative. Commander Samuel Francis Du Pont of the ship *Cyane*, whose naval unit was at the time actively engaged in the Mexican-American War, included the following note with his logs:

Note—the last two returns show an increase in the average of punishments, arising from the crew having much duty on shore, with great liability to temptation and facility of and access to liquor. Yet this, in time of war and often with an enemy at hand, would permit no indulgence. It may be proper to remark that, where the amount of punishment differs for the same offense, or even where it has been less for a greater than one less aggravated, previous character and conduct, and the extent of exposure to temptation, have been taken into consideration. (No. 51 334; see fig. 3.6)

Irvine Shubrick, Commander of the *Saratoga*, similarly felt compelled to explain his results, ascribing “nearly” all offenses to the “effects of liquor” (No. 51 144). However, Du Pont’s note is much more substantial than Shubrick’s and betrays a deeper discomfort. The captain,

whom biographer Kevin Weddle describes as being “obsessed with reputation” (54), makes excuses for the discrepancies in the data, both the frequency of the punishments and the severity with which certain individuals are dealt. Du Pont reminds the reader, whom he would have known would chiefly consist of the members of Congress, that America is in a “time of war,” and so commanders cannot afford to be lenient. Yet, these assertions and others like it made by fellow officers in their statements to the Navy Secretary do not cohere with the information in the returns.

First and foremost, naval officers had testified that flogging was only used as a last resort. On the contrary, Exec. Order 51 exposed the ubiquity of corporal punishment within the US Navy. In all, between the years 1846-1848, sixty naval commanders administered 5,937 floggings. At one point during the debate, Senator Hale read aloud a list of names of sailors who had been punished: “You will hardly find a name that is repeated. It would seem it was necessary to go through the crew before they began the second time. So that that remark as to the ‘cowardly, skulking rascals’ is not true, for the record shows that it is not true” (Congressional Globe, 31st Cong., 1st Sess., 2058). Hale uses the evidence in the logs to shut down the assumption that corporal punishment was reserved for a troublesome few, demonstrating that flogging was not the exception, but the rule. The recitation of names is a clever way of representing the data, in a sense, *performing* the data in real time, to convey its largeness.

Another argument was that corporal punishment was necessary to keep the crew in line, given the high stakes. Data analysis at the time was quite rudimentary by modern standards. Still, with the ability to aggregate the data came the understanding that, by isolating the variables, one could reveal new correlations, or, in some cases, prove them false. In this case, Navy officers claimed that disobeying orders could jeopardize the lives of everyone on board. However, as documented in the returns, flogging was not only common

practice at sea, but while the ships were docked in port. Even sailors stationed in the naval yards and on receiving ships, where the safety risks were considerably more manageable than those offshore, were routinely punished in this manner (No. 51 258, 260-268).

Flogging was not the only form of punishment. Unlike privates, officers were not flogged, but could be disgraced. Ordinary sailors, as well, could be deprived of rations or, in more serious cases, imprisoned in the brigs (No. 51 89-192). Still, though there were other types of penalties, flogging was by far the most common. One of the reasons the Navy relied on corporal punishment was its efficiency. As Melville says in *White-Jacket*, “It can be inflicted in a moment; it consumes no valuable time; and when the prisoner’s shirt is put on, that is the last of it” (166). These sentiments were echoed in the testimonies collected by Navy Secretary Preston and in the arguments of Senator David L. Yulee, chairman of the Committee on Naval Affairs. Yulee complained that alternatives to flogging, such as imprisonment in the brig, “draws men from the service—the men who are necessary for the safe navigation of the vessel” (*Congressional Globe*, 31 Cong., 1st Sess., 2059). In other words, corporal punishment was the most convenient method of keeping the sailors in line.

These punishments were often highly ritualized. Melville describes the routine of cataloguing and reciting the punishment data in *White-Jacket*:

All the officers—midshipmen included—stood together in a group on the starboard side of the main-mast; the First Lieutenant in advance, and the surgeon, whose special duty it is to be present at such times, standing close by his side. Presently the Captain came forward from his cabin, and stood in the centre of this solemn group, with a small paper in his hand. That paper was the daily report of offences, regularly laid upon his table every morning or evening, like the day’s journal placed by a bachelor’s napkin at breakfast. (162)

As illustrated above, the entering of the data formed an important part of the disciplinary process, serving both to legitimize the punishment in the eyes of the state and to reinforce the institutional power to which the sailors were subject.

At the same time, the log data also exposed the lack of clarity and inconsistencies within the law. One of the issues was the severity of the punishments. The Act for the Government of the Navy of the United States, passed by Congress in 1799, in theory banned Navy Commanders from issuing sentences exceeding a dozen lashes. However, the limit could be contravened, if ordered by court martial.⁷⁴ Because of this loophole extreme punishments did not die out and continued to be ordered, as evident by the Exec. Order 51 data. For instance, in 1846 two landsmen on the frigate *Congress* captained by the aforementioned Commander Du Pont were sentenced by court martial to one-hundred lashes and eighty lashes for “drunkenness and mutinous conduct” and “mutinous conduct and disrespect,” and a third landsman was sentenced to fifty lashes for desertion (see fig. 3.5). Notably, of the eighteen court martials recorded in Exec. Order 51, this was the only case that resulted in a mitigation of the sentence; the commodore who issued the order ended up reducing these punishments to the still horrifying sentence of fifty, forty, and twenty lashes (No. 51 153); the other cases resulting in punishments ranging from eighteen to fifty lashes. Nor were court martials reserved for the most serious of offenses, such as mutiny. One seaman, for instance, was sentenced to eighteen lashes by court martial for being “noisy and fighting” No. 51 93).

Within the Navy command more generally, there seemed to be no agreement upon the appropriate punishment for specific offenses. In fact, what constituted a punishable offense was entirely at the discretion of the captain, as evident by the wide range of violations recorded in the returns. According to Exec. Order 51, drunkenness and fighting were among the most common offenses, followed by general disobedience. However, sailors could also be punished for having a “filthy” appearance, “skulking,” being too “noisy,” being “too slow,”

⁷⁴ To receive a court martial, the captain had to “apply to the Secretary of the Navy, the commander-in-chief of the navy, or the commander of a squadron,” and in the interim the accused would be “put-under-confinement” (Government of Navy Art. 4).

“littering,” and wasting food (*No. 51* 241). The naval code “put the scourge into the Captain’s hands” (*White-Jacket* 191), giving the commander the power to inflict brutal punishments for the most minor missteps. For this reason, Melville implies that the rules, as outlined in the Articles of War, were kept purposely ambiguous. As shown in the previously mentioned scene in the novel, the ritualized reading of the articles, which took place at the muster each month, was meant not to inform or educate the sailors, but instead as an exercise of power. In fact, the deliberate obfuscation of meaning and withholding of information served that power, enshrouding its mechanisms beneath a veil of secrecy. The collection and presentation of punishment data was a reminder that the crew was under surveillance, but also that the officers were inscrutable and inaccessible by that same system. Much like Exec. Order 51, what fascinates about *White-Jacket* is how it forces that gaze in upon itself, with those in command subject to their own documentary systems.

The novel opens with a description of the titular garment: “It was not a very white jacket, but white enough, in all conscience, as the sequel will show” (9). On the one hand, the jacket, with its unusual bright hue, is a marker of the character’s individuality and his quiet refusal to conform to navy standards. On the other hand, his resentment of the jacket, which reveals itself even on the opening pages, suggests that his attempts at resistance are, in the end, doomed to fail. White-Jacket’s eagerness to discard the garment, indeed the necessity of doing so to ensure his survival, shows how totalizing institutions use information systems to manage and ultimately crush dissidence.

Once aboard, the sailors are stripped of all privacy. The cramped hammocks, regulation size at “eighteen inches” wide per man, are the only personal space afforded the common sailor (46, 99). Yet the hammocks are only accessible during the allotted hours and are rolled away in the daytime; in fact, failure to properly pack away your beddings is enough

to earn a flogging. As such, access to personal belongings (and to sleep) is rigorously managed. There is a humorous bit in which White-Jacket struggles in vain to adjust his bed hangings to gain a few inches, and he ends up with a hammock “stiff as a board... with [his] nose against the ceiling, like a dead man’s against the lid of his coffin” (100). Indeed, though labelled a seafaring romance, the novel anticipates Melville’s later tragicomic office parable “Bartleby the Scrivener” in its lampooning of the bureaucratic system, or as White-Jacket calls it the “folly... of striving to get either below or above those whom legislation has placed upon an equality with yourself” (100). In the novel, the Navy is described as being in state of decay; the protagonist is likened to a “dead man” in a “coffin.” Yet, those in charge fail to treat the institutional rot or even acknowledge its existence. As Melville explains, “the chief reason is this – a reason which has sanctioned many an abuse in this world – *precedents are against it*” (103).

Because of the lack of privacy, the jacket, with its many hidden pockets, is especially valuable. The coat functions as a “store-house” (49). Melville compares the garment to an “old castle... full of winding stairs, and mysterious closets, crypts, and cabinets; and like a confidential writing-desk, abounded in snug little out-of-the-way lairs and hiding places, for the storage of valuables” (47). The articles he keeps tucked away in the jacket seems rather mundane: extra clothing, needle and thread, books (48). Yet, the act of keeping these items is representative of White-Jacket’s determination to safeguard and nurture a private, inner life, away from the prying eyes of others. Of course, in the end, the “old castle” fails to guard against intrusion. The garment catches the attention of pickpockets who make quick work of “pillaging” his valuables (49).

The jacket, “white as a shroud” (9), imperils the main character, in more ways than one. From the start, it proves to be more of a “burden” than a blessing. The design is highly unpractical for seafaring work. First off, it is too tight and difficult to unfasten. What is more,

the quilted material soaks up water, which is impossible to avoid on deck where the crew are continually doused in rain and sea spray. White-Jacket repeatedly begs the lieutenant for tar sealant, so that he can waterproof the material, but is refused (11, 97, 146). So, he is forced to go about his duties “soaked and heavy... dragging [himself] up step by step, as if [he] were weighing an anchor” (10).

Worst of all, the unusual hue of the jacket attracts the notice of his superiors, who single him out for special errands: “how easy, in that mob of incognitos, to individualize that white jacket” (146). White-Jacket realises, too late, the privilege of being able to blend in and not stand out. Indeed, after the ship runs into a “snow-squall” off the southern tip of Cape Horn, he welcomes the flurries. The coverlet of snow, which blankets everyone on deck, allows White-Jacket to once more blend in with his fellow seamen: “the men become *white-jackets* along with myself” (146). The double confinement of the white jacket, in this way, enacts the squeeze of tyranny, which impresses itself upon all aspects of life within the navy.

For Melville, the factory was another disciplinary system. In *White-Jacket*, Melville describes how technologies of quantification transformed modern work culture, with the mechanization of work bound up with the carceral system: “The whole body of this discipline is emphatically a system of cruel cogs and wheels, systematically grinding up in one common hopper all that might minister to the moral well-being of the crew” (436). The novel is replete with what Giddens calls “time-space ordering devices,” such as timetables, clocks, bells, and stopwatches: tools which “lie at the heart of modern organization,” due to their ability to coordinate activities at scale (*Nation-State* 174). In fact, the labour movement of the 1840s centred on the issue of time, specifically the length of the working day. As will be shown, standardization enabled closer monitoring of workers, but also of workplace practices, opening the door for new forms of resistance, including the formation of workers’ collectives.

When Melville joined the Navy in 1843, America was just pulling out of a punishing depression. With the economy on the mend and standards of living rising, the working class began to mobilize to demand better working conditions (Rayback 92). The labour unrest of this period was, in part, a response to the creation of the modern workday, which functioned as a system not just for increasing efficiency but for monitoring workers. One crucial development was the implementation of rigid work schedules, which replaced the flexible, self-directed schedules of the “putting out” and farming system. As shown in the novel, the timetable has its origins in military practice. The changing of the watch, which takes place every four hours, is marked by the ringing of a bell, with the logs filled out in accordance with these shifts (110). Melville compares the Navy’s rigid adherence to the schedule as such: “It is something like life in a large manufactory. The bell strikes to dinner, and hungry or not, you must dine” (56). Scenes like this harken to the military origins of bureaucracy and of modern workplace culture.⁷⁵

However, clocks were not always tools for regulation, and, in fact, could be manipulated by the managers to extract additional labour. The workday, in general, had lengthened since the 1820s (Zonderman 235). This was, in part, due to the use of artificial light, particularly whale oil lamps, which allowed factories to remain open past sunset. However, it was also due to the tendency of employers to manipulate the clocks. By “shaving” time, ringing the bell to work earlier or later, the workday could be extended by as much as half an hour (Roediger and Foner 51-52, Thompson 38). Indeed, as David Zonderman points out, the factory bells and clocks were made to be visible, often situated on the highest belfry, but *not* accessible. Only the supervisor had control of the device (Zonderman 237-238). As one mill worker reported, “There we worked as long as we could see in summer time, and I could not

⁷⁵ See, for instance, Claybaugh.

say at what hour it was that we stopped. There was nobody but the master and the master's son who had a watch, and we did not know the time" (Kydd 283). Likewise, Melville describes the shipmaster's dominion over time:

[the captain] is the lord and master of the sun. It is not twelve o'clock till he says so. For when the sailing-master, whose duty it is to take the regular observation at noon, touches his hat, and reports twelve o'clock to the officer of the deck; that functionary orders a midshipman to repair to the captain's cabin, and humbly inform him of the respectful suggestion of the sailing-master. "Twelve o'clock reported, sir," says the middy. "*Make it so,*" replies the captain. And the bell is struck eight by the messenger-boy, and twelve o'clock it is. (32)

Data collection was crucial in modernizing work and, in turn, establishing a new culture of workplace surveillance. Mechanisms like the stopwatch enabled job performance to be quantified, putting more pressure on workers to increase their output. Yet, it was paper technology—such as timesheets, ledgers, and logbooks—that arguably had a more transformative effect. The Springfield Armory, whose managerial techniques served as a model for the industrial factories of the 1840s, is a prime example. After taking charge of the armory in 1815, Colonel Roswell Lee sought to perfect worker performance; not through training or education, but rather by establishing information systems to better monitor and evaluate their output. Under his direction, the unit foremen began collecting data on each individual worker, including "units completed, units on hand, scrap, waste, and tools returned as worn out" (Chandler 74). These reports could then be used to detect and correct for inefficiencies or flaws in production. As Lee boasts in an 1819 report, "Complete accountability is established and enforced throughout; and if there is any error committed, it will be discovered on comparison and traced to its source" (qtd. Chandler 75). In this way, Lee's armory became the blueprint for the modern assembly line.

The individuality of the *worker* likewise had to be stamped out, that she, like the product, could be made more efficient and dependable (Pollard 254-255). In this sense, White-Jacket's

experience as a man-of-war recruit is representative of the “transient, marginal, and deviant” countryside or domestic worker, who must be made to comply with the strict controls of life within an urban factory, and so adhere to what Werner Sombart called the “new economic order” (Sombart qtd. Pollard 254). The averaged man is, as Melville points out, more vulnerable to exploitation. Much like Whitman in his later Civil War poems, when Melville thinks of war, he thinks of lists. In *White-Jacket*, Melville describes the naval drills, in which the men leap to their stations, in an enactment of a battle. During one of these exercises, White-Jacket ruminates on the rituals of battle, and concludes that, in the aftermath of a bloody skirmish, the first act would be to do a head count and tally up the dead: “And opposite all these poor fellows’ names, down would go on the quarter-bills the blood marks of red ink—a murderer’s fluid, fitly used on these occasions” (87). The roll call not only underscores the centrality of numbers and counting in military rituals, but how these acts normalize violence by reducing suffering to cost benefit; and the same might be said of the larger role of data collection in the ritualized discipline and sacrifice of the modern industrial-era worker through the extraction and exploitation of their labour.

Yet, even as these changes were being implemented, workers found new ways to evade and resist the strict controls of the new factory system. As discussed in Chapter Four, the growth of numeracy inadvertently set the stage for more sophisticated forms of labour organization. As Edward Palmer Thompson observes, if workers came to accept the dominion of the timetable and the clock over factory life, they would in turn demand greater government oversight of and intervention into oppressive labour practices (Thompson 86). Take, for instance, the following testimony of a Lowell textile worker, in which she sums up the cumulative effect of “shaving time” off the factory clocks:

You see by tightening the screws in this way, the operatives lose from four to six minutes per day, under the pretense of allowing them thirty minutes for meals. A little calculation will show how it would stand at the end of five years; and it will be recollected that many

of the operatives have worked in the same mill more than five years. Four to six minutes per day, say averages five minutes—thirty minutes per week, two hours per month, two days of thirteen hours per year, and ten days for five years. This is the practical effect of this irresponsible, over-working oppressive system. (“Corporate Tyranny,” qtd. in Zonderman 239)

Likewise, in the *White-Jacket* chapter “One Reason Why Men-of-War’s Men Are, Generally, Short-Lived,” Melville describes how the rotating shifts took a toll on the health of Navy seamen by cutting into their rest hours. As he explains, the crew were banned from using their hammocks during the day, but still required to do alternating night shifts. As such, they had no opportunity to catch up on sleep: “Indeed, deducting the time allowed for the other watch to turn out; for yourself to arrange your hammock, get into it, and fairly get asleep; it maybe said that, every other night, you have but three hours’ sleep in your hammock” (101). As demonstrated in this chapter, the imposition of strict schedules, which made workers more attentive to time, had the unintended effect of galvanizing the labour movement. Workers were better able to articulate and document the ways in which their labour was being exploited, and in turn could make more sophisticated and targeted demands for reform.

The first decisive act in the movement to decrease workhours came from Massachusetts, the heart of America’s manufacturing industry. The Ten-Hour Republican Association was created in 1842, with branches springing up across the state. The organization’s goal was to petition the state legislature to institute a standard ten-hour workday (Rayback 92; Commons 536). Though the bill failed to pass, the movement continued to gain momentum, with the formation of the New England Working Men’s Association in 1844 and the Lowell Female Labour Reform Association in 1845, along with several other labour groups (Rayback 94; Commons 539). By the late 1840s, there were hundreds of ten-hour law petitions in circulation in New England, and the legislative government was forced to act. In 1847, New Hampshire became the first state to set a legal limit on the length of the working day, though

the fight for shorter hours and higher wages would continue well into the 1850s (Rayback 94-95). The minority report of the New Hampshire House Committee, which played a decisive role in the final vote, warned that “excessive labour” threatened not just the “physical health” but the intellectual and spiritual well-being of the workers:

Constant daily labor, for the full number of hours which health and strength will permit, leaves very little ability, and often little inclination for that intellectual culture, without which the man, or what is still more, the woman, becomes a mere slave to labor, and approaches the condition of the machine she attends. (New Hampshire 1847 House Report, 477)

Of course, the underside of the moral reform movement was the “moral policing” of workers, which the bill did not address. Pollard observes that during the industrial era, factory owners funded schools and church programs, with the aim “both to encourage moral education in its more usual sense, and to inculcate obedience” (Pollard 268). Through cultivating a Protestant work ethic, employers sought to stamp out revolt and create a more compliant, docile workforce: “the drive to raise the level of respectability and morality among the working classes was not undertaken for their own sakes but primarily, or even exclusively, as an aspect of building up a new factory discipline” (Pollard 270). As David Roediger and Philip Foner point out, concerns about the “moral welfare” of workers, particularly female workers, was used to justify expanded powers of surveillance, to the extent that the factory supervisor assumed a pseudo “guardianship” over these men and women, exerting influence over their lives not only while at work, but at all times (Roediger and Foner 46-47). The Lawrence Manufacturing Company rules issued in 1833, for instance, encompasses a broad set of regulations that apply to conduct both during and outside of workhours:

All persons in the employ of the Company, are required to attend assiduously to their various duties, or labor, during working hours: are expected to be fully competent, or to aspire to the utmost efficiency in the work or business they may engage to perform, and to evince on all occasions, in their deportment and conversation, a laudable regard for

temperance, virtue, and their moral and social obligations. No persons can be employed by the Company, whose known habits are dissolute, indolent, dishonest, or intemperate, or who habitually absent themselves from public worship. (Lawrence Manufacturing Company general regulations, 1833; see fig. 3.8)

The moral regulation of workers is similarly reflected in the ‘moral codes’ written into whalers’ contracts, as covered in the previous section on *Omoa*, and into the military’s Articles of War.

Melville himself questioned the aims of the moral reformers. In his novel, he does not preach the virtues of self-discipline, but rather the dangers of institutionalization. The protagonist is deeply suspicious not only of the military, but of other organizations, including the church. He excoriates the hypocrisy of the Navy’s church program, which preaches peace, but participates in the war machine. As he points out, the Articles of War guarantee that for each enemy casualty, the minister is awarded two-twentieths of the “bounty” (188). He writes, as well, about how military men become unsuited to life as civilians. Within the confines of the man-of-war, the Navy seamen live like prisoners, whose day-to-day lives are highly regulated. As a result, many of them have difficulty adjusting to freedom on shore. Indeed, though the crew of the *Neversink* swear they will abandon navy life, soon after reaching home they drink and gamble away their wages, and so are forced to reenlist (454). In short, they become socialized to prefer imprisonment.

The novel vacillates between the ordering and disordering impulse. In the chapter “Man-at-War Library,” for instance, Melville describes visiting the *Neversink*’s library. The character observes that the ship’s collection of books, guarded by a “dried up” old marine corporal who had once been a postal office clerk, was “paid for by the government” (199). Indeed, in the mid-nineteenth century, naval reformers established onboard public libraries. These programs were meant to “develop and supplement the self-discipline of seamen” (Glenn 412). In other words, the library was intended to instil good moral values and

cultivate a “seaman’s internalized restraint” (ibid). For *White-Jacket*, however, the library is not a place of “restraint,” but an escape from the tight controls of man-of-war life. He delights in the disordered jumble of books, not lined up neatly on a shelf, but packed inside an “old cask” like “potatoes.” Sifting through the volumes of philosophies, histories, biographies, belles-lettres and even some “odd” plays, he discovers “precious... jewels.” As *White-Jacket* says, “public libraries have an imposing air” because their neat classification systems discourage serendipitous discovery; in contrast, “the books that prove most agreeable, grateful, and companionable, are those we pick up by chance here and there” (201).

At the same time, Melville’s suspicion of organizational systems leads him to study and dissect how they operate and ultimately discover how they can be ‘hacked.’ Multiple chapters in *White-Jacket*, such as chapter three, “A Glance at the Principal Divisions, Into Which a Man-of-War's Crew is Divided,” anticipate the structure of the “Cetology” or “whale folio” chapter in *Moby-Dick*. Similarly, Melville moves methodically from the “grand divisions” of the Starboard and Larboard watch to the “specialized” subdivisions of topmen, and from the highest rank of commodore to the lowest rank of cabin boy. In all, he identifies over thirty distinct positions and alludes to numerous others. As *White-Jacket* puts it, “It is from this endless subdivision of duties in a man of war, that, upon first entering one, a sailor has a need of a good memory, and the more of an arithmetician, the better” (18).

While both novels are interested in classification systems, in *White-Jacket* Melville looks more to sociological than biological systems. The character *White-Jacket* is fascinated by the social structures aboard the naval ship, what he calls the “eternally shifting, domestic by-play of a man of war” (452). As he realizes, the social hierarchy is mapped out spatially, with different sections of the ship occupied by different ranks. These social spaces are, in turn, organized to facilitate surveillance. Those who work in the bowels of the vessel,

amongst the “water-tanks, casks, and cables,” are of “gloomy disposition, taking a sour view of things.” Likewise, those stationed in the “gun-room,” under the eye of the officers, are described as a “narrow-minded set; with contracted souls; imputable, no doubt, to their grovelling duties” (61). The captain, meanwhile, commands from the raised quarter-deck, overseeing all from above.

White-Jacket, on the other hand, is a “main-top-man,” stationed on the “loftiest yard.” Unlike the rest of the crew, the “liberal-hearted, lofty-minded” topmen, who work in the ship riggings, are “lifted above the petty tumults, carping cares, and paltrinesses of the decks below” and can escape the notice of the captain and mates (60). Indeed, when not on duty, White-Jacket finds solitude in the “chains,” which hang on the outside of the ship and whose rigging seems to form “little chapels, alcoves, niches, and altars, where you lazily lounge—outside of the ship, though on board” (60, 376). Much like Ishmael in *Moby-Dick*, Melville positions his hero outside of the fray, as an onlooker or bystander to the main action, rather than a direct participant. Likewise, he is regaled with stories of battle but is never deployed into action. The ghostly hue of his jacket underscores the liminal position he occupies on the ship, apart from the others. While stationed on watch, he escapes into his thoughts, “consciousness glid[ing] away,” neither here nor there. His disembodied status within the naval institution is shown in his fellow sailors’ failure to recognize his “corporeality.” Indeed, having dozed off during his watch, he is mistaken for a phantom and knocked off the mast, very nearly plummeting to his death (95-96).

Within the datafied system, to be uncountable is a form of exile, and the white jacket is a reminder of the “eternal risk” of nonconformity: “‘Jacket... you must change your complexion! You must hie to the dyers and be dyed, that I may live’” (96). One of the other loners on board the *Neversink* is the poet Lemsford. Like White-Jacket, Lemsford is a free thinker and fights to retain his autonomy within the oppressive environment of the Navy. The

poet's verses are the opposite of the naval logs, and the crew fear their disordering influence. Lemsford's eccentricities threaten the cohesion of the group, and as such the other seamen regard him as a dangerous "lunatic." Fearing they will find and destroy his manuscript, the poet hides the pages: "They hated his box, as if it had been Pandora's, crammed to the very lid with hurricanes and gales. They hunted out his hiding-places like pointers, and gave him no peace night or day" (54). The poet as an agent of disorder can also be read as a code for queerness, whose unnameability defies classification.⁷⁶

However, in Melville's novel, the chief threat to the navy establishment is not disorder, but rather organized revolt, in the form of counter-surveillance. Aboard a man-of-war, part of the game is to outwit and out-surveil the commanders. In the novel, Bland, the master-at-arms, whom Melville compares to a "Cuba blood-hound," is always on the hunt for rule-breakers. He is aided in his task by the corporals Leggs and Pounce, a former police officer and a former jailor, appropriately enough. The master-at-arms also places spies among the crew, known as "fancy men" and "white mice," to root out wrong-doers and would-be insurgents. Indeed, between Bland and his cronies, the seamen are never fully at ease:

During the day the master-at-arms and his corporals are continually prowling about on all three decks, eager to spy out iniquities. At one time, for example, you see Leggs switching his magisterial rattan, and lurking round the fore-mast on the spar-deck; the next moment, perhaps, he is three decks down, out of sight, prowling among the cable-tiers. Just so with his master, and Pounce his coadjutor; they are here, there, and everywhere, seemingly gifted with ubiquity. (358)

Yet the crew are always one step ahead. Gambling, for instance, is strictly forbidden, but the seamen develop a clever system of counterespionage to avoid detection. To evade the officers, the sailors "contribute a small sum toward a joint fund, to be invested in a bribe for some argus-eyed shipmate, who shall play the part of a spy upon the master-at-arms and

⁷⁶ For more on how "queerness" was coded in the Navy punishment logs, see Langley 172-173.

corporals while the game is in progress” (357). Notably, the “mizzen-top men,” those of White-Jacket’s position, are often selected to be scouts, both because they are light and swift-footed and because they work in the rigging and have the best view of the activity below. The spy network is so effective that, despite the ban, lively games and dice and cards are almost always taking place, in “some certain shadow, behind some certain hammock” (357). In returning the master-at-arms’ gaze, the crew members unsettle his authority, and he grows increasingly paranoid, often suspecting that he is being followed, and he takes to muttering to himself: ““The muffled dice are somewhere around... There are them three chaps, there, been dogging me about for the last half-hour”” (360). These games of surveillance and counter-surveillance were being played out in industrial-era workplaces, and a mini-industry sprung up around labour espionage, in which private investigators were hired to spy on employees and root out the “trouble-makers.”⁷⁷

At the same time, labour reformers used witness testimonies—which they collected in pamphlets and memoirs as well as dramatized in novel form—to rally public support. Case and point, during the debates on flogging, ordinary seamen who wrote about their experiences in the Navy played a role in shifting the narrative. These amateur “journalists” figure in Melville’s novel, working to expose what Foucault terms “delinquency from above” (287). For all his attempts to “keep [him]self in the background” (151), White-Jacket actively resists conformity. His chief act of rebellion is that of recording and reporting on the abuses that he witnesses. In this task, he draws upon his Navy training, utilizing his knowledge of the institute’s informational practices. One of his chief responsibilities as a sailor is simply to “watch” or stand guard and record the data or events into the ship’s log. The company is divided into quarter-watches that rotate every four hours (except for the dogwatch), which

⁷⁷ On the history of labor espionage in nineteenth-century America, see Luff, “Surrogate Supervisors”; Smith, *From Blackjacks to Briefcases*, 75-96.

means that all sailors take part in watch duties, and this activity is the backdrop for much of the novel's events. As Mark Andrejevic explains, lateral surveillance, in which workers are trained to report on and monitor one another, is meant to enhance the efficiency of the penal system in two ways: firstly, by distributing the labour of surveillance; secondly, by indoctrinating the workers to penal practices (485-486). This, in turn, sows mistrust and division amongst the workers, who are, as a result, less capable of organized resistance.

White-Jacket, however, takes his "duty to watch" as an opportunity to "look back" at his subjugators. His station as a topmast man, in this sense, suits his true occupation as chronicler of events. Under his purview, no one is beyond scrutiny. From his lofty position in the rigging, he not only has a "bird's-eye" view, but what he describes as the ability to give an "impartial account of our man-of-war world; withholding nothing; inventing nothing; nor flattering, nor scandalizing any; but meting out to all—commodore and messenger-boy alike—their precise descriptions and deserts" (60-61). Like the citizen scientists of the reform era, White-Jacket studies the relations between the different social groups aboard the *Neversink*. He seeks out the "names, callings, and precise abodes" of the various crew and laments the lack of a "public printed Directory for the *Neversink*, such as they have in large towns, containing, an alphabetic list of all the crew, and where they might be found" (152). The novel itself is a product of White-Jacket's investigation into what he calls the "social" culture aboard a man-of-war.

Though White-Jacket describes his gaze as objective, in fact, the novel is written from the perspective of the subjugated. From this point of view, watching is a tool not of dominion but of empathy. Much as in Whitman's "walking stories," in which the author travelled to and reported on different communities in Brooklyn, White-Jacket's exploration of the ship gives him a window into the lives of the other seamen. While perched on the lanyards, for instance, he happens to observe a sheet-anchor-man engaged in "solitary" prayer:

I was pleasantly reclining in a particularly shady and secluded little niche between two lanyards, when I heard a low, supplicating voice. Peeping through the narrow space between the ropes, I perceived an aged seaman on his knees, his face turned seaward, with closed eyes, buried in prayer. Softly rising, I stole through a port-hole, and left the venerable worshipper alone. (377)

The man, who is a devoted Baptist, later asks to forgo the navy ship's official Sunday service because it is Episcopalian, and is threatened with punishment under the Articles of War:

“May I be allowed, sir, not to attend service on the half-deck?”

“You will be allowed, sir!” said the Captain, haughtily, “to obey the laws of the ship. If you absent yourself from prayers on Sunday mornings, you know the penalty.” (187)

Through his empathetic observations of “othered” communities, *White-Jacket* exposes and counteracts the gaze of his commanders, which criminalizes deviance and regards rule-breakers only as unruly brutes.

In this way, watching also becomes a tool for exposing tyranny. In *White-Jacket*, Melville explains how there were no means for a Navy private to appeal a sentence. Neither was there a process for filing complaints against the officers, who were, consequently, given free rein to terrorize the crew with no repercussions. As the author puts it, “not one solitary clause is to be found which in any way provides means for a seaman deeming himself aggrieved to obtain redress” (350). For these reasons, Melville argues that the naval code is undemocratic and violates the “spirit of the political institutions of the country,” “convert[ing]” “free” citizens into “slaves” (172). The lack of oversight connects back to the questions of surveillance. Because those in charge are not being held to account, common sailors take it upon themselves to document and draw attention to these abuses. As Melville says, “In other ships, the thing may be glazed over by a guarded, punctilious exterior, almost complete hiding the truth from casual visitors, while the worst facts touching the common sailor are systematically kept in the background” (436). The sailors’ journal, in this sense, functions as

the counterpart to the official log, a means of exposing those abuses that are “systematically kept” out of the public eye.

Further to this, as Melville points out in *White-Jacket*, not all infractions were dealt with formally, or indeed recorded in the logs. The officers could, for minor offenses, strike the men with a “colt” or “bit of rope’s end.” In fact, in the novel, the mates of the *Neversink* are ordered to “carry the ‘colt’ coiled in their hats, in readiness to be administered at a minute’s warning upon any offender” (167). The threat of the “scourge” was thus ever-present. Likewise, as shown in the novel, the casual violence inflicted on Black sailors through forced participation in “games” like headbutting would not have been recorded. Jeannine DeLombard has written persuasively about the ways that *White-Jacket* exposes the “gradations” of oppression, in terms of the intersection of labour and of race (57). I would add that Melville not only draws attention to how Black crew members were treated differently “under [the] law” (62), but how they were differently encoded in the log data. To revisit the example given by DeLombard, in the novel Captain Claret’s “favourite pastime” is to order the “negro” sailors Rose-Water and May-Day to “bu[tt] each other like rams” for his entertainment. When the “sport” turns into a “real” fight, Captain Claret punishes both sailors with a flogging: “‘though I now and then permit you to *play*, I will have no *fighting*...’ And the negroes were flogged” (324). “Fighting” is one of the most common infractions listed in Exec. Order 51. In the novel, the “official” crime, a designation that is emphasized in the novel through italics, is contrasted with the “unofficial” violence of “play.” In this way, the scene underscores how the authority endowed upon information systems can further the erasure and obfuscation of violence inflicted on Black bodies.

As discussed in the previous chapter, the histories of Black people in America have been expunged in various ways, including through suppression of data, as happened in the creation of a separate, less comprehensive Slave Schedule for the 1850 and 1860 National

American Censuses. Indeed, as shown in *White-Jacket*, while data practice has functioned as a tool of colonization, which racializes and designates non-whites as Other,⁷⁸ *exclusion* from the record can be another form of subjugation. Earlier in the same scene, Rose-Water tries to disavow himself of the blackness that marks him as Other by recourse to his lineage, asserting that his mother was a slave and the “mistress of a Virginia planter belonging to one of the oldest families in the State” (124). Of course, the slaveowner can verify that his family is “one of the oldest” because his family name has been recorded in the national registry; the planter’s lineage can be traced, while the slave’s cannot, as underscored by Rose-Water’s failure to deter his attackers by appealing to an unencoded and unauthorized (and, thus, unrecognized) pastness. As the racial dynamics of punishment in this scene bring to light, those who are not counted do not count (essentially, do not *exist*) in the eyes of the state and are, therefore, excluded from being full participants in society, which not only makes them vulnerable to exploitation, but also robs them of their identities and histories. Recovering these histories can involve sifting through the data with an eye not only to what is said, but what is unsaid or suppressed.⁷⁹ Being attuned to these exclusions and to the ways that subjects are differently encoded, as Melville does in this scene, can by the same token lend itself to alternate interpretations of the data.

Throughout the novel, Melville draws attention to how the act of documenting and observing the ship’s activities functions as an exercise power, a notion that was not lost on the Navy Command, who, in the author’s telling, goes out of its way to suppress unauthorized accounts, which might contradict or undermine that of the official record. As Melville points out, censorship is written into the Articles of War, which “forbid any person in the Navy to

⁷⁸ For more on how the categorization of race in the American National Census further entrenched racial hierarchies, see Nobles.

⁷⁹ See, for instance, Cook et al., who chronicle the history of Black naming practices by cross-referencing data from slave sales with those from national registries like the census.

bring any other person in the Navy into contempt” (56). In the novel, one of the sailors is caught writing an exposé on “Navy Abuses” and, consequently, has his work confiscated by the Captain: “The volume was seized by the master-at-arms, armed with a warrant from the Captain. A few days later, a large nail was driven straight through the two covers, and clinched on the other side, and, thus, everlastingly sealed, the book was committed to the deep” (56). The incident underscores the precarious position of the protagonist as a fellow gatherer and recorder of information.

Indeed, Melville repeatedly emphasizes the impenetrability of the Naval Command, and its lack of openness about its disciplinary systems. He compares the captain’s quarters, for instance, to the “innermost shrine of the Pope, and the dungeons and cells of the Inquisition” (153). Robert Chapel and Edward Stessel, among others, have underscored the influence of Melville’s *White-Jacket* on the rights of seamen; though as mentioned earlier Anderson argues that the impact of Melville’s novel has been exaggerated, calling it a “bandwagon-reform” novel.

But, to what extent did the Navy establishment fear being exposed to outside scrutiny? Commander Du Pont was one of the 84 naval officers who testified in favour of corporal punishment when consulted by the Secretary Preston (William A. Graham to SFDP, 14 April 1851, SFDP to Graham 16 April 1851). As shown in the Exec. Order 51 returns, he had in the past ordered shockingly severe punishments during his command of the frigate *Congress*, so his opposition to the abolition of corporal punishment is not surprising. In fact, he was so “alarmed” by the anti-flogging movement that he travelled to Washington to rally support in opposition to the bill (Langley 184), and it was perhaps in this context that he encountered Melville’s *White-Jacket*. The naval commander was reportedly “disgusted at the impact of Melville’s book on Congress and the public” (Weddle 35). Du Pont accused the author of sensationalising the events, packing the story with “every enormity he has ever heard of in

the ocean... making the frigate the stage on which they are exhibited” (SFDP to Charles Henry Davis, 14 May 1850).

However, not all officers were opposed to change, and, in fact, some of the loudest calls for reform came from within the Navy establishment. After the ban on flogging passed in 1850, some congressmen called for the act to be amended. However, Commander R. F. Stockton spoke out against restoring the practice. In an 1852 speech before the Senate, Stockton testified that flogging mars the relationship between sailors and their commanders: “the one is the oppressor, the other the oppressed, who may fear or hate, but he neither loves nor respects his tyrant” (*Sailor’s Magazine*, v.23-24, 596-597). Stockton spoke, as well, about the need to uphold enlightenment values: “Good ships, well built, well rigged, and fully equipped are magnificent specimens of human science and art” and need “good men,” in other words men of reason, to match (*ibid*).

As Foucault points out in *Discipline and Punish*, moral reform changed the conversation around discipline, which was no longer about a battle over the physical body, but a battle over the “soul” (16). The expansion and diffusion of the carceral system, as facilitated by this shift, is reflected in the congressional debates over naval reform. During the debates, those opposed to abolishing corporal punishment argued that alternatives, such as being imprisoned in the brig, were worse. Senator Yulee cited a report from the superintendent of the Auburn prison in New York State, which found that prisoners suffered more lasting damage from solitary confinement than the lash, the switch to the former having resulted in “eight cases of insanity” (*Congressional Globe*, 31st Cong., 1st Sess., 2059). By comparison, Yulee argued, corporal punishment was the “more humane” route. Yulee’s rationale is highly dubious, given that, as evidenced in Exec. Doc. No. 51 logs, punishment by confinement in single or double irons was, when administered, often done so *in addition* to floggings, not as an alternative. Still, the comparison does reveal how surveillance society, more generally, would

take the carceral system as its organizational basis. The Auburn prisoners are, moreover, an example of how the subjects of discipline were increasingly seen as objects of study. As Yulee observes, their suffering did not necessarily lessen under the new system of “treatment.”

Likewise, *White-Jacket* illustrates how knowledge production drives the expansion of panoptic society. Cuticle, the ship’s surgeon, treats his patients as specimens or laboratory experiments. The doctor’s cyborgian body—his “inorganic appurtenances” include a false wig, dentures and a glass eye—match his crudely methodical nature (303). In a grotesquely over-the-top scene, the doctor performs an unnecessary amputation on an injured seaman, all to satisfy his craving for more “interesting cases.” As the patient expires on the operating table, Cuticle lectures him about his good fortune at being born in the “enlightened age” of science (305). The attending surgeons-in-training acknowledge that the surgery will do more harm than good, likely leading to the patient’s death, but fail to intervene. In fact, they time the amputation to see if the doctor can cut off the limb in record speed (302).

Indeed, during the anti-flogging debates, some senators in favour of reform indicated that what was most offensive about corporal punishment was not the resultant suffering, but the explicit and personal way in which such punishment was inflicted. Senator Benton, for one, expressed discomfort at forcing officers to take part in “spectacles” of violence, asking whether it was “worthwhile to make the officers of the navy the instruments or agents to correct the incorrigible parts of mankind” (Congressional Globe, 30th Cong., 2nd Sess., 33). Such comments are indicative of how moral reform did not eliminate punishment, but only made it less “distasteful” by mediating it through the state. Indeed, the reform movement did not succeed in dismantling the military institution, and some might argue even rescued it from ruin.

In *White-Jacket*, the author at one point asks whether reforms go far enough: “Some of these evils are unavoidably generated through the operation of the Naval code; others are absolutely organic to a Navy establishment, and, like other organic evils, are incurable, except when they dissolve with the body they live in” (437). The suggestion is that more radical action might be needed. Better to burn system down, “dissolve... the body they live in.” Such an argument raises a provocative question: is documenting these abuses enough, or do reform novels, by neutralising our mutinous impulses, ultimately feed back into and support the system? Indeed, on the surface, it might appear that White-Jacket’s attempts at revolt are ultimately thwarted. He is noticeably absent from the “rebellion of the beards,” in which the men protest mandatory shaving. There is only one instance in which White-Jacket is brought, against his will, into direct conflict with the captain. However, he is once more saved from persecution (330-331), and so is denied the glory of a “death song” (Foucault 66).

Yet as Melville makes clear throughout the novel, the book itself is its own “answer” to the panoptic system, albeit an imperfect one. White-Jacket’s “office,” as he calls it, is not just gathering information, but exposing how these systems operate, and so opening them to critique (448). In *Discipline and Punishment*, Foucault mentions “democracy” only once, in relation to Jeremy Bentham, from whom he adapted the concept of a panoptic society. Notably, Foucault posits that, for Bentham, the ideal panopticon was an *open* system: “There is no risk, therefore, that the increase of power created by the panoptic machine may degenerate into tyranny; the disciplinary mechanism will be democratically controlled, since it will be constantly accessible to ‘the great tribunal committee of the world’” (DP 207). In contrast to Foucault’s interpretation of this passage, I argue that during technological leaps, when the penal (and knowledge-producing) mechanisms are concentrated in the hands of a few, there is a significant risk that the doors will be shut; the diffusion of power is, therefore, not inevitable but must be fought for.

White-Jacket is not a “gallows hero” because he was not fighting against the traditional penal system, but a distributed, surveillance-based one, in which workers were increasingly controlled, not through spectacles of violence, but systems of documentation. Learning to navigate this system was essential to the survival of maritime workers and to keeping tyranny in check. *White-Jacket* and, to a lesser extent, *Omoo* are works of *indiscipline*, which respond to and subvert the systems of datafication (and surveillance) to which maritime workers were subject. In *Moby-Dick*, Melville delves deeper into informational practices. Rather than the political implications of our datafied existence, he considers the existential ones, including the potential to imagine alternate, non-human subjectivities.

Imagining Whale: The ‘Multiple Morphisms’ of Moby Dick

Intro

So long as a man’s eyes are open in the light, the act of seeing is involuntary; that is, he cannot then help mechanically seeing whatever objects are before him.

Nevertheless, any one’s experience will teach him, that though he can take in an indiscriminating sweep of things at one glance, it is quite impossible for him, attentively, and completely, to examine any two things—however large or however small—at one and the same instant of time; never mind if they lie side by side and touch each other... How is it, then, with the whale? (*Moby-Dick* 368)

In *Moby-Dick*, Herman Melville presents the reader with a strange scene: Ishmael gazes upon the severed heads of two whales, one a Sperm whale and the other a Right whale, each hoisted upon either side of the ship in preparation for further processing. As he walks around the heads, his impression of the whale continually changes. Much like in the scene with the doubloon, the shape of the head “assume[s] different aspects” and takes on new meanings “according to [his] point of view” (371). From one side, Ishmael is struck by the magnificence of its barnacled crown, the “diademed king of the sea,” and from another, he assesses its financial worth, speculating that the “sulky pout” alone would “yield... some 500 gallons of oil or more” (372). In a remarkable thought experiment, not unlike Thomas Nagel’s famous analogy of the bat, Ishmael even attempts to step *inside* the whale itself, imagining what does it mean to experience the world as whale?

As Nicole Shukin points out in *Animal Capital*, the question “what is an animal?” is not “self-evident,” but rather “fluctuates with the vicissitudes of culture and history and, more particularly, with the vicissitudes of a species line that can be made either more porous or impregnable to suit the means and ends of power” (15). As she argues, the “rendering of animal flesh and capital” is not necessarily counter to the aims of capitalism, and indeed can serve its power, “so long as they are discursively managed under the separate domains of

culture and economy” (21). Yet, this “productive contradiction of animal capital’s metaphorical and material currencies is constantly at risk of igniting into real social antagonism should their separate logics brush too closely” (21).

The final chapter of this dissertation contextualizes the multiple morphisms of *Moby-Dick* within emergent notions of perceiving animals, both as human and as data. This approach to the novel is not, in itself, entirely unique. Hugh Crawford, Elizabeth Schultz, and Philip Armstrong each point out how Melville’s work blurs the distinctions between human, animal, and machine. However, only certain analogies are seen as constructive, in the sense of challenging rather than reenforcing binary thinking. In past readings, the quantified animal, as an object of scientific study and resource extraction, is often figured as the Othered animal. By contrast, I argue that it is through moments of what Shukin terms “distortion” or “strategic switching” between perceptual modes (26-27) that Melville troubles the human-animal divide and creates opportunities for interspecies subjectivity.

In Schultz’s ecocritical study of the novel, the whale is the quintessential cyborg as defined by Donna Haraway: a “monster” who transgresses the boundaries between technology and nature (Schultz 111; Haraway 2). From this perspective, the “cybernetic” whale, like the humanized whale, stands in contrast to the “excessive and gratuitous waste of nature through human greed and abuse of technology,” instead signifying a utopic recognition and embrace of what Haraway calls our “joint kinship with animals and machines” (Schultz 111; Haraway 154). However, for Schultz, only certain types of imagining-whale are reparative, as opposed to violent. As she says, “In dying, this whale is not merely a statistic or a resource; Melville transforms it... into a suffering, feeling being” (105). In describing how the shift in perspective occurs, she underscores the dynamic between these two morphisms, one based in language and metaphor and the other in numbers: “Melville adds the rhetoric of sentiment to that of sensationalism to intensify the

reader's sorrow for the whale's death" (105). In this reading, to describe whales as beings who "suffer" and "feel" as humans do can provoke an emotional, empathic response. By contrast, the quantified whale is hopelessly Othered, and to think of animals in such terms forecloses the possibility of deeper understanding.

Armstrong argues that ecocritical readings of *Moby-Dick*, including that of Schultz, often overstate the novel's claims for biodiversity, projecting contemporary environmentalist beliefs onto the text without attention to historical context (102). As he points out, the anthropomorphised whale is inscribed with "competing attitudes," not only in relation to whaling but also gender and class; as such, far from presenting a coherent ecological vision, the novel instead invokes an "uneasy ambivalence" about human and animal relations (107, 110). Like Schultz, Armstrong observes how the novel "traffics" between human and nonhuman domains, invoking various "morphisms," including the technological (127). At the same time, he concludes that, for Ishmael, such analogies are ultimately failures. The "real whale" is ever out of reach, realized only in the violence of the hunt, in which the whale's struggle for survival forces a recognition of nonhuman agency (111-112).

Crawford uses actor-network theory to understand the novel as a play of human and nonhuman forces. As in my own study, he looks to Lieutenant Matthew Fontaine Maury's *Wind and Current Charts*, arguing that Melville's novel can also be read as a "study of the networks that produce and stabilize various objects of knowledge" (16). Crawford's insights into how novels function as "actors" (12) informed my own approach to the role of narrative, including art and literature, in making meaning from data. At the same time, actor-network theory, in "prioritizing action over mind" (Cerulo 543), offers little by way of subjectivities. In Crawford's model, human and nonhuman agents alike, including inanimate objects, are situated on a level playing field: it does not matter whether it is a thinking whale or an unthinking shoal or harpoon line, each exerts influence in the same manner. As in the

previous studies, there is no consideration of the ‘whaleness’ of the whale, which Melville returns to again and again.

Lorraine Daston argues that the perspectival mode, which foregrounds the study of other minds including the nonhuman, was a product of the subject-object split. In her fascinating article, “Intelligences: Angelic, Animal, Human,” she describes the different versions of anthropomorphism that have existed, comparing its use in medieval angelology to that in nineteenth-century comparative psychology. In both cases, anthropomorphism was an “instrument of discovery” (Daston 52). However, while medieval theologians “were keenly interested in the mental operations and affects of angels,” presumably to aid in textual interpretation, they “did not attempt to imagine what it felt like to be one” (Daston 50-51). Only centuries later does the individual, subjective experience become a subject of investigation: “The notion that the ability to assume other perspectives was both possible and salutary, and that a complete escape from perspective would be more salutary still, seems to have first emerged in force, complete with the metaphors of viewpoint and perspective” (Daston 52). Hence, when Ishmael asks in *Moby-Dick*, “how is it” that the sperm whale sees the world, his question is unique to the age of modernity, and would not have occurred prior to the subject and object division.

The notion of what it means to “escape” from perspective in the mid-nineteenth century, when Melville wrote *Moby-Dick*, is complicated by the entanglement of subjective and objective modes. As detailed in the previous chapters, early sociological studies, conducted under the banner of “moral science,” were often openly and fiercely political in their aims. Rather than detached objectivity, these citizen scientists aimed to convey their authentic connection to and embeddedness within the communities that they studied. Numbers were, moreover, not seen as contra to these aims, and rather were deployed as a rhetorical strategy. The “moral table,” which combined surveys of social phenomenon with

calls to action, was an early data trope. As a measure of the collective, the table functioned as both a model of humanity and as an ideology. For the social reformers, data practice was hailed as a democratizing force that gave voice to underrepresented groups. At the same time, data collection was also a measure of credibility that authorized the researcher to speak for these communities.

Yet, the phrase “moral table,” a combination of terms that seems curious from a modern perspective, speaks to a certain relation to the subject, and to numbers, that was by the mid-nineteenth century being reconfigured; and, indeed, by the late 1860s the term “moral science” was supplanted by “social science” (Lengermann and Niebrugge 76-77). With the professionalization of data practices, there was a shift from conceptualizing ‘data’ as a tool and marker of “authenticity” to one of “objectivity” (Frankel 11). As Rita Felski notes, detachment is, in fact, another form of attachment, in that it signifies a certain “mood” or attitude towards the object (6). Though she is talking here of the critic, this notion of detachment can also be applied to the “objectivity” that characterized the new scientific researcher, in the sense of a shift in, rather than absence of, perspective.

In the second half of the nineteenth century, anecdotes continued to be relied on by naturalists, including Charles Darwin and his protégé George Romanes, who drew on their personal experiences to understand and describe animal behavior (Knoll 17). At the same time, there was growing suspicion of anthropomorphism, in its so-called “naïve” assumption of “sameness” between humans and animals, and a call for new approaches. Describing the subject in “neutral,” “technical” terms was thought to be a way to overcome this bias (Karlson 711). Paul White describes, for instance, how physiological textbooks from the 1870s “virtually erased the animal subject from the scene of the experiments” (63). The animal as research subject “rarely appeared as an animal itself” (64). Instead, not unlike the

dissected whale in *Moby-Dick*, the “segments of the creature formed part of the instrumental ensemble” (64).

However, as Eileen Crist and Frans de Waal point out, it is impossible to escape from the human perspective. Mechanomorphism, their term for the technical, quantitative description of animals, is also “prone to error,” in its assumption that certain traits—emotions, rationality, consciousness—are unique to humans (de Waal 2000; Crist 9, 42, 68, 84–85, 90; cited in Karlson 711). Along these lines, White challenges the notion that anthropomorphism in the nineteenth-century was “a force outside the laboratories... not within them,” arguing by contrast that “in the laboratory, too, the boundaries between the animal and the human could be destabilized by the very experiments designed to clarify them” (61-62). Dalston, likewise, posits that quantitative methods, while imposing hierarchy, in some ways broke down stark the divisions between the human and the animal, by situating them as part of a continuum:

Minds were no longer qualitatively different from one another—rational from animal souls, male from female intelligences; instead, they differed only quantitatively and could be (at least in the case of intelligence) plotted as points along a continuum. Hence the investigation of animal minds became only a more far-flung case of figuring out how other human minds worked, the difficulties of understanding one’s dog differing only in degree from those of making sense of a Frenchman. (49)

Building on the work of these scholars, this final chapter looks closer at the intersection of morphoi, what Dalston terms the “shapes of understanding other minds” (51), in nineteenth-century whaling texts. In these works, the manyness of the whale—as resource, as research subject, and as capital—is not necessarily transgressive. As shown in the characters of Bildad and Peleg and Ahab, these ambiguities can facilitate animal surveillance, and in turn the “rendering” of animals as capital. At the same time, as explored in the final section on Ishmael, these moments of “disruption,” deployed intentionally and self-reflectively, can also call attention to “animal otherness” in ways that unsettle the human

point of view. In this way, Melville moves from the political consideration of data in *White-Jacket* to the existential in *Moby-Dick*, exploring how data can trouble the notion of a single, objective reality, and awaken us to the potentialities of alternate subjectivities, including that of the non-human.

Maury's Wind and Currents Charts

As documented in *Moby-Dick*, whalers in the nineteenth century increasingly apprehended their environment and the non-human animals who inhabited it through the lens of data. In the chapter "The Chart," the narrator Ishmael speculates that by "carefully collat[ing]" the data from the "entire whale fleet" one could "construct elaborate... charts" capable of tracking the sperm whale's migratory patterns (220). In a corresponding footnote, Melville reveals that this hypothesis has since been proven with "precisely such a chart in course of completion" (220). Melville includes a statement from US Navy Lieutenant Matthew Fontaine Maury dated from April 16th, 1851, announcing a new series of maps detailing the prime hunting grounds for sperm and right whales. The excerpt describes how the charts divide the ocean into districts:

of five degrees of latitude by five degrees of longitude; perpendicularly through each of which districts are twelve columns for the twelve months; and horizontally through each of which districts are three lines; one to show the number of days that have been spent in each month in every district, and the two others to show the number of days in which whales, sperm or right, have been seen. (220)

Maury's whaling charts were published one year after *Moby-Dick*, in the 1852 edition of *Sailing Directions*, the culmination of an ambitious crowd-sourced data collection project.

Kevin D. Haggerty and Richard V. Ericson argue that unlike the panoptic machine envisioned by Michel Foucault, in which the "few... watch the many," modern surveillance systems exist as an unruly network of "crisscrossing" gazes (17-18). Indeed, the

entanglement of human and non-human surveillance in *Moby-Dick* reflects the “rhizomatic” structure of these emergent data collection systems. My research draws upon numerous primary sources, most notably Maury’s *Sailing Directions* (first ed. published 1848) and *Whalemen’s Shipping List and Merchants’ Transcripts* (published 1843 to 1914). Lance E. Davis et. al.’s *In Pursuit of Leviathan*, a comprehensive study of the rise and fall of the American whaling industry from an economic perspective, was also of crucial import in unpacking the nuances of whaling as *work*. There have, in turn, been numerous studies that examine Melville’s work through the lens of industrialization (see Pettey, Gilmore and Riley) and natural science (see Tanyol, Crawford, Nurmi, and King). This first section of the chapter on the information systems in *Moby-Dick* brings these fields together, showing how the data collected on whales and whaling workers was deeply intertwined.

Lieutenant Maury, the real-world oceanographer and data scientist whose work inspired the datafiers in *Moby-Dick*, was himself a singular character whose story would not be out of place in one of Melville’s nautical adventure tales. Trained as a navy officer, he was on track to a promising career when he was maimed in a stagecoach accident. He was riding beside the driver when the car overturned, and his hip was crushed. The bones were poorly reset and left him with a permanent limp and lifelong pain (Corbin 29-30). During his recovery, the lieutenant sought solace in books and learning. His correspondence from this time reveals his intense curiosity in the world and his desire to carve out his own “little patch of knowledge”:

Sometimes I think—when I become desperate—that I’ll write. Sometimes I have a notion to take to books and be learned; but then such vast fields and pastures and wastes and seas of unexplored knowledge appear on the horizon, my ignorance sickens at the prospect. I am reminded of how little, how very little, I do know; just enough to be sensible of this fact. Then I’ll content myself with cultivating a few little patches of knowledge. What shall they be? Shall they be light or heat?—storms or

currents?—ship-building or ship-sailing?—steam or projectiles?—hollow shot or gravitation?—gases or fluids?—winds or tides?—or—And in the wilderness of subjects, the mind is confused, and knows not which to choose. (Letter to Anne Maury, February 25, 1840; Corbin 35)

Maury's desire to "cultivat[e] a few little patches of knowledge" speaks to how scientific practice was changing. The rapid development of industry in the nineteenth century created a demand for specialized research. As a result, the sciences split away from the humanities into their own discipline and continued to divide into increasingly specialized fields. In Maury's letter, his "confusion" of the "mind" as he flits between topics— "light or heat? —storms or currents?"—reflects this period of partitioning. At the same time, his refusal to alight on a single subject, cutting off his list of topics mid-thought ("or—"), is also indicative of an underlying tension within the sciences themselves: that between the "hardening" of disciplines and the desire to bridge the gaps between them.

In fact, the professionalization of science did not spell the end of the "generalist." On the contrary, as information historian Geoffrey Bowker has argued, with the proliferation of knowledge there was a growing need for new scientific methods (and new scientists) that could help to navigate what Maury refers to here as this "wilderness of subjects" (Bowker 83-84). In other words, specialization created a demand for data science, an "ur-knowledge" whose methods transcend disciplinary boundaries. A demand, as well, for researchers who can collate "vast fields" of knowledge and discover links between seemingly unrelated phenomena. In this way, Maury's letter reveals much about the kind of researcher he would become. Much like Adolphe Quetelet, whose pioneering work on demography was discussed in the previous chapter on Whitman and the census, Maury's ability to engage with and make connections between various disciplines made him especially suited to the data-driven research that he would ultimately pursue.

At the time of writing the above letter, however, Maury was in a “desperate” state. His injuries had put an end to his hopes of active naval duty, and he believed his professional life was over (Corbin 37). Then in 1843, three years after his accident, his fortunes took a turn. Maury was reassigned to the Navy’s Depot of Charts and Instruments. By all means, it was “not a very prestigious post” (Maury Abstracts, Introduction; Hearn 88). However, the confines of his job forced him to rethink the way ocean navigation was conducted, opening new avenues of discovery. In effect, he became the Navy’s chief archivist. His primary duty was to make sure the fleet’s nautical and astronomical equipment was kept in good working order, checking and rechecking the devices for accuracy. He was also responsible for organizing the depot’s collections of charts and records, which were housed in the office’s basement. It was there, amongst the disorderly and neglected documents, that he uncovered boxes of captains’ logbooks. These journals contained the precious raw data that would form the basis of his future discoveries.

The whaling logbook makes an early appearance in Melville’s *Moby-Dick*. In the chapter “All Astir,” which describes the preparations for the voyage, Captain Bildad’s sister Aunt Charity busies herself with “fetching and carrying” all the “necessities,” such that “nothing should be wanting.” Amongst these “necessities” are a “bunch of quills” for the chief mate, to be kept in his desk next to his logbook (107). Through scenes like this, Melville conveys the importance of notetaking for nineteenth-century mariners. Whaling notebooks such as the one described in *Moby-Dick* were meticulously updated and contained a wealth of information. For every day spent at sea, the log keeper was expected to make note of the date, the ship’s position (longitude and latitude), the wind speed and direction, and the weather. The logbook might also describe other aspects of the life aboard the ship, such as the day-to-day duties of cleaning and repair or notable events like accidents or deaths (Adler). The data contained in these historical objects is so richly detailed that it has been the basis of

multiple modern climatology studies, including the Old Weather project, collaboratively run by the United States National Oceanic and Atmospheric Administration (NOAA) and the Smithsonian, and the Southern Weather Discovery project, managed by New Zealand's National Institute of Water and Atmospheric Research (NIWA). Notably, both the Old Weather project and the Southern Weather Discovery project rely on volunteers to transcribe the handwritten logbook data. In other words, they use crowdsourced labour, much like Maury did in the nineteenth century.

As the Lieutenant discovered, the Navy depot held over a thousand notebooks in all, some of them dating back to the 1700s. One point of interest in terms of this study: the initial set of logs included that of the *Acushnet*, the same ship that Melville briefly worked aboard prior to writing *Moby-Dick* (Abstract Log of the *Acushnet*). Maury himself may have poured through the pages and read an account of the voyage that inspired Melville's nautical epic. As will be seen, the inclusion of the *Acushnet* in Maury's study is not entirely surprising, considering the scope of the project and the number of whaling ships that came to be involved.

Maury believed that a quantified world could be navigated more efficiently and safely, and that this forgotten archive held enough data to make it possible. Over the next three years, the Lieutenant and his small team of clerks worked tirelessly to extract and aggregate the data in the logs, using it to create detailed charts of how the wind and current trends change from month to month over the course of a year. These maps made visible the hidden elements that governed the earth's atmosphere and waters (see fig. 4.1). As described in an 1858 article in *The North British Review*, Maury's charts were blueprints of the ocean, which not only harnessed but *mechanized* its forces in service of the modern industrial era: "In the machinery which governs the sea, the sunshine, the clouds without rain, the day and night, with their heating and radiating processes, are the cogs and notched wheels which

compose it, and which, amid all the jarring of the elements, preserve in harmony the exquisite adaptations of the ocean” (*NBR*, February-May 1858, 429).

Exhilarated by his initial findings, Maury determined that he would expand beyond the primary set of notebooks and find ways to gather fresh data. Though he was able to convince the US Navy to get on board, he quickly realized that this would limit the scope of the data to waters patrolled by Navy ships. To extend the project’s reach, he resolved to enlist the help of privately owned merchant vessels (Pinsel 124; Hearn 94). In 1850, Maury circulated a ‘Notice to Mariners’ announcing that shipmasters could receive their own copy of his *Wind and Current Charts* free of charge (*Sailing Directions* 289-291). In return, they had to agree to provide the National Observatory with additional data, as guaranteed in a signed statement (*Sailing Directions* 411; see fig. 4.3). Those who took part in the program were given a blank logbook for recording observations with instructions to return it to the observatory after completing their voyage (Hearn 123-124; *Sailing Directions* 412-413; see fig. 4.4).⁸⁰ Similarly, web users today relinquish their data to private companies in exchange for a service, such as access to a social media platform. Unlike today, data collection in the industrial era was paper-based and, therefore, more explicit, not to mention limited by time and space. Maury, for instance, could not gather data without the whalers’ knowledge; they needed to actively take part in the collection of the observations. Perhaps for that reason, people were more skeptical of data-gathering in the pre-computational era.

Indeed, at first, it was difficult to convince mariners that it was a worthwhile exchange. Logbooks were precious commodities, filled with years, sometimes decades of observations; and shipmasters were understandably reluctant to simply hand them over. Some also doubted that Maury’s routes were truly faster. Why trust his directions when they could

⁸⁰ Fig. 4.3 is an example of a receipt for Maury’s *Sailing Directions* from the Collections Research Center (CRC) at the Mystic Seaport Museum in Connecticut.

rely on their own instincts and experience? The voyage of Captain Jackson of Baltimore in 1848 put those doubts to rest. Jackson's ship, the *W.H.D.C. Wright*, followed the course set out in Maury's charts and made the journey in record time, coming home to port more than a month ahead of schedule. Newspaper coverage of the event heaped praise on Maury, crediting his maps with the voyage's success (*The Baltimore American*, 18 May 1848, pp. 1). It was later proven that by following these charts, mariners could cut their travel time by at least a third. Voyages from America's east coast to Rio de Janeiro, for instance, could be made in as little as twenty-three days, where before the average travel time was fifty-five days (Hearn 124). Word of Maury's miraculous charts spread and within weeks the observatory had issued over five thousand copies of *Sailing Directions*. By 1851, more than 1,000 captains had participated in Maury's project, and by 1854 Maury had collected over a million observations (Hearn 157). As Maury proclaimed in an address to the American Association for the Advancement of Science: "Never before was such a corps of observers known; and never before could the commercial marine of any country boast of such a body of navigators as those of America" (*Summarized Proceedings* 67).

Whalers had special significance for Maury's project. They travelled to the farthest and least explored regions of the ocean, often venturing where other vessels would not go. However, it was not just access to remote areas that made the contributions of whalers so valuable. Whalers' logbooks contained data not only on the weather conditions but also on marine life. A number of nineteenth century shipping logbooks have been digitized and made publicly available by institutions like the New Bedford Whaling Museum. These online collections offer a glimpse of the type of materials that Maury was placed in charge of. As shown in the archived logs, encounters with whales are often marked in the notebook margins with a tiny image of a whale. These whale symbols were sometimes inked in by hand, but more often the log keeper used a stamp (Adler).

As Adrienne Mason points out, whaling stamps were primarily an “accounting” tool, used to assess the success (or failure) of a voyage from a commercial standpoint (Mason). At the same time, as graphic representation, the stamps also highlight the data’s narratological capacities. As touched on in Chapter Two, the mid-nineteenth century was the beginning of a “Golden Era” in data visualization (Friendly and Denis), with notable experiments in graphic display being the National Census Bureau’s 1860 Map of Slave Distribution and Florence Nightingale’s “Rose Diagram.” As in these other examples, whaling stamps were unlike hand-drawn illustrations, in that they imposed a structure and regularity on the information, which allows for recognizable patterns to emerge. As shown in Figure 6, an image of a whale in profile typically signified a successful hunt, while a diving tail indicated either a sighting or a failed catch. The whale stamps were often marked with a number to represent the quantity of blubber harvested, which underscores their function as tools for collecting observations (Louisa Bark, KWM 130B, 252). In addition to tracking whales, the stamps were used to mark other notable events. For instance, a stamp shaped like a ship often indicated a meeting with another vessel, while a coffin-shaped one signified a death. The index or appendix of a logbook might include rows of stamps, which functioned like a bar graph to visually summarize the total catch for the voyage (see fig. 4.7). However, as serialized in the log entries, the stamps also conveyed narrative. Wibke Weber, in his discussion of “narrativity” in data visualizations, explains how some graphics make use of recognizable elements of storytelling, in that they depict a “sequence of events or happenings that are temporally structured and coherently related to each other, involving one or more characters or anthropomorphic agents or objects” (297). Other types of oceanographic data, such as wind direction, might have also been recorded with symbols, but were not. The whalers reserved the stamps for data that was particularly valuable, and which also contained these narrative elements of temporality and “character.” The stamps situate the events in

time, and when flipping through the pages, the frequency of certain symbols animate the data, visually conveying a sense of how the voyage unfolded.

Though Mason posits that the whale stamps are proof of a “fundamental tenet of modern business: data is king” (Mason), as shown, the stamps, and the logbooks at large, made use of storytelling elements, which informed the way the data were “read.” That the events signified by the stamps also held emotional resonance may explain why, in addition to the whales, some log keepers had stamps for other types of marine life, such as manta rays and sunfish. As Mason observes, these species were not commercially hunted, so do not serve an obvious “accounting” purpose (Mason). The whaling logs also contained other forms of “art,” such as poetry and water-colour paintings of the island geography. The stamps themselves were hand-carved from wood, bone, or ivory, and unique to each ship. As Mason points out, carving the stamps was a way for the crew to pass the time: “creat[ing] art” broke up the tedium of day-to-day life at sea, which for the first mate involved a significant amount of data entry, that “most mundane of tasks” (Mason). At the same time, the craftsmanship of the engravings, pressed into books like miniature trophies, also reflected the value of the catch and the challenging nature of the job, as ships might go weeks or months without a sighting. These aesthetic elements, in turn, shaped how readers engaged with the logbook data. Sara Brinch explains that “beauty matters in data visualization” because it “activates” a certain response (270). The reader-viewer connects with the information on a deeper “emotional” or “cognitive” level and, as such, may be enticed to “study it in more detail, or even take action from it” (Brinch 270).

That said, the design choices of the craftsmen were also more utilitarian than they might at first appear. The effort to capture the accurate likeness of the whale in print is a subject that Melville explores in depth in the chapter “Of the Monstrous Depictions of Whales.” As Melville points out, artistic depictions of whales were rarely accurate, since

most artists never had the opportunity to observe the animals in the wild, and often embellished what little they knew, to create more fanciful and dramatic scenes (294). The logbook keepers, unlike the artists, placed special importance on features that could aid in identification. Different species yielded different grades of oil—sperm whale oil was worth three times as much as a right whale’s—so there was a financial incentive to creating accurate representations, as shown in the *Stephania*’s logbook. As pictured in the book, the V-shaped double spout of the right whale easily differentiates it from the single-spouted sperm whale. The intricately carved stamp even captures the right whale’s characteristic curved lip and the sperm whale’s blunt forehead, whose shape Melville compares to a “battering ram” (Louisa Bark, KMW 130B, 31; Melville 375; see fig. 4.7). As data visualizations, the designs of the stamps are what Edward Tufte might call “elegant” in the simplicity and efficiency with which they convey the most relevant information, paring the whale down to its most recognizable and, therefore, useful features (Tufte 116, 121; Brinch 263).

Whalers were driven by an immediate economic interest, but for Maury the value of the whales was not in their blubber alone. The whales *themselves* were reservoirs of data, whose bodies were inscribed with information about the earth’s movements. In this sense, Maury conceived of whales as not just subjects but “agents” of surveillance. Haggerty and Trottier discuss the contemporary phenomenon of “recruiting” animals as “vision machines,” often by outfitting them with tracking devices, with the purpose of collecting information about their surroundings (8). One notable example given by the scholars is that of the Ocean Monitoring Network, whose stated goal is to “wir[e] the world” through the establishment of a global “aquatic animal tracking network” (OTN). Though Haggerty and Trottier focus on recent cases, there are precedents for “animal agents” of surveillance in the nineteenth century. Maury similarly envisioned ways of “instrumentalizing” the animal gaze, to extend

the surveillance powers of the US Naval Observatory and fulfil new directives. The lieutenant theorized, for instance, the migration pattern of the Cetacea mirrored the underwater flows, with certain species preferring warm or cold-water currents (*Sailing Directions* 235).⁸¹ For this reason, he began to collect data on whale sightings. Given the interest in the Northwest Passage, Maury was eager to find proof that whales migrated across the arctic ocean, presumably through an open water route that could be navigable by ship. In Maury's correspondence with whalers, which is discussed in more detail in the section on Ishmael, he made repeated inquiries about the whales' ability to "sound" below the ice and the maximum time that they are able to hold their breath (W. S. Haven's letter to George Manning, Sept 17, 1849, Maury 251; Walter R. Jones to Lieut. Maury, Sept. 20, 1849, Maury 252-253; C. B. Chappell to W. R. Jones, October 25th, 1849, Maury 253-255; Captain Roys to Lieut. Maury, January 19th, 1851, Maury 255-256). He also requested that whalers send him skin samples, likely to ascertain whether the bowhead whales found in Bering Strait and Baffin Bay regions were of the same species (Capt. McKenzie to Lieut. Maury, May 22, 1851, Maury 256). Melville alludes to these arctic whaling expeditions in *Moby-Dick*. In the novel's prologue, he quotes Scottish author Robert Pearse Gillies's 1826 *Tales of a Voyager to the Arctic Ocean*. Melville describes, as well, "experiments" that verified the warm-bloodedness of whales, whose "cosy blanket[s]" of blubber insulate them against even the most frigid polar temperatures (342).

However, the whales proved not to be the passive extensions of the human gaze that Maury hoped. The data that the lieutenant gathered on whale sightings was released in a series of 'Whale Charts,' first published as a standalone chart in 1851 and later incorporated

⁸¹ Maury came to believe that certain species of whales, whether for reasons of biology or feeding habits, had preferences for either warm or cold currents. As such, he theorized that the patterns of sightings would correspond with the underwater flows. So strongly did he believe this theory, that he cites the migration routes of the right whale as proof of a continuous warm water current from the Red Sea to the English Channel (*Sailing Directions*, 1852 ed., 235).

into the 1852 and 1854 editions of *Sailing Directions* (Hearn 128, 131-2). The charts tally the total number of whale sightings in each five-degree quadrant of the world on a per-month basis. The graphic version of the table plots the prime hunting grounds for sperm and right whales in each season, with color-coded squares and symbols to show the species and abbreviated letters to indicate the favored time of year: winter (w), spring (v), summer (s), autumn (a), and all-weather (a) (see fig. 4.8). Notably, the traditional hunting grounds in the North Atlantic are entirely depleted, with sightings concentrated in the central Pacific and Arctic Oceans (“Whale chart” *Norman B. Leventhal Map & Education Center*). In this sense, the map also inadvertently functions as a testament to the impact of the whaling industry on the animals’ habitat, discussed further on in the section on the dual surveillance of whales and whaling work. Indeed, as the editors of the Hendricks House edition of *Moby-Dick* note, the charts were too outdated by the time they were published to be of use: “the grounds became exhausted faster than any map maker could keep up with the news” (Vincent and Mansfield 718).

Though the editors suggest the decline was due to overhunting, the drop in sightings may have had more to do with changes in the whales’ behavior. A 2021 study by Hal Whitehead, Tim D. Smith, and Luke Rendell found that the traditional method of open-boat whaling, which is what is described in *Moby-Dick*, was less detrimental to the whale population than once thought; more likely, the whales themselves became more adept at avoiding the ships (130).⁸² As Ishmael observes in *Moby-Dick*, the whales had learned to be shier of humans, clustering together in “extensive herds” for protection, so that sightings

⁸² The Whitehead, Smith, and Rendall study, which draws from numerous sources including Maury’s whaling abstracts, argues that the “rapid decline in strike rate” was due to “learned defensive behaviors” (3, 5). These findings are supported by those of Davis et al., who hypothesize that sperm whales did not start to suffer dramatic and unsustainable declines in numbers until the early 20th century. Rather, it was the introduction of steam-driven whaling equipped with high-powered mechanical guns that had the most devastating effect (Davis 148; 508). At this point, the American whaling industry was already defunct, having been put out of commission in the 1860s by a combination of the discovery of cheaper, alternative fuel sources and persistent labor shortages (Davis 368, 195).

became rarer (425, 513). Indeed, as Armstrong points out, Melville emphasized the whales' "capacity to learn and to pass on that learning which cannot be reduced to instinct" (126). By contrast, Maury overlooked the capacity of nonhuman animals for agency. Rather, he approached the charting of whales as he did the ocean currents, conflating physical phenomena (like the orbit of the planets) with behavioral phenomena (like migration patterns). In doing so, he discounted the role of nonhuman animals as "actors" within our social relationships, as well as the way that information, once released, has an impact on the world, which limits data's effectiveness as a tool for predicting behavior. Even if the maps had been released in a timelier manner, had the whalers followed the information in the charts, their presence would, no doubt, have disrupted the whales, and in doing so, changed the expected outcome. Ultimately, in rendering the whales as data (and as commodity), the charts instead became a record of the ways that whales defended themselves against being hunted and, in a sense, 'looked back' at their surveillors.

Melville directly cites Maury's research, and his novel illuminates not only the profound influence data-gathering techniques had on the whaling industry, but the fallibility of these techniques. Ahab pursues Moby Dick not just in the physical world but the quantitative world of data, hunting for traces of the white whale in the pages of his charts and record books. Every night, the captain retreats into his cabin to pour over his "yellowish sea charts" and to "study the various lines and shadings... and with slow but steady pencil trace additional courses over spaces that before were blank" (219). To determine the most viable hunting grounds, he consults "piles of log-books," containing records of sperm whale sightings from past voyages (219). From his charts, Ahab determines that Moby Dick winters in the equatorial region of the Pacific Ocean, an area called the "Season-on-the-Line."⁸³

⁸³ Sperm whales from both the northern and southern hemispheres winter in the equatorial regions. The overlap between these populations meant that these hunting grounds, which nineteenth-century whalers dubbed the "on the line," yielded good catches in any season (Allen 6).

Rather than take the most direct route, the captain takes a more deliberate and calculating approach. To optimize his chances of intercepting Moby Dick's path, he opts to spend a year "zig zagging" across the ocean (222). This is the point, according to his measurements, "when all possibilities would become probabilities, and... every probability the next thing to a certainty" (221).

Crawford calls *Moby-Dick* Melville's "great network novel," in that it exemplifies the actor-network theory of Bruno Latour. Yet, as Crawford notes, both the novel and Maury's *Wind and Current Charts* illuminate the "fragility" of said network. He points out, for instance, the challenges Maury faced in maintaining control from a distance, in terms of recruiting reliable data-gatherers and in enforcing standardized rules for recording observations (12-13). As Crawford says, "There are innumerable points where well-designed networks can break down and end up producing something quite different from what those who originally cobbled them together envisioned" (12). He argues that, in the novel, Ahab's failure to triumph over the whale likewise speaks to the vulnerability of these networks to breaking down: "The logbooks and charts can enable Ahab and his crew to find the whale... but there can be no guarantee of victory" (18). While an intriguing theory, Crawford fails to elaborate on what makes Ahab's network susceptible to collapse, instead attributing the disaster to a general inability to account for all variables. In this, the scholar overlooks the ways that Ahab himself breaks with maritime practices regarding data collection and analysis, smashing his tools and severing ties with the network. Ultimately, it is not lack of control over the network, but control itself, in the desire to impose meaning and order and to reign in data's "unruly" nature, that is Ahab's downfall. From this perspective, the "fragility" of the data assemblage, the points in which the network "breaks down," might instead be understood as opportunities for critical engagement, and to reinterpret and repurpose the data in ways other than intended.

Before turning to Ahab and Ishmael, however, the next section looks closer at the long tradition of information gathering and exchange within whaling, and how these established practices were reconfigured with the rise of data, in ways that shifted and, in some ways, destabilized the labour dynamics.

Gaming The Whaling System

Moby-Dick was written at the apex of American whaling, and on the surface the novel celebrates the industry's economic achievements. Indeed, for half a century between 1825 and 1875, the winds were in the American industry's favor (Allen 82). In addition to the development of a thriving shipbuilding industry on the lumber-rich east and west coasts (Davis 267),⁸⁴ the US government also commissioned multiple large scale oceanographic data collection projects. The rigorous cultivation of resources—both material and, as I argue, informational—gave the United States a serious competitive edge. By the 1840s American whalers had come to dominate the industry, manning an estimated 700 of the world's 900 whaleships (Allen 82).

During the whaling boom, the fishing port of New Bedford grew “embarrassingly rich,” wealthier per capita than perhaps any city in the world (Allen 82). Yet much of that wealth was concentrated in the hands of a few. In Melville's novel, the obsession with maximizing capital through the acquisition of data is satirized through characters of Bildad and Peleg, the agents and chief financiers of the voyage. To Ishmael's surprise, the captain has little part in the major preparations for the trip. Ahab does not, in fact, make an appearance until well into novel, keeping out of sight and “invisibly enshrined in his cabin” for the first 135 pages or so (112, 135). Before the ship leaves port, Bildad and Peleg are the

⁸⁴ For more on the development of the American shipbuilding industry in the nineteenth century, see Thiesen.

face of the expedition and play an important role in establishing the novel's data-driven subtext.

Data collection was vital because whaling was a high-stakes game. Whaling ships had between three and five smaller boats, each manned by a crew of six: four rowers, a steerer and a harpooner. On sighting a whale, these boats would be lowered into the water and “give chase” (Adler). Harpooned whales could escape by “drawing the line” and pulling the harpoon loose or by “taking the line” and swimming away with the weapon and rope still intact. Once the whale had been killed, there was also the risk that the corpse would sink before it could be retrieved, a phenomenon that Melville describes in *Moby-Dick*. In the chapter “The Pequod Meets the Virgin,” the crew dart an old bull whale. However, they are forced to cut it loose before it capsizes the ship: “With a terrific snap, every fastening went adrift; the ship righted, the carcass sank” (401). The loss of the catch is cast as a tragedy in Melville's novel, not just because of the wasted profit but because of the animal's unnecessary suffering. The author paints the whale's “anguished” and “piteous” death in gruesome detail (399). In reality, losing a catch happened all too frequently and in an actual logbook would be unlikely to garner more than a passing reference. An entry from the whaling ship *Stephania*, which records a string of similar failures over the course of three days, reads only “saw whales, lowered Larboard boat and sunk” and “Larboard boat lost him” (Louisa Bark, KWM 130B, 121; see fig. 4.6).

The logbooks also aided in navigating the ship's finances. The log keepers recorded encounters with whales in their daily logbook entries, but they also kept a summary of their catch in the ship's abstract. The *Stephania*'s log keeper, for instance, kept a tally of the number of whales hunted and barrels yielded by each boat. In this way, one could gauge the skill (and value) of the different crew members and coordinate the hunt (and perhaps adjust the lay) accordingly. According to these figures, the *Stephania*'s larboard boat was the most

successful, yet still lost more whales than it took, “saving” only ten of the twenty-one whales that were darted (see fig. 4.6).

From the perspective of the worker, the volatility of the job was not only due to the uncertainties of the hunt, but the structure of pay. In Melville’s novel, the character Stubb declares that we are all subject to chaos and chance, whether we will it or no. Stubb’s code—“to live in the game, and die in it!”—can be better understood as shaped by his economic realities as a whaler (555). As discussed in the previous chapter, unlike their British counterparts, American crew were not granted set wages, but a portion or “lay” of the final profit. This amount was to some extent determined by experience and could vary greatly. Ishmael, being a “green hand” and new to the craft, is hired for a mere 275th percentage of the “net proceeds of the voyage,” what amounts to a “rather *long lay*” (Melville 85). One of the consequences of the lay system was that every member, regardless of rank, was highly invested in the outcome of hunts. Success and failure were tied to the group, strengthening the communal bond (Davis 518). At the same time, some bore more risk than others. The owners of whaling enterprises typically paid into insurance, which protected them from financial ruin even in the case of a major disaster.⁸⁵ Crew members, on the other hand, had no guarantee of a payoff and bore the brunt of the risk (Davis 411-412).

In the novel, the power imbalance between the agents and the workers is evident in how the voyage is managed. Consider Bildad and Peleg’s willingness to endanger the crew. Before the events of the *Pequod*, news had spread that Ahab had become dangerously unhinged. Yet the owners are still willing to bet on Ahab and select him especially to captain the voyage. There is some grumbling about this amongst the *Pequod*’s crew, especially after Ahab reveals his true mission. Stubb remarks that any ship with Ahab at the helm should

⁸⁵ For more on the maritime insurance industry in nineteenth-century North America, see Levy, especially the chapter “Perils of the Sea.”

“pay something extra on its insurance policy, just as though it were loaded with powder barrels... and boxes of lucifers” (563). Indeed, appointing such a person captain seems an unnecessary risk, out of character for persons as calculating as Bildad and Peleg undoubtedly are. However, as the narrator Ishmael explains, the decision only *appears* rash and is, in actually, quite pragmatic: “far from distrusting his fitness for another whaling voyage, on account of such dark symptoms, the calculating people of that prudent isle were inclined to harbor the conceit, that for those very reasons he was all the better qualified” (205). In other words, the agents’ hope is that the captain’s mania for vengeance will translate into more kills and a juicier “profit.” For this, they are willing to risk the lives of the crew. For the crew’s part, though they privately express alarm, any real resistance to Ahab’s authority fails to materialize. The first mate Stubb wonders aloud at Ahab’s explosive temper, which he likens to a “powder pan,” and especially resents the captain’s slight of calling him a “dog,” but in the end he retreats “tamely” rather than taking action. Stubb chooses not to put too much store in events, for why bother to read too deeply into a universe that is essentially random? As he says, “Think not, is my eleventh commandment,” for all is but a “game” (140).

Stubb’s “unthinking” anarchy finds its opposite in Bildad and Peleg’s ceaseless calculations. For Bildad and Peleg information has a dollar value, and their obsession with data is a way of keeping pace with the fluctuations of the modern economy. As the chief financial backers, Bildad and Peleg have the most money invested in the expedition and the most to gain and lose, at least financially, by its success. Bildad alone is reported to have “thousands of his hard-earned dollars” at stake (115), an accurate description, as a typical whaling voyage in 1880 cost about \$50,000 not adjusted for inflation, a “substantial sum” at the time equal to about \$1.2 million US dollars in 2018 (Davis 259). The risk attached to whaling helps explain why the agents are eager to gather as much information as possible, as the wrong calculation could bankrupt the enterprise. Bildad especially is so plugged into the

latest market projections that he reels off stats from memory. Among his parting words of advice, “be careful with the butter—twenty cents the pound it was.” He also warns the crew to be mindful of bashing the boats about “needlessly,” not out of concern for the sailors’ well-being, but because “good white cedar planks” are expected to increase three cents over the next year (116). As shown in the novel, “special knowledge, exceptional skill, and innovative activity” had a “substantial” impact on profits, which Davis et al. estimate accounted for “at the very least one-sixth of total returns” (Davis 454).

The Circulation of Data

Apart from the agents, a single voyage might also have multiple smaller investors. These persons were often locals who lived and worked in cities like Nantucket or New Bedford and held various other occupations, from bakers to politicians (Davis 414). The *Pequod*, for instance, is described as having a “crowd of old annuitants; widows, fatherless children, and chancery wards; each owning about the value of a timber head, or a foot of plank, or a nail or two in the ship” (Melville 81). Local inhabitants such as these would have already had a strong connection to whaling by virtue of living and working in a port city, but these ties were reinforced and affirmed through their status as shareholders. That the financing of whaling voyages was not exclusive to the rich, with many in the community being small-time players, helps us better understand how the novel’s economic data were understood by its nineteenth-century readers. Patricia Cohen’s research on the spread of numeracy in early America shows that the average citizen in the antebellum period was surprisingly adept with numbers (see *A Calculating People*). All of this suggests that Bildad’s financial jargon, while comically exaggerated, might not have been as foreign to Melville’s nineteenth-century readership as one might presume.

In fact, the savvy whaling investor in Melville's time could consult numerous resources, and shipping statistics were regularly printed in the local papers. As mentioned in the Whitman chapters, the number of periodicals and almanacs underwent a dramatic surge in the 1840s, and there was a corresponding increase in the publication of all manner of data: from moral tables to lists of imports and exports. Whaling owners and investors kept informed of the latest market changes by reading periodicals such as *Whalemen's Shipping List and Merchants' Transcript*, *The Merchants' Magazine and Commercial Review* and *Commercial Statistics*. By checking the 1847 edition of *Commercial Statistics*, for instance, Bildad could have easily found the quantity, value, and duties on cedar imports, facts that are cited in the novel.

Within information-gathering networks, data circulates through multiple "centers of calculation" (Haggerty and Ericson 613). Haggerty and Ericson, who borrow the term from Bruno Latour, describe these centers as places where "information derived from flows of the surveillant assemblage are reassembled and scrutinized in the hope of developing strategies of governance, commerce and control" (613). As such, the Navy Depot of Charts and Instruments, where Maury was headquartered, was not the center of America's data-gathering operations, but just one node of many.

Port cities, for instance, were gateways for not just goods but information. Government regulations, primarily regarding taxation, necessitated careful record keeping, and the municipalities collected huge amounts of economic data. For instance, vessels that unloaded and loaded at the docks were required to report the type and quantity of goods as well as their origin and destination. Labor laws, which required all maritime workers to be certified by either the port authorities or the American consuls, also meant that captains had

to keep detailed, up-to-date crew lists (Davis 81).⁸⁶ These documents were so exact that by consulting the registry for the ship *Acushnet*, on which Melville briefly worked as a ship hand, one can tell precisely when and where the future author of *Moby-Dick* deserted ship: July 9, 1842 at Nukahiva Bay. There were even specialized rules that required captains to report the length and weight of their vessel. Introduced by the State of Massachusetts in 1783, the Schooner Tax required that all vessels pay a “pilot fee” to hire a smaller ship to guide them in and out of port, with the rate of the tax determined by the size of the ship and the season (Cunliffe 142-143, McCulloch Dictionary 184). In the novel, Bildad and Peleg find a way around this tax: in addition to the many other hats they wear, the owner-investors are also licensed “pilots.” In other words, they have a special permit to “park” their own ships, thus avoiding the extra fee and demonstrating yet again their cleverness at navigating the documentary system (Melville 113).

While in the past this information might have been confined to city record books, by the 1840s financial data were a regular fixture in newspapers. Economists and investors could use this information to gauge the flow of goods and even predict a shortage or a surplus. Shipping news was an especially important source of information for whaling owners, who tended to be based on land and oversee the voyage from afar. Whaling voyages were typically lengthy affairs, but, luckily for the owners, they did not have to wait until the end of the voyage to start to see a return on their investment. After a successful hunt, the whalers would unload their barrels of oil at the nearest port to be shipped back home on a merchant vessel and then continue on their way. This practice enabled whalers to extend the length of their expeditions, which often lasted two or more years. The lists of these shipments were

⁸⁶ Beginning in 1803, captains of American vessels sailing to other countries were required by law to submit crew lists with the “names, places of birth and residence, and a description of the persons” to customs. These regulations were intensified in the years 1817 to 1864 with the introduction of hiring laws, which stipulated that two-thirds of the crew had to be American citizens. To avoid stiff penalties, ship masters made a habit of keeping detailed record books (Davis 81).

then circulated in local periodicals, such as the aptly named *Whalemen's Shipping List*. By reading these reports, the owners could check status of the voyage and know how many barrels to expect.

Shipping lists were not the only ways to gather news. Port hotels were popular haunts for seamen. Mariners would gather at these establishments to exchange news and find employment. The Spouter-Inn, where Ishmael meets Queequeg, embodies the spirit of the mariner's tavern, just the "spot for cheap lodgings, and the best of pea coffee," and a bit of news. In the following scene, we get a sense of the tavern's function as the community bulletin: "Starting up, the landlord cried, 'That's the Grampus's crew. I seed her reported in the offing this morning; a three years' voyage, and a full ship. Hurrah, boys; now we'll have the latest news from the Feegees'" (15). Michael Quinlan theorizes that port hotels also served as makeshift headquarters for strikes and other forms of collective action. Because seamen regularly congregated in these locations, they became highly efficient at networking and, for this reason, were well-positioned to mobilize (Quinlan 162). As such, it is appropriate that in Melville's novel the tale of the Town-Ho mutiny, which is structured as a story-within-a-story, is told at a hotel tavern, with Ishmael relating the story to a group of Spaniards over drinks at the Golden Inn in Lima, Peru (270).

While a port city is an information hub, a ship at sea is essentially off the grid. Perhaps for this reason, the information-obsessed Bildad is loath to disembark the *Pequod* and be cut off from communication. There was one exception, however: the "gam" or a meeting with another whaling ship. A closer look at the function of the gam in Melville's novel not only gives insight into how networks of whalers historically communicated, but also sheds light on Ahab's growing discontent with traditional methods of gathering information.

Due to the precarious nature of their work, whalers relied on each other for news. As Ishmael says in *Moby-Dick*, “Of all ships separately sailing the sea, the whalers have the most reason to be sociable” (267). In fact, the practice of “gams” was unique to whalers and was not practiced by other types of seafarers, such as merchants or navy men (267). The “gam” typically consisted of one party coming aboard the other’s ship to exchange news, often over a shared meal and drink, and it fulfilled multiple functions. For whalemen it was a rare opportunity to socialize, as well as to learn about sailing and hunting conditions.

Like Whitman, Melville was fascinated by language and includes several footnotes and asides explaining the etymological origin of various terms, including the “gam.” Because the term is industry jargon, it was not recognized as being part of formal English. As Melville says, there was no room on “Noah Webster’s ark” for the gam (239). Thus, in the novel, Melville authors his own definition, even putting it in the correct dictionary format: “GAM. Noun—A social meeting of two (or more) Whale-ships, generally on a cruising-ground” (268). The unsanctioned status of the term “gam” in fact reinforces its role in community-building, as coded speech or slang is often used to identify and strengthen the ties between the members of a group. Still, as Whitman observed, the American dialect was uniquely democratic in its tendency to absorb jargon from working classes as well as various crafts and trades (see Chapter Two). Considering this, it is perhaps surprising that “gam” was excluded from American dictionaries.

Melville dedicates an entire expository chapter to the subject of gams and an additional seven plot-driven chapters demonstrate these meetings in action. As if to underscore the significance of these exchanges, most of these chapters contains the word “meet” in their title, such as “The Pequod Meets the Rose-Bud” and “The Pequod Meets the Delight.” As a plot device, the gams are an effective way to build tension. With each meeting, Ahab uncovers new clues about Moby Dick’s whereabouts, which signals to both the captain

and the reader that the white whale lies ahead, and the final confrontation is drawing closer. As the frequency of sightings increases, the reports of violence and devastation also intensify, which of course does nothing to deter Ahab and only strengthens his resolve.

More significant in relation to my thesis is how Ahab repeatedly breaks with gam etiquette. At first, Ahab takes part in the tradition of exchanging letters. He delivers mail to the other captain, even reading the letter aloud so that the other man, who is illiterate, can understand. But from the start, Ahab either ignores or fails to inquire about other pertinent news such as weather or hunting conditions. He also refuses invitations to join in the revelries, often part of the ritual of the gam, or to assist another ship in a rescue mission. For Ahab, the only reason to “consort” with other captains is to gather “intelligence” about Moby Dick, and all else is a distraction (352).

Ishmael, by contrast, enthusiastically embraces the whaling gam, unpacking its cultural significance with the help of statistical tables. In the chapter “The Decanter,” Ishmael serves the reader a quantitative “study” of the drinking and eating habits of whalers. Ingeniously, he uses the inventory records from sixteenth and seventeenth-century Dutch ships to calculate their average consumption of alcohol and butter. The study delves into the “cellars” of over 180 vessels, whose records of stores it took Ishmael three days to “digest” (497). The resulting tabulations include such morsels as this: the Dutch whaling fleet’s annual consumption of victuals included 144,000 lbs of cheese, 550 ankers of Gin, and 108,000 barrels of beer. From this, Ishmael calculates that each ship had provision enough to supply every man with two barrels of beer every three months, not including the hard liquor (496-497).

As discussed in the previous chapters, “moral tables,” which sought to quantify the effects of antisocial behavior like alcoholism and prostitution, were utilized by various social reform movements. Temperance societies, for instance, published pamphlets containing

moral tables as a warning against the evils of drink. In *Moby-Dick*, Melville inverts this data trope. He invokes statistics, not as testament to the evils of debauchery, but proof of the “fat old” tradition of hospitality and camaraderie amongst whalers. As Ishmael proudly proclaims, pointing to his calculations as evidence, those in the trade have always had a taste for “abounding good cheer” (442). Ishmael’s assertions are of course overblown. Were the figures available, he could have built a stronger case by, for instance, comparing the alcohol consumption amongst Dutch whalers to the per capita consumption levels in the country as a whole. Still, what is most intriguing about his approach, methodological issues aside, is how he uses statistics to abbreviate the gam, and whaling culture more generally, as a cultural phenomenon.

From a historical perspective, the custom of the gam helps explain why whalers were so obliging in response to Maury’s requests for data, being as the practice of information exchange was already well established in the whaling community. That Maury was able build the modern infrastructure of his data-gathering project upon past traditions was perhaps crucial to his mission’s success. In this context, Ahab’s refusal to participate in the gam, severing his ship’s ties with the information network, is not just a discourtesy but a negation of one of his fundamental duties as a whaling captain. By contrast, Ishmael’s quantitative study of “good cheer” expounds upon and reinforces the connection between sociality and information collection.

Informational Cyborgs

While Ishmael’s approach is more exploratory, Ahab’s use of data is driven by a singular purpose: to predict the white whale’s movements. Though Ahab seeks to use the data as a tool of mastery, he instead becomes mastered by the potentialities of data, in their seeming promise of unlimited knowledge. Like the “pale usher” described in the novel’s

prologue, Ahab works himself into a manic, trance-like state: “have I not tallied the whale, Ahab would mutter to himself, as after poring over his charts till long after midnight he would throw himself back in reveries—tallied him, and shall he escape?” (223). At the height of his passions, Ahab is described as a “vacated thing, a formless somnambulistic being” and a “blankness” (224). As he sits hunched over his papers in the dark, the flickering shadows on his lined brow make it appear as if a “deeply marked chart” has been etched into his forehead (219). His visage reflects his datafying mind, the grooves of his lined face seeming to trace the longitudes and latitudes in his charts. His body bears the marks of quantification in other ways. Ahab calculates the ship’s coordinates with the aid of a “smooth, medallion-shaped tablet” carved into the “upper part of his ivory leg” (163). He is plugged into the ship’s machinery and into the larger culture of datafication, with his mechanical limb functioning as another apparatus for making observations.

Later in the novel, Ahab imagines future worlds in which beings would not just be fused with but forged entirely through technology. The ideal man in this world would be a towering automaton, with no powers of locomotion or of sight and no capacity for empathy, but possessing vast computational powers:

That old Greek, Prometheus, who made men, they say, should have been a blacksmith, and animated them with fire... While Prometheus is about it, I’ll order a complete man after a desirable pattern. Imprimis, fifty feet high in his socks; then, chest modelled after the Thames Tunnel; then, legs with roots to ’em, to stay in one place; then, arms three feet through the wrist; no heart at all, brass forehead, and about a quarter of an acre of fine brains; and let me see—shall I order eyes to see outwards? No, but put a sky-light on top of his head to illuminate inwards. (523)

Jonathan Cook, for whom Ahab is the classic antihero, reads the model man as an amalgamation of mythologies; he posits that the “steel shoulder blades,” for instance, are taken from the Titan Atlas (206). Yet, in other ways, the superhuman being that Ahab envisions does not at all resemble a hero (or monster) of the ancient world and is uniquely

modern. The mechanical man, fixed in place, is a fusion of old and new, that borrows not only from classic myths but from industrial-era automata. The “reasoning machine” was most famously conceptualized by Charles Babbage and Ada Lovelace in their 1842 “Sketch of the Analytical Engine,” but its potentialities were debated by numerous nineteenth-century thinkers, including Andrew Ure, Karl Marx, and Edgar Allan Poe (Voskuhl 207-208).⁸⁷ Lovelace, who incidentally like Ahab (and like Maury) was “prone... to bodily sufferings” (Lovelace “To Andrew Cross” 144), foresaw the endless applications of such a machine. In her notes accompanying “Sketch of the Analytical Engine,” she predicts that if numbers could stand in for other “objects,” such an “engine” would be capable of processing problems, or even creating art, “of any degree of complexity or extent” (691).⁸⁸ Likewise, Ahab’s automaton, whom he names Imprimis or ‘first among things,’ is a premonition not just of the technological era, but of the informational one, and looks towards a time when machines will outperform humans not just on physical tasks but on mental ones.

As Voskuhl explains, the automaton, whose conceptual origins date back to at least the Enlightenment Era, found new resonance in the nineteenth century, as both a fantasy of freedom and of bodily transcendence and a nightmarish “oracle” of enslavement under the factory system (Voskuhl 210-211). The automaton makes another appearance in Melville’s “The Bell-Tower,” published as part of his 1856 collection *The Piazza Tales*. In the short story, the inventor Bannadonna is inspired to build a mechanical worker after “observing” the repetitive motion of the watchmen who man the belltowers:

It was from observing these exposed bells, with their watchmen, that the foundling, as was opined, derived the first suggestion of his scheme. Perched on a great mast or spire, the human figure, viewed from below, undergoes such a reduction in its apparent size, as to obliterate its intelligent features. It evinces no personality. Instead

⁸⁷ See, for instance, Andrew Ure, *Philosophy of Manufactures* (pub. 1835); Edgar Allan Poe, “Maelzel’s Chess Player” (pub. 1836); Thomas Huxley, “On the Hypothesis that Animals are Automaton and its History” (pub. 1874); Hermann Von Helmholtz, *Wechselwirkung* (pub. 1854).

⁸⁸ See also Fuegi and Francis.

of bespeaking volition, its gestures rather resemble the automatic ones of the arms of a telegraph. (422)

Laura Otis, in *Networking: Communicating with Bodies and Machines in the Nineteenth-Century*, describes how networks and webs abound in nineteenth-century literature. As she explains, the first wired communication apparatuses were “modelled” after the body’s sensory systems, as captured in experiments on “animal electricity” (125-126). In Melville’s story, the “gestures” of the workers, “reduce[d]” to their basic form, resemble the “automatic” pulse of a telegraph transmitter. The workers’ actions, thus translated, become the data for Bannadonna’s designs. The surveillance and standardization of work, as described in the previous chapter, gave rise to the desire to not just maximize, but exceed the capacities of the human worker. German physicist Hermann von Helmholtz, speaking in 1854, described the object as such: “Nowadays, we no longer aim to build machines which perform the work of one human but that one machine performs the work of a thousand humans” (Helmholtz, *Wechselwirkung*, 6; qtd. Voskuhl 207). The automaton, as a fantasy of perfection, has links to the rise of eugenics, and Melville’s story hints at these darker tendencies, which undergird the inventor’s techno-utopic desires. Bannadonna seeks to combine “all excellences of all God-made creatures” and in doing so fashion the ultimate worker, one possessing of all the physical and mental capacities, but incapable of independent thought or action: “nothing less than a supplement to the Six Days’ Work; stocking the earth with a new serf” (424).

In *Moby-Dick*, the author likewise wrestles with the implications of whaling’s transition from “craft” to industry (Cohen 144), of which coordinated data collection projects were no small part. Notably, Ahab aspires to refashion himself as a god, even as he is confronted with his own displacement from the data-driven world. Ahab’s musings on the automaton take place during a visit to the ship’s carpenter. The carpenter, whom Ahab calls

the “manmaker,” is taking measurements to fit him with a new prosthetic limb. Ahab’s “orders” for a new mechanized body, made partly in jest, reveal the bitterness with which he endures being “measured.” The humiliation he experiences is felt all the more acutely because it is underscored by his intense longing to transcend his physical and mental limits: “Here I am, proud as a Greek god, and yet standing debtor to this blockhead for a bone to stand on! Cursed be that mortal inter-indebtedness which will not do away with ledgers. I would be free as air; and I’m down in the whole world’s books” (524). As discussed, maritime voyages were documented in meticulous details, generating extensive paper trails of logbooks, consular documents, registration certificates, and other forms. Consequently, whaling captains, once relied upon for their intuition and experience, increasingly navigated their voyages through “paper world” of charts and logbooks.

In defiance of these trends, as the confrontation with Moby Dick draws nearer, Ahab appears to turn away from data-gathering tools. About three-quarters of the way through the novel, there is a shift marked both by the end of the expository or scientific chapters and a shift in Ahab’s attitudes. Each day at noon, Ahab uses his quadrant to calculate the ship’s position. Staring into the fiery “eye” of the sun, he starts to contemplate the limits of his knowledge:

Or canst thou tell where some other thing besides me is this moment living? Where is Moby Dick? This instant thou must be eyeing him... Science! Curse thee, thou vain toy; and cursed be all the things that cast man’s eyes aloft to that heaven, whose live vividness but scorches him, as these old eyes are even now scorched with thy light, O sun! Level by nature to this earth’s horizon are the glances of man’s eyes; not shot from the crown of his head, as if God had meant him to gaze on his firmament. Curse thee, thou quadrant!” dashing it to the deck, “no longer will I guide my earthly way by thee. (553-554)

For all of humankind’s technological advances, so much information remains inaccessible: one can read the “heavens” or stars, but never ascend to their level. As he “dash[es]” the

“heavenly quadrant” to pieces, Ahab disavows not just science, which he closely associates with technologies of measurement and quantification, but God (567).

Notably, the first mate Starbuck, the only crew member to “venture to oppose” Ahab, even going so far as to contemplate his murder (593, 568), has a wholly different understanding of data than that of the other characters mentioned thus far. Bildad and Peleg have a pragmatic, utilitarian view of information, seeing it as a resource to be exploited. Starbuck, on the other hand, believes that the observations recorded by scientific instruments are evidence of an underlying order, which is divine in nature.⁸⁹ For this reason, he views Ahab’s destruction of the “heavenly” quadrant as blasphemous. In Starbuck’s eyes, the incident affirms Ahab’s fallibility. Indeed, far from being humbled by the power of nature, which is a manifestation of a higher order, Ahab feels only “scorn,” thus confirming the extent of his “fatal pride” (573).

However, Ahab’s suspicion of data, which sets him apart from both Starbuck and Bildad and Peleg, cannot only be attributed to hubris. Ahab’s distress also hints at a deeper existential anxiety. Though, in the final chapters, Ahab appears to regress back to more ancient navigation methods, increasingly trusting his fate to mysticism and magic, the tension between the legible, quantifiable world and the inscrutable, subjective world is ever-present in the novel. Ironically, though Ahab desires, above all, omniscience, he himself becomes the object of study, scrutinized by various characters, including the carpenter, the doctor, Starbuck, Ishmael, and, by proxy, the reader/critic. Tormented by a pain in his phantom limb, Ahab posits: “If I still feel the smart of my crushed leg, though it be now so long dissolved; then, why mayst not thou, carpenter, feel the fiery pains of hell forever, and without a body?” (524). Ahab believes his suffering, which seems to have no physical cause or cure, is

⁸⁹ Armstrong offers an alternate interpretation of the first mate, arguing that Starbuck is above all a “rationalist,” motivated by “material” concerns rather than sentiment (109).

evidence of another reality beyond the material realm. The carpenter, for his part, is only concerned with the quantifiable world, remarking: “Truly, Sir, if it comes to that, I must calculate over again, I think I didn’t carry a small figure, Sir” (524). A similar incident occurs during Ahab’s confrontation with the ship doctor from the *Enderby*. As with the carpenter, the doctor’s practical, logical outlook—accentuated by his “mathematical” bows (491)—contrasts with Ahab’s impassioned outbursts. Thinking Ahab insane, the doctor goes so far as to attempt to bloodlet him and even suggests using a thermometer to measure the heat of his fury, which of course only further incenses the captain (492).

On one hand, the scene affirms that Ahab suffers, not from lack of data, but confirmation bias, allowing his desires and motivations to shape his interpretations. The doctor points out that whales cannot digest human flesh and so likely bit off the limb by mistake, saying “what you take for the White Whale’s malice is only his awkwardness,” but is ignored (491). Indeed, Ahab repeatedly seeks out evidence that confirms his beliefs and rejects what appears to contradict it. On the other hand, Ahab’s “riddle” of the missing limb, which he insists he feels “smart” and “tingle” as acutely as a living leg, raises a legitimate point about the limits of data in capturing the individualized, subjective experience, which also bears closely on the discussion of the datafied subject.

James Rule argues that the postmodern condition is characterized by a “split existence”: “Any member of a modern, highly ‘developed’ society is apt to feel that he inhabits two worlds at once. One is the ordinary world of events, people, relationships and so on as they directly impinge on experience. The other is a ‘paper world’ of formal documentation which serves to verify, sanction and generally substantiate the former, experiential reality” (13). Rule emphasizes that the “paper world” is not just a copy or imitation of the real world, but rather “stirs with life of its own.” He uses the example of marriage, birth, or educational certificates: these documents “weigh more heavily on men’s

lives than the ‘reality’ which they are supposed to represent” (13). Indeed, as Ahab observes, the labour of crafting the replacement leg would be recorded in the logbook and the cost marked in the ledger. The financial debt is not what disturbs the captain, but rather the incongruity or “inter-debtedness” between his documentary existence, as recorded in the “ledgers” and “books,” and that of his lived reality. Haggerty and Ericson, drawing on Donna Haraway, describe these “data doubles” as being composed of discrete “flows” of information. Indeed, today the average person generates endless trails of data. In this way, “the monitored body [becomes] increasingly cyborg; a flesh-technology-information amalgam” (Haggerty and Ericson 611). Ahab and, more pointedly, the whale-as-automaton anticipates this becoming-cyborg of the surveillance (and informational) era, a process which in turn challenges the notion of a single cohesive self.

The previous sections focus primarily on *human* bodies, but how might the monitoring of non-human animals open up the potential for alternate subjectivities? The next part examines the contradictory relationship of the whalers to the whales, which they relied on and lived alongside, as captured in both *Moby-Dick* and the real-world whaling logs.

Logging Leviathan

Ishmael is often seen by Melville scholars as Ahab’s opposite, a paradigm of democratic openness that exists in contrast to the rigid tyranny of the captain. Harold Bloom, for one, contrasts Ishmael’s “encompassing, fluid identity” with Ahab’s “rigid self-definition” and “fixed purpose and fixated personality” (Bloom 53).⁹⁰ Indeed, my own study outlines some of the chief ways that their philosophies of data diverge. Yet, in regard to his research mentality, Ishmael’s often contradictory relation to his favorite subject, the cetacean, is far from innocuous. From the perspective of the whales, Ishmael’s detached scientific

⁹⁰ For more on the opposing philosophies of Ishmael and Ahab, see Staud 279.

observations could be regarded as at least as, if not more, dangerous than Ahab's passions. Though Ishmael positions himself as a scientist, his "research" is shaped by and indivisible from the practice of whaling, which makes sense given that the first cetologists were not professionals, but amateur scientists who often fell into the study of whales while working aboard whaling ships.

Whales, still mysterious today, were in Melville's time even less understood. There were few opportunities to study whales in their natural habitat and scientists often relied on second-hand reports. Thomas Beale's *The Natural History of the Sperm Whale*, published in 1839, is often cited as an important source for *Moby-Dick*. Like Melville, Beale had no formal training in zoology, but instead gathered his observations while working aboard whaling vessels, in his case as a ship doctor. Beale's first-hand knowledge gave him the tools to debunk certain myths about leviathans, particularly their reputation as "monsters of the deep." In *The Natural History of the Sperm Whale*, Beale writes that the whale is not ferocious, but rather a "most timid and inoffensive animal" (5-6). Likewise, in the novel's cetology sections, Melville offers up a compelling counter narrative to Ahab's monster. He emphasizes, for instance, the whale's strong social bonds, which run so deep that entire groups have been slaughtered because they refused to abandon an injured companion.

Yet these moments of near recognition between species almost always end in violence. In *Moby-Dick*, observations are recorded and transmitted by way of the narrative, an act that also in effect functions as a form of *processing*: the crucial point being, the more information that is amassed the more vulnerable the species is to being hunted. Consider Ishmael's surveillance of the whales in *Moby-Dick*. As Armstrong notes, throughout the novel there is an unsettling tension between "empathetic, anthropomorphized" descriptions of non-human animals and "animal-as-capital" (Armstrong 1040). For instance, in the killing of the first whale, no sooner is it spotted, relaxing on the sea as if "smoking his pipe as of a

warm afternoon,” than it is systematically slaughtered and dismembered (316). Captain Ahab is another dark rendition of the datafying impulse, as are Bildad and Peleg. What the research mentality of these characters reveals is that the surveillance of animals is not innocent. Rather, it is also on the basis of this knowledge that species are assessed and rendered fit for commodification. At the same time, switching between these modes of perceiving animals—as human and as technological—has a disorienting effect, one which brings the whalers’ complex and often contradictory relationship with the whale into relief. As shown in the following section, through these interventions, Melville shows how “rendering” whales as data could also inadvertently muddle the divisions between nature and culture, human and animal.

Both marine and labor data were collected for the same reason: to manage risk. As Margaret Cohen explains, whalers were engaged in a constant battle against their environment, living and working in conditions that were often chaotic and hostile to their survival. For Cohen, recording their experiences in the logbooks was a way to harness that chaos and, if not triumph over nature, at least manage it. Cohen’s interpretation differs from mine in that she focuses on the narrative structure of the logbook entries, which she argues was often framed in a “problem-solution” format (68). As such, she devotes less attention to the significance of the non-narrative elements, which form the backbone of the logs. Upon examining the notebooks, it is clear that detailed narrative descriptions were the exception rather than the rule. By comparison, virtually all entries contain at least some data, and measurements—such as the date and time, speed and direction of travel, and geographic coordinates—were often meticulously recorded. That said, as described in the chapter on *White-Jacket*, the logbook data did not stand on its own and existed within a network of corresponding textual material, which shaped its interpretation.

The hybrid form of *Moby-Dick*, with its entanglement between narrative and data, builds upon the narrative structure of real-life testimonies by nineteenth-century whalers, as recorded in Lieutenant Maury's 'Whale Charts.' Maury did not solely rely on numerical data, and he often used qualitative data gathered from personal testimony to reinforce and expound upon his theories. He corresponded directly with multiple whalers, and several of these letters are published in full as part of the 'Whale Charts' section of *Sailing Directions*. These exchanges reveal that Maury's interpretation of the data was shaped, at least in part, by his consultations with whalers. Prior to publishing these charts, Maury sought feedback on his preliminary findings. He also questioned the whalers extensively about whale behavior and physiology.

In these testimonies, the whalers, much like Ishmael, often switch abruptly between apprehending Cetacea as commercial goods and as intelligent, complex creatures deserving of empathy. In a letter written by Captain Daniel McKenzie to Maury in 1849, the author reduces the whale to its capital value:

The cows on an average will yield fifteen barrels of oil; the males, (or bulls, as whalers call them,) are much larger, will yield from fifty to one hundred barrels of oil. At this stage, he is a noble animal, moving through the water so graceful, and with such majesty, and with such astonishing velocity; and that too, without apparent muscular action, is sublime; and when attacked, such perfect command over his locomotion as to entirely change his position as quick as thought. (*Sailing Directions* 237)

These two ways of perceiving whales, through comparisons to humans and to machines, are continually brought up against one another, echoing the tension between these two forms in *Moby-Dick*. Even while espousing the whale's grace and nobility, Captain McKenzie disassembles it into its component parts. The terms he uses to characterize the whale's power and speed, such as "velocity" and "locomotion," are more apt for describing a machine than a living thing. He remarks on the force with the which the whale propels itself through the water, despite the uncanny lack of visible muscles. Melville likewise compares the whale to a

battleship: “only think of the gigantic involutions of his intestines, where they lie in him like great cables and hausers coiled away in the subterranean orlop-deck” (Melville 452). The whale becomes, in this way, an extension of industry.

As Shukin points out, the animal-as-machine analogy can function as a form of colonising, of positing the “Other” in more familiar terms (16). At the same time, the rendering of the whale as technological also confuses the boundaries between the human and the “natural” world, particularly as humans, like Ahab, are similarly described as mechanical; and the captain is, as mentioned, likewise subject to measurement and observation. Indeed, as White observes, “the research animal could... also be human,” and nineteenth-century studies of patients in somnambulant or other unresponsive states revealed that humans too responded instinctually to stimuli, as though being controlled by invisible forces (61).

As such, the automaton was not only an analogy for the mechanized worker. As Otis explains, the “reasoning machine” was also a metaphor for the mind, in which thought processes were perceived as mechanical (31-32).⁹¹ In fact, the Cartesian notion of animal as machine was not only revived in the nineteenth century but expanded to include humans, as shown in later works like Thomas Huxley’s “On the Hypothesis That Animals Are Automata” (Voskuhl 206-207).⁹² To return to the example of Melville’s short story “The Bell-Tower,” when the automaton Talus murders his maker, it is unclear whether it was intentional, or just a function of his programming. The unnamed narrator-observer, who stands in for both the reader and the researcher, offers opposing interpretations of the events: one in which the machine’s actions are evidence of human emotions and reason, and the other

⁹¹ On Charles Babbage’s “fascination” with how the mind worked, see Otis. The scholar explains how the mathematician drew inspiration from “organic processes,” modelling the programming of his hypothetical machine after the “basic principles of analysis” (Otis 31-33).

⁹² Huxley was influenced by the materialist theory of seventeenth century philosopher Julien Offray de La Mettrie, whose *Man a Machine* was the subject of much debate in the nineteenth century. Notably, La Mettrie refers to Jacques de Vaucanson, inventor of the automatic loom and maker of life-like automata, as a “modern Prometheus” (Voskuhl 206-207).

in which they are just a mechanical response. Such questions lay at the core of debates not only about the ethical treatment of nonhuman beings, but about the nature of free will and of consciousness. The narrator implies that the “murder” was an unfortunate accident; the automaton’s aspect, hovering over the inventor’s body “as if whispering some post-mortem terror,” only one of *seeming* menace, while, in actuality, being indicative of “clogged” up machinery (429). The inventor himself, a staunch “materialist” (426), repeatedly denies the automaton agency. “It” has “no soul,” Bannadonna insists (415). Yet, throughout the story, Melville inserts moments that cast doubt on this assertion.

Though, to all appearances, Talus is confined to the circular track and to the repetitious labour of ringing the tower bell, the villagers swear they hear movement in the tower: “Hark is that a footfall above?” (415). More unsettling still is the implication that the automaton is not only capable of movement but thought and feeling. Armstrong argues that in *Moby-Dick* scenes of parody, such as the old whale’s death, are often mistaken for genuine sentiment (107). At the same time, I would posit that Melville could be “skeptical” of anti-cruelty rhetoric, while at the same time interested in the implications of non-human subjectivity. In “The Bell-Tower,” for instance, the automaton stands in for not only the worker as research subject, but the animal as research subject. The inventor’s indifference to Talus’s fate echoes the argument, used by some nineteenth-century physiologists in defense of vivisection, that emotions were “automatic mechanisms, materially-based” (White 71). The villagers hear “strange sounds... half-suppressed screams and plainings, such as might have issued from some ghostly engine, overplied” (517) coming from the tower, but it is uncertain whether the “screams” are an anthropomorphised projection, or evidence of suffering. Talus never speaks and, apart from the “strange sounds” that may or may not be machinery, there is no indication that it can communicate. Much like the animal (or unconscious human) subject, the automaton cannot describe its experiences: our

interpretation of its actions is limited to the data gathered through outside observation. The question of whether Talus truly possesses “intelligence and will,” or only “appears” so (423), remains unresolved, and raises deeper questions about the nature of subjectivity. The implication is that if automaton can convincingly mimic thought and feeling, who is to say that human consciousness might not, likewise, be a function of a complex machine.

For some nineteenth-century naturalists, the presence of animal emotions, especially those associated with morality, such as loyalty and sympathy, was seen as evidence of human-animal affinity. As Daston puts it, “Capacity for sympathy—recognized as such without hesitation by human observers—inducted the sensitive species into a moral community of sorts” (48). For this reason, dogs were highly esteemed and thought to share a special closeness with humans, even more so than apes. Indeed, Darwin’s *On the Expression of the Emotions in Animals and Man* (1872) contains numerous anecdotes about his canine companions, and in this work and in *The Descent of Man* (1871) he makes the case that “social instincts such as sympathy and pity evolved through the operation of natural selection” (White 68, 70; Knoll 15).

While for some, animal emotions were evidence of kinship, for others they were another mark of difference. Nineteenth-century physiologist David Ferrier, who conducted experiments on animals that tested the neurological function of the brain, argued that emotions were like any other physiological response. In other words, feelings were just another instinct that had to be controlled (White 71). As White explains, for those like Ferrier who defended vivisection as a necessary evil, the ability to master one’s emotions in pursuit of the greater good of scientific discovery was proof of humankind’s superiority, evidence of the researcher’s moral resolve and fortitude:

that they possessed sympathy and tenderness and yet were able, on entering the laboratory, to mobilize their curiosity, stem the tide of sentiment, and perform like

well-tuned instruments for the pursuit of truth and medical mercy was a crucial part of their self-legitimization; it asserted their preeminent position on the physiological and moral scale of being, ahead of their critics, who, like the lower creatures they advocated, were slaves to their sentimental affections. (White 74)

Yet, as White points out, there was always a risk that the researcher would, in turn, become desensitized to violence. As such, in anti-cruelty rhetoric, the vivisectors were often compared to “beasts,” whose “brutal passions... were unleashed through the repeated and prolonged infliction of pain on helpless creatures” (White 70).

In *Moby-Dick*, the whaler is, at times, also depicted as a “divided self,” who must “stem the tide of sentiment” to carry out a necessary duty. Ishmael celebrates the contributions of whalers to oceanography, calling them “pioneer[s] in ferreting out the remotest and least known parts of the earth” (120). Maury’s data collection project, in this sense, helped to rehabilitate the image of whalers, who could now claim they were not just “butchers” (Melville 119), but explorers and pathbreakers contributing to the creation of new knowledge. Indeed, in the chapter “The Advocate,” Ishmael justifies the brutality of the hunt as being in the service of a nobler cause. Yet, at other points, the crew also exhibit cruelty, as when Flask “pricks” the boil of an injured whale. Moreover, as Schultz points out, Melville frequently compares the human characters to animals, and the crew are likened to “sharks” and “wolves” and are described as having but a “small touch of human mothers in them” (Schultz 101; Melville 101, 333, 399, 187).

Likewise, in a letter to Maury, McKenzie recounts the bond between whales who will “rush with great speed to their wounded companion, as if to extend their sympathy, if nothing more, unconscious of their own danger” (Maury SD 237). Still, even while seeming to grant the Cetacea complex, human-like emotions, the captain instructs the reader on how these characteristics can be exploited for the whalers’ gain. He explains how a clever hunter can entrap his prey by playing on its sympathies for its fellows: “The bold whaler avails himself

of their approach, lays off a short distance from his bleeding victim, and takes them as they come; and if he is clever at the deadly game, he will mortally wound several, ere they discover the tragic act he is playing” (Maury SD 366). As Captain McKenzie attests, only intelligent creatures capable of compassion could be baited in this way. As such, his instructions inadvertently muddle the boundaries between human and non-human: in this telling, the hunter behaves more like a machine, and only in recognizing the “tragedy” of the act redeems his humanity.

The careful measurements, as recorded in the whalers’ testimonies, deepen the uncanny sense of human perception as mediated by data. For instance, in addition to the letters, Maury’s book includes a reprint of Captain Francis Post’s “History of the Spermaceti Whale,” which is notable for its “many useful statistics,” including the frequency and height of the whale’s sprays (every fifteen seconds to a height of twelve feet), the amount of time they can hold their breath (fifty-two minutes), the length and circumference of the whale (sixty-two feet long and thirty-two feet around), the number of teeth (two rows of twenty-two), the size of the pods (from fifteen-to-twenty to over a hundred), and the speed with which they can travel (two to ten miles per hour) (*Sailing Directions* 368-372).

Like the testimonies in Maury’s ‘Whale Charts,’ *Moby-Dick* contains numerous examples of both qualitative and quantitative observations. Early in the novel, the narrator makes it known that each whale follows its own unique breathing and diving patterns, a fact that comes into play in the story’s climax. As Ishmael explains, like all expert trackers, whalers are so familiar with their prey’s habits that they are able to anticipate their likely course. Thus can the whale’s speed and direction can be predicted with the reliability of a “modern railway” (612). Ahab, for instance, is so knowledgeable of Moby Dick’s ways that he knows to time each dive with his “binnacle watch,” commanding his crew to resume their lookout “as soon as the last second of the allotted hour expire[s]” (610). These observations,

like those recorded in Maury's Whale Charts, are not random but purposeful, giving the hunter an edge over his prey. Data, in other words, are another weapon in the whaler's artillery.

In Melville's novel, the harvesting of whales for knowledge and for fuel thus becomes intertwined. Compare for instance these two scenes of dissection, one of which appears in Maury's 'Whale Charts' and the other in *Moby-Dick*. In his report, Captain Post advises "green hands," new to the whaling industry, to take the time to "examine the internal structure of the whale," not just to satisfy an innate curiosity or thirst for knowledge but to "point his lance with a more deadly aim" (*Sailing Directions* 372). *Moby-Dick* contains an almost identical incident in which Ishmael explains how he once had the opportunity to dissect a young whale. According to him, the crew brought a small whale corpse on deck with the intention of harvesting its "poke," possibly a reference to the whale bladder or other organ, in order fashion it into a harpoon sheath. Ishmael, however, sees an opportunity for scientific investigation. He considers the whale from the perspective of not just a worker but a researcher; the ship deck is reimagined as a surgical theatre with Ishmael as the chief physician, performing a dissection for the attendant reader. In this instant, as in others, the whale is a repository of knowledge, akin to a precious letter or scroll. To neglect to "break the seal and read all the contents" would be unimaginable, even sacrilege; a denial of a "blessed opportunity" (Melville 499). As the scene illustrates, the whaler's closeness to the whales, while providing opportunities for extraordinary moments of empathy, also has the effect of endangering them: the more the whaler learns, the more vulnerable to the "deadly" aim of the lance they become.

Whales And Whalers on the Margins

Ishmael's perspectives on the hunt, as all else, are contradictory. In some sections, he romanticizes the frontier mindset, in which the ocean and its creatures are open for the taking, but in other parts he questions whether this outlook is ultimately sustainable. In the chapter "Does the Whale's Magnitude Diminish? —Will He Perish?", he raises the possibility that whales, like the American buffalo, will be hunted to extinction. He at first appears to brush aside questions about the viability of the species, arguing that American whalers kill too few whales, 13,000 annually by his sources, to have a lasting impact. As such, he reasons that there is no real cause for alarm (513). Even so, in raising the specter of the buffalo, Ishmael undercuts his own argument. In a novel haunted by loss, the extermination of the American buffalo stands in for the numerous casualties of industrialization and raises questions of how to grapple with its rapid changes (see also Casarino; Armstrong; and Schultz). Ishmael himself points out that in less than a generation America had witnessed the near-complete extermination of an entire species. Where once buffalo herds numbering in the tens of thousands had "shook their iron manes and scowled with their thunder-clotted brows... now the polite broker sells you land at a dollar an inch" (512). The bison's disappearance is all the more "incredible" for the fact that there was once as many such animals in Illinois as there are men in London, their "census" count exceeding even that of a modern, man-made city (512). Ultimately, the effect of raising the possibility of the whale's extinction is to unsettle rather than reassure. Like the title of the chapter, which is posed as a question, the whale's fate is undecided. The efficiency of the buffalo's extermination is, moreover, a chilling reminder of the destructive potential of technocapitalism, in which humans and non-human animals alike are surveilled and consumed by the industrial machine.

The disappearance of the whale, while likely more due to learned behavior on the part of the whalers than overhunting, nonetheless frames both Melville's experience working

aboard whaling ships and the themes of the novel. Even from the nascent days of the American whaling industry, whalers observed a huge decline in sightings. Already in the late 1700s, the once thriving Northern Right whale population had all but vanished, and whalers began to express worries about the industry's future (Laist 266; "The Atlantic Right Whale" 117).⁹³ Despite growing concerns about the viability of the species, there were no serious attempts in the nineteenth century to regulate the hunt.⁹⁴ As Eric Dolin explains, the whaling industry was caught in a "boom and bust" cycle. As the customary whaling grounds became depleted, due to the animals being either killed off or driven away, the ships were forced to move on in search of new territory (Dolin 259). For the same reasons, hunters would choose to target new species, which is how the right whale, initially named because it was the "right" one to hunt, came to be supplanted by the more plentiful sperm whale as the choice catch (Allen 10, 12). As such, the name became a failed analogy; instead of a real/imagined marker of capitalism's success, the 'right whale' stands as testimony to its exploitative potential.

By the mid-nineteenth century, the search for fresh hunting grounds had pushed the American whaling industry westward into the Pacific. In its annual report on whale fisheries published on January 7, 1851, the *Whalemen's Shipping List* remarked on the "scarcity" of sperm whale sightings in the Pacific (WSL 1851 Jan 7, 178). In fact, by modern estimates sightings of sperm whales between 1830 and 1850 dropped by sixty percent (Tillman and Breiwick 1983; Whitehead 1995b). However, the editors of *WSL* seem more concerned about

⁹³ A letter to the editor of *Scientific American* published in 1886 reads: "During the last quarter of the eighteenth century, [the right whale] became so scarce that it was often not found on our coast; and eventually... the 'fishery' was given up" (117).

⁹⁴ There were no serious attempts to regulate whaling until the formation of the Convention for the Regulation of Whaling in 1931, which was followed by the International Convention for the Regulation of Whaling (ICRW) in 1948. However, because these agreements were economically motivated, the goal being to "make possible the orderly development of the whaling industry," they had limited effectiveness (Allen 23-25). In fact, the greatest declines in numbers occurred after these laws were passed, in the 1950s to 1970s (Davis 51-52).

labor shortages than overhunting and are far more emphatic in their complaints about “undisciplined” crew and high levels of desertions (WSL 1851 Jan 7, 178).

In fact, the surveillance of workers and of non-human animals was closely intertwined. As whalers became better at tracking, as aided by data-gathering and navigational tools, so too did the whales become “shier” of humans and more apt at evading them. The need to travel into unknown waters, in turn, contributed to both the increased length of the voyages and the precarious nature of the work (Starbuck 113).⁹⁵ A study by Davis et al. found that over the course of the nineteenth century approximately forty percent of American whaling ships were lost at sea with a per voyage loss rate of six percent (Davis 258-259). Captains and mates were paid handsomely, as agents relied on them to navigate the dangerous waters not only of the ocean but of labor unrest; meanwhile, the wages for ordinary seamen stalled. As described in the previous chapter, the crew members rebelled against these working conditions, using desertion, strikes, and mutiny to mitigate the risks and exit contracts they judged were no longer profitable. Shipmasters, in turn, increasingly subjected maritime workers to strict codes of conduct, using “moral reform” as an excuse to keep the crew under close watch in order to prevent them from leaving the ship or filing complaints with the American consuls.

The dual role of whaling logs in surveilling both the human and the “natural” world is exhibited in Captain Post’s aforementioned report of “useful statistics,” which contains observations not only about whales but about whaling work. Some of these “computations” are more sensational than scientific in nature, serving to showcase America’s industrial might. He boasts that America’s whaling fleet has grown so large that were its vessels laid end-to-end it would span half the circumference of the earth (Post 245). However, much as he

⁹⁵ In *The History of the Whaling Industry*, published in 1878, Alexander Starbuck cites the “scarcity and shyness” of the whales, which resulted in “longer and more expensive voyages,” as an “important” cause of the American whaling industry decline (113).

does with the whales, he also records observations about the crew and measures the efficiency of their activities. For instance, he notes that whale blubber takes 36 hours to process, or two to three hours per barrel (Post 249).

Much like Captain Post, Ishmael not only breaks down the whale into its composite parts but also deconstructs the processes of whaling work. Consider the following sequence of tasks:

while the one tackle is peeling and hoisting a second strip from the whale, the other is slowly slackened away, and down goes the first strip through the main hatchway right beneath, into an unfurnished parlor called the blubber-room. Into this twilight apartment sundry nimble hands keep coiling away the long blanket-piece as if it were a great live mass of plaited serpents. And thus the work proceeds; the two tackles hoisting and lowering simultaneously; both whale and windlass heaving, the heavers singing, the blubber-room gentlemen coiling, the mates scarfing, the ship straining. (339)

As shown in the scene, the mechanization of whaling work was aided by the introduction of new tools, such as the geared winches and the windlass crank, which allowed whale blubber to be processed at sea instead of onshore and required less skill and manpower to operate.

The singing of the “heavers,” which permeates the industrial clamor, could be read as a heroic affirmation of the working-class spirit. However, the whaling songs also attest to the mechanization of maritime labor. As Stuart M. Frank writes, sea chanteys were “working songs” that rose to popularity during the expansion of maritime commerce, including whaling. These songs were meant to be sung when performing certain tasks, and they were used both for synchronizing the movements of the crew and breaking up the monotony of the workday (Frank 2). As conditions aboard vessels worsened, chanteys became an “indispensable” tool for increasing efficiency and improving morale. Indeed, in Melville’s novel, the voices of the human “heavers” merge with the industrial creaks and groans of the “heaving” equipment. Further to this point, the bodies of workers beneath deck are obscured

by the darkness, so that only their “nimble hands” that “keep coiling away” the pieces of blubber are visible. The emphasis on “working hands” echoes a scene further on in the novel, in which Ishmael clasps hands with his fellow workers while submerged in a vat of spermaceti. In this case, the disembodied hands instead underscore the depersonalisation of whaling work and the marginalization of the workers.

In the novel, Melville collects and preserves artifacts of whales and of whaling, and in this sense, one could argue he situates both the animals and the craft of whaling as part of the “receding past” (Berger 22). Notably, when the Smithsonian National Museum of Natural History first opened its doors to the public in 1881, thirty years after the publication of *Moby-Dick*, one of its crowning gems were its whale exhibits. The museum commissioned its chief modeler to create a lifelike cast of a 32-foot humpback whale, which was exhibited in the Arts and Industries Building, dubbed the “Palace of Wonders,” where it can still be seen today. When viewed from one side it appears as if the whale is swimming through the halls, while on the other side the whale’s “skin” has been peeled back, to expose its inner skeleton (Report of the Assistant Director of the US National Museum, Goode, Brown. Government Printing Office, 1881, p. 7; see fig. 4.10 and 4.11). The natural exterior of the whale is, in this way, presented as an “illusion,” which conceals its machine-like interior operations. The animal as “model machine” is underscored by the museum’s display of zoological specimens alongside those of industry and technology, such as ceramics and print machines. Within the next few years, the museum also acquired a number of whaling artifacts, including a fully equipped whaling boat and captain’s logbooks (ibid, pp. 21, 133-134). The whale and the worker were, in this way, arranged side by side as objects of study, laid bare before the surveilling eye.

Into The Sub-Sub

Armstrong contrasts the whale as “passive resource” with the “fighting whale,” as epitomized by *Moby Dick*. For the scholar, the whale’s agency is only realized in the battle to the death: “the hunt alone confronts the human with that dimension of the whale which escapes or defeats all other modes of cultural mediation, scientific, artistic or economic: the animal’s agency, its embodied resistance to human plans, as signified by the risk of ‘being eternally stove and sunk by him’ . For Ishmael, then, the real whale is the fighting whale” (Armstrong 112-113). The implication is that within the universe of *Moby-Dick* the nonhuman world is unknowable, except in its (futile) resistance to destruction. The “real” whale remains inaccessible. Yet, as Daston points out, to dismiss all analogies as doomed to failure is invariably an isolationist perspective (54), which I would argue is at odds with Ishmael’s repeated attempts at human-animal connection. Moreover, though Armstrong sees the “hunt” as the act of lowering the boats to give chase, as described in the previous sections, darting the whale is only the culmination of a long process, which involves careful study of the whale’s physiology and behavior. These observations, as Ishmael himself observes, play a not insignificant role in the outcome of the hunt and shape the way in which the whaler reads the whale. In these moments the hunter glimpses what Berger terms the “invisible orders” that coexist with our own (10).

As in *White-Jacket*, in *Moby-Dick* watching is not inherently exploitive or violent. The whale and the whaler share a kinship, one rooted in their mutual observation of one another. Berger writes that city dwellers, estranged from animals, can only view them as objects of “nostalgia.” Yet those who continue to rely on and live alongside animals retain a sense of our “parallel” existence. For these persons, the seeming contradictions of their relationship with animals—the farmer who is both “fond of his pig and is glad to salt away his pork”—is evidence of the “dualism” of their “similar/dissimilar lives” (Berger 16).

Likewise, during a pause in the hunt, Ishmael is “enchanted” by a scene of nursing mother whales:

as human infants while suckling will calmly and fixedly gaze away from the breast, as if leading two different lives at the same time... even so did the young of these whales seem looking up towards us, but not at us, as if we were but a bit of Gulf-weed in their new-born sight. Floating on their sides, the mothers also seemed quietly eyeing us. One of these little infants, that from certain queer tokens seemed hardly a day old, might have measured some fourteen feet in length, and some six feet in girth. (455)

For the whaler, the whale is neither merely an object of “nostalgia” nor purely a resource. In this scene and others, the tension between these two perceptual modes is an affirmation of their dual existence. Indeed, in the novel the relationship between the datafier and the datafied is not necessarily exploitive. As shown in the final section, through his experiments with genre, Melville posits an alternate understanding of data, in which the process of datafication opens up rather than forecloses multiple interpretations.

Significantly, Ishmael’s intentions, unlike those of Captain Post and Ahab, are never clearly stated, and in this he deviates from the conventions of the seafaring genre. As Cohen points out, maritime adventure novels often mimicked the problem-solution structure set out in whaling logbooks. The logbook entries served as a guidebook of sorts, helping future navigators overcome potential crisis. In adapting the seafaring narratives for popular consumption, authors used detailed descriptions of whaling practices to engage the reader in the action and build tension until the inevitable resolution. The information-dense entries in *Moby-Dick*, on the other hand, are not purpose-driven in that the facts do not serve an obvious end goal. The intent behind the information is made murky and untenable, which is especially evident when comparing not just the textual content but the form.

Like the aforementioned scene, the structure of the novel is staged as a grand dissection, dismantling the whale into its composite parts: as specimen, as industrial good,

even as metaphor in the “whiteness” chapter. The subsections deconstruct the whale still further with entire chapters dedicated to the various parts: blubber, head, tail, spout, skeleton. The disassembly of the whale is emblematic of the nineteenth century industrial turn. In simple terms, the rise of modernity was marked by a transition from a craft-based to a factory-based economy. Factories standardized the production of goods by breaking them down into their disparate parts. In a sense, the assembly line was less about assembling a finished product than taking apart what appears whole and finding (or creating) the edges and seams that make *disassembly* possible. These disassembled components were, moreover, not so much physical as informational.

Take the example of the first factory-made guns invented by Samuel Colt in 1848. Colt’s major insight was that even a fairly complex mechanism like a rifle could be reduced to a series of measurements, a process that ensured that the product could be tested and re-tested to meet set standards. This gave factory-produced guns a distinct advantage on the battlefield, as their standardized parts, identical to and interchangeable with those of like model, made them easier to repair on the fly. For this reason, Alan Liu has argued that the Colt rifle exemplifies how quantification serves as the basis for all manner of standardized production. In fact, he sees the invention of factory-made guns in the mid-nineteenth century as a predecessor to not just web standards, but computational thinking at large (Liu 2004). In this sense, the processing of the whale in *Moby-Dick* is an allegory for not just for the industrial era, but the informational.

Yet, much like Ishmael’s unfinished whale folios, the system is inherently leaky, and in splitting open the whale he unleashes rather than reins in the torrents of information. Consider the use of footnotes. Both the encyclopedic sections and those rich in character and action contain annotations. As Sascha Morrell notes, even in the midst of the climactic battle with Moby Dick, “Ishmael cannot resist inserting a footnote to clarify his use of the term

“pitchpoling”” (Morrell; Melville 607). As discussed, in seafaring novels the inclusion of information is used to build tension. But while for Cohen the deferral of action is key, I argue that the passive consumption of knowledge is not in itself enough. Rather, it is the activation of research methods, in which the reader is called upon to take part in piecing together the facts of the story, that makes it effective. In the battle scene, having dashed one of the boats to pieces, Moby Dick observes the damage from a short distance away. Then the white whale starts to move in a “peculiar” way, repeatedly “thrusting” out of the water, while slowing revolving, in the process sending out enormous billows of water and spray. At first, the whale’s behavior is ominous *because* of its strangeness. However, by consulting the annotation, the reader learns that sperm whales use the “pitchpole” motion to increase their range of vision, especially when under attack. One might expect that the imposition of “facts,” which rationalize the whale’s actions, would diminish the power of the passage. On the contrary, the act of cross-referencing engages the reader in the events at hand, and consequently she becomes more invested in the outcome. More pointedly, in contrast to the “fixed” thinking of Ahab (Bloom 53), the anecdotes invite the reader (much like Ishmael) continually to recalibrate her understanding based on new information.

The footnotes, in a sense, act as “hyperlinks” that stitch the expository and narrative chapters together. But the dominant mode is not always clear: do the facts annotate the plot, supporting and illuminating the events, or vice versa? Notably, references to past and future events appear almost exclusively in the expository sections. In other words, in his role as a researcher, Ishmael’s narration becomes more self-reflexive. The results of a Zeta⁹⁶ analysis,

⁹⁶ Zeta analysis is a method of stylometry, the statistical analysis of authorial style, which compares different sets of texts to discover the list of words uniquely preferred in each set. The method was first proposed by John Burrows in 2007, with variations by Hugh Craig and Maciej Eder (Burrows; Craig and Kinney; Eder, Rybicki, and Kestemont). The Zeta method is based on the distribution of words, rather than absolute frequency. As such, words that appear in high concentration only in rare instances are not overvalued; common function words, such as “the” and “a,” which are found throughout the corpus, are also discounted. Instead, the method focuses on words in the mid-frequency range, which tend to be information-rich, subject words (Burrows 27-28).

which compared the most and least preferred words of narrative and encyclopedic chapters, revealed that one of the most characteristic terms of the encyclopedic sections was the word “chapter,” which is used in reference to other parts of the novel.⁹⁷ The encyclopedic chapter “The Dart,” for instance, opens with “a word concerning an incident in the last chapter” (321). Metacommentary such as this is typical of the information-driven sections of *Moby-Dick*. In his role as the data-archivist, Ishmael frequently steps outside of the events, drawing attention to the de/constructedness of the novel.

The novel functions as a catalog of information, punctuated with headings and pointers that reference events both real and fictional as well as past and future plot points. Sometimes the links appear broken, leading the reader in conflicting directions or nowhere in particular. Of the twenty-two footnotes that appear in the original edition, most relate to etymology, natural science or the process of whaling. In some instances, however, the subject matter takes an unusual turn. Rather than providing supplementary facts, the annotations become prompts for experiments in free form writing. In “The Whiteness of the Whale,” Ishmael describes the first time he encountered an albatross. Ishmael’s recollection has a dreamlike quality, infused with mystical imagery and hyper-realistic details like the bird’s “vast archangel wings” and ghostly cries (210). The encounter takes place during a storm, when the deck is shrouded in mist, and afterwards he describes himself as “awake[ning]” from a trancelike state (210). For Ishmael, the novel’s narrator-archivist, to “sw[i]m through libraries” evokes the dreamlike experience of browsing through seemingly endless content

⁹⁷ Figure 4.9 shows the results of Zeta analysis using Stylometry with R, in which the encyclopedic chapters of *Moby-Dick* were compared against those that are plot-driven, the latter being identified as such by the presence of named characters (Miya). Stylometry is most often applied to the macroanalysis of large collections, rather than the microanalysis of a single text; and Eder has argued that authorship cannot be reliably determined if the sample size is much less than 2,000 words, and in some cases the “fingerprint is so vague, that... substantially larger samples” are needed” (“Short Samples”). However, I would tentatively posit that the Zeta method could have useful applications in tracking stylistic changes across a single text (or versions of a text), particularly in the exploratory phase of research, where the goal is not to definitively identify authorship or genre, but rather to identify potential areas for further investigation

(147). For the contemporary reader, at his most introspective Ishmael might resemble a web surfer lost at sea, clicking from subject to subject, adrift in a murky unconscious. The annotations in effect become extensions of the psyche, inviting the reader to deviate from the main text and wander down the hidden “halls” of the narrator’s imagination (213). As with the other authors in my study, Melville in this way invokes the hallmarks of information-dense writing only to invert them.

To return once more to the example of “pitchpoling,” Ishmael reiterates in the footnote that the term was coined by whalers in allusion to the thrusting motion of the harpoon.⁹⁸ The etymology in a sense underscores the ties between commerce and scientific practice, with the observation of animal behavior used to aid the hunt. At first, the linked chapter, “The Sperm Whale’s Head,” appears to reinforce this connection. Ishmael explains that the whale’s limited field of vision, which is restricted to 30-degrees on either side, leaves its immediate front and back exposed, and whalers can take advantage of these blind spots to sneak up on their prey. However, the practical application of this knowledge, *on the battlefield* so to speak, quickly turns to the philosophical implications, mainly how to consolidate two opposing views of the world. As Ishmael points out, the sperm whale is simultaneously presented with two distinct pictures, between which lies “profound darkness and nothingness” (368). Such a manner of seeing is hardly comprehensible to human beings, having only ever experienced unidirectional vision. Yet, the whale’s ability to at once examine the world through two “divided and diametrically opposite” lenses, is cause for envy. Human beings, limited by a single perspective, might do well to think more like whales and strive for modes of apprehension that are “more comprehensive, combining, and subtle”

⁹⁸ An earlier chapter, simply titled “Pitchpoling,” describes the hunting maneuver in greater detail, explaining how the whaler carries a second, shorter spear in addition to the harpoon, which is used to repeatedly dart and fatally wound an already tagged whale (408-410). However, there is no mention of the second definition of “pitchpoling,” which describes the whale’s behavior, until the latter footnote in the climax. So, the connection between the two chapters, “Pitchpoling” and “The Sperm Whale’s Head,” can only be made by consulting the annotation.

(368). The novel itself is an experiment in just that, presenting its subject matter through shifting modes of genre.

Bowker points out that information science endows human beings with powers of omniscience and omnipresence previously thought to be reserved only for the gods (40). As far back as the eighteenth century, mathematicians such as Daniel Bernoulli and Pierre Laplace speculated about the infinite potential of information science. In a famous thought experiment known as “Laplace’s Demon,” Laplace theorized that if one could capture, like a snapshot, the state of all matter at any given time, one could attain perfect knowledge of not only all future events but all events that had already come to pass.⁹⁹ With enough information, humans would not only have the power to freeze time but move through it. The “demon” of information was partially realized with the rise of data science in the nineteenth century. Through data collection and analysis, for instance, Maury unlocked the mysteries of the ocean’s wind and water currents, able to better predict their movements and use this knowledge to humankind’s advantage.¹⁰⁰

That the whales in *Moby-Dick* are rumored to possess the ability to bend space and time makes sense if one understands the cetacean as an analogue of information. According to Ishmael, there have been whales captured in the North Pacific embedded with harpoons from whalers in Greenland; moreover, the age of the darts indicates that the attacks took place only days apart. Given this evidence, one might conclude that whales can somehow transcend the normal laws of physics, travelling considerable distances underwater in the

⁹⁹ In *A Philosophical Essay on Probabilities*, published in 1812, Pierre Laplace writes: “We may regard the present state of the universe as the effect of its past and the cause of its future. An intellect which at a certain moment would know all forces that set nature in motion, and all positions of all items of which nature is composed, if this intellect were also vast enough to submit these data to analysis, it would embrace in a single formula the movements of the greatest bodies of the universe and those of the tiniest atom; for such an intellect nothing would be uncertain and the future just like the past would be present before its eyes” (4).

¹⁰⁰ Maury’s contributions to oceanography are, nonetheless, tainted by his racist ideology. During the Civil War, Maury fought on the side of the Confederates and remained a staunch supporter of slavery expansionism even after the South’s surrender, trying and failing to set up a slavery settlement in Mexico (Hardy and Rozwadowski 13).

blink of an eye. *Moby Dick*, in particular, is said to possess the strange power of not only teleportation but of seemingly being in two places at once, capable of “mystic modes whereby, after sounding to a great depth, he transports himself with such vast swiftness to the most widely distant points” (200). What is more, legend has it that “*Moby Dick* [is] not only ubiquitous, but immortal (for immortality is but ubiquity in time)” (Melville 200).

Though human beings cannot manipulate space and time directly, we can simulate these manipulations, both narratively and through the creation of data models in which certain characteristics of the world are represented quantitatively. These models or proxy worlds can in this way radically alter how we perceive and interact with our environment. By consulting Maury’s oceanographic charts, for instance, navigators could predict the seasonal shifts in wind and current patterns and plan their voyages accordingly. The model is still by nature a representation, not a replication, of reality. Yet, in a sense, it becomes just as real as the physical world in that it has material effects, influencing not just individual actions but the development of entire cultures. Bruno Latour and Johanna Drucker, among others, have pointed out how the particular way in which data are mobilized—not just in terms of how it is visualized but how it is selected, categorized, and otherwise processed—impacts decision-making.¹⁰¹ Of course, that data can be mobilized at all was in the mid-nineteenth century still a novel idea.

Moby-Dick contains numerous allusions to the godlike powers acquired through information, or rather to the tantalizing (and dangerous) dream thereof. Melville first introduces the archetype of the datafier in the novel’s enigmatic prologue. The “sub-sub-librarian” who oversees the world’s archives of knowledge is positioned as the architect of the modern world. He exists outside of the main storyline yet presides over the rest of the

¹⁰¹ See Latour, “Visualization and Cognition”; Drucker, “Humanities Approach to Graphical Display.”

novel. The presence of the datafier, for whom Ishmael is a proxy, is made evident through the insertion of the numerous encyclopedic entries into the text as well as the inclusion of various footnotes and other informational asides. The meta-references to past and future chapters, which as mentioned occur almost exclusively in the expository chapters, further reinforce (and satirize) the omniscience of the datafier. The “pale usher,” in his palace of dusty archives, is a parodic reimagining of an ancient god in a modern, informational world. In this retelling, the future keepers of knowledge will not be a divine race but of average creed, outwardly remarkable only in their sickly and overworked appearance. If we look to examples from history, Melville’s characterization is true to life. In the case of Lieutenant Maury, his “library” was the Depot of Charts and Instruments, an apparently dismal and cramped office space, not unlike the setting of Melville’s prologue (Hearn 112).

Significantly, datafiers such as Maury worked not on the frontlines but in the background. As Kevin Donnelly and others note, with the rise of the information economy new discoveries were increasingly the work not of a single scientist, but of teams of researchers (Donnelly 157). Data-centric projects, such as Maury’s oceanography charts, were the result of countless contributors, which marks a radical departure from scientific process in previous times. The prominence of information via the multitudes in Melville’s work, as well as in Whitman’s, is in this way emblematic of this epistemological development, whereby knowledge is no longer generated by the individual, but by the collective.

Scholars such as Andrew Delbanco have remarked on Ishmael’s changeability, contrasting his “widening embrace” with Ahab’s “monomania” (Delbanco 18). As I have argued above, the first iteration of the datafier, later reborn as Ishmael, is the “pale usher,” a cataloger of information. The sub-sub librarian is a conduit for the archive, speaking through and as a collection of excerpts. As such, Ishmael does not represent a single, fixed

perspective, but rather an “aggregate” of many. In his appraisal of the Spouter-Inn painting, for instance, Ishmael apprehends the work through multiple, shifting vantage points: “the artist’s design seemed this: a final theory of my own, partly based upon the aggregated opinions of many aged persons” (12). Delbanco argues that over the course of the novel, Ishmael does not coalesce but becomes further diffused, such that his character “can hardly be located” (18). As the story unfolds, Ishmael increasingly recedes into the background. He barely participates in the novel’s main events, instead manifesting as a collection of observations. In a sense, Ishmael becomes *as* database, speaking in multiple, heterogeneous voices. The story of *Moby-Dick* so told becomes one of the emergence of the datafying subject.

But can we then speak of Ishmael as a character? For Delbanco, the expository chapters are so much “noise” that interrupts and ultimately drowns out the signal of the novel’s central character: “The narrating mind (called Ishmael at first) hurtles outward, gorging itself with whale lore and with the private memories of men who barely speak” (18). The novel’s hybrid form is, in this sense, “lethal” to Ishmael’s integrity as a cohesive protagonist and narrator. For this reason, though Ishmael is the sole survivor of the wreckage, one could argue he does not emerge from the story intact. Instead, Melville “delights” in the destruction of his hero, who escapes the sinking ship but is ultimately subsumed by the multitudes (18).

At the same time, as shown in this study Ishmael is not the only character to engage with data and he does so in ways that are distinct to his persona. Ishmael’s approach to research, what is collected and how it is presented, reveals much about his philosophy of data and offers a new vantage point from which to interpret his character. Consider, for instance, Ishmael’s anecdote about how he came to tattoo his body with numerical measurements, one of the more remarkable examples of the novel’s quantitative psyche. As Ishmael explains,

during one of his trading expeditions, he had the opportunity to befriend the king of an island nations in the Arsaides, a region also known as the Solomon Islands. Among the king's chief treasures was the complete skeleton of a sperm whale, which had been reconstructed and erected into a temple-like structure. Upon visiting the skeleton shrine, Ishmael immediately shifts into research mode. He pauses to take note of both the "trophies" and carvings that decorate the structure and to calculate the skeleton's various dimensions. These numbers are so precious to Ishmael that he has them inked permanently onto his skin. Though he assures the reader that this was for practical purposes, there apparently being "no other secure way of preserving such valuable statistics," in the context of the story the act holds deeper significance (502).

The tattoo is a recurring symbol in the novel. When Ishmael first meets Queequeg, he is at once struck by the strange markings on his skin. Interestingly, he compares Queequeg's face tattoos to a geographic chart: "But who could show a cheek like Queequeg? which, barred with various tints, seemed like the Andes' western slope, to show forth in one array, contrasting climates, zone by zone" (33). Passages such as this reveal the quantitative lens through which Ishmael views the world. One could interpret Ishmael's numerical tattoos as an act of mimicry, a shallow imitation of Queequeg's authentic expression of spirituality. Alternatively, Ishmael's tattoos could be read as his genuine proclamation of faith in a different type of world, one ruled not by ancient gods but by numbers. It is an act of tribute and worship, as well as one of archiving, a record not just of the statistics themselves but of how quantitative thinking transformed modern man. That Ishmael is the sole survivor of the *Pequod* further signifies the abandonment of the old gods of mysticism and magic and the rise of the new gods of information, or rather the possibility that through information human beings might themselves acquire godlike powers.

At the same time, Ishmael is no fanatic; his curiosity, in a sense, forbids it. This is established early in the novel when Ishmael-as-narrator chooses to set aside his whale folios and leave the taxonomic system unfinished, with the “crane still standing” so to speak, such that the possibility of further construction remains open (159). His tattoos are likewise laid out like half-finished plans, or more accurately plans for a system that is not rigid but dynamic and open to change. As Ishmael exclaims: “God keep me from ever completing anything” (159). For this reason, he chooses to leave parts of his skin unmarked, not bothering with the “odd inch” and cutting out the finer measurements, so that he can create space, not for further calculations, but “poems” not yet written (Melville 502). A space, one might also say, for data and narrative to coexist.

While fascinated by the potentialities of data, Ishmael also understands their limits. As discussed in the introduction, data must be selected and, therefore, are always susceptible to bias. In the chapter “The Funeral,” Ishmael likewise recognizes the fallibility of information, while at the same time demonstrating that even faulty data shape our perception, in effect taking on their own reality. In the following example from the novel, Ishmael explains that after stripping the blubber fisherman typically discard the rest of the whale, setting the “peeled white corpse” adrift in the sea. Should this “vast white headless phantom” then be spotted from afar by a sailor, it could then be easily mistaken for waves crashing against a rocky shoal (343-344). These concealed shoals are deadly to wooden ships, which can run aground on these jagged banks and be smashed to pieces. Considering the peril, the sighting of such a shoal would be sure to be recorded in the ship’s log, and the area would thereafter be avoided. The ghost of the whale is thus made real, “materializing” via the act of recording or datafying it.

As the story demonstrates, even information that is misconstrued or based on faulty sources cannot be released into the environment without altering it. In other words, it has

material consequences, affecting the world in concrete ways, which some information theorists argue is part and parcel with possessing a materiality. Along these lines, Bruno Latour has persuasively argued that an inscription or record of information can have the same effect as a physical feature.¹⁰² In *Moby-Dick*, Ishmael makes a similar argument using the parable of the “bell whether.” If the lead ram, who is designated by his bell, leaps over a walking stick, the herd that follows behind will continue to perform the action even after the stick is taken away (344). In other words, the presence of the stick does not have to be experienced directly to be felt. The ship’s logbook also acts as a “bell whether.” The wind and current data collected by US Naval Observatory, for instance, changed the way that ships navigate the seas. One can imagine that the accumulation of these decisions over time had both socio-cultural and biological effects, impacting both the human and the natural world. Latour points out that having been datafied and translated into a form that is more easily stored, shared, and duplicated, the presence or influence of the thing in question not only exists but is amplified. This theory of information is borne out in Ishmael’s telling of the floating corpse: a whale that was a “terror” in life can “become a powerless panic to the world” in death (345). In other words, the imprint takes on its own reality, becoming in a sense more “real” than the thing itself.

By drawing attention to the fallibility of information, Ishmael counteracts the allure of that old enlightenment dream. To “know it all” and become as gods remains for Ahab an unfulfilled but tantalizing desire, one that has carried forward into the current data-driven era. By contrast, for Ishmael the limits of information (and of data) are not cause for despair or reason to dismiss scientific method altogether, but rather seem to be inherent to the process of knowledge creation. There are, of course, clear instances of error, as in the above-mentioned case of the false shoal. But even if the foundational assumptions and methods of information

¹⁰² See Latour, “Visualization and Cognition.”

gathering are sound, in order to extract meaning from the noise and make visible the underlying patterns, a certain degree of lossiness is inevitable. Something must always be left behind.

As shown, Melville frequently invokes techniques of datafication in *Moby-Dick*. Notably, the figure of the datafier is not singular, but manifests differently in each of the aforementioned characters. The contradictory uses to which data are put reflect the varied, sometimes naive, assumptions about data that prevailed in the nineteenth century and to an extent still persist today. In Ishmael's case, the apprehension of whales as scientific object and as economic resource are deeply intertwined, which speaks to how early oceanic studies, in which whalers observed and recorded the habits of whales, were driven by economic interests. Far from being immune to this program, Ishmael's surveillance of the whales shows how research thinking both facilitates and functions as an extension of capitalist practices.

At the same time, describing the human elements of these information gathering processes, as Ishmael does, challenges the presumption of neutrality. In this way, the novel's hybrid form makes visible the implicit narratives embedded in the data. To speak of data and narrative as oppositional is to ignore the role of human intervention. Datafication is interpretation, an (un/re)making of the object that reveals alternate meanings even as it suppresses others and is consequently an act of both violence and creation. Similarly, data functions narratively as a model of the world. Time and time again, Ishmael rejects the possibility of an all-encompassing system and instead insists on the many models approach. His radical apprehension of data as a space for play, in which re/orderings are expressions of a ludic impulse rather than that of domination, is an alternative rendition of the datafying subject and the redemptive counterpart to the darker impulses of Ahab and of Bildad and Peleg.

An Inconclusion

Both Melville's *Moby-Dick* and Whitman's *Leaves of Grass* celebrate unfinished systems. The narrator-protagonist Ishmael, reflecting on the limitations of whale taxonomy, remarks, "For small erections may be finished by their first architects; grand ones, true ones, ever leave the copestone to posterity," and he concludes with an oath: "God keep me from ever completing anything" (159). The historicization of the multiple, contradictory cultures of data is, likewise, a work-in-progress. I hope that this brief (and inconclusive) meditation on the making of the datafied and datafying subject—as journalist, citizen, worker, and nonhuman animal—invited the reader to reflect on data, not just as technology or practice, but as lived experience; and, moreover, to imagine alternate histories and futures of data, systems yet to be authored.

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Appendix A: Chapter 1

WHERE THE GREAT STRETCH OF POWER MUST BE WIELDED.—It is to us a cheering and grand idea, that the agricultural and domestic west must eventually outtopple in means, extent and political power, all the rest of this republic—and carry away in what it listeth. The boundless democratic free west!—We love well to contemplate it, and to think of its future, and to think how widely it will minister to human happiness and rational liberty. The slave states are confessedly either stationary, or on a very slow progress, or in an actual decline. The Atlantic states, with a rush after wealth, and the spread among them of effeminating luxuries, need a balance wheel like that furnished by the agricultural sections of the west. Moreover in the connection, it must not be forgotten that New York too, has in herself this balance wheel: a glance at the census will show an unrivalled productiveness and fertility in her grain-growing and other agricultural departments. Her broad interior, and the line toward the lakes, are like unto Mississippi valley in very many particulars. . . . We append the following summary of the growth of the western states:

Ohio welcomed the first permanent settlers in 1788; now is occupied by 1,732,000.

Michigan, to which the attention of emigrants was turned twelve or fourteen years ago, now has 300,000 people.

Indiana was organized as a separate territory in 1810, and entered the union as a state in 1818.—From that date, its population trebled every ten years till the last census, and in the last five years it has arisen from 476,000 to 700,000.

Missouri, which in 1816 had only 20,800 people, has now 600,000, having increased 50 per cent. in five years.

Iowa was scarcely heard of at the east ten years ago; it is but fourteen years since the only white inhabitants north of the Missouri line were a few Indian traders. More than 100,000 now make that beautiful land their home; 60,000 of whom have gone in during the last four years.

Wisconsin was organized ten years ago; the marshals have just taken the census, and, from present appearances, the population will vary but little from 150,000, being an increase of 100,000 in five years. One portion of the territory, 33 miles by 30, which ten years ago, was an unbroken wilderness, now numbers 30,000 inhabitants; and emigration to that portion of the west is greater than ever. The seven new states and territories above mentioned—to say nothing of the other western and southwestern states and Texas—have increased since the last adjustment of the ratio, more than a million and a half.—*Home Missionary*.

Fig. 1.1. Walt Whitman. "Where the Great Stretch of Power Must Be Wielded." *The Brooklyn Daily Eagle*, 2 April 1847, p. 2. Rpt. in *The Journalism*, vol. 2, edited by Herbert Bergman et al., Peter Lang, 2003, p. 237. Retrieved from the Center for Brooklyn History, Brooklyn Public Library.

The Brooklyn Daily Eagle article "Where the Great Stretch of Power Must Be Wielded" was reprinted in *The Journalism, Volume Two*, but with the summary statistics, which comprise half the article, omitted. The original piece shows how Whitman uses census data to highlight the prosperity of the free states and the deterioration of South, describing the slave states as "either in stagnation or decline," which is in keeping with the growing use of data as a propaganda tool (2).

STATE DEBTS.—The aggregate amount of the debts of all States, is \$206,517,629, the annual interest on which \$10,468,722. As to the 'Empire' the New Constitution, we fancy, will make it set a good example for the brother States, 'in all time' to come, in this matter of debt.

THE WEBSTER DINNER.—Mr. Webster was anxious to impeach the President soon after the removal of the cloth at the Philadelphia dinner. The presence of the ladies, however, prevented his splitting the mahogany.

LAKE CRAFT.—There are now being built at various points on Lake Erie, five new steamboats and about thirty other vessels carrying in the aggregate about 11,000 tons—all designed for business in 1847.

It is computed that a man who drinks four glasses of liquor a day, consumes in a year the value of four barrels of flour, four pair of boots, one hundred pounds of beef, forty pounds of butter, a new hat, a satin vest, and a bonnet for his wife.

MANUFACTURES IN CONNECTICUT.—From recent statistics, it appears that there are in the State of Connecticut 137 cotton mills, 123 woollen mills, 37 paper mills, 187 tanneries, 6 carpet factories, 32 clock factories, 323 coach and wagon factories, beside factories for the manufacture of sewing silk, pins, machinery, and 'Yankee notions' of every description.

THE EXPLOSION ON THE MARIA.—Of the twenty-one persons scalded and conveyed to the hospital at Natchez, seventeen have died, and there was little hope of the recovery of the remaining four. The report that Capt. Dunnica was drowned proves to be incorrect, as at the last accounts he was alive and endeavoring to save portions of the cargo.

The consumption of bread in London is 885,468,750 pounds, or 213,867,187 quartern loaves yearly. This quantity of bread, if equally divided among the population of London, would be equal to 8-12 pounds or 85 loaves yearly, or 13 ounces daily to each person.

SPEDDY WORK.—The new bridge on the Hartford railroad is completed. It is 1300 feet in length, and has been built in six weeks—the old one having been destroyed by the tornado on the 13th of Oct.

Miss Millikin, of New Orleans, has come up to Louisville, with the intention of suing John Hayes for breach of promise.

In Paris there are 396 newspapers, with 700,000 subscribers, and in the departments of France 898, with about 350,000 subscribers.

Fig. 1.2. A sample of 'news bites' from: *The Brooklyn Daily Eagle*, 4 Dec. 1846. Retrieved from the Center for Brooklyn History, Brooklyn Public Library.

Much like a modern-day news ticker, the penny presses regularly reprinted "headlines" from the top stories of the day. As shown, Whitman's selections often included "noteworthy" statistics (2).

No. 41. – A young man; confesses to being a criminal; sheds tears during our whole conversation, particularly when he is reminded of his family. “Happily,” says he, “nobody can see me here;” he hopes then to return into society, without being stamped with shame, and not to be rejected by it.

Ques. Do you find it difficult to endure solitude?

Ans. Ah! Sir, it is the most horrid punishment that can be imagined!

Ques. Does your health suffer by it?

Ans. No: it is very good; but my soul is very sick.

Ques. Of what do you think most?

Ans. Of religion; religious ideas are my greatest consolation.

Ques. Do you see now and then a minister?

Ans. Yes, every Sunday.

Ques. Do you like to converse with him?

Ans. It is a great happiness to be allowed to talk to him. Last Sunday, he was a whole hour with me; he promised to bring me to-morrow, news from my father and mother. I hope they are alive; for a whole year, I have not heard of them.

Ques. Do you think labour an alleviation of your situation?

Ans. It would be impossible to live here without labour. Sunday is a very long day, I assure you.

Ques. Do you believe your little yard might be dispensed with, without injury to your health?

Ans. Yes, by establishing in a cell a continued current of air.

Ques. What idea have you formed of the utility of the system to which you are subject?

Ans. If there is any system which can make men reflect and reform, it is this.

Fig. 1.3. Appendix No. 10 from: Gustave de Beaumont and Alexis de Tocqueville. *On the penitentiary system in the United States and its application in France; with an appendix on penal colonies, and also, statistical notes*, translated by Francis Lieber. Carey, Lea & Blanchard, 1833, p. 188.

Appendix No. 10 of *On the Penitentiary System* includes selections of interviews conducted with prisoners from the Philadelphia Penitentiary in October 1831. Tocqueville and Beaumont took care to anonymize the data, which was itself an innovative practice for the time, with the prisoners identified by number (Swedberg 110). They do, however, often provide demographic information (e.g., approximate age, race, class, religion), details about criminal history (e.g., repeat or first-time offender, profession of innocent or guilt), and a description of the subject’s general demeanor during the session (Beaumont and Tocqueville 188).

No. II — Sanitary State

The mortality in those prisons of which we have been able to collect documents, is in the following progression:

At Walnut Street, (Pennsylvania)	1	died of	16.66	prisoners.
At Newgate, (New York,) -	1	“	18.80	“
At Sing-Sing, - - -	1	“	36.58	“
At Wethersfield, - - -	1	“	44.40	“
In the Penitentiary of Maryland,	1	“	48.57	“
At Auburn, - - - -	1	“	55.96	“
At Charlestown, (Massachusetts,)	1	“	58.40	“

It must not be forgotten that for three of these prisons, Sing-Sing, Wethersfield, and the Penitentiary of Maryland, we have been able to obtain the mean term of three years only.

In the city and suburbs of Philadelphia the annual mortality has been, from 1820 to 1831, as 1 inhabitant out of 38.85 inhabitants.

At Baltimore, in 1828, 1 individual died out of 47 inhabitants.

Thus, in two prisons, Newgate and Walnut street, mortality has been much greater than in the cities of Philadelphia and Baltimore. (These are old prisons.) In one (Sing-Sing) mortality has been nearly equal, and in four (the Wethersfield, Auburn, Charlestown, and Maryland penitentiaries) the mortality has been less.

Fig. 1.4. Appendix No. 17 from: Gustave de Beaumont and Alexis de Tocqueville. *On the penitentiary system in the United States and its application in France; with an appendix on penal colonies, and also, statistical notes*, translated by Francis Lieber. Carey, Lea & Blanchard, 1833, p. 249.

Appendix No. 17 of *On the Penitentiary System* is dedicated to “Statistical Observations and Comparisons.” Beaumont and Tocqueville collected data from secondary sources, such as government reports. The following “moral table” compares the mortality rates within the prisons to those of neighboring cities (Beaumont and Tocqueville 249).

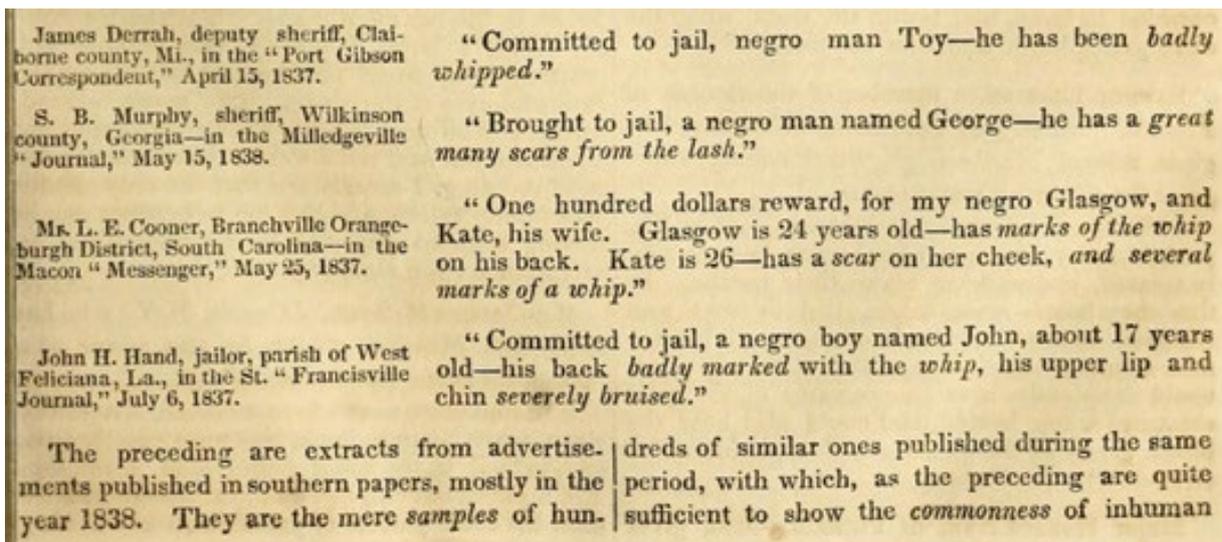


Fig. 1.5. Description of punishments from: Theodore Weld, Angelina Grimke, and Sarah Grimke. *American Slavery as It Is: Testimony of a Thousand Witnesses*. American Anti-Slavery Society, 1839, p. 63. *Internet Archive*, www.archive.org/details/americanslavery1839weld2. Accessed 14 Jan. 2022.

American Slavery As It Is repurposed data from bounty ads published in Southern newspapers. The reports of scars and disfigurements, which were intended to help identify and recover the escaped slaves, are here used as evidence of torture and abuse. The "witnesses" on the left are the names of those who issued the bounty, typically either the local sheriff or the slave owner, along with the title of the paper in which it was published (Weld et al. 63).

A PLEA FOR THE STRICKEN ONES!—Look at that advertisement in an adjoining column, of Harnden & Co., 6 Wall st., N. Y., who engage to remit any sum—small or great—to Ireland, free of discount for their trouble. Reader! if you have *any thing* that you can spare at all, in the name of Him who pledged His sacred word to credit to HIMSELF all aid given to ‘suffering sad humanity,’ we entreat such aid for the distressed ones in that beautiful God-stricken island! Ah, how little we know here of the gloomy horrors there! how hard, amid our plenty, luxury, happiness and health, to realize the want, squalor, misery and disease that accumulate now on so many thousands in Ireland!

Pleas for charitable gifts are so common in newspapers, that when a vivid occasion really arises, it is apt to be passed over by the reader, as one of a monotonous ever-recurring class. So let not *this* occasion be passed over! If there ever were any time when a public motion, spreading from north to south, in behalf of aid to a distressed community, were needed, this is the time. Give *now*. Wait not.—Pestilence and ashy-faced starvation have their iron grip on hundreds and thousands of our fellow creatures—and we can at least balk *some* of the sway of those gloomy powers, if we will. This is no sickly charity, either: it is famine to men and women present, face to face! It is thin-ribbed poverty, prostrate on its heap of straw, foodless, garmentless, chilled, almost praying for death—and its bitter lot made doubly bitter by the sight of similar misery in so many directions around it!

Christians! need we to entreat you? Forego some of the conventionalisms of devotion, and worship Christ in truth by “ministering unto Him,” through those distressed stricken beings!

INCREASE OF PAUPERISM.—The statistics of the almshouse at Flatbush during the past month, and a comparison with those of the same period last year, will make the tax-payers of this county open their eyes. From some statements politely handed us by one of the superintendants of the poor, we are enabled to present the following comparative table. It will be seen that there is this year an increase in the pauperism, relieved at the public expense, amounting to very nearly twenty-five per cent. over that of last winter:

	1847.	1846.
No. paupers admitted in Jan.....	73	53
“ do discharged “	34	35
Remaining.....	39	18
In the almshouse 1st of Jan.	379	308
Remaining on the 1st of Feb.....	418	326
Lunatics in the asylum.....	52	48
Making in all.....	470	374
Increase this year.....	95	

If the population of the county had increased in the same ratio, this excess in the number of paupers supported at the public expense might be somewhat satisfactorily accounted for. We have no means at hand for arriving at the correct amount of increase in the population; but should suppose that it must be less than twenty-five per cent. If this be so, we are at a complete loss to account for the additional burthen cast upon the property holders of the county. The expenses of the almshouse in N. Y. have undoubtedly been very materially swelled by the increased pauper emigration, as that city has the responsibility of supporting all aliens who may become chargeable to the public within two years after landing at that port. For that reason such causes cannot operate to increase pauperism in this county. We understand that a great many emigrants who are in need of assistance, apply for relief to our superintendants; but with a creditable desire to protect the right and interest our inhabitants, those functionaries institute the most rigid investigations when they suspect such cases, and promptly turn them over to the authorities of New York. It is not to be denied that there is a vast deal of sickness and suffering among the poor, out of the ranks of those who are publicly declared paupers; and the most reasonable solution of the above question is that an unusual number of persons are from this cause obliged to seek the public aid. We may be wrong, but that is the only tangible solution to be given at present.

Fig. 1.6. “A Plea for the Stricken Ones!” and the companion piece “Increase of Pauperism,” which appear on the same page, from: Walt Whitman. “A Plea for the Stricken Ones!” and “Increase of Pauperism.” *The Brooklyn Daily Eagle*, 5 Feb. 1847, p. 2. Retrieved from the Center for Brooklyn History, Brooklyn Public Library.

Appendix B: Chapter 2

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 SCHEDULE I. Free Inhabitants in Ward 11, Brooklyn in the County of Kings State of New York enumerated by me, on the 1st day of July, 1850. Ass't Marshal

Dwelling-house numbered in this enumeration in the year 1850.	Family numbered in this enumeration in the year 1850.	The Name of every Person whose usual place of abode on the first day of June, 1850, was in this family.	Sex and Color.			Profession, Occupation, or Trade of such Male Persons over 15 years of age.	Value of Real Estate owned.	Place or State, Territory, or Country, to which he has been born.	Married within the year.					Whether deaf and dumb, blind, insane, idiotic, pauper, or convict.
			Male	Female	Color				10	11	12	13		
		Mary Kelly	30	f				Scotland						
		Mary A	4	a				N.Y.						
		Richard	1	m										
251	156	Jefferson B. Day	34	a		Merchant	1000							
	114	Anna	31	f										
		Isabella	7	a										
		Susan	6	a										
		Mary Lake	19	f				Scotland						
252	168	Charles F. Fitch	54	m		Washmaker	1000							
	110	Mary D	33	f				N.Y.						
		Arthur	14	m										
		Charles	11	m										
		George	8	m										
		Mary A	3	f										
		Stephen	10	m										
		Elyse	11	f										
253	169	Johnnie White	25	m		Hardman								
		Isabella A	22	f										
		James P. Spang	14	m		Chalk								
		Michael Spang	7	m										
		James J. White	1	f										
		Agnes McFarlane	14	f				Scotland						
254	170	Charles F. Schuch	51	m		Hotel Keeper								
	170	Elyse	20	f				N.Y.						
		Mary G	2	f										
		Isabella	20	f				Scotland						
		Bonny McGinn	22	m		Bookkeeper		N.Y.						
		James Bradley	21	m		Carpenter		N.Y.						
		Elizabeth J. Hoff	20	f				Scotland						
255	171	Samuel J. Abraham	61	m		Physician	1000							
	171	Isabella	40	f										
		Isabella	3	f				Scotland						
		Elyse Powell	11	f				N.Y.						
256	172	Valter P. Williams	61	m		Carpenter								
	172	Louisa	54	f			5000							
		Mary	31	m		Editor								
		George	20	m		Carpenter								
		William	28	m										
		Jefferson	17	m		Printer								
		Isabella	16	f										
		Louisa	13	f				Scotland						
		Mary Russell	20	f										

Fig. 2.1. Walter Whitman, 1850 census, Brooklyn Ward 11, King's County, New York, M432, roll 520, p. 241b, image 56, Ancestry.com. Accessed 13 Jan. 2022.

I. Population. CENSUS of the Inhabitants in the First Election District of the 7 Ward of Brooklyn in the County of Kings taken by me on the 4 day of June, 1855. Robert Van Allen Marshal.

Household No.	Name	Sex	Age	Color	Relation to head of family	In what county of this State, or in what other State or Foreign Country born	Married	Whether within the year ending in this city or town	Profession, Trade, or Occupation	SCHEDULE			Whether deaf and dumb, blind, insane, idiotic, pauper, or convict
										Male	Female	Alone	
1	Joseph Edward	M	6	W	Son	New York							
7	James	M	10		Son	New York			25	Boat Maker			1
	Bathym	F	24		Daughter	New York							
	Catherine	F	14		Daughter	New York							
	Richard	M	4		Son	New York							
	Ann	F	9		Daughter	New York							
8	Walter Whitman	M	65	W	Head	New York			66	Ship Carpenter			1
	Louisa Whitman	F	60	W	Wife	New York							
	Walter Whitman	M	34	W	Son	New York			36	Seaman			1
	Andrew Whitman	M	27	W	Son	New York				Ship Carpenter			1
	George Whitman	M	15	W	Son	New York				Ship Carpenter			1
	Eugene Whitman	M	22	W	Son	New York				Ship Carpenter			1
	Edward Whitman	M	15	W	Son	New York				Ship Carpenter			1

Fig. 2.2. Walter Whitman, 1855 census, Brooklyn Ward 7, King's County, New York, ED 1, image 20, Ancestry.com. Accessed 13 Jan. 2022.

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Page No. 114

SCHEDULE 1. Free Inhabitants in 9th & 11th Ward Brooklyn in the County of Kings State of New York enumerated by me, on the 13th day of June 1860. Joseph Smith Ass't Marshal.
Post Office Brooklyn City

Dwelling No. or lot number	Name	Sex	Age	Color	Profession, Occupation, or Trade of each person, male and female, over 15 years of age	Value of Estate Owned		Place of Birth, Naming the State, Territory, or Country	Married within the year	Whether deaf and dumb, blind, insane, idiotic, pauper, or convict
						Real Estate	Personal Estate			
461	John	M	3	W				New York		
	William	M	7	W				New York		
949	William Armstrong	M	34	W	Ship Carpenter	✓	100	Scotland		
	Catherine	F	32	W				New York		
	Catherine	F	13	W				New York		
	Margaret	F	10	W				New York		
	Mary	F	5	W				New York		
	Margaret	F	3	W				New York		
	William	M	1	W				New York		
950	Wm. Stokutt	M	26	W	Ship Carpenter		100	England		
	Maria	F	35	W				New York		
951	Christian (Dyck)	M	35	W	Land Maker	✓	150	Germany		
	Frederick	M	30	W				New York		
	Christian	M	40	W				New York		
952	Benjamin (Lind)	M	29	W	Ship Carpenter	✓	100	Germany		
	Richard	M	29	W				New York		
	John	M	1	W				New York		
462	Louisa Whitman	F	66	W	Housekeeper	✓	300	New York		
	Walter	M	34	W	Ship Carpenter	✓		New York		
	George	M	27	W	Ship Carpenter	✓		New York		
	Eugene	M	25	W	Ship Carpenter	✓		New York		
	Edward	M	15	W	Ship Carpenter	✓		New York		

Fig. 2.3. Walter Whitman, 1860 census, Brooklyn Ward 11, King's County, New York, M653, roll 770, p. 332, image 114, ED 2, Ancestry.com. Accessed 13 Jan. 2022.

Page No. 12 } Inquiries numbered 7, 16, and 17 are not to be asked in respect to infants. Inquiries numbered 11, 12, 15, 16, 17, 19, and 20 are to be answered (if at all) merely by an affirmative mark, as follows.

SCHEDULE 1.—Inhabitants in Second Ward in the County of City of Washington, State of D.C., enumerated by me on the 2nd day of June, 1870.

Post Office: _____ Rufus Barr, Asst Marshal.

1	2	3	DESCRIPTION.			7	VALUE OF REAL ESTATE OWNED.		10	PARENTS.			15	16	17	18	19	20
			4	5	6		8	9		11	12	13						
1		—	Over 18	5	M				Maryland									
2		—	Female	4	F				District of Col.			Eng						
3		—	Female	17	F	House Servant			Virginia									
4	85	98	Male	6	M		5000		Vermont									
5		—	Female	4	F	Keeps House			Virginia									
6		—	Female	23	F	Post Office			Vermont									
7		—	Female	16	F				District of Col.									
8		—	Female	13	F	Washing			District of Col.									
9		—	Female	27	F	House Servant			Maryland									
10		—	Female	7	F		3000		Vermont									
11	79	99	Male	25	M	Clerk			New York									
12		—	Female	37	F	Clerk			New York									
13		—	Female	14	F	at School			New York									
14		—	Female	58	F	Chit City Genl			New York									
15		—	Female	26	F	State Dept			New York									
16		—	Female	19	F	Dom Servant			Maryland									
17		—	Female	23	F	"			Virginia									

Fig. 2.4. Walter Whitman, 1870 census, Ward 2, Washington, District of Columbia, M593, roll 123, p. 216B, image 12, Ancestry.com. Accessed 13 Jan. 2022.



Fig. 2.6. Francis William Edmonds. *Taking the Census*. 1854. Metropolitan Museum of Art, New York.

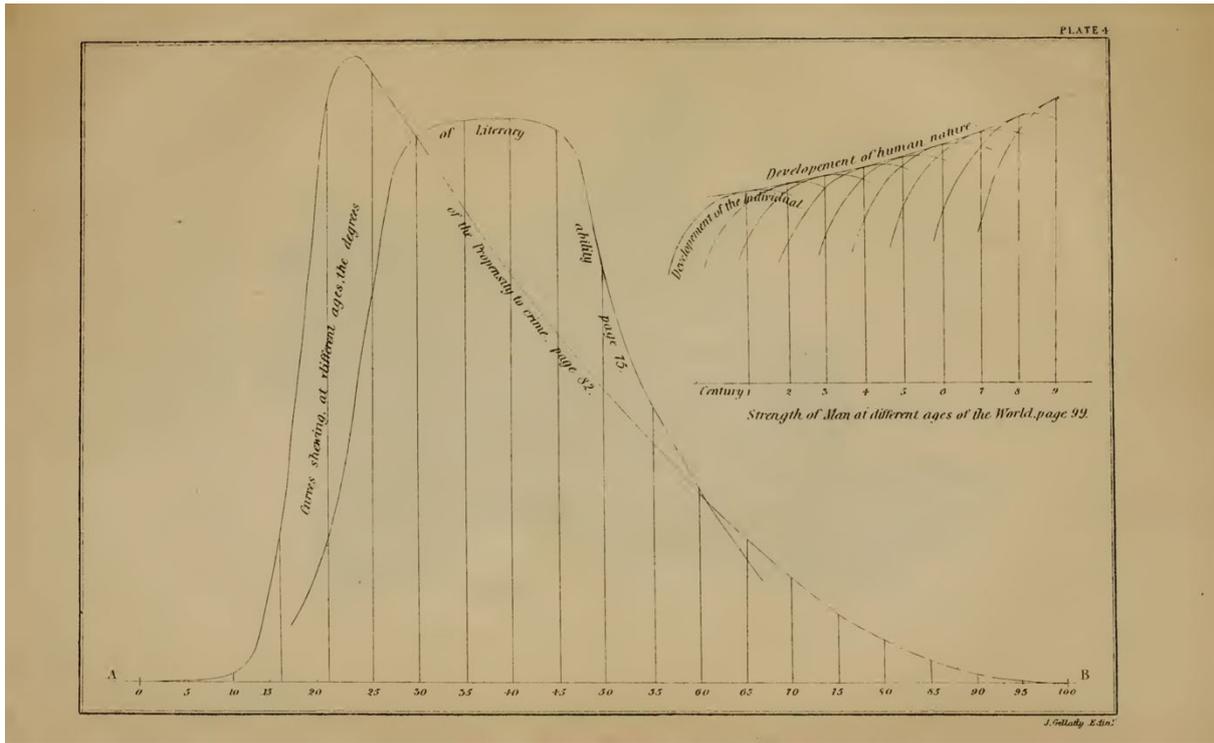


Fig. 2.7. Adolphe Quetelet. "Plate 4." *On Man and the Development of His Faculties*, English ed., W. and R. Chambers, 1842, p. 133. *Internet Archive*, <https://archive.org/details/treatiseonmandev00quet>. Accessed 13 Jan. 2022.

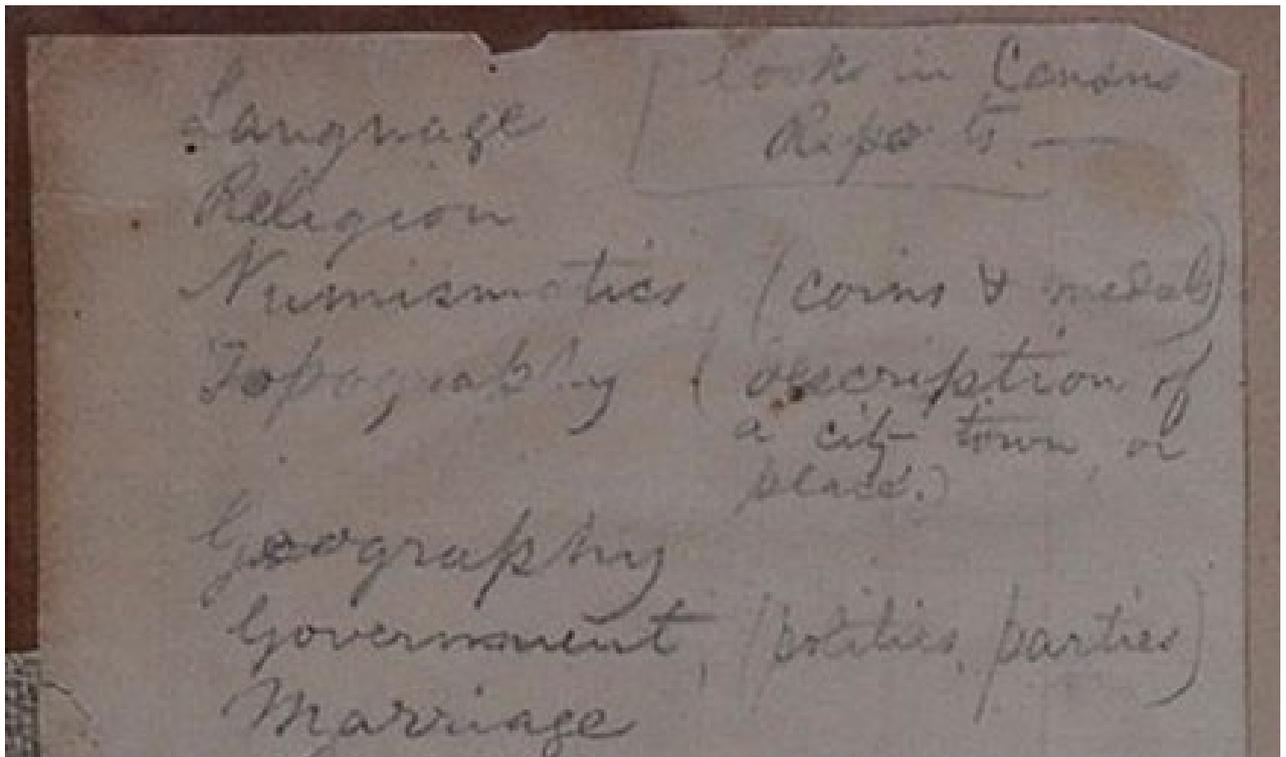


Fig. 2.8. Whitman's note to "Look in Census Reports" from: "Cultural Geography Scrapbook [marginalia]" (Surface 3), editor Matt Cohen, *The Walt Whitman Archive*, general editors Ed Folsom and Kenneth M. Price, www.whitmanarchive.org/manuscripts/marginalia/transcriptions/owu.00090.html. Accessed 1 May 2020.

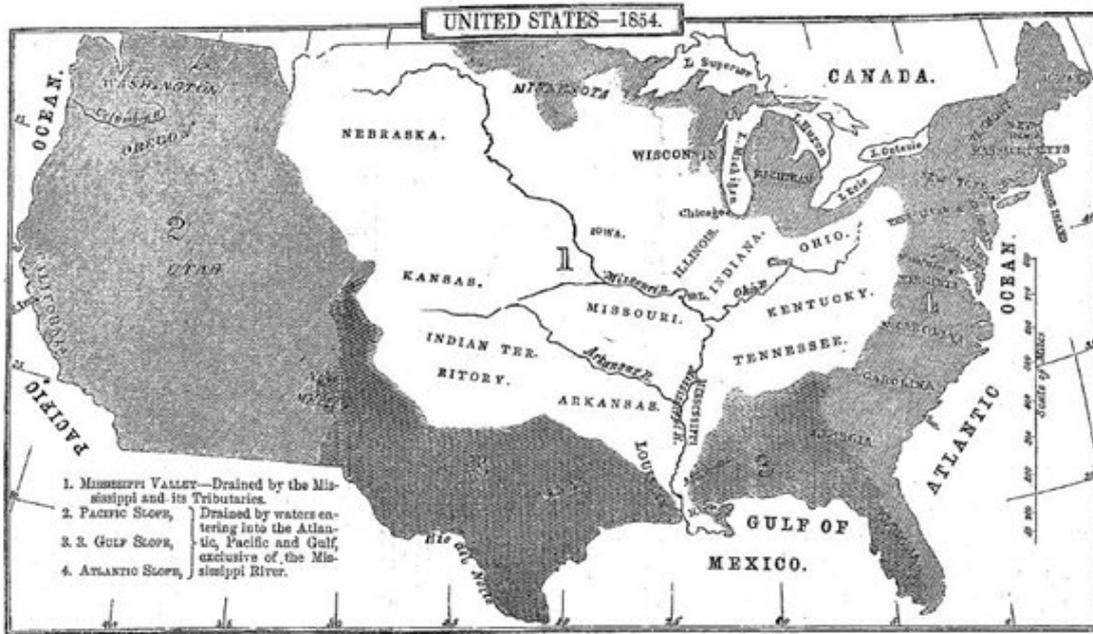


Fig. 2.10. "United States 1854." *Statistical View of the United States*. Compendium edition, edited by James de Bow, United States Census Bureau, Beverly Tucker, 1854, p. 30. Retrieved from the United States Census Bureau, <https://www.census.gov/library/publications/1854/dec/1850c.html>. Accessed 11 Dec. 2021.

Appendix C: Chapter 3

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No.	ENTRY.		APPEARANCE ON BOARD.	WHERE.	NAMES.	STATIONS.	TIME LAST SETTLED AND PAID TO.	D. D. D. OR P.	WHEN.		WHERE OR FOR WHAT REASON.
	DAY, MONTH.	YEAR.							DAY, MONTH.	YEAR.	
569	31 July	1843		Hawaii	William Davis	at Sea	June 30 ⁴⁴				New York
570	31 July	1844		do	Wm Smith, Jr. Rumia	at Sea	Dec 31 ²³	17	June	1844	Seaman
571	31 July			do	Chas Willis	at Sea		17	June	1844	Seaman
572	17 Aug			Oahu	Herman Melville	at Sea	June 30 ⁴⁴				New York

Fig. 3.1. Herman Melville listed as recruit 572 from: Muster Roll, 1823-1844 USS *United States*. Navy Records, 1789 to 1925, Record Group 45, vol. 117 of 143, National Archives, p. 230.

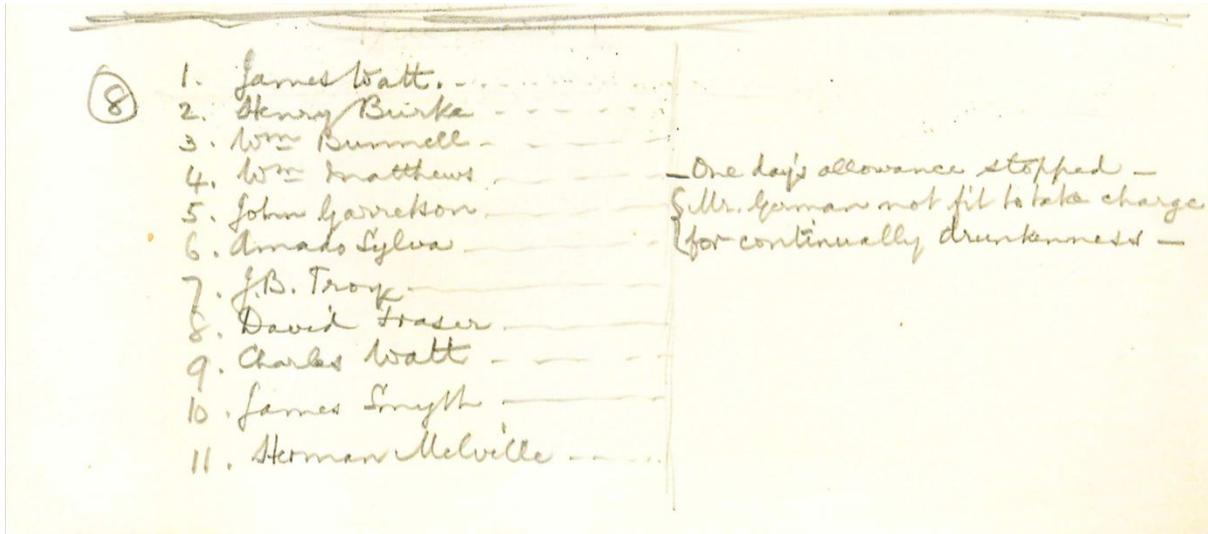


Fig. 3.4. Papers Relating to the Ship Lucy Ann [handwritten copy], ca. 184-. 1842. A1 86, 909996. State Library of New South Wales, Sydney.

Included amongst Consul Wilson's notes is the following list, which appears to name the crew members that he gathered testimonies from during his initial investigation. Beside the names of Matthews and Garrelson, he wrote "One day's allowance stopped" and "Mr. German not fit to take charge for continually [sic] drunkenness" ("Revolt Documents" 316; Heflin 168).

Log Book of the U.S. Frigate United States, bearing the broad Pendant of
Honolulu Island of Oahu
Friday August 18th 1843.

Commence with moderate breeze from N^W & clear. Shifted Herman
Melville O.S. and Griffith Williams O.S.

W. Watkins

From 4 to 8, moderate breeze from N^W & clear. at sunset inspected crew
at Quarters

W. Watkins

From 8 to midnight, light breeze from the N^W & clear.

W. Watkins

From midnight to 4, light air from the land and clear.

S. Baber

From 4 to 8, light air from N^W & clear. Rec fresh provisions for the crew.

W. Watkins

From 8 to meridian, light breeze from N^W & cloudy. at 9 am. mustered
the crew at Quarters. Flogged Mitchell O.S. with 12 lashes with cats for striking
sentry on Post. Geo Clark O.S. with 12 of cats for smuggling liquor, J. B. Stanky "H" with
12 lashes with kittens for fighting and W. B. Oving "H" with 6. for using
provoking language. Suspended the Boatswain from duty for disrespectful
conduct to the Officer of the Deck - by replying when ordered by the same through
Mid: Key, to call all hands stand by their washed clothes that he would re-
ceive no more orders in this ship, or words to that effect.

W. Watkins

Deck Report 20.

Water on Hand 27.000 galls.
- Flogged 500
- Remaining 26.500

Fig. 3.5. The log entry for August 18, 1843, from: USS *United States*, 7/1/1843 - 10/14/1844. Logbooks of US Navy Ships, ca. 1801 - 1940, Record Group 24: Records of the Bureau of Naval Personnel, 1798 - 2007. 148774760, image 53. National Archives, Washington, DC. *National Archives Catalog*, <https://catalog.archives.gov/id/148774760>. Accessed 11 Feb. 2021.

As shown in the log, Herman Melville "O.S." was recruited in Honolulu, Oahu. That same day, four men were flogged, and their various offenses were recorded as: "striking sentry on post," "smuggling liquor," "fighting," and "using provoking language." The boatswain was also "suspended... from duty" for "disrespectful conduct to the officer on deck" (image 53).

Quarterly return of punishments—Continued.

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Date.	Names.	Rank.	Offences.	Punishment.
March 21	Robert H. Brown.....	Seaman.....	Drunkenness.....	12 lashes with cats.
21	John Somers.....	do.....	do.....	12 do.
	Andrew J. Brock.....	do.....	Striking a man.....	8 do.
	Albert Miller.....	Landsman.....	Desertion.....	12 do.
	John Tally.....	Seaman.....	Mutinous conduct.....	12 do.
25	Morris Sharp.....	Landsman.....	Disobedience of orders.....	8 do.
	Preston L. Corbitt.....	Captain top.....	do.....do.....	9 do.
	Charles Jester.....	Ordinary seaman.....	do.....do.....	9 do.

* Punishments inflicted by order of and in the presence of the commander.

NOTE.—The last two returns show an increase in the average of punishments, arising from the crew having much duty on shore, with great liability to temptation and facility of and access to liquor. Yet this, in time of war and often with an enemy at hand, would permit no indulgence. It may be proper to remark that, where the amount of punishment differs for the same offence, or even where it has been less for a greater than one less aggravated, previous character and conduct, and the extent of exposure to temptation, have been taken into consideration.

UNITED STATES SHIP *CYANE*, Harbor of San Jose, April 1, 1848.

S. F. DU PONT, Commander

Ex. Doc. No. 51.

Fig. 3.6. Commander S. F. Du Pont of the *Cyane* appended the following note to his quarterly returns, dated April 1, 1848, in which he attempts to explain the “increase in the average of punishments,” from: United States, Congress. Ex. Doc. No. 51. Punishments in the Navy. 30th Congress, 2nd session, p. 331. *HathiTrust*, <https://hdl.handle.net/2027/uc1.b3983496>. Accessed 11 Dec. 2021.

Quarterly report of punishments inflicted on board the United States frigate Congress, S. F. Du Pont, commander, for the quarter ending March 31, 1846.

Date.	Names.	Rank.	Offences.	Punishment.
January	1 Henry Drew	Seaman	Drunk and noisy	12 lashes with the cats.
	Christopher Jarrett	Boy	Striking Thomas Moore, a prisoner	12 do.
	5 William Riley	Seaman	Drunkenness	12 do.
	Charles Green	do.	do.	12 do.
	Hugh Patten	do.	do.	12 do.
	John Douglass	do.	do.	12 do.
	George Murray	Ordinary seaman	do.	12 do.
	Edward Schlemmer	Landsman	Abusing sentry on post	12 do.
	James Finn	Boy	Drunkenness and having liquor in his possession	12 do.
	12 Charles Green	Seaman	Drunkenness	12 do.
	Charles Thompson	do.	Disobedience of orders	12 do.
	William Riley	do.	Drunkenness	12 do.
	15 James Leonard	Landsman	do.	12 do.
	16 Daniel Kenedey	do.	Sentenced by a court-martial to receive 160 lashes for the crime of drunkenness and mutinous conduct, but mitigated by the commodore to 50 lashes	50 do.
	Thomas Moore	do.	Sentenced by a court-martial to receive 80 lashes for the crime of mutinous conduct and disrespect to his superior officers. His punishment was mitigated to 40 lashes by the commodore.	40 do.
James Ore	Ordinary seaman	Sentenced by a court-martial to receive 50 lashes for the crime of desertion. His punishment was mitigated by the commodore to 25 lashes.	25 do.	
February	12 Edward Schlemmer	Landsman	Fighting	9 do.
	Peter Devan	do.	Scandalous conduct	8 do.
	6 Alexander McCaffray	do.	Threatening the captain of after guard with personal violence	7 do.
	12 John Brown, 1st	Seaman	Fighting	5 do.

Ex. Doc. No. 51.

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Fig. 3.7. The quarterly returns for the frigate Congress, from: United States, Congress. Ex. Doc. No. 51, Punishments in the Navy. 30th Congress, 2nd session, p. 153. *HathiTrust*, <https://hdl.handle.net/2027/uc1.b3983496>. Accessed 11 Dec. 2021.

1833

GENERAL REGULATIONS,
TO BE OBSERVED BY PERSONS EMPLOYED BY THE
LAWRENCE MANUFACTURING COMPANY, IN LOWELL.

1st. All persons in the employ of the Company, are required to attend assiduously to their various duties, or labor, during working hours; are expected to be fully competent, or to aspire to the utmost efficiency in the work or business they may engage to perform, and to evince on all occasions, in their deportment and conversation, a laudable regard for temperance, virtue, and their moral and social obligations; and in which the Agent will endeavor to set a proper example. No persons can be employed by the Company, whose known habits are or shall be dissolute, indolent, dishonest, or intemperate, or who habitually absent themselves from public worship, and violate the Sabbath, or who may be addicted to gambling of any kind.

2d. All kinds of ardent spirit will be excluded from the Company's ground, except it be prescribed for medicine, or for washes, and external application. Every kind of gambling and card playing, is totally prohibited within the limits of the Company's ground and Boarding Houses.

3d. Smoking cannot be permitted in the Mills, or other buildings, or yards, and should not be carelessly indulged in the Boarding Houses and streets. The utmost vigilance must be exercised to prevent the calamity of fire in the Mills, Pickers, Houses and other buildings, and proper arrangements being made for extinguishing fire, it remains to avert panic and confusion, should such an evil overtake us, by preparing the mind to meet it, and the Watchmen during their watches, may by such preparation, and due vigilance, prevent the necessity of an alarm. Should a fire break out they will observe the regulations in such cases provided,—and send immediately for the Agent, or ring the bell, as may appear most advisable. The Fire Department must be exercised at least once a month.

Fig. 3.8. Excerpt from: the Lawrence Manufacturing General Regulations, issued on 21 May 1833. Kress Collection of Business and Economics, Baker Library, Harvard Business School.

Appendix D: Chapter 4

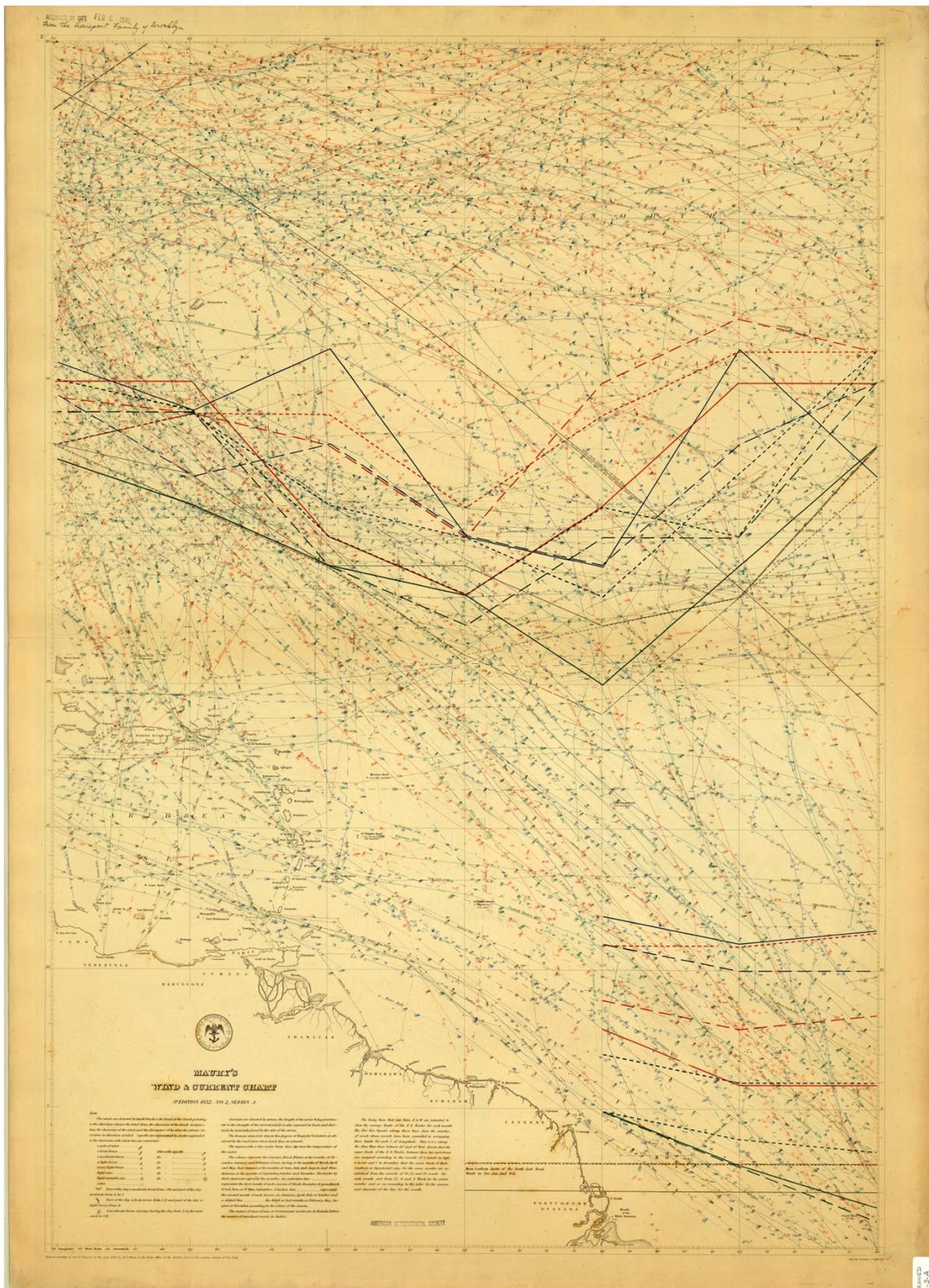


Fig. 4.1. Matthew Fontaine Maury and the United States Naval Observatory. “Maury’s Wind & Current Chart,” Map. 3d. edition 1852, no. 2, series A. American Geographical Society Library, University of Wisconsin-Milwaukee Libraries, <https://collections.lib.uwm.edu/digital/collection/agdm/id/1717/>. Accessed 22 Feb. 2020.

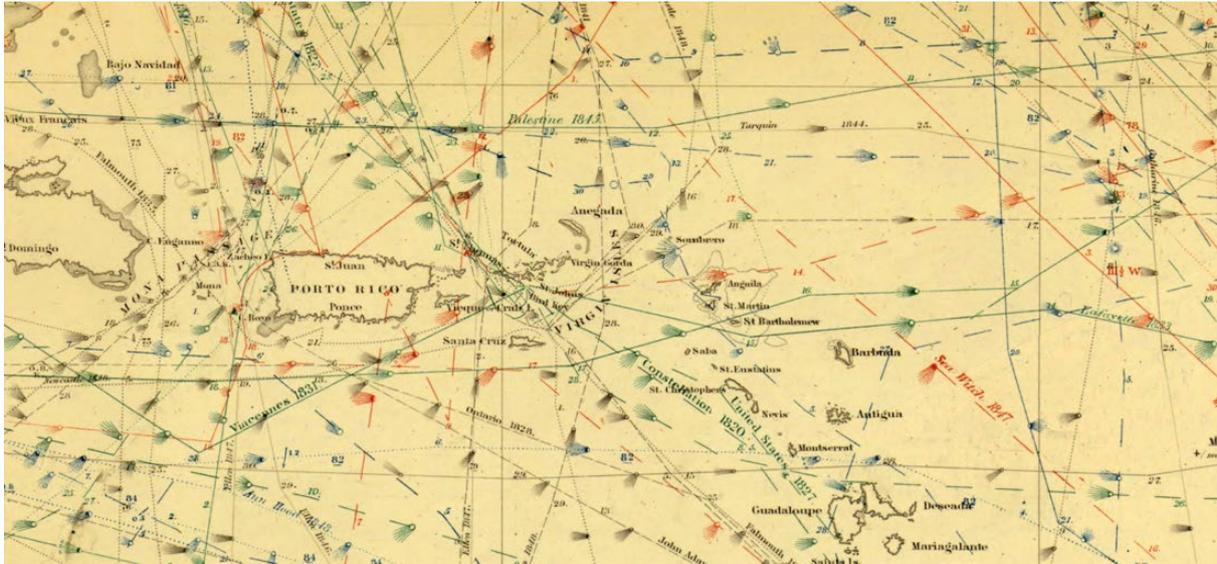


Fig. 4.2. Matthew Fontaine Maury and the United States Naval Observatory; “Maury's Wind & Current Chart” [detail enlargement], Map. 3d. edition 1852, no. 2, series A. American Geographical Society Library, University of Wisconsin-Milwaukee Libraries, <https://collections.lib.uwm.edu/digital/collection/agdm/id/1717/>; accessed 22 Feb. 2020.

The graphic elements of Maury’s “Wind and Current Charts” shows how nineteenth-century data collectors experimented with data visualization techniques. As described in the map legend, the angle and shape of the “brush” strokes indicate the direction and strength of the winds, which ranged from gales to calms, while the colour (black, red, blue, or green) indicate the season. The currents are represented by arrows, with the strength of the current communicated by both the length of the arrow and a dotted number showing the speed in knots. The underlined numbers show the temperature of the water.

Received this 17th day of June 1858.

from Thomas Tennent - one Abstract Log, one copy of
 Maury's Sailing Directions 7th edition, and

Sheets No ^s)	_____	(Series A.)
do. do.	_____	(" B.)
do. do.	_____	(" C.)
do. do.	_____	(" D.)
do. do.	_____	(" E.)
do. do.	_____	(" F.)

Maury's Wind & Current Charts, for and in consideration
 of which I promise to keep in the manner and form pre-
 scribed, a journal of my Voyages, and on my return to
 transmit the same to the National Observatory.

Commanding _____
 of _____
 Bound _____

Nicholas Kuylen
 Ship Uncorwah
 New York
 China

Fig. 4.3. Receipt for Maury's Sailing Directions, and Wind & Current Charts, 1858. Collections Research Center (CRC), Mystic Seaport Museum, Connecticut. Courtesy Mystic Seaport Museum, G.W. Blunt White Library, VFM 845.

ABSTRACT LOG of the

Date.	Latitude at noon.	Longitude at noon.	Currents. (Knots per hour.)	Variation observed.	Bar.	THER. 9 A. M.		WINDS.	
						Air.	Water.	First Part.	Middle Part.

Leave broad margin.

NOTE.—Frequent mention has been made and much stress laid in this work as to the peninsula of cold water, in the North Atlantic, and as to the probabilities of soundings far to the southward and eastward as well as to the northward and eastward of the Grand Banks. The ship "Hudson," Capt. Simpson, is said to have got soundings in 35 fathoms—mud—about Lat. 45° N., Long. 45° W. Capt. M. D. Ricker, of the "Antarctic," on a voyage last June from New Orleans to Liverpool, reports a most remarkable change both in temperature and color of the water—the former may possibly have been caused by an iceberg, still it is very desirable to have more temperatures and soundings near the same place. This phenomenon occurred between his position, Lat. 39° 38' N., Long. 63° 6' W., at noon June 24th, and his position the next day at noon, viz. 39° 44' N., 61° 2' W.

I quote from the very excellent and valuable abstract that he has returned to this office.

Sea Account, June 24, 1851.

"At 1 P. M. observed the water to be much changed from a blue to a very light green, caught up the thermometer and hove it over, and looking at it I was very much surprised to see that it had fallen 11 degrees since 9 A. M., which was then 77, and I judged within the influence of the Gulf. One hour after, it had fallen to 54°, and in 25 minutes after, to 52; the color of the water a very light green, the ship going about 4 knots to the eastward with a light breeze from the West. At 3 P. M. a fog-bank was approaching the ship from the N. N. W. and N., which soon enveloped the ship in a cold mist, and changing the wind to that quarter, and bringing with it some considerable swell. Observed great quantities of chips, rockweed and some few sprigs of gulf-weed. Luffed the ship up in the wind and tried for soundings with the patent lead, but in the hurry did not get down but about 80 fathoms—no bottom—4 P. M. water 56°, and at 8 do. 66°, and at 12, 70°, wind W. by S.

I notice on the chart there is a bank or shoal laid down in this neighborhood, called Anne Bank, and in the "Memoir Atlantic Ocean" it is called ——— Reef, the position of which has not been very accurately determined. It is mentioned as being in about Lat. 39° N. and 64° 20' W. Our Lat. by observation, one hour before I tried the water or at noon, was 39° 33' and Long. by a good chronometer 63° 06'—[2, in fact, very good ones.]

I think if there was any bottom there, we had probably got past it before I sounded. During the following 24 hours we have had very little if any gulf current."

Fig. 4.4. Matthew Fontaine Maury. *Explanations and Sailing Directions to Accompany the Wind and Current Charts*, 4th ed., C. Alexander, 1852, p. 314. Retrieved from the Library of Congress, <https://lccn.loc.gov/13016495>. *HathiTrust*, <http://catalog.hathitrust.org/Record/011639976>. Accessed 11 Dec. 2021.

The sample logbook abstract that was distributed to merchant vessels that participated in Lieutenant Maury's program. Unlike the initial set of notebooks that Maury discovered in the Navy storehouse, the abstracts were specially designed for gathering oceanographic data (314).

Commander, bound from _____ to _____ 18__

WINDS.	REMARKS.
<p>Latter Part.</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Leave broad margin.</p>	<p>Enter under this head, force of wind, kind of weather, state of barometer just before, during, and after gales of wind. The changes and the time of changes of the wind during gales; sudden changes in temperature or color of the water, and the time when such changes are first and last noticed.</p> <p>Discolorations of water, tide rips, sea-weed and drift. Flocks of birds. Whales, stating whether they be sperm or right, in shoals, pairs or single.</p> <p>Always mention thunder, lightning, fogs, rain, snow, dew and hail, meteors and auroras, &c., pumice stones found floating at sea; fall of dust, &c.</p> <p>When falls of dust or red fogs are encountered, collect and send specimens; and note all atmospherical or other phenomena of interest to navigation.</p> <p>And when any of the routes herein recommended are tried, state whether you have had a longer or shorter passage than vessels sailing about the same time <i>without</i> the "Wind and Current Chart" on board, or without having tried these routes.</p> <p>It is very desirable to know the temperature of the water, even for a few feet below the surface. Therefore, those vessels that are provided with the means of letting water into the hold, would render a valuable service, by drawing a bucket of water through the cock daily, and recording its temperature. Let the water so drawn run a little while first, so that it may be of the natural temperature. State the depth of the cock below the water.</p> <p>Keep your Abstracts on paper of this size, and leave a large margin in the middle for binding.</p>

ERRATA.—Page 68—line 4—for "730" read 720.
 " Page 179—line 21—for "Plate IV" read Plate IX.

Fig. 4.5. Matthew Fontaine Maury. *Explanations and Sailing Directions to Accompany the Wind and Current Charts*, 4th ed., C. Alexander, 1852, p. 315. Retrieved from the Library of Congress, <https://lccn.loc.gov/13016495>. *HathiTrust*, <http://catalog.hathitrust.org/Record/011639976>. Accessed 11 Dec. 2021.

The accompanying remarks to the abstract logs, amongst other things, instruct the user to "use paper of similar size" and "leave broad margins" to allow for binding. Log keepers are also directed to record whale sightings, making note of the species and general size of the pod, as in "shoals, pairs or single" (315).

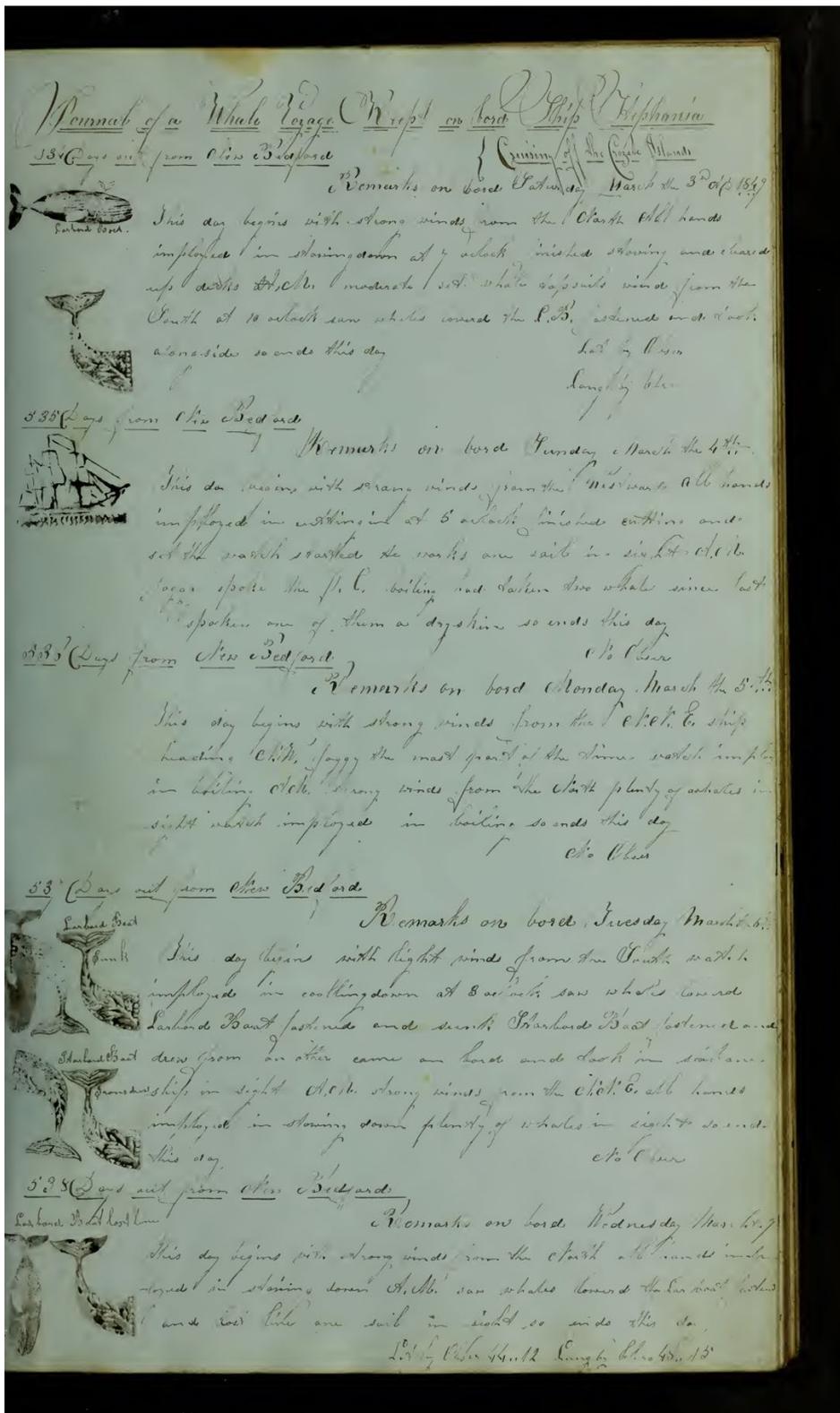


Fig. 4.6. Logbook of the Louisa (Bark), New Bedford Whaling Museum Research Library, KWM 130B, p. 121, <https://archive.org/details/logbookoflouisab00loui>. Accessed 18 Feb. 2020. Courtesy of the New Bedford Whaling Museum.

Logbook excerpt from the *Stephania*, a New Bedford whaling ship sailing the Antarctic Crozet Islands region, dated March 3 to 7th, 1849. After one successful kill on March 3rd, the crew lost two whales on March 6th, which sank before they could be brought aboard. At least one other whale was darted, but “drew” the harpoon loose and escaped. On March 4th, the *Stephania* encountered another whaling vessel and exchanged news; at this point, the *Stephania* had been at sea for more than five hundred days (121).

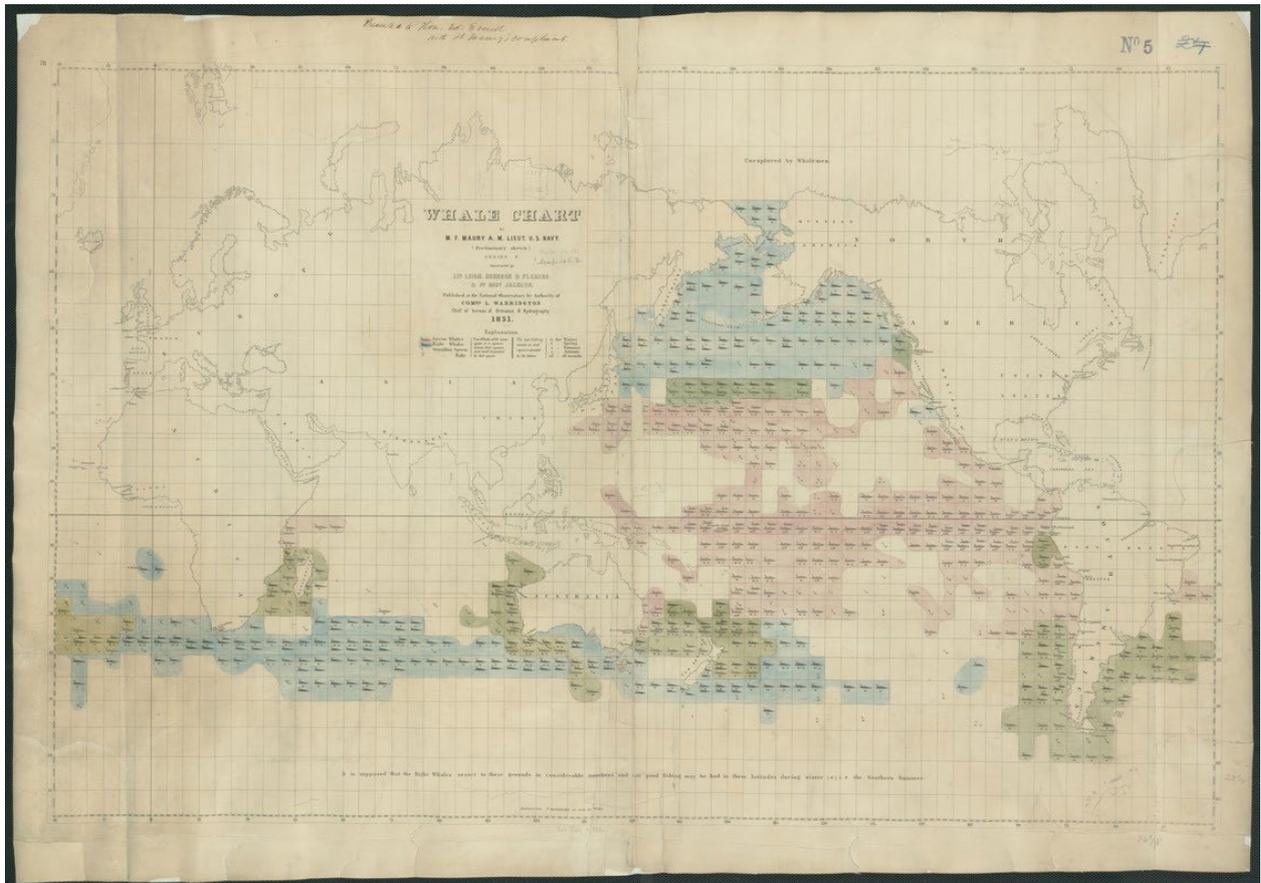


Fig. 4.8. Matthew Fontaine Maury and United States Naval Observatory. "Whale chart." Map. 1851. Norman B. Leventhal Map & Education Center, <https://collections.leventhalmap.org/search/commonwealth:x633f952x>. Accessed 22 Feb. 2020.

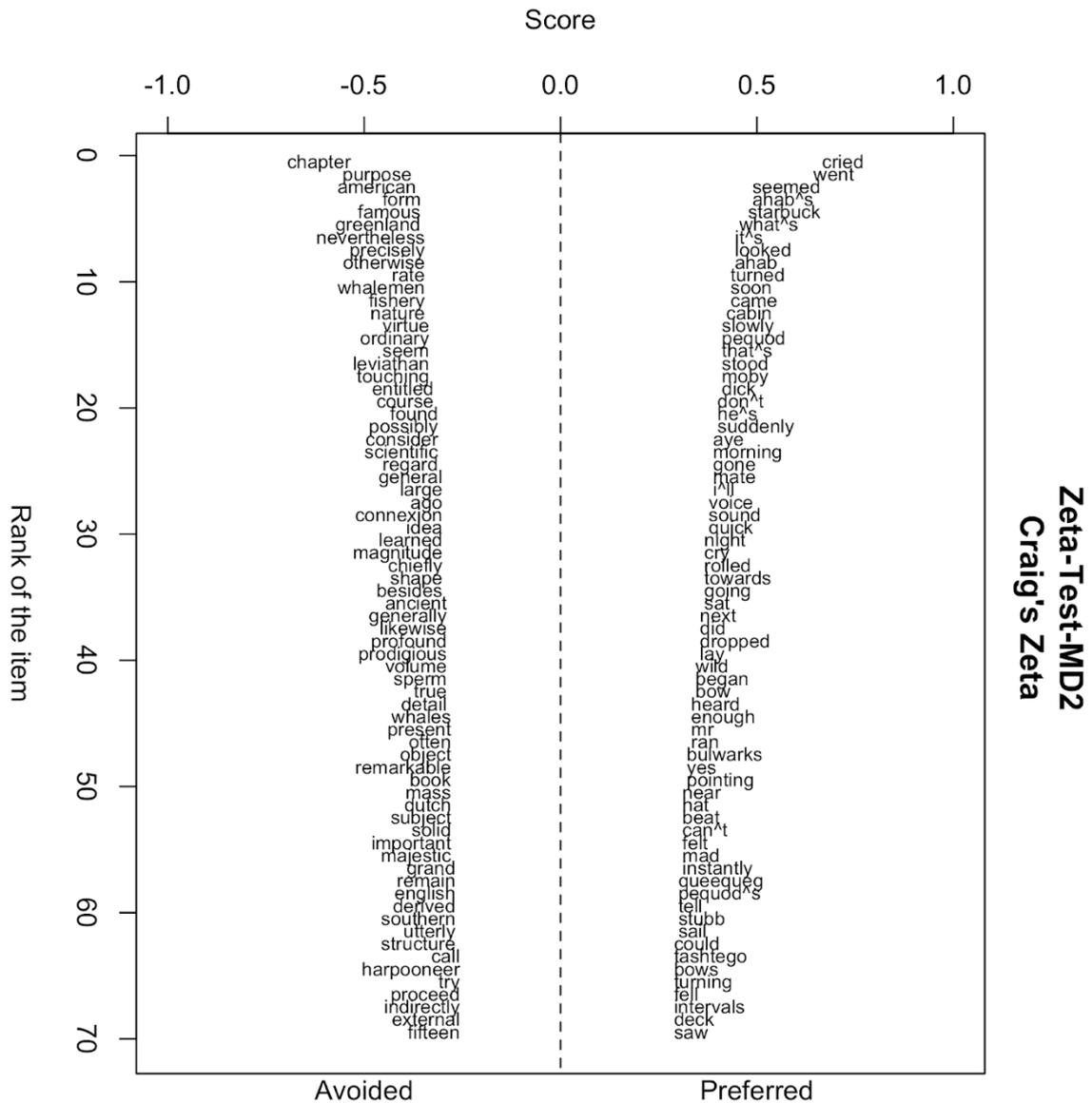


Fig. 4.9. Results of Zeta analysis from: Chelsea Miya. "The Two Moby Dicks: The Split Signatures of Melville's Novel." DH 2018, Mexico City, 26-29 June 2018.

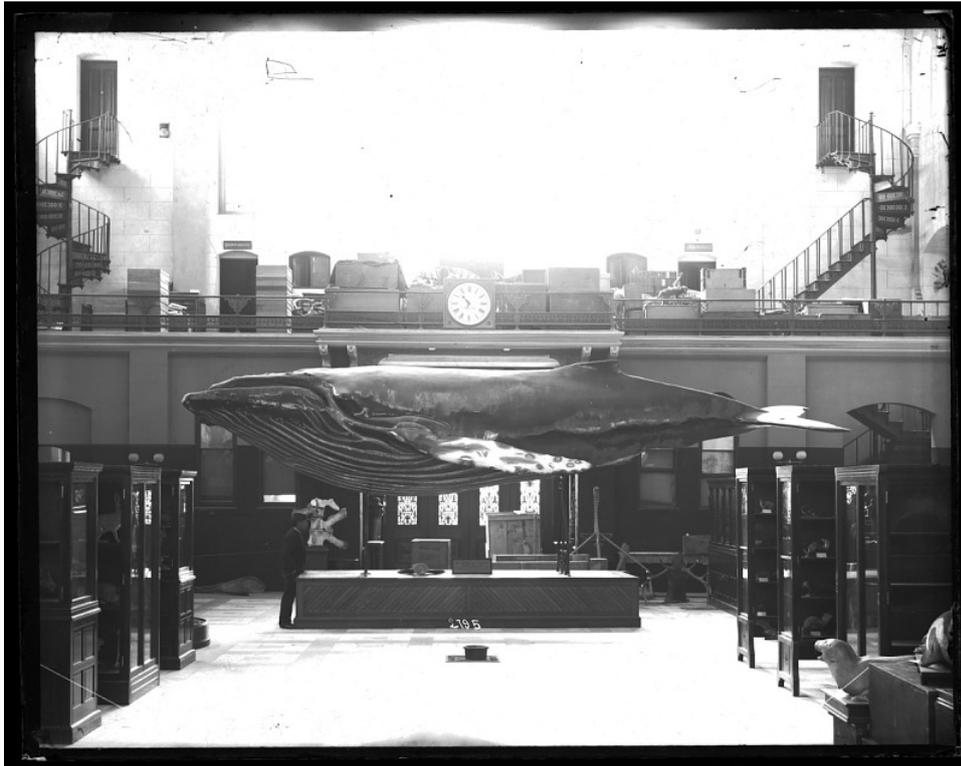


Fig. 4.10. Smithsonian Institution Archives, Acc. 11-007, Box 012, Image No. MNH-2795, https://www.si.edu/object/humpback-whale-cast%3Asiris_arc_388403. Accessed 22 Feb. 2020.

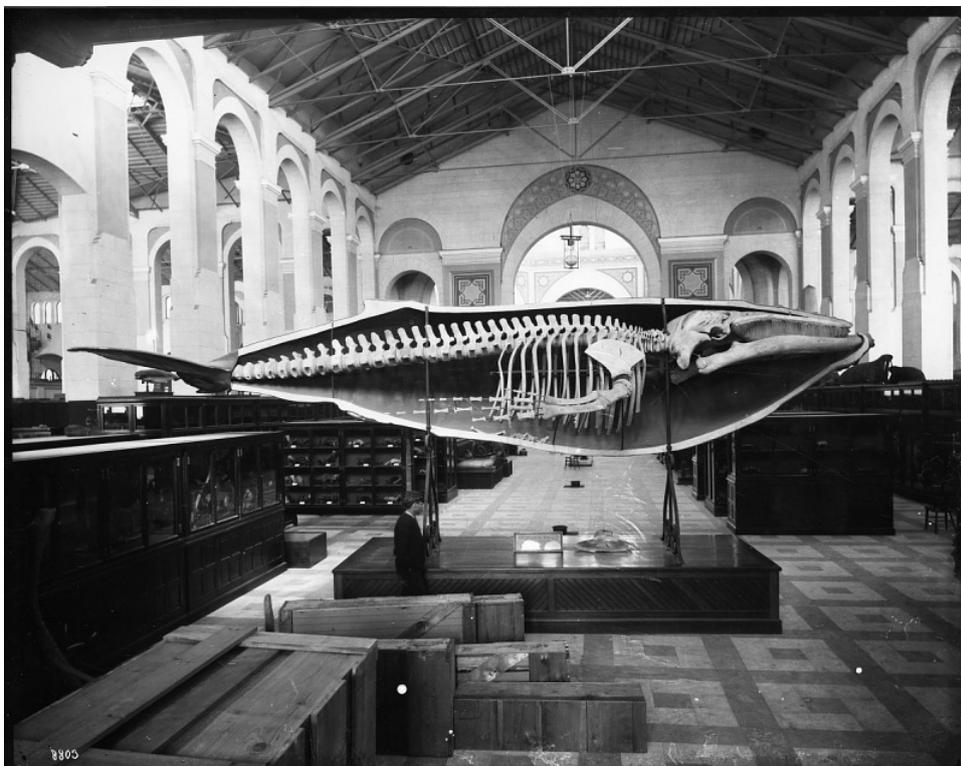


Fig. 4.11. Smithsonian Institution Archives, Record Unit 95, Box 43, Folder 1, https://www.si.edu/es/object/whale-cast-south-hall-united-states-national-museum:siris_sic_9297. Accessed 22 Feb. 2020.