The Pennsylvania State University

The Graduate School

THE CONSEQUENCES OF STRUCTURAL STIGMA FOR EMPLOYMENT, MARRIAGE, AND INDEPENDENT LIVING AMONG DEAF INDIVIDUALS IN 19TH CENTURY AMERICA

A Dissertation in

Sociology and Demography

by

Megan Lemmon

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Doctor of Philosophy

August 2019

The dissertation of Megan Lemmon was reviewed and approved* by the following:

Molly A. Martin
Associate Professor of Sociology and Demography
Dissertation Adviser
Chair of Committee

Jennifer Van Hook
Roy C. Buck Professor of Sociology and Demography
Director, Graduate Program in Sociology

Steven A. Haas
Associate Professor of Sociology and Demography

Jonathan Cook
Assistant Professor of Psychology

*Signatures are on file at the Graduate School.

ABSTRACT

This study examines the consequences of structural stigma (i.e., norms, policies, and other social conditions that constrain opportunities and resources for stigmatized groups) by leveraging a unique historical case—sites in 19th century America with reduced structural stigma towards deaf individuals, or deaf enclaves. I hypothesize that deaf people had greater social and economic opportunities if they lived in deaf enclaves compared to living elsewhere in the United States, and that the benefits of living in a deaf enclave were greater for deaf people compared to hearing people. I use data from the 1850 full census to examine three outcomes that were highly valued during this period: employment, marriage, and establishing an independent residence. I also use an original dataset that links samples of deaf and hearing men across the 1850 and 1880 censuses to examine whether exposure to structural stigma during childhood in 1850 had long-term consequences for marriage among these men 30 years later in 1880. My analyses account for community-level differences in support for progressive values, favorable labor market conditions, availability of potential marriage partners, and availability of boarding opportunities to better isolate the role of structural stigma for these outcomes.

Most of the results of this study support my hypotheses. In Chapter 4, I find that compared to their deaf peers living elsewhere in the U.S., deaf men living in deaf enclaves in 1850 were more likely to be employed. Residence in deaf enclaves was not associated with employment for hearing men. In Chapter 5, I find that deaf young adults were more likely to have ever married if they were living in a deaf enclave in 1850 relative to their deaf peers living elsewhere in the U.S. In contrast, hearing young adults were slightly less likely to marry if they lived in a deaf enclave. I also find that deaf young adults were more likely to have independent

residences in they lived in deaf enclaves in 1850, but only by creating their own households. Contrary to what I expected, deaf young adults in deaf enclaves were *not* more likely to establish an independent residence by boarding. In Chapter 6, I find that deaf men who were living in deaf enclaves as children in 1850 were more likely to have married as adults in 1880, while residence in a deaf enclave during childhood was not associated with hearing men's chances of marrying. These results should be interpreted cautiously, however, because 90% of the deaf men in my sample who lived in deaf enclaves as children were also living in deaf enclaves as adults. Consequently, I was not able to distinguish exposure to structural stigma during childhood from exposure during adulthood.

Although I cannot definitively say that structural stigma caused these patterns, the fact that only deaf people benefited from living in deaf enclaves increases my confidence that structural stigma could have played a role. These results suggest that structural stigma could have wide-ranging consequences for wellbeing.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGEMENTS

I am grateful for several people who supported me throughout this process. I am especially grateful for my advisor, Molly Martin. I could not have finished this project without her guidance and encouragement. I am also grateful for feedback and helpful suggestions from my dissertation committee members: Jenny Van Hook, Steven Haas, and Jonathan Cook. I am also grateful for an RGSO Dissertation Support grant from Penn State University. Finally, I am grateful for the individuals who digitized and documented the historical census data for this project, including those at IPUMS USA (IPUMS-USA, University of Minnesota, www.ipums.org.) and Ancestry.com.

CHAPTER 1: BACKGROUND

INTRODUCTION

Disability is increasingly recognized as an important dimension of social inequality (Goodley 2016; Krahn et al. 2015). People with disabilities experience worse health, lower educational attainment, lower labor force participation, and higher rates of poverty than people without disabilities (World Health Organization 2011). The traditional explanation for these patterns is that individuals' bodily impairments prevent them from full participation in social life (Goodley 2016). This perspective ignores the social factors that contribute to disabled individuals' marginalization, such as prejudice and discrimination. The social model of disability challenges this perspective and draws attention to features of society that restrict access to opportunities and resources for people with disabilities (Oliver 1990).

One important feature of society that prevents individuals with disabilities from full participation in social life is stigma. According to Goffman's (1963) classic definition, stigma results from attributes that are "deeply discrediting" and reduce a person from a "whole and usual person to a tainted, discounted one" (p. 3). Many studies have explored the causes and consequences of stigma, but most of these studies are focused at the mirco level; they examine individual perceptions and small-scale interactions between stigmatized and non-stigmatized individuals (Hatzenbuehler 2016). More recently, scholars have called attention to structural forms of stigma (e.g., Corrigan et al. 2005; Hatzenbuehler, Phelan, and Link 2013). Link and Hatzenbuehler (2014) define structural stigma as "societal-level conditions, cultural norms, and institutional policies that constrain the opportunities, resources, and wellbeing of the stigmatized." Structural stigma is similar conceptually to structural racism—i.e., the societal

conditions that perpetuate a racialized social order and systematically disadvantage some groups based on racial identity (Bonilla-Silva 1997)—but is broader in scope. Structural conditions maintain and perpetuate greater power among majority group members and exist independent of individual-level discrimination (Bonilla-Silva 1997; Link and Phelan 2001; Lukachko, Hatzenbuehler, and Keyes 2014). Therefore, structural stigma can produce negative outcomes for stigmatized individuals outside the context of interpersonal interactions (Hatzenbuehler 2017; Livingston 2013). Structural stigma has been linked to worse health for members of several stigmatized groups, including racial, ethnic, and sexual minority individuals (Hatzenbuehler & Keyes 2013; Hatzenbuehler et al. 2017; Lukachko et al. 2014), but few existing studies explore how structural stigma impacts individuals with disabilities.

This study explores the consequences of structural stigma for individuals with disabilities using a unique historical case—deaf individuals in 19th century America. Deaf people were stigmatized in general (Lane 1992; Winzer 1986), but qualitative research suggests that this stigma was reduced in certain places and that deaf individuals were more integrated in these communities (Groce 1985; Lane, Pillard, and Hedberg 2011). Lane, Pillard, and Hedberg (2011) identified three such places, which they call "deaf enclaves." On the island of Martha's Vineyard, for example, most of the island inhabitants learned sign language and substantially reduced the communication barrier between hearing and deaf individuals. Deaf islanders were seen as "unique individuals" rather than members of a disabled minority group (Groce 1985, p. 4). This geographic variation in structural stigma provides a unique opportunity to explore the consequences of stigma for deaf individuals.

DEAF INDIVIDUALS IN 19TH CENTURY AMERICA

In order to better understand the consequences of structural stigma and how certain locations may have reduced structural stigma towards deaf individuals, I begin by locating deaf individuals in their 19th century historical context. I will highlight the ways that mainstream society perceived and portrayed deafness and deaf individuals, how deaf individuals' lives changed across the 19th century, and how deaf individuals fared in terms of common indicators of economic and social wellbeing.

Prevalence and causes of deafness

Today, deafness (i.e., an absence of hearing or profound hearing loss) is most often the result of genetic traits and is less often caused by illness or injury (Petit 1996), but during the 19th century the causes of deafness were largely mysterious. People recognized that deafness could be passed on through families or caused by injuries and illnesses such as meningitis and scarlet fever, but many families were unaware of what caused their child's deafness. In the 1850s, the most common cause of deafness was thought to be "fright experienced by the pregnant mother" (Wilde 1854). Other common explanations were things like "a clap of thunder", "mother's conduct", and "sickness from fright" (Gannon 2012). By the end of the 19th century, diseases that caused deafness such as scarlet fever, diphtheria, malaria, and meningitis became less prevalent, which likely reduced the prevalence of deafness over time (United States. Bureau of the Census 1920).

Deafness is rare. The earliest estimates of the prevalence of deafness in 19th century America come from the 1830 census, which estimated that there were 475 deaf individuals per 1,000,000 in the general population (United States. Bureau of the Census 1920). 19th century

census estimates ranged from a low of 423 in 1850 to a high of 675 in 1880. In general, deaf individuals have always been a tiny minority group.

Mainstream perceptions and Deaf identity formation

Voices of deaf individuals—like other members of marginalized groups—are largely absent from the historical record before the 19th century (Van Cleve and Crouch 1989). We do have some idea of how the hearing majority viewed deaf people. At the beginning of the 19th century, hearing people generally saw the deaf as a dependent group and sometimes a burden on their communities. Deaf people were excluded from certain rights and responsibilities, including the right to vote and enter into a contract (Higgins 1980). The dominant idea was that deaf people were not fully competent human beings—especially those who were born deaf or became deaf at an early age (Higgins 1980). Deaf individuals were seen as lacking intelligence because people believed that deafness prevented individuals from learning language, and without language individuals were incapable of rational thought (Sacks 1989). This idea is reflected in the common terminology used to describe deaf individuals; throughout most of the 19th century, deaf individuals were called deaf and "dumb". Most who became deaf before they learned to speak in the early decades of 19th century America were indeed extremely limited in their ability to learn English or any other language; Americans generally knew nothing about teaching deaf children and deaf students gained little from attending public schools (Edwards 2012). Most of these deaf individuals were only able to communicate with gestures. One deaf man later compared the experience of deaf individuals to "foreigners among a people whose language they [could] never learn." (Olof Hanson, quoted in Van Cleve and Crouch 1989, p. ix).

Motivated by sympathy for the unfortunate situation facing deaf people, some hearing individuals wanted to help deaf Americans. One of these sympathetic hearing individuals was

Thomas Hopkins Gallaudet, who traveled to Europe to learn techniques in deaf education. Public education was expanding and becoming more normative in the United States during the 19th century (Bode 1967) but deaf children were not able to benefit from the existing education system. Gallaudet convinced Laurent Clerc, a deaf school teacher in France, to travel to America and help him open the first school for deaf pupils in America. They opened the American Asylum (now called the American School for the Deaf) in 1817, which was a critical event in deaf history (Van Cleve and Crouch 1989). Clerc and Gallaudet instructed the first deaf students in this American school using a version of sign language developed in France, which evolved over many years to eventually become the American Sign Language that is used among deaf Americans today (Edwards 2012). Their efforts were enormously successful—in addition to learning sign language, deaf children who previously had no grasp of English learned to read and write. The success of these schools showed the hearing majority that deaf people were capable of language and rational thought. Over the next several decades, the American Asylum secured additional federal and state funding to expand and several new schools for deaf students opened (Fay 1893). By the end of the 19th century, there were 30 schools for the deaf and about half of all deaf individuals attended a deaf school (Buchanan 1999).

These schools brought literacy to deaf individuals—a huge step forward, but what was perhaps even more transformative was that they enabled deaf people to form a positive shared identity. Before they arrived at a deaf school, most deaf children had limited contact with other deaf people and some even believed they were the only deaf person in the world (Edwards 2012). They were isolated and excluded from many social interactions. They internalized the dominant social messages and believed that their deafness was a deficit that set them apart from others. Attending a deaf school changed them—they no longer felt isolated or different; among

their deaf peers they felt a sense of "wholeness and belonging" (Higgins 1980, p. 171). By the 1850s, a new Deaf[1] identity was beginning to form among those who attended these residential deaf schools, especially the American School for the Deaf (Van Cleve and Crouch 1989). They began to see themselves as members of a community with their own unique language and culture (Edwards 2012; Lane et al. 2011). Many brought this new sense of identity with them when they left school and wanted to maintain connections to other deaf people. By the end of the 19th century, deaf Americans formed several organizations to meet their specific needs and promote their wellbeing, including their own churches, clubs, and newspapers (Van Cleve and Crouch 1989).

By the mid- to late 19th century, many deaf adults had valuable skills and resources—including literacy, vocational skills that could translate into paid employment, ties to other deaf people, and membership in an emerging Deaf community— and were productive members of their local communities. As a result, public perceptions of deaf people began to shift. Deaf people were less often seen as dependent or burdens on their communities, but there were increasing concerns that deaf people disrupted the social order (Werner 2012). Hearing people started to describe deaf people as "clannish" and view sign language with suspicion (Robinson 2012). These changing attitudes towards deaf individuals paralleled nativist attitudes towards immigrant groups as America experienced a sharp increase in immigration (Baynton 1996). Hearing people wanted deaf people to assimilate into hearing society, which meant giving up sign language and learning to lipread and speak (Werner 2012). In 1880, group of educators—consisting almost entirely of hearing members—met for an international conference on deaf education and recommended banning sign language from schools (Schein 1989). Beyond

[1] The capital D in Deaf is used to denote membership in a Deaf subculture (Edwards 2012).

assimilation, some prominent hearing leaders wanted to eliminate deafness from the population entirely. Alexander Graham Bell was the most well-known and influential proponent of this position. In an 1883 presentation to the National Academy of Sciences, Bell argued that deaf individuals should not marry one another because of their increased risk for producing deaf offspring (Bell 1884).

Stigma towards deaf individuals

Although public perceptions of deaf people changed significantly across the 19th century, deaf individuals were always a stigmatized group. According to Link and Phelan (2001) stigma occurs when (1) individual differences are labeled; (2) labeled individuals are associated with negative stereotypes; (3) labeled individuals experience separation from an "us" group and are placed in a "them" group; and (4) labeled individuals experience status loss and discrimination. Additionally, stigmatizers must possess greater power than those they are stigmatizing (Link and Phelan 2001).

Deaf people meet all components of Link and Phelan's (2001) stigma definition. First, deaf individuals were labeled—deafness was seen as an important characteristic that set them apart from hearing individuals. Second, deaf individuals were stereotyped. As described earlier, the nature of these stereotypes changed across the century (e.g., from "dumb" and "dependent" to "clannish" and "defective") but deaf individuals clearly faced negative social evaluations from mainstream society (Higgins 1980; Robinson 2012). Third, deaf individuals were considered to be separate from hearing individuals. Deaf individuals also noted that they felt "separated" from the hearing majority and "in many cases despised by hearing men" (Confer 1858; as quoted in Krentz 2000, p. 191). As another example, the 1880 decennial census contained an additional set of survey questions for deaf individuals, which were compiled into an official government report

that refers to deaf individuals as "defectives" or members of a "defective class" (Census Reports Tenth Census 1880, p. viii). Fourth, deaf individuals experienced status loss and discrimination. Many deaf individuals reported examples of discrimination especially pertaining to employment (Krentz 2000; Robinson 2012; Van Cleve and Crouch 1989). Finally, deaf individuals clearly faced a context of unequal power. Hearing individuals controlled all economic and political institutions in 19th century America, and deaf individuals occupied almost no powerful positions (Van Cleve and Crouch 1989).

Social and economic wellbeing

Despite the important gains in education and access to a positive Deaf identity that occurred during the 19th century, deaf people were stigmatized and faced barriers to full participation in society. In general, deaf individuals lagged behind their hearing peers across multiple indicators of social and economic wellbeing. This project focuses on three key outcomes: employment, marriage, and establishing an independent residence.

Employment

In 19th century America, work was both an economic necessity as well as a source of self-esteem and personal identity (Keyssar 1986). Americans believed that work was good and that everyone should work (Bode 1967), but employment was particularly important for men. Writing in 1879, authors of a popular self-help book on success described employment as the single most important factor for masculine identity, and that "a man without employment is not a man" (Haines and Yaggy 1879 as quoted in Volo and Volo 2007, p. 54) Most Americans needed to work and being out of work could lead to material hardship, social dislocation, and psychological stress (Keyssar 1986). Throughout the mid- to late 19th century, more than 90% of working-aged males were participating in the labor force (Sobek 2001). At the beginning of the 19th century,

most Americans made their living primarily through agriculture and were self-employed or working as part of property-owning families. By the end of the 19th century, most workers were employed by others for a wage or salary. The shift towards wage labor made Americans increasingly vulnerable to unemployment—the inability to find work among those who were willing and able to work. Unemployment became increasingly common and was recognized as a social problem during the latter half of the 19th century (Keyssar 1986).

Given that at the beginning of the 19th century hearing people viewed deaf people as incompetent and dependent, they likely did not expect deaf men to work. Yet by the mid- to late 19th century, deaf individuals' orientation towards employment matched that of mainstream society. Deaf leaders encouraged deaf individuals to support themselves through work and deaf individuals wanted to do so (Buchanan 1999; Van Cleve and Crouch 1989). The curriculum at schools for the deaf was designed to help students become independent wage earners and included training in trades such as cabinet making, shoe making, and tailoring (Buchanan 1999). This training provided deaf individuals with greater career preparation than most hearing students received at public schools (Van Cleve and Crouch 1989).

Despite valuing work and possessing marketable skills during the mid- to late 19th century, most deaf individuals faced barriers in the labor market. Deaf leaders argued that hearing people created these barriers—hearing employers underestimated deaf people's abilities and mistreated deaf workers (Buchanan 1999). This became especially problematic as the economy shifted away from agriculture and artisan trades towards a wage-labor factory economy during the latter half of the 19th century; deaf people increasingly had to rely on jobs from hearing employers rather than supporting themselves through agriculture and handicrafts (Van Cleve and Crouch 1989).

Marriage

Marriage is "one of the most significant and universal life events" (Rothman 1987 p. 4) and marriage arguably held even greater social significance during the 19th century than it does today (Bode 1967). Marriage and families were believed to provide a "haven of safety" and a "little world of joy and love" (Griffen 1884, as quoted in Ruggles 1987, p. 130). Nearly all Americans hoped to marry and most adults eventually did. In 1850, only about 6% of men and 8% of women were not married by age 45 (Fitch and Ruggles 2000). Both men and women desired the benefits that marriage provided including intimacy, security, and the ability to build a home of their own (Rothman 1987). Marriage also served important social functions, such as continuing family wealth and providing the context for childrearing (Volo and Volo 2007).

By the beginning of the 19th century, love was the most important precondition to marriage and once young adults fell in love, marriage was expected to follow (Rothman 1987). Yet love was not enough for marriage; before marrying, men were expected to demonstrate that they could provide for a family, either by establishing themselves in a profession or inheriting property from their parents (Volo and Volo 2007). Young women did not face the same economic barriers to marriage but were expected to fulfill the duties of wives and mothers—making a home and caring for their families' physical, emotional, and moral needs (Rothman 1987). Young adults usually searched for their marriage partners independently and parents had little control over their children's courtship (Volo and Volo 2007). Earlier in the 19th century, young people often began romantic relationships by socializing with opposite sex peers in informal settings. As the country became increasingly urban and sex-segregated, young men and women had less informal contact with each other and more began courtships with relative strangers (Rothman 1987).

Although marriage was the norm in general, deaf adults were much less likely than their hearing peers to marry (Fay 1898). Deaf adults faced several barriers to marriage. First, given that deafness is rare, most deaf individuals had few if any deaf peers nearby; their pool of potential marriage partners was almost entirely hearing. Deaf and hearing people often had trouble communicating, which makes it difficult to establish the kind of emotional connection that was considered necessary for marriage. Although men and women were looking for different attributes in their future spouses, both wanted some shared characteristics and experiences that could strengthen their emotional bond (Rothman 1987). Individuals often seek homophily in marriages and such marriages are more likely to be satisfying and long-lasting (McPherson, Smith-Lovin, and Cook 2001). Deaf people likely preferred to marry another deaf person and deaf-deaf marriages were happier and longer lasting compared to deaf-hearing marriages (Van Cleve and Crouch 1989). The lack of nearby deaf peers and the communication barrier between deaf and hearing individuals likely made it difficult for deaf individuals to find a suitable marriage partner.

Second, deaf individuals may have had trouble demonstrating that they met the expectations for marriage. Deaf men were less likely to be employed than hearing men (Buchanan 1999) so they were less likely to show that they could provide for a wife and children. Some deaf women had training in useful homemaking skills such as tailoring (Buchanan 1999) but potential partners may have worried about how a deaf woman could manage the enormous responsibilities of caring for a family that were expected of wives and mothers (Rothman 1987).

Independent residence

Today, establishing an independent residence is considered an important transition to adulthood. Most young adults hoped to leave their childhood homes and create their own

independent households (Bode 1967). Young adults in 19th century America also valued having their own independent households, but the process of leaving home differed in some ways from what is typical today. In 19th century America, it was common for children as young as 12 to leave their parents' home for a few months or years at a time and then return (Kett 1977). Many children and young adults left their parents' home to pursue their education or, more often, to work—as servants, farm hands, apprentices, or laborers in factories (Kett 1977). Children might leave their parents' home several times before moving out for good. Because of high mortality rates during the 19th century, it was more common for children to move out or live separately from their parents because their parents died (Gutman et al. 2002).

Young adults lived away from their parents for many reasons but the ideal living arrangement was to live in one's own home (Rothman 1984). The most common way that young adults were able to live in their own homes was through marriage. A small share of married couples remained in their parents' homes to inherit their family's farm or business (Ruggles 1994), but most adults established an independent household when they married (Coontz 2000). Young adults who established an independent household took on new roles, and these roles were almost universally gendered. Young men adopted a new role as household head and were expected to govern their households and provide for their family members (Smith 1992). In the 19th century, every household was assumed to have a head and this head was always expected to be male (Rotundo 1993). Household heads generally had higher status and authority than other household members (Ruggles 1994). Young women, in general, were expected to create a welcoming home environment and take on the responsibilities of wives and mothers (Volo and Volo 2007). Although living in one's own household was seen as the ideal living arrangement, many single young men and women achieved some independence by boarding. Boardinghouses

and commercial hotels proliferated during the 19th century and single young adults commonly moved out of their parents' homes and became boarders (Volo and Volo 2007).

Young adults with disabilities are less likely than their non-disabled peers to live independently today (Janus 2009) but previous research has not examined whether deaf individuals were less likely to establish an independent residence during the 19th century. Although establishing an independent household was highly valued during this era, deaf leaders tended to focus their attention on the need for financial independence (Buchanan 1999), perhaps assuming that residential independence would follow. Given the dominant ideas that deaf individuals were dependent on others during the early 1800s (Higgins 1980), it seems likely that they faced barriers to establishing an independent residence. Deaf men were less likely to be employed (Buchanan 1999) so they may not have been able to afford their own household or the cost of staying in a boardinghouse. Deaf men may also have been less able to take on the role of household head, since this is a position of status and authority that was inconsistent with mainstream perceptions of deaf people. Deaf men and women were less likely to marry (Fay 1898) so they may have been less likely to have their own households but more likely to be living as boarders (if they could afford boarding costs). If deaf people faced barriers to establishing an independent residence, it seems probable that they would be more likely to be living with their parents or other family members.

Deaf individuals in the mid- to late 19th century were less likely to achieve traditional markers of economic and social wellbeing than their hearing peers—they were less likely to marry, be employed, and potentially establish an independent residence. Scholars argue that stigma plays a role in these kinds of disparities (Hatzenbuehler and Link 2014; Oliver 1990), yet

it is difficult to isolate the causal impact of stigma. Other factors such as education, social class, and opportunity structures in the local environment affect these outcomes as well. One way to better estimate the consequences of stigma for members of stigmatized groups is to exploit variation in structural stigma (Hatzenbuehler 2016).

DEAF ENCLAVES: POTENTIAL SITES OF REDUCED STRUCTURAL STIGMA FOR DEAF INDIVIDUALS

Previous qualitative research suggests that structural stigma towards deaf individuals may have been reduced in certain locations that experienced an increased prevalence of hereditary deafness during the 19th century. Lane, Pillard, and Hedberg (2011) identify three prominent locations, which they call "deaf enclaves." Enclaves are essentially clusters of distinctive population groups in particular places (Abrahamson 2005; Marcuse 2005). Previous research on enclaves has been mostly focused on "ethnic" or "immigrant" enclaves, in which members of a particular ethnic group cluster in particular places and attract new immigrants (e.g., Abrahamson 2005; Wilson and Portes 1980; Zhou and Logan 1989). Yet other kinds of groups, such as religious minorities, also form enclaves (Marcuse 2005). Previous research emphasizes the local economic conditions that allow ethnic enclaves to form and sustain themselves, including a substantial number of ethnic group members with useful business experience and the availability of capital and potential workers within the local environment (Wilson and Portes 1980). Beyond economic conditions, scholars argue that enclaves allow group members to share language and rituals that generate powerful connections among group members and tie them to particular places (Mazumdar et al. 2000). Enclaves provide many benefits to the people living in them,

including providing economic opportunities, mitigating psychological trauma, and preserving cultural traditions (Abrahamson 2005; Mazumdar et al. 2000).

The three deaf enclaves identified by Lane and colleagues (2011) are (1) Henniker, New Hampshire; (2) Martha's Vineyard, Massachusetts, and (3) Southern Maine. The first of these three deaf enclaves formed when the Brown family—who carried a dominant gene for deafness—moved to Henniker, New Hampshire from Massachusetts in 1785. Lane, Pillard, and Hedberg (2011) argue that the dominant genetic transmission of deafness was an important factor in establishing New Hampshire as a deaf enclave. This genetic process implies that each deaf person with this gene has a 50% chance of passing on the deaf gene to their child, and because of this pattern the Brown family had deaf family members in every generation. Consequently, deaf individuals in the Brown family had many deaf relatives and they developed a strong sense of a shared deaf identity.

The second deaf enclave, Martha's Vineyard, also had an exceptionally high prevalence of hereditary deafness. As an island with limited migration to and from the mainland prior to the twentieth century, Martha's Vineyard had particularly high rates of intermarriage, or marriage between individuals that share a common ancestor. Intermarriage increases the risk that recessive genes will be expressed, and this allowed a recessive trait for deafness to be expressed at a much higher rate than existed elsewhere in the United States. Inhabitants of Martha's Vineyard responded to these circumstances by learning sign language—even hearing individuals knew basic sign language and were able to communicate with deaf islanders (Groce 1985).

Southern Maine became the third deaf enclave when several deaf families migrated from Martha's Vineyard to the Sandy River basin area between 1789 to 1794 (Lane, Pillard, and Hedberg 2011). Although there was some migration between Maine and Martha's Vineyard,

there is no evidence that hearing individuals in Maine learned sign language to the same extent as on Martha's Vineyard.

Although these three locations were separated from each other geographically, some deaf people developed ties across deaf enclaves. Deaf youth from deaf enclaves often attended the American School for the Deaf and formed relationships with each other there (Lane et al. 2011). For example, Thomas Brown from Henniker, New Hampshire met Mary Smith from Martha's Vineyard at the American School and they were married in her home town (Lane et al. 2000). When Mary passed away Thomas married a woman from southern Maine, whom he likely met through a classmate.

Schools for the deaf were critical for the development of a shared Deaf identity and subculture, as described earlier, but Lane and colleagues (2011) argue that deaf enclaves were important factors in the development of Deaf identity as well. In general, deaf youth attended school for a few years and then returned home or moved elsewhere; they did not remain in the area where the school was located (Lane et al. 2011). Deaf people spent most their lives outside the context of a deaf school; they lived, worked, and married in their local environments. Thus, the extent to which they were able to benefit from the ties they made and the resources they gained while attending school depended on their local environments.

Dimensions of structural stigma

Local environments can reduce or exacerbate stigma and thereby affect the social and economic opportunities available to members of stigmatized groups (Crosnoe 2007). Three key dimensions affect the level of structural stigma in the local environment: (1) local representation

of the stigmatized group; (2) community-level attitudes, and (3) laws and policies. I will describe each of these dimensions and theorize how they may have operated in deaf enclaves.

Local representation of the stigmatized group

The first dimension of structural stigma is the local representation of the stigmatized group, or the extent to which stigmatized individuals are relatively common or rare in the local environment (Hatzenbuehler, Keyes, and McLaughlin 2011). Greater local representation increases opportunities for contact between stigmatized and non-stigmatized individuals. The contact hypothesis argues that interactions between stigmatized and non-stigmatized individuals decreases stigma by discrediting negative stereotypes and increasing empathy among the non-stigmatized (Pettigrew and Tropp 2006). These interactions allow the non-stigmatized to see the stigmatized as unique individuals rather than members of a minority group. Many studies find that even limited forms of contact are effective in reducing negative attitudes toward stigmatized groups (Lee, Farrell, and Link 2004; Pettigrew and Tropp 2006).

Beyond contact between stigmatized and non-stigmatized individuals, greater local representation of the stigmatized group provides opportunities for stigmatized individuals to form relationships with each other. These relationships provide an important source of "bonding" social capital, or ties based on shared identities (Szreter 2002). Relationships with other members of a stigmatized group provide safe avenues for affiliation and social and political influence (Miller, Levin, & van Laar 2006) and through these shared ties, members of stigmatized groups can work together to change stigmatizing social environments (Cook et al. 2014). Having greater representation also make it easier to form local organizations that provide social support and validation to members of stigmatized groups (Oswald et al. 2010; Oswald & Culton, 2003).

effects. Such organizations decrease the salience of a stigmatized status and can even change the meaning of a stigmatized trait from a drawback to an asset (Crocker and Major 1989).

Deaf enclaves had an increased prevalence of hereditary deafness during the 19th century, which should have led to a greater local representation of deaf individuals in deaf enclaves. Lane and colleagues (2011) did not directly measure local representation in deaf enclaves but they point out that children from Martha's Vineyard, Henniker, New Hampshire and nearby towns, and southern Maine were overrepresented in the population of students attending the American School for the Deaf. Additionally, Groce (1985) calculated that 1 in every 155 people were born deaf on Martha's Vineyard during the 19th century, compared to 1 in every 5,728 individuals on the mainland. My analysis of 1850 census data (described in Chapter 3) confirms that deaf enclaves did in fact have a greater representation of deaf individuals compared to elsewhere in the United States.

Given their greater local representation of deaf individuals, deaf enclaves should have provided greater opportunities for interactions between hearing and deaf individuals, which allows hearing people to see their deaf peers as individuals rather than members of a stigmatized minority group. Consistent with this idea, when hearing individuals on Martha's Vineyard recounted their memories[2] of the deaf members of their community, they described their deaf peers in individualized terms such as a "very good fisherman" (p.4), a "very good card player" (p.91) and having a "good sense of humor" (Groce 1985, p. 92). Their deafness was remembered as more as an afterthought, or even sometimes forgotten; it was not seen as an importance difference. Deaf youth from Martha's Vineyard also did not view their deafness as a salient

[2] When Nora Groce (1985) conducted her interviews there were no surviving deaf individuals on the island.

difference. In contrast to deaf youth growing up elsewhere—who primarily wrote about how isolated they felt in their home communities—deaf youth from Martha's Vineyard did not describe their childhoods as isolating; instead they wrote about ordinary experiences such as interacting with local Native Americans and fishing (Edwards 2012).

Greater local representation of deaf individuals should have also led to greater opportunities for deaf individuals to form important and useful ties with one another in deaf enclaves. Lane et al. (2011) argue that the interactions among deaf individuals in Henniker, New Hampshire allowed them to form the National Association of the Deaf (then called New England Gallaudet Association of the Deaf-Mutes) in 1850, which was the first organization dedicated to uniting and promoting the quality of life for deaf people (Lane, Pillard, and Hedberg 2011; NAD History 2017).

Community-level attitudes

Community-level attitudes towards the stigmatized group is another dimension of structural stigma that varies across places (Hatzenbuehler 2014). Individuals learn prejudices against certain groups from many sources, including their families, the media, religion, and intergroup conflict (Crandall and Eshleman 2003). Such attitudes towards stigmatized groups become aspects of the "cultural wisdom" that are passed from one generation to the next through socialization (Crocker and Lutsky 1986; Mojtabai 2010). Although a trait or identity may be stigmatized in general, communities vary in their willingness to openly express prejudice towards stigmatized groups and to control their own impulses to stereotype and avoid stigmatized individuals (Miller et al. 2011). For example, Mojtabai (2010) found that individuals

living in regions with stronger negative beliefs about mental illness were more likely to express negative attitudes towards people with mental illness.

Martha's Vineyard provides a striking example of this dimension of structural stigma—negative attitudes towards deaf individuals seemed to be nearly absent in this community (Groce 1985). In general, hearing people on Martha's Vineyard did not consider deaf individuals to be disabled and did not express the prejudice towards deaf people that was prevalent in mainstream society. I was not able to locate any accounts of community attitudes towards deaf people for the New Hampshire and Maine enclaves during the 19th century, but Lane and colleagues (2011) note that some deaf men and women were active in their communities and occupied positions of prestige, which may indicate that community attitudes were more favorable towards deaf individuals in deaf enclaves compared to elsewhere in the United States.

Laws and policies

A third important dimension of structural stigma is local laws and policies (Corrigan et al. 2005; Hatzenbuehler 2014). Laws and policies can be intentional or unintentional forms of structural stigma (Livingston 2013). Intentional forms of structural stigma include laws and policies that restrict rights and resources available to members of stigmatized groups, such as Jim Crow laws that restricted rights for African Americans in many life domains, laws that prevent individuals with mental illness from holding elective office or voting, and laws that use disability status as a reason to terminate parental rights (Corrigan et al. 2005; Lightfoot, Hill, and Laliberte 2010). Unintentional forms of structural stigma do not explicitly target members of stigmatized groups, but members of stigmatized groups are disproportionately affected by these laws and policies. For example, organizational policies that prevent individuals with a police record from

being considered for employment disproportionately affect those with mental illness, because they are more likely to have police records due to emergency mental health care needs (Livingston 2013). Local laws and policies can also reduce structural stigma by protecting rights for members of stigmatized groups, such as laws that allowed same-sex couples to marry or ban discrimination based on sexual orientation (Herek 2009).

A full review of the local laws and policies operating in deaf enclaves during the mid- to late 19th century is beyond the scope of this study, but Lane and colleagues (2000) identified one protective policy in a deaf enclave: Henniker provided funding for Thomas Brown to attend the American School for the Deaf before New Hampshire approved state funding to cover the cost of tuition for deaf schools. Although some local laws denied rights to deaf people, such as a law in New York during the early 1800s that denied deaf individuals the right to vote (Higgins 1980), it was more common for deaf people to be discouraged from pursing certain rights and activities rather than forbidden by law (Groce 1985). It seems logical then that structural stigma was reduced in enclaves through informal channels, such as changing in community attitudes and norms, rather than through laws and policies.

It is important to note that these three dimensions of structural stigma are not independent of one another. For instance, community-level attitudes can influence the kinds of local laws that are introduced and passed, and local laws can also change community attitudes (Klawitter and Flatt 1998; Tilcsik 2011). Greater local representation of the stigmatized group facilitates interactions that improve community attitudes towards the stigmatized group and enables collective action among members of the stigmatized group to change laws and policies. Furthermore, some aspects of structural stigma have a powerful influence but are difficult to measure in empirical research, such as informal norms. Norms have largely been absent from

previous research on structural stigma, but likely mattered a great deal for deaf enclaves. The norm of using sign language on Martha's Vineyard created a much more welcoming environment and removed barriers to full participation in society for deaf people. Rather than focusing on the consequences of a single dimension of structural stigma, some studies have combined multiple dimensions of structural stigma to identify certain places as having high or low levels of structural stigma (e.g., Hatzenbuehler, Wieringa, and Keyes 2011). Using a similar approach, I rely Lane and colleagues' (2011) work to identify the location of deaf enclaves and test whether deaf individuals fare better in deaf enclaves compared to other places in the United States.

HYPOTHESES: SOCIAL AND ECONOMIC WELLBEING AMONG DEAF INDIVIDUALS IN DEAF ENCLAVES

If structural stigma against deaf individuals was reduced in deaf enclaves as previous qualitative research suggests (Groce 1985; Lane et al. 2011), I hypothesize that deaf individuals had greater social and economic opportunities if they lived in deaf enclaves compared to elsewhere in the United States. I do not expect to see the same increase in opportunities for hearing individuals who lived in deaf enclaves, since this reduction in structural stigma was unlikely to affect them. To test my hypotheses, I compare the experiences of deaf people in and outside of deaf enclaves relative to hearing people in and outside of deaf enclaves. If deaf people experienced substantial gains in wellbeing when they lived in a deaf enclave while hearing people did not, I can be more confident that structural stigma contributed to disparities in these outcomes.

In the following chapters, I explore the extent to which structural stigma contributed to employment, marriage, and establishing an independent residence by testing whether deaf individuals who lived or grew up in deaf enclaves were more likely to achieve these outcomes than their peers living elsewhere—and whether deaf individuals received greater benefits from living in deaf enclaves relative to their hearing peers. While it could be the case that deaf enclaves provided greater opportunities for employment, marriage, and establishing an independent residence not just for deaf people but for everyone, hearing people should not directly benefit from the reduced structural stigma towards deaf individuals in these places. As such, the relationship between enclave residence and these outcomes should be *stronger* for deaf individuals. In order to test the following hypotheses, I estimate conditional models that include the interaction of whether the individual is deaf and whether she/he lives in a deaf enclave. If this interaction is positive and statistically significant, this shows that deaf individuals received a greater benefit from living in a deaf enclave compared to their hearing peers.

I focus on the immediate consequences of structural stigma in my first two empirical chapters and examine the long-term consequences of stigma in my final empirical chapter. I test whether adult enclave residence was associated with employment in Chapter 4, and focus on and marriage and establishing an independent residence among young adults in Chapter 5. In Chapter 6, I test whether exposure to structural stigma during childhood has long-term consequences for marriage by examining whether childhood enclave residence is associated with marriage 30 years later.

Chapter 4: Deaf Enclave Residence and Employment, 1850

Chapter 4 focuses on employment in 1850 using data from the full 1850 census. Although deaf men were less likely to be employed than hearing men during the 19th century

(Buchanan 1999), deaf men living in enclaves may have had greater access to labor market opportunities compared to their peers living elsewhere. If community attitudes towards deaf individuals were more favorable in deaf enclaves compared to mainstream society, deaf men living in deaf enclaves should have faced less discrimination from hearing employers. Given the greater representation of deaf individuals in deaf enclaves, deaf men likely had greater opportunities to form ties with one another and could support their peers' employment by hiring them as workers, purchasing their goods and services, or letting them know about employment opportunities (Royster 2003). These ties could also benefit employment indirectly by sharing knowledge about schools for the deaf, which provided both academic and vocational training (Buchanan 1999).

H1: Living in a deaf enclave is positively associated with employment among deaf men in 1850. (I.e., I expect that the interaction term for being deaf and living in a deaf enclave is positive and statistically significant.)

Chapter 5: Deaf Enclave Residence, Marriage, and Establishing an Independent Residence, 1850

Chapter 5 focuses on marriage and establishing an independent residence in 1850 using data from the full 1850 census. I examine these two outcomes together because they tightly linked during the 19th century—marriage was the main way that young adults were able to establish their own households (Volo and Volo 2007). Deaf individuals were less likely to marry than their hearing peers (Fay 1898), but deaf enclaves may have provided additional opportunities to find a marriage partner. First, having a greater concentration of deaf individuals in a deaf enclave means that deaf people would have a greater chance of finding a marriage

partner who was also deaf—this would help potential partners form the romantic and emotional connection that was necessary for marriage (Rothman 1987). Second, if community attitudes in deaf enclaves are more favorable towards deaf people, hearing people should be more likely to consider their deaf peers as attractive marriage partners.

H2: Living in a deaf enclave is positively associated with marriage among deaf young adults in 1850. (I.e., I expect that the interaction term for being deaf and living in a deaf enclave is positive and statistically significant.)

Previous research has not yet examined whether deaf young adults were less likely to have an independent residence, but given the dominant attitudes at the time it seems plausible that they faced barriers in this dimension of social life. If community attitudes in deaf enclaves were more favorable towards deaf people—especially if they were less likely to be seen as dependent on others—deaf young adults may have had greater opportunities to establish independent residences, either by moving into their own households or boarding. If deaf men also had greater employment opportunities in deaf enclaves, this would increase their ability to meet the financial demands necessary to move out of their parents' homes. Furthermore, if living in a deaf enclave increases the chances that deaf young adults are able to marry, this should also increase their chances of living in their own household and decrease their chances of living in their parents' household (Coontz 2000). Deaf young adults living in deaf enclaves may have also had greater freedom to pursue other independent living arrangements by boarding, but this option was much more common among unmarried people (Volo and Volo 2007).

H3: Living in a deaf enclave is positively associated with having an independent residence—either in one's own household or as a boarder—among deaf young adults in 1850. (i.e., I expect

that the interaction term for being deaf and living in a deaf enclave is positive and statistically significant.)

H4: Greater marriage opportunities for deaf individuals in deaf enclaves explains some or all of the variation in living arrangements among young adults in 1850. (I.e., I expect that accounting for differences in marriage will reduce the size of the interaction term for being deaf and living in a deaf enclave and may make it no longer statistically significant.)

Chapter 6: Childhood Deaf Enclave Residence and Marriage in Adulthood, 1880

Chapter 6 chapter examines whether exposure to structural stigma during childhood in 1850 has long-term consequences for marriage among adults in 1880. I examine this question using an original dataset that links samples of deaf and hearing males across the 1850 and 1880 US censuses, which is described in Chapter 2. The bulk of previous research on structural stigma has focused on a single point in time and uses cross-sectional data, but a few studies have found lasting effects of exposure to stigma. For instance, Link and colleagues (1999) found that perceived stigma among men with mental health and substance abuse issues was associated with increased depressive symptoms one year later. Whether exposure to structural stigma during childhood contributes to individual outcomes in adulthood remains an open question.

Childhood experiences have consequences for a variety of adult outcomes, including health and longevity (e.g., Blackwell, Hayward, and Crimmins 2001; Hayward and Gorman 2004), socioeconomic status (e.g., Duncan, Ziol-Guest, and Kalil 2010; McLeod and Kaiser 2004), and marriage (e.g., Umberson et al. 2005; Whisman 2006). Exposure to structural stigma during childhood could affect the chances of marrying in adulthood through several pathways. First, exposure to stigma is stressful (Link et al. 1991) so living in an environment with greater structural stigma could lead to worse psychological wellbeing. For example, exposure to stigma

in childhood and adolescence is a risk factor for internalizing and externalizing problem behaviors (Bos and Gartrell 2010). Children living in deaf enclaves may have been protected from this stress and its psychological consequences, which could make them more attractive marriage partners as adults. Second, structural stigma could affect norms around marriage for stigmatized groups and children may internalize these norms. Deaf people were less likely to marry than hearing people (Fay 1898) but if marriage was more common among deaf adults in deaf enclaves, deaf children in these places would be more likely to see marriage as an attainable outcome and expect to marry as adults. Hearing children would also be more likely to see examples of married deaf adults, which might increase their willingness to eventually marry a deaf partner. Third, exposure to structural stigma during childhood could affect educational attainment and socioeconomic status in adulthood. This was likely a key factor for deaf enclaves, since attending a residential school for the deaf was a huge resource for deaf individuals during this time (Van Cleve and Crouch 1989). Deaf enclaves appear to have facilitated education among their deaf residents (Lane et al. 2011). Beyond their educational value, these residential schools provided opportunities for deaf individuals to meet new deaf peers and develop relationships that could lead to marriage.

H5: Living in a deaf enclave in 1850 during childhood is positively associated with marriage in 1880 among deaf men in adulthood. (i.e., I expect that the interaction term for being deaf and living in a deaf enclave in 1850 is positive and statistically significant.)

ALTERNATIVE EXPLANATIONS

If I do find support for my hypotheses, a key remaining challenge is determining whether differences in structural stigma produced these patterns. Beyond reduced structural stigma, deaf

enclaves likely differed from other places in the United States in many ways and may have possessed other traits that affected deaf individuals' wellbeing. These traits, or potential alternative explanations, include support for progressive values, favorable labor market conditions, availability of potential marriage partners, and availability of boarding opportunities. By accounting for these differences in local environments, I can better isolate the role of structural stigma for deaf individuals' opportunities for employment, marriage, and establishing an independent residence.

Progressive values

Deaf individuals likely fared better in places that were more progressive. In 1850, America was amid "the most fervent and diverse outburst of reform energy in American history" (Walters 1978, p. ix). Americans became increasingly concerned about human suffering—especially among marginalized groups of all kinds, including disabled individuals, prisoners, slaves, and women (Mintz 1995). Progressive reform movements during this era focused on causes such as abolishing slavery, expanding women's rights, providing free public education (including for deaf children), freeing mentally ill inmates from prison, and establishing institutions like hospitals, almshouses, and asylums. These reform efforts were closely linked; they were called "the Sisterhood of Reforms" and "one was expected to accept all, if any" (Thomas Wentworth Higginson as quoted in Walters 1978, p. ix). Most reformers during this era lived in the Northeast and were especially concentrated in New England (Mintz 1995). These reformers sometimes focused their attention on deaf people and their efforts led to and supported the establishment of schools for the deaf. The local community's level of support for progressive values could affect many areas of life for deaf people, including employment, marriage, and

establishing an independent residence. If deaf enclaves were more progressive than other places in the US, this could explain why deaf people had greater opportunities in these places.

In 1848, progressive reformers created a new political party called the Free Soil Party to oppose the expansion of slavery (Rayback 1970). The two main political parties at the time (Democrats and Whigs) were torn on the issue of slavery and whether it should be allowed to extend into new territories acquired through the Mexican-American War and a treaty with Great Britain and neither side took a firm stand on this issue. This frustrated progressive activists and they formed the Free Soil Party to promote abolitionism and other progressive values (Rayback 1970). Although the Free Soil Party presidential candidate, Martin Van Buren, did not win the 1848 election, he received 10 percent of all votes and as much as 25 percent in some New England counties, which was remarkable considering how new the party was (Walters 1978). County-level differences in voting patterns for the 1848 presidential election can, thus, shed light on the extent to which local communities supported progressive values.

Labor market structure

Deaf men may have been more likely to be employed in places with favorable labor market conditions. I focus on three labor market conditions that may have particularly benefited deaf men and may have also been more common in deaf enclaves. First, deaf men may have been more likely to be employed if they lived in places with greater farming opportunities. Leaders of deaf organizations argued during the 19th century that farming was the best occupation for deaf men because it provided autonomy and did not subject deaf men to the biases of hearing employers (Buchanan 1999). Furthermore, farming households could be self-sufficient and required less contact with the outside world the working in a factory or other jobs that involve employer-employee relationships. In 1850, farming was by far the most common

occupation for men (Sobek 2001) so deaf enclaves were not unique places in terms of providing abundant farming opportunities. Yet deaf enclaves could have provided more farming opportunities than some places, especially large cities like New York City and Baltimore.

Deaf men also may have excelled in places with greater opportunities to work in artisan or craft trades. Specifically, they may have benefited from places with opportunities to work in shoemaking, cabinet-making, and tailoring, because schools for the deaf provided training in these trades (Buchanan 1999). These schools taught students how to use and care for tools to allow them to compete in the labor market with hearing peers (Fay 1893). Shoemaking was an especially useful trade for deaf individuals because it required little capital to start and work was plentiful in most places (Fay 1893). Apprenticeships in craft trades flourished in colonial New England and were less popular in the middle and southern colonies that primarily relied on indentured servants and slave labor (Rorabaugh 1988). Additionally, several towns in Essex county, Massachusetts—which were relatively close to the Henniker, New Hampshire deaf enclave identified by Lane and colleagues (2011)—had vibrant shoemaking industries during the mid- to late 19th century and produced a huge share of the nation's shoes (Mulligan 2006).

Finally, deaf men may have been more likely to be employed if they lived near an active whaling port. The whaling industry was at its peak during 1850 and this time period was considered the "golden age" of whaling in America (Dolin 2008). Martha's Vineyard had an active whaling port and several deaf members of this community worked on whaling and fishing boats (Groce 1985). Whaling was very profitable and generated wealth in places with whaling ports (Dolin 2008). Places with active whaling ports, therefore, may have generated other employment opportunities beyond fishing and whaling and created a tight labor market.

Marginalized groups tend to benefit from tight labor markets (Couch and Fairlie 2010), so deaf men may have benefited from living near an active whaling port.

In sum, these local labor market conditions—specifically, the availability of opportunities to work in farming, artisan trades, or near an active whaling port—may explain why deaf men were more likely to be employed if they lived in a deaf enclave.

Availability of potential marriage partners

People are more likely to marry when they have access to a greater number of potential marriage partners (Becker 1973). The local sex ratio—i.e., the number of men relative to the number of women—is a major factor for marriage timing and prevalence. Men are less likely to marry and tend to marry later if they live in places with relatively few women, and vice versa (Becker 1973). Deaf individuals may have been particularly affected by sex ratios since they were less likely to marry in general—this pattern may have been exacerbated in places with an unbalanced sex ratio. For example, deaf men may have faced especially difficult chances of marrying if they lived in a place with more males than females. In contrast, deaf men may have been better able to compete with their hearing peers in the marriage market if they lived in a place with few males relative to females. During the 19th century, some places had very imbalanced sex ratios; for instance, in 1850 there were fewer than 600 white females for every 1,000 white males in West (de Graaf 1980). If deaf enclaves had favorable sex ratios, this could explain why deaf people were more likely to marry in these places.

Availability of boarding

Many young people established an independent residence during the 19th century by becoming a boarder (Volo and Volo 2007). Although previous research has not yet examined whether deaf young adults were less likely to board compared to their hearing peers, deaf

enclaves may have provided greater opportunities for deaf youth to do so. Boarding was especially common among young women who worked in the textile mills in the Northeast (Volo and Volo 2007). If deaf enclaves had greater boarding opportunities than other places, this could explain why deaf young adults were more likely to have an independent residence in deaf enclaves.

MECHANISMS

I also explore two potential mechanisms, or pathways through which deaf enclaves could have provided greater social and economic opportunities to deaf individuals. These potential mechanisms are (1) a greater local representation of deaf individuals and (2) greater hereditary deafness.

Local representation of deaf individuals

As described earlier in this chapter, having a greater local representation of the stigmatized group is one of the key ways that structural stigma is reduced. Therefore, if deaf people had greater opportunities in deaf enclaves, their greater local representation in deaf enclaves may have been at least partially responsible.

Hereditary deafness

Having a greater prevalence of hereditary deafness in deaf enclaves may have benefited deaf individuals in several ways. First, individuals with hereditary deafness are much more likely to have deaf family members, including deaf parents. Deaf children tend to have greater language proficiency when they have a deaf parent who can teach them sign language (Prinz and Strong 1998). In contrast, deaf children without deaf family members may not have learned any language before attending a school for the deaf later in during childhood or adolescence. Having deaf family members can also buffer against stigma and even lead to a shared positive identity,

as happened with the Brown family in the Henniker, New Hampshire deaf enclave (Lane et al. 2011). Having greater language skills and greater protection against the stress of dealing with stigma could have benefited deaf individuals in many ways that could have directly or indirectly affected their chances of being employed, marrying, or living independently.

Second, people who became deaf due to hereditary causes were likely healthier, on average, compared to those who became deaf due to accidents or illnesses, since these accidents or injuries may have caused other (unmeasured) health conditions. Healthier individuals are more likely to be employed (Ross and Mirosky 1995) and marry (Guner, Kulikova, and Llull 2018).

CONCLUSION

This study leverages historical variation in structural stigma towards deaf individuals to examine the consequences of structural stigma. I make four contributions to the literature on structural stigma. First, I focus on deaf individuals— a group that has not yet been examined in the structural stigma literature. Second, I focus on the mid- to late 19th century, which can broaden our understanding of the consequences of structural stigma across time. Third, I focus on outcomes that have received less attention in the current research on structural stigma: employment, marriage, establishing an independent residence. Finally, I examine whether exposure to structural stigma during childhood is associated with marriage 30 years later in adulthood, which is a longer timeline than has been examined in previous studies. This study also tests the social model of disability and can shed light on how much social conditions matter for people with disabilities. I provide more information on the details of my study, including my data sources, measures, and analytic strategy, in the following chapter.

CHAPTER 2: DATA AND METHODS

DATA

1850 full US census

The primary data source for this study is the 1850 full census, which is publicly available through IPUMS (Ruggles et al. 2015). The 1850 census was the first census to collect information on every (free) individual, rather than aggregated statistics per household. The 1850 census is the only available data source that contains information on every person interviewed in the United States and whether they were deaf. Given that deafness is rare (i.e., the 1850 census only included about 11,000 deaf individuals in a total population of over 23 million), having information on every deaf person is necessary to test whether those living deaf enclaves had different experiences than those living elsewhere. The 1850 census collected few details on each person beyond basic demographic information; see Figure 2.1 for a sample page of the 1850 census. Despite its limitations, the 1850 census does contain valuable information on living arrangements (from which IPUMS staff are able to infer family relationships including marriage, described in greater detail below) and men's occupations, which makes it possible to examine employment, marriage, and independent residences. I keep all deaf individuals and a random 5% of hearing individuals from the 1850 census. Each empirical chapter uses a subsample of these data, which are described in greater detail in the "SAMPLES" section below.

1848 Presidential Election Voting Data

To better account for community support for progressive values in 1850, I include data on voting patterns from the 1848 presidential election from the Database of [United States] Congressional Historical Statistics, 1789-1989. These data contain state- and county-level statistics on voting patterns and other political behaviors across two centuries and are publicly

available through ICPSR (Swift et al. 2009). I merged variables on each county's share of votes for the presidential candidates in the 1848 election to the 1850 full census data using county and state IDs.

Deaf & Hearing Northeast Boys, 1850-1880 dataset

Chapter 6 uses an original dataset of males between ages 5 and 15 who were living in the Northeast in 1850 and were linked across the 1850 and 1880 US censuses, which I am calling "Deaf & Hearing Northeast Boys, 1850-1880." This longitudinal dataset provides information on individuals at two points in time: in childhood in 1850 and adulthood in 1880. By linking individuals to their 1880 census record, I am able to see whether they had ever married as adults (by age 35-45, approximately). Additionally, the 1880 census was the first census to collect information on marital status; census-takers recorded whether each person was single, married, widowed, or divorced. I constructed this dataset by combining two samples: (1) hearing males, which I drew from the IPUMS Linked Representative Sample 1850-1880 and (2) deaf males, in which I manually linked individuals across the 1850 and 1880 censuses using Ancestry.com. I describe the linking processes for each of these samples in greater detail below.

I chose males ages 5-15 who were living in the Northeast (i.e., Maine, Vermont, Massachusetts, Rhode Island, Connecticut, New Hampshire, New York, New Jersey, and Pennsylvania) in 1850 as my target sample for several reasons. First, women were not included in the Linked Representative Sample 1850-1880 if they married between 1850 and 1880, and without information on marriage among hearing females I have no comparison group for deaf females. Second, males were traditionally expected to begin working at age 16 and were no longer considered children. Third, mortality was very high in 1850 and mortality risks were highest for those under age 5 (Jacobson 1957), so by excluding those under age 5 in 1850 I

increase my chances of finding individuals who survived to 1880. Finally, the social and economic conditions in the South and West were very different from those in the Northeast—for example, slavery was legal and widespread in the South but was banned in the Northeast and the West was much more rural and contained a much larger share of single men compared to the Northeast (de Graaf 1980)—so by limiting my analyses to those who grew up in the Northeast my comparisons between those who grew up in a deaf enclave and those who grew up elsewhere are cleaner. Additionally, I needed to focus on a selective and strategic target sample because the manual linking process (described below) that I used for my deaf sample took an enormous amount of time. I originally planned to include all US states and territories rather than only Northeastern states, but I realized that I needed to search for a smaller group in order to finish constructing this dataset in a reasonable amount of time. By limiting my search to males ages 5-15 who were living in the Northeast in 1850, I was able to finish the dataset on time while still being able to make reasonable comparisons among my groups of interest: deaf and hearing individuals and those who lived in in a deaf enclave as children and those who did not.

Hearing males

I drew my sample of hearing males from the Linked Representative Sample 1850-1880, which begins with a 1% sample of the US population in 1850 and links these individuals to their records in the 1880 full US census. IPUMS staff used five variables to create these linkages: birth year, place of birth, given name, surname, and race. This linking process is described in detail in an article by Goeken and colleagues (2011). IPUMS staff chose to only link records if there was an exact match on race and place of birth, but name and age were allowed to vary somewhat across census years. They used Freely Extensible Biomedical Record Linkage (FEBRL) software to identify all potential matches across census years to create age and name

similarity scores. For example, FEBRL would compare a white male who was born in Maine and was age 5 in 1850 against all white males born in Maine who were between ages 28-42 in 1880 and then assign all matches similarity scores for age and name using the Jaro-Winkler distance algorithm. Using pre-defined thresholds for these similarity scores, IPUMS staff retained a subset of these matches as potential links. Next, IPUMS staff evaluated these potential links using the machine-learning tool Support Vector Machine (SMV). The SMV software assigns each potential link a confidence score; positive confidence scores are considered "true" links and negative scores are considered "false" links. IPUMS staff considered cases with multiple "true" links to be ambiguous and rejected them; in other words, cases were only linked across census years if this process created only one "true" link. Consequently, they were less likely to successfully link individuals with common names and those born into states with large populations (Goeken et al. 2011).

IPUMS staff released independent linked samples for men, women, and married couples. They were only able to link women across the 1850-1880 censuses if these women were unmarried or married to the same person at both time points; women who married between 1850 and 1880 were not able to be linked across censuses since they almost universally changed their last names when they married. From the sample of men, I kept males who were between ages 5-15 and were living in the Northeast in 1850. This sample did not contain any males who were deaf; otherwise I would have dropped them to avoid duplicates with my sample of deaf males. Among this subset of the Linked Representative Sample 1850-1880 (i.e., males between ages 5 and 15 who were living in the Northeast in 1850), IPUMS staff were able to successfully link 29% of the sample to their 1880 census record (949 individuals out of 3,246 total).

Deaf males

I constructed a separate sample to link deaf males across the 1850-1880 censuses because there were too few deaf individuals in the IPUMS Linked Representative Sample 1850-1880 to examine geographic variation in wellbeing among deaf individuals. (In fact, as stated earlier, there was not a single deaf male in the IPUMS data within my target age range and geographic area.) I created these 1850-1880 linkages for deaf males manually using Ancestry.com (rather than using the same automatic process that IPUMS used to create their linkages) because a large sample is necessary to have the power to detect statistically significant differences across places and given that there were so few deaf individuals, I needed a high number of successful linkages between 1850 and 1880. Furthermore, I wanted to use deafness as a variable in my linking process and information on deafness in 1880 is only available through Ancestry.com. (The full 1880 census data that IPUMS used does not contain information on whether individuals were deaf in 1880, but it is possible to view this information on Ancestry.com.)

Beyond providing the crucial information on whether individuals were deaf in 1880, Ancestry.com also contains other valuable data sources that helped me link deaf individuals to their 1880 census records. These data sources include census records for additional years, vital records on births, deaths, and marriages, and records from the U.S. Special Census on Deaf Family Marriages and Hearing Relatives, 1888-1895—a survey conducted by Edward Allen Fay between 1889-1894 that collected information on marriages involving at least one deaf person (Fay 1898). I took advantage of the enormous wealth of information on Ancestry.com to make linkages between 1850 and 1880 for my deaf subsample.

I began my manual linking process with a spreadsheet containing a list of all deaf males between ages 5-15 who were living in the Northeast in 1850 from the 1850 census (N=660). I

created this list with the following variables from the 1850 census: unique person ID (I created this variable by combining each person's household ID with their location in the household roster), first name, last name, state name (from his current residence), county name (from his current residence), and birth year (IPUMS staff constructed this variable based on the respondent's age). From this list of individuals, I began my linking process by first locating the individual's 1850 census record on Ancestry.com. I looked for an exact match on birth year and 1850 residence (i.e., state and county) but allowed names to vary because Ancestry.com sometimes contained a different interpretation for names, especially in cases where the handwriting was hard to read. After locating a match on the 1850 census record, I made sure that the person was indeed deaf (because I found a few cases in which people were marked as deaf in the IPUMS 1850 Census data but their census records did not match this) and then used the information from their 1850 census record to create a new person record on Ancestry.com.

Next, I tried to locate the individual's 1880 census record. When possible, Ancestry.com includes links to "suggested records"[3] on its site that it thinks may belong to the same individual. I looked for a link to an 1880 census record and opened it up if one was present. If not, I searched for the individual's 1880 census record. By default, the search function on Ancestry.com uses the following variables in its search criteria: first name, last name, birth year, birth place, previous residence, and gender. All of these variables come from the 1850 census since I used this record to create my person record. This search can be customized in a variety of

[3] Ancestry.com explains why it in includes "suggested records": "Using the information from this record transcription, Ancestry searches for other records that may be related to the same person. The suggestions system also looks at people in trees to which this record has been saved to see if there are additional records saved to those people. These records are displayed here to aid you in finding other records that may help you in your research." (Ancestry.com accessed 4/21/19)

ways, including adding additional variables or limiting searches to exact matches on certain variables, but in most cases I used the default settings. Once I located an 1880 census record either through the "suggested records" links or using a targeted search, I reviewed it for accuracy, paying most attention to whether the person was recorded as deaf. If he was deaf and his name and age were reasonably close matches, I considered this to be a successful link. If he was not marked as deaf but was living with one or more family members that he had been living with in 1850, I looked for additional records (e.g., census records from additional years, Fay marriage records, etc.) to corroborate that this was indeed a correct match. If he was not marked as deaf and was not living with any family members that I recognized from his 1850 census record, I rejected this as a successful link. If my initial search did not yield a successful link, I broadened my search to include additional records and then saved any additional matching records (which I determined by the same method: primarily looking to see that the individual was deaf and that their name and year of birth were relatively close, but also considering family relationships in ambiguous cases) to his person record. I did this because adding additional information to the person record sometimes resulted in better searches that eventually led me to the correct 1880 census record. For example, in several cases I found that the person I was looking for started using his middle name, so including his middle name in my search makes it more likely that I eventually find the correct 1880 census record. If I was not able to find a matching 1880 census record after searching the full Ancestry.com database, I took short notes on what I was able to find. If I was able to find evidence that he had ever married (from the Fay marriage records) or died (from death records or occasionally from a sibling's Fay marriage record) before 1880, I recorded this information. I also noted the latest matching record I was able to find.

When I was confident that I had found a successful link, I recorded the following information from the 1880 census record in my spreadsheet: county of residence, state of residence, marital status, whether he was the head of his household, whether he was employed, his occupation, whether his spouse was deaf (if he was married), and whether he was marked as deaf in 1880. If I was not able to find a correct match in 1880, I left these fields blank. I repeated this process for each person in my list.

As I went through my manual linking process, I dropped cases from my sample because they were not deaf (n=3) or because they were duplicates of another record (n=72). Duplicates were relatively common among students who were attending residential deaf schools. It appears as though residential deaf schools reported their entire student body, but many of these students had an additional census record for their usual homes. In these duplicate cases, I dropped the record for the residential deaf school and retained the home census record. If I found two records for the same person and neither one was for a residential deaf school, I dropped the second one in my list. Among my manually-linked sample of deaf males (i.e., deaf males between ages 5 and 15 who were living in the Northeast in 1850), I was able to successfully link 46% to their 1880 census record (267 individuals out of 585).

Full sample (deaf and hearing males)

I appended my deaf and hearing subsamples to create my Deaf and Hearing Northeast Boys, 1850-1880 dataset. This dataset contains 1,216 individuals who were successfully linked to their 1880 census records (out of 3,831 who could have possibly been linked). Having a successful linkage rate of 32% seems low, but the benefit to this sample is that I am confident that these linkages are valid, which is much more important than having a higher linkage rate with more ambiguous matches. Furthermore, a low linkage rate is unavoidable given the limited

information available in these censuses, the human error that went into recording the original records and transcribing them into digital records, and the large numbers of people who share the same names or similar names. This linkage rate also does not take into account those who died before 1880 or left the United States, which could be a sizeable portion of this sample. Among my deaf sample, I found evidence that 15% of those who were not successfully linked to their 1880 census records had died before 1880. (Perhaps mortality rates were higher among deaf individuals; unfortunately, there is no available evidence on mortality for my hearing sample.)

I was able to achieve a higher linkage rate among my deaf sample compared to the IPUMS sample by manually linking individuals and using deafness as an additional variable, and since deafness is rare, this increases my ability to make correct matches. Since the deaf and hearing samples use different linkage procedures, I carefully examine my constructed dataset for sources of bias, which is described in greater detail in Chapter 6.

SAMPLES

Working-aged men in 1850

Chapter 4 focuses on employment among men in 1850 and uses a sample of working-aged men between ages 21 and 80 from the 1850 census (see Figure 2.3). I restrict my analyses to males because employment information was not collected for females. Employment was common among men of all ages, but I exclude the oldest men who may have been out of the labor force due to declining health. I also exclude males under age 21 because information on literacy was only collected for those ages 21 and older and this may be an important predictor of deaf men's employment. I began with the full sample of deaf individuals and a random 5% sample of hearing individuals in the 1850 census. I kept males between ages 21-80 (N= 241,951). I then excluded those who were currently attending a residential deaf school (n = 71)

because census-takers did not collect information on employment for students who were currently attending a residential deaf school and most were likely out of the labor force while attending school. I also exclude those living in states or territories that did not vote in the 1848 presidential election (N= 8,678). This number includes those living in: (1) US territories—which were not allowed to vote—in areas that are now California, Minnesota, New Mexico, Oregon, Washington, and Utah; (2) the District of Columbia, which was also not allowed to vote; and (3) South Carolina, which did not have a popular vote in 1848; instead, their 9 electoral college votes were determined by 9 individuals chosen by the state legislature.

Next, I use a listwise deletion strategy to exclude cases that are missing data on any of my analytic variables. I chose this strategy (rather than multiple imputation) since I have missing data for less than 5% of my cases. I dropped cases due to missing data on country of birth (n = 640); literacy status (n= 205); and county-level voting data from the 1848 presidential election (n= 6,717). I had to exclude 38 counties due to missing voting data because they were created from two or more counties between 1848 and 1850 (i.e., the 1850 county did not exist as such in 1848 and therefore did not have data on its voting patterns). I had to exclude 56 counties because they did not have valid voting data for unknown reasons. In total, I had to exclude 6,717 individuals living in 94 counties because of missing data on the 1848 presidential election. My final analytic sample contains 225,640 individuals, including 3,127 deaf individuals.

Young adults in 1850

Chapter 5 focuses on marriage and establishing an independent residence among young adults in 1850 and uses a sample of men and women between the ages 21 and 40 from the 1850 census (see Figure 2.3). Since the 1850 census did not ask about marital status, I use variables on family relationships from the household roster to infer whether young adults had ever married

and whether they were living in an independent residence in 1850 (described in greater detail below). I chose this age range because this is the life course stage in which most people married for the first time and established independent residences. I began with the full sample of deaf individuals and a random 5% sample of hearing individuals in the 1850 census. I kept those between age 21 and 40 (N=307,196). I then excluded those who were attending a residential school for the deaf (n=114) because it is ambiguous as to whether their living arrangements should be considered "independent" and whether they are married. I also exclude those living in territories or states that did not vote in the 1848 election (n=9,861).

Given that I have missing data for less than 5% of my cases, I use a listwise deletion sample. I dropped cases due to missing data on country of birth (n = 686); literacy status (n=155); and county-level voting data from the 1848 presidential election (n= 9,034). My final analytic sample contains 287,346 individuals including 3,115 deaf individuals.

Deaf & Hearing Northeast Boys, ages 5-15 in 1850

Chapter 6 focuses on marriage in 1880 and uses data from my constructed dataset, Deaf and Hearing Northeast Boys, 1850-1880 (see Figure 2.5). As described earlier, these data contain a sample of males between ages 5 and 15 who were living in the Northeast in 1850 and were successfully linked to their 1880 census record. I drew a listwise deletion sample from these data. I dropped cases that were missing country of birth in 1850 (n=1), county-level data from the 1848 presidential election (n=27), and marital status in 1880 (n=2). My analytic sample includes 1,204 individuals, including 263 deaf individuals.

MEASURES

The following section describes the variables used in my three empirical chapters. Most of the variables from the 1850 census are also included in the Deaf & Hearing Northeast Boys, 1850-1880 dataset, but a few exceptions are noted below. All variables from the 1880 census are only available in the Deaf & Hearing Northeast Boys, 1850-1880 dataset.

1850 census

Outcome variables

Currently employed. I use a dichotomous variable indicating that the respondent was currently employed (=1) in 1850. IPUMS staff created this variable based on the occupation of each male over age 15. They considered a man to be employed (=1) if he was recorded as having any occupation.

Living arrangements & Independent residence. I create a categorical variable to capture four different kinds of living arrangements: respondents are coded as: (1) "living in own household" if they are listed as the household head or the household head's spouse; (2) "boarding" if IPUMS staff coded their relationship to the household head as "Roomers/boarders/lodgers"; (3) "living in a parent's household" if they have a mother or father in their household and they are not the household head or household head's spouse; and (4) "other" if any of the previous conditions are not met. The "other" category includes people who are living with siblings, other family members, in poorhouses, or in other institutions like jails or military housing. The category (1) "living in own household" includes some young adults who are living with a parent. I chose to count these individuals as having their own households rather than living in a parent's household because if the parent is not listed as household head or the

head's spouse, this implies that the parent moved into the child's household or that the parent is no longer in charge of the household and has shifted responsibility to the child (Ruggles 2007).

From this categorical variable on living arrangements, I create a dichotomous variable indicating that respondents have an independent residence (=1) if they are living in their own household or are boarding. In other words, I combine categories (1) "living in own household" and (2) "boarding" to indicate an independent residence and combine categories (3) "living in a parent's household" and (4) "other" to indicate a non-independent residence.

Ever married. I use a dichotomous variable indicating that the respondent was ever married if he or she has a spouse or own children present in the household. The 1850 census did not collect information on marital status; however, IPUMS staff constructed several variables on family relationships based on age, sex, last name, and position in the household roster. Census takers were instructed to record the household head first, followed by his wife, his children, and finally any other family members and unrelated household members such as servants or boarders. IPUMS staff used information in the household roster to infer family and household relationships, including spouses and children. I consider individuals to have ever been married (=1) if they have a spouse or their own children in the household based on the family relationship variables created by IPUMS staff. There will be some instances in which marital status is incorrectly assigned. Individuals who are married but not living with their spouse or own children will be miscategorized as never married, and those who have children outside of marriage will be miscategorized as ever married, but childbearing outside of marriage was relatively uncommon in the 19th century (Rothaman 1984).

Deaf spouse[4]. I use a dichotomous indicator that the respondent has a deaf spouse in their household (=1) using a variable that was constructed by IPUMS staff. This variable has a value of 1 if the respondent has a spouse in the household and if that person was recorded as deaf; otherwise it has a value of 0.

Predictor variables

Deaf. I use a dichotomous indicator that the person was deaf based on the "DEAF" variable from the 1850 census that was constructed by IPUMS staff (Ruggles et al. 2015). Census-takers were instructed to write in whether each person was: "deaf and dumb, blind, insane, idiotic, pauper, or convict". I consider those who were marked as "deaf" or "deaf and dumb" to be deaf (=1).

Deaf enclave residence. I create my variable indicating deaf enclave residence in 1850 using the work of Lane and colleagues (2011). They identified three locations as prominent deaf enclaves in the 19th century: New Hampshire (Henniker and nearby towns); Maine (the Sandy River region in Southern Maine), and the island of Martha's Vineyard in Massachusetts. In order to locate individuals living in one of these enclaves, I use the smallest geographic unit consistently available in the 1850 census: the county. I classify places in New Hampshire and Maine as being part of a deaf enclave by locating every town mentioned in Lane et al.'s (2011) study within their 1850 county boundaries. They identified six towns in New Hampshire that were located within two counties (Merrimack and Hillsborough) in 1850 and ten towns in Maine that were located within two counties (Franklin and Kennebec) in 1850. I coded these five counties (two in New Hampshire, two in Maine, and Dukes county containing Martha's Vineyard in Massachusetts) as "core" enclave locations. However, Lane et al. (2011) note that

[4] This variable is not available in the Linked Representative Sample 1850-1880.

the borders of the Maine and New Hampshire enclaves are fuzzy. Moreover, the values and norms of these places may have spilled over to surrounding counties. To account for this, I also identified all counties bordering the New Hampshire and Maine core enclave counties. In 1850, there were 9 counties that shared a border with the New Hampshire core enclave counties and 6 counties that shared a border with the Maine core enclave counties. I code these 15 counties as "periphery" enclave locations. As an island, Martha's Vineyard in shares no borders with other counties and was described as having a culture that is totally distinct from mainland Massachusetts at this time (Groce 1985), so I do not code any periphery counties for the Martha's Vineyard location. See Figure 2.2 for a graphic representation of these deaf enclave locations. I aggregate the 5 core counties and 15 periphery counties, such that anyone who lives in any of these 20 counties is counted as living in a deaf enclave (deaf enclave residence=1). Due to the small number of deaf individuals living in deaf enclaves, I am not able to detect statistically significant differences when I separate the three deaf enclave locations, so I rely on my aggregate measure for all multivariate analyses.

Control variables

Age. I measure age in 1850 in years. I also include age squared in models predicting employment to account for a nonlinear relationship.

Sex. I measure sex using a dichotomous variable indicting that the respondent is female (=1). When examining outcomes that are available for both men and women (marriage and independent residence in 1850 in Chapter 5), I estimate separate models for men and women.

Race. I measure race using a dichotomous variable indicating that the respondent has been identified as non-white (=1). Census-takers were instructed to record whether respondents were "black" or "mulatto" or another race (such as Native American, although few Native

Americans were included in the 1850 census) and to leave this space blank for "white" respondents.

Nativity. I measure nativity using a dichotomous variable indicating that the respondent was foreign-born (=1) if they were born outside the United States. IPUMS staff constructed this variable using the recorded place of birth for each respondent in 1850.

Other disability[5]. I measure disability status using a dichotomous variable indicating that the respondent has a disability (=1) if they were recorded as any of the following: "dumb" (meaning they can hear but cannot speak), "blind", "idiotic", or "insane" on the 1850 census.

Literacy. I measure literacy using a dichotomous variable that the respondent cannot read and write (=1). Census-takers were instructed to record this information for every person above age 20.

Is not living with a parent. I created a dichotomous variable indicating that the respondent is not living with a parent (=1) if the respondent does not appear to be in the same household as his/her own mother or father in 1850. I created this variable using the variables on family and household relationships that were constructed by IPUMS staff, as described earlier.

Is attending a residential school for the deaf. I created a dichotomous variable indicating that the respondent was attending a residential school for the deaf in 1850 (=1) based on information from several variables: (1) the respondent was deaf; (2) the respondent was living in a group-quarters type household (e.g., "Deaf, blind school", "Home, other dependent"); and (3) the respondent was listed as attending school within the last year. I found students in 12 schools for the deaf and carefully checked these records against lists of schools for the deaf. These 12 schools were located in Hartford, CT; Philadelphia, PA; Danville, KY; Columbus, OH;

[5] This variable is not available in the Linked Representative Sample 1850-1880.

Jacksonville, IL; Indianapolis, IN; Floyd, GA; Spartanburg, SC; New York, NY; Augusta, VA; Wake, NC; Boston, MA. I used a Wikipedia page (https://en.wikipedia.org/wiki/List_of_schools_for_the_deaf#United_States) and Google searches to confirm some cases that were unclear.

Urbanicity. I measure urbanicity using a dichotomous variable indicating that a person was living in an urban area (=1) in 1850. Urban areas include cities and incorporated places with at least 2,500 inhabitants. IPUMS staff created this variable based on the household's geographic location in 1850.

Farming household. I measure farming households using a dichotomous variable indicating that the respondent is living on a farm (=1). IPUMS staff created this variable and counted a household as being a farm if anyone in the household has an occupation of "farmer" in 1850.

Region. I measure region using several variables for census-defined regions. I use the Middle Atlantic region (i.e., New York, New Jersey, and Pennsylvania) as my reference category because it contained the greatest share of the population in 1850. I include variables indicating the respondent lived in New England, East North Central, South Atlantic, East South Central, and West.

County-level % urban. I measure each county's level of urbanicity in 1850 using the county's percentage of households that are located in an urban area. This variable, along with all county-level variables, is calculated using the full 1850 census data rather than my analytic samples that include all deaf and a random 5% of hearing individuals. I use the full 1850 census to ensure these variables are representative of the county's entire population and are not biased towards deaf individuals (who are overrepresented in my analytic samples).

Alternative explanation variables (county-level)

Progressive values. As a measure of general progressive values in the community, I include county-level variables on the percentages of votes in the 1848 presidential election that went to each candidate. I use variables from the Database of [United States] Congressional Historical Statistics, 1789-1989 that I linked to the 1850 census data using county and state IDs. My reference category is the percentage voting for the Whig candidate, the national winner of the election. I include the percentage voting for the conservative Democratic candidate, the percentage voting for the progressive Free Soil candidate, and the percentage voting for other candidates.

Local labor markets. I include three variables to account for local labor market conditions that may have been conducive to employment for deaf men. First, I include the county's percentage of household that are farms. Given that living on a farm is associated with the ability to marry and live independently, I also include this variable as a control in models predicting marriage and independent households.

Second, I include the county's percentage of the labor force who are employed in artisan trades for which pupils of deaf schools receive training (shoemakers, tailors, and cabinet-makers), which is based on employed males' reported occupation. The numerator for this variable is the total number of males who had an occupation of shoemaker, tailor, or cabinet-maker in each county and the denominator is the total number of males over age 15 who reported any occupation in the county.

Third, I include a dichotomous variable indicating that the county contains an active whaling port (=1), which I created using data on whaling ship departure records from Dolan (2008). I classify counties as having an active whaling port if at least one whaling ship left a port

in that county in the decade before 1850 and after 1850 (i.e., at least one ship left between 1840 and 1850 and at least one ship left between 1850 and 1860).

Sex ratio. To account for local differences in the availability of potential marriage partners, I include a variable that measures the ratio of males to females between ages 15 and 50 in each county. A value of 1 indicates that there are equal numbers of males and females, while a value above 1 indicates a greater number of males and a value below 1 indicates a greater number of females in the county.

% Boarding. To control for local variation in the availability of boarding opportunities, I include a variable indicating the percentage of the county's population that is boarding in 1850. I created this variable using the IPUMS-constructed variable measuring each person's relationship to the household head. The numerator is the total number of people who were boarding in a county and the denominator is the total number of people living in the county.

Mechanism variables (county-level)

% deaf with deaf family member in household. To better account for local differences in hereditary deafness, as opposed to deafness from illnesses or accidents that may have caused additional health concerns beyond deafness, I include a variable indicating the percentage of deaf people who were living with a deaf family member (excluding spouses).

Number deaf in county per 10,000. I account for the local representation of deaf individuals by including a variable indicating the number of deaf individuals in the county per 10,000 residents. This variable does not count students who were attending residential deaf schools since these students were living there temporarily and many of them were also counted in their home communities.

1880 census

Outcome variable

Ever married. I create a dichotomous variable indicating that the respondent was ever married (=1) in 1880 using information on marital status. In 1880, census-takers were instructed to record the marital status of each person as "Single," "Married," or "Widowed, Divorced." I code those who were recorded as either "Married" or "Widowed, Divorced" as having ever married.

Control variables

Is not currently employed. I use a dichotomous variable indicating that the respondent was not currently employed (=1) in 1880 if the respondent reported no occupation in 1880.

Deaf enclave residence. I use the same strategy to code respondents as living in an enclave in 1880 as I used in 1850 (see above), with one exception: I also counted those living in Androscoggin County, Maine as living in a deaf enclave. Androscoggin County was formed in 1854 from areas that previously belonged to 4 counties, all of which were either core or periphery enclave counties in 1850. As a result, 21 counties were counted as enclave counties in 1880.

Lives in same county as 1850. To better account for geographic mobility, I use a dichotomous indicator that the respondent is living in the same county in 1880 that he lived in 1850 (=1). This measure underestimates the number of people who remained in the same county, since several new counties were created in Northeast states between 1850 and 1880. Everyone who was living in one of these newly-created counties in 1880 would not be counted as living in the same county (=0), even if they never moved.

Region. Similar to my region variables for 1850, I measure region in 1880 using several variables for census-defined regions but use fewer categories. I use the Middle Atlantic region (i.e., New York, New Jersey, and Pennsylvania) as my reference category because it contained the greatest share of the population. I include variables indicating the respondent lived in New England and group those living in any other region together into an "outside Northeast" category. I do not use all 5 census regions since only a small share of my sample moved away from the Northeast between 1850 and 1880.

I include fewer control variables from the 1880 census compared to the 1850 census for several reasons. First, I do not include variables from 1880 that, in general, should not change over time, i.e., sex, race, and nativity. I also do not include age in 1880 since it is a direct function of age in 1850. I do not include other disability status in 1880 because it was not available in Linked Representative Sample 1850-1880 dataset. I do not include variables on urbanicity or farming households in 1880 because I was not able to determine this information from my manual linking process for deaf individuals. Finally, I do not include any county-level control variables for 1880 because I need the full census data to construct these variables and I was only working with a small sample from the 1880 census.

ANALYTIC STRATEGY

The following three empirical chapters all use the same basic analytic strategy to compare the experiences of deaf and hearing individuals in and outside deaf enclaves and test whether deaf individuals fared better if they lived in deaf enclaves compared to other locations. All three chapters use deafness and deaf enclave residence in 1850 as predictors and each chapter focuses on a different outcome. In the following multivariate analyses, I first estimate the

additive associations of being deaf and living in a deaf enclave in 1850 for each outcome (i.e., employment, marriage, or independent residence), net of individual and household control variables. Second, I estimate a conditional model that includes the interaction of whether the individual is deaf and whether she/he lived in a deaf enclave in 1850. These conditional models allow me to test my hypotheses that living in a deaf enclave was particularly beneficial for deaf individuals' wellbeing (versus equally beneficial for everyone, including hearing people). Finally, I test whether the observed pattern is explained by county-level differences between deaf enclaves and non-enclaves by including county-level variables for my potential alternative explanations and mechanisms. When predicting marriage in 1880 in Chapter 6, I also add control variables from the 1880 census.

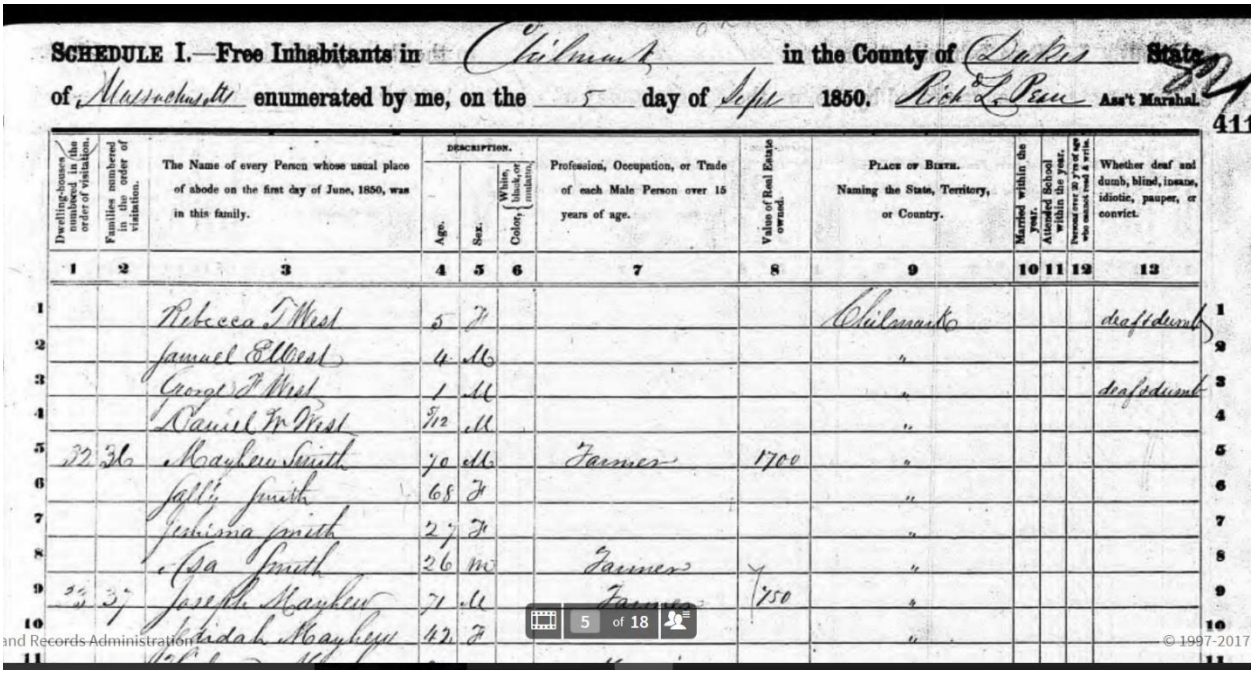
I use logistic regression to predict my dichotomous outcomes (employment, marriage, independent residence) and multinomial logistic regression to predict living arrangements in 4 categories. I tested whether I should use a multi-level modeling strategy, in which individual characteristics (level 1) are nested within counties (level 2), using the intraclass correlation. The intraclass correlation ranges from 0 to 1, with smaller values indicating less variation across counties. My intraclass correlations ranged from .017 to .046, indicating that about 2-5% of the variation in my outcome variables is across counties. Aguinis, Gottfredson, and Culpepper (2013) recommend using multilevel models if the intraclass correlation is .10 or higher. Given the very small amount of variation in my outcome variables across counties, I use the more parsimonious logistic regression models instead (Aguinis, Gottfredson, and Culpepper 2013).

In the following chapter, I compare the county-level characteristics of deaf enclave and non-enclave locations in 1850. I also compare core and periphery deaf enclave counties. These comparisons are helpful for understanding how deaf enclaves compared to the rest of the United

States and other places in the Northeast in 1850. I include these descriptive statistics in a separate chapter since I use deaf enclave residence in 1850 as my indicator of reduced structural stigma across all three empirical chapters.

Figures for Chapter 2

Figure 2.1 Sample page from the 1850 census.

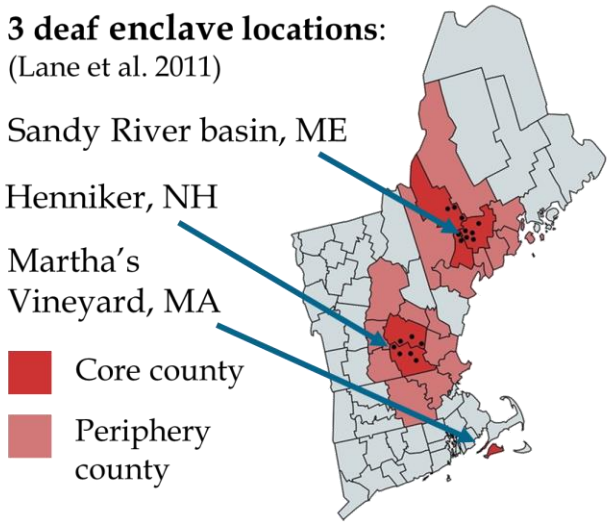


SCHEDULE I.—Free Inhabitants in Chilmark in the County of Dukes State of Massachusetts enumerated by me, on the 5 day of Sept 1850. Rich'd L. Pease Ass't Marshal.

Dwelling-houses, numbered in the order of visitation.	Families numbered in the order of visitation.	The Name of every Person whose usual place of abode on the first day of June, 1850, was in this family.	Description: Age.	Sex.	Color, (black, or mulatto)	Profession, Occupation, or Trade of each Male Person over 15 years of age.	Value of Real Estate owned.	Place of Birth. Naming the State, Territory, or Country.	Married within the year.	Attended School within the year.	Persons over 20 yrs of age who cannot read & write.	Whether deaf and dumb, blind, insane, idiotic, pauper, or convict.
1	2	3	4	5	6	7	8	9	10	11	12	13
		Rebecca T West	5	F				Chilmark				deaf&dumb
		Samuel E West	4	M				"				
		George F West	1	M				"				deaf&dumb
		Daniel M West	5/12	M				"				
32	32	Maylew Smith	70	M		Farmer	1700	"				
		Sally Smith	68	F				"				
		Jerusha Smith	27	F				"				
		Asa Smith	26	M		Farmer		"				
33	33	Jos. M. Maylew	71	M		Farmer	1750	"				
		Lydia L Maylew	42	F				"				

Image is from Ancestry.com (accessed 9/14/2017)

Figure 2.2 Deaf enclave locations



Original map created using MapChart software (https://mapchart.net/usa-counties.html) based on information from Lane et al. (2011)

Figure 2.3 Sample selection for working aged men (Chapter 4).

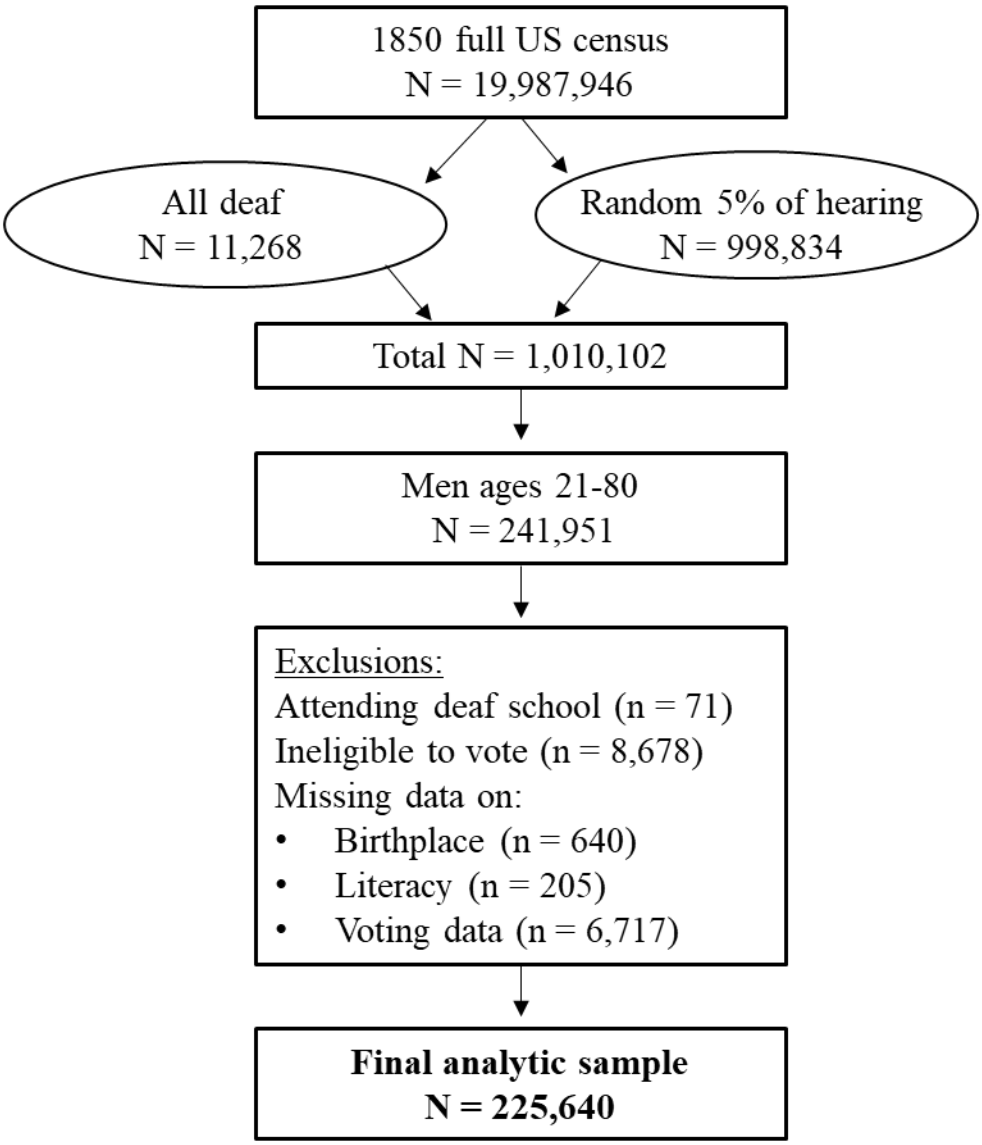


Figure 2.4 Sample selection for young adults (Chapter 5).

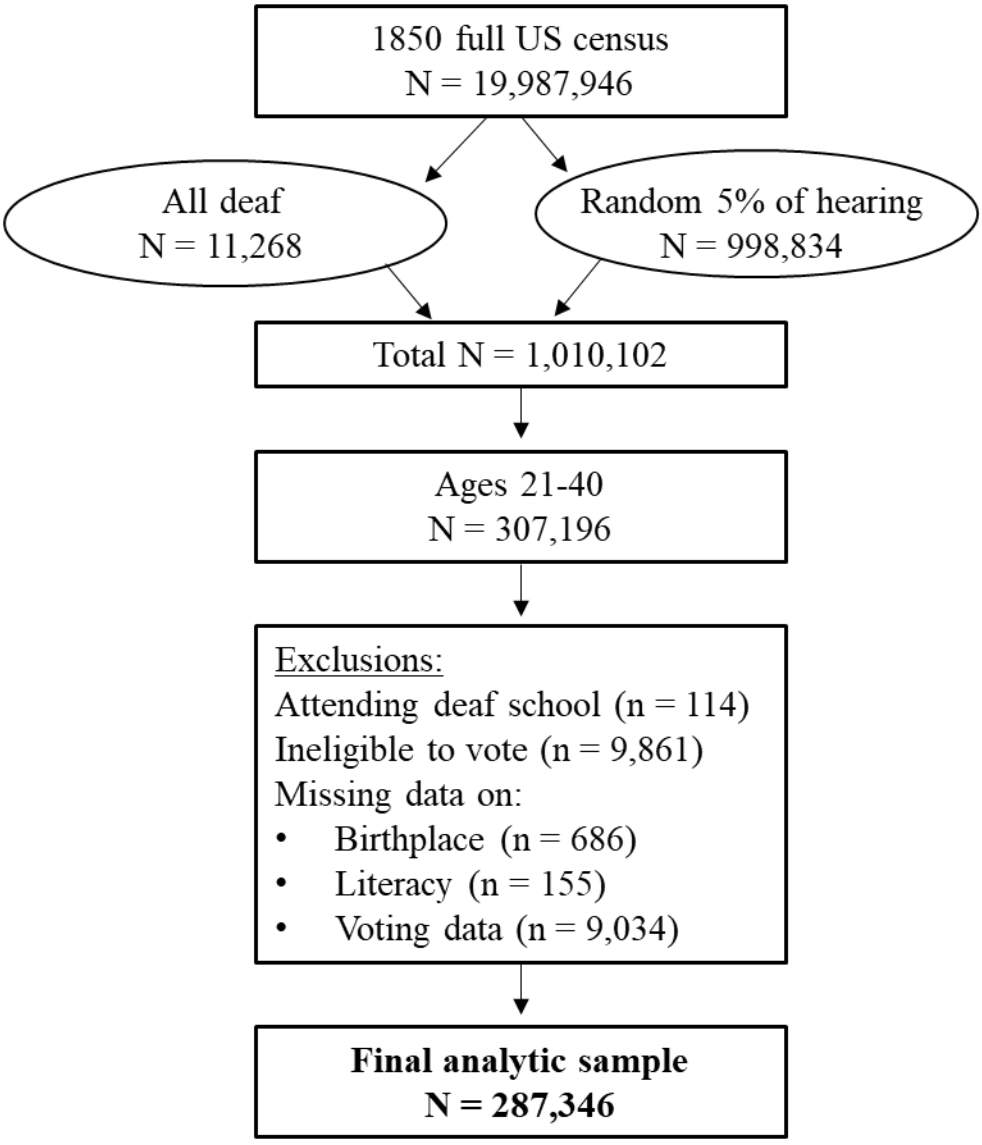
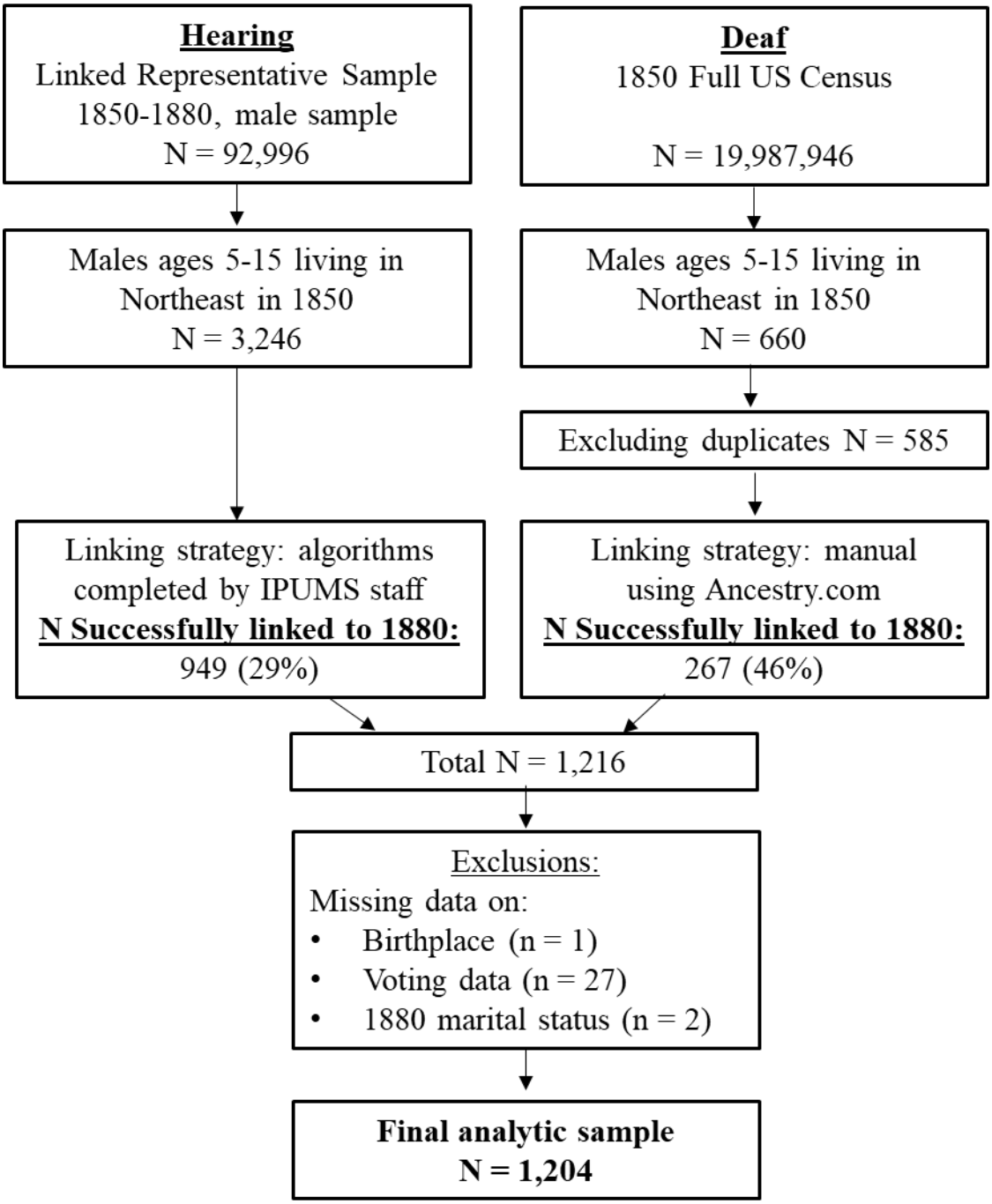


Figure 2.5 Sample selection for Deaf & Hearing Northeast Boys, 1850-1880 (Chapter 6).



CHAPTER 3: DEAF ENCLAVE & NON-ENCLAVE COMPARISONS

This chapter shows descriptive statistics on my potential alternative explanations and mechanisms within and outside deaf enclaves in 1850. Before examining multivariate models that predict social and economic wellbeing, it is important to consider how the characteristics of deaf enclaves could condition the experiences of deaf people living in them and how these characteristics may or may not explain any observed differences in outcomes between deaf and hearing people living in and outside deaf enclaves. Seeing how deaf enclaves compare to other places provides context to better understand how deaf enclaves matter for employment, marriage, and establishing independent residences.

First, I compare deaf enclave counties to all other counties in the United States and to other counties in the Northeast, excluding those who did not vote in the 1848 presidential election or whose voting data is missing, since these counties were dropped from my analytic samples. Next, I compare core deaf enclave counties, i.e., those containing towns mentioned in Lane et al. (2011) and periphery deaf enclave counties, i.e., counties sharing a border with core enclave counties.

RESULTS

I show descriptive statistics for all counties, deaf enclave counties, and non-enclave counties in Table 3.1. The first column of Table 3.1 shows the average characteristics of all counties in my analytic samples in 1850 (N=1,438). As shown here, the average county contained only about 4% of households in an urban area and 63% of its households were farms. The average county had 1.5% of its labor force working in artisan trades, only about 1% of counties contained an active whaling port, the average sex ratio was 1.1 males to every 1 female

between ages 15 and 50, and about 7% of residents were boarding. In the average county, only 4% of votes in the 1848 presidential election were for the progressive Free Soil candidate. About 11% of deaf individuals were living with a deaf family member and there were 5.2 deaf individuals per every 10,000 residents in the average county.

Next, I examine how deaf enclave counties compared to all other non-enclave counties and other non-enclave counties in the Northeast. Statistically significant differences ($p<.05$) between deaf enclave counties (N=20) and all other counties (N=1,418) are indicating with by [a], while [b] indicates significant differences between enclave counties and non-enclave counties in the Northeast (N=180).

Deaf enclaves were substantially different from the rest of the United States across most of these measures, but they share more in common with the rest of the Northeast. On average, deaf enclave counties were significantly more urban than non-enclave counties both in and outside the Northeast; about 32% of residents in deaf enclaves were living in an urban area. Deaf enclaves also contain fewer farming households (49%) compared to all other non-enclave counties but are not significantly different from other Northeast counties. Deaf enclaves contained a greater share of artisan workers in their labor force (3%) than the rest of the US but were not significantly different from other Northeast counties. Ten percent of deaf enclave counties contain an active whaling port, which is significantly higher than the average for all US counties but not other counties in the Northeast. Deaf enclave counties had a more balanced sex ratio (1.0) compared to the rest of the nation and other Northeast counties. Deaf enclaves also contained a larger share of boarders (11%) compared to the rest of the US but not other counties in the Northeast. Deaf enclave counties had a larger share of votes going to the progressive Free Soil candidate (18%) that the rest of the US but were not significantly different from other

Northeast counties. Deaf enclave counties had a substantially higher share of deaf residents compared to both the rest of the United States and other Northeast counties; on average, deaf enclave counties contained 8.8 deaf people per 10,000 residents. Surprisingly, deaf enclaves did not have a significantly greater share of deaf individuals living with a deaf family member, even though the percentage of deaf individuals living with a deaf family member is nearly twice as high in deaf enclaves compared to the rest of the nation (21% vs. 11%). It could be that these differences are not statistically significant because there is a large amount of variation (i.e., the standard deviation is 22.2) across counties.

Next, I explore whether core deaf enclave counties are significantly different from periphery enclave counties in Table 3.2. Here, statistically significant differences ($p<.05$) between core and periphery enclave counties are indicated with a *. Given that there are only 5 core enclave counties and 15 periphery counties, my ability to detect statistically significant differences is limited by power issues. I do find one statistically significant difference, however; core enclave counties contained a greater share of deaf individuals compared to periphery enclave counties. On average, core enclave counties had 33.1 deaf individuals per 10,000 residents compared to 16.3 deaf residents per 10,000 in periphery enclave counties. Two other differences stand out, though these are not statistically significant. First, core enclave counties were less urban than periphery counties (22% vs. 36%). Second, deaf enclave counties contained about twice as many deaf individuals who were living with deaf family members compared to periphery counties (33% vs. 16%).

DISCUSSION

This chapter explored the characteristics of deaf enclaves and how they compared to other counties in the United States and the Northeast in 1850. Deaf enclaves were unique places

in some respects, though they were generally more similar to other places in the Northeast. Deaf enclaves did have some labor market conditions that could be beneficial for deaf men's employment: compared to the rest of the US, deaf enclaves had greater opportunities for artisan workers and were more likely to contain a whaling port. Deaf enclaves did not offer greater opportunities for farming, however. Consistent with Lane and colleagues' (2011) expectations, deaf enclaves had greater representation of deaf individuals—both compared to the rest of the United States as well as other places in the Northeast. This greater representation was most pronounced in core enclave counties but periphery counties also had greater local representation of deaf individuals.

TABLES FOR CHAPTER 3

Table 0.1 Descriptive Statistics Comparing Deaf Enclave & Non-Enclave County Characteristics

		All counties		Non-enclave counties: All non-enclave		Non-enclave counties: Northeast		Deaf enclaves: All enclave	
	Range	mean / *p*	sd	mean / *p*	sd	mean / *p*	sd	mean / *p*	sd
Alternative explanations									
% households in urban area	0 - 97.4	4.3	14.0	3.9	13.4	16.1	25.0	32.3	22.9 [ab]
% farming households	0 - 94.7	63.2	19.3	63.4	19.3	43.5	17.8	48.9	18.8 [a]
% of employed men who are artisan workers	0 - 14.8	1.5	1.3	1.4	1.2	2.4	1.7	3.1	3.3 [a]
Contains an active whaling port	0 , 1	0.01	0.09	0.01	--	0.06	--	0.10	-- [a]
Sex ratio	.8 - 7.4	1.1	0.3	1.1	0.3	1.1	0.1	1.0	0.1 [ab]
% boarding	.8 - 51.8	6.6	4.4	6.5	4.4	9.9	3.7	10.6	4.8 [a]
1848 election results (% voting Whig omitted)									
% voting Democrat	1.9 - 100	49.0	15.9	49.0	15.9	37.8	15.5	45.4	12.7 [ab]
% voting Free Soil	0 - 58.7	4.4	9.7	4.2	9.6	14.6	14.4	18.1	8.0 [a]
% voting other	0 - 25	0.0	0.7	<0.01	0.7	<0.01	0.0	<0.01	0.0
Mechanisms									
% deaf with deaf family member in household	0 - 100	11.3	22.2	11.2	23.7	14.8	17.5	20.5	12.3
Number deaf in county per 10,000	0 - 54.6	5.2	4.9	5.2	4.8	5.5	3.7	8.8	9.6 [ab]
N		1,438		1,418		180		20	

Data come from the 1850 full census

[a] significantly different from all non-enclave counties $p < .05$

[b] significantly different from other Northeast counties, $p < .05$

Table 0.2 Descriptive Statistics Comparing Core and Periphery Deaf Enclave County Characteristics

		Core counties		Periphery		
	Range	mean / *p*	sd	mean / *p*	sd	
Alternative explanations						
% households in urban area	0 - 81.3	22.43	18.32	35.54	23.91	
% farming households	11.8 - 79.5	50.78	18.98	48.33	19.31	
% of employed men who are artisan workers	.77 - 14.8	2.94	2.31	3.14	3.61	
Contains an active whaling port	0 , 1	0.20	0.45	0.07	0.26	
Sex ratio	.77 - 1.12	0.98	0.09	0.99	0.10	
% boarding	4.4 - 20.3	10.65	5.83	10.52	4.71	
1848 election results (% voting Whig omitted)						
% voting Democrat	25.6 - 65.2	43.80	16.47	45.99	11.87	
% voting Free Soil	8.8 - 44.0	18.08	4.55	18.08	8.97	
% voting other	0 - .1	0.00	0.00	0.01	0.03	
Mechanisms						
% deaf with deaf family member in household	0 - 50.0	33.10	12.81	16.27	9.12	*
Number deaf in county per 10,000	3.72 - 48.5	15.59	18.49	6.51	2.08	
N		5		15		

Data come from the 1850 full census

* significantly different from core enclave counties, $p < .05$

CHAPTER 4: DEAF ENCLAVE RESIDENCE AND EMPLOYMENT, 1850

THE CURRENT STUDY

This chapter examines whether structural stigma affects employment opportunities by testing whether deaf men were more likely to be employed if they lived in a deaf enclave compared to elsewhere in the United States. I account for several alternative explanations that may have affected geographic variation deaf men's employment beyond stigma—including the structure of the local labor market and support for progressive values—to better isolate the relationship between structural stigma and employment among deaf men. Additionally, I examine employment among both deaf and hearing men. If structural stigma toward deaf individuals was indeed reduced in deaf enclaves, I hypothesize that deaf men should have been more likely to be employed in these locations compared to elsewhere in the United States, while hearing men residing in deaf enclaves should not have received the same gains in employment.

The following analyses use a sample of working aged males, i.e., men ages 21 to 80 from the 1850 census. This sample contains all deaf men and a random 5% of hearing men (see Figure 2.3 to see a visual representation of my sample selection). My outcome is a dichotomous variable indicating that the respondent was employed in any occupation in 1850. For the multivariate models predicting employment, I first estimate an additive model showing the average associations between deafness, deaf enclave residence, and employment, net of individual and household control variables. Next, I test whether living in a deaf enclave provided greater benefits for deaf men compared to hearing men by including an interaction term indicating that the person was deaf and was living in a deaf enclave. Finally, I add additional county-level

variables to the model to see whether the observed patterns are explained by potential alternative explanations or mechanisms.

RESULTS

Descriptive statistics

Table 4.1 displays descriptive statistics for the full sample (N=225,640) and compares deaf men (n=3,127) and hearing men (n=225,513). As shown in Table 4.1, about 92% of the full sample was employed in 1850. Only 70% of deaf men were employed while 92% of hearing men were employed. About 7% of the sample lived in a deaf enclave and a greater share of deaf men lived in a deaf enclave compared to hearing men (9% of deaf men vs. 7% of hearing men). Deaf men also differed from hearing men in several other ways: on average, deaf men were a few years older (42 years old vs. 37 years old), fewer of them were foreign-born (10% vs. 20%), more of them had a disability other than deafness (2% vs. <1%), and more of them could not read and write (19% vs. 8%). Compared to hearing men, deaf men were also slightly less likely to live in an urban area (16% vs. 22%) and were more likely to live in a farming household (40% vs. 50%).

Multivariate models

Results from multivariate models predicting employment are shown in Table 4.2. Results from the additive model (Model 1) show that on average, deaf men were less likely to be employed compared to hearing men (b=-1.62, p<.001). Among the full sample, there is no association between deaf enclave residence in 1850 and employment. Age was positively associated with employment (b= 0.17, p<.001) but this positive effect declines at the oldest ages, as indicated by the negative coefficient for age squared (b= -0.002, p<.001)). Racial minorities

were less likely to be employed compared to whites (b=-0.91, p<.001). Having a disability other than deafness was negatively associated with employment (b=-3.72, p<.001). Living in an urban location was positively associated with employment (b=.26, p<.001), as was living on a farm (b=1.20, p<.001). Employment also varied by region; compared to those living in the Middle Atlantic region, those living in New England (b=0.17, p<.001) and East North Central (b=.10, p<.01) regions were more likely to be employed, while those living in the South Atlantic (b=-0.16, p<.001), East South Central (b=-0.16, p<.001), and West (b=-.15, p<.05) regions were less likely to be employed. The ability to read and write was not associated with employment.

I find support for Hypothesis 1 in Model 2 of Table 4.2; deaf men living in deaf enclaves were more likely to be employed compared to deaf men living elsewhere, net of individual and household control variables. This conditional relationship is indicated by the positive and statistically significant coefficient for the interaction term for being deaf and living in an enclave (b=.43; p<.01). In contrast, enclave residence is not associated with employment among hearing men. This is indicated by the coefficient for deaf enclave residence, which now shows the association between enclave residence and employment for hearing men and is not statistically significant (b=0.02, p>.05).

Next, I test whether the observed conditional association is explained by several potential alternative explanations, including local labor market conditions and support for progressive values, by adding county-level control variables in Model 3. These potential alternative explanations do not explain the observed finding that deaf men were more likely to be employed if they lived in a deaf enclave; the size of the coefficient for the interaction term for being deaf and living in a deaf enclave is unchanged and remains statistically significant (b=.43; p<.01). The p value does increase in size with the additional variables included, but it remains below the

.05 threshold. As shown in Model 3, several of these potential alternative explanations are associated with employment. Men were more likely to be employed if they lived in counties that were more urban (b=.002, $p<.001$), had a greater share of farming households (b=.01, $p<.001$), had a greater share of artisan workers (b=.01, $p<.01$), and if the county contained an active whaling port (b=.17$p<.05$). Employment was also more common in counties in which a greater share of votes in the 1848 presidential election went to the progressive Free Soil candidate (b=.003, $p<.01$).

Finally, I test whether the observed finding (i.e., deaf men were more likely to be employed if they lived in a deaf enclave) can be explained by potential mechanisms, including greater local representation of deaf individuals and greater hereditary deafness, in Model 4. These potential mechanisms do not explain the observed conditional relationship. Including these variables does not shrink the size of the coefficient for being deaf and living in a deaf enclave and the coefficient remains statistically significant (b=.44; $p<.01$). The county's percentage of deaf individuals is positively associated with employment (b=.01; $p<.001$), but the percentage of deaf individuals who are living with deaf family members is not associated with employment.

I show the predicted probabilities of being employed among deaf and hearing men in and outside deaf enclaves, based on the estimates from Model 4 in Table 4.2, in Figure 4.1. 79% of deaf men who were living in a deaf enclave in 1850 are predicted to be employed compared to 72% living elsewhere, whereas deaf enclave residence has no relationship with employment for hearing men (92% of hearing men are predicted to be employed regardless of location).

DISCUSSION

This chapter examined whether structural stigma affected employment opportunities among deaf men in 1850. I find support for Hypothesis 1; deaf men were more likely to be

employed if they were living in deaf enclaves compared to their deaf peers living elsewhere. In contrast, living in a deaf enclave did not matter for hearing men's employment. This finding was not explained by potential alternative explanations, including differences in local labor market conditions or support for progressive values.

Deaf men's gains in employment were somewhat modest; 79% of deaf men were predicted to be employed in deaf enclaves compared to 71% of deaf men living elsewhere. Living in a deaf enclave did not allow deaf men to achieve the same chances of employment as hearing men; the 79% employment rate predicted for deaf men in deaf enclaves is still substantially lower than the 92% employment rate predicted for hearing men.

Although the observed increase in deaf men's employment may seem modest, this finding indicates that deaf men's reduced employment cannot be entirely explained by their deafness. If it were the case that deafness itself was the only barrier to employment, we would not expect to see this kind of geographic variation in deaf men's employment. I cannot be sure that the observed gains in deaf men's employment among those living in deaf enclaves is due to reduced structural stigma in these places, but these results suggest that social conditions affected deaf men's employment opportunities.

I acknowledge several limitations to this study. First, my structural stigma measure is crude and there may be some inaccuracy in my coding of the deaf enclaves identified by Lane et al. (2011). I do not believe, however, that this substantially biases the results; if anything, I likely arrived at a conservative estimate for the effect of structural stigma on employment. Second, I also have a crude measure of employment and it likely overestimates the number individuals who were actively employed during 1850 (Sobek 2001). Given the instructions for census-takers to record each man's usual occupation, some respondents were likely classified as employed

even though they were currently out of work. I do not think this source of measurement error should influence the main finding of this study since this pattern likely occurred across the country. Third, I was not able to account for all of the factors that likely affect men's employment, such as health status. I did my best to account for individual, household, and geographic confounders to better estimate the relationship between structural stigma and employment among deaf men but I had limited information from the 1850 census.

In the following chapter, I continue exploring the consequences of structural stigma for marriage and establishing an independent residence.

Tables for Chapter 4

Table 0.1 Descriptive Statistics

		Full Sample	**Deaf subsample**	**Hearing subsample**
	Range	Mean or Proportion		
Is currently employed	0 , 1	0.92	0.70	0.92
Is deaf	0 , 1	0.01	--	--
Lives in an enclave	0 , 1	0.07	0.09	0.07
Lives in a periphery county	0 , 1	0.06	0.08	0.06
Individual characteristics				
Age	21 - 80	37.45	42.00	37.39
Race: non-white	0 , 1	0.02	0.02	0.02
Foreign born	0 , 1	0.19	0.10	0.20
Has other disability	0 , 1	0.00	0.02	0.00
Cannot read and write	0 , 1	0.09	0.19	0.08
Household characteristics				
Urban location	0 , 1	0.22	0.16	0.22
Is a farm	0 , 1	0.49	0.40	0.50
Region (omitted: Middle Atlantic)				
New England	0 , 1	0.16	0.20	0.16
East North Central	0 , 1	0.23	0.18	0.23
South Atlantic	0 , 1	0.11	0.16	0.11
East South Central	0 , 1	0.10	0.11	0.10
West	0 , 1	0.07	0.05	0.07
N		225,640	3,127	222,513

Data come from the 1850 full census

Sample includes males ages 21-70; contains all deaf and random 5% of hearing individuals

Table 0.2 Coefficients from logistic regression models predicting employment (N=225,640)

	Model 1	Model 2	Model 3	Model 4
Is deaf	-1.62 ***	-1.65 ***	-1.65 ***	-1.68 ***
	(0.04)	(0.05)	(0.05)	(0.05)
Lives in enclave	0.04	0.02	0.03	0.02
	(0.04)	(0.04)	(0.05)	(0.05)
Deaf * enclave	--	0.43 **	0.43 *	0.44 *
		(0.17)	(0.17)	(0.17)
Individual characteristics				
Age	0.17 ***	0.17 ***	0.17 ***	0.17 ***
	(0.00)	(0.00)	(0.00)	(0.00)
Age squared	-0.002 ***	-0.002 ***	-0.002 ***	-0.002 ***
	(0.00)	(0.00)	(0.00)	(0.00)
Race: non-white	-0.91 ***	-0.91 ***	-0.87 ***	-0.87 ***
	(0.04)	(0.04)	(0.04)	(0.04)
Foreign born	0.11 ***	0.11 ***	0.12 ***	0.13 ***
	(0.02)	(0.02)	(0.02)	(0.02)
Has other disability	-3.72 ***	-3.71 ***	-3.72 ***	-3.72 ***
	(0.09)	(0.09)	(0.09)	(0.09)
Cannot read and write	-0.04	-0.04	-0.05	-0.05
	(0.03)	(0.03)	(0.03)	(0.03)
Household characteristics				
Urban location	0.26 ***	0.26 ***	0.18 ***	0.18 ***
	(0.02)	(0.02)	(0.03)	(0.03)
Is a farm	1.20 ***	1.20 ***	1.15 ***	1.15 ***
	(0.02)	(0.02)	(0.02)	(0.02)
Region (omitted: Middle Atlantic)				
New England	0.17 ***	0.17 **	-0.01	-0.04
	(0.03)	(0.03)	(0.04)	(0.04)
East North Central	0.10 **	0.10 **	-0.01	0.01
	(0.02)	(0.02)	(0.03)	(0.03)
South Atlantic	-0.16 ***	-0.15 ***	-0.15 ***	-0.16 ***
	(0.03)	(0.02)	(0.02)	(0.02)
East South Central	-0.22 ***	-0.22 ***	-0.32 ***	-0.31 ***
	(0.03)	(0.03)	(0.03)	(0.03)
West	-0.15 *	-0.15 *	-0.18 ***	-0.17 ***
	(0.03)	(0.03)	(0.04)	(0.04)
County characteristics				
% households in urban area	--	--	0.01 ***	0.01 ***
			(0.00)	(0.00)
% farming households	--	--	0.01 ***	0.01 ***
			(0.00)	(0.00)
% of employed men who are artisan workers	--	--	0.01 **	0.01 **
			(0.01)	(0.01)
Contains an active whaling port	--	--	0.17 **	0.17 **
			(0.05)	(0.05)

Table 4.2. Coefficients from logistic regression models predicting employment (N=225,640) continued

	Model 1	Model 2	Model 3	Model 4
1848 election results (% voting Whig omitted)				
% voting Democrat	--	--	0.002	0.002
			(0.00)	(0.00)
% voting Free Soil	--	--	0.003 **	0.003 **
			(0.00)	(0.00)
% voting other	--	--	0.01	0.02
			(0.05)	(0.05)
% deaf with deaf family member in household	--	--	--	0.06
				(0.05)
Number deaf in county per 10,000	--	--	--	0.01 ***
				(0.00)
Constant	-1.26	-1.26	-1.79	-1.86

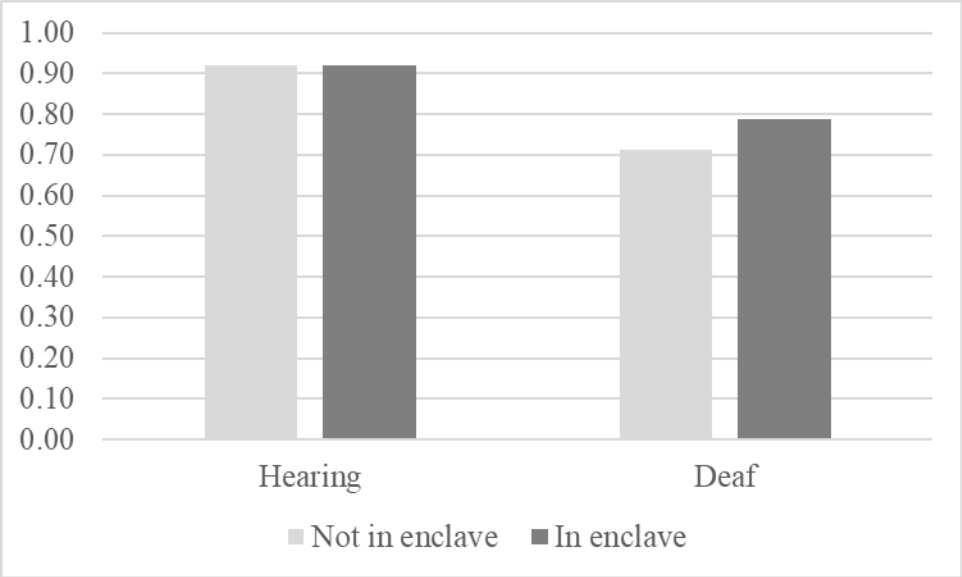
Data come from the 1850 full census

Sample includes males ages 21-80; contains all deaf and random 5% of hearing individuals

* $p < .05$; ** $p < .01$; *** $p < .001$; standard errors in parentheses

Figures for Chapter 4

Figure 4.1 Predicted probability of being employed in 1850.



CHAPTER 5: DEAF ENCLAVE RESIDENCE, MARRIAGE, AND ESTABLISHING AN INDEPENDENT RESIDENCE, 1850

THE CURRENT STUDY

This chapter examines whether structural stigma is associated with two key transitions to adulthood: marriage and establishing an independent residence. I hypothesize that deaf young adults were more likely to achieve these outcomes if they lived in a deaf enclave in 1850 compared to their peers living elsewhere, and that they received greater benefits from living in deaf enclaves relative to their hearing peers. The following analyses use a sample of young men and women ages 21 to 40 from the 1850 census. As a reminder, this sample contains all deaf individuals and a random 5% of all hearing individuals (see Figure 2.4 to see a visual representation of my sample selection).

First, I focus on marriage. I test whether deaf men and women living in a deaf enclave are more likely to have ever married compared to their deaf peers living elsewhere (Hypothesis 2). Since the census did not include questions on marital status, I rely on information from the household roster—whether they were living with a spouse or their own children—to determine whether these young adults had ever married by 1850. Given the gendered expectations in readiness for marriage and the ability to establish an independent residence (Rothman 1984; Volo and Volo 2007), I estimate separate models for young men and women. I also test whether the benefits of living in a deaf enclave for marriage differ by gender.

Deaf enclaves could provide greater opportunities for deaf people to marry both by increasing the likelihood that deaf young adults can find another deaf person to marry or increasing the likelihood that hearing people will choose to marry deaf partners. If deaf enclaves had a greater share of marriages between deaf and hearing spouses than other places in the

United States, this would be a strong indication that deaf enclaves have reduced stigma towards deaf individuals. Unfortunately, due to the small number of hearing people who have deaf spouses in my sample[6], I am unable to examine whether hearing people are more likely to have a deaf spouse if they live in a deaf enclave. I am able, however, to test whether deaf people are more likely to have a deaf spouse if they live in a deaf enclave. This will not fully address the question of whether hearing people are more likely to choose deaf spouses if they live in a deaf enclave, but it can show whether deaf people in deaf enclaves were more likely to select deaf or hearing spouses. Due to small sample sizes, I group men and women together in models testing whether deaf young adults were more likely to marry a deaf spouse if they lived in a deaf enclave.

Next, I focus on establishing an independent residence. Young adults in 1850 typically established an independent residence either by forming their own households or boarding (Volo and Volo 2007). I hypothesize that compared to their deaf peers living elsewhere, deaf individuals were more likely to have independent residences—either in their own households or as boarders— if they lived in a deaf enclave (Hypothesis 3). Next, I explore young adults' living arrangements further by separating those who live in their own household—which was considered the ideal living arrangement (Volo and Volo 2007)—from those who were boarding. I also examine whether the variation in independent residences among deaf individuals living in deaf enclaves is explained by variation in marriage (Hypothesis 4). I estimate separate models for young men and women.

[6] This is because I am working with a sample of individuals (not households) and I only retained 5% of hearing individuals from the full 1850 census. As such, I only have 26 hearing people who had a deaf spouse in my sample.

As described earlier, each of following analyses follows the same basic strategy: First, I estimate an additive model showing the average associations between deafness, deaf enclave residence, and the outcome, net of individual and household control variables. Next, I test whether living in a deaf enclave provided greater benefits for deaf people compared to hearing people by including an interaction term indicating that the person was deaf and was living in a deaf enclave. Finally, I add additional variables to the model to see whether the observed patterns are explained by potential alternative explanations or mechanisms.

RESULTS

Descriptive statistics

Descriptive statistics for the full sample (N= 287,346) and a subsample of deaf individuals (n=3,115) are displayed in Table 5.1. About two-thirds (67%) of these young adults had ever been married in 1850. Marriage was much less common among deaf individuals, however; only 29% of deaf young adults had ever been married in 1850. Among the full sample, the most common living arrangement is living in one's own household as head or spouse (63%), followed by living in a parent's household (16%), boarding (15%), and other living arrangements (6%). Among deaf young adults, living in a parent's household is the most common living arrangement (46%), followed by living in one's own household as head or spouse (22%), and equal shares are boarding or living in other arrangements (16% each). Deaf young adults differ from their hearing peers on several other characteristics; deaf individuals are, on average, less likely to be foreign-born (10% vs. 20%), more likely to have another disability (2% vs. <1%), more likely to be illiterate (22% vs. 10%), less likely to live in an urban area (18% vs. 24%), and more likely to live in a farming household (54% vs. 46%).

Multivariate models

Marriage

Table 5.2 contains estimates from multivariate logistic regression models predicting marriage among men, controlling for several individual and household characteristics. The additive model (Model 1) shows that, among the full sample, deaf men were significantly less likely to be married compared to hearing men (b=-2.05, $p<.001$). Those living in deaf enclave locations were also significantly less likely to be married compared to those living elsewhere in the United States (b=-0.12, $p<.001$). Age was positively associated with marriage (b=0.19, $p<.001$). Racial minorities were less likely to be married compared to whites (b=-0.63, $p<.001$). Having a disability other than deafness was negatively associated with marriage (b=-3.00, $p<.001$). Living in an urban area was negatively associated with marriage (b=-.19, $p<.001$), as was living on a farm (b=-.21, $p<.001$).

I find support for Hypothesis 2 in the conditional model (Model 2): deaf men living in deaf enclaves were significantly more likely to be married compared to deaf men living elsewhere, net of the individual and household control variables in the model. The interaction term for being deaf and living in a deaf enclave is positive and statistically significant (b=.65; $p<.01$). This interaction term remains statistically significant and nearly the same size when I include county-level control variables (percent urban, percent farming, the sex ratio, and support for progressive values) in Model 3 (b=.63; $p<.01$) and potential mechanisms (individual level: employment status and literacy; county-level: percent of all deaf that have a deaf family member in their household and number of deaf individuals per 10,000 residents) in Model 4 (b=.64; $p<.01$).

I find a similar pattern for marriage among women. Results from models predicting marriage among women in Table 5.3 show that on average, deaf women were significantly less likely to be married compared to hearing women (b=-2.23; p<.001) and women living in a deaf enclave were less likely to be married compared to those living elsewhere (b=-.16; p<.001). Yet deaf women living in a deaf enclave were significantly more likely to be married compared to deaf women living elsewhere, as indicated by the interaction term coefficient in Model 2 (b=.1.41; p<.001). This coefficient remains statistically significant and does not decrease in size with the inclusion of county-level controls in Model 3 or potential mechanisms in Model 4.

I show the predicted probability of being married for deaf and hearing individuals in and outside deaf enclaves in 1850 in Figure 5.1. This figure shows the predicted probabilities net of individual and county-level variables, based on the results from Model 4 of Tables 5.2 for men and 5.3 for women. As shown here, 58% of hearing men living in a deaf enclave were predicted to be married, compared to 61% of hearing men living elsewhere. In contrast, deaf men receive a boost in their chances of being married if they live in a deaf enclave: 33% are predicted to be married if they live in a deaf enclave compared to 25% living elsewhere. This difference is starker for women: 55% of deaf women living in deaf enclaves are predicted to be married, compared to 29% living elsewhere.

Based on these results, it appears as though deaf women benefit from living in a deaf enclave to a greater extent than men when it comes to marriage. I tested whether this gender difference is statistically significant by estimating models with a three-way interaction between deafness, deaf enclave residence, and gender (models not shown but available upon request). In these models, the interaction term for being deaf, living in a deaf enclave, and being female is positive and statistically significant. This indicates that deaf women's increased chances of

marrying if they live in a deaf enclave are significantly greater than deaf men's chances of marrying if they live in a deaf enclave. This interaction term did not shrink and remained statistically significant with the inclusion of county-level variables for potential alternative explanations and mechanisms.

Next, I test whether deaf individuals were more likely to have a deaf (vs. hearing) spouse if they lived in a deaf enclave in 1850. I limit my analyses to deaf individuals who have a spouse in their household and combine men and women[7] to have a greater sample size (n=649). Table 5.4 shows results from logistic regression models predicting having a deaf spouse. As shown in Model 1, deaf young adults who are living in deaf enclaves are more likely to have a deaf spouse compared to their deaf peers living elsewhere (b=0.77; $p<.05$). Foreign-born individuals are less likely to have a deaf spouse compared to their native-born peers (b=-1.14; $p<.01$), but sex, age, urbanicity, and whether the individual lives on a farm are not significant predictors of having a deaf spouse[8]. When county-level control variables are introduced in Model 2, the coefficient for enclave residence becomes marginally statistically significant. This finding appears to be due to power issues related to small sample sizes, since the size of the coefficient for enclave residence remains close to the same size (b=.75; $p<.10$). Including potential mediators in Model 4 also does not change this observed finding much (b=.76; $p<.10$).

Independent residence

Next, I predict living in an independent residence (living in one's own household or boarding compared to living in a parent's household or other). Results predicting an independent

[7] In cases where a husband and wife are both present in the sample, I randomly dropped one person from the couple (n=120)

[8] Other disability status and race were not included as control variables due to their lack of variation on the dependent variable.

residence for men are shown in Table 5.5. Model 1 shows that, on average, deaf men are significantly less likely than hearing men to have an independent residence (b=-2.03; $p<.001$) and living in a deaf enclave is not associated with having an independent residence. Model 2 introduces the interaction term for being deaf in an enclave, which is positive but not statistically significant (b=.37; $p>.05$), indicating that deaf men living in deaf enclaves are slightly more likely to have an independent residence than their peers living elsewhere but this is not a substantial difference. This finding does not support Hypothesis 3. I estimated models that included county-level variables but the interaction term remained unchanged, so I do not show these models in Table 5.5.

Results for women, however, are consistent with Hypothesis 3. As shown in Table 5.6, deaf women were significantly less likely have an independent residence on average (b=-2.05; $p<.001$) and those living in a deaf enclave are also less likely to have an independent residence on average (b=-0.07; $p<.05$). Yet, as indicated by the interaction term in Model 2, deaf women living in deaf enclaves are significantly more likely to have an independent residence compared to their deaf peers living elsewhere (b=1.05; $p<.001$). This finding remains statistically significant and approximately the same size when county-level variables for potential alternative explanations are included in Model 3 and for potential mechanisms in Model 4.

Figure 5.2 shows the predicted probability of having an independent residence for deaf and hearing young adults by deaf enclave residence in 1850, net of individual and county-level variables (based on the results from Model 4 of Tables 5.5 and 5.6). As shown here, the difference between deaf men living in an enclave and those living elsewhere is relatively small; 52% of deaf men living in deaf enclaves are predicted to have an independent residence compared to 46% living elsewhere. This difference is not statistically significant. In contrast,

deaf women living in deaf enclaves are substantially more likely to have an independent residence compared to deaf women living elsewhere (58% vs. 36%).

Next, I dig deeper into living arrangements to see if living in a deaf enclave matters more for having one's own household or boarding. I do this by estimating multinomial logistic regression models predicting four categories of living arrangements. I use living in a parent's household as the reference group. Panel A shows results predicting living in one's own household, while Panel B shows results predicting boarding. (Results predicting the residual category "other" are not shown. Deaf individuals were less likely to be living in "other" living arrangements vs. living in their parent's household, but this relationship did not vary across deaf enclaves.) I also test whether differences in living arrangements are explained by deaf individuals' increased likelihood of being married when they live in deaf enclaves (Hypothesis 4) by including a variable indicating that the respondent was ever married in the final model.

Results for living arrangements among men are shown in Table 5.7. Looking at the results for having one's own household (Panel A), the additive model (Model 1) shows that compared to hearing men, deaf men are significantly less likely to live in their own household vs. live in a parent's household (b=-2.84; $p<.001$), while enclave residence is not associated with these living arrangements. Deaf men living in deaf enclaves, however, are more likely to live in their own household vs. live in a parent's household compared to their deaf peers living elsewhere, as indicated by the positive and statistically significant interaction term for being deaf in a deaf enclave in Model 2 (b=.83; $p<.01$). Including county-level control variables in Model 3 and potential mediators in Model 4 does not diminish this condition relationship. Model 5 includes a variable indicating the respondent was ever married. Men who are married are significantly more likely to live in their own household vs. live with their parents (b=4.98;

p<.001). Marriage appears to explain a small portion of the conditional relationship between being deaf and living in a deaf enclave, as the coefficient for the interaction term is somewhat reduced in size but remains statistically significant (b=.81; p<.05).

Turning to models that predict boarding vs. living in a parent's household among men (Panel B), Model 1 shows that among the full sample, deaf men are less likely to be boarding vs. living in a parent's household (b=-1.17; p<.001) and deaf enclave residence is not associated with boarding. As shown in Model 2, I do not find evidence of a conditional relationship for boarding; deaf men living in deaf enclaves are just as likely to be boarding vs. living with a parent as deaf men living elsewhere (b=-0.08; p>.05). I added county-level variables but these do not change the results so I do not show additional models in this table.

Next, I examine living arrangements among women in Table 5.8, beginning with models predicting living in one's own household vs. living in a parent's household (Panel A). On average, deaf women were less likely to live in their own household vs. live in a parent's household (b=-2.51; p<.001) and women who live in a deaf enclave were also less likely to live in their own household (b=-0.15; p<.001), as shown in Model 1. Yet deaf women living in deaf enclaves are more likely to live in their own household vs. live in a parent's household compared to their deaf peers living elsewhere, as indicated by the positive and significant interaction term in Model 2 (b=1.33; p<.001). This finding is not explained by county-level control variables or mechanisms included in Model 3 and Model 4. However, unlike the models for men, I do find that the observed conditional relationship is fully explained by marriage; when including a variable for marriage in the model, the interaction term coefficient is reduced in size substantially and is no longer statistically significant (b=0.64; p>.05). In other words, the reason that deaf women were more likely to live in their own household compared to living in a parent's

household if they lived in a deaf enclave is because deaf women were more likely to be married in deaf enclaves.

Results of models predicting boarding vs. living with a parent among women (Panel B) are similar to those among men. In general, deaf women are less likely to be boarding vs. living in a parent's household (b=-0.57; $p<.001$) and enclave residence is not associated with boarding. These associations do not vary for deaf women living in deaf enclaves, as indicated by the non-statistically significant interaction term in Model 2 (b=-0.36; $p>.05$). Adding county-level variables do not change the results so I do not show additional models.

In order to better understand differences in these living arrangements, I show the predicted probabilities of each type of living arrangement in Figure 5.3 for men and Figure 5.4 for women. These predicted probabilities are based on estimated from Model 4 in Tables 5.7 and 5.8. Looking at young men's living arrangements in Figure 5.3, we can see several patterns. First, there is little variation in hearing men's living arrangements in and outside of deaf enclaves but we do see some variation for deaf men. Consistent with the results from Table 5.7, we see that deaf men were more likely to live in their own household if they lived in a deaf enclave; 33% of deaf men living in deaf enclaves are predicted to live in their own household compared to 22% of deaf men living elsewhere. We do not see an increase in boarding among deaf men in deaf enclaves, however; fewer deaf men were predicted to be boarding in deaf enclaves compared to elsewhere (20% vs. 26%) but this difference is not statistically significant. Among non-independent residences, deaf men living in deaf enclaves were less likely to live in a parent's household compared to deaf men living elsewhere (36% vs. 41%), but similar shares were living in other arrangements (11% both in and outside of deaf enclaves).

Taken together, these patterns shed light on the findings from models predicting independent residence (i.e., own household or boarding vs. living in a parent's household or other living arrangements). We can see that deaf enclaves do not increase deaf men's chances of boarding and do not decrease deaf men's chances of living in other, non-independent living arrangements. Instead, it appears as though deaf men living in deaf enclaves are more likely to move out of their parents' households and into their own households, but this difference is not apparent when grouping different types of independent and non-independent arrangements together.

Turning to young women's living arrangements in Figure 5.4, we can see that hearing women (like hearing men) have little variation in their living arrangements in and outside deaf enclaves. Deaf women, in contrast, have quite a bit of variation in and outside deaf enclaves. Notably, deaf women were more than twice as likely to live in their own household if they lived in a deaf enclave compared to living elsewhere; 48% of deaf women in a deaf enclave were predicted to have their own household compared to 20% of deaf women living elsewhere. Similar to the results for men, fewer deaf women living in deaf enclaves were boarding compared to their peers living elsewhere (10% vs. 18%) but this difference is also not statistically significant. Looking at non-independent living arrangements, deaf women living in deaf enclaves were less likely to live in their parent's household compared to their deaf peers living elsewhere (35% vs. 43%) and were also less likely to live in other living arrangements (8% in deaf enclaves vs. 19% elsewhere).

DISCUSSION

This chapter focused on two key dimensions of the transition to adulthood—marriage and establishing an independent residence—to examine whether structural stigma affects these individual outcomes. I hypothesized that structural stigma reduced deaf individuals' chances of achieving these outcomes and that deaf young adults should have had a greater chance of marrying and establishing an independent residence if they lived in a deaf enclave where structural stigma was reduced. In general, most of the findings from this study are consistent with my hypotheses and theories on structural stigma, but some interesting nuances emerged.

Results for models predicting marriage supported Hypothesis 2: deaf young men and women were more likely to have ever married if they lived in a deaf enclave. In contrast, hearing young adults were slightly less likely to have ever married if they lived in a deaf enclave. These patterns were not explained by differences in the availability of marriage partners or support for progressive values.

I found partial support for my hypotheses on establishing an independent residence and some interesting differences emerged between men and women. Contrary to Hypothesis 3, I did not find that living in a deaf enclave significantly improved deaf men's chances of establishing an independent residence (i.e., living in one's own household or boarding). I was able to learn more by examining their living arrangements in more detail and separating out boarders from those who were living in their own households. I found that living in a deaf enclave did not improve deaf men's chances of boarding—in fact, fewer deaf men were boarding in deaf enclaves than were boarding elsewhere in the United States. Yet deaf men were significantly more likely to live in their own household compared to living in their parent's household if they

lived in a deaf enclave compared to their deaf peers living elsewhere. Overall, differences in living arrangements among deaf men in and outside deaf enclaves were relatively small.

Deaf women, in contrast, were substantially more likely to have an independent residence if they lived in a deaf enclave. This pattern was not explained by county-level variables for potential alternative explanations and mechanisms. Furthermore, deaf women living in deaf enclaves were more than twice as likely to live in their own household compared to deaf women living elsewhere. When examining women's living arrangements in more detail, I found that deaf enclaves did not increase deaf women's chances of boarding; their increased likelihood of establishing an independent residence if they lived in a deaf enclave was primarily due to their greater chances of living in their own households.

The findings on boarding are not consistent with hypothesis 3: I expected that deaf enclaves would increase opportunities for young adults to establish independent residences either by forming their own household or boarding. Deaf enclaves did not increase deaf young adults' chances of boarding, however; in fact, deaf young adults were slightly less likely to be boarding compared to their hearing peers.

Beyond the gender difference in results predicting establishing an independent residence, two additional gender differences emerged in these analyses. First, I found that deaf women experienced a greater benefit from living in a deaf enclave for their chances of marrying relative to deaf men. In other words, both deaf men and deaf women more likely to marry if they lived in a deaf enclave compared to their deaf peers living elsewhere, but this relationship was substantially stronger for deaf women. This pattern could reflect gendered differences in the chances of marrying and age at marriage among all young adults: women tended to marry at younger ages compared to men (Rothman 1984). It is also possible that men and women varied

in their willingness to consider marrying a deaf partner. Perhaps deafness seemed like less of a barrier for the expectations of wives compared to husbands. If that was the case, men may have been more willing to marry a deaf partner than women. This could be an avenue for future research and studies should continue to explore whether the consequences of structural stigma vary by gender.

The second gender difference that emerged was that marriage had a substantial impact deaf women's ability to establish an independent residence but was less influential for deaf men. Accounting for differences in marriage among those living in and outside deaf enclaves fully explained the observed finding that deaf women were more likely to live in their own household rather than in their parent's household if they lived in a deaf enclave, but did not explain this pattern among deaf men. This finding is likely driven by rigid gender roles during the 19th century; women almost never headed their own households because the household head was seen as a man's role (Rotundo 1993). Consequently, a woman's only path to living in her own household was through marriage, while a man could live in his own household by other means. For example, some men inherited the household head role when their fathers died (Ruggles 2007).

I found one more interesting pattern in these results. Somewhat unexpectedly, deaf young adults were not more likely to marry a hearing spouse if they lived in a deaf enclave; instead, they were more likely to marry another deaf person. It is important to note that I was only able to examine the spouses of deaf young adults; because I only had 5% of hearing young adults, my sample contained too few hearing people with deaf spouses to examine differences between hearing adults living in and outside deaf enclaves. As such, these results cannot address whether hearing people were more or less likely to marry a deaf person if they lived in a deaf enclave.

The observed pattern among deaf young adults may reflect deaf individuals' preference to marry a partner who shared their language and similar experiences (Van Cleve and Crouch 1989). Deaf enclaves could have facilitated deaf-deaf partnerships by providing additional opportunities for deaf people to meet each other and form romantic relationships and by increasing their chances of attending a residential deaf school, where many deaf young adults met their future spouses (Greenwald 2012).

This study has several limitations. First, I use variables that likely contain considerable measurement error. I have a crude measure of marriage because the 1850 census did not collect information on marital status and I had to rely on information from the household roster to determine whether these young adults were living with their spouse or own children. Although this marriage measure is imprecise, I do not expect that it is particularly biased among deaf individuals or within deaf enclaves so I do not think this measurement error would affect the main findings of this study. I also have a crude measure for residence in a deaf enclave, as described earlier. Second, my models include a limited set of control variables and I was not able to account for some factors that likely affect the ability to marry and establish an independent residence, such as family socioeconomic status and health. Third, I was not able to test whether hearing adults were more likely to marry a deaf spouse if they lived in a deaf enclave. Previous research shows that contact between stigmatized and non-stigmatized individuals leads to increased empathy and decreased stigma (Williams 1947; Pettigrew and Tropp 2006) but to my knowledge, studies have not yet examined whether non-stigmatized groups are more likely to marry members of stigmatized groups in places with reduced structural stigma. Future research should address this question.

In my final empirical chapter, I continue to explore the consequences of structural for marriage but with a different focus—I test whether residence in a deaf enclave during childhood in 1850 is associated with marriage among men in 1880.

Tables for Chapter 5

Table 0.1 Descriptive Statistics

		Full Sample	**Deaf subsample**	**Hearing subsample**
	Range	Mean or Proportion		
Ever married	0 , 1	0.67	0.29	0.68
Has deaf spouse	0 , 1	<0.01	0.35	<0.01
Independent residence	0 , 1	0.78	0.39	0.78
Living in own household as head or spouse	0 , 1	0.63	0.22	0.63
Boarding	0 , 1	0.15	0.16	0.15
No independent residence	0 , 1	0.22	0.61	0.22
Living with parents	0 , 1	0.16	0.46	0.16
Other	0 , 1	0.06	0.16	0.06
Is deaf	0 , 1	0.01	--	--
Lives in an enclave	0 , 1	0.06	0.09	0.06
Lives in a periphery county	0 , 1	0.05	0.07	0.05
Individual characteristics				
Female	0 , 1	0.48	0.45	0.48
Age	21 - 40	29.34	29.92	29.33
Race: non-white	0 , 1	0.02	0.02	0.02
Foreign born	0 , 1	0.20	0.10	0.20
Has other disability	0 , 1	<0.01	0.02	<0.01
Cannot read and write	0 , 1	0.10	0.22	0.10
Household characteristics				
Urban location	0 , 1	0.24	0.18	0.24
Is a farm	0 , 1	0.46	0.54	0.46
Region (omitted: Middle Atlantic)				
New England	0 , 1	0.15	0.18	0.15
East North Central	0 , 1	0.23	0.20	0.23
South Atlantic	0 , 1	0.11	0.15	0.11
East South Central	0 , 1	0.11	0.13	0.11
West	0 , 1	0.07	0.05	0.07
N		287,346	3,115	284,231

Data come from the 1850 full census

Sample includes men & women ages 21-40; contains all deaf and random 5% of hearing individuals

Table 0.2 Coefficients from logistic regression models predicting marriage among men (N=149,542)

	Model 1	Model 2	Model 3	Model 4
Is deaf	-2.05 ***	-2.12 ***	-2.15 ***	-2.02 ***
	(0.06)	(0.07)	(0.07)	(0.07)
Lives in enclave	-0.12 ***	-0.13 ***	-0.15 ***	-0.16 ***
	(0.03)	(0.03)	(0.03)	(0.03)
Deaf * enclave	--	0.65 **	0.63 **	0.64 **
		(0.20)	(0.20)	(0.20)
Individual characteristics				
Age	0.19 ***	0.19 ***	0.20 ***	0.19 ***
	(0.00)	(0.00)	(0.00)	(0.00)
Race: non-white	-0.63 ***	-0.63 ***	-0.58 ***	-0.58 ***
	(0.04)	(0.04)	(0.05)	(0.05)
Foreign born	-0.63 ***	-0.63 ***	-0.50 ***	-0.54 ***
	(0.02)	(0.02)	(0.02)	(0.02)
Has other disability	-3.00 ***	-3.00 ***	-3.04 ***	-2.41 ***
	(0.15)	(0.15)	(0.15)	(0.15)
Is not currently employed	--	--	--	-1.01 ***
				(0.02)
Cannot read and write	--	--	--	0.42 ***
				(0.02)
Household characteristics				
Urban location	-0.19 ***	-0.19 ***	-0.07 **	-0.08 **
	(0.02)	(0.02)	(0.02)	(0.02)
Is a farm	-0.21 ***	-0.21 ***	-0.35 ***	-0.41 ***
	(0.01)	(0.01)	(0.01)	(0.01)
Region (omitted: Middle Atlantic)				
New England	-0.05	-0.04	-0.22 ***	-0.21 ***
	(0.02)	(0.02)	(0.03)	(0.02)
East North Central	0.27 ***	0.27 ***	0.15 ***	0.15 ***
	(0.01)	(0.02)	(0.02)	(0.02)
South Atlantic	-0.01	-0.01	-0.23 ***	-0.25 ***
	(0.02)	(0.02)	(0.02)	(0.02)
East South Central	0.21 ***	0.21 ***	-0.05	-0.04
	(0.02)	(0.02)	(0.02)	(0.03)
West	-0.12 ***	-0.12 ***	<-0.01	<-0.01
	(0.02)	(0.02)	(0.03)	(0.03)
County characteristics				
% households in urban area	--	--	<0.01 ***	<0.01 ***
			(0.00)	(0.00)
% farming households	--	--	0.01 ***	0.01 ***
			(0.00)	(0.00)
Sex ratio	--	--	-1.41 ***	-1.43 ***
			(0.06)	(0.06)

Table 5.2. Coefficients from logistic regression models predicting marriage among men (N= 149,542) continued

	Model 1	Model 2	Model 3	Model 4
1848 election results (% voting Whig omitted)				
% voting Democrat	--	--	<0.01 ***	<0.01 ***
			(0.00)	(0.00)
% voting Free Soil	--	--	<-0.01 ***	<-0.01 ***
			(0.00)	(0.00)
% voting other	--	--	0.01	0.01
			(0.02)	(0.02)
% deaf with deaf family member in household	--	--	--	<-0.01
				(0.00)
Number deaf in county per 10,000	--	--	--	<0.01
				(0.00)
Constant	-4.86	-4.86	-4.13	-4.94

Data come from the 1850 full census

Sample includes men ages 21-40; contains all deaf and random 5% of hearing individuals

* p <.05; ** p <.01; *** p <.001; standard errors in parentheses

Table 0.3 Coefficients from logistic regression models predicting marriage among women (N=137,804)

	Model 1	Model 2	Model 3	Model 4
Is deaf	-2.23 ***	-2.36 ***	-2.37 ***	-2.38 ***
	(0.06)	(0.07)	(0.07)	(0.07)
Lives in enclave	-0.16 ***	-0.18 ***	-0.14 ***	-0.13 ***
	(0.03)	(0.03)	(0.03)	(0.03)
Deaf * enclave	--	1.41 ***	1.43 ***	1.44 ***
		(0.21)	(0.21)	(0.21)
Individual characteristics				
Age	0.13 ***	0.13 ***	0.13 ***	0.13 ***
	(0.00)	(0.00)	(0.00)	(0.00)
Race: non-white	-0.51 ***	-0.51 ***	-0.42 ***	-0.47 ***
	(0.04)	(0.04)	(0.04)	(0.04)
Foreign born	-0.06 **	-0.06 **	-0.05 *	-0.07 ***
	(0.02)	(0.02)	(0.02)	(0.02)
Has other disability	-3.32 ***	-3.32 ***	-3.30 ***	-3.32 ***
	(0.16)	(0.16)	(0.16)	(0.16)
Cannot read and write	--	--	--	0.17
				(0.02)
Household characteristics				
Urban location	-0.47 ***	-0.47 ***	-0.34 ***	-0.34 ***
	(0.02)	(0.02)	(0.03)	(0.03)
Is a farm	-0.31 ***	-0.31 ***	-0.40 ***	-0.40 ***
	(0.02)	(0.02)	(0.02)	(0.02)
Region (omitted: Middle Atlantic)				
New England	-0.02	-0.02	-0.18 ***	-0.17 ***
	(0.02)	(0.02)	(0.02)	(0.02)
East North Central	0.64 ***	0.65 ***	0.26 ***	0.25 ***
	(0.02)	(0.02)	(0.02)	(0.02)
South Atlantic	0.04	0.04	-0.07 **	-0.09 **
	(0.02)	(0.02)	(0.03)	(0.03)
East South Central	0.48 ***	0.48 ***	0.11 ***	0.08 **
	(0.02)	(0.02)	(0.03)	(0.03)
West	0.80 ***	0.80 ***	0.20 ***	0.17 ***
	(0.03)	(0.03)	(0.04)	(0.04)
County characteristics				
% households in urban area	--	--	0.01 ***	0.01 ***
			(0.00)	(0.00)
% farming households	--	--	0.01 ***	0.01 ***
			(0.00)	(0.00)
Sex ratio	--	--	1.68 ***	1.72 ***
			(0.08)	(0.08)

Table 5.3. Coefficients from logistic regression models predicting marriage among women, continued

	Model 1	Model 2	Model 3	Model 4
1848 election results (% voting Whig omitted)				
% voting Democrat	--	--	<0.01 **	<0.01 **
			(0.00)	(0.00)
% voting Free Soil	--	--	<-0.01	<-0.01
			(0.00)	(0.00)
% voting other	--	--	0.02	0.02
			(0.05)	(0.05)
% deaf with deaf family member in household	--	--	--	<-0.01
				(0.00)
Number deaf in county per 10,000	--	--	--	<-0.01 *
				(0.00)
Constant	-2.37	-2.37	-4.77	-4.78

Data come from the 1850 full census

Sample includes women ages 21-40; contains all deaf and random 5% of hearing individuals

* p <.05; ** p <.01; *** p <.001; standard errors in parentheses

Table 0.4 Coefficients from logistic regression models predicting having a deaf spouse among currently married deaf men & women (N= 649)

	Model 1	Model 2	Model 3
Lives in enclave	0.77 *	0.75 ^	0.76 ^
	(0.35)	(0.39)	(0.40)
Female	0.32	0.23	0.24
	(0.20)	(0.20)	(0.20)
Age	0.01	0.01	0.01
	(0.02)	(0.02)	(0.02)
Foreign born	-1.14 **	-1.35 **	-1.18 **
	(0.41)	(0.42)	(0.42)
Cannot read and write	--	--	-0.86 *
			(0.35)
Household characteristics			
Urban location	0.54	0.36	0.31
	(0.26)	(0.36)	(0.32)
Is a farm	-0.22	-0.22	-0.25
	(0.23)	(0.24)	(0.24)
Region (omitted: Middle Atlantic)			
New England	0.18	0.04	-0.16
	(0.32)	(0.40)	(0.42)
East North Central	0.07	0.13	0.12
	(0.29)	(0.39)	(0.39)
South Atlantic	-0.58	-0.50	-0.47
	(0.38)	(0.45)	(0.46)
East South Central	-1.36 **	-1.24 *	-1.15 *
	(0.50)	(0.58)	(0.58)
West	-0.48	-0.23	-0.27
	(0.52)	(0.68)	(0.69)
County characteristics			
% households in urban area	--	0.01	0.01
		(0.01)	(0.01)
% farming households	--	<0.01	<0.01
		(0.01)	(0.01)
Sex ratio	--	-0.73	-0.56
		(1.20)	(1.21)
1848 election results (% voting Whig omitted)			
% voting Democrat	--	<0.01	<0.01
		(0.01)	(0.01)
% voting Free Soil	--	0.01	0.01
		(0.01)	(0.01)
% voting other	--	0.40	1.47
		(3.20)	(3.24)
% deaf with deaf family member in household	--	--	0.01
			(0.01)
Number deaf in county per 10,000	--	--	0.02
			(0.02)
Constant	-1.70	-1.30	-1.78

Data come from the 1850 full census; Sample includes men and women ages 21-40

^ p <.10; * p <.05; ** p <.01; *** p <.001; standard errors in parentheses

Table 0.5 Coefficients from logistic regression models predicting independent residence among men (N= 149,542)

	Model 1	Model 2
Is deaf	-2.03 ***	-2.07 ***
	(0.06)	(0.06)
Lives in enclave	-0.01	-0.02
	(0.04)	(0.04)
Deaf * enclave	--	0.37
		(0.19)
Individual characteristics		
Age	0.19 ***	0.19 ***
	(0.00)	(0.00)
Race: non-white	0.01	0.01
	(0.05)	(0.05)
Foreign born	0.51 ***	0.51 ***
	(0.02)	(0.02)
Has other disability	-3.13 ***	-3.13 ***
	(0.13)	(0.13)
Household characteristics		
Urban location	-0.13 ***	-0.13 ***
	(0.02)	(0.02)
Is a farm	-0.91 ***	-0.91 ***
	(0.02)	(0.02)
Region (omitted: Middle Atlantic)		
New England	-0.07 **	-0.07 **
	(0.02)	(0.02)
East North Central	0.36 ***	0.36 ***
	(0.02)	(0.02)
South Atlantic	0.20 ***	0.20 ***
	(0.02)	(0.02)
East South Central	0.39 ***	0.39 ***
	(0.02)	(0.02)
West	0.47 ***	0.47 ***
	(0.03)	(0.03)
Constant	-3.70	-3.70

Data come from the 1850 full census

Sample includes men ages 21-40; contains all deaf and random 5% of hearing individuals

* p <.05; ** p <.01; *** p <.001; standard errors in parentheses

Table 0.6 Coefficients from logistic regression models predicting independent residence among women (N= 137,804)

	Model 1	Model 2	Model 3	Model 4
Is deaf	-2.05 ***	-2.15 ***	-2.15 ***	-2.17 ***
	(0.06)	(0.06)	(0.06)	(0.06)
Lives in enclave	-0.07 *	-0.09 **	-0.04	-0.04
	(0.03)	(0.03)	(0.03)	(0.03)
Deaf * enclave	--	1.05 ***	1.07 ***	1.08 ***
		(0.21)	(0.21)	(0.21)
Individual characteristics				
Age	0.11 ***	0.11 ***	0.12 ***	0.11 ***
	(0.00)	(0.00)	(0.00)	(0.00)
Race: non-white	0.07	0.06	0.14	0.07
	(0.05)	(0.05)	(0.05)	(0.05)
Foreign born	0.66 ***	0.66 ***	0.68 ***	0.64 ***
	(0.02)	(0.02)	(0.02)	(0.02)
Has other disability	-2.96 ***	-2.97 ***	-2.95 ***	-2.98 ***
	(0.14)	(0.14)	(0.14)	(0.14)
Cannot read and write	--	--	--	0.26 ***
				(0.02)
Household characteristics				
Urban location	-0.15 ***	-0.15 ***	-0.05	-0.04
	(0.02)	(0.02)	(0.03)	(0.03)
Is a farm	-0.57 ***	-0.57 ***	-0.64 ***	-0.64 ***
	(0.02)	(0.02)	(0.02)	(0.02)
Region (omitted: Middle Atlantic)				
New England	-0.05 *	-0.05 *	-0.19 ***	-0.17 ***
	(0.03)	(0.03)	(0.02)	(0.02)
East North Central	0.52 ***	0.52 ***	0.24 ***	0.22 ***
	(0.02)	(0.02)	(0.02)	(0.02)
South Atlantic	-0.07 **	-0.07 **	-0.17 ***	-0.19 ***
	(0.02)	(0.02)	(0.03)	(0.03)
East South Central	0.32 ***	0.32 ***	0.02	-0.01
	(0.02)	(0.02)	(0.03)	(0.03)
West	0.66 ***	0.66 ***	0.21 ***	0.18 ***
	(0.03)	(0.03)	(0.04)	(0.04)
County characteristics				
% households in urban area	--	--	<0.01 ***	<0.01 ***
			(0.00)	(0.00)
% farming households	--	--	0.01 ***	0.01 ***
			(0.00)	(0.00)
Sex ratio	--	--	1.68 ***	1.32 ***
			(0.08)	(0.08)
% boarding	--	--	<-0.01	<-0.01
			(0.03)	(0.03)

Table 5.6. Coefficients from logistic regression models predicting independent residence among women (N= 137,804) continued

	Model 1	Model 2	Model 3	Model 4
1848 election results (% voting Whig omitted)				
% voting Democrat	--	--	<0.01	<0.01
			(0.00)	(0.00)
% voting Free Soil	--	--	<-0.01	<-0.01
			(0.00)	(0.00)
% voting other	--	--	0.11	0.11
			(0.06)	(0.06)
% deaf with deaf family member in household	--	--	--	<-0.01
				(0.00)
Number deaf in county per 10,000	--	--	--	-0.01 **
				(0.00)
Constant	-1.86	-1.86	-3.59	-3.59

Data come from the 1850 full census

Sample includes women ages 21-40; contains all deaf and random 5% of hearing individuals

* p <.05; ** p <.01; *** p <.001; standard errors in parentheses

Table 0.7 Coefficients from multinomial logistic regression models predicting living arrangements among men (N= 149,542). Living with parents is the reference group.

	Panel A: Living in own household					Panel B: Boarding	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2
Is deaf	-2.84 ***	-2.93 ***	-2.94 ***	-2.73 ***	-1.81 ***	-1.17 ***	-1.16 ***
	(0.08)	(0.08)	(0.08)	(0.08)	(0.11)	(0.07)	(0.08)
Lives in enclave	-0.08	-0.09 *	-0.08	-0.08	0.03	0.06	0.06
	(0.04)	(0.04)	(0.04)	(0.05)	(0.06)	(0.05)	(0.05)
Deaf * enclave		0.83 **	0.82 **	0.85 **	0.81 *		-0.08
	--	(0.24)	(0.24)	(0.34)	(0.34)	--	(0.26)
Individual characteristics							
Age	0.27 ***	0.27 ***	0.27 ***	0.27 ***	0.17 ***	0.12 ***	0.12 ***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Race: non-white	-0.15 *	-0.15 *	-0.07	0.02	0.48 ***	0.65 ***	0.65 ***
	(0.07)	(0.07)	(0.07)	(0.07)	(0.09)	(0.07)	(0.07)
Foreign born	0.48 ***	0.48 ***	0.54 ***	0.50 ***	0.95 ***	1.38 ***	1.38 ***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)
Has other disability	-3.97 ***	-3.97 ***	-3.98 ***	-2.99 ***	-1.77 ***	-1.36 ***	-1.36 ***
	(0.20)	(0.20)	(0.20)	(0.21)	(0.26)	(0.15)	(0.15)
Is not currently employed	--	--	--	-1.69 ***	-1.61 ***	--	--
				(0.03)	(0.04)		
Cannot read and write	--	--	--	0.45 ***	0.22 ***	--	--
				(0.03)	(0.05)		
Ever married	--	--	--	--	4.98 ***	--	--
					(0.03)		
Household characteristics							
Urban location	-0.22 ***	-0.22 ***	-0.04	-0.08 *	-0.21 ***	0.17 ***	0.17 ***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.05)	(0.03)	(0.03)
Is a farm	-1.03 ***	-1.03 ***	-1.16 ***	-1.29 ***	-1.20 ***	-1.47 ***	-1.47 ***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)

Table 5.7. Coefficients from multinomial logistic regression models predicting living arrangments among men (N= 149,542). Living with parents is reference group.

	Panel A: Living in own household					Panel B: Boarding	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2
Region (omitted: Middle Atlantic)							
New England	-0.15 ***	-0.15 ***	-0.32 ***	-0.29 ***	-0.26 ***	-0.03	-0.03
	(0.03)	(0.03)	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)
East North Central	0.48 ***	0.48 ***	0.21 ***	0.23 ***	0.20 ***	0.24 ***	0.24 ***
	(0.02)	(0.02)	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)
South Atlantic	0.29 ***	0.29 ***	0.10 **	0.11 **	0.47 **	0.15 ***	0.15 ***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.05)	(0.03)	(0.03)
East South Central	0.59 ***	0.59 ***	0.23 ***	0.27 ***	0.46 ***	0.30 ***	0.30 ***
	(0.03)	(0.03)	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)
West	0.62 ***	0.62 ***	0.33 ***	0.36 ***	0.54 ***	0.82 ***	0.82 ***
	(0.04)	(0.04)	(0.04)	(0.05)	(0.06)	(0.04)	(0.04)
County characteristics							
% households in urban area	--	--	<0.01 ***	<0.01 ***	<0.01	--	--
			(0.00)	(0.00)	(0.00)		
% farming households	--	--	0.02 ***	0.02 ***	0.02 ***	--	--
			(0.00)	(0.00)	(0.00)		
Sex ratio	--	--	0.11	0.12	1.05 ***	--	--
			(0.09)	(0.09)	(0.13)		
% boarding	--	--	0.01 ***	0.01 **	0.02 ***	--	--
			(0.00)	(0.00)	(0.00)		

Table 5.7. Coefficients from multinomial logistic regression models predicting living arrangments among men (N= 149,542). Living with parents is reference group.

	Panel A: Living in own household					Panel B: Boarding	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2
1848 election results (% voting Whig omitted)							
% voting Democrat	--	--	<0.01	<0.01	<0.01	--	--
			(0.00)	(0.00)	(0.00)		
% voting Free Soil	--	--	<-0.01 ***	<-0.01 **	-0.01 ***	--	--
			(0.00)	(0.00)	(0.00)		
% voting other	--	--	-0.04	-0.04	-0.06	--	--
			(0.03)	(0.03)	(0.05)		
% deaf with deaf family member in household	--	--	--	<-0.01	<-0.01	--	--
				(0.00)	(0.00)		
Number deaf in county per 10,000	--	--	--	<-0.01	-0.01	--	--
				(0.00)	(0.00)		
Constant	-5.94	-5.94	-6.94	-6.57	-7.39	-2.69	-4.98

Data come from the 1850 full census

Sample includes men ages 21-40; contains all deaf and random 5% of hearing individuals

Results for "other" living arrangments not shown.

* p <.05; ** p <.01; *** p <.001; standard errors in parentheses

Table 0.8 Coefficients from multinomial logistic regression models predicting living arrangements among women (N= 137,804). Living with parents is the reference group.

	Panel A: Living in own household					Panel B: Boarding	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2
Is deaf	-2.51 ***	-2.64 ***	-2.65 ***	-2.67 ***	-1.62 ***	-0.57 ***	-0.53 ***
	(0.07)	(0.08)	(0.08)	(0.08)	(0.12)	(0.09)	(0.09)
Lives in enclave	-0.14 ***	-0.15 ***	-0.10 *	-0.09 *	-0.06	0.07	0.07
	(0.04)	(0.04)	(0.04)	(0.04)	(0.06)	(0.05)	(0.05)
Deaf * enclave		1.33 ***	1.36 ***	1.36 ***	0.64		-0.36
	--	(0.24)	(0.24)	(0.24)	(0.38)	--	(0.33)
Individual characteristics							
Age	0.16 ***	0.16 ***	0.16 ***	0.16 ***	0.11 ***	0.06 ***	0.06 ***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Race: non-white	-0.11	-0.11	-0.01	-0.01	0.01	1.07 ***	1.07 ***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.09)	(0.07)	(0.07)
Foreign born	0.83 ***	0.83 ***	0.83 ***	0.83 ***	1.14 ***	1.43 ***	1.43 ***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)
Has other disability	-3.74 ***	-3.74 ***	-3.73 ***	-3.73 ***	-2.36 ***	-0.56 **	-0.56 **
	(0.23)	(0.23)	(0.23)	(0.23)	(0.30)	(0.18)	(0.18)
Cannot read and write	--	--	--	0.29 ***	0.31 ***	--	--
				(0.03)	(0.04)		
Ever married	--	--	--	--	6.22 ***	--	--
					(0.04)		
Household characteristics							
Urban location	-0.23 ***	-0.23 ***	-0.13 ***	-0.13 ***	-0.02	0.53 ***	0.53 ***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Is a farm	-0.65 ***	-0.65 ***	-0.74 ***	-0.74 ***	-0.78 ***	-1.00 ***	-1.00 ***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)

Table 5.8. Coefficients from multinomial logistic regression models predicting living arrangments among women (N= 137,804). Living with parents is reference group.

	Panel A: Living in own household					Panel B: Boarding	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2
Region (omitted: Middle Atlantic)							
New England	-0.11 ***	-0.11 ***	-0.28 ***	-0.28 ***	-0.28 ***	0.01	0.01
	(0.03)	(0.03)	(0.03)	(0.03)	(0.0)	(0.04)	(0.04)
East North Central	0.63 ***	0.63 ***	0.28 ***	0.27 ***	0.17 ***	-0.01	-0.01
	(0.02)	(0.02)	(0.03)	(0.02)	(0.03)	(0.04)	(0.04)
South Atlantic	-0.02	-0.02	-0.10 **	-0.09 **	-0.20 **	-0.41 ***	-0.41 ***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)
East South Central	0.42 ***	0.42 ***	0.08 *	0.08 *	-0.13 *	-0.34 ***	-0.34 ***
	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.05)	(0.05)
West	0.92 ***	0.92 ***	0.37 ***	0.37 ***	0.12	0.29 ***	0.29 ***
	(0.04)	(0.04)	(0.05)	(0.05)	(0.07)	(0.06)	(0.06)
County characteristics							
% households in urban area	--	--	0.01 ***	0.01 ***	<0.01 *	--	--
			(0.00)	(0.00)	(0.00)		
% farming households	--	--	0.01 ***	0.01 ***	0.01 ***	--	--
			(0.00)	(0.00)	(0.00)		
Sex ratio	--	--	1.86 ***	1.91 ***	0.40 **	--	--
			(0.10)	(0.10)	(0.14)		
% boarding	--	--	-0.01 *	-0.01 *	0.01 *	--	--
			(0.00)	(0.00)	(0.00)		

Table 5.8. Coefficients from multinomial logistic regression models predicting living arrangments among women (N= 137,804). Living with parents is reference group.

	Panel A: Living in own household					Panel B: Boarding	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2
1848 election results (% voting Whig omitted)							
% voting Democrat	--	--	<0.01	<0.01	<0.01	--	--
			(0.00)	(0.00)	(0.00)		
% voting Free Soil	--	--	<-0.01	<-0.01	<-0.01	--	--
			(0.00)	(0.00)	(0.00)		
% voting other	--	--	0.16	0.17 *	0.17	--	--
			(0.08)	(0.08)	(0.11)		
% deaf with deaf family member in household	--	--	--	<0.01	<0.01	--	--
				(0.00)	(0.00)		
Number deaf in county per 10,000	--	--	--	<-0.01	<-0.01	--	--
Constant	-2.88	-2.88	-5.29	-5.32	-6.68	-2.19	-2.19

Data come from the 1850 full census

Sample includes women ages 21-40; contains all deaf and random 5% of hearing individuals

Results for "other" living arrangments not shown.

* p <.05; ** p <.01; *** p <.001; standard errors in parentheses

Figures for Chapter 5.

Figure 5.1 Predicted probabilities of marriage in 1850.

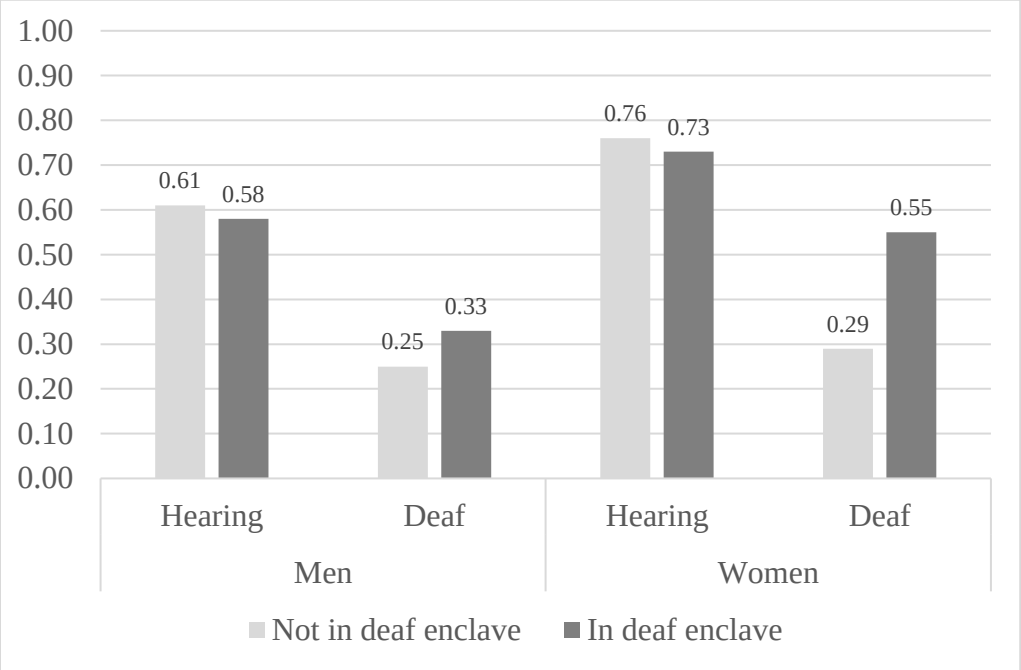


Figure 5.2 Predicted probabilities of living arrangements in 1850 among men.

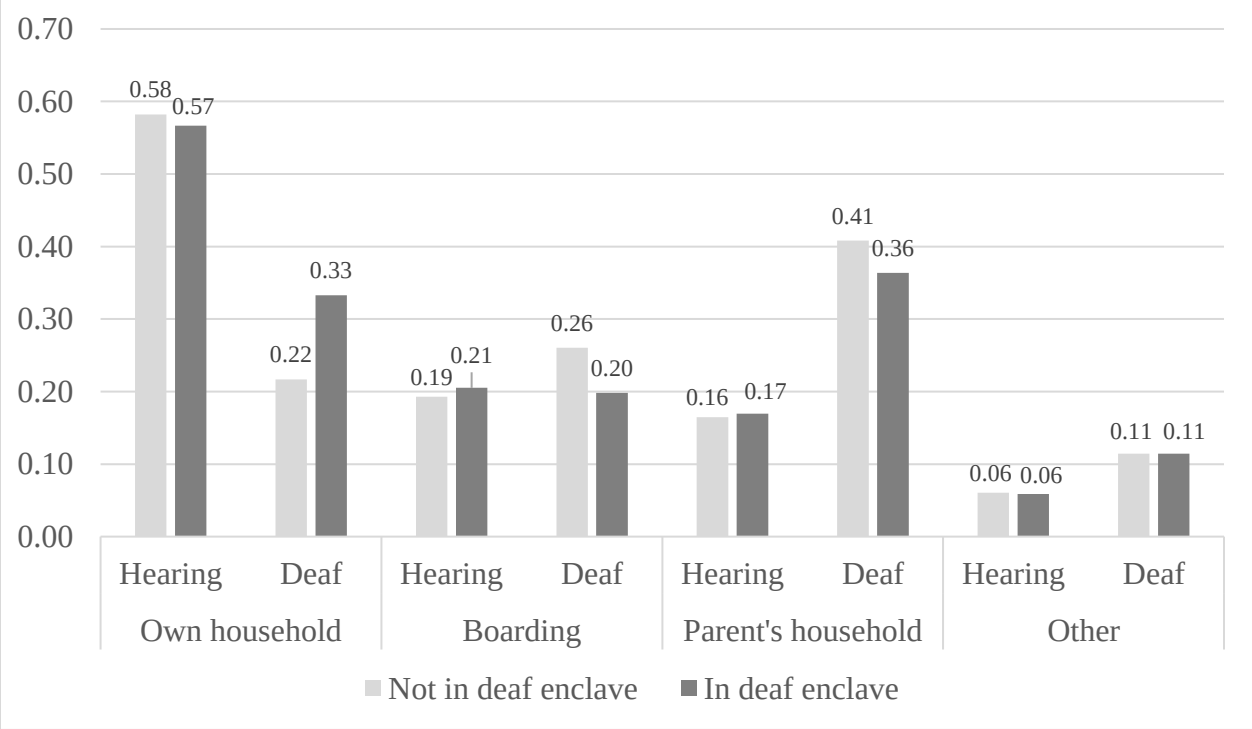
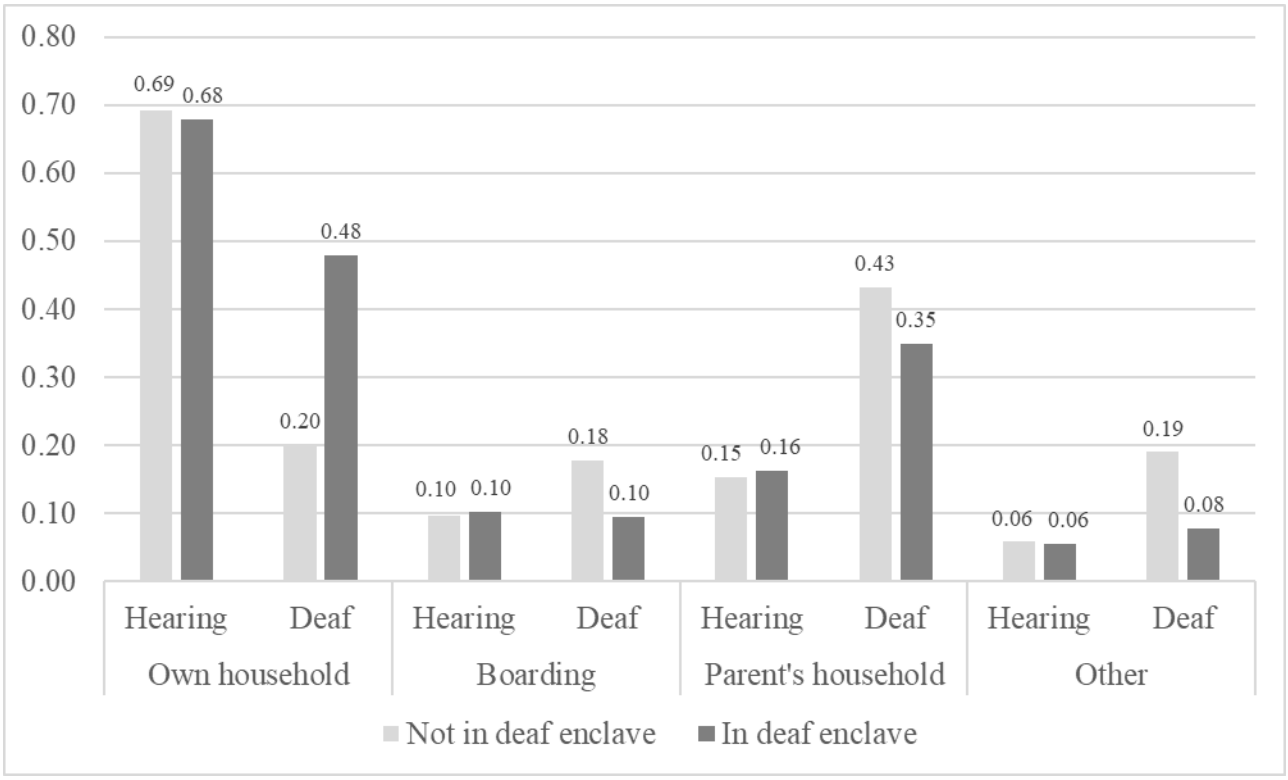


Figure 5.3 Predicted probabilities of living arrangements in 1850 among women.



CHAPTER 6: CHILDHOOD DEAF ENCLAVE RESIDENCE AND MARRIAGE IN ADULTHOOD, 1880

THE CURRENT STUDY

This chapter examines whether exposure to structural stigma during childhood has long-term consequences for marriage in adulthood among deaf men. I hypothesize that growing up in an environment with lower structural stigma (i.e., a deaf enclave) is positively associated with marriage in adulthood among deaf men (Hypothesis 5). I test this hypothesis using an original longitudinal dataset containing deaf and hearing boys between ages 5 and 15 who were living in the Northeast in 1850 and were linked to their 1880 census record (Deaf & Hearing Northeast Boys, 1850-1880).

Before turning to the analyses predicting marriage in adulthood, I begin by carefully examining my analytic sample for sources of bias. I compare my analytic sample (i.e., those who were successfully linked to their 1880 census record) to those who were eligible to be included in this sample but were excluded because they were not linked to their 1880 census record. Given that my deaf and hearing groups were linked using different processes (as described in Chapter 2; also see Figure 2.5) I examine my deaf and hearing subsamples separately. Finally, I check for differences in my analytic sample compared to those who were not linked among those living in deaf enclaves and those living outside deaf enclaves, since this is my indicator for structural stigma and is critical for the following analyses. For all of the following tests comparing my analytic sample to the not-linked sample, I am only able to examine differences in 1850 characteristics, as all 1880 characteristics are missing for those who were not linked to their 1880 census record.

After showing descriptive statistics and testing for differences across my key groups in my constructed dataset, I examine migration into and out of deaf enclaves between 1850 and 1880. Unlike the 1850 census data that I used in previous chapters, my constructed dataset contains information on the same individuals at two points in time: first as children in 1850 and then as adults 30 years later in 1880.

Finally, I estimate multivariate logistic regression models to predict marriage in 1880. I test whether deaf men were more likely to marry as adults in 1880 if they lived in a deaf enclave as a child in 1850. I follow the same analytic strategy as previous chapters; I begin with an additive model that only includes variables from childhood in 1850. Next, I add an interaction term indicating that the person was deaf and was living in a deaf enclave in 1850. Then I add 1850 county-level variables for potential alternative explanations and mechanisms. Finally, I include additional control variables from 1880, including employment status and information on current residence.

RESULTS

Descriptive statistics

I show descriptive statistics for the full sample in Table 6.1. The first column shows all eligible males, i.e., all deaf and a random 1% of hearing males between ages 5-15 who were living in the Northeast in 1850 (N=3,801). The second column shows my analytic sample, i.e., individuals who were successfully linked to their 1880 census record (N=1,204). The third column shows the remaining individuals who were not successfully linked to their 1880 census record and were excluded from my analytic sample (N=2,597).

Before examining differences between those who were successfully linked to their 1880 census record and those who were not, I will describe a few key characteristics of my analytic

sample (see the second column in Table 6.1). As described in Chapter 2, my analytic sample contains about 32% of all eligible participants. 22% of my analytic sample is deaf. About 1 in 5 lived in a deaf enclave in 1850 and 17% were in a periphery county. Most men in my analytic sample had married by 1880 (83%).

Next, I examine my analytic sample for sources of bias. Stars indicate statistically significant ($p<.05$) differences between my analytic sample and those who were not linked to their 1880 census record. On average, my analytic sample is not much different from the not-linked sample. I found only two statistically significant differences between those who were linked to their 1880 census record and those who were not: deafness and nativity. Deaf individuals were significantly more likely to be linked to their 1880 census record; 22% of my analytic sample was deaf compared to 12% of those who were not linked. Those who were born outside the United States were significantly less likely to be linked to their 1880 census record (2% of linked sample was foreign-born compared to 4% of not-linked sample).

Hearing vs. deaf comparison

Table 6.2 compares descriptive statistics for my deaf and hearing subsamples and checks for sources of bias within these two groups. Panel A shows descriptive statistics for all eligible males, separated by those who were deaf (Column 1) and hearing (Column 2). Statistically significant differences ($p<.05$) between the deaf and hearing groups are indicated with a [b]. Panel B focuses on my deaf subsample and compares those included in my analytic sample who were linked to their 1880 census record (Column 3) to those who were not linked (Column 4), while Panel C shows the same comparison among hearing individuals. Statistically significant differences between those who were linked to their 1880 census record and those who were not linked are indicated with a [c].

Interestingly, several additional factors (beyond deafness and nativity) emerge as significant differences among my analytic sample and the not-linked sample when examining the deaf and hearing subsamples separately in Table 6.2. Among my deaf subsample, those who were not living with a parent in 1850 were significantly less likely to be linked to their 1880 census record; 25% of the linked subsample were not living with a parent in 1850 compared to 36% of the not-linked subsample. Similarly, those who were attending a residential school for the deaf in 1850 were also less likely to be linked to their 1880 census record (22% of linked subsample vs. 30% of not-linked subsample). Deaf respondents were less likely to be successfully linked if they were older, foreign-born, or living in an urban location and they were more likely to be linked if they lived on a farm in 1850. Among the hearing subsample, those who were living in a deaf enclave in 1850 were more likely to be successfully linked to their 1880 census record; 23% of the linked subsample were living in a deaf enclave in 1850 vs. 19% of the not-linked sample. This pattern was also observed for those living in a deaf enclave border county (19% in the linked subsample vs. 16% in the non-linked sample). Hearing males were also were also significantly more likely to be successfully linked if they lived in New England compared to the Middle Atlantic region in 1850.

Deaf enclave vs. non-enclave comparison

Next, I test for significant differences between the linked and not-linked samples across deaf enclave and non-enclave counties. Table 6.3 compares those who were living in deaf enclaves in 1850 and those living elsewhere in the Northeast, following the same pattern as Table 6.2. Panel A shows descriptive statistics for all eligible males who were living in deaf enclave counties in 1850 (Column 1) and non-enclave counties (Column 2). Statistically significant differences ($p<.05$) between the two groups are indicated with a [b]. Panel B focuses on

only on those living in deaf enclaves in 1850 and compares those who were linked to their 1880 census record (Column 3) to those who were not linked (Column 4), while Panel C shows the same comparison among those elsewhere in the Northeast. Statistically significant differences between those who were linked to their 1880 census record and those who were not linked are indicated with a [c].

Before examining differences in the linked and not-linked samples, I will describe differences between boys who were living in deaf enclaves and those who were living elsewhere in the Northeast in 1850 (see Panel A in Table 6.3). In this sample, deaf enclaves contained fewer deaf boys compared to the rest of the Northeast deaf; 8% of those living in deaf enclaves were deaf compared to 17% elsewhere in the Northeast. This pattern is driven by the large number of deaf children ages 5-15 who were attending residential schools for the deaf in 1850; all of these schools were located outside deaf enclaves. Deaf enclaves contained a smaller share of boys who were not living with a parent in 1850 (6% in deaf enclaves vs. 11% elsewhere). Deaf enclaves also contained smaller shares of boys who were non-white (nearly 0% in deaf enclaves vs. 2% elsewhere), and foreign-born (1% in deaf enclaves vs. 4% elsewhere). Boys from deaf enclaves were more likely to live on a farm (54% in deaf enclaves vs. 47% elsewhere).

Finally, I tested for significant difference between those who were successfully linked to their 1880 census record and those who were not among those living in deaf enclaves in 1850 (Panel B in Table 6.3) and those living elsewhere in the Northeast (Panel C in Table 6.3). These tests largely mirrored the results for the full sample in Table 6.1 and do not reveal any new significant predictors of being linked to an 1880 census record. Consistent with results for the full sample, only deafness and nativity are significant predictors of being successfully linked to their 1880 census record among both deaf enclaves and non-enclaves.

Migration into and out of deaf enclaves between 1850 & 1880

Next, I examine migration into and out of deaf enclaves between 1850 and 1880 among deaf and hearing individuals, which is depicted in Figure 6.1. Here we can see that among those who were living in a deaf enclave in 1850 as children, deaf men were less likely to move away from a deaf enclave than their hearing peers. About 10% (3 out of 29) of deaf men who lived in a deaf enclave as children moved away from a deaf enclave as adults, compared to 26% (56 out of 214) of hearing men (this difference is marginally statistically significant, $p<.10$). Among those who were not living in a deaf enclave as children and were living elsewhere in the Northeast in 1850, deaf men were more likely to move into a deaf enclave by 1880; about 7% of deaf men who grew up outside a deaf enclave moved into a deaf enclave as adults, compared to 4% of hearing men (this difference is also marginally statistically significant, $p<.10$).

Multivariate models

Table 6.4 shows results from multivariate models predicting whether the respondent was ever married in 1880. The first column (Model 1) shows estimates from the additive model, which only includes individual- and household-level predictors from 1850. On average, deaf men were significantly less likely to have ever married by 1880 (b=-1.66, $p<.001$). Living in a deaf enclave as a child in 1850 was not significantly associated with marriage in 1880. The only other predictor from 1850 that was associated with marriage in 1880 was age; older men were significantly more likely to be married in 1880 (b=0.06, $p<.05$).

I find support for Hypothesis 5 in Model 2, which adds the interaction term indicating that the respondent was deaf and was living in a deaf enclave in 1850. As shown in the second column of Table 5.4, this interaction term is positive and statistically significant (b=1.18 $p<.05$), indicating that deaf men were significantly more likely to have married by 1880 if they were

living in a deaf enclave during childhood in 1850 compared to their deaf peers living elsewhere. Living in a deaf enclave during child was not associated with marriage for hearing men.

Next, I add county-level variables from 1850 for potential alternative explanations and mechanisms in Model 3. Including these variables does not account for the conditional association that deaf men are more likely to have married in 1880 if they lived in a deaf enclave during childhood in 1850. None of these 1850 county-level variables has a statistically significant association with marriage in 1880. The coefficient for the interaction term for being deaf and living in a deaf enclave actually increases in size by a small amount when these county-level variables are included in Model 3 (b=1.26 $p<.05$). In an additional series of models (not shown but available upon request), I entered each county-level variable into the model separately. These tests resulted in tiny changes in the size of the interaction term coefficient. The largest change in this coefficient occurred when I included only the county-level percentage farming, which changed the size of the coefficient from 1.18 to 1.21. This small suppression effect occurs because deaf enclave counties had a larger share of farming households compared to other counties (as shown in Table 5.3) and the county's percentage farming in 1850 is negatively associated with marriage in 1880 (though this association is not statistically significant). Thus, accounting for this county-level difference in percentage farming in 1850 strengthens the conditional relationship between being deaf in a deaf enclave in 1850 and marriage in 1880.

Finally, I add several additional measures from 1880 in Model 4, including whether these men are currently employed, living in a deaf enclave, living in the same county in 1880 as they lived in 1850, and region. Including these 1880 variables decreases the size of the coefficient for the interaction term for being deaf in a deaf enclave, but it remains statistically significant

(b=1.13 $p<.05$). Additional tests (not shown but available upon request) reveal that employment status in 1880 and deaf enclave residence in 1880 are the variables responsible for this partial mediation. In other words, deaf men's employment status in 1880 and residence in a deaf enclave in 1880 account for some (but not all) of the observed conditional relationship that deaf men were more likely to be married in 1880 if they lived in a deaf enclave as a child in 1850. Results from Model 4 also show that men who were not employed in 1880 were significantly less likely to have ever married in 1880 (b=-1.86 $p<.001$). Men who were living in the same county at both time points were also less likely to have ever married in 1880 (b=-.53 $p<.01$). On average, living in a deaf enclave in 1880 and region in 1880 were not associated with marriage in 1880.

Figure 6.2 displays the predicted probabilities of having ever married in 1880 for deaf and hearing men living in and outside of deaf enclaves in 1850, based on estimates from Model 4 of Table 3.4. As shown here, 81% of deaf men who lived in a deaf enclave as a child in 1850 were predicted to have ever married by 1880, compared to 65% of deaf men who were living elsewhere in the Northeast in 1850. In contrast, living in a deaf enclave as a child in 1850 did not significantly predict hearing men's chances of marrying in 1880 (the difference between 88% and 86% is not statistically significant). Among those who lived in deaf enclaves in 1850 as children, deaf men's chances of ever marrying are almost as high as hearing men's (81% for deaf men vs. 86% for hearing men).

DISCUSSION

The key finding from this chapter is that compared to their deaf peers living elsewhere in the Northeast as children in 1850, deaf men were more likely to have ever married as adults in 1880 if they lived in a deaf enclave as a child in 1850. Living in a deaf enclave as a child in 1850

was not associated with the chances of ever marrying among hearing men. In general, deaf men were less likely to marry than hearing men, yet growing up in a deaf enclave provided a substantial boost in deaf men's chances of eventually marrying. In fact, deaf men who lived in deaf enclaves as children were almost as likely to have ever married as their hearing peers; among those who lived in a deaf enclave as a child between ages 5-15 in 1850, 81% of deaf men were predicted to have ever married by 1880 compared to 86% of hearing men. This finding is consistent with Hypothesis 5 and provides some support for the idea that exposure to structural stigma during childhood can have long-term consequences for well-being in adulthood.

A key challenge here is that I was unable to establish whether living in a deaf enclave during childhood provides greater benefits for marriage compared to living in a deaf enclave during adulthood. Unfortunately, my sample contains only 3 deaf men who were living in a deaf enclave as children in 1850 but had moved away by 1880. Consequently, the key finding in this study is driven by the experiences of men who lived in deaf enclaves both as children and adults.

This pattern could indicate that deaf men recognized the benefits of living in a deaf enclave and were less likely to move elsewhere. Among deaf men who were living in a deaf enclave as children in 1850, 90% were still living in a deaf enclave as adults in 1880. In contrast, only 74% of hearing men who were living in deaf enclaves as children were still living in deaf enclaves as adults in 1880. This pattern is not explained differences in migration among deaf and hearing men in general; deaf and hearing men are equally likely to be living in the same county as adults in 1880 as they were living in as children in 1850. They were also equally likely to have moved outside the Northeast in 1880. Additionally, a larger share of deaf men who were living outside deaf enclaves as children in 1850 moved into deaf enclaves as adults in 1880; 7% of deaf men moved into a deaf enclave in 1880 compared to 4% of hearing men. These patterns are

consistent with the idea that deaf enclaves had reduced structural stigma towards deaf individuals—deaf men should be less likely to migrate out of deaf enclaves and more likely to migrate into deaf enclaves as adults if these places provided them with greater opportunities, such as greater chances of marrying. These patterns should be interpreted cautiously, however, give the small number of deaf men who migrated between 1850 and 1880 (only 3 moved out and 16 moved in). Future research should explore whether structural stigma affects migration patterns among members of stigmatized groups.

It is important to keep in mind that these analyses use an analytic sample that is no longer representative of the population. Deaf men are substantially over-represented—this was part of the sample design to achieve large enough sample sizes to make comparisons between those living in and outside deaf enclaves, but the analytic sample includes even more deaf men than would be expected given who was eligible to be included. By manually linking deaf individuals and using additional information available through Ancestry.com, I was able to achieve a substantially greater linkage rate among my deaf subsample—I was able to successfully locate 46% of deaf males, while IPUMS staff were only about to locate 29% of their sample of hearing males. My manual linkage process introduced several sources of bias into the sample: notably, deaf children who were living with their parents were significantly more likely to be linked to their 1880 census record than children who were not living with their parents in 1850. In other words, I was significantly more likely to locate an individual's 1880 census record—and therefore include him in my analytic sample— if he was living with family members in 1850. This source of bias occurred because I used much more information in my linking process compared to what IPUMS staff used. For example, in some cases I was able to locate deaf individuals by locating their family members during later census years. IPUMS staff

intentionally did not use information on family members in their matching algorithms to avoid introducing this source of bias into their sample. My deaf subsample was also biased along several other individual and household characteristics that are likely related to whether the child was living with family members in 1850; deaf males were less likely to be included in my analytic sample if they were older, attending a residential deaf school, living in an urban area, or in a non-farming household in 1850. The hearing males in my analytic sample are also longer representative of the general population of hearing males. My analytic sample is more likely to contain hearing males who were living in New England in 1850—including those living in deaf enclaves—compared to those living in the Middle Atlantic region in 1850. This likely reflects the difficultly IPUMS staff faced in linking individuals who were born in states with larger populations, such as New York and Pennsylvania (Goeken et al. 2011). My analytic sample also includes fewer individuals who were foreign-born, regardless of which linking process was used.

Although my analytic sample differs from the full population of males ages 5-15 who were living in the Northeast in 1850 in several ways, I do not think that these differences should affect the main finding of this chapter—that deaf men were more likely to marry as adults in 1880 if they lived in a deaf enclave during childhood in 1850. Notably, it is reassuring that my analytic sample does not over-represent deaf males who lived in a deaf enclave in 1850. I also did not find any significant differences in who was no longer counted as "deaf" in 1880.

This study contains several additional limitations. First, as described in previous chapters, the 1850 census collected relatively little information on individuals and I am unable to account for factors that may matter for marriage, such as health and family socioeconomic status.

Second, my control variables from the 1880 census are even more limited compared to what I have from the 1850 census. I was not able to include household control variables on

farming or urbanicity in 1880 since I was not able to determine this information for deaf individuals through my manual linking process. Given that farming and urbanicity were significantly associated with marriage among young adults in 1850 (see Chapter 5), it would have been helpful to control for these factors in adulthood. I do not expect that accounting for differences in farming and urbanicity in 1880 would substantially change the key finding from this study, however, since including these variables did not explain similar findings for marriage among young adults in 1850.

Third, although I carefully examined by analytic sample for sources of bias across my variables of interest from 1850, there are likely other sources of bias that I was unable to measure. One key factor is mortality—those who died between 1850 and 1880 were not eligible to be included in my analytic sample. Using my manual linking process, I was able to determine that 15% of my deaf sample who were not linked to their 1880 census records died before 1880; the true value of the share who died is likely higher since death records were not well-tracked during this time period (Hanzlick 1997). Those who survived to 1880 were likely healthier, on average, than those who died (Markides and Machalek 1984). This might explain why a much larger share of deaf men in this sample had ever married compared to the sample of young adults in 1850 (63% in 1880 vs. 29% in 1850). These samples differ in other important ways, however, and are not directly comparable—the 1880 sample is older, only includes those living in the Northeast during childhood, and uses a more accurate measure of marriage—but mortality selection could play a role in these findings.

Despite these limitations, this chapter contributes to our understanding of the consequences of structural stigma. As noted in earlier chapters, I cannot be certain that the observed pattern—i.e., deaf men were more likely to have ever married as adults if they lived in

a deaf enclave during childhood—is due to differences in structural stigma across these places. Compared to the previous two chapters, however, this chapter arguably makes a cleaner comparison between those living in deaf enclaves and those living elsewhere. Since I restrict my sample to children who were living in the Northeast in 1850, deaf enclaves shared more in common with non-enclave places than when I included a larger share of the United States. Furthermore, compared to the previous two chapters, deaf men in this chapter should be more similar to each other. This chapter only includes those who became deaf as children and survived into adulthood. In contrast, previous chapters examined adults who could have become deaf at any time and their deafness may have been caused by illnesses or injuries that had other consequences for their health and wellbeing. The selection processes for this chapter could at least partially address the concern that deaf individuals living in deaf enclaves were healthier, on average, than their peers living elsewhere, because less healthy deaf men would be less likely to survive to 1880.

Future research should continue to investigate the questions I tried to address with this chapter, including whether childhood exposure to structural stigma during childhood matters for outcomes in adulthood and whether structural stigma is associated with inward and outward migrations for members of stigmatized groups. I consider the implications of these findings and those from previous chapters in Chapter 7.

TABLES FOR CHAPTER 6

Table 0.1 Descriptive statistics for all eligible males, analytic sample, & non-linked subsamples

		All Eligible Males	Analytic sample (Linked to 1880)	Not linked
	Range	Mean or Proportion		
1850 characteristics				
Individual & household characteristics				
Is deaf	0 , 1	0.15	0.22 *	0.12
Lives in a deaf enclave	0 , 1	0.19	0.20	0.18
Lives in a periphery county	0 , 1	0.15	0.17	0.15
Is not living with a parent	0 , 1	0.11	0.10	0.11
Is attending residential school for deaf	0 , 1	0.04	0.05	0.04
Age	5 - 15	10.09	9.96	10.16
Race: non-white	0 , 1	0.01	0.01	0.01
Foreign born	0 , 1	0.04	0.02 *	0.04
Urban location	0 , 1	0.22	0.23	0.21
Is a farm	0 , 1	0.49	0.48	0.49
New England region (Middle Atlantic omitted)	0 , 1	0.48	0.52	0.46
1880 characteristics				
Was linked to 1880 census record	0 , 1	0.32	--	--
Ever married	0 , 1	--	0.83	--
Lives in an enclave	0 , 1	--	0.19	--
Lives in a periphery county	0 , 1	--	0.17	--
Lives in same county as 1850	0 , 1	--	0.50	--
Is not currently employed	0 , 1	--	0.06	--
Region (Middle Atlantic omitted)				
New England	0 , 1	--	0.44	--
Outside Northeast	0 , 1	--	0.17	--
N		3,801	1,204	2,597

Data come from Deaf & Hearing Northeast Boys, 1850-1880

Sample includes males ages 5-15 who were living in Northeast in 1850

* significantly different from non-linked subsample, $p < .05$

Table 0.2 Descriptive statistics comparing deaf & hearing subsamples

		Panel A: All eligible		Panel B: Deaf subsample		Panel B: Hearing subsample	
				Linked to		**Linked to**	
		Deaf	**Hearing**	**1880**	**Not linked**	**1880**	**Not linked**
	Range						
1850 characteristics							
Individual & household characteristics							
Lives in a deaf enclave	0 , 1	0.10 [b]	0.20	0.11	0.09	0.23 [c]	0.19
Lives in a periphery county	0 , 1	0.07 [b]	0.17	0.08	0.07	0.19 [c]	0.16
Is not living with a parent	0 , 1	0.31 [b]	0.07	0.25 [c]	0.36	0.06	0.07
Is attending residential school for deaf	0 , 1	0.26	--	0.22 [c]	0.30	--	--
Age	5 - 15	10.61 [b]	10.00	10.33 [c]	10.84	9.85	10.06
Race: non-white	0 , 1	0.01	0.01	0.00	0.01	0.01	0.01
Foreign born	0 , 1	0.08 [b]	0.03	0.05 [c]	0.10	0.02 [c]	0.03
Urban location	0 , 1	0.46 [b]	0.17	0.39 [c]	0.52	0.18	0.17
Is a farm	0 , 1	0.31 [b]	0.52	0.40 [c]	0.23	0.50	0.53
New England region (Middle Atlantic omitted)	0 , 1	0.33 [b]	0.50	0.33	0.33	0.57 [c]	0.48
1880 characteristics							
Was linked to 1880 census record	0 , 1	0.46 [b]	0.29	--	--	--	--
Ever married	0 , 1	--	--	0.63 [b]	--	0.89	--
Not marked as deaf in 1880[a]	0 , 1	--	--	0.09	--	--	--
Lives in an enclave	0 , 1	--	--	0.16	--	0.20	--
Lives in a periphery county	0 , 1	--	--	0.14	--	0.18	--
Lives in same county as 1850	0 , 1	--	--	0.51	--	0.50	--
Is not currently employed	0 , 1	--	--	0.19 [b]	--	0.03	--
Region (Middle Atlantic omitted)							
New England	0 , 1	--	--	0.31 [b]	--	0.48	--
Outside Northeast	0 , 1	--	--	0.16	--	0.17	--
Died before 1880[a]	0 , 1	--	--	--	0.15	--	--
N		578	3,223	263	315	941	2,282

Data come from Deaf & Hearing Northeast Boys, 1850-1880; Sample includes males ages 5-15 who were living in Northeast in 1850

[a] variable is only available for deaf subsample

[b] significantly different from hearing subsample, $p < .05$; [c] significantly different from non-linked subsample, $p<.05$ (only shown for Panels B & C)

[c] significantly different from non-linked subsample, $p < .05$ (only estimated for Panels B & C)

Table 0.3 Descriptive statistics comparing deaf enclave & non-enclave samples

		Panel A: All eligible		Panel B: Deaf enclaves		Panel C: Non-enclaves	
		Deaf enclave counties	**Non-enclave counties**	**Linked to 1880**	**Not linked**	**Linked to 1880**	**Not linked**
	Range	Mean or Proportion					
1850 characteristics							
Individual & household characteristics							
Is deaf	0 , 1	0.08 [b]	0.17	0.12 [bc]	0.06	0.24 [bc]	0.13
Lives with a parent	0 , 1	0.06 [b]	0.11	0.07	0.06	0.11 [b]	0.12
Attending residential school for deaf	0 , 1	--	0.05	--	--	0.06	0.04
Age	5 - 15	10.08	10.10	9.92	10.17	9.97	10.15
Race: non-white	0 , 1	0.00 [b]	0.02	0.00	0.00	0.01 [b]	0.02
Foreign born	0 , 1	0.01 [b]	0.04	0.01	0.02	0.03 [bc]	0.05
Urban location	0 , 1	0.21	0.22	0.24	0.19	0.22	0.22
Is a farm	0 , 1	0.54 [b]	0.47	0.56 [b]	0.53	0.46 [b]	0.48
New England region (Middle Atlantic omitted)	0 , 1	--	0.36	--	--	0.39	0.34
1880 characteristics							
Was linked to 1880 census record	0 , 1	0.34	0.31	--	--	--	--
Ever married	0 , 1	--	--	0.87	--	0.82	--
Not marked as deaf in 1880[a]	0 , 1	--	--	0.07		0.09	--
Lives in an enclave	0 , 1	--	--	0.76	--	--	--
Lives in a periphery county	0 , 1	--	--	0.66	--	--	--
Lives in same county as 1850	0 , 1	--	--	0.53	--	0.49	--
Is not currently employed	0 , 1	--	--	0.04	--	0.07	--
Region (Middle Atlantic omitted)							
New England	0 , 1	--	--	0.88 [b]	--	0.33	--
Outside Northeast	0 , 1	--	--	0.10 [b]	--	0.19	--
Died before 1880[a]	0 , 1	--	--	--	0.18	--	0.14
N		709	3,092	243	466	961	2,131

Data come from Deaf & Hearing Northeast Boys, 1850-1880; Sample includes males ages 5-15 who were living in Northeast in 1850

[a] variable is only available for deaf subsample

[b] significantly different from non-enclave subsample, $p < .05$; [c] significantly different from non-linked subsample, $p < .05$ (Panels B & C only)

Table 0.4 Coefficients from logistic regression models predicting marriage in 1880 among men (N= 1,204)

	Model 1	Model 2	Model 3	Model 4
1850 characteristics				
Is deaf	-1.66 ***	-1.84 ***	-1.84 ***	-1.53 ***
	(0.18)	(0.20)	(0.21)	(0.22)
Grew up in deaf enclave	0.13	-0.12	-0.12	-0.24
	(0.25)	(0.26)	(0.29)	(0.37)
Deaf * enclave	--	1.18 *	1.26 *	1.13 *
		(0.54)	(0.55)	(0.57)
Individual & household controls				
Age	0.06 *	0.06 *	0.06 *	0.07 *
	(0.03)	(0.03)	(0.03)	(0.03)
Race: non-white	0.76	0.72	0.86	0.82
	(1.06)	(1.07)	(1.08)	(1.08)
Foreign born	-0.48	-0.51	-0.57	-0.77
	(0.45)	(0.46)	(0.46)	(0.47)
Is not living with a parent	0.77	0.75	0.72	0.79
	(0.49)	(0.49)	(0.49)	(0.51)
Is attending residential school for deaf	-0.12	-0.01	-0.02	-0.39
	(0.62)	(0.62)	(0.64)	(0.68)
Urban location	0.30	0.31	0.23	0.14
	(0.24)	(0.24)	(0.28)	(0.28)
Is a farm	0.31 ^	0.29	0.32 ^	0.34 ^
	(0.18)	(0.18)	(0.19)	(0.20)
New England region (Middle Atlantic omitted)	-0.02	-0.06	-0.07	-0.44
	(0.19)	(0.20)	(0.30)	(0.44)
County chracteristics				
% households in urban area	--	--	<0.01	<0.01
			(0.01)	(0.01)
% farming households	--	--	-0.01	-0.01
			(0.01)	(0.01)
Sex ratio	--	--	1.55	1.72
			(1.37)	(1.44)
1848 election results (% voting Whig omitted)				
% voting Democrat	--	--	0.01	<0.01
			(0.01)	(0.01)
% voting Free Soil	--	--	0.02	0.01
			(0.01)	(0.01)
% voting other	--	--	-0.89	-1.10
			(3.45)	(3.57)
% deaf with deaf family member in household	--	--	0.02	0.02
			(0.03)	(0.03)
Number deaf in county per 10,000	--	--	<-0.01	0.00
			(0.01)	(0.01)

Table 6.2. Coefficients from logistic regression models predicting marriage in 1880 among men, continued

	Model 1	Model 2	Model 3	Model 4
1880 characteristics				
Lives in deaf enclave	--	--	--	0.21
				(0.38)
Lives in same county as 1850	--	--	--	-0.53 **
				(0.20)
Is not currently employed	--	--	--	-1.86 ***
				(0.27)
Region (Middle Atlantic omitted)				
New England	--	--	--	0.38
				(0.41)
Outside Northeast	--	--	--	0.07
				(0.32)
Constant	1.23	1.31	-0.44	-0.09

Data come from Deaf & Hearing Northeast Boys, 1850-1880

Sample includes males ages 5-15 who were living in Northeast in 1850

^ p <.10; * p <.05; ** p <.01; *** p <.001; standard errors in parentheses

Figures for Chapter 6

Figure 6.1 Deaf enclave residence across time among deaf and hearing males, 1850-1880.

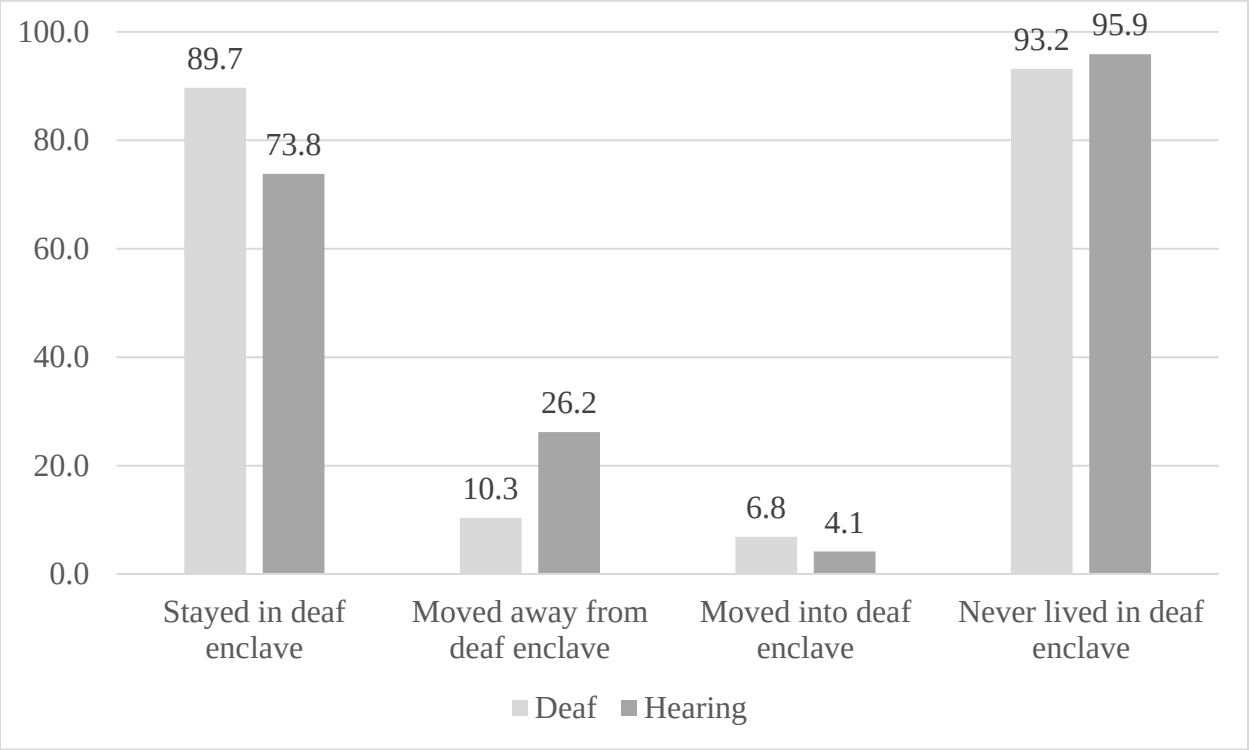
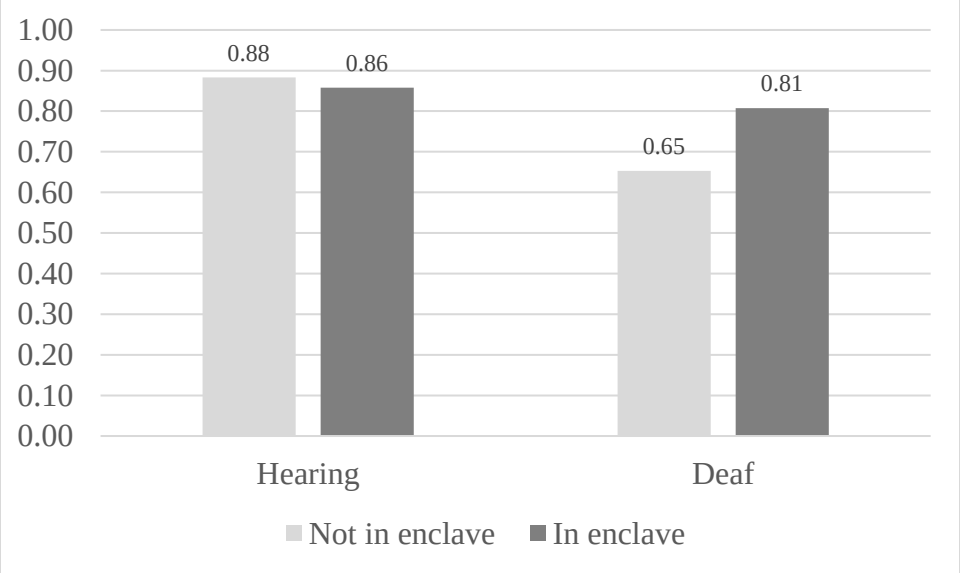


Figure 6.2 Predicted probability of marriage among men in 1880.



CHAPTER 7: CONCLUDING REMARKS

SUMMARY OF FINDINGS

The goal of this study was to explore the consequences of structural stigma by leveraging a unique historical case—sites in 19th century America with reduced structural stigma towards deaf individuals, or deaf enclaves. I hypothesized that deaf people should have greater social and economic opportunities if they lived in deaf enclaves compared to deaf people living elsewhere and, in general, I found support for my hypotheses. Compared to their deaf peers living elsewhere, deaf individuals were more likely to be employed, marry, and establish independent residences if they lived in deaf enclaves. Since the reduction in structural stigma should not have affected hearing people to the same degree as deaf people, if at all, I compared the experiences of deaf people living in and outside deaf enclaves to hearing people in and outside deaf enclaves. Hearing individuals did not receive these same benefits from living in a deaf enclave—in fact, hearing young adults in 1850 were *less* likely to marry if they lived in a deaf enclave relative to their hearing peers living elsewhere. Although I cannot definitively say that structural stigma caused these patterns, the fact that only deaf people benefited from living in a deaf enclave increases my confidence that structural stigma could have played a role.

The results of this study suggest that structural stigma could have wide-ranging consequences for wellbeing. Previous research documents the consequences of structural stigma for a variety of health outcomes and health behaviors (Hatzenbuehler 2017), but less is known about how structural stigma may affect other areas of life. In this study, I focus on three key indicators of wellbeing during the 19th century: employment, marriage, and establishing an independent residence. All three of these outcomes were highly valued in 19th century America

(Rothman 1987; Volo and Volo 2007) and deaf individuals were much less likely to achieve these outcomes compared to their hearing peers (Buchanan 1999; Fay 1898).

Chapter 4

In Chapter 4, I find that deaf men were more likely to be employed if they lived in deaf enclaves relative to their deaf peers living elsewhere in 1850, which is consistent with Hypothesis 1. About 79% of deaf men were predicted to be employed in deaf enclaves compared to 71% living elsewhere. Living in a deaf enclave was not associated with hearing men's employment; 92% of hearing men were predicted to be employed both in and outside of deaf enclaves.

Chapter 5

In Chapter 5, I find that deaf young adults were more likely to have ever married if they were living in a deaf enclave in 1850 relative to their deaf peers living elsewhere. In contrast, hearing young adults were slightly less likely to marry if they lived in a deaf enclave. These results support Hypothesis 2.

I also find that deaf young adults were more likely to have independent residences in they lived in deaf enclaves in 1850, but only by creating their own households. Contrary to Hypothesis 3, deaf young adults in deaf enclaves were *not* more likely to establish an independent residence by boarding. Given that most young adults in the 19th century established independent residences when they married, I hypothesized that deaf individuals' increased chances of marrying in deaf enclaves could explain their increased chances of establishing an independent residence in a deaf enclave (Hypothesis 4). I found support for Hypothesis 4 among women: deaf women's increased chances of living in an independent residence if they lived in a deaf enclave was entirely explained by differences in marriage in and outside deaf enclaves.

Differences in marriage did not explain this association for deaf men, however. Deaf men were more likely to live in their own households rather than live in a parent's household if they lived in a deaf enclave regardless of whether they had ever married.

Chapter 6

In Chapter 6, I find that deaf men who were living in deaf enclaves as children in 1850 were more likely to have married as adults in 1880, which is consistent with Hypothesis 5. This finding is unique because previous research has not yet tested whether exposure to structural stigma in childhood is associated with outcomes in adulthood. These results should be interpreted cautiously, however, because 90% of the deaf men in my sample who lived in deaf enclaves as children were also living in deaf enclaves as adults. Consequently, my measure of exposure to structural stigma during childhood was highly correlated with exposure to structural stigma during adulthood and I was not able to distinguish between the two.

Alternative explanations

In order to better isolate the role of structural stigma for employment, marriage, and establishing an independent residence, I tried to account for potential alternative explanations that could account for increased opportunities for deaf people in deaf enclaves. These alternative explanations included the community's level of support for progressive values, labor market conditions, and availability of potential marriage partners and opportunities for boarding. In Chapter 3, I tested whether deaf enclaves provided greater opportunities in these areas in 1850. Deaf enclaves did possess some characteristics beyond reduced structural stigma that could have been particularly beneficial for deaf individuals—compared to the rest of the United States, deaf enclaves had greater support for progressive values, more favorable labor market conditions (i.e., greater opportunities to work in artisan trades and in places with an active whaling port), a more

balanced sex ratio, and more opportunities for boarding. Yet these differences did not account for the observed findings that deaf individuals were more likely to be employed, marry, and live in an independent residence if they lived in a deaf enclave.

Mechanisms

I also tested whether two potential mechanisms could explain why deaf individuals had greater social and economic opportunities in deaf enclaves. These mechanisms were greater local representation of deaf individuals and greater hereditary deafness in deaf enclaves. Consistent with Lane and colleagues' (2011) predictions, deaf enclaves had a substantially higher share of deaf residents in 1850 compared to other places in the United States; however, I was not able to determine whether hereditary deafness was significantly more common in deaf enclaves relative to other places in the US. I tried to approximate hereditary deafness by measuring the percentage of deaf people who were living with a deaf family member (excluding spouses) in 1850. On average, deaf enclaves had a greater share of deaf individuals living with a deaf family member than the rest of the U.S. (21% vs. 11%), but this difference was not statistically significant.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

This study has several limitations. First, a key challenge for this project was that there is little surviving data from the mid- to late 19th century, so I was limited to the basic information collected by the 1850 and 1880 censuses. I had to rely on imprecise measures to identify deaf enclaves and several other key variables including my outcome measure for marriage in 1850, which I had to infer from information from household rosters. I was not able to account for all factors that likely influence employment, marriage, and independent living, such as health and family socioeconomic status. I tried to account for characteristics of deaf enclaves that could have affected deaf individuals' opportunities for employment, marriage, and independent living,

but I was not able to account for all alternative explanations. Future research could explore additional geographic factors, such as measures of industrialization.

Second, I do not have a direct measure of structural stigma towards deaf individuals. Instead, I relied on information from Lane and colleagues' (2011) work to identify places in which structural stigma was likely reduced and used these deaf enclaves as proxies for structural stigma. I tried to overcome this limitation by comparing the experiences of deaf and hearing people in my analyses, since hearing people should not have experienced the same benefits from reduced structural stigma. I also tried to account for potential alternative explanations to structural stigma. Yet it is possible that the greater wellbeing deaf people experienced in deaf enclaves was caused by something other than reduced structural stigma. Future research could continue to explore what occurred within deaf enclaves during this time, such as by linking deaf individuals to enrollment records from deaf schools.

Third, due to small sample sizes and limited migration among deaf men, I was unable to test whether exposure to structural stigma during childhood had an independent effect on marriage in adulthood, beyond its association with structural stigma in adulthood. Future research should continue to explore the long-term consequences of structural stigma.

This study revealed two interesting patterns that could be explored in future research. First, the consequences of structural stigma may vary by gender. I found that deaf young women received a substantially greater boost in their chances of marrying and establishing independent residences if they lived in a deaf enclave in 1850 compared to deaf men. Future research could examine whether structural stigma affects men and women differently across other outcomes and among other groups. Second, places with reduced structural stigma may attract and retain members of stigmatized groups. In this study, deaf men were more likely to remain in deaf

enclaves as adults if they lived there as children and were more likely to move into deaf enclaves as adults if they did not live there as children, relative to hearing men in and outside deaf enclaves. This could have made deaf enclaves more welcoming environments for deaf people over time. If this pattern exists in other places, migration could lead to further reductions in structural stigma across time. Future research could explore how low-stigma environments change over time and whether these changes have implications for wellbeing.

IMPLICATIONS

This study sheds light on the disparities in employment, marriage, and independent living that deaf individuals faced during the mid- to late 19th century. These disparities were not uniform across places and were substantially reduced in deaf enclaves, suggesting that these disparities were partially—though not entirely—due to social conditions such as structural stigma. Considering these three outcomes together, deaf enclaves seemed to provide the greatest benefits for marriage. Deaf young women were more than twice as likely to have ever married if they lived in a deaf enclave in 1850 compared elsewhere in the United States, and deaf men's chances of marrying nearly matched their hearing peers among those who were living in deaf enclaves as children in 1850. Results for employment and establishing an independent residence were more modest in comparison, especially considering that living in a deaf enclave did not increase opportunities to become a boarder. These findings may suggest that the benefits of living in deaf enclaves were primarily due to ties between deaf individuals, rather than changes in the attitudes of hearing people living in these places. Consistent with this idea, I found that deaf young adults were more likely to have a deaf spouse if they lived in a deaf enclave compared to their deaf peers living elsewhere. Deaf people living in deaf enclaves may have been better able to act on their preference to marry a deaf partner (Van Cleve and Crouch 1989).

Deaf individuals are a unique group in many ways, as is the structural stigma they faced in 19th century America. As such, the findings of this study may not be generalizable to members of other stigmatized groups or to deaf individuals today. Yet the experiences of deaf individuals during this time are informative for considering how structural stigma may impact other groups and how these groups respond to stigmatizing environments. During the 19th century, deaf Americans used their shared ties to cultivate a positive, shared Deaf identity and began to celebrate their unique language and culture—and this celebration of Deaf culture continues today (Van Cleve and Crouch 1989; Edwards 2011). Other stigmatized groups have also begun to reject negative stereotypes about them and to cultivate positive shared identities. For instance, the neurodiversity movement promotes a positive, shared identity and sense of community among autistic people (Kapp et al. 2013). Deaf enclaves facilitated the development of Deaf culture (Lane et al. 2011), which may have contributed to the greater social and economic opportunities deaf people had in those places. Similar processes may be happening among other groups who are forming these kinds of identities. Future research could explore relationships between shared positive identities, structural stigma, and wellbeing among stigmatized groups.

This study may shed light on how enclaves matter for the people living in them. Scholars argue that an enclave can "open opportunities for its members that are not easily accessible in the larger society" (Zhou and Logan 1989, p. 809) and results from this study are consistent with this idea. Previous research on enclaves has largely focused on entrepreneurship and economic wellbeing among ethnic minority groups (Abrahamson 2005). Yet the results of this study suggest that enclaves can benefit other groups, including those with much smaller populations like deaf people. Despite their tiny numbers relative to the rest of the population, deaf men were more likely to be employed if they lived in deaf enclaves. This study also suggests that living in

an enclave may benefit minority groups in other areas of life, including the ability to marry and live independently. Lane and colleagues (2011) believe that deaf enclaves enabled marriage and family ties among deaf people—such ties were likely crucial sources of social capital. It is important to note, however, that deaf enclaves were not formed through segregation—deaf people were not forced to cluster certain areas. By definition, enclaves are formed through voluntary clustering; in contrast, when the minority group is segregated into certain areas, such places are called "ghettos" (Marcuse 2005). While enclaves encourage group members to form useful social ties with other minority group members and foster a sense of community through shared cultural practices (Mazumdar et al. 2000), ghettos reinforce the existing status hierarchy and block minority group members from accessing valuable resources and opportunities (Marcuse 2005). This study finds that deaf people tended to fare better if they lived in a deaf enclave, but the mechanisms that led to these differences remain an open question. Future research should continue to explore which specific aspects of local environments lead to greater wellbeing among minority groups and whether these patterns vary across different kinds of places or different minority groups.

This study provides support for the social model of disability—the idea that features of society, including structural stigma, restrict opportunities and resources for people with disabilities (Oliver 1990). Deaf Americans faced barriers to employment, marriage, and establishing an independent residence during the 19th century, but they were able to substantially these disparities in certain places. Future research should work to identify ways to reduce barriers such as structural stigma and facilitate greater wellbeing for people with disabilities and other stigmatized groups.

REFERENCES

Abrahamson, Mark. 2005. *Urban Enclaves*. Macmillan.

Baynton, Douglas C. 1996. *Forbidden Signs: American Culture and the Campaign Against Sign Language*. University of Chicago Press.

Becker, Gary S. 1973. "A Theory of Marriage: Part I." *Journal of Political Economy* 81(4):813–46.

Bell, Alexander Graham. 1884. *Memoir Upon the Formation of a Deaf Variety of the Human Race*. National academy of sciences.

Blackwell, Debra L., Mark D. Hayward, and Eileen M. Crimmins. 2001. "Does Childhood Health Affect Chronic Morbidity in Later Life?" *Social Science & Medicine* 52(8):1269–84.

Bode, Carl. 1967. *American Life in the 1840's*. First Edition edition. Doubleday & Co.

Bos, Henny and Nanette Gartrell. 2010. "Adolescents of the USA National Longitudinal Lesbian Family Study: Can Family Characteristics Counteract the Negative Effects of Stigmatization?" *Family Process* 49(4):559–72.

Buchanan, Robert M. 1999. *Illusions of Equality: Deaf Americans in School and Factory, 1850-1950*. Gallaudet University Press.

Bureau (U.S.), Volta. 1893. *Histories of American Schools for the Deaf, 1817-1893*. Volta bureau.

Census Reports Tenth Census: Report on the Defective, Dependent, and Delinquent Classes of the Population of the United States, as Returned at the Tenth Census (June1, 1880). 1888. U.S. Government Printing Office.

Chaudoir, Stephenie R., Valerie A. Earnshaw, and Stephanie Andel. 2013. "'Discredited' Versus 'Discreditable': Understanding How Shared and Unique Stigma Mechanisms Affect Psychological and Physical Health Disparities." *Basic & Applied Social Psychology* 35(1):75–87.

Cleve, John V. Van and Barry A. Crouch. 1989. *A Place of Their Own: Creating the Deaf Community in America*. Gallaudet University Press.

Cleve, John Vickrey Van, ed. 2007. *The Deaf History Reader*. 1st edition. Washington, DC: Gallaudet University Press.

Cook, Jonathan E., Valerie Purdie-Vaughns, Ilan H. Meyer, and Justin T. A. Busch. 2014. "Intervening within and across Levels: A Multilevel Approach to Stigma and Public Health." *Social Science & Medicine* 103:101–9.

Coontz, Stephanie. 2006. *Marriage, a History: How Love Conquered Marriage*. Penguin.

Corrigan, Patrick W., Kristin A. Sokol, and Nicolas Rüsch. 2013. "The Impact of Self-Stigma and Mutual Help Programs on the Quality of Life of People with Serious Mental Illnesses." *Community Mental Health Journal* 49(1):1–6.

Corrigan, Patrick W., Amy C. Watson, Mark L. Heyrman, Amy Warpinski, Gabriela Gracia, Natalie Slopen, and Laura L. Hall. 2005. "Structural Stigma in State Legislation." *Psychiatric Services* 56(5):557–63.

Couch, Kenneth A. and Robert Fairlie. 2010. "Last Hired, First Fired? Black-White Unemployment and the Business Cycle." *Demography* 47(1):227–47.

Crandall, Christian S. and Amy Eshleman. 2003. "A Justification-Suppression Model of the Expression and Experience of Prejudice." *Psychological Bulletin; Washington* 129(3):414–46.

Crocker, Jennifer and Neil Lutsky. 1986. “Stigma and the Dynamics of Social Cognition.” Pp. 95–121 in *The Dilemma of Difference: A Multidisciplinary View of Stigma, Perspectives in Social Psychology*, edited by S. C. Ainlay, G. Becker, and L. M. Coleman. Boston, MA: Springer US.

Crocker, Jennifer and Brenda Major. 1989. “Social Stigma and Self-Esteem: The Self-Protective Properties of Stigma.” *Psychological Review; Washington, Etc.* 96(4):608.

Crosnoe, Robert. 2007. “Gender, Obesity, and Education.” *Sociology of Education* 80(3):241–60.

Decker, Scott H., Natalie Ortiz, Cassia Spohn, and Eric Hedberg. 2015. “Criminal Stigma, Race, and Ethnicity: The Consequences of Imprisonment for Employment.” *Journal of Criminal Justice* 43(2):108–21.

Dolin, Eric Jay. 2008. *Leviathan: The History of Whaling in America*. Reprint edition. New York; London: W. W. Norton & Company.

Duncan, Greg J., Kathleen M. Ziol-Guest, and Ariel Kalil. 2010. “Early-Childhood Poverty and Adult Attainment, Behavior, and Health.” *Child Development* 81(1):306–25.

Edwards, R. A. R. 2012. *Words Made Flesh: Nineteenth-Century Deaf Education and the Growth of Deaf Culture*. NYU Press.

Evans-Lacko, S., E. Brohan, R. Mojtabai, and G. Thornicroft. 2012. “Association between Public Views of Mental Illness and Self-Stigma among Individuals with Mental Illness in 14 European Countries.” *Psychological Medicine* 42(8):1741–52.

Fay, Edward Allen. 1898. *Marriages of the Deaf in America. An Inquiry Concerning the Results of Marriages of the Deaf in America*. Washington, D.C., Gibson Bros., Printers and Bookbinders.

Fitch, Catherine A. and Steven Ruggles. 2000. “Historical Trends in Marriage Formation: The United States 1850-1990.” *The Ties That Bind: Perspectives on Marriage and Cohabitation* 59–88.

Frable, Deborrah E. S., Linda Platt, and Steve Hoey. 1998. “Concealable Stigmas and Positive Self-Perceptions: Feeling Better around Similar Others.” *Journal of Personality and Social Psychology* 74(4):909–22.

Frost, David M. and Ilan H. Meyer. 2009. “Internalized Homophobia and Relationship Quality Among Lesbians, Gay Men, and Bisexuals.” *Journal of Counseling Psychology; Washington* 56(1):97.

Gannon, Jack R. 2012. *Deaf Heritage: A Narrative History of Deaf America*. 1st Edition, Including a new author's preface edition. Washington, D.C: Gallaudet University Press.

Geronimus, A. T. 2000. “To Mitigate, Resist, or Undo: Addressing Structural Influences on the Health of Urban Populations.” *American Journal of Public Health* 90(6):867–72.

Gillespie, Brian Joseph, David Frederick, Lexi Harari, and Christian Grov. 2015. “Homophily, Close Friendship, and Life Satisfaction among Gay, Lesbian, Heterosexual, and Bisexual Men and Women.” *PLoS One; San Francisco* 10(6):e0128900.

Goeken, Ron, Lap Huynh, T. A. Lynch, and Rebecca Vick. 2011. “New Methods of Census Record Linking.” *Historical Methods: A Journal of Quantitative and Interdisciplinary History* 44(1):7–14.

Goffman, Erving. 1963. *Stigma: Notes on the Management of Spoiled Identity*. New York: Simon & Schuster.

Goodley, Dan. 2016. *Disability Studies: An Interdisciplinary Introduction*. SAGE.

de Graaf, Lawrence B. 1980. “Race, Sex, and Region: Black Women in the American West, 1850-1920.” *Pacific Historical Review* 49(2):285–313.

Green, Sara E. 2003. “‘What Do You Mean “What’s Wrong with Her?”’: Stigma and the Lives of Families of Children with Disabilities.” *Social Science & Medicine* 57(8):1361–74.

Groce, Nora Ellen and John W. M. Whiting. 1985. *Everyone Here Spoke Sign Language: Hereditary Deafness on Martha’s Vineyard*. Harvard University Press.

Guner, Nezih, Yuliya Kulikova, and Joan Llull. 2018. “Marriage and Health: Selection, Protection, and Assortative Mating.” *European Economic Review* 104:138–66.

Hanzlick, Randy. 1997. “Death Registration: History, Methods, and Legal Issues.” *Journal of Forensic Sciences* 42(2):14108J.

Hatzenbuehler, Mark L. 2014. “Structural Stigma and the Health of Lesbian, Gay, and Bisexual Populations.” *Current Directions in Psychological Science* 23(2):127–32.

Hatzenbuehler, Mark L., Andrew R. Flores, and Gary J. Gates. 2017. “Social Attitudes Regarding Same-Sex Marriage and LGBT Health Disparities: Results from a National Probability Sample.” *Journal of Social Issues* 73(3):508–28.

Hatzenbuehler, Mark L. and Katherine M. Keyes. 2013. “Inclusive Anti-Bullying Policies and Reduced Risk of Suicide Attempts in Lesbian and Gay Youth.” *Journal of Adolescent Health* 53(1, Supplement):S21–26.

Hatzenbuehler, Mark L., Katherine M. Keyes, and Deborah S. Hasin. 2009. “State-Level Policies and Psychiatric Morbidity In Lesbian, Gay, and Bisexual Populations.” *American Journal of Public Health* 99(12):2275–81.

Hatzenbuehler, Mark L., Katherine M. Keyes, and Katie A. McLaughlin. 2011. “The Protective Effects of Social/Contextual Factors on Psychiatric Morbidity in LGB Populations.” *International Journal of Epidemiology* 40(4):1071–80.

Hatzenbuehler, Mark L. and Bruce G. Link. 2014. “Introduction to the Special Issue on Structural Stigma and Health.” *Social Science & Medicine* 103:1–6.

Hatzenbuehler, Mark L., Susan Nolen-Hoeksema, and John Dovidio. 2009. “How Does Stigma ‘Get Under the Skin’?: The Mediating Role of Emotion Regulation.” *Psychological Science* 20(10):1282–89.

Hatzenbuehler, Mark L., Jo C. Phelan, and Bruce G. Link. 2013. “Stigma as a Fundamental Cause of Population Health Inequalities.” *American Journal of Public Health* 103(5):813–21.

Hatzenbuehler, Mark L., Seth J. Prins, Morgan Flake, Morgan Philbin, M. Somjen Frazer, Daniel Hagen, and Jennifer Hirsch. 2017. “Immigration Policies and Mental Health Morbidity among Latinos: A State-Level Analysis.” *Social Science & Medicine* 174:169–78.

Hatzenbuehler, Mark L., Nicolien F. Wieringa, and Katherine M. Keyes. 2011. “Community-Level Determinants of Tobacco Use Disparities in Lesbian, Gay, and Bisexual Youth: Results From a Population-Based Study.” *Archives of Pediatrics & Adolescent Medicine* 165(6):527–32.

Hayward, Mark D. and Bridget K. Gorman. 2004. “The Long Arm of Childhood: The Influence of Early-Life Social Conditions on Men’s Mortality.” *Demography* 41(1):87–107.

Heckman, Timothy G., Eileen S. Anderson, Kathleen J. Sikkema, Arlene Kochman, Seth C. Kalichman, and Timothy Anderson. 2004. “Emotional Distress in Nonmetropolitan Persons

Living With HIV Disease Enrolled in a Telephone-Delivered, Coping Improvement Group Intervention." *Health Psychology* 23(1):94–100.

Herek, Gregory M. 2009. "Sexual Stigma and Sexual Prejudice in the United States: A Conceptual Framework." Pp. 65–111 in *Contemporary Perspectives on Lesbian, Gay, and Bisexual Identities, Nebraska Symposium on Motivation*, edited by D. A. Hope. New York, NY: Springer New York.

Hipes, Crosby, Jeffrey Lucas, Jo C. Phelan, and Richard C. White. 2016. "The Stigma of Mental Illness in the Labor Market." *Social Science Research* 56:16–25.

Jacobson, Paul H. 1957. "An Estimate of the Expectation of Life in the United States in 1850." *The Milbank Memorial Fund Quarterly* 35(2):197–201.

Jacoby, Ann, Dee Snape, and Gus A. Baker. 2005. "Epilepsy and Social Identity: The Stigma of a Chronic Neurological Disorder." *The Lancet Neurology* 4(3):171–78.

Janus, Alexander L. 2009. "Disability and the Transition to Adulthood." *Social Forces* 88(1):99–120.

Kapp, Steven K., Kristen Gillespie-Lynch, Lauren E. Sherman, and Ted Hutman. 2013. "Deficit, Difference, or Both? Autism and Neurodiversity." *Developmental Psychology* 49(1):59–71.

Kawachi, Ichiro and Lisa F. Berkman. 2001. "Social Ties and Mental Health." *Journal of Urban Health* 78(3):458–67.

Kellogg, Day Otis. 1878. *Encyclopædia Britannica: A Dictionary of Arts, Sciences, and General Literature*. J. M. Stoddart.

Kessler, Ronald C., J. Blake Turner, and James S. House. 1989. "Unemployment, Reemployment, and Emotional Functioning in a Community Sample." *American Sociological Review* 54(4):648–57.

Kett, Joseph F. 1977. *Rites of Passage: Adolescence in America, 1790 to the Present*. Basic Books.

Keyssar, Alexander. 1986. *Out of Work: The First Century of Unemployment in Massachusetts*. Cambridge Cambridgeshire ; New York: Cambridge University Press.

Klawitter, Marieka M. and Victor Flatt. 1998. "The Effects of State and Local Antidiscrimination Policies on Earnings for Gays and Lesbians." *Journal of Policy Analysis and Management* 17(4):658–86.

Krahn, Gloria L., Deborah Klein Walker, and Rosaly Correa-De-Araujo. 2015. "Persons With Disabilities as an Unrecognized Health Disparity Population." *American Journal of Public Health* 105(Suppl 2):S198–206.

Krentz, Christopher. 2000. *A Mighty Change: An Anthology of Deaf American Writing, 1816-1864*. Gallaudet University Press.

Lane, Harlan L. 1992. *The Mask of Benevolence: Disabling the Deaf Community*. Knopf.

Lane, Harlan, Richard C. Pillard, and Ulf Hedberg. 2011. *The People of the Eye: Deaf Ethnicity and Ancestry*. 1 edition. New York: Oxford University Press.

Lee, Barrett A., Chad R. Farrell, and Bruce G. Link. 2004. "Revisiting the Contact Hypothesis: The Case of Public Exposure to Homelessness." *American Sociological Review* 69(1):40–63.

Levin, Shana and Colette Van Laar, eds. 2005. *Stigma and Group Inequality: Social Psychological Perspectives*. 1 edition. Mahwah, NJ: Psychology Press.

Lightfoot, Elizabeth, Katharine Hill, and Traci LaLiberte. 2010. "The Inclusion of Disability as a Condition for Termination of Parental Rights." *Child Abuse & Neglect* 34(12):927–34.

Link, B. G., J. C. Phelan, M. Bresnahan, A. Stueve, and B. A. Pescosolido. 1999. “Public Conceptions of Mental Illness: Labels, Causes, Dangerousness, and Social Distance.” *American Journal of Public Health* 89(9):1328–33.

Link, Bruce G. and Jo C. Phelan. 2001. “Conceptualizing Stigma.” *Annual Review of Sociology* 27(1):363–85.

Link, Bruce G., Lawrence H. Yang, Jo C. Phelan, and Pamela Y. Collins. 2004. “Measuring Mental Illness Stigma.” *Schizophrenia Bulletin* 30(3):511–41.

Livingston, James D. 2013. *Mental Illness-Related Structural Stigma:* Mental Health Commission of Canada.

Lukachko, Alicia, Mark L. Hatzenbuehler, and Katherine M. Keyes. 2014. “Structural Racism and Myocardial Infarction in the United States.” *Social Science & Medicine* 103:42–50.

Margo, Robert A. 1992. *The Labor Force in the Nineteenth Century*. *Working Paper*. 40. National Bureau of Economic Research.

Markides, Kyriakos S. and Richard Machalek. 1984. “Selective Survival, Aging and Society.” *Archives of Gerontology and Geriatrics* 3(3):207–22.

Mazumdar, Sanjoy, Shampa Mazumdar, Faye Docuyanan, And Colette Marie Mclaughlin. 2000. “Creating A Sense of Place: The Vietnamese-Americans And Little Saigon.” *Journal of Environmental Psychology* 20(4):319–33.

McConnell, David and Gwynnyth Llewellyn. 2002. “Stereotypes, Parents with Intellectual Disability and Child Protection.” *Journal of Social Welfare & Family Law* 24(3):297–317.

McKee-Ryan, Frances, Zhaoli Song, Connie R. Wanberg, and Angelo J. Kinicki. 2005. “Psychological and Physical Well-Being During Unemployment: A Meta-Analytic Study.” *Journal of Applied Psychology* 90(1):53–76.

McLeod, Jane D. and Karen Kaiser. 2004. “Childhood Emotional and Behavioral Problems and Educational Attainment.” *American Sociological Review* 69(5):636–58.

McPherson, Miller, Lynn Smith-Lovin, and James M. Cook. 2001. “Birds of a Feather: Homophily in Social Networks.” *Annual Review of Sociology* 27(1):415–44.

Mendoza-Denton, Rodolfo, Geraldine Downey, Valerie J. Purdie, Angelina Davis, and Janina Pietrzak. 2002. “Sensitivity to Status-Based Rejection: Implications for African American Students’ College Experience.” *Journal of Personality and Social Psychology* 83(4):896–918.

Miller, Carol T., Kristin W. Grover, Janice Yanushka Bunn, and Sondra E. Solomon. 2011. “Community Norms About Suppression of AIDS-Related Prejudice and Perceptions of Stigma by People With HIV or AIDS.” *Psychological Science* 22(5):579–83.

Mintz, Steven. 1995. *Moralists and Modernizers: America’s Pre-Civil War Reformers*. JHU Press.

Mojtabai, Ramin. 2010. “Mental Illness Stigma and Willingness to Seek Mental Health Care in the European Union.” *Social Psychiatry and Psychiatric Epidemiology; Heidelberg* 45(7):705–12.

Morris, Stephen. 2007. “The Impact of Obesity on Employment.” *Labour Economics* 14(3):413–33.

Mulligan, William H. Jr. 2006. *Shoemakers of Lynn, Massachusetts, 1850-1880:* The Edwin Mellen Press.

“NAD History.” *National Association of the Deaf*. Retrieved March 17, 2017 (https://www.nad.org/about-us/nad-history/).

Nielsen, Kim E. 2012. *A Disability History of the United States*. Beacon Press.

Oliver, Michael. 1990. *The Politics of Disablement: A Sociological Approach*. London: Palgrave Macmillan.

Oswald, Ramona Faith and Linda S. Culton. 2003. "Under the Rainbow: Rural Gay Life and Its Relevance for Family Providers*." *Family Relations* 52(1):72–81.

Oswald, Ramona Faith, Courtney Cuthbertson, Vanja Lazarevic, and Abbie E. Goldberg. 2010. "New Developments in the Field: Measuring Community Climate." *Journal of GLBT Family Studies* 6(2):214–28.

Pachankis, John E. 2007. "The Psychological Implications of Concealing a Stigma: A Cognitive-Affective-Behavioral Model." *Psychological Bulletin* 133(2):328–45.

Pachankis, John E., Mark L. Hatzenbuehler, Katie Wang, Charles L. Burton, Forrest W. Crawford, Jo C. Phelan, and Bruce G. Link. 2018. "The Burden of Stigma on Health and Well-Being: A Taxonomy of Concealment, Course, Disruptiveness, Aesthetics, Origin, and Peril Across 93 Stigmas." *Personality and Social Psychology Bulletin* 44(4):451–74.

Pager, Devah. 2003. "The Mark of a Criminal Record." *American Journal of Sociology* 108(5):937–75.

Paul, Karsten I. and Klaus Moser. 2009. "Unemployment Impairs Mental Health: Meta-Analyses." *Journal of Vocational Behavior* 74(3):264–82.

Peplau, Letitia Anne and Adam W. Fingerhut. 2007. "The Close Relationships of Lesbians and Gay Men." *Annual Review of Psychology* 58(1):405–24.

Perry, Brea L. 2011. "The Labeling Paradox: Stigma, the Sick Role, and Social Networks in Mental Illness." *Journal of Health and Social Behavior* 52(4):460–77.

Petit, Christine. 1996. "Genes Responsible for Human Hereditary Deafness: Symphony of a Thousand." *Nature Genetics* 14(4):385.

Pettigrew, Thomas F. and Linda R. Tropp. 2006. “A Meta-Analytic Test of Intergroup Contact Theory.” *Journal of Personality and Social Psychology; Washington* 90(5):751.

Prinz, Philip M. and Michael Strong. 1998. “ASL Proficiency and English Literacy within a Bilingual Deaf Education Model of Instruction. [Miscellaneous Article].” *Topics in Language Disorders* 18(4):47–60.

Rayback, Joseph G. 2015. *Free Soil: The Election of 1848*. University Press of Kentucky.

Rorabaugh, W. J. 1988. *The Craft Apprentice: From Franklin to the Machine Age in America*. Oxford, New York: Oxford University Press.

Ross, Catherine E. and John Mirowsky. 1995. “Does Employment Affect Health?” *Journal of Health and Social Behavior* 36(3):230–43.

Rothman, Ellen. 1987. *Hands and Hearts: A History of Courtship in America*. Cambridge, Mass: Harvard University Press.

Rotundo, E. Anthony. 1994. *American Manhood*. Reprint edition. New York, NY: Basic Books.

Royster, Deirdre. 2003. *Race and the Invisible Hand: How White Networks Exclude Black Men from Blue-Collar Jobs*. University of California Press.

Ruggles, Steven. 1987. *Prolonged Connections: The Rise of the Extended Family in Nineteenth-Century England and America*. Steven Ruggles.

Ruggles, Steven, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek. 2015. “Integrated Public Use Microdata Series: Version 6.0 [Dataset].”

Rybarczyk, Bruce, David L. Nyenhuis, John J. Nicholas, Susan M. Cash, and James Kaiser. 1995. “Body Image, Perceived Social Stigma, and the Prediction of Psychosocial Adjustment to Leg Amputation.” *Rehabilitation Psychology* 40(2):95–110.

Sacks, Oliver. 2000. *Seeing Voices*. Reprint edition. New York: Vintage.

Schein, Jerome D. 1989. *At Home Among Strangers*. Gallaudet University Press.

Schein, Jerome D. and Marcus T. Delk. 1974. *Deaf Population of the United States*. Silver Spring, Md: Natl Assn of the Deaf.

Smith, Daniel Scott. 1992. "The Meanings of Family and Household: Change and Continuity in the Mirror of the American Census." *Population and Development Review* 18(3):421–56.

Sobek, Matthew. 2001. "New Statistics on the U.S. Labor Force, 1850–1990." *Historical Methods: A Journal of Quantitative and Interdisciplinary History* 34(2):71–87.

Swift, Elaine K., Robert G. Brookshire, David t. Canon, and Evelyn C. Fink. 2009. *Database of [United States] Congressional Historical Statistics, 1789-1989*. Ann Arbor, MI: Inter-university Consortium for Political and Social Research.

Szreter, Simon. 2002. "The State of Social Capital: Bringing Back in Power, Politics, and History." *Theory and Society* 31(5):573–621.

Tilcsik, András. 2011. "Pride and Prejudice: Employment Discrimination against Openly Gay Men in the United States." *American Journal of Sociology* 117(2):586–626.

Umberson, Debra, Kristi Williams, Daniel A. Powers, Hui Liu, and Belinda Needham. 2005. "Stress in Childhood and Adulthood: Effects on Marital Quality Over Time." *Journal of Marriage and Family* 67(5):1332–47.

United States. Bureau of the Census. n.d. "The Deaf-Mute Population of the United States, 1920." Retrieved March 5, 2019 (https://bepl.ent.sirsi.net/client/en_US/default/search/detailnonmodal/ent:$002f$002fSD_ILS$002f0$002fSD_ILS:639480/ada).

Varady, David P. 2005. *Desegregating the City: Ghettos, Enclaves and Inequality*. Ithaca, UNITED STATES: State University of New York Press.

Volo, James M. and Dorothy Denneen Volo. 2007. *Family Life in 17th- and 18th-Century America*. Greenwood.

Walters, Ronald G. and Eric Foner. 1997. *American Reformers, 1815-1860, Revised Edition*. Macmillan.

Wellman, Barry and Scot Wortley. 1990. "Different Strokes from Different Folks: Community Ties and Social Support." *American Journal of Sociology* 96(3):558–88.

Whisman, Mark A. 2006. "Childhood Trauma and Marital Outcomes in Adulthood." *Personal Relationships* 13(4):375–86.

Wilde (sir.), William Robert W. 1854. *On the Physical, Moral, and Social Condition of the Deaf and Dumb*.

Williams, David R. and Ruth Williams-Morris. 2000. "Racism and Mental Health: The African American Experience." *Ethnicity and Health; Abingdon* 5(3/4):243.

Wilson, Kenneth L. and Alejandro Portes. 1980. "Immigrant Enclaves: An Analysis of the Labor Market Experiences of Cubans in Miami." *American Journal of Sociology* 86(2):295–319.

Winzer, Margret A. 1986. "Deaf-Mutia: Responses to Alienation by the Deaf in the Mid-Nineteenth Century." *American Annuals of the Deaf* 131(1):29–32.

World Report on Disability. 2011. World Health Organization.

Yang, Y., K. L. Zhang, K. Y. Chan, and D. D. Reidpath. 2005. "Institutional and Structural Forms of HIV-Related Discrimination in Health Care: A Study Set in Beijing." *AIDS Care* 17(sup2):129–40.

Zhou, Min and John R. Logan. 1989. "Returns on Human Capital in Ethnic Enclaves: New York City's Chinatown." *American Sociological Review* 54(5):809–20.

Vita
Megan Lemmon

Areas of Specialization

Disability, family, health disparities, social inequality

Education

PhD	Sociology & Demography, The Pennsylvania State University	2019
MA	Sociology & Demography, The Pennsylvania State University	2015
BA	Sociology, Western Washington University	2008
AA	Everett Community College	2006

Publications

Lemmon, Megan, Sarah E. Patterson, and Molly A. Martin. 2018. "Mothers' Time and Relationship with Their Adolescent Children: The Intersecting Influence of Family Structure and Maternal Labor Force Participation." *Journal of Family Issues* doi:0192513X18756929.

Martin, Molly A., Adam M. Lippert, Kelly D. Chandler, and **Megan Lemmon**. 2018. "Does Mothers' Employment Affect Adolescents' Weight and Activity Levels? Improving Our Empirical Estimates." *SSM - Population Health* 4:291–300.

Whyman, Mira, **Megan Lemmon**, and Jay Teachman. 2011. "Non-Combat Military Service in the United States and its Effects on Depressive Symptoms Among Men." *Social Science Research,* 40 (2): 695-703.

Lemmon, Megan, Whyman, Mira, and Jay Teachman. 2009. "Active Duty Military Service in the United States: Cohabiting Unions and the Transition to Marriage." *Demographic Research* 20: 195–209.