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RISKY BUSINESS: VISUALIZING AND HISTORICIZING THE ROLE OF GEOGRAPHIC REPRESENTATION AND THINKING IN AMERICAN BUSINESS

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RISKY BUSINESS:
VISUALIZING AND HISTORICIZING THE ROLE OF GEOGRAPHIC
REPRESENTATION AND THINKING IN AMERICAN BUSINESS

THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Arts in the
College of Arts and Sciences
at the University of Kentucky

By

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2020

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ABSTRACT OF THESIS

RISKY BUSINESS:

VISUALIZING AND HISTORICIZING THE ROLE OF GEOGRAPHIC REPRESENTATION AND THINKING IN AMERICAN BUSINESS

Geographic representation and thinking has a long history in the American business world. This thesis examines the role of geographic representation and thinking in the fire insurance industry in the late nineteenth and early twentieth centuries through the Sanborn Map Company and in the development of site selection as a concept in the mid-twentieth century through the biography of William Applebaum. Through these case studies, I explore the relevance applied cartographic representations to the business world and the opportunities it presents towards advancing geography as a discipline.

KEYWORDS: applied geography, Sanborn Map Company, site selection, cartographic history

John Joseph Swab

07/28/2020

Date

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CHAPTER 1. INTRODUCTION

In the midst of the chaos pulling at the very strings of our social, economic, and political fabric, writing a thesis on the history of geographic thought and of historical geography seems like the least relevant topic. Yet the ongoing COVID-19 pandemic and its impacts presents an opportunity for (or more likely, will force through budgetary pressures) geography to reconsider its place within the academy and its overall objectives as a discipline. However, even before the pandemic, geography was showing signs of distress: the closure of weakened research-intensive departments at the University of Southern California (2010) and Johns Hopkins University (2017) preceded the elimination of geography at teaching institutions such as Long Island University-Post (Elizabeth, 2020). Threats to the departments at the University of Nebraska and the University of Wisconsin-Stevens Points due to low enrollments pose ominous threats to the future of the discipline (Dunker, 2018; Shastri and Hovorka, 2019). And while writing this thesis, the University of Alaska decided to completely eliminate its entire geography department (Whitford, 2020). Moreover, across the discipline, there has been a significant decline in geography majors, with concern that the long-term effects on even the most stalwart departments might bring about unwelcome changes that hurt geography as we know it (Kaplan, 2019).

As the academy changes, so too must the discipline and the individuals who call themselves geographers. Of course, this is not the first time the discipline has faced existential crises: ever since geographers began meeting and building a body of scholarship, there has been a debate over the state of the field, what geography's unique domain of knowledge is, and the discipline's utility to society. This long, on-going

discussion over what geography “is” and what it can be has been both a liability and an asset to the discipline. The same discipline that was “not a university subject” fit for Harvard in 1948 is the same discipline that continues to thrive in recent decades (Smith, 1987). As a discipline, our ongoing concern about geography’s health has produced a robust corpus of scholarship written by the eminent scholars who are responsible for the current state and focus of the discipline. These reconceptualizations and rearticulations of the discipline are the major and minor course corrections that have—for better or worse—put geography where it is today. And while inherently each piece of scholarship and every action taken by a geographer constitutes the advancement of a particular vision of geography, some visions have found lasting influence and adherents in the discipline, long out living the original individuals who first conceptualized them.

In this thesis, I probe at these alternative versions of the discipline, seeking to uncover the stories of forgotten geographies and geographers whose impact on the discipline and the American landscape continues to have major implications regarding the business of geography. With bits of evidence scattered across dated journal articles and archival collections, and other forms of evidence illuminated only through data visualization, these stories reflect alternative histories of the discipline that are not part of our “normative canon.” As such, I seek to advance an argument that a focus on the changing nature of geography’s practical applications warrants attention for understanding ongoing challenges that the discipline faces and where we as geographers might take the discipline. Specifically, I examine the importance and changing nature of applied geography; that is the application of geographical thinking and techniques *outside of boundaries of the academy*. As a piece of historical geographical research, I examine

the importance of representation and abstraction to aiding in business decisions around insurance underwriting (Chapter 2) and site selection (Chapter 3). Underlying these empirics is an attention to the development and priorities of the discipline in the era of study. Thus, this thesis ties together these historical moments with the emphasis of the discipline today, seeking to understand how we might continue to advance the discipline.

By tying historical geography to the history of geography, I tread along a well-worn path. The Presidential Addresses of the American Association of Geographers have long served as a way for individual scholars to contextualize their view of the discipline, illuminating its flaws and shortcomings, and charting a course towards an improved version. In short, they are a ready body of literature documenting the “course corrections” that have made geography what it is today (Brunn, 2018).¹ Coming in yearly installments from scholars of varying interests, networks, preferences, and the like, each address presents a personalized snapshot of the discipline in that particular time. In the pages to come, I explore the Presidential Addresses of two prominent geographers, Carl Sauer and Ronald Abler.

As one of geography’s so-called “larger than life” figures, Carl Sauer’s brand of geography has long been investigated for imparting a particular epistemological worldview into the discipline, one that prioritized field study to understand the development of a particular landscape (Entrikin, 1984). This concept, and the larger idea of the cultural landscape, were critical to the formation of the versions of cultural and

¹ I use the appropriate name of the AAG during the time period in which I am writing about, i.e. the Association of American Geographers for before 2016 and the American Association of Geographers for 2016 on.

historical geography that dominated much of mainstream human geography in the post-World War II era to until the late 1990s (Groth and Bressi, 1997).

Perhaps the first historical geographer to embrace the label; Sauer's address, entitled "Foreword to Historical Geography," argued for a geographical discipline based on a marriage of space and time, seeking to understand the currents of activity on the surface of the Earth, from the physical processes that altered the land to the creatures which inhabited and developed culture on the land's surface (Sauer, 1941). Speaking roughly a half century since the formation of an academic endeavor labeled as "geography," Sauer sought to provide clarity to both his own methods and the larger structure of the discipline. In opening the address, Sauer asserted that his speech was "a protest against the neglect of historical geography" but rather was a response to the version of the discipline outlined by Richard Hartshorne's 1939 book *The Nature of Geography* which had largely relegated historical geography to edges of the discipline (Sauer, 1941, 1-2). Dismayed at the decline of physical geography and the continued fracturing of geography, Sauer charted a version of the discipline's history that arose out of a particular set of circumstances imparting on geography birthmarks pointing to its origin. His address encouraged regionalism as articulated by Hartshorne (with a strong dose of history of course), with a call to find this knowledge through situated experiences in the field. In short, it was a call for a vision of the discipline, which would prove to be premonitory over the next decade.

As Sauer outlined his view of the discipline at the Annual Meeting in Baton Rouge, much of the world was engulfed in the opening salvos of the Second World War. By the 1941 Annual Meeting, the United States would be a war with the Axis powers,

and geographers with specific regional interests would find their expertise in demand by the federal government. By the close of the war—and with the horrors of the Holocaust revealed for the entire world to see—Sauer’s version of geography had both the practical utility and philosophical underpinnings to chart a new direction for the discipline in the post-war years, specifically around regional studies and fieldwork. This view of the discipline produced a pipeline of geographers to serve the growing national security apparatus that became crucial to the Cold War geopolitical paradigm (Barnes and Farish, 2006).

Nearly a half century after Sauer’s address, another Presidential Address mirrored similar concerns. Ronald Abler’s 1987 address came on the heels of another pressing crisis for the discipline, namely the closure of the geography departments at Columbia, Northwestern, and the University of Chicago (Abler, 1987). Reeling from the discontinuance of graduate training in the loftiest of American higher education institutions, Abler felt there was a need to recalibrate the discipline towards a more wholistic view of that fostered an active physical geography branch, that fully embraced the emerging subdiscipline of GIS, and that expanded geography’s audience to include academics, educators, and practitioners (Abler, 1987, 520). Reflecting on the changing nature of the discipline, which had spent two decades developing Marxist and feminist geographies, he also argued for a pragmatic return to regional studies, which would re-expand the discipline and return it to its rightful heritage. Abler, then writing as a Professor of Geography at Penn State, the President of the Association of American Geographers, and the director of the National Science Foundation’s geography division provided him unique insight into how the discipline might move forward. Indeed, Abler

would go to become the Executive Director of the Association of American Geographers from 1990 to 2003. Thus, his address was a premonition of what was to come in the discipline, or at a minimum, a version of how the discipline might evolve. In the thirty-three years since, aspects of his address have been readily taken up, with the development of an active and robust physical geography and GIS subdisciplines, which have thrived in the neoliberal academy due to their perceived practicality. Others, such as an overt return to regional geography as a dominant paradigm within the discipline, have not materialized reflecting the changing needs of society after the end of the Cold War.

Strikingly however, attention to cartographic representation was present in both addresses. As a tool of representation, cartography and maps are one of geography's most readily understood and practical contributions to society. Both Sauer and Abler, geographers whose main focus was not in cartography, saw the map as a practical utility for the discipline. For Sauer, the map was an item to be consulted either for its archival merit or constructed to highlight the development of a phenomenon (Sauer, 1941, 14). For Abler, the map was a by-product of a GIS process that would bring visual clarity to a wide variety of topics through advanced geographic data storage, processing, and manipulation (Abler, 1987, 514-515). In both addresses, representation via the map was a useful utility to express geographic principles and create job opportunities for geographers.

Yet historically, cartography had long been maligned within the discipline. While cartography has its roots as an organized practice in the sixteenth century, as an academic endeavor, cartographic research was taken up fairly late even within geography. Geographers such as J.P. Goode and Erwin Raisz formalized the practical importance of

cartography before the Second World War, with significant impacts in the classroom but little in the way of research (McMaster and McMaster, 2002). After the Second World War, Arthur Robinson married theory and practice together in cartography, articulating a more scientific version of the practice over the artistic version that had existed before. Through various metrics, models, and theories his work and this epistemological lens came to dominate cartographic research throughout the 1950s until the rise of desktop GIS computing in the 1990s. This analytical cartography was largely interested in creating maps quickly, with higher accuracy, and with greater clarity, and understanding how perceptually these processes worked (Robinson, 1953). This epistemology set cartography apart from the regional Sauerian work which dominated throughout the 1950s and the critical work which emerged in the 1970s and 1980s. In some sense, Robinson's approach saw cartography as a methodological practice needing constant revision. The emphasis was largely on producing a better product to better understand the world from the cartographer's point of view, not on understanding and communicating the underlying processes that made a map into a visual representation of the world.

This view of cartography found a ready place in growth of state-sponsored higher education in the post-war era, which embraced cartography for its practical utility. Private universities, on the other hand, saw robust cartographic research programs as largely unnecessary to their core mission (Dunbar, 1986). For example, when it had a program, Harvard had numerous cartographers on its payroll, yet none were ever tenure-track faculty. At Clark in the late 1970s, after the departure of two-tenure track appointments in cartography, Mark Monmonier was considered for a faculty position. Ultimately, the position was not filled as members of the Clark faculty felt that Monmonier's research

output was not equivalent to other Clark faculty members and that his appointment would signal “that Clark is going into cartography as a field of specialization in a big way” (WAK [Assumed to be William A. Koelsch], 1978, 2).²

Even the establishment of the Harvard Lab for Computer Graphics in 1965, while a major factor in the development of digital mapping, did little to improve the fortunes of cartography in the discipline. While from the outside it may have seemed that geography was back at Harvard, it was far more of a return of a small subfield of the discipline than a full-fledged embrace. With money from the Ford Foundation to “raise the performance level of professional persons in city and regional planning and related fields”, the center’s objectives made it a key locus in quantitative geography and digital mapping, but little else in the realm of geography emerged (Wilson, 2017, 57). The departure of William Warntz in 1970, along with the rise of Marxist geography, led to a significant decline in the intellectual importance of this center of the discipline and to its attempt at improving the fortunes of cartography. Over the next twenty-one years, the center would continue to produce new geographic software that was formative to the emergence of digital mapping. Utilizing the money from its sales to continue to fund the center until 1991, this established a business model for GIS software and cartographic education in higher education which would prove important to the future of the discipline. This neoliberal model placed practical utility as measured by monetary income from which to justify the continued existence of such units.

² The departing professors were George McCleary and Kang-Tsung Chang. Both were on the faculty for less than a decade and were the only tenure-track appointments in cartography in Clark’s history to that point.

By the time of Abler's address in 1987, the fortunes of cartography were beginning to change. Digital cartographic applications were entering the business and academic community in force. ESRI, then a multi-million-dollar company, had already introduced its first desktop GIS ARC/INFO in 1982, which was making inroads in the academic and business community. Clark University, which had decided not to emphasize cartography in 1978, changed course and hired J. Ronald Eastman to teach in 1981—albeit in a Visiting Assistant Professor role—before hiring him into a tenure-track position in 1986 (Eastman, 2014). This change in direction came on the heels of Eastman's development of the GIS software IDRISI and the establishment of Clark Labs, which in a model similar to Harvard, financed the development of a GIS research program through the sale of software (Eastman, 2003, 2). By the turn of the millennium, this “pay-to-play” GIS model would be well entrenched in the subdiscipline, turning geography departments into consumers of expensive ESRI products and advanced hardware. Increasingly, these “pay-to-play” models were extended to education, with Penn State establishing the first online-only GIS program in 1999, largely funded through government-sponsored training in defense and homeland security (Goldsberry, 2019).³

Of course, this change did not come without notice. Abler's address only added fuel onto the flames of the growing power of desktop GIS and the ongoing personal computing revolution in the discipline. Indeed, the next American Association of Geographers President, Terry Jordan, wrote that GIS had the potential to transform the discipline into a “race of technicians, for-hire scientists, and teacher-trainers” (Crampton

³ The list of online GIS programs is too numerous to list, however there are more than 20 different online programs available as of 2020.

and Wilson, 2015; Jordan, 1988). To remain relevant cartography labs suddenly required immense sums of money to construct adequate teaching and research spaces and along with this came new tenure lines to support the teaching of GIS. Combined with the already negative attitudes towards cartography, even present at eminent public institutions with leadership in cartography and GIS such as the University of Wisconsin, the rest of the discipline was unprepared for the major shift that was already occurring.⁴ As the economics of the discipline began to change, it became clear that this new wave of money for GIS research and teaching represented a definitive shift in the structure of the discipline. Combined with end of the Cold War, infighting between critical geographers, and the decline of regional studies; concerns emerged that GIS might be a second Quantitative Revolution that could sweep away two generations of critical work. Starting in the early 1990s, critiques informed by geographers drew attention to problematic issues with GIS, notably spilling over on the pages of prominent journals and contributing to the “science wars” of the era (Openshaw, 1991; Schuurman, 2000; Smith, 1992).

At the same time, there was a stirring within the history of cartography towards a more theoretically informed understanding of maps. Mainly an outgrowth of the rare maps trade and the construction of map libraries, much of subdiscipline was focused around bibliography and description of historic maps. Although earlier generation of

⁴ As a PhD student at Wisconsin in the late 1980s, Matthew Edney was slighted by non-cartographic faculty members stating that “. . .the continual denigration of maps and mapping in the seminar on geographic thought required of all doctoral students . . .[and] the absolute refusal—until it became a matter of raising external funds—to deal with remote sensing and geographic information systems, which were otherwise dismissed as merely applied technologies with no intellectual merit. . .” were commonplace during his graduate career (Edney, 2019, 82). This sentiment has been reflected by other cartographers as well.

academic cartographers in the 1950s and 1960s had been expected to address some topic in the history of cartography as part of their training, this was mainly a pro forma requirement with a lack of coordinated research inquiry. This orientation left the history of cartography without a unified body of thought that connected it to academic discourse in geography. Yet by the 1970s this disordered nature within the history of cartography began to change. David Woodward, a Robinson graduate from Wisconsin who served as the head of the cartographic library at the Newberry Library, and John Brian Harley, a British scholar who held a variety of academic posts in the United Kingdom and eventually at the University of Wisconsin-Milwaukee, began to produce scholarship that addressed systems of mass cartographic production (such as the UK's Ordnance Survey) and lay the intellectual foundations of the history of cartography as an academic endeavor (Harley, 1968; Woodward, 1974). The two would work together to establish the *History of Cartography* project in 1981, which continues today working to chart the history of cartographic practice from prehistory to the twentieth century ("History – History of Cartography Project," n.d.).

Yet by the late 1980s, Harley's work sought to understand the larger enterprise of cartography in terms of its impact upon the world. These later works by Harley were informed by French theorists like Michel Foucault who were readily gaining steam in the academy at large. Harley's *Deconstructing the Map*, published in 1989, came to be recognized as a significant touchstone in the development of cartographic theory to come (Harley, 1989). In the 1990s, as new cultural geography began to form in the discipline, more nuanced accountings of axes of difference emerged as a central paradigm to geographical scholarship, and the critical deconstruction of various knowledge paradigms

began (Mitchell, 1995). While Harley's premature death in 1991 prevented him from continuing to contribute to these emerging paradigms, geographers were quick to turn to his work to construct a new field of inquiry around maps and geospatial technologies.

As skirmishes over the role of the GIS in the discipline turned into a 'science war', geographers worked to establish a détente within the discipline. With funding from the National Science Foundation, a meeting at Friday Harbor, Washington was convened between GIScientists and human geographers. The outcome of meeting was a better understanding between a subset of both factions and is often seen as the beginning of critical GIS and cartography (Crampton and Wilson, 2015; Schuurman, 2000). While these meetings and the subsequent fields have not fully healed the riff between human geography and GIScientists, this bridge-building work has gone a long way to building a better understanding between various factions of geographers. Also springing from this meeting was a desire to better integrate mapping and mapping technologies into society, to socially ground them in the needs, desires, and interests of the people. This led to the beginning of public participatory GIS and more nuanced understandings of the impacts of geospatial information. In a similar vein, Gwendolyn Warren and Bill Bungee's radical mapping work with the Detroit Geographic Expedition in the 1960s and Bungee's *Nuclear War Atlas* of the 1980s were rediscovered, providing historical examples of potential and radical ways to move forward (Bunge, 2011, 1989). Other work examined the marketing utility of GIS and its impact on individual privacy rights (Pickles, 1995). In other words, this was a diverse and burgeoning field that sought to understand the role of geospatial information beyond merely the construction of the map.

Thus the emergence of critical GIS and critical cartography throughout the 1990s and early 2000s signaled a greater engagement not only with the legacy of the Quantitative Revolution, but also the emerging digital technologies and theories of cartographic production (Barnes, 2009). As such, this thesis pulls from this legacy, focusing on role of geospatial information as an economic practice, tying in what might traditionally be perceived as scholarship in historical geography to illustrate its points. Using a historical lens, it seeks to understand the role that this information has played in insurance underwriting and spurring economic development in two different contexts. It employs what Matthew Edney has recently termed the “procedural approach” to cartography: this largely replaces the history of cartography with its bibliographic description with a processual history that seeks to understand a map for all the steps that go into creating it (Edney, 2019). In the process, Edney seeks to jettison the field of the “history of cartography” and the term “cartography,” replacing them with “map studies” and “map” (Edney, 2019). While providing a new framework for an understanding of map history, this more broadly provides a framework for understanding the use of geographic information in society. The processual approach shares much in common with the concept of practice—that is an understanding of how and why individuals and entities respond to various situations in similar ways. For example, the processual approach seeks to interrogate everything from training of the cartographer, the mode of map production, the circulation network of the map, the industrial network the maps producers were located within, and so on. The processual approach is a never-ending story in the sense that a map and its meaning is always becoming and unbecoming. Thus, understanding the processual practice of the use of geographic information in commercial settings provides

a unique understanding of the overall importance of this information to the larger functioning of the economy. The processual framework also importantly enables a more flexible framework to incorporate the work of different scholars. Geography is among the whitest of all social sciences, and subfields such as cartography are still largely dominated by white male scholars. The processual approach is as much of an intellectual mindset as it is a framework for understanding the changing nature and interpretation of geographic information. In other words, the processual approach opens the door to diverse and innovative ways of understanding the map.

Against this backdrop, the two chapters of this thesis stand in defense of this line of inquiry. Chapter Two examines the history of fire insurance mapping in the current state of Oklahoma, seeking to understand how a settler-colonial state assessed fire risk and underwrote development from the late 1880s to the 1910s. As such, this chapter mainly falls in the realm of historical geography and map studies. Here regimes of risk management are explored for their impact on both the state of Oklahoma and in the larger context of the Sanborn Map Company. The chapter also explores how fire insurance mapping during this period reflected the speculative nature of development and capital during this era.

Chapter Three seeks to deepen this engagement with commercial entities more explicitly through the exploration of the organization and use of geographic information in business. As such the chapter explores the biography of William Applebaum, an applied geographer whose work in the supermarket industry helped to introduce mass retailing to the United States. Also detailed is the key role Applebaum played in the development of the first American intelligence agency and his intellectual influence and

mentorship which continues to have an impact on both the discipline of geography and the American built environment. Applebaum's story challenges dominant narratives of the history of the discipline, providing a story of a marginalized, Jewish, quasi-academic applied geographer, whose influence in his era arguably had a larger impact outside of the discipline than inside of it. This history illustrates how understanding practice outside of the academy is important to understanding the larger uses of geographic information, and how the value of geographic information in commercial contexts is leveraged to make significant decisions. The thesis concludes by illuminating possible future research activities to further engagement between these two fields and ponders the value and future of the discipline.

To be clear, this thesis is not explicitly about applied or business geography in the sense in which they are practiced today. In fact, I would assert that there is no distinct subfield of "applied" or "business" geography. These are topical and empirical concerns that are useful nomenclatures for a particular set of scholarship that employs specific methodologies towards specific aims. In other words, what is currently seen as applied and business geographies is merely a reflection of what we deem as "applied" and "business" related (Roepke, 1977). Rather, in this thesis, I seek to advance an argument about the utility and practice of geography, not necessarily for its value in contributing to academic discourse but rather in shaping the whole of human society. Specifically, this is achieved by bringing applied/business geography and cartography into conversation with critical geography to highlight the ways in which all of geography is imbricated in the operations of society.

The fracturing of the discipline into four general subfields and many smaller specialties, is an advantageous feature of geography, allowing geographers to claim relevancy around a wide variety of topics. However, some of the glaring shortcomings of the discipline are reflected in this decentralized approach to intellectual inquiry. In other words, without a general focus of the discipline's work, our impact on society is more muted and harder to articulate. Cartography is an excellent example of this issue. Maps are perhaps the most readily identifiable product of the discipline, yet research into cartographic issues is not at the core of applied geographies nor at the core of most geographer's research interests. Indeed, as previous sections have shown, there has been an active disdain for cartography in the discipline. Why is this? Why would (do) some geographers slight what is our most ready contribution to society?

I believe the answer is less about animosity towards different research agendas (even if the interpersonal and departmental politics indicate to the contrary) but rather about the differing goals of each endeavor. The divide between geography and cartography is that between the theory/methods/empirics of documenting a specific place and the *practice* of implementing these theory/methods/empirics to represent a specific place. The practice of cartographic techniques takes one away from the work of geography, i.e. the documentation of place, and thus has been seen as lesser. The irony, of course, is that geography has largely adopted the techniques and methods of other disciplines to better understand geographical topics.

Doubly ironic is the fact that even though the final outputs are different, the standards academic geographers work to produce are largely the same. To put it another way, cartography professors do not get tenure for publishing maps but rather for writing

about the practice of maps, in the way an urban geographer is expected to write on urban topics. Moreover, the same educational infrastructure that produces the seemingly “unemployable” geography major also produces the “employable” cartographer (along with a whole host of other beneficial and problematic things). On the level of the individual geographer, it is possible for one to embrace these differing epistemologies and methods, producing various matrixes of research that constitute the field known as “geography.” Indeed, as Chapter 3 shows, geographers can embody these practices in a variety of ways.

In a time period where critical scholarship is making inroads into discussions of everyday life, critiques of the carceral state or gentrification or the spatial economics of the healthcare industry are not just “thought pieces” but important contributions to the understanding of society’s problems. At the same time, scholarship written under the guise of applied or business-related work, may run counterintuitive to other efforts within the discipline and increase inequalities and injustice. One of the points of this thesis is to point out the inherent contradictions between applied and business geographies and other aims of geographical research, using the role of geographic information to understand the discipline’s impact outside of the academy.

CHAPTER 2. MAPPING RISK IN OKLAHOMA AND INDIAN TERRITORIES: THE RIVALRY
BETWEEN THE CLARKSON RATING BUREAU AND THE SANBORN MAP COMPANY, 1890-
1915

2.1 Introduction

In 1893, historian Fredrick Jackson Turner delivered what has become of one most enduring historical analyses in American history. His thesis argued that with the announcement of the closure of the American frontier by the Census Bureau in 1890 (that is white settlement and control of land formerly occupied by Indigenous peoples) the end of first chapter of American history had been marked (Turner, 1893). Moving forward, the United States would be entering a new historical epoch, the character of which, in 1893, was unknown. Turner lamed the closing of the frontier, arguing that the essence of frontier life had defined the character and operation of the nation.

In Turner's history, poor settlers found economic prosperity. Immigrants formed communities and integrated in the nation's fabric. Democratic values and forms of governance were put to the test as newly formed communities developed the basics of a functioning society to maintain order. Success led to urbanization and new forms of economic and social development. And when the newly settled land had ceased to be new and stopped providing the opportunities it had for its first (white) inhabitants, citizens picked up and moved to the new frontier to start the process over and hope to find "life, liberty, and pursuit of happiness." And for a century, starting in the bluegrass of Kentucky and marching west, the citizens of the United States had played out this same narrative across the North American continent.

Now, from the lens of the present, the limitations of Turner's analysis are painfully obvious. In addition to its reductive nature, it ignores or delegitimizes the

contributions of enslaved persons, individuals of various ethnicities (both white and non-white), and non-male individuals. It erases the Indigenous peoples of the continent, placing their very existence as a historical artifact of human evolution, asserting that their ultimate subjugation to the American government and white society was a foregone conclusion that could have been predicted from the beginning. And above all it places the white, male settler in the limelight of history; making their story the center billing of the historical narrative.

While the conclusions of Turner's analysis have been widely panned by modern scholars, both within geography and history, for a simplistic view of historical narrative and the development of society and a lack of attention to Indigenous and other minority groups, his work still stands as a bellwether within American historical scholarship (Cronon, 1987). His thesis has become as much of a historical moment itself as the recent history he sought contextualize in 1893; it marked a break between an America largely focused on internal affairs and continental territorial control to the beginning of a rising American nation-state, deeply imbricated in world trade and global affairs. It marked, in some sense, a mastery of a supposed continental destiny and the beginning phases of the emergence of a new global order with the United States at its center. Delivered in Chicago during the highly influential World's Fair, which articulated an immense number of American innovations (everything from electricity to city planning), the thesis touches upon the nature of (white) American society at that time (Burg, 2014). Wiggish approaches to American history aside, Turner's thesis articulated a form of social and economic development of the nation, one where the vastness "emptiness" of the west operated a form of pressure release, allowing the nation to develop peacefully.

The point of utilizing Turner in the introduction of this chapter is not to advance Turner's thesis as a mode of analysis, but rather to pick up the historical-geographic narrative he utilized. While Turner was a historian by trade, he interfaced extensively with early geographers. He had training in the study of maps, and his education skirted along the edges of early academic geography at the University of Wisconsin and at Johns Hopkins University (Block, 1980). Moreover, his conceptual framework for migration and economic development proved to be a jumping off point for geographers looking to explore these topics (Gelfand, 1954; Kearns, 1984). Turner, and his frontier thesis, thus is part and parcel of a particular set of circumstances reflecting the changing political forces of the United States, the rise of industrialization and modern capitalism, the increasing role of statistics and mapping in the orderly operations in (white) society. What this chapter of the thesis seeks to do is similarly use Turner's thesis as a jumping off point to understand the impact of white, western capital—as expressed through insurance mapping—in one of last territories open for white settlement.

At the center of the 1890 Census and Turner's thesis was the disappearance of the American frontier. From the lens of the Manifest Destiny, this was the settling of the North American continent, what we today know as the lower-forty-eight states of the United States. The last of these territories open for white settlement in 1889 was what would become the state of Oklahoma, then divided into two separate territories, Oklahoma Territory and Indian Territory. Thus, the machine that was settler colonial capitalism found one last "unsettled" territory to exploit, just in time for the Census Bureau to declare the end of the American frontier.

This chapter explores importance of speed, capital, and economies in the map publishing business in the late nineteenth and early twentieth centuries. While all maps have their own economies of production, in this chapter I want to examine how the “on-the-ground” processes of development manifested in the production and circulation of geographic information. The linkages between economic development and cartography are a deep and a mutually co-constructive process, and while the map may not be the territory, it is a snapshot of the territory and often its economy. In this chapter, I examine the “cartographic interplay” between two map producers in pre-statehood Oklahoma, charting the development of both territories with the importance of accurate and up-to-date geographic information for use in the fire insurance industry. These two companies—one a major national producer of maps and the second an upstart local inspection bureau—churned out hundreds of maps and map updates known as “corrections” in an approximately twenty-year period from 1894 to 1914. The larger genre of insurance mapping is also examined, contextualizing the development of this form of mapping in the broader history of insurance. I conclude by contextualizing the role of risk in economic development, and the broader implications of this for the discipline.

As a field of scholarship, critical cartography’s mode of inquiry has largely focused around the social power of maps (Crampton, 2001). In this chapter, I explore the economic implications of fire insurance mapping, charting the importance of accurate geographic information to the emergence of settler-colonial economics. Although geography as a discipline in higher education was in the process of forming in this period, the cartographic impulse for greater accuracy and detail is very much present in this

chapter. In Oklahoma and Indian Territory, cartographers and surveyors raced against each other to supply the most up-to-date and accurate information to ensure that the insurance industry could accurately underwrite risk.

It is also important to note that this chapter mainly highlights the stories of white, capitalist, settler men. While Indigenous peoples were directly impacted in this process, the enterprise of mapping in Oklahoma (like in many other places), is dominated by white people. As numerous scholars have documented, the mapping of Indigenous peoples is almost always an extension of the colonial project (Palmer and Rundstrom, 2013; Rundstrom, 1995). Indigenous cartographies do exist however their maps speak to an entirely different epistemological project than the settler-colonial, capitalistic desires of much of western mapping. As territories, Oklahoma and Indian Territories were subject to their own conflicting tensions that were by-products of Indigenous removal to an unfamiliar territory and an apathetic hostility from the American government. These tensions over the division and establishment of reservations, the creation of Oklahoma counties, the drawing out of individual property lines and so on fall outside the scope of this chapter.

2.2 Methodology and Sources:

This chapter mixes methods from archival research and basic quantification to provide the evidence for many of the claims. Out of necessity, the mixing of these methods provides unique insight on both the larger processes of the fire insurance industry and the speculative development of Oklahoma during this time. Fire insurance history has not been written with any frequency, much less so for its impact in specific geographic regions, which complicates the interpretation of this material. Moreover,

archival material related to the entities described in this chapter are virtually nonexistent apart from the maps that have been preserved in libraries and archives. This work thus uses the remaining maps as the primary archival record from which this argument is constructed (Uhl et al., 2018).

Much in the way cultural geographers “read” the landscape to understand the influences enacted upon it, this chapter uses the corpus of archival maps to read maps at-a-distance, providing a novel way of extracting information from where there is a dearth of information (Lewis, 1979). In some sense it utilizes a data analytics approach to read between the lines to understand the major currents in the production of these maps, similar to those in the history of the book (Kirschenbaum, 2007). After an early period in the late 1860s, the historical record of Sanborn’s production becomes murky. Between 1868 and March 1884, the company did not copyright its maps, leaving a hole in the historical record. Moreover, while the current iteration of the Sanborn Map Company apparently has a small corporate archive, records from this early era were not maintained. Thus, “reading” Sanborn and Clarkson maps based on their metadata provides additional data via proxy to understand and contextualize their production. This approach mirrors digital humanities approaches that seek to discover new knowledge via digital mediums, especially around spatial history (Knowles and Hillier, 2008; White, 2010). In other words, this is meta-mapping as a method.

A significant aspect of the methodology used to undergird this argument pulls from the field of digital humanities. Emerging in the early 2000s and 2010s, this field applied technology to traditional humanities topics in order to gain new interpretations of the past. These “distant readings,” meta-analyses, and new visualizations have enabled

scholars to both observe new patterns and reach new audiences with their scholarship (Unamuno, 2017). In geography, digital humanities has manifested itself mainly in the field of spatial history and the use of GIS. Here the spatial insight gleaned from humanistic data have enriched our understanding of various phenomenon and developed a new set of tools and uses for GIS. While there are significant limitations—especially in representing non-Euclidean space, expressing uncertainty, and in the limits of the spatial database—these new uses have enabled a new form of view humanities topics (Bergmann and Lally, 2020).

In the context of this project, this approach is highly important. Both Sanborn and Clarkson left few traditional archival records from which to understand the organization of their surveying practices. There are few surveyor records, corporate correspondence, or financial documents to examine. The largest part of these archival records is seemingly the least important in crafting a narrative to contextualize the process of mapping—that is maps themselves. Here, even the archival landscape of maps is highly variegated: hundreds of editions of Clarkson maps, many used and annotated, exist in the holdings of the Oklahoma Historical Society while pristine copyright deposits of Sanborn maps exist at the Library of Congress and the University of Oklahoma. It is an incomplete archival record that prioritizes the detailed information of historical landscape itself over the process of map creation.

In lieu of these valuable archival materials, reading the metadata of a corpus of maps constitutes the creation of its own archive. The metadata for a standard fire insurance map is simple: in addition to the name of the town and its location, the date the map was created and the number of sheets is also recorded. From these seemingly scant

records it is possible to construct a “meta-map” documenting the spatial organization of these mapping firms, highlighting both the importance of the settlements being surveyed and the internal organization of the mapping company. This is easier to perform for the Sanborn maps as multiple sources exist to harvest the metadata, and the metadata was initially captured when Sanborn submitted their maps for copyright deposit to the Library of Congress. Additional metadata was generated when the duplicate copies of these maps were circulated to individual state institutions in the 1960s and 1970s, led by the map library at University of California, Berkeley.⁵

The archival records of Clarkson maps prove more difficult to extract this type of data from due to their use in the underwriting business and their donation in mass to the Oklahoma Historical Society after their practical use had disappeared. However, the need for access and cataloging of these materials for the efficient organization of libraries provides useful information for the digital humanist to analyze. Here data created by the archivists of the Oklahoma Historical Society after the collection was donated proved useful.

Utilizing the concepts of distant reading and mapping of the archive also shows the overall significance of the spatial extent of cartographic production. In digital humanities projects, maps and geospatial data are typically not critically interrogated for their power, in a style familiar to critical cartographers (Giesecking, 2018). Using the metadata of the map itself with a critical cartography lens in the creation a new map

⁵ Throughout this chapter, I utilize the information from Berkeley in constructing the graphs and maps documenting the mapping process.

provides a methodology from which to understand the process of mapping. Meta-mapping is a method to understand the spatial importance of mapping itself.

2.3 The Emergence of an Industry: Fire Insurance Cartography in the History of Cartography

It is only in the past century and a half that large-quantity map publishers emerged. For most of Western history, maps were privileged items reserved for those with capital, education, or political influence. While these consumers were wealthy, the publishers who compiled, engraved, published, and sold these maps were less privileged. Where the map was a tool for others to increase or manage their power, for the publisher, the map was an instrument of life, to sustain themselves and their families. Small firms worked hand-in-hand with explorers, utilizing their data to employ highly-skilled craftspersons and boutique suppliers to produce the graphic visualization that became a map. Through the collation and display of this data, publishers created information, which produced new value that could be exchanged for money. Yet the very process of creating this information, like any business, was fraught with issues. In an era of European colonization, maps frequently became out-of-date and older maps were financial liabilities which threatened the publisher's security (Pedley, 2005). In this period before the easy reproduction of non-textual images, the production process of a map combined with the rapid advance of new colonial knowledge meant that the publishing of maps was a capital-intensive, marginal-profit business.

In practice, this meant that publishers frequently held onto their backstock as a potential asset, mainly by transforming old maps into "new" maps by adding new information and collating older maps into atlases for bulk sale (Bagrow, 2010). This

model of cartographic production kept map prices high and the number of publishers low, limiting competition for more advanced maps. By the early nineteenth century, this picture has begun to change for a variety of reasons. First, the expansion of surveying and civil engineering as fields of inquiry led to the development of skilled draftspersons who could produce more accurate and large-scale maps, leading to more map sheets. Secondly, changing models of paper production led to the emergence of more paper, dropping the cost of publishing. At the same time advances in printing technology made the production of larger quantities of maps possible as well. This moved the affordability of maps “down-the-scale”, making them more available to other (still wealthy) entities (Pedley, 2005). In practice, this meant that there were more uses for a map and a larger supply of people and materials to produce additional maps, leading to the emergence of maps in a variety of non-governmental and non-navigational industries.

One such industry which embraced the map was the fire insurance industry. In the Anglo-American world, the first documented use of mapping practices in insurance was after the 1666 Great Fire of London. Destroying much of central London, the economic losses were staggering, and this led to the formation of several nascent insurance companies (Evans, 1987). The by-product of the fire was the introduction of new measures to control and manage urban conflagrations including firefighting brigades, building codes, and insurance mapping. These early maps were quite limited in their scope, rendering a settlement and its buildings visible in the large-scale of 1 inch to 0.5 miles (Ristow, 1982). These maps would eventually document prevailing wind directions and the type of water supply in the city, staples that remained on fire insurance maps well into the twentieth century. Still, these maps were difficult and costly to construct.

For example, the Phoenix Assurance Company of London emerged as one of the largest insurers in the Anglo-American world and seems to have engaged in extensive mapping efforts starting in the late eighteenth century, commissioning maps of their areas of coverage. These ranged from a thirty-two sheet map of London developed from 1792 to 1799 to a single map of Charleston, South Carolina in 1790 (Ristow, 1982). As the company's North American liabilities grew, a director of the company Jenkin Jones, was sent to gather "accurate topographical information" of North American cities. While he seems to have gathered much relevant information about fire vulnerability in these cities (including firefighting capabilities, water supply, the nature of the street layout, among others), the cartographic output of this nearly two-year journey (while currently lost) seems to have been quite small. The tenability of insurance firms meant that even the largest, most sophisticated firms struggled to mobilize mapping technologies effectively due to their high cost of production.

However, as surveying and papermaking advanced to enable the production of more maps, the emergence of larger economies and the immense scale of development led to changes in the insurance industry; mainly the consolidation of the industry and the emergence of statistical methods. On this first point, the growth of cities and the increasing size of fires led to a series of insurance crises in the early part of the nineteenth century (Oviatt, 1905). In essence, a large fire would occur and smaller insurers would find themselves without enough (or any) capital to cover their losses, leading to bankruptcy for the company and no insurance payout for a policyholder. As Ristow states, this mainly occurred in the United States after the New York City fire of 1835, which led to the transition of a significant part of the insurance industry to Hartford,

Connecticut (Ristow, 1982). The effect of this fire led to the establishment of new laws requiring a reserve account to cover a standard amount of loss, to ensure that companies could weather significant conflagrations. At the same time, the disruption of this fire and the new laws encouraged the development of larger insurance firms, that took on more geographically distributed risk, insulating both the firm and policyholder from financial calamity (Baranoff, 1998). While evidence is scant, I also believe that this led to the beginning of the reinsurance industry more broadly (Borscheid et al., 2013).

Reinsurance—that is, the process of insurers themselves being insured by larger insurance companies—was combined with additional forms of risk management and documentation, which included statistical modeling, insurance inspections, and mapping, to manage risk of all types. Of these statistical modeling emerged as a particularly rich area for most of the insurance industry.

In the nineteenth century insurance began to expand beyond maritime and fire, into health, life, and property insurance more broadly. The development of statistics led to manipulations in these forms of insurance, allowing companies to more accurately charge premiums for “predictable” events. Highly used in life insurance, fire insurance companies found that while statistical measures did to improve their business models, there were limits on how effective numbers could be (Tebeau, 2012, 96). Generally, insurers could calculate the risk of individual industries from conflagration: for example, saloons were generally a higher risk entity to insure. However, unlike life insurance, risk in the fire insurance industry manifested itself differently. While life insurers could predict with some degree of certainty the risk of certain populations—and knew that everyone would eventually die—fire insurance did not face the same risk calculations.

Fires were geographically-specific events that were highly variable in their intensity depending on the fire's immediate surroundings, its general location in a city, and in the firefighting operations of the city itself. Thus, while insurers could write a higher risk policy for a saloon, a single-family home next door could be insured at a much lower rate, even though the fire risk was nearly as high as the saloon due to their proximity. While there was an emerging science to firefighting, fire-proof building, and other fire prevention measures, calamity could strike easily (Tebeau, 2012, 256). For example, the Baltimore fire of 1904 destroyed the city's highly built-up, seemingly inflammable central business district due to a lack of standardized firefighting equipment. Two years later, the 1906 San Francisco earthquake and fire consumed much of the highly flammable wooden city whose firefighting equipment, while advanced, was hindered by the earthquake, allowing the fire to expand tremendously. In both examples, buildings that were surrounded by fire survived while other highly engineered "inflammable" buildings burned. Although these examples happened more than fifty years after the development of statistical methods, they illuminate the difficulty insurers faced in predicting these events and drawing generalizable laws or rules about the nature of urban conflagrations.

The solution then was to address the unpredictability of fire through a geographic model; to develop an art and science of fire insurance underwriting that took into consideration the basic physical principles of fire, the local ability to fight fire, and the building-specific information to craft policies that turned a profit while minimizing risk. Under this model, the map served as the primary document from which to assess and

document this risk at a distance, proving both the local and building-specific information from which initial underwriting decisions were made (Tebeau, 2012, 103).

Yet again, the high costs of map production meant there was little coordinated mapping efforts during this time. It was only in the late 1840s that fire insurance mapping as a practice emerged in the United States. This first map, of New York City, was commissioned by William Hope who had convinced various insurers located in the city to co-sponsor the map's production. This map, produced by William Perris, documented the island of Manhattan and launched the beginning of an independent insurance industry (Wright, 1983). While evidence is hard to come by, it seems that this process was replicated across other major American cities, with local insurers banding together to commission their own maps of their own cities. This model placed the emphasis on the local, and thus the next major development in fire insurance mapping was the establishment of a firm that could coordinate mapping on a national scale with a uniform set of standards. That company would emerge as the standard of fire insurance mapping under the name of the Sanborn Map Company.

2.4 The Emergence of the Sanborn Map as an Industry Standard

Trained as a surveyor, Daniel Alfred Sanborn obtained his start working as an in-house surveyor for the Aetna Insurance Company (Ristow, 1982). At the close of the Civil War, Sanborn was dispatched to map a number of towns in Tennessee. Realizing that there was a market for these maps, he founded his own company under the name D.A. Sanborn National Insurance Diagram Bureau in 1867. The first set of maps of Boston (Library of Congress) were subsequently followed by volumes for Charlestown and Cambridge (Boston Public Library) and maps of Chicago (Newberry Library and

Boston Public Library). Within a few years, Sanborn's company had truly established a national presence with known examples from towns as small as Williamsport, Pennsylvania (Williamsport Historical Society) and Kearny, Nebraska (Nebraska Historical Society).⁶

Although Sanborn Map Company records do not exist for the nineteenth century, it is clear that the approach of the company was in three-parts:

- a) ally themselves with a national insurance companies like Aetna who would buy their products in bulk,
- b) leave the major cities with individual cooperatives to map themselves, and
- c) focus on providing maps of smaller towns and cities across the United States.

This three-part model is reflected in career of Daniel Carter Beard, who was employed with Sanborn from 1874 to 1878 (Beard, 1939). Better known for his later career as the co-founder of the Boy Scouts of America, one of Beard's early jobs was with Sanborn as a surveyor. His papers, preserved in the Library of Congress's Manuscript Division, may be the only records related to the company's early days that reflect the perspective of the surveyor. In his role as a surveyor, Beard was sent across the American South and Midwest mapping cities as small as Dalton, Georgia (population 1,809 in 1870) to as large as Cleveland, Ohio (Batts and Queen, 2012). In this role, Beard

⁶ An important methodological note here: apart from the first Boston atlas in 1867, Sanborn did not regularly begin copyrighting their maps until 1884. Moreover, apart from atlases where the title page stated they were a Sanborn product, individual sheet maps for smaller towns and cities were not stamped with the Sanborn label. This means that there likely is a number of early, unmarked, and undocumented Sanborn maps. I have confirmed some of the maps listed in this section as consistent with other known Sanborn maps based on their symbology.

brought Sanborn's business strategy to bear on the world. His correspondence with company headquarters in New York City discusses the needs of individual insurance firms, their role in selecting which settlements were to be mapped, competition from other firms that threatened to undercut their product, and ways to improve their product. While a larger analysis of the Beard papers reveals additional insight into the production process of fire insurance maps, this falls outside of the scope of this chapter.

Regardless by the mid-1880s, Sanborn was one of a number of independent firms that produced fire insurance maps in the United States. A short accounting of these other major firms and their geographic extent is as follows (Ristow, 1968):

- Perris-Brown: New York City and Newark, New Jersey
- Hexamer: Philadelphia and industrial sites in eastern Pennsylvania, Delaware, and southern New Jersey
- Rascher: Chicago, Illinois
- Whipple: St. Louis, Missouri and surrounding towns
- Dakin: Primarily California, but large cities in Oregon, Washington, Idaho, Montana, Utah, and Arizona, and British Columbia, Canada

Competition was enhanced by advances in printing images. The introduction and widespread adoption of lithography for printing images meant that printing one's own maps had become affordable enough for individuals to do so. For example, in mid-1880s, a firm by the name of Scarlett & Scarlett mapped towns along the upper Delaware River Valley in Pennsylvania and New Jersey. Their maps, published in the same year as their Sanborn counterparts, are nearly identical to one another (Figure 2.1 and 2.2).

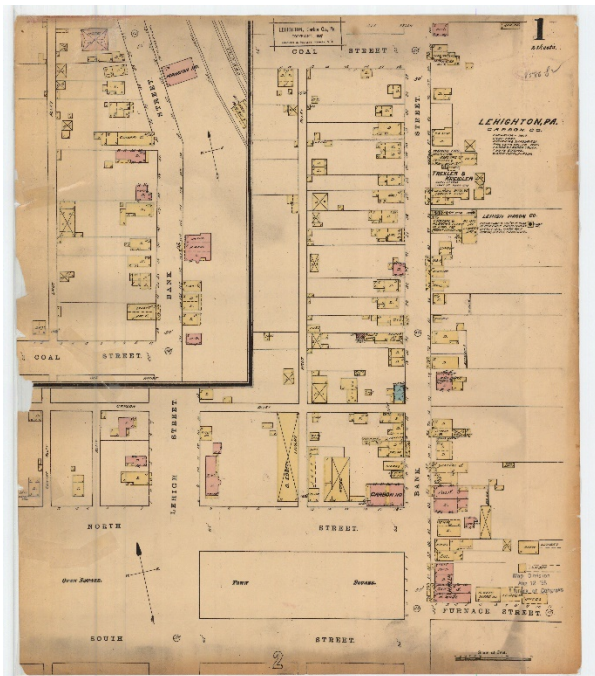
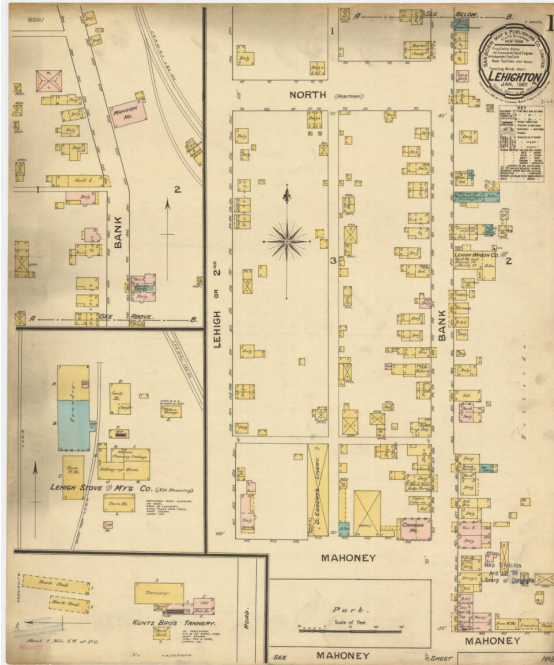


Figure 2.1 Comparison of fire insurance maps for Lehighon, Pennsylvania, 1887. Top is the edition issued by Sanborn. Bottom is issued by Scarlett & Scarlett. (Maps from Donald W. Hamer Center for Maps & Geospatial Information, Penn State)



Figure 2.2 Comparison of the extent of Sanborn and Scarlett & Scarlett Maps for Lehighton. Blue outline is Sanborn, orange outline is Scarlett & Scarlett. (Aerial imagery from PASDA).

Whether these were direct cases of plagiarism, examples of surveyors who “double-dipped” and sold their own brand of maps on Sanborn’s dime, or were a short-lived competitor, it is clear that the insurance mapping market had become saturated with firms. Other forms of saturation include a major copyright case over the usage of symbols between Perris-Brown of New York and their protégée Hexamer & Sons in Philadelphia that made its way to the United States Supreme Court in 1878 (Rosen, 2018).

At the same time, new professional organizations related to fire insurance began to emerge that also posed a threat to the industry. Informal local organizations, which had sponsored many of the first mapping efforts, developed into more formal clubs which met

to coordinate insurance rates and policies in their individual areas of interest, both geography and industry specific. These ranged in size from individual cities to entire regions. While many of these firms did not actively engage in mapping on a regular basis, they would engage an individual surveyor to map smaller settlements that a major firm was unwilling to map (Tebeau, 2012). “Inspection bureaus” also emerged as a viable alternative to mapping companies. These entities, which were split between non-profit and for-profit companies, specialized in providing detailed inspections of risk for industrial sites and towns, issued detailed diagrams of factories, mapped smaller settlements, and provided up-to-date information to insurers. In other words, these bureaus provided specialized service that Sanborn could not engage in or was unwilling to do so, allowing even the smallest of white settlements to gain insurance protection.

With all of these competitors, the industry began to consolidate, with Sanborn emerging as essentially the single insurance mapping company in the United States by the beginning of the First World War (Ristow, 1968). This monopoly was established in a number of ways. First, Sanborn’s earlier corporate strategy made it the largest of the fire insurance map firms in terms of its geographic coverage, and thus it was able to handle changes in the marketplace the best. Secondly, Sanborn worked closely with insurers themselves who were rapidly expanding as the United States urbanized and developed economically. This close relationship manifested itself in the ownership of the company, with much of the Sanborn Map Company’s stock being owned by the directors of the insurance companies themselves (many of whom would also serve on Sanborn’s board of directors). Through this process of enrichment, Sanborn was largely insulated from the economic forces that impacted small firms both of the insurance and mapping variety. As

the insurance firms allied with Sanborn became national and entered various major cities, they introduced Sanborn's product to local agents, creating competition. The overall lower rates that were offered by national firms as compared to local firms triggered additional consolidation, leading to less business for local mapping firms, which either shuttered or were purchased by Sanborn. By the late 1890s, Hexamer who focused on Philadelphia exclusively, was the only remaining firm in a major insurance market that was not controlled by Sanborn. While professional organizations still posed a threat, for the most part they were neutralized through the dominance of the national insurers who comprised the membership of these board. Inspection bureaus, for the large part, focused on the local and provided a different service than Sanborn. Mapping services, when provided, became contained only to settlements too small for Sanborn to map or for specific industrial sites such as textile mills. The exception to this, and the crux of this chapter, is the inspection bureau which did not follow these rules on the plains of Oklahoma.⁷

⁷ As a footnote, Sanborn's continued dominance of the field likely contributed significantly to their decline as company in the late 1950s. The company absorbed Hexamer due to anti-German sentiment in 1916, and crushed an upstart competitor with a novel mapping method in 1917, and subdued a near coup from the National Board of Fire Underwriters by adding two members to the Sanborn Map Company board of directors in the early 1920s. After a profitable decade, the company was hurt by the Great Depression, and it limped along through the 1940s and early 1950s and began to collapse in the late 1950s as insurance firms consolidated and transitioned towards statistical methods for estimating risk. A larger story exists about the company's life after this period and in its transition towards a geospatial services company, but this is beyond the scope of this thesis.

2.5 Oklahoma: Speculation and Risk on the Plains

While every state in the United States has its own unique history, the history of Oklahoma is a microcosm of American history at large. Purchased for pennies an acre in the Louisiana Purchase, this semi-arid “wasteland” became the home for thousands of displaced Indigenous peoples in the 1830s. As the United States expanded, Indigenous peoples east of the Mississippi were either pushed onto greatly reduced eastern reservations, made to assimilate into white culture, or forced to move into “Indian Territory” that now comprises half of modern-day Oklahoma (Chang, 2010). Marginally protected by the federal government from white settlement and development, these peoples were allowed to live in this foreign land as payment for the theft of their eastern homelands.

As the Transcontinental Railroad tied the east and west coasts together, the vast interior of the United States began to open for settlement, necessitating the removal of additional tribes who were either forcibly removed to Indian Territory or were pushed onto more local reservations comprised of marginal land. In this now “empty” land, American settlers quickly moved to farms and built communities. This post-Civil War economic development was tied together by the Homestead Act of 1862, massive European immigration, and a rampant capitalistic system of development. In the background the United States Public Land Survey System facilitated the white demarcation of the land and the political guise of the Manifest Destiny pushed for the settlement and establishment of a dozen territories and states between the end of the Civil War in 1865 to the opening of Oklahoma and Indian Territories to white settlement in 1889.

I argue that we can read the settlement of Oklahoma against the backdrop of the end of the “frontier era” of American history as Turner argued in 1893. The end of this era, is often considered the start of “formal” American imperialism outside of the contiguous United States with the settlement of Alaska during the Klondike Gold Rush (1896); the annexation of Hawaii (1898); the Spanish-American War and the “protectorship” of the Philippines, Cuba, and Puerto Rico (1898); and the establishment of Panama and the following ratification of the Hay-Bunau-Varilla Treaty which led to the construction of the Panama Canal (1903) (McCartney, 2006). However, the long war that the American government waged against Indigenous people increased significantly in terms of its violence, the willful ignorance of the rule of law, and outright human suffering in the post-Civil War period (Chun, 2013). I argue that the opening of Oklahoma and Indian Territories to white settlement in 1889 represents a key development in this period, as a transitional point between the end of the “Indian Wars” and beginning of non-contiguous United States imperialism.⁸

Against the backdrop of settler colonialism across the Great Plains, by the mid-1880s, Oklahoma stood out as the missing puzzle piece of development. Of the six states that adjoin Oklahoma, only New Mexico with its 34-mile-long border at the very end of the panhandle, was not a state when Oklahoma was opened for white settlement. Yet, modern day Oklahoma as it is now seen, was actually three separate territories by the opening for white settlement in 1889 (Figure 2.3). Indian Territory, in the eastern half of

⁸ Historians continue debate when the “Indian Wars” ended, with some dates listed well into the 1920s. There also is an assimilationist rhetoric to this debate that fails to consider the ways that Indigenous peoples continue(d) to resist settler colonialism. Regardless, the late 1880s and early 1890s represent the end of an era of overt, active, and prolonged conflict between the US Army and Indigenous peoples.

the state, was home to various reservations for eastern tribes. Oklahoma Territory comprised the western half of the state, with reservations that were sparsely populated, and a central territory known as the “Unassigned Lands” that would become a magnet for much white colonial desire. The third territory, “No Man’s Land” was comprised of the panhandle and was the result of various surveying decisions that left a narrow strip of land between New Mexico, Texas, Colorado, and Kansas. Of these, Oklahoma Territory and the Unassigned Lands in particular would become contentious issues.

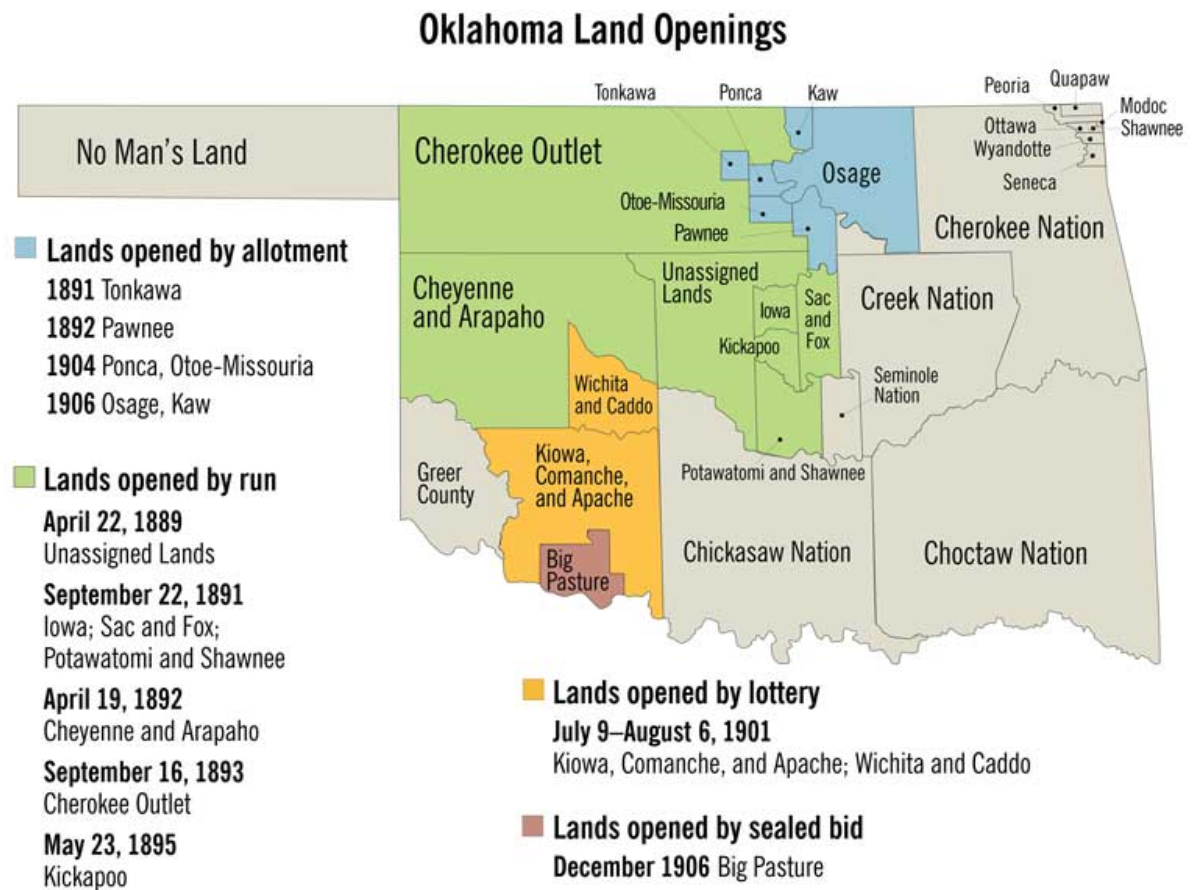


Figure 2.3 Map of modern-day Oklahoma, showing the dates of various land openings to white settlement. (Map from Oklahoma Historical Society).

In general, these lands could not be owned by white settlers, and entry by non-Indigenous peoples into the territory without explicit permission from the federal government or individual tribes was prohibited (Chang, 2010). Without the privileges of (white) ownership there was little outside money invested in the territories, and thus economic growth was limited. Moreover, this form of economic development was not part of Indigenous culture and was fundamentally different. Yet across the western United States, capital in a variety of forms was finding new, productive outlets in agricultural and extractive industries. As speculation subsided into the real economics of value and profit through the production of materials in other territories, this growth machine needed to find new outlets for expansion. Oklahoma Territory, and the Unassigned Lands in particular, represented a seemingly open piece of land, unassigned to any tribe, and ripe for this machine to expand to. Moreover, the borders between Indigenous and white society were porous, with local connections across the territorial lines and an elite Indigenous power structure in Washington, DC to deal with the federal government. These connections would prove to be the key links in opening the territory to white settlement.

One of these Indigenous elites, Elias Boudinot, a Cherokee, worked in Washington, DC as a railroad promoter for the Santa Fe Railroad (Colbert, n.d.). In early 1879, he penned an article for *The Chicago Times* discussing the nearly two million acres of the “Unassigned Lands” which in his opinion, were technically open to white homesteading. The land, ceded by Creek and Seminole tribes in 1866 due to their alliance with the Confederacy during the Civil War, returned the land to federal ownership while adding provisions for a single north-south and east-west railroad line across the territory.

This key change laid the foundations for the “boomer” movement, which would wage a decade-long fight to open the Unassigned Lands to white settlement. During these “boomer” raids, small bands of white men would cross into the territory and race to the Unassigned Lands to claim their homestead (Hightower, 2018). Eventually, the US Army would catch up to them, arrest them, and return them across the border. Although an escalating series of punishments and fines sought to deter these raids, they were ineffective. While a US District Court found that these lands were not open to homesteading, the tribes lobbied Congress to take additional protective action, and Indigenous peoples confronted these white invaders, boomer raids still occurred (Hoig, n.d.).

By the mid-1880s, under the renegotiated treaties signed in 1866, the Santa Fe Railroad began to construct a north-south railroad between Kansas and Texas which ran right along the edge of the Unassigned Lands and Indian Territory (Hoig, n.d.). As boomers entered the territory via the railroad and the railroad saw the opening for increase business, Congressional lobbying increased and eventually the President was given the authority to open the Unassigned Lands to white settlement. Finally, on April 22, 1889 at the stroke of noon, the Unassigned Lands were opened by Presidential Proclamation for white settlement.

More than 50,000 whites streamed over the border that day (Hightower, 2018). Acres of land that had been prairie just hours before turned into small cities that exploded in population. Within a week, buildings had already been constructed, schools established, banks and newspapers founded, forming a new outpost of white society. The same process that opened the Unassigned Lands would be repeated over and over as

various tribes had the exclusive rights to their land removed by Congress or were allowed to engaged in Western property regimes and sell it whomever they desired. From 1889 until the Panic of 1907, Oklahoma experienced the highest population growth of any state in the Union, more than quadrupling in population (North, 1907). Settlers flooded the plains, turning the grasslands into "productive" homesteads in such high numbers that more than a quarter of all Oklahoma counties reached their peak population before the 1920s (and thus before migration induced by the Dust Bowl and the Great Depression) (US Census Bureau, 2010).⁹ Oklahoma City grew at two times the rate of the second fastest growing city in the United States, and the number of miles of railroad constructed from 1900-1910 surpassed that of any other state (Veenendaal, Jr, n.d.). The discovery of oil led to one of the largest economic booms, and the founding of dozens of multi-million-dollar companies engaged in the oil industry. In short, Oklahoma and Indian Territories were booming during these years. New rounds of organized and speculative investment sought to turn new allotments of land in the most productive economic contributors they could be. Growth however was geographically uneven and the speculative nature of this growth would lead to economic contraction and the collapse of settlements.

From the geographic perspective, John Wesley Morris wrote extensively on these topics. In the discipline historically, regional geographers have not utilized state boundaries to define the limits of their intellectual inquiry. While a regional geographer

⁹ This population decline can be read as a form of speculative capitalism as measured through population. Using demographics as a proxy for economic growth, the farther in the past the peak population of a county was, the less economically important it is currently in relation to its past. Additionally, this model assumes positive population growth, which has been true of Oklahoma and the United States since its founding.

might specialize in the American West or the Northeast, geographers have not typically set their intellectual prowess on the activities that go on within the boundaries of an individual state in a holistic fashion. Morris, Professor of Geography at the University of Oklahoma from 1948 to 1973, is one of the exceptions to this rule (Goodman, 1982). As a historical geographer, he authored more than half a dozen books on the historical geography of Oklahoma, penning works on Oklahoma cities, boundaries, and development. His most popular book (which remains in press today), *Ghost Towns of Oklahoma*, documented the abandoned and nearly abandoned towns throughout the state, of which he estimated there were more than 2,000 candidates (Morris, 1977).¹⁰ Morris identified more than a dozen reasons for the decline of towns including shifts in agricultural patterns, changing transportation networks, political opposition, and poor choice in townsite location. All of these factors, however, reflect the extractive nature of the Oklahoma and Indian Territories economy, and are reflected in their fire insurance mapping.

2.6 Insurance Mapping in Oklahoma and Indian Territories:

While the role of insurance in the early history of Oklahoma and Indian Territories has yet to be told, from the cartographic record it is possible to reconstruct where and when white insurers began to see these territories as profitable. By the mid-1880s, Sanborn was well on its way to becoming the preeminent fire insurance mapping company in the United States. In 1886 Sanborn mapped McAlester and Muskogee, and in

¹⁰ In order for a town to count as a ghost town, Morris had three main criteria for inclusion on the list: 1) all building in the settlement were no longer standing, or 2) very few buildings remain and were largely abandoned, or 3) for larger towns, there had been a decrease in 80% in population from its highest figure. Morris noted this could include towns of as small as a few dozen people to small cities of a few thousand.

1888 returned to map Vinita and Wewoka. These towns, centers for the meeting of white commerce and industry with Indigenous peoples for their respective nations (Choctaw, Muscogee, Cherokee, and Seminole), were mapped on a single sheet each. Clearly, there was not much in the eyes of the surveyor worth insuring likely due to the fact that Indigenous settlement patterns did not reflect those of white Americans. Apart from these towns, it would not be until 1894 that Sanborn would return to Oklahoma to issue new maps.¹¹ Mapping sixty-four towns in that year, Sanborn's production in this state would be extremely high as the company sought to provide its clients with the necessary information to begin underwriting. This reentry into mapping the territories is likely reflected that stabilization of the market from 1893 to 1896. Across the United States economic growth was highly uneven, with multiple small financial panics occurring (Hoffmann, 1956). Seeing that the Oklahoma and Indian Territory market did not decrease significantly during this period likely showed insurers that the market had, at a minimum, stabilized (Figure 2.4).

¹¹ It is important to note here that it is possible for Sanborn to have mapped additional towns and/or revisited the territories before this time. With the sole source of evidence coming from the copyright deposits of Sanborn maps in the Library of Congress, it is possible there are undocumented editions of maps that were published and are unknown.

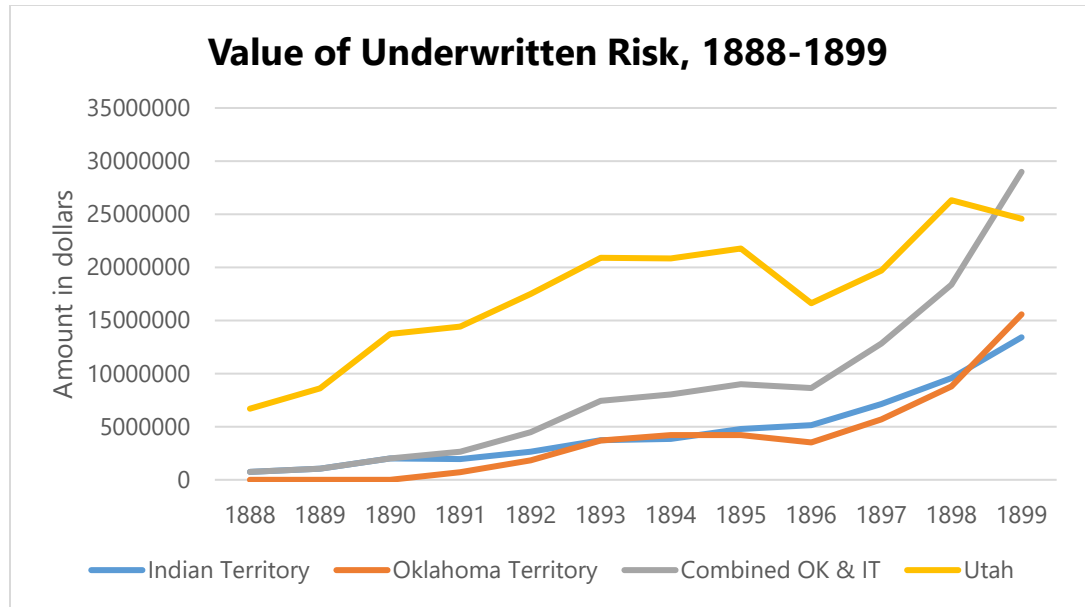


Figure 2.4 Value of Underwritten Risk for Oklahoma and Indian Territories and the state of Utah from 1888-1889. Data was collected from *The Weekly Underwriter*, a trade publication for the insurance industry, from the December edition for the years 1888-1899.

Moreover, in comparison to the state of Utah, which in 1890 had a population of roughly 50,000 fewer people than the combined population of Oklahoma and Indian Territories, the market was primed for more growth. The value of underwritten risk in Utah in 1890 was nearly four times the size of the Oklahoma and Indian Territories market, indicating that the territories underinsured. When comparing overall map production between the combined territories, Utah, and Oregon (which had a population roughly 60,000 people larger than the combined territories), we see the explosion of the Oklahoma and Indian Territories market, with map production from 1894 to 1899 outpacing Utah and Oregon's combined total mapping for the entire sixteen year period from 1884 to 1899 (251 maps for Oklahoma and Indian Territories to 232 maps for Utah and Oregon combined, see Figure 2.5).

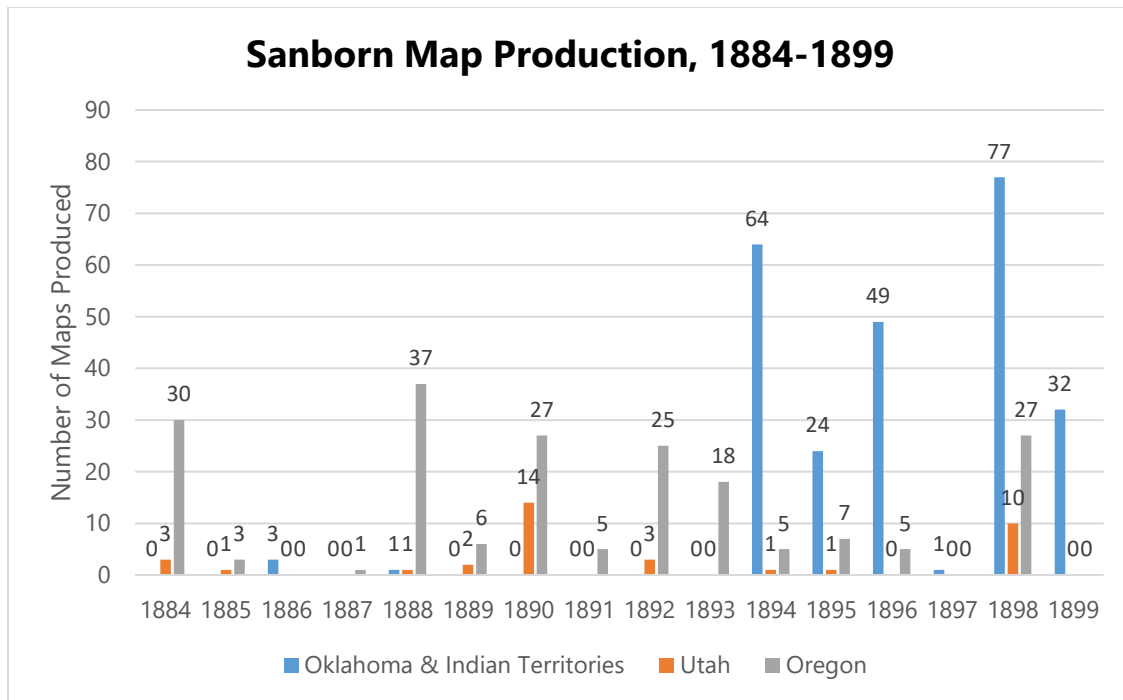


Figure 2.5 Sanborn Map production for Oklahoma & Indian Territories, Utah, and Oregon. These areas, all with similar populations, show the variability in mapping by Sanborn. (Data from University of California, Berkeley Union List).

This sustained growth is reflective of the various forms of speculative capital that was flowing into the territories during this time. From the insurance perspective, a combination of eastern, midwestern, and international insurers were underwriting Oklahoma and Indian Territory’s sustained growth which expanded (in terms of dollars underwritten) more than sevenfold between 1892 and 1899 (Table 2.1).

Table 2.1 Geographic Location of Oklahoma and Indian Territory Underwriters. Note the nearly eight-fold increase in value underwritten between 1892 and 1899. (Data from The Weekly Underwriter.)

1899 Amount Underwritten by Region			1892 Amount Underwritten by Region	
Region	State/Country	Sum of Total Risk	Row Labels	Sum of Total Risk
East	Connecticut	4699190	East	3260020
	New Jersey	1097149	Connecticut	673657
	New York	6874579	Massachusetts	385662
	Pennsylvania	3016914	New Jersey	158177
	Rhode Island	174261	New York	1368367
	Virginia	9723	Pennsylvania	674157
	Massachusetts	2014451	International	847857
East Total		17886267	Canada	19675
International	Canada	717354	Germany	1750
			United Kingdom	826432
	Germany	292740	Midwest	254610
	Netherlands	94982	Illinois	58180
	Sweden	12100	Minnesota	196430
	Switzerland	32550		
	United Kingdom	5250571	Grand Total	4362487
International Total		6400297		
Midwest	Illinois	237560		
	Kansas	2156724		
	Minnesota	1107817		
	Missouri	939302		
	Wisconsin	284017		
Midwest Total		4725420		
Grand Total		29011984		

Here the expansion in amount of value underwritten and the geographic expanse of the underwriters themselves signified the growth in the value of Oklahoma. Another way in which to visualize this growth is through the meta-mapping method, documenting the number of maps produced per county in Oklahoma. The spatial differences indicate the general location (albeit delayed due to the process of actually issuing maps after

surveying) of where value was being created in Oklahoma (Figure 2.6). For example, 1894 shows a nearly bifurcated split between new opened Oklahoma Territory and Indian Territory. In 1895, this progressed to just mapping the northern part of Oklahoma Territory and in 1896, southern Oklahoma Territory and all of Indian Territory. These spatial variations reflect not only the growth of economic value of individual counties, but also the ways in which the Sanborn Map Company organized its mapping efforts.

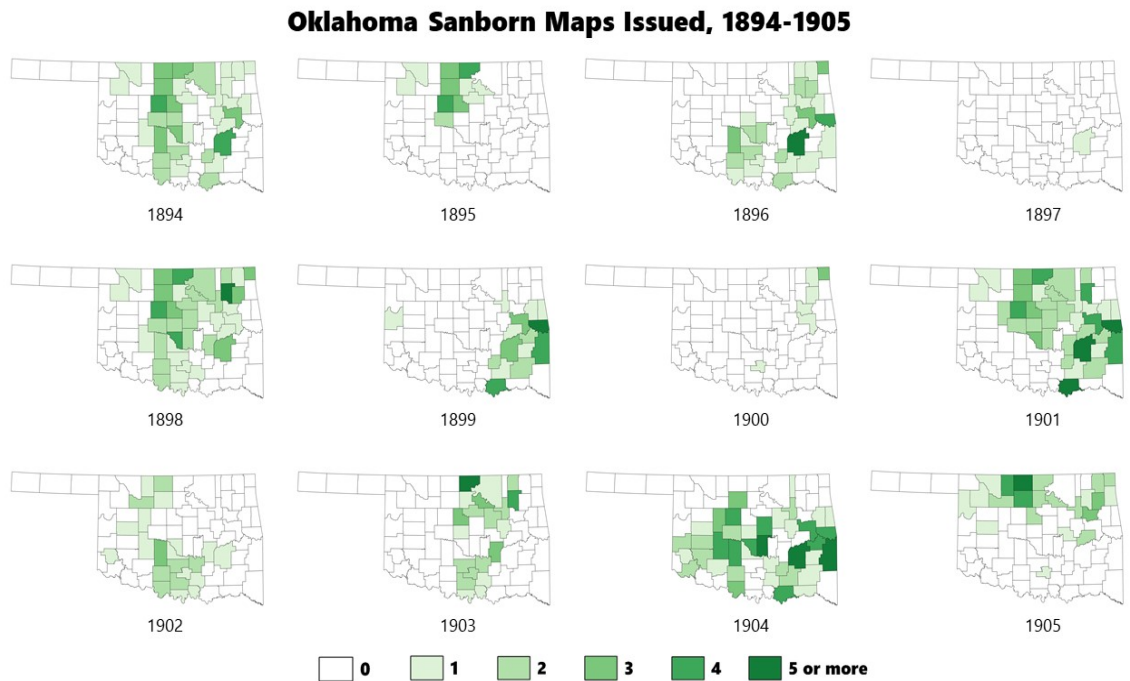


Figure 2.6 Number of Sanborn Maps Issued per County in Oklahoma, 1894 to 1905. Note that several counties were not mapped during this time period. (Data from University of California, Berkeley Union List).

In short, the booming economic profile of Oklahoma and Indian Territories resulted in a tremendous growth in the amount and value of underwritten risk. From an underwriting perspective, this meant that there was a need to understand the conditions of the built environment in Oklahoma and Indian Territories. Sanborn's role in this market

would not emerge in earnest until 1894, yet the company would soon be challenged by a new competitor: the Clarkson Inspection Bureau.

2.7 The Upstart Competitor: The Clarkson Inspection Bureau

The Clarkson Inspection Bureau is emblematic of inspection bureaus inasmuch as it is one of the few whose history can be traced by its notoriety as well as its historical record. As previously discussed, inspection bureaus worked as local information brokers for the insurance industry, providing in-depth local knowledge to insurers and advocacy for more favorable insurance laws at the local level. While many were industry associations or non-profits, a few were individually owned and run, turning a profit based on how accurate and up to date their information was. The Clarkson Inspection Bureau falls in the latter category and used its influence to swindle many a policyholder into paying higher rates to line the pockets of insurers.

The namesake of the company, Harrison Clarkson, was born in 1833 in Indiana and started his career in the insurance industry in 1864 as a field agent for the Aetna Insurance Company (coincidentally the first client of the Sanborn Map Company). In 1868, Aetna sent him to Kansas on a work trip and he and his young family soon relocated to Topeka (State Archives, n.d.). As time went on he became more prominent in the insurance community, eventually being appointed to serve as the deputy state Superintendent of Insurance in 1871 before being promoted to full Superintendent in 1874 where he served for the legal limit of one year (Topeka Capital, 1905). After his tenure, he became deeply involved with the Kansas Inspection Bureau in Topeka and during the 1880s, he became associated with the Rocky Mountain Inspection Bureau based out of Denver. Also during this time, he began a publishing company that

exclusively produced products for the insurance industry. His control over both the information brokers of the insurance industry and the means of publication placed him in an excellent position to exert control within the Kansas insurance industry.

For example, one of the products he offered was the *Harrison Clarkson Insurance Rate Book*, a guide that assisted Kansas insurance agents in setting rates throughout the entire state. This guide became so widespread in insurance underwriting that in 1897 the state of Kansas brought Clarkson and nearly 60 insurance companies to court for violating the state's anti-trust laws (Grant, 1979). The state's argument was that Clarkson was not actually running an independent inspection company at all, but rather was a middleman colluding with insurers to fix artificially high rates across the state. In return for these higher rates, Clarkson allegedly received kickbacks while the insurance companies reaped extra profit. While both Clarkson and the insurance companies sought to have the case dismissed, the parties eventually acquiesced, and Clarkson's Rating Bureau ceased to do business—or so wrote the insurance commissioner in 1897 (Kansas Insurance Department, 1898).

Contemporary records indicate that Clarkson did not abolish his rating bureau and publishing house but rather continued the business (Oklahoma and Indian Territories Inspection Bureau, 1905). While subsequent Superintendents of Insurance would investigate the company, none would end up taking them down. Clarkson and the insurance companies had plenty to lose and in classic business form doubled-down on diversification. Already somewhat present in the insurance markets in Oklahoma and Indian Territories, in July of 1899 they began to issue different rates for each territory. The by-product of this control was likely higher insurance rates for residents of the two

territories. Indeed, during the 1904 meeting of attorneys for Oklahoma and Indian Territories, the association spent time discussing the state of fire insurance in the territories. They stated that there was a need for:

“creating a board, or a fire insurance commission with power to determine what companies may do business in the territory and to fix and regulate insurance rates in the various localities. All fire insurance rates in Oklahoma are now fixed by one insurance expert in Topeka, Kansas, and no person, board or authority in Oklahoma has any authority or power in the matter, except to pay full tariff rates or “kick” or both.”

--Oklahoma and Indian Territory Bar Association, 1904, 70-71

With the understanding of this issue, it is unclear what action—if any—was taken legally. However, around 1905 the name was changed from Clarkson Rating Bureau to the Oklahoma and Indian Territory Inspection Bureau, though it seems that the publishing of rates was controlled by Clarkson in Topeka for some additional years.¹² Regardless, the inspection bureau remained in business until the mid-1950s. As part of a broader consolidation of inspection bureaus, the former records were likely destined for the landfill until they were rescued by the former head statistician for the rating bureau and donated to the Oklahoma Historical Society in Oklahoma City.¹³ The collection contains no correspondence but is comprised of fire rating booklets, Sanborn fire insurance maps updated by hand, and manuscript fire insurance maps created under the Clarkson moniker. These look to be the primary documents used by the Clarkson Rating Bureau during the late 19th and early 20th centuries and provide insight into insurance operations in Oklahoma and Indian Territories. The uniqueness of this collection is the

¹² Clarkson seems to have found the insurance mapping business lucrative as he operated under a variety of names in a much-reduced role in Kansas until his death in 1921.

¹³ Another topic beyond the scope of this thesis is the consolidation of local inspection bureaus from the 1950s to the late 1970s, and the emergence of a national inspection bureau named “Insurance Service Organization” which is now a division of Verisk.

large number of manuscript fire insurance maps, which together comprise over a thousand maps, many of which are unique for their depictions of the Oklahoma built environment.

This trove of cartographic materials indicates that Clarkson was competing with Sanborn in mapping risk in Oklahoma and Indian Territories. Many towns were mapped by both Sanborn and Clarkson in the same year, often within months of each other, indicating that the two firms sought to be able to provide the most up-to-date geographic information. While production of Clarkson maps began as early as 1892, by the turn of the twentieth century, Clarkson was well on its way to rivaling Sanborn in terms of the number of towns mapped in Oklahoma (Figure 2.7).¹⁴

¹⁴ It is highly possible that the archive is incomplete, thus Clarkson may have been more active earlier.

Comparison of Sanborn & Clarkson Map Production

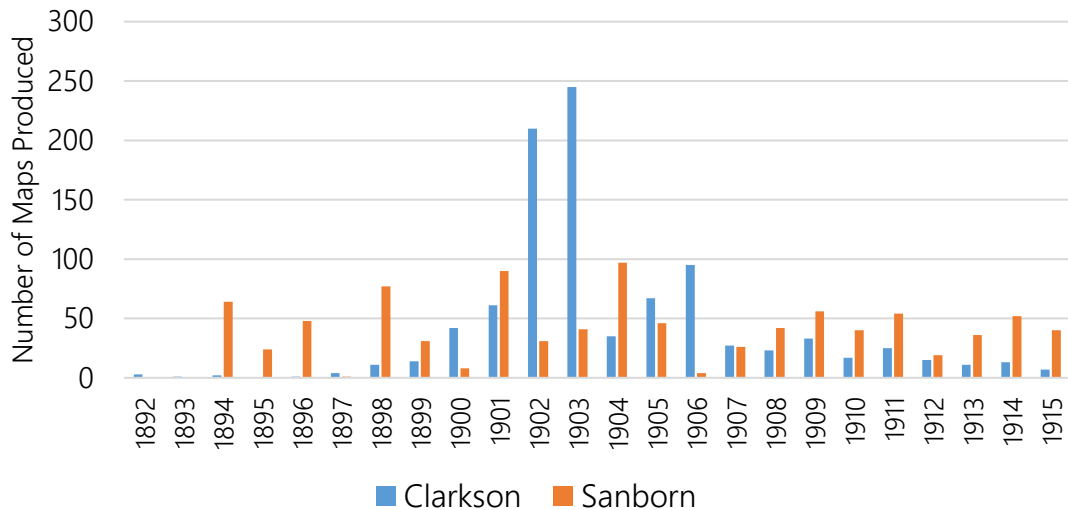


Figure 2.7 Clarkson and Sanborn map production, 1892-1915. Clarkson Data from the Oklahoma Historical Society, Sanborn from University of California, Berkeley Union List

Production of Clarkson maps increased steadily throughout the late 1890s, outpacing Sanborn’s production in 1900, 1902, 1903, 1905, 1906, and 1907, before steadily declining into the 1910s. Yet, while production outpaced Sanborn, the number of sheets per settlement was significantly lower overall (Figure 2.8). As a metric of economic worth, the number of pages per settlement is one possible proxy from which to understand the overall production of these maps. Since the normal scale of Sanborn maps were fifty feet to one inch (1:600) and Clarkson maps were roughly at the same scale, contextualizing the number of sheets per town on average shows how much land each company was mapping. Since underwriters wanted as much information as possible to accurately assess risk and to expand their portfolios, a smaller average number of sheets indicates an emphasis on smaller, less economically important towns while a higher

average number of sheets indicates the opposite. This metric provides one view on understanding the portfolio of maps produced by each company.

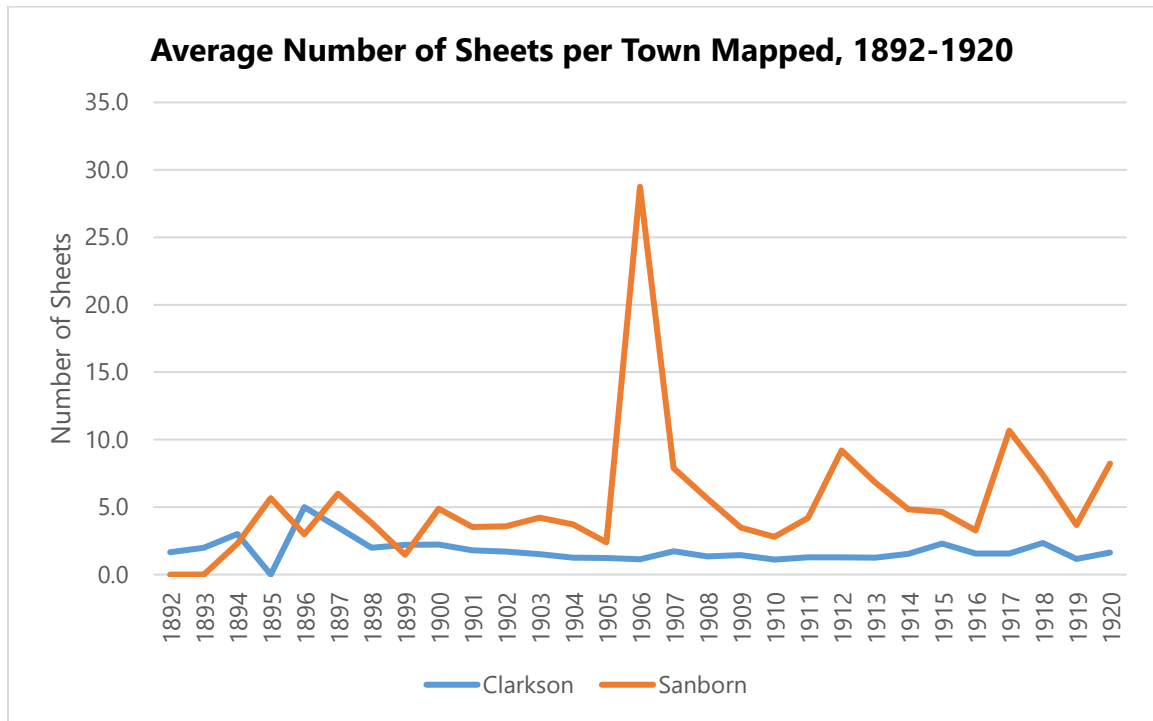


Figure 2.8 Average number of sheets per town mapped, 1892-1920. Clarkson Data from the Oklahoma Historical Society, Sanborn from University of California, Berkeley Union List

From 1892 to 1900, Sanborn and Clarkson’s average sheets per town was relatively similar, yet as the low count of map production as Figure 2.8 shows, production was dominated mainly by Sanborn after 1900. Here the company began an effort to map relevant settlements in Oklahoma. Yet even when Clarkson’s map production increased from 1900 to 1906, there was little variability in the average number of sheets produced per town by Clarkson. This suggests that Clarkson was mapping less area than Sanborn. The spike in average Sanborn map production in 1906 reflects the company’s remapping of Oklahoma City (101 sheets) and the mapping of three small towns which has an

impact on the average. Even removing this large spike, it is clear that Sanborn was mapping larger towns with more frequency than Clarkson was during this time.

Contextualizing Sanborn production within Oklahoma and Indian Territories to other states is another way in which to understand the speculative nature of the insurance enterprise. When comparing the average number of sheets per town in the territories to that of Pennsylvania (Figure 2.9) it is clear that Sanborn was producing far fewer sheets per town in Oklahoma than it was other states. This likely was reflective of Sanborn's approach to mapping Oklahoma towns, which prioritized the number of individual towns mapped over the comprehensiveness of maps themselves. In other words, Sanborn issued more individual maps of towns with a smaller sheet count than they did in other states. This issue reflects a long-standing question regarding Sanborn map production; mainly around the extent to which a settlement's "suburbs" were mapped. Understanding that cities did not have definitive borders where the built environment ended, individual surveyors were left to assess whether these suburban zones were worth the cost of mapping. In Oklahoma, these areas were likely not deemed economically valuable

enough to be mapped.

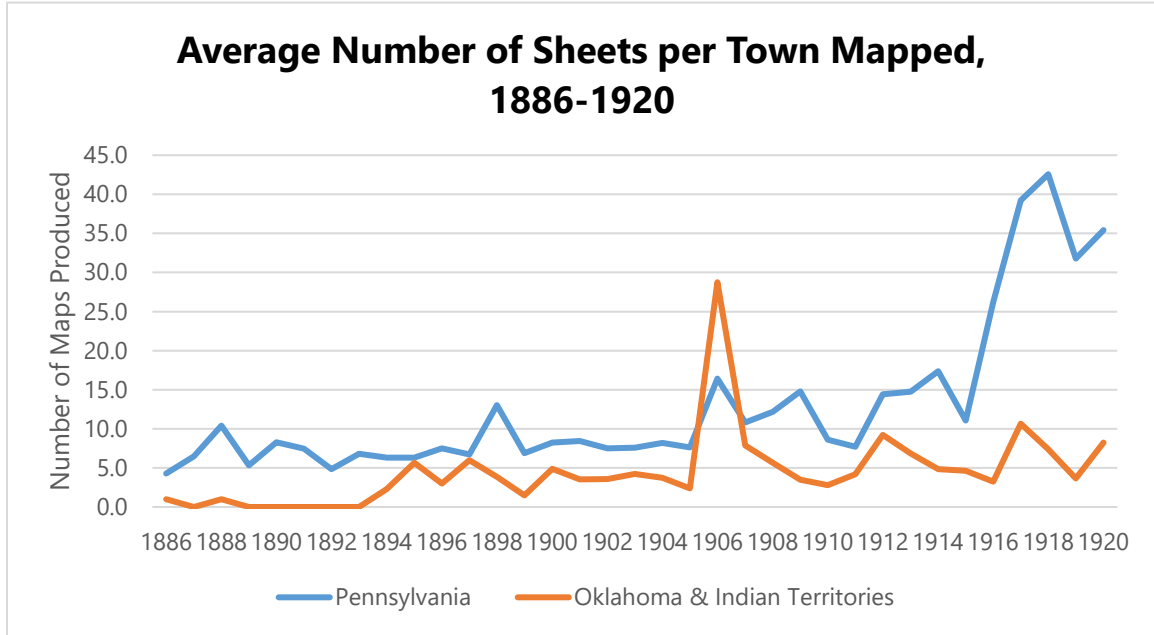


Figure 2.9 Average number of sheets per town mapped, 1886-1920. Sanborn data from University of California, Berkeley Union List.

The large spike in average sheets per settlement in Pennsylvania from 1916 to 1920 reflects Sanborn's acquisition of the Hexamer Map Company in the leadup to the First World War (Ristow, 1968). Sanborn quickly began to reissue these maps under their own imprint, utilizing Hexamer's underlying system to divide the city. Hexamer had utilized the same scale, however narrowed the extent of each individual sheet, which produced more map sheets and a greater number of overall volumes. Since Sanborn adopted this system, the average from 1916 on for Pennsylvania is inflated. Even when taking this into consideration, the overall average production is higher than Oklahoma. This suggests that interest from insurers was strong enough to continue surveying small Oklahoma towns, many under five sheets for over two decades.

Insurers willingness to purchase new maps undergirded the entire production of Sanborn maps. Indeed, as the following letter to an insurance agent in late 1904 shows, an affirmative to purchase maps led the publication of a map. Surveyor Harry W. Randall wrote to two insurers:

“Kindly advise me of your write [sic] insurance in any of the following towns: Enterprise, Whitefield, Stigler, Vian or Canadian. What companies do you place this outside business in?” (Randall, 1904)

With what must have been a positive response, Randall visited all five towns located in Indian Territory, mapping them in November 1904. At the time the towns all had a population of around 500 people or less and all had been surveyed before. As Figure 2.10 shows, these were not substantial settlements, rather they were small rural gathering points frequently built around the railroad or the cotton gin where farmers would frequent. From the perspective of distant insurers, these were settlements that could grow rapidly depending on the local economic conditions and the assistive hand of speculative capital. In other words, what might be a small town built around a cotton gin, might in a year or two, become a sizable town with the introduction of a railroad or the discovery of a new mineral resource to exploit. Insurers would thus want this information to ensure that they had an understanding of the local built environment and a foothold in what might be an emerging market. Indeed, Clarkson would also find some of these same towns profitable for their map offerings, producing maps of Canadian (1902, two editions), Vian (1906, two editions), and Stigler (1904 and an unknown date). Interestingly, the 1904 Clarkson map of Stigler was also provided in November, perhaps indicating copying or “double-dipping” on the part of the surveyor, similar to Scarlett & Scarlett in Pennsylvania and New Jersey.

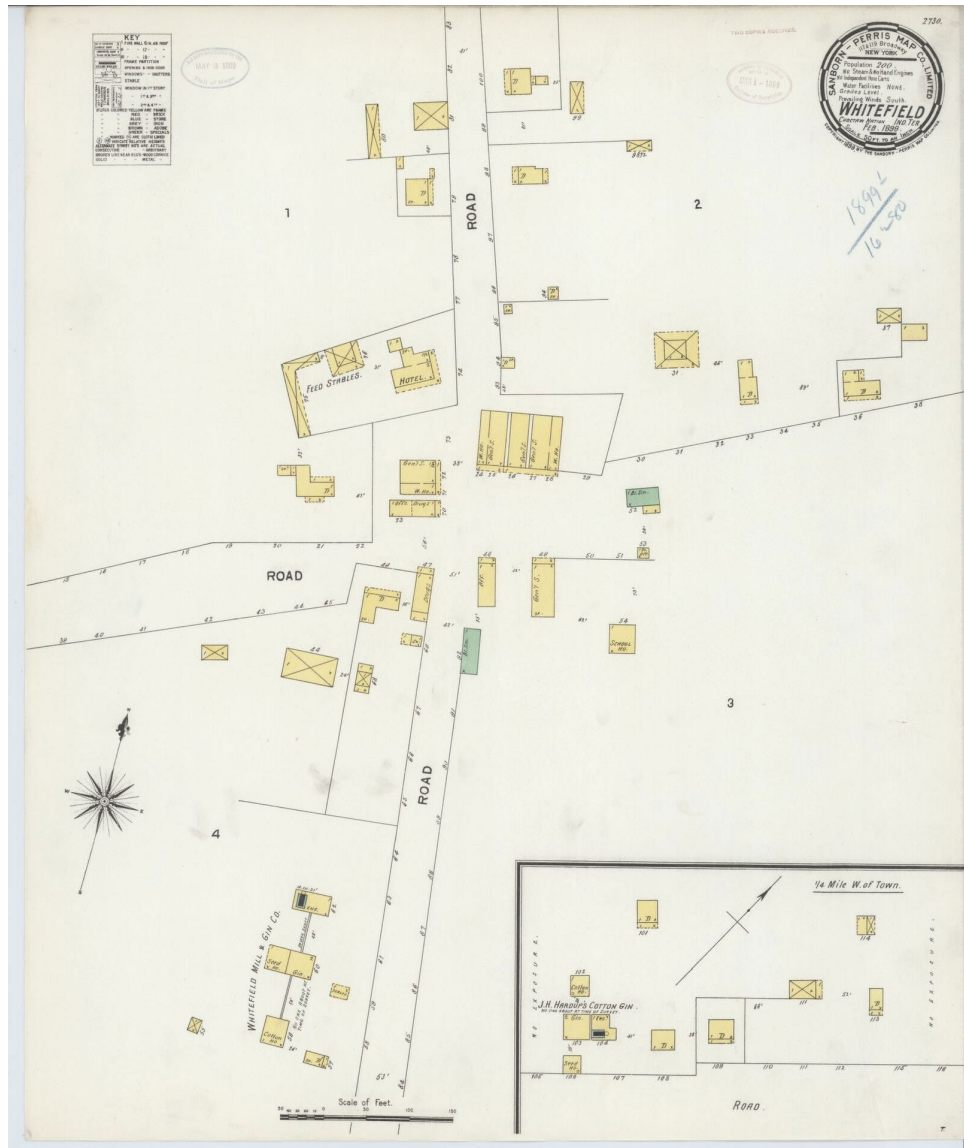


Figure 2.10 Whitefield, Choctaw Nation, February 1899. These spontaneous settlements were highly unplanned, reflecting their provisional nature. (Geography and Maps Division, Library of Congress).

For Sanborn, however, 1904 would be the last mapping for Enterprise and Whitefield. Canadian would be mapped an additional time in 1914 and Vian three more times until 1927. Only Stigler, made the county seat of Pittsburg County in 1907, would eventually grow larger than two sheets, last mapped in 1931 with seven sheets. As underwriters found these areas to be unprofitable, the towns were dropped from

Sanborn's offerings, reflecting their diminished economic importance. Based on the low average number of maps produced per town, Sanborn was carrying a large profile of these smaller settlements, some of which grew tremendously and others that faded into oblivion.

Perhaps nothing illuminates the role of speculative capitalism than the more than ten "one-and-done" towns that were never remapped again by Sanborn from 1894-1915, and the over fifteen that were revisited and resurveyed only once. These towns, some of which today are ghost towns and many of which are documented in Morris's *Ghost Towns of Oklahoma*, reflect the overactive hand of the insurance market (Morris, 1977). At the same time, some towns grew so significantly that insurance mapping by Sanborn could not keep up: this is where Clarkson stepped in.

For example, Bartlesville located in eastern Oklahoma, is a prime example of this. A small village first settled in 1895, Bartlesville was incorporated in 1897 as "third class" town with a population of under two-hundred people. Noting oil slicks on the surface of a nearby creek, a local merchant began drilling on land located outside of town. Striking black gold, the 21-day gushing of the Nellie Johnstone Well No.1 made public the knowledge that the area was home to a significant reserve of oil. Sensing immense economic potential, the Santa Fe railroad came to the town in 1899 setting off a tremendous economic boom (May, n.d.). Companies including Phillips Petroleum of Phillips 66 fame, Getty Oil, Citgo, and Sinclair all got their start in the oil fields around Bartlesville. This subsequent economic boom can be traced on the interplay between maps produced Clarkson and Sanborn maps updated by Clarkson located in the Oklahoma Historical Society.

The town was first mapped by Clarkson in April 1900 where it had a recorded population of 800 people. Clarkson updated its own maps with corrections and additional sheets in 1903 and 1905, for a total of 5 sheets. By 1904, Sanborn had published a map stating the population was 1,500 people, which Clarkson corrected on its own in 1905 and 1907, while adding an additional map sheet in 1906 bringing the total to 3 sheets.

Sanborn again resurveyed in July 1907, publishing 7 sheets, though Clarkson did not update this map likely due to the Panic of 1907 (which severely dampened economic growth nationwide) and the fact that in November of 1909 Sanborn again published a new map totaling 15 sheets. Clarkson would update this 1909 map by hand until 1915. From April 1900 to November 1909, the population of this town grew from only 800 people to 10,000. Though the 1910 Census would record the population just over 6,500 people, it is clear that Bartlesville was developing faster than Sanborn could keep up or was willing to do.

As oil emerged as a key industry in Oklahoma, Clarkson continued to produce maps documenting the risks in oil fields, refineries, and storage facilities. These maps reflect the highly specialized nature of these entities and the immense capital that undergirded them. Here a much smaller, more specialized corps of surveyors documented various risks in these high-value industrial plans. In Oklahoma, Clarkson stepped in to fill this role, documenting various oil industry facilities, allowing Sanborn to map towns as it did across the nation.

2.8 Variations in the Underwriting Process

As insurance developed in Oklahoma and Indian Territories, there was an unequal application of fire insurance rates between the two territories. While fire insurance maps

were produced to roughly the same standards across the United States the map was only one tool in the determination of fire insurance rates. A complex assemblage of information went into the determination of the final amount of risk and the overall premium for the property, including not only the depiction of the built environment as shown on the map, but also the agent's personal knowledge of the area and the client, the rules issued by corporate headquarters, and the guidance issued by the local inspection bureau (Baranoff, 1998).

To illustrate the complex dynamics of this process, I want to use the town of Addington, Indian Territory, located in the territory assigned to the Chickasaw Nation. While not significant, the town highlights how this the underwriting process occurred and tied remote settlements into a white, Western economic order.

In March of 1904, Addington was mapped by both Sanborn and Clarkson. The town had a population of around 500 people, with no firefighting equipment, no substantial civic improvements, and a rudimentary water system. The local industry was centered around the Chicago, Rock Island, and Pacific Railroad and consisted of resource extraction and processing, thus the industrial landscape consisted of feed lots, lumber yards, grain storage facilities, and a brick factory (Sanborn Map Company, 1904). Interspersed in this landscape were homes, commercial facilities, and service industries. It was an otherwise unremarkable town. The 1904 Sanborn map is only a single sheet and documents the town near its peak population.¹⁵

¹⁵ Morris lists Addington as a ghost town, currently the town has a population of around 100 inhabitants (Morris, 1977).

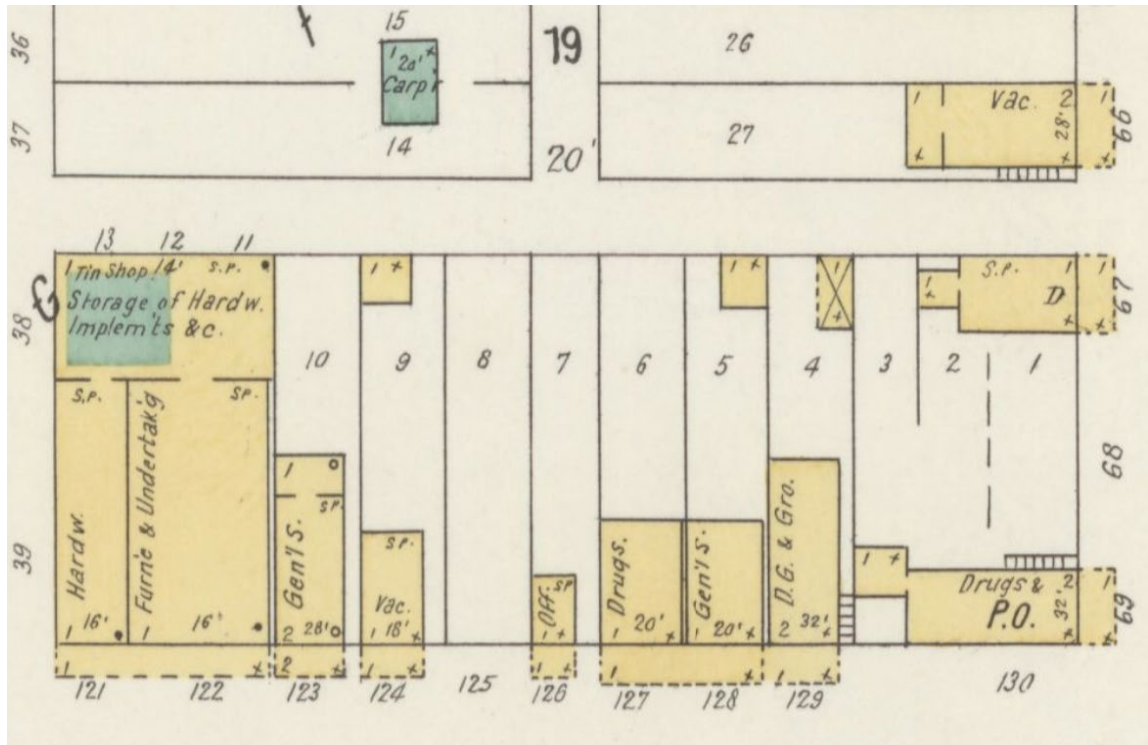


Figure 2.11 Sanborn Map for Addington, Indian Territory, 1904 (Geography & Maps Division, Library of Congress). Key: Vac. = Vacant, Off. = Office, Gen'l S. = General Store, D.G. = Druggist, Gro. = Grocer, P.O. = Post Office, D = Dwelling. Numbers in the street indicate address, those such as " 20' " indicate the width of the street, numbers within lots indicate lot number as surveyed for deeds, within a building this corresponds to the number of floors. For more information see (Sanborn Map Company, 1953).

For the purpose of this example, assume that as an underwriter you have received an application for a policy on building located at 121-122 Second Street, comprised of a tin shop, a hardware store, and a furrier/undertaker business (Figure 2.11). Given the mix of open flame from the tin shop, the abundance of flammable materials likely contained in the hardware store, and the explosive chemicals needed for being a furrier and undertaker—all contained within a wood building in a town without firefighters or a steady water supply—an insurer would be unlikely to underwrite such a dangerous building. Assuming that perhaps the insurer knew the owner and felt obligated to

underwrite a policy, the underwriter would need to take into the account both the conditions of town and the building itself (as previously described) and also the immediate landscape. The entire block was built of wooden-frame dwellings (all highly flammable), contained three drug stores and two general stores (likely containing flammable materials), one vacant building (unmonitored and thus a liability risk), and one dwelling (a source of near constant fire from the kitchen). This would have raised the insurance premium needed to insure this building significantly.

On top of this, the underwriter would have to follow company policy as well. Insurers would regularly deny writing new policies based on the amount of risk they had already underwritten—i.e. if the general store at 123 Second Street was insured through the same firm, 121-122 Second Street would be unlikely to receive a policy. Moreover, some insurance companies set their own rates to ensure that they would turn a profit on insuring certain types of industry. Here, the furrier/undertaker business would likely have their own rate as determined by the company's head office, that was applied to all such risky businesses across the nation.

Finally, the underwriter could turn to the rate book issued by the local inspection agency. Here the 1905 rate book—issued by Harrison Clarkson in Kansas City—guided the minimum rates to charge (Oklahoma and Indian Territories Inspection Bureau, 1905). Given that 121-122 Second Street was one building with three businesses in it, plus an additional store was located within 25 feet (123 Second Street), 121-122 itself would be assessed at \$6.80 and the contents within at an additional \$6.25 per month *at a minimum*. Given the particulars of Addington and the composition of the businesses within the

building, the rate would have likely needed to be much higher to compensate for the additional risk.

In the setting of rates, biases could easily be introduced. Sanborn maps were known to note the denomination of places of worship, which given the location of places of worship in this time period, served as an indicator of the ethnic composition of the immediate community (Hillier, 2010). For some places of worship, especially those for specific communities, the name revealed detailed information about the local occupants (i.e. African Methodist Episcopal, Greek Orthodox, Jewish, etc). This trend continued in Oklahoma, however other markers influenced the writing of policies, specifically based on territory.

Oklahoma and Indian Territories were separate political entities and the rating structure commissioned by Clarkson privileged the mainly white residents of Oklahoma Territory over the demographics of Indian Territory. For example, if Addington was located in Oklahoma Territory instead of Indian Territory in 1905, 121-122 Second Street would have had a minimum policy of \$4.60 for the building and \$4.25 for the contents (Oklahoma and Indian Territories Inspection Bureau, 1905). In general, insurance rates for buildings in Oklahoma Territory were about 30% lower than they were for buildings in Indian Territory. While the archival record does not document the precise reasons for these discrepancies, given the racial discrimination exhibited towards the inhabitants of Indian Territory and the variations in economic development between the two territories, race seems to be a likely explanation for these differences. Moreover, insurance redlining has a long history in the United States, locking minorities out of the benefits of insurance and increasing the negative risks that the lack of insurance brings (Squires, 2003). Thus, a

structural aspect of insurance regimes in Oklahoma was tilted towards discriminating towards minority groups under the guise of them providing inherently higher risk.

The accuracy of insurance maps was critical to the efficient functioning of the underwriting system. Sanborn innovated a system of updating maps via “corrections” which allowed the original map to be updated by pasting on updates to the map (Hayward, 1973). In Oklahoma and Indian Territories, the rapid pace of development meant that new maps and paste-ons needed to be issued on a regular basis. Very few of these paste-on maps exist for Sanborn maps; Clarkson maps have many preserved, updated maps. The two following images demonstrate how Sanborn and Clarkson depicted a block in Norman, Oklahoma Territory.

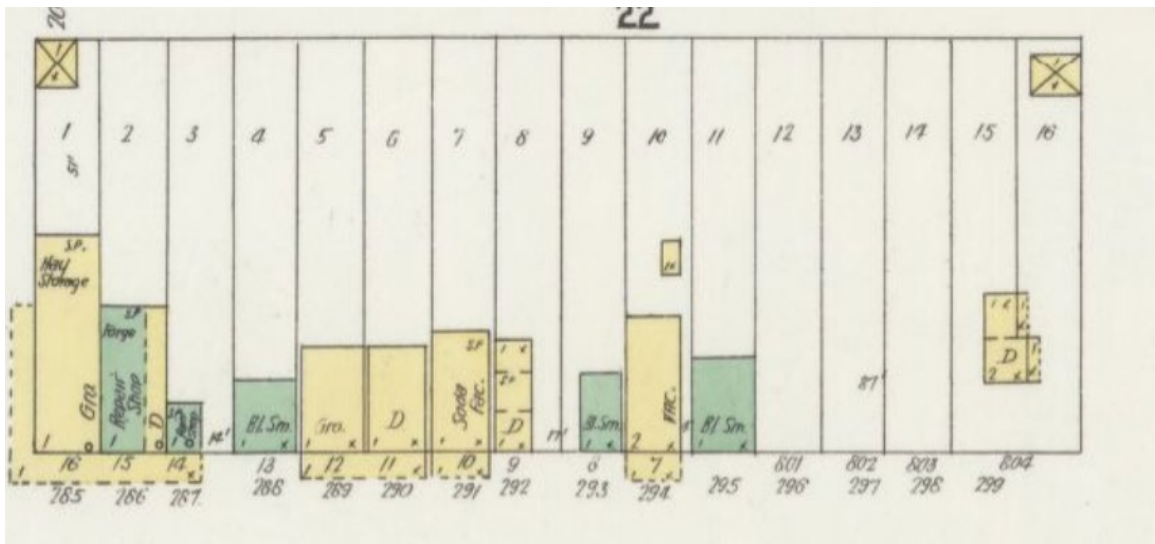


Figure 2.12 Norman, OK August 1898 (Geography & Maps Division, Library of Congress).

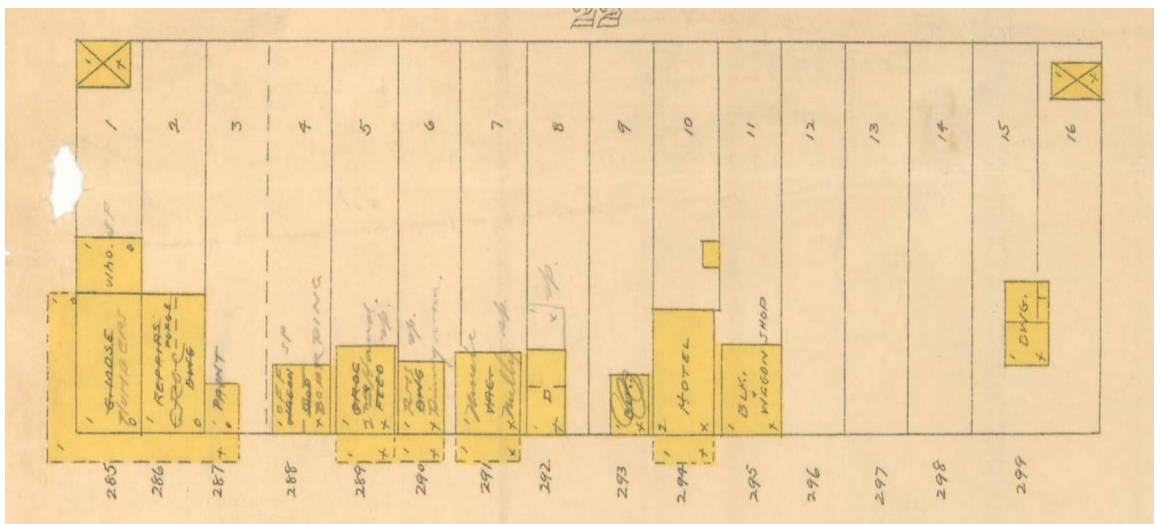


Figure 2.13 Clarkson Map, Norman OK June 1898, updated to November 1899 in pencil (Oklahoma Historical Society)

In Figure 2.12, produced by Sanborn, we see a standardized set of abbreviations that classified land use across the United States, while Figure 2.13 shows the different set used by Clarkson. The maps are nearly identical in terms of depictions of the built environment, however with the later date of survey we see some of the changes that

occurred in just two months' time. For example, 294 Main is shown on the Clarkson map as a hotel, in the Sanborn its listed as vacant. 286 Main is listed as a wagon shop in the Clarkson map, and as a blacksmith on the Sanborn map. 291 is vacant on the Clarkson map and is listed as a soda factory on the Sanborn. These differences in representation on the map would lead to differing levels of risk, corresponding to differing premiums for the occupants of this part of town. The difference between the Clarkson and Sanborn map is as much of a product of the rapid change in the landscape of Oklahoma and Indian Territories as it reflective of the surveyor's method of recording the landscape. In other words, the subjectivity of the map was a valuable tool for underwriters to understand the variegated and varied landscape of these urban environments.

2.9 Conclusion

Ultimately the missions of these two companies explain the differences in their maps: Clarkson made its money selling up-to-date local insurance information to other insurance companies, while Sanborn was at its core a mapping business with a national clientele. Clarkson made its money on having a wealth of knowledge of the local conditions, Sanborn made its money on selling highly accurate maps to large clients. And although it is difficult to classify this as a true rivalry, there are clues that Sanborn responded to the declining number and increased specificity of Clarkson maps in the spirit of traditional inspection bureaus after 1911. From 1916 to 1920, the number of "one-and-done" towns that Sanborn never returned to map due to their relative unimportance increased significantly, and a column-long article in a company newsletter from 1925 noted the past mutual distrust and conflict between the state bureaus such as Clarkson and the Sanborn Map Company (Kelly, 1925).

With an absence of textual company archives for both Sanborn and Clarkson, understanding if this was a true rivalry, an uneasy alliance, or just a plain historical coincidence may never fully be known. However, in the spirit of contextualizing the development of Oklahoma's early insurance markets and the broader history of the Sanborn Map Company, this analysis highlights the ways in which the dynamics of the economic cycle, insurance markets, and mapping companies responded to meet the needs of customers. In analyzing the records of the Clarkson Rating Bureau, it seems as if the immense amount of cartographic material can be attributed to Sanborn's hesitation to map and resurvey the area regularly, the increasing scrutiny within Kansas towards Clarkson's practices, and the natural market for up-to-date information about the built environment in two rapidly changing and economically dynamic territories.

While the historical geography literature has frequently utilized Sanborn Maps as a tool to understand the historical built environment, this literature has largely ignored the role of insurance and the role of these maps in the formation of this environment. Through an analysis of the formation of an insurance market during the peak period of settler-colonial state development, this chapter illuminates how the management of risk was critical to the continuance of economic development. These linkages point to a need for a more nuanced understanding of the geographic perspective of insurance, some of which is being researched in this current moment. Emerging literature between nature-society and economic geography has begun to question the connection between climate change and insurance, examining how disasters are being quantified and monetized to maintain the status quo (Booth, 2020). While the onus of this research is different, the fundamental question of the geographies of risk remains the same. Understanding the

spatial mechanics behind risk is crucial to understanding both historical issues such as the development of the built environment and contemporary issues such as the impacts of climate change on human settlements (Gibson-Graham et al., 2019). The meeting point for these forms of scholarship revolves around the utility of geographic information in a corporate setting, where information is analyzed, and decisions are made which ultimately come to bear on the landscape. As Chapter 3 shows, these decisions are not just limited to the world of insurance but are located throughout much of corporate America.

CHAPTER 3. THE BUSINESS OF GEOGRAPHY: WILLIAM APPLEBAUM, SITE-SELECTION, AND ECONOMIC VALUE OF GEOGRAPHIC INFORMATION

3.1 Introduction

In conducting a literature review for the second chapter of this thesis, I came across a strange, short article in the journal *Economic Geography*. Published in 1952 and entitled *A Technique for Constructing a Population and Urban Land Use Map**, this four-page article detailed the use of Sanborn maps in determining where a population lived and the state of the built environment (Applebaum, 1952). The contents of the paper were routine, and this was not what attracted my attention. Rather, it was the byline of the article's author and the small asterisk at the end of the title which drew immediate question. Firstly, the author, William Applebaum, was listed as the Assistant General Manager of Stop & Shop, Inc (a Boston-based supermarket chain) with the caveat that he had "pioneered ... marketing geography." Secondly, the asterisk linked to a short footnote at that bottom of the page which stated "This paper, given originally before the Association of American Geographer in December 1935, has been revised and brought up to date to meet a continuing interest in the subject" (Applebaum, 1952). Between the nearly seventeen years between presenting and publishing the work, and the non-academic status of Applebaum, I became intrigued that there was more to this paper and author. What I found and what this chapter is, is a biography of a geographer whose influence on the discipline of geography and the American built environment has been perhaps forgotten.

In the context of the history of geography, much work needs to be done to uplift the voices of the marginalized actors who played critical roles in the structure of the

discipline. To this end, Applebaum fills this role as a professional geographer of Jewish descent who did not complete graduate work, yet would go on to receive the Association of American Geographer's highest award in 1959 (American Association of Geographers, n.d.). He remains in the shadows of the discipline, yet his work in pioneering the ideas of site selection and market trading areas remains of key importance to the formation of the American built environment.

As Chapter 2 showed, there is an economy to the production, circulation, and use of maps. While often wrapped up in the social and the political, the creation of maps to marshal resources and document the emergence of risk, exists as a form value creation for map readers. This chapter takes a different tack on the examination of the economic value of geographic information. Through a lens of Applebaum, I explore the use of geographic information in business and its connections to geographic scholarship. While economic geography exists as a subdiscipline, much of its work is focused on the economies of space and the organization of society to produce value. In these regimes of scholarship, there has been little attention paid to the role of geographic information and business decision making. Much of this form of analysis is materialized in the realm of applied and business geographies. Here geographic information is at the core of these enterprises; situating them historically allows us to understand their overall importance and their impact upon the discipline (Wood and Phelps, 2020).

3.2 William Applebaum: Becoming a Geographer

Born in 1906 in Pruzhany, Belarus, Applebaum's family immigrated to the United States in 1920. His parents initially settled in Spokane before moving to St. Paul, Minnesota in high school. Fluent in three languages by the time he graduated (English,

Russian, and German), he enrolled in the University of Minnesota in 1925 intending to study medicine (Harvard University, 2005, 10-12). After a difficult year, he withdrew and spent a year working as a ranch hand in the upper Midwest. Determined to complete a degree, he returned to Minnesota in 1928, declaring a major in geography. Here Applebaum would excel academically and make a number of important connections before graduating in 1931.

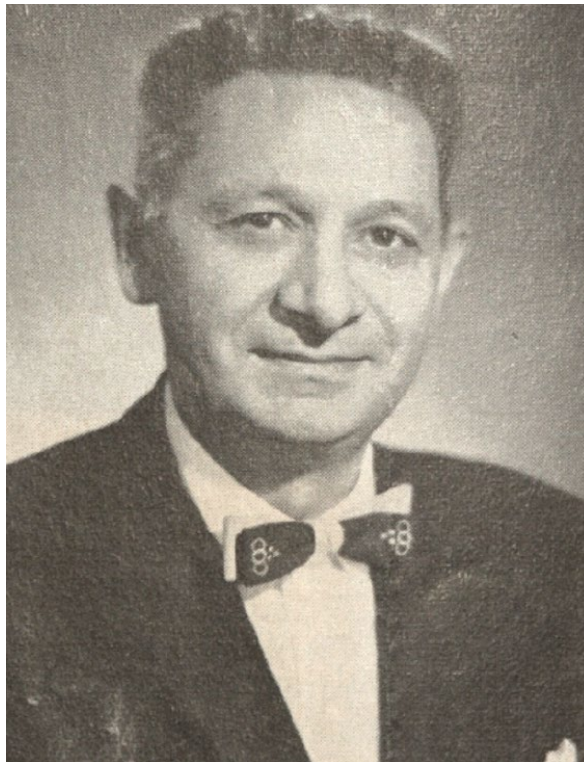


Figure 3.1 William Applebaum, circa 1964. (Harvard Business School Archives, Faculty Biographical Information, William Applebaum, Carton 1, Folder GC 151).

His most important connection was with a relatively new figure on campus, a young professor by the name of Richard Hartshorne. Hartshorne, then just a few years removed from completing his PhD at the University of Chicago in 1924, had taken up a position teaching geography at Minnesota. Though the department was comprised primarily of

older geographers with little cohesion, Hartshorne found his Minnesota environment to be a productive base from which to establish a career (DeVivo, 2015). An impressive scholarly output—nearly an article a year in an era where an article every few years was sufficient for tenure—and the beginning of the development of an international network of geographers were hallmarks of Hartshorne’s research agenda in these years. Long before Hartshorne’s turn towards political geography in the mid-1930s and publication of *The Nature of Geography* in 1939, these efforts were aimed towards exploring topics related towards economic and urban geography. His PhD dissertation at Chicago led to early publications on grain movement on Lake Michigan (1924) and studies in a similar vein were conducted on the location iron and steel production (1928). And in a glance of what was to come, Hartshorne also penned a semi-theoretical article entitled *Location as a Factor in Geography* (Hartshorne, 1927), arguing that the location of various entities in space may not reflect the “optimum location” for the best efficiency. In the late 1920s, as geography slowly began to throw off the yoke of environmental determinism, these early efforts at articulating a distinctly urban and distinctly economic geography, were key in moving the discipline forward.

Hartshorne’s movement towards these distinct fields seems to have culminated as Applebaum was finishing his degree, which examined the urban economic geography of the Twin Cities (Hartshorne, 1932). Though heavily regionalistic, Appelbaum, who likely took classes with Hartshorne, would have been readily exposed to many of these ideas throughout his undergraduate education. From Applebaum’s future career, it is clear that these interests in urban and economic geography resonated with him. Graduating in the depths of the Great Depression, he was fortunate to earn a fellowship to start his graduate

education at the University of Cincinnati. Enrolling in the fall of 1931, Applebaum undertook an immense project in urban and economic geography that would yield a two-volume report by the end of his nine-month fellowship but no graduate degree.

3.3 Nevin Fenneman, the University of Cincinnati, and Early Applied Economic Geography

Like many other departments during this era, the geography department at the University of Cincinnati was combined with the geology department. Under the leadership of Nevin M. Fenneman, a geologist turned geographer and a founding member of the Association of American Geographers, the department had carved out a research niche in physical geography but little in the realm of human geography, mirroring Fenneman's own research interests. In some sense, Fenneman was a less famous version of William Morris Davis. Trained at the University of Chicago with Rollin Salisbury, his research focused on the physiography of the United States. Similar to Salisbury, he believed that "Geology deals with the history of the earth's crust. Physiography deals with the history of the earth's surface." (UA-81-35, Box 3, Unpublished Papers and Address, 1914 AAG Paper). In addition to being a founding member of the Association of American Geographers, his major research contribution to geography was the two-volume physiography of the United States (Fenneman, 1938a, 1938b). He oversaw the 1918 Association of American Geographers conference held in conjunction with the Geological Society of America, where he also was a member of the leadership (Ryan, 1986). And although an important figure in the formation of geography, Fenneman was fundamentally a geologist at heart. This importantly shaped his understanding of how

geography as a discipline should function and what role the geographer should play in society.

Fenneman saw the work of the geographer as similar to the work of the geologist: while there was much scientific research to conduct, much of that work could be tied to commercial and practical ends. If geologists could find employ in the academy, private industry, and in government, something Fenneman did throughout his career, so too could geographers. From his perspective, geography's greatest utility was to align research interests with the practical goals of society. While Fenneman's work generally revolved around his geological training, the commercial applications of geographic thinking were an important part of his research. In the 1910s, Fenneman vigorously but unsuccessfully argued for the location of a new Federal Reserve Bank branch in Cincinnati over Cleveland stating that Cincinnati's geographic distribution of trade was larger than Cleveland's (Ryan, 1986).

His interest in the practical applications of geography as a mode of operations for the discipline seems to have been of significant focus to him from around the First World War until the mid-1920s. His 1918 Presidential Address at the Annual Meeting of the Association of American Geographers sought to expand on this topic, in a defense of the relevance of the discipline (Fenneman, 1919). Similar to recent debates about the core of the discipline, Fenneman sought to articulate the importance of geography as unifying science that could synthesize multiple disciplines into a single narrative. This narrative, and the emphasis of his speech, was on the importance of areal relations and regional geography to the contribution of scientific knowledge. As he noted, the significant

number of geographers involved in the First World War indicated a utility to society that the geographer was able to fulfill.

At the 1920 American Geographical Society meeting in New York, Fenneman presented a paper entitled *Geographic Adjustment as a Line of Research*, detailing how geographers could use the geographic lens to “adjust” human life to be more efficient. Rooted in deterministic thinking, the onus of Fenneman’s paper was on geography’s role making society more efficient, centering on the relationship between the physical environment and various facets of human geography such as agriculture, transportation, commerce, and industry. To typify the types of questions a geographer could ask, Fenneman posed the following questions:

“Is the state industrially adjusted? Is it availing itself of its raw material? Are the proper industries based on these; and are they properly located? Is it overdoing any of these? Is account being taken of the fact that neighboring states can do some of these things better? Are two related industries so located and operated as to strengthen and not weaken each other?”

–(1920: UA-81-35, Box 3, Unpublished Addresses and Papers)

These questions centered the onus of research on economic geography, and in revisions, Fenneman would change the title to *Constructive Geography*, thus shifting the emphasis towards the utility of the discipline’s research. In contrast to most of what was termed commercial or industrial geography at this time, Fenneman’s approach sought to imbue geography with a sense of purpose. This new paradigm moved commercial geography away from raw imperialism and encyclopedic cataloging at its root, and towards finding efficiencies within preexisting economic systems. And though deterministic in its thinking, it did not necessarily imbue overt racism into the core questions of the

subdiscipline. In short, Fenneman's work was outlining a rational, scientific, and pragmatic approach to increasing economic efficiencies through geographic analysis.

Moreover, what is striking is how clear Fenneman was in articulating these points—this was a research agenda that could have significant buy-in outside of the academy. In the interwar period, when geography was at its zenith of its power outside of the academy, there was a real opportunity to consolidate a discipline that was struggling to find a 'legitimate' research agenda with the continued pragmatics of service to advancing human society in some way. A rearticulated commercial geography, away from "anything and everything useful for merchants to know" (Van Dyke Robinson, 1910, p.v) towards a more scientific organization of economic activity had potential to grow the still-small discipline in meaningful ways.

Aspects of Fenneman's paper seems to have been inspired by the development of the Geology and Geography Division of the National Research Council, of which Fenneman was a member. Initially founded during the First World War to coordinate war-related research, the organization was forced to restructure in the post-war era. Fenneman was at the center of these efforts, believing that establishing common research agendas and funding structures would be good for the discipline as a whole. An unsigned and undated letter included directly after Fenneman's 1920 American Geographical Society presentation in his papers at the University of Cincinnati University Archive seems to hold clues both to Fennemen's thinking and his limitations in implementing this vision of commercial geography.

Sent to sixteen geographers, the letter was an exercise to remove the "general vagueness" of the "real field for geographic research" for the purpose of finding common

areas that the National Research Council could emphasize and support for the discipline. Using Missouri as an example, the letter urged its recipient to make a hypothetical list of “all kinds of data desired for the purpose named [research], regardless of source, regardless of whether such data would or would not pass under the name of Geography when looked at apart from the use here specified, and equally regardless of whether such data are or are not in existence” (1920: UA-81-35, Box 3, Unpublished Addresses and Papers). In response to the exercise, Fenneman compiled a list of data sources a page and half long, and a list of geographic questions, many of which revolved around economic geography.

For Fenneman, this exercise—created by him or not—obviously spurred him to present on the topic. However, its impact on the wider discipline was much more muted. Many of the sixteen selected were geographers either at the end of their academic lives, firmly entrenched in other ways of thinking, or not pursuing research.¹⁶ Assuming that the letter was sent in 1920; four of the nine were over the age of fifty. At least two would die within in the next three years. And perhaps more significantly, many of the geographers were not looking for new research agendas. Ellsworth Huntington clung to his deterministic writings until his death in the 1940s, Goode’s research began to turn more towards cartography, and Lawrence Martin was in government service for the rest of his career. Although the letter was not exclusively asking about commercial

¹⁶ Geographers were only listed by their last name, and only 9 of the 16 were able to be identified including: William Morris Davis, Alfred Hulse Brooks, Albert Perry Brigham, John Russell Smith, Rollin Daniel Salisbury, J. Paul Goode, Lawrence Martin, Ray Hughes Whitbeck, and Ellsworth Huntington.

geography, the academic base that Fenneman could have used to build support for this agenda did not materialize.

Moreover with little formal training outside of geology, Fenneman was poorly equipped to advance scholarship on this front. Correspondence in 1920 with J. Paul Goode, a trained economist turned geographer at the University of Chicago, indicates that the two were to work on the “possibilities of co-operation between the departments of geography and various lines of public service; such as land classification, railway regional development, trade advice, city survey, and the like” (UA-73-32, Box 1, G Correspondence) but little seems to have come of these efforts.

During the early 1920s, Fenneman’s work with the National Research Council (NRC) centered around articulating what the NRC could do to enhance geography and geology, and significant consideration was given to the development of new funding structures that could be funneled towards academics (Fenneman, 1922). Here the intent was not to acquire money from the government, but rather to pursue additional money from private industry that could be doled out to academics in grant form. Fenneman found limited success in this role, but the ramifications of obtaining outside money for research was to be significant to him in the immediate future.

Though never rising above the position of a department chair, Fenneman was a central figure in administration of the University of Cincinnati. The university, the only one of its kind, had been chartered by the city of Cincinnati to provide educational and research opportunities for the city’s residents, and thus there were extensive civic connections between university administration and high society. Since his arrival at Cincinnati in 1907, Fenneman had developed extensive contacts within Cincinnati

society that positioned him well to interface between the academy and industry (Ryan, 1986). In 1922, these contacts materialized with the development of the Cincinnati Resource Survey, a five-year effort to document and understand the city's business and industrial prospects funded by the Commercial Club of Cincinnati (Ryan, 1986). The results, an 86-page report documenting the industrial strengths and areas for expansion in the city and an entire room full of collated data available for the use of all interested parties, provided highly valuable information for business and industry leading to additional grants.¹⁷ Here deterministic thinking provided key understandings to how the city could continue to develop its economy.

In an annual report documenting the activities of the survey, Fenneman discussed the importance of eliminating waste and the economic ramifications of doing so, arguing that "Every time we eliminate waste, we create wealth." (Fenneman, 1927, 4). However, the waste Fenneman was writing about was not just human or industrial waste, but also waste in human effort, marketing, and "geographically unwise competition"; in other words, economic waste and inefficiencies (Fenneman, 1927, 4-5). Moreover, the questions the survey was seeking to answer are reminiscent of the questions generated by Fenneman in response to his American Geographical Society paper, listing in a question and answer format, detailed responses to questions about Cincinnati such as: "What raw materials are in and on the land around us?", "What things should we not attempt to produce?", and "Where can the things that we make be sold, and in what quantities?"

¹⁷ Other economic geographers on the faculty including Earl Case and Daniel Bergsmark also contributed to these efforts.

(Fenneman, 1927). These questions mesh well with Hartshorne's article, in the sense they were seeking to understand how location played a role in the efficiency of the economy. On this last question, Fenneman discussed the need for detailed understandings of local economics, especially in areas outside of the city. From this understanding came a need to document the local conditions of the Cincinnati metro area.

In conjunction with this survey, a donation by the owner of a local biscuit company sponsored an advanced fellowship on specific topics, stipulating that Fenneman alone should have discretion to choose the recipient that would do the best work to enhance the reputation and marketability of the city (UA-73-32, Box 1, Strietmann Fellowship). Running for five years from 1927 to 1932, Applebaum was the last fellow selected for this honor. Applebaum's "advanced graduate study" became a nine-month comprehensive land use survey and analysis of the greater Cincinnati suburbs and "secondary commercial areas" to assess their potential for growth.

3.4 Commercial/Industrial/Business Geography in the 1920s: A Slow-Moving Sub-Discipline

While commercial geography—sometimes labeled industrial or business geography—had a long tradition in the discipline with roots back to the 1870s, its primary issue was its lack of scientific rigor. Most forms of commercial geography were descriptive in nature, documenting an area's key exports and natural resources, and their uses to modern society. This scholarship became the foundation of geography departments in business schools (such as at the University of Pennsylvania and Columbia University) and the introduction of commercial geography as an important part of business education (Goode, 1917; Rowley, 1964).

Fenneman's version of commercial geography as a science to improve the efficiency of the economy, while seemingly of high relevance, was not taken up by most of the discipline in the 1920s. From 1920 to 1927 more than ten new textbooks on the topic were published (Handley, 1982). Business schools across the United States added commerce geography to their curriculum, buoying enrollment, but functionally little had changed. Even the establishment of the journal *Economic Geography* in 1926 at Clark University, did not have an immediate impact upon the quality of business geography scholarship.

Perhaps the most damning critique of the traditional form of commercial geography came from none other than Isaiah Bowman. In a ten-page book review of eleven commercial geography books, Bowman reflected on commercial geography's rise within the discipline and its ability to be a science. In order for commercial geography to be part of modern geography, Bowman wrote that:

“To be a science commercial geography ought by definition to fulfill three conditions: it should (1) have its facts arranged in a systemic order; (2) rationally explain present conditions in accordance with established “laws”; (3) predict the future course of development or lead the way to the discovery of new laws. . . . The tests applied by one person in a given solution must be capable of verification at other places and by other men under standard conditions, just as a physicist or physiologist lays down the governing conditions of his experiment and confidently invites verification of a truth or law which he claims to have discovered.”

--(Bowman, 1925, 288)

In Bowman's analysis commercial geography did none of that. Its emphasis on “geographical influence” (in other words determinism) and encyclopedic listing of facts left the subfield weak and out-of-touch with new developments in the discipline (Bowman, 1925, 286). Further, Bowman argued that main focus of the efforts of

commercial geography was merely on educating future business leaders and not on developing a new science; however, if the inverse was these scholar's intent, the field was still "too feeble and juvenile" to be truly scientific (Bowman, 1925, 291).

Most notably, J. Paul Goode at the University of Chicago's work engaged with Fenneman's ideas of a scientific and practical commercial geography. One such work outside of his cartographic contributions examined the geographical influence on Chicago's trade networks (Goode, 1926). Similarly sponsored by the Chicago Board of Trade and the city itself, his study examined how Chicago interacted and traded with the rest of the world, documenting how the particular geography of the city led to its economic rise.¹⁸ Hartshorne's thesis on shipping traffic in Lake Michigan was an outshoot of this work and compromised some of the more developed work in economic geography during this time. However, unlike Goode whose work seemed to have been split between cartography and applied geography, Hartshorne saw an opening for more scientific work in this area, leading to his 1927 paper on the importance of location in geography.

Entitled "Location as a Factors in Geography," the article highlighted how the "relative location" of an entity was the "all-important factor" in understanding not only how economies functioned but also in how a new business might succeed. Using terms such as "locus," "optimum location," and "relative location" Hartshorne sought to illuminate the hidden matrix that made some locations more advantageous than others

¹⁸ Entitled *The Geographic Background of Chicago*, the book reads interestingly with Cronon's *Nature's Metropolis* (1991), in the sense that Goode articulated many of Cronon's points (in less detail, of course). For other critical perspectives of Cronon, see Holdsworth, 1994.

(Hartshorne, 1927). Discussing everything from land prices and taxation rates to the access of appropriate forms of labor and transportation, the nine-page article sought to bring a geographical viewpoint to these issues of economics. This wholistic review of a site mirrored Hartshorne's long attachment to regional, idiographic geography. For a young Applebaum, these ideas must have been engrained in his education from Hartshorne, which he then would have brought to bear on his graduate training in Cincinnati with a sympathetic Fennemen.

Likely with Hartshorne's support, Applebaum applied and received the fellowship at the University of Cincinnati. The fellowship was unique in the sense that Applebaum's primary focus was on completing the report that the fellowship was based on and not on earning a graduate degree. Thus, for the nine-months that Applebaum was in Cincinnati, he was primarily focused on collecting, collating, and drafting his final report on these "secondary commercial areas." In total Applebaum visited 111 different commercial districts, mapping each in detail, collecting data, and running basic spatial analysis on the relationship of each district to its surrounding residential area. When presented to the Commercial Club of Cincinnati, the resulting two volume report was hailed as a tremendous resource and was "used extensively by real estate men and bankers" as late as 1938 (The Cincinnati Enquirer, 1938).

This urban geographic knowledge yielded a massive and unparalleled collection of urban data on the Cincinnati suburbs, enabling various forms of capital to better understand how the city fringes were developing. This marriage of applied economic geography with some economic and urban geographic theory, and nine-months of

intensive fieldwork would prove to be an important series of skills and experience for both Applebaum and the discipline.

3.5 Launching a Professional Career

At the conclusion of his fellowship, Applebaum returned to Minneapolis to undertake PhD work with Hartshorne. However, his time at Minnesota was cut short by a job offer back in Cincinnati. Starting in May 1933, Applebaum was employed by the Kroger Grocery and Baking Company, a Cincinnati-based grocer, as a research geographer. Tasked with conducting “studies in urban geography from the standpoint of marketing” (Applebaum, 1942, OSS Application, RG 226, Personnel Files 2166353), his work was critical to the immediate profitability of Kroger and longer-term prospects of food retailing in the United States. In light of both economic and urban geography during this time, Applebaum’s work was original for both its academic content and commercial utility.

Simply put, food retailing in the United States during the 1920s and early 1930s was a highly local affair. In contrast to today’s supermarkets, consumers purchased food goods from small, local corner stores and were served by staff members for each item they sought to purchase (Zimmerman, 1955). However, in the 1920s as the economy boomed, the chain grocery store became a fixture of American prosperity. Centralized purchasing along with low food prices ushered in a period of immense growth in the chain grocery store industry. As these companies grew larger—Kroger for example grew from 779 stores in 1920 to more than 5,575 stores in 1930—smaller chains and independent stores increasingly found themselves merging or going out of business (Deutsch, 2012, 58). As the decade progressed, dissent towards the “chain stores”

emerged for their ability to easily undercut independent stores with deep pockets, large advertising budgets, and coordinated purchasing. In the face of such overwhelming odds, local shopkeepers organized to address this threat. The result of these sentiments was proposed legislation at the local and state levels across the nation to tax, regulate, or outright ban chain stores; placing chain stores on the defensive just as the Great Depression reached its deepest depths in the early 1930s (Deutsch, 2012, 78).

In addition to negative public sentiment, grocery store chains found the ground underneath them quickly shifting. Considered as safe bets by Wall Street during the 1920s due to their high stock prices and consistent dividends, the deflationary impact of the Great Depression hurt their business model hard. Kroger stock, for example, dropped from \$120 a share to a little over \$36 a share in 1930 alone. This came on the heels of Kroger selling more food than they ever had in their entire history as a company (Deutsch, 2012, 135).

While the Great Depression lowered food prices nationwide, the costs of maintaining and staffing a large portfolio of small stores each with their own employees, kept food prices high. In 1930, a regional manager for Kroger by the name of Michael Cullen wrote to upper management about the prospects for large, self-service, high-volume grocery store. His basic argument was to roll-out a high-volume, low-cost grocery store that through marketing, would attract large crowds who though they were saving money. In addition to lower overhead costs, a small number of goods would be offered “at cost” merely to attract customers into the stores. The rest of the goods would be marked up to generate a profit, with certain items significantly overpriced compared to competitors. Through this method, Cullen wrote that:

“[This model] would be a riot. I would have to call out the police and let the public in so many at a time. I would lead the public out of the high priced houses of bondage into the low prices of the house of the promise land. I would convince the public that I would be able to save from one to three dollars on their food bills. I would be the ‘miracle man’ of the grocery business. The public would not, and could not believe their eyes. Week days would be Saturdays—rainy days would be sunny days, and then when the great crowd of American people came to buy all those low priced and 5% [marked up] items, I would have them surrounded with 15%, 20%, and in some cases 25% [marked up] items. In other words, I could afford to sell a can of Milk at cost if I could sell a can of Peas and make 2^c, and so on through the grocery line.”

—Letter reproduced in Zimmerman, 1955, 34.

Location would play a critical role in the development of this new form of store, with Cullen writing:

“Again, you may object to my locating two or three blocks from the business center of a big city, one great asset in being way from the business section is parking space. Another is, you can get generally the kind of store you want and on your own terms. The public will walk an extra block or two if they can save money, and one of our talking points would be, the reason we sell at wholesale prices are that we are out of the high rent district.”

—Letter reproduced in Zimmerman, 1955, 34-35.

In the context of geographic scholarship at the time, the optimum location of this new form of store was far different from anything in existence at the time. The letter went unanswered and the President of Kroger refused to meet with Cullen even when he made a personal visit to the Cincinnati headquarters. Rebuffed by the company, Cullen quit his job on the spot, moved to New York City, and established King Kullen as the first American supermarket (Zimmerman, 1955). His logic proved to be quite promising—using the same business model of bulk buying, selling certain items at discount and marked up prices, and renting a less-than-desirable but large former auto body shop in Queens—Cullen found great success in leading the residents of Queens into the promise

land of cheap food. In less than five years, King Kullen had 15 stores and more than a dozen of competitors in the New York market (Zimmerman, 1955).¹⁹ Seeing this phenomenon emerge nationwide, Kroger realized that its business model needed to change. The impact of these developments was three-fold on their strategy: 1) Kroger needed to consolidate their store profile into larger, more modern stores, 2) underperforming stores needed to be shuttered to free up capital to invest in these new stores, and 3) catering to middle and upper income consumers could provide new ways to bring in more profit (Deutsch, 2012, 140-141).

In order to facilitate these goals, the company established the Kroger Food Foundation, as its research arm to investigate any number of topics related to food retailing ranging from food science to marketing (Phillips, 1936). While other work specifically focused on the quality of the food itself or how to sell more of it, Applebaum's work in the foundation was fundamental to conveying that food to consumers. From the perspective of management, the establishment of new supermarkets was a highly risky venture. In order to work, the company had to shutter existing stores in order to open one large supermarket. Monetary outlays for each individual supermarket were high and required extensive planning to operate. The key factor in all of this—the location of a store and its relation to the rest of city—became of critical importance to the establishment of new supermarkets. Applebaum, armed with intimate knowledge of each

¹⁹ Of marginal importance to this paper, but an interesting “thoughtworm” nonetheless, is the relationship between early supermarkets and rise of our current political state. After losing his home construction business with the onset of the Great Depression, Fred Trump started his own successful supermarket in the same neighborhood as the original King Kullen. This store was later purchased by King Kullen to eliminate competition, providing him the capital to reenter the housing market.

of Cincinnati's suburban shopping districts and advanced knowledge of urban geography, was a natural candidate for this position. Within two years, Applebaum had been promoted to Chief of Staff for the Marketing Research Department, supervising all marketing research for the company (Applebaum, 1942, OSS Application, RG 226, Personnel Files 2166353).

This period of professional success was enhanced by his rising stature within academic geography—although he had not completed his Master's degree at the University of Cincinnati or progressed beyond the first year of his doctoral program, he presented on some of his research methods at the 1935 Association of American Geographers conference in St. Louis (Applebaum, 1952, 1). During this era, the Association of American Geographers was a group of elite academic geographers whose membership and participation at annual meetings was carefully guarded and curated. Presenting at the annual meeting required either full membership in the Association (and thus an academic position, which Applebaum did not possess) or sponsorship of one's paper by someone who was a full member (Barnes and Farish, 2006; James et al., 1979). While it is unclear whether Hartshorne or Fenneman sponsored the paper, it is indicative that a senior academic felt that Applebaum's work was of general interest to the rest of the discipline.

His paper, the same one published in *Economic Geography* in 1952, explained how to use of Sanborn fire insurance maps to construct a population and land use map. The implication, when first presented in 1935, began a discussion about how business entities could easily acquire and process relevant geographic information and reflect the

set of techniques that Applebaum had used extensively while working with Kroger.²⁰ Here the emphasis on the best use of land reflected a broader concern in the United States to spur economic growth and development. Indeed, in July 1935 Applebaum and J. I. Falconer (a professor of rural economics at Ohio State University) presented on this topic to the Cincinnati Regional Planning Commission. Although approaching the topic of efficient land use from a different perspective, the emphasis on the semi-rural was crucial. As Falconer noted, “the land policy in the United States had changed from a system of colonization to a process of placing land to the use to which it was best suited,” while Applebaum remarked that “Conditions today [in locating retail stores] call for much greater efficiency in the field [sic], with a maximum elimination of costly mistakes” (The Cincinnati Enquirer, 1935). Thus, untenable agricultural land would be better utilized for urban purposes such as housing or retail, with Applebaum’s locational techniques paving the way for an enhanced and more profitable commercial experience.

These techniques were tested out in the local surroundings of Cincinnati. In 1927, the city boasted 446 individual grocery stores.²¹ Six years later, more than a hundred outlets had been shuttered, and by 1940 only 247 outlets remained in the city. Moreover, only 27% of the 446 individual stores (a total of 119 stores) were still operating in the same location in 1940 as they were in 1927. Throughout this period, Kroger retained a significant majority of the grocery stores in the city, hovering around 47% of all outlets in

²⁰ In the context of the urban geography of the time, this was quite innovative. As Wheeler and Brunn have described, there was little urban geography in the 1930s and the urban geography that would emerge at the University of Chicago in the 1940s largely developed after Applebaum’s contributions (Wheeler and Brunn, 2002).

²¹ Data for this section came from Grocerteria.com and the US Census Bureau. I am in debt to Ashanté Reese’s *Black Food Geographies* for discovering this dataset (Reese, 2019).

the city, even while 46% of its 1927 stores were shuttered. This shift in food retailing practices was likely driven by a combination of the general economic downturn that was the Great Depression, a need for greater efficiency from each individual retail outlet, and Applebaum's skills in understanding basic site selection. Here, the largest changes in overall grocery stores were located in suburban and majority Black census tracts (Figure 3.2). These economic logics that manifested in Applebaum's site selection criteria can be seen for their implementation in the morphology of the built environment.

In suburban areas, land was cheaper to acquire and develop, and in addition, suburbanites were more likely to have access to their own cars which they could use to drive to these new stores. Combined with the lack of home development during the Great Depression, the centralization of grocery stores proved easier to achieve in the suburbs. In majority Black neighborhoods, consolidation of grocery stores came about due to the impacts of systemic racism, which reduced income and thus profit for individual grocery stores in these neighborhoods, leading to the shuttering of various stores.

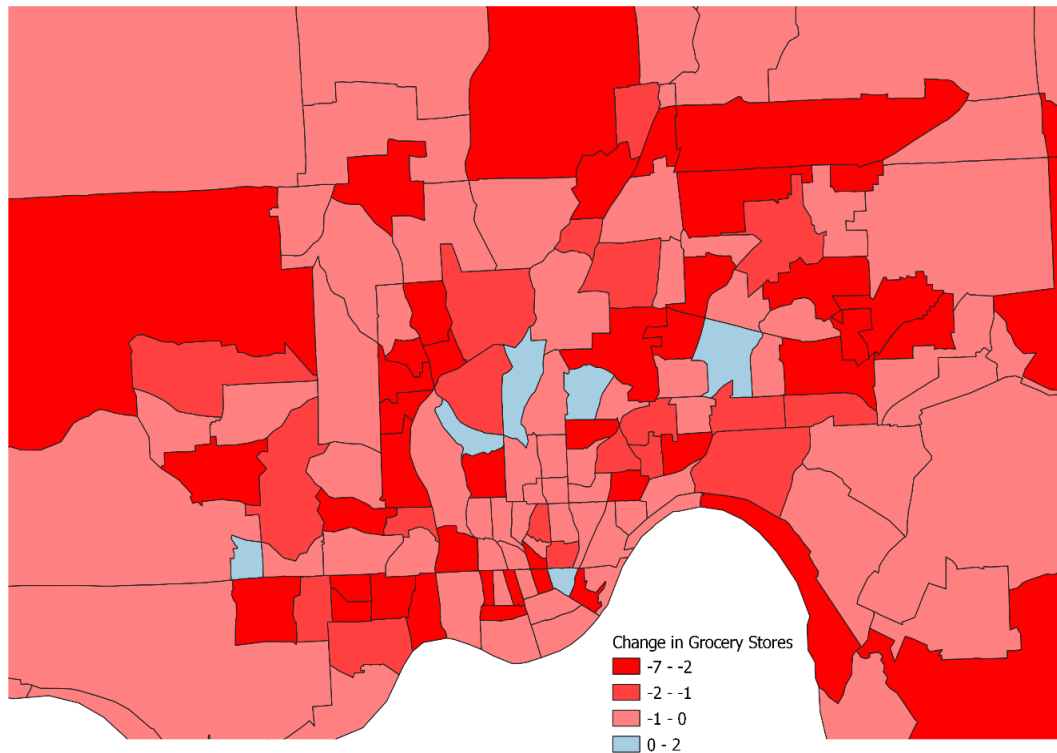


Figure 3.2 Map showing change in overall grocery store count by census tract between 1927 and 1940. (Boundaries from NHGIS, grocery data from Grocerteria).

In 1938, Applebaum moved to Boston to become the Director of Market Research and Coordination for the Economy Grocery Store Corporation, today known as Stop & Shop (The Cincinnati Enquirer, 1938). Earning \$10,000 a year (roughly equivalent to over \$180,000 today), Applebaum was tasked with slimming down Stop & Shop's footprint while increasing market share. Indeed, Applebaum was able to implement this quite successfully, leading the company to increased profitability in a time of economic scarcity and wartime constraints. As Figure 3.3 shows, in the nine years from fiscal year 1938 to 1946 (the last year data was available), Stop & Shop shuttered more than 250 stores while quadrupling overall sales per store (Stop & Shop, Inc., 1946).

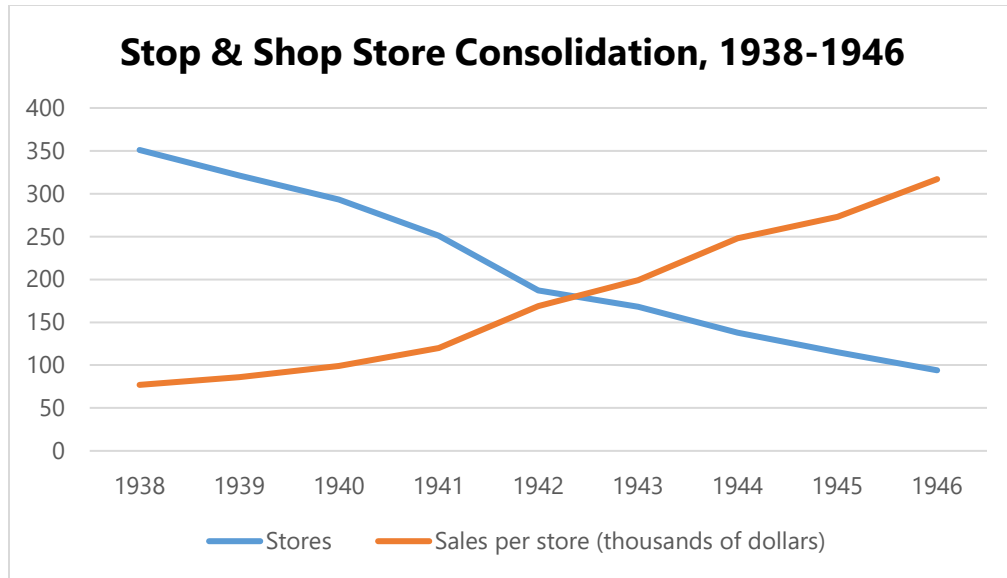


Figure 3.3 Stop & Shop Store Consolidation from 1938 to 1946. Not pegged to inflation. (Information from Stop & Shop, Inc., 1946)

Here deterministic thinking played a key role in forming the trading area of grocery stores during this period. Taking in account the physical conditions of the built environment (location of suitable buildings, types of stores located in adjacent units, transportation infrastructure), in conjunction with the social conditions (economic status, race), and overall competition, enabled grocery store planners to predict with some degree of perceived certainty the likelihood of a new establishment to succeed. Being able to predict the success of a business entity thus became a highly valuable skill necessary for the emergence of major food retailers.

Moreover, in contrast to the work in urban and economic geographies and other allied social science disciplines, Applebaum's work filled an important niche in understanding the urban and economic geographies of the city. While the period from the 1920s to the 1940s saw the emergence of these subfields, academics were largely concerned with understanding how the city functioned and developed. This meta-level

analysis led to the development of various generalizable models about how urban development occurred on a “universal” scale (Burgess, 1935). In other words, academics could explain how neighborhoods went through cycles or the reasonings behind the relocation of certain industries to various sections of the city. They could not, however, explain why a particular industry would or would not succeed in a specific parcel of land. Nor could they predict with any generalizable degree of certainty where specific industries would best succeed. Even more formal theories such as Central Place Theory—first published in 1933 in German and not readily taken up in American geography until the 1940s—only articulated a certain distribution of a phenomena on the surface of the Earth (Ullman, 1941). Even when applied to specific phenomena, the most useful information that Central Place Theory could reveal is the general location where something should be located.²²

Applebaum’s deterministic methodology provided key, actionable recommendations for where a grocery store would succeed. Even if the various forms of evidence were based on crude methods and personal understandings of the city, these findings were welcomed due to the overall lack of knowledge on the city in general. Also working in Applebaum’s favor was the industry of his choice: the continuous demand for food mean that it was unlikely for a store to be entirely unprofitable. Rather, the measure of success was based on the overall rate of return and amount of materialized profits.

²² It is also important to note here Central Place Theory was also intertwined with negative impacts on the world, specifically in Nazi Germany’s economic planning and strategizing (Rössler, 1989). Central Place Theory would also provide the theoretical background of other quantitative attempts to predict and understand retail environments (Berry, 1967).

Additionally, the practice of site selection was generally in its infancy; therefore, any improvements were welcomed regardless of the logic behind them.

3.6 Service and Teaching: Applebaum During World War II and the Post-War Era

Irrespective of how Applebaum was acquiring this information, the connections he forged between industry, academic, and government proved to be useful as he continued to develop his career. Applebaum's move to Boston was accompanied by an increase in both job duties and professional recognition. Yet, much of this was interrupted by the outbreak of the Second World War. The United States, which had returned to its isolationist roots in the 1920s, found itself wholly unprepared for the idea of a global war in all of its facets. In particular, however, there was a dearth of intelligence information about the world. These informational agencies were spread across the government from the State Department to the military to the Library of Congress. With little rhyme or reason, it became clear that there was a need for a unified intelligence agency to collect high-level information about the world (Flint and Kirsch, 2012). The solution to this was the formation of the Office of Strategic Services (OSS).

Overseen by Franklin D. Roosevelt's law school friend, William Donovan, the OSS became the premier intelligence gathering and covert operations agency in the nation. A central part of these activities was the formation of the Research and Analysis (R&A) Division overseen by Harvard historian William L. Langer and within that, the geography division headed by Richard Hartshorne. Hartshorne, whose national profile and high-level connections had only risen with the publication of *The Nature of Geography* in 1939, was well positioned to lead this unit and recruited an immense

number of high-profile and budding scholars whose work was influential to understanding social conditions in various territories around the world (Barnes, 2006). As part of the leadership, Hartshorne invited Applebaum to work as his second-in-command (NARA, OSS). In 1942, Applebaum was granted a leave of absence from Stop & Shop and moved to Washington, DC to assist Hartshorne. In this role, he would have interfaced with an extensive group of geographers, many of whom would go onto have a significant impact in the discipline in the post-war era. Less than a year later, Applebaum was promoted to be the special assistant to head of the entire RA division, William Langer (Applebaum, 1942, OSS Application, RG 226, Personnel Files 2166353).²³

In this role, Applebaum's duties revolved around the organization and flow of information. In addition to being Langer's personal assistant, he served as the secretary of the R&A Executive Committee which discussed high-level intelligence issues. He interfaced extensively with the Librarian of Congress, Archibald MacLeish, in establishing a special room in the library for researchers to conduct classified research (Applebaum, 1943, Correspondence between OSS and the Library of Congress, RG 226, General Correspondence, Folders 10-12). But perhaps of highest significance was his work overseas.

Roughly a third of the R&A staff (approximately 400 people) was scattered across the globe and while each was in regular communication with Washington, there was a need for streamlined communication between these entities. In April 1944, Applebaum

²³ While officially classified as a promotion, there may have been conflict between highly degreed academics and the graduate-degreeless Applebaum, which made a "promotion" the best option for all.

embarked on what would become a five-month trip around the globe to assist in the operations of each outpost. While some of his detail was routine administrative work such as implementing policy, other matters around the organization of specific branches and the streamlining of the relationship between the outposts and Washington was critical work in ensuring that the flow of intelligence information remained efficient (Applebaum, 1944, *Mission to the Outposts*, RG 226, Box 28).

A thick report, compiled upon his return to Washington, entitled *Mission to the Outposts* documents Applebaum's activities during these months, showing just how crucial his role was to the orderly functioning of the R&A's intelligence gathering activities (Applebaum, 1944, *Mission to the Outposts*, RG 226, Box 28). In addition to organizing and surveying the function of each outpost, assessing its facilities including infrastructure and available information, and assessing the distribution of personnel, Applebaum frequently undertook special missions for Langer, implemented high-level reorganization of R&A activities in the outposts, and collected information and periodicals in places such as Palestine. Over these five months, Applebaum traveled around the world starting in Great Britain before heading to Italy, Algeria, Egypt, India, Ceylon, Burma, and China. While finding complete records on Applebaum's actions overseas is difficult, a medical report from early December 1944 upon his return to Washington indicates that at some point he served behind Japanese lines (Applebaum, 1944, *Medical Report*, RG 226, Personnel Files 2166353). Moreover, his accounting and acquisition of Palestinian periodicals and other forms of intelligence—which were left off official after-action reports—seems to indicate that other special missions were carried out on an as-needed basis.

Working at such high levels in the OSS, he most certainly would have been on a first name basis with a variety of academic geographers. And while each position in the OSS was unique, Applebaum's contributions to the OSS were more diverse than most. His excellence in marshalling information merited him a nomination from Langer and Donovan to be awarded the Distinguished Service Medal, then the third highest military award. While OSS administrators concurred about the merit of Applebaum's work, the Distinguished Service Medal was reserved only for Generals and the occasional Colonel (Ball, 1945, Memorandum for Dr. William L. Langer, RG 226, Personnel Files 2166353). Thus, Applebaum was nominated for the Legion of Merit, which in 1945, was the highest non-combat medal that could be awarded. The proposed citation was written as follows:

“For meritorious achievement in connection with military operations against an enemy of the United States; Lieutenant William Applebaum, USMCR, organized the Washington Outpost Office of the Research and Analysis Branch, responsible for coordinating and providing the field units with personnel, intelligence, materials and services, serving the United States military and other Government agencies in several Theaters of Operation. Through his efforts, essential to proper performance, prepared a detailed manual and trained a staff to carry on the work in the face of a rapidly increasing flow of intelligence, dispatches and communications, requiring extraordinary skills, initiative and perseverance. Lt. Applebaum worked prodigiously in the Branch Outposts in the United Kingdom, Algeria, Italy, Egypt, Ceylon, China and Burma, and facilitated the dissemination of intelligence to SHAEF, the Army Air Forces, Allied Military Governments overseas and the Joint Chiefs of Staff and branches of the Army and Navy in Washington. He stimulated the field outposts in expediting and procuring foreign scientific and technical publications originating from enemy and enemy occupied territories. His wisdom, innate knowledge and resourcefulness contributed towards eliminating duplication of research effort within the Research and Analysis Branch. The entire service of Lieutenant Applebaum to the Government of the United States has been honorable.”

—Proposed Citation (Donovan, 1945, Recommendation for the Award of the Legion of Merit to Lt. William Applebaum, USMCR, RG 226, Personnel Files 2166353)

Applebaum's work clearly was highly important to the proper functioning of the Research and Analysis division—while his contributions in terms of geographic knowledge were limited, his ability to marshal and manage immense flows of geographic information set him apart from others during this time. While appealed, the award was ultimately not approved due to Applebaum's rank as a Lieutenant (and not as a field grade officer), and Applebaum was instead awarded the Bronze Star Medal (NARA, OSS). Regardless, Donovan himself remarked that Applebaum was “a brilliant organizer” and Colonel David Bruce (later a US Ambassador to France, Germany, and the United Kingdom) stated that he was “an outstanding officer of unparalleled organizational ability” (Mattingly, 1989).

With the end of the war, Applebaum returned to Boston and Stop & Shop. The decade immediately following the war would be one of the most productive and award-filled for Applebaum, reflecting his importance to a rapidly changing American economy. In 1948, Applebaum was promoted to the Director of Planning and Coordination at Stop & Shop. A year later he was again promoted to Assistant General Manager, which also came with voting privileges on the company's board of directors (The Boston Globe, 1949). This coincided with a stint as a consultant to the National Security Council's Research and Development Board (1948-1952), a 250-member panel of civilian and military experts tasked with assisting the military in ensuing operational readiness for the country should war breakout again (Cutler, 1956; Harvard University, 2005).

At the same time, Applebaum began more extensive academic work, both in geography and in the burgeoning field of marketing. In this latter field he was especially influential, serving as a founding member and part of the editorial staff of the *Journal of Marketing* (Applebaum, 1966, 1947). Combined with frequent speaking engagements at major research universities including Clark University, the University of Wisconsin, the University of Massachusetts, and Stanford University and even the discussion of a Professorship at the University of Washington's business school; Applebaum was well connected to academic discourse in geography and marketing (Harvard Business School Archives, Faculty Biographical Information, William Applebaum, Carton 2, Folder GB2.152 and University of Washington Special Collections, Edward Louis Ullman Papers, Box 2, Folder 5, Letter to Applebaum, 2/3/1954). This period also saw a more active publishing agenda in both geography and marketing. As part of these efforts, to assist Kroger in determining its market share in midwestern states, he hired an extensive number of geography faculty and graduate students to conduct paid summer research (Cohen, 1956).

At the same time, Applebaum's personal connections to academic geography began to grow stronger, specifically around the program at Harvard University.²⁴ Applebaum, who had become close friends Edward Ullman during the war, had been hired into the Harvard program (University of Washington Special Collections, Edward Louis Ullman Papers, Box 2, Folder 5, Letter to Ullman, 5/7/1946). Moreover, Applebaum's old advisor, mentor, and friend Richard Hartshorne was good friends with

²⁴ The program at Harvard was combined with the geology program, forming a joint department of Geography and Geology, thus the elimination of geography at Harvard was closure of the program in geography as opposed to a department (Smith, 1987).

Derwent Whittlesey, the chair of program in geography, likely facilitating a connection between these two. It had been under Whittlesey's editorship of the *Annals of the Association of American Geographers* that the full-text of Hartshorne's *The Nature of Geography* had been published in serial form (Barnes and Farish, 2006). Combined with Stop & Shop's headquarters in Boston, connections between professional geographers and a major geography program was bound to occur.

Indeed, in early January 1950, *The Boston Globe* ran a nearly full-page article (Figure 3.4) on page seven discussing efforts between *The Globe's* staff, Applebaum and the Stop & Shop research team, and Harvard geographers and cartographers to produce the first up-to-date map of the Boston metropolitan area in nearly twenty years (Kline, 1950). The undertaking funded by Stop & Shop, supervised by Applebaum and Ullman, and drawn by former OSS cartographers employed by the department, relied on data collected by students. Central to this this data collection was Kenneth W. Walter, a geography graduate student at Syracuse University, who personally "walked through 43 cities and towns, street by street, classifying shopping centers." In recognition of his efforts, the title of the article reflected the immense amount of effort Walter went to stating that "Student Wore Out a Pair of Shoes Every Two Weeks Getting Material for Globe's Map of Metropolitan Boston." As *The Globe* noted, "most developments since 1928 were not mapped on any one base map" rendering the ability to see an accurate version of the entire metropolitan area impossible (Kline, 1950). Moreover, while initially developed for the siting of new stores, it was thought there would be "wide application to other commercial and public activities" including city planning, real estate development, mortgage appraisal, research in urban geography, and marketing. Indeed,

the map had already been utilized to site the location of various tuberculosis x-ray units to ensure that the entire population was covered (Figure 3.5).

THE BOSTON SUNDAY GLOBE—JANUARY 8, 1950 A-7

Student Wore Out a Pair of Shoes Every Two Weeks Getting Material for Globe's Map of Metropolitan Boston



HARVARD GEOGRAPHERS PLAN GLOBE MAP OF METROPOLITAN BOSTON—Associate Prof. Edward L. Ullman (second left), discusses with cartographer Robert L. Williams (third left), and geography researchers, George K. Lewis (left), and Jack C. Ransome and John M. Finlayson, some of the technical problems in developing the first up-to-date map of the metropolitan area in more than 20 years.

By NAT KLINE

The first complete, up-to-date base map of Metropolitan Boston, the result of a year of painstaking research, has just been published by the Boston Globe.

The locations of 518 shopping centers in Greater Boston, roads of every type from huge arterial highways to town streets, railroads and railway yards, town and county boundaries, reservations, parks, water bodies—all these and much more factual information is contained in the base map and three supplementary editions.

One research student, whose wood, and from Cohasset to Framingham.

When the Globe's research department consolidated the data originally gathered by the citizens of geography and regional planning, it found out many startling facts about Metropolitan Boston.

In Hingham, a complete map of Metropolitan Boston, as it is in 1949, was available in a completely updated.

Individual city and town maps were loaded with "paper streets" which were planned but never constructed.

Most developments since 1938 were not mapped on any one base map.

In many cases, maps of individual communities had not been corrected for many years in the light of the new business and residential developments.

To present its up-to-date Metropolitan Boston map and Retail Shopping Center Outline Study, the Globe had every official data department available. City, town, county and state statistics were placed and up to date as possible.

The Globe maps are published in three, four and five colors. The base map shows water and terrain and minor subdivisions.

Map Wides Applications

Roadways are classified as major arterial, secondary roads and all others. Railroad lines are differentiated by between multiple and single track. Water bodies are differentiated from lakes, rivers and streams to swamps. Airports are marked as aerial ports. Private and public markets research purpose, such as location of new stores, the Globe's Metropolitan Boston Map is expected to have wide application in other commercial and public activities. City Planning, real estate development, mortgage appraisal and research in urban geography will find it a useful aid, even as the planners of sales campaigns or wholesale servicing.

The location of the Tuberculosis X-ray units for the current campaign to cover every citizen of Boston, with the idea of locating the machines to reach the maximum number of persons, was guided to a great extent by the Globe Shopping Center map.

Facilities of future development is surrounding areas are reflected in the map. Shopping areas outside the 418 in the main Metropolitan area are indicated.

Green dots, each representing 100 persons, give an accurate picture of population density at the points which to study.

The Harvard research group under the direction of Prof. Ullman were Robert L. Williams, the cartographer, and George K. Lewis, Robert B. Johnson and Jack C. Ransome. John Finlayson of Arlington aided in the drafting.



A SECTION OF THE BOSTON GLOBE SHOPPING CENTER MAP OF METROPOLITAN BOSTON—The map published in four editions shows population density and distribution, highways and layout of residential streets and 518 shopping centers classified according to size. This map shows the shopping centers.

Figure 3.4 Article from *The Boston Globe* documenting Applebaum's efforts with the Harvard geography program to create a new map of the Boston area (Kline, 1950).

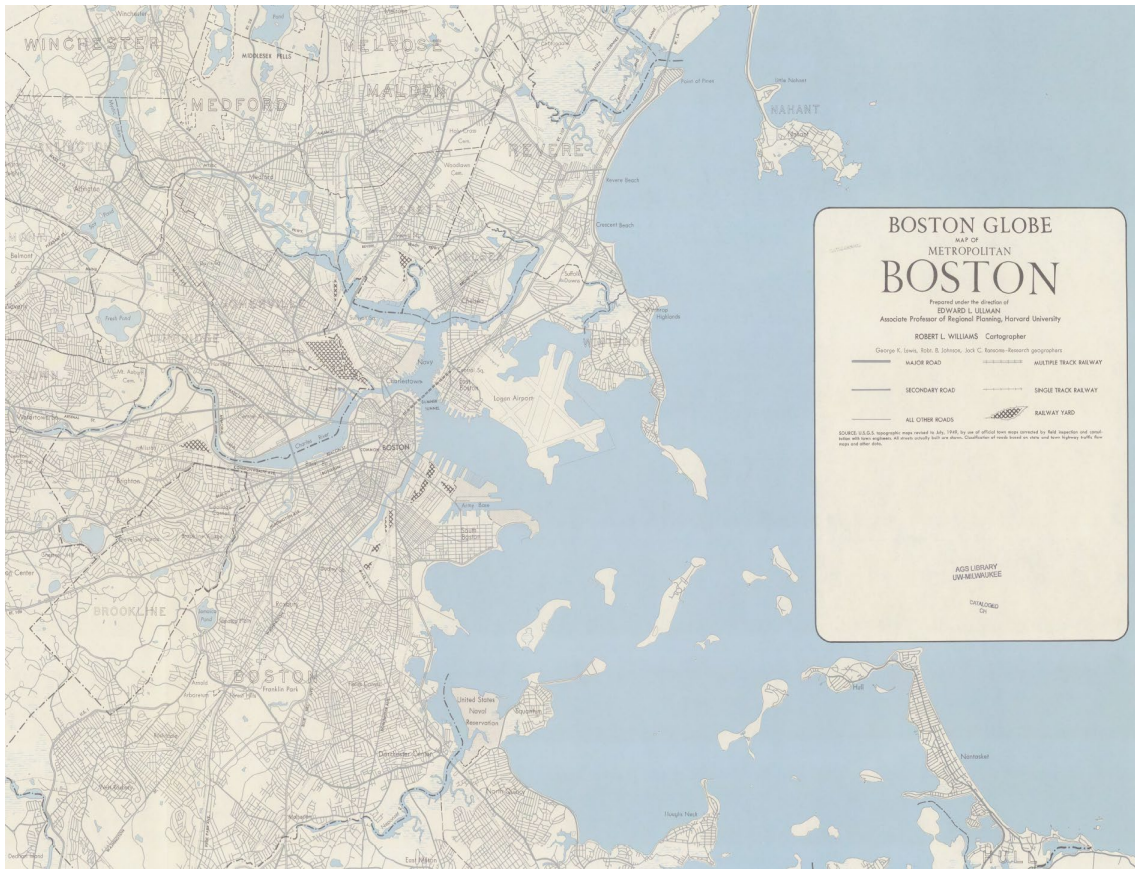


Figure 3.5 Section of the final map produced by the program. Note the large blank space left on the legend, for the printing of additional information at a later time, which is not present in the map in Figure 3.4. (American Geographical Society Library, University of Wisconsin—Milwaukee).

These highly detailed, intricate encounters with the department were underpinned by Applebaum’s role in assisting various graduate students in completing their studies. For example, in November 1951, Applebaum wrote to Ullman—now at the University of Washington—about one of the last PhD students enrolled in the program:

“No doubt, by now, you have had a chance to go over Howard Green’s thesis. My reason for bringing it up is that I would like to enlist your help to bring this Ph.D. degree matter to a conclusion. We have some longer range plans for Howard, and the sooner that this is behind him, the better for all concerned.”

— University of Washington Special Collections, Edward Louis Ullman Papers, Box 2, Folder 5, Letter to Ullman, 11/15/1951).

Howard Green would be hired by Stop & Shop to conduct market research before heading to Chicago to work in site selection with Montgomery Ward (Green, 1961). Green was not the only student that Applebaum helped however: Saul Cohen, the last geography PhD student at Harvard and one of the few Jewish students in geography, was heavily influenced by Applebaum. From Cohen's graduation in 1956 to the early 1960s, the two worked closely in a variety of business geography projects including both academic texts and consulting work (discussed more at length further in this chapter). While the fate of the program was already sealed in 1948, Applebaum's involvement with geography and Harvard continued even after the ending of formal classes in 1956 (the year of Whittlesey's death).

In 1954, at the age of 47, Applebaum retired from Stop & Shop all together, embarking with his wife on a nine-month tour of Europe and the Middle East (The Boston Globe, 1954). Upon his return to Boston, he began consulting work and a new academic career starting as a Visiting Lecturer in Food Distribution with the Harvard Business School. While the courses that he taught were not inherently geographical—in the names of the courses, nor in the discussion of topics—the emphasis on distribution and retailing of goods reflected an applied geographic tradition that Applebaum had spent his career developing. With courses like “Retail Merchandizing of Consumer Goods,” “Retail Management and Control,” and “Strategy Problems in Mass Distribution,” Applebaum imparted a career's worth of knowledge of the mass retailing business to a generation of Harvard Business School students (Harvard University, 1958). In the context of 1950s and 1960s—a period of unprecedented growth in the size of business

and American consumerism—Applebaum’s classes were an important contribution to the growth of this system. It also placed geography in the business school with other Ivy League schools such as University of Pennsylvania and Columbia University.

With the benefit of hindsight, it is also clear that much of this growth was underpinned by business school graduates. The entire process of development—from the identification of a new markets, the selection of possible sites, the negotiation process, and the ultimate opening of new businesses was increasingly orchestrated by professionals trained in the process of marketing and the economics of business. This position became permanent in 1960, when the visiting designation was removed from his title (Harvard Business School Archives, Faculty Biographical Information, William Applebaum, Carton 2, Folder GB2.152). Throughout this time, Applebaum worked extensively with a fellow business school professor Malcom P. Salmon, who also specialized in the business of retail enterprises to better understand the hidden economics of mass retailing. Throughout this period, Applebaum’s publications and reputation continued to increase. From 1950 to 1954, he served as the chair of the joint National Research Council and Association of American Geographers Committee on Careers in Geography; from 1958 to 1961 as a member of Office of Naval Research grants committee which funded much early quantitative geography work, and as a member of various United States Department of Agriculture research and marketing activities from 1950 to 1964 (Harvard Business School Archives, Faculty Biographical Information, William Applebaum, Carton 2, Folder GB2.152). In 1959, the Association of American Geographers awarded him the Citation of Merit, then the highest award that the Association of American Geographers then gave out to members (American Association

of Geographers, n.d.). Along with various Harvard graduate students, he represented geography at early Regional Science Association meetings (Isard, 2003). Applebaum continued government work in the early 1960s, traveling to India and Yugoslavia as part of the “Food for Peace” missions which sought end violence through the distribution of excess American food (The Boston Globe, 1964).

This period was also associated with a marked increase in foreign research and consulting work, particularly in Western Europe. Applebaum is known to have worked with several German retailers, and several articles were republished in German and French language retail trade magazines (Harvard Business School Archives, Faculty Biographical Information, William Applebaum, Carton 2, Folder GB2.152). It is also clear that Applebaum was ahead of his time on important trends in both food marketing and business administration. In the mid-1960s, he discussed the importance of electronic data processing and the likelihood the mass-market “cash and carry” food distribution warehouses would become important players in the food distribution market, anticipating the rise of current large retailers like Costco and Sam’s Club and their associated data management systems (Harvard Business School Archives, Faculty Biographical Information, William Applebaum, Carton 1, Folder GC.151).

Yet, the 1960s were also a period of difficult relations with the discipline. While the discipline had largely abandoned deterministic thinking by the end of World War II, replaced by regional geography and area studies, changes were afoot. The rise of quantification in the 1950s, which would lead to the Quantitative Revolution in the 1960s, signaled yet another shift in the energies of the discipline. Although Applebaum’s work was inherently quantitative it was also regionalistic and thus he would find

difficultly in building a larger research agenda. His work was too practical, not theoretical in the slightest, and did not fit neatly in either disciplinary paradigm. His numerical data was child's play compared to the emerging spatial sciences and his regions were micro-regions, on the scale of the market area of a store and its overall influence. While obviously more successful than Fenneman was in the 1920s, Applebaum faced similar challenges in generating sustained academic interest in his vision of the discipline. Perhaps more importantly, Applebaum's lack of an academic position, graduate degrees, and Jewish faith likely left him a marginal player in an increasingly professionalized academy (Kobayashi, 2014). Thus, by the mid-1960s, Applebaum largely had begun to focus on developing the field of marketing and monetizing his skill, in essence developing a larger presence outside of geography.

This observation was known and acknowledged within the discipline. In addition to his international consulting work, Applebaum's written work was heavily read internationally. For example, Ross Davies, a professor of geography at University of Newcastle upon Tyne in the United Kingdom heavily cited Applebaum's work in his book *Marketing Geography* stating that "William Applebaum is widely regarded as the chief architect of marketing geography as a separate field of study in the United States. He defined the subject as being 'concerned with the delimitation and measurement of markets and with the channels of distribution through which goods move from producer to consumer'" (Davies, 1976, 2). Davies continued, summarizing Applebaum's position that marketing geography—of which site selection was a critical—was an applied and not inherently "purely academic" subject. He also stated that "Applebaum, indeed, campaigned for the subject as a visiting lecturer to the Harvard Graduate School of

Business Studies [sic], rather than establishing himself within a geography department” (Davies, 1976, 3). While such a bold statement may not truly reflect Applebaum’s desires, it does speak to the discipline’s failures to integrate Applebaum into the discipline.

3.7 Determinism in Geographic Thinking

Applebaum’s form of thinking, I argue, was a form of “commercial determinism,” which was present to some degree in the economic work of both Hartshorne and Fenneman. While geography has extensively studied and documented the history of environmental determinism in the discipline for its racist and discriminatory conclusions which were mobilized in the name of colonialism and the Holocaust, the larger concept of determinism as a philosophical concept has been less explored (Peet, 1985; Platt, 1948).

Determinism, as a philosophical concept, is generally defined as a worldview where phenomena can be explained and predicted as a matter of natural law (Hoefler, 2016). Environmental determinism is largely defined as “a type of reasoning that holds the character and form of a society, culture or body can be explained by the physical conditions within which it has developed” (Gregory, 2009, 196-197). Extending this to commercial activities, this definition might be rewritten as: a type of reasoning that holds that the character and form of an economic activity can be explained by the social and physical conditions within which it has developed. As a basis for inquiry, it presupposes that economic activities arise out of the particular social and physical conditions of any given location, providing a framework for understanding why economic activities have developed in a certain way and how it might emerge in the future. As a paradigm of

geographical thinking, determinism is one analytical lens that can be applied to a given issue and in terms of “applied” work it presents a highly useful theoretical lens for the formation of a new physical world.

Moreover, similar to the conclusion of environmental determinism, issues arose the impacts of all form of deterministic scholarship. While individual empirics could be on their own valid, the overall conclusions functioned largely independent of the evidence. For example, in Ellen Churchill Semple’s writings on eastern Kentucky, she correctly identified major factors of the physical environment which impacted the development of human society such as the aggressive slope of the mountains which made travel difficult and dissuaded the emergence of an enslaved labor driven economy (Semple, 1910). However, her larger emphasis on normative models and the assumption that eastern Kentucky strove to be “modern” like other rural communities, asserted that these communities and peoples were backwards and needed help advancing into new registers of development. The results of environmental deterministic thinking were overtly racist actions which sought to improve the human race through ethnic cleansing (Giaccaria and Minca, 2016). Similarly, commercial determinism relied on amalgamations of scientific facts and assumptions to produce information to make decisions on where to locate a new store. Moreover, determinism gained its power through the framework within which it was applied. As Fenneman stated, this drive to reduce economic waste could be pioneered through site selection, but to what ends? Small grocery stores and larger supermarkets could both be successfully studied under this intellectual framework, but the process of actually implementing these changes operated at the level of practice.

In one of Applebaum's earliest publications to expand upon his methods, co-written with Saul Cohen, they described similar issues (Cohen and Applebaum, 1960).²⁵ In working to determine the market area of individual stores, the paper blended traditional models of urban morphology with business, asserting that stores in planned shopping centers performed better than stores located within neighborhoods. This marketing equilibrium sought to understand how location, existing stores, and supply chains impacted the overall profitability of stores, with an eye towards practical utility of increasing more profit (Cohen and Applebaum, 1960). For example, Figure 3.6 shows how the development of a new supermarket led to a changing trading area for each store.

²⁵ While this article was not issued when Applebaum was employed by a supermarket chain, the rash of publishing he engaged in during the 1960s seems to be driven by a desire to earn credit (both financially and in terms of reputation) of the trade secrets, techniques, and general retail expertise he had developed during the previous thirty years.

As an additional point of reference, the article acknowledged the importance of twenty scholars and practitioners to the completion of the article. This included 5 geographers (Edward Akerman, Hans Carol, Richard Hartshorne, Raymond Murphy, and Edward Ullman), 6 business school faculty members (from Harvard, University of Illinois, and University of Pennsylvania), and 8 professional geographers/planners/site selection specialists (from firms including Stop & Shop, Kroger, Star Market, and Montgomery Ward). The final acknowledgement, to Eileen Schell as a cartographic assistant, is also of note. She was an early graduate student of Saul Cohen's at Boston University, trained in cartography with Erwin Raisz, and after founding her own site selection consultancy firm would go on to serve as the Secretary of Consumer Affairs of Massachusetts from 1979-1983.

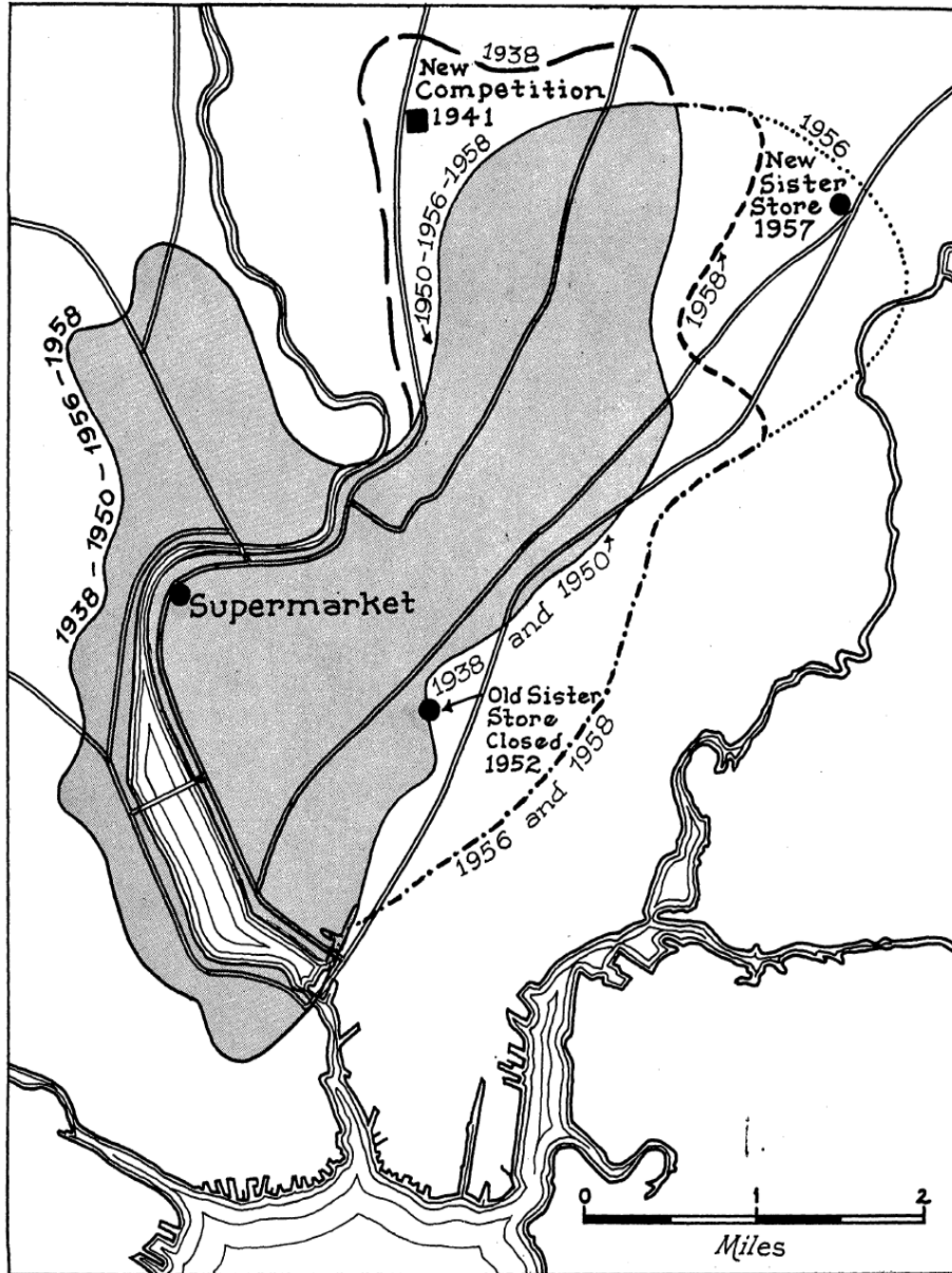


FIG. 7. Stability of trading area. A store's trading area boundary remains fairly constant over long periods of time. Customer-spotting studies in 1938, 1950, 1956, and 1958 are the basis for this map. The supermarket was built in 1938. Significant boundary changes have occurred only in the areas affected by the 1957 opening and the 1952 closing of sister stores, and by the construction in 1941 of a considerably larger competitive store with better facilities.

Figure 3.6 Map showing changes in supermarket trading area due to supermarket consolidation, competition, and relocation. (Cohen and Applebaum, 1960)

However, location was not the only important characteristic of this work. In general, their emphasis on the physical characteristics of the landscape could also assist in all determining how a store preformed. These included the following metrics:

- Per capita sales/local income levels
- Access and condition of road networks/drive time from housing to retail locations
- Location of competition/availability of suitable sites

Thus, in general, the ideal market would be a growing, medium-sized city with little other competition and high incomes. This would allow for a new chain to secure the best sites, create a market presence, expand as the city grew all while profiting. As Applebaum and Cohen concluded, “Under rational behavior of retail society, strong and well-informed competition is the best agent for maintaining dynamic equilibrium within market areas” (Cohen and Applebaum, 1960). In other words, under these ideal conditions, retailers would be able to maximize profit and provide the best use of the land.

As a basic service, food retailing is a small-profit margin, large volume business—meaning that while everyone needs food, many different people sell it, driving down the overall price and profits. The movement towards grocery store consolidation was thus an exercise in maximizing retail at scale, inherently lowering prices through mass buying, undercutting one’s competitors, and then finding ways to profit. Thus, Applebaum’s career in the supermarket industry occurred at the best time: he was able to guide the transition from an overbuilt, inefficient system to a centralized, more efficient system, leaving the industry before the supermarket industry became saturated.

In addition, while determining the optimal location for a supermarket was critical to its success, as a predictive measure, the criteria Applebaum used only eliminated the

worst sites from consideration. In essence, he could ensure that a store would not be unprofitable because of high taxes, poor site configuration, or market saturation, but he could not make the store turn a profit. Nor could he accurately predict if the store would be profitable even if the most ideal site was selected, due to the actions of outside parties (for example, poor in-store management, opening of competitors, increase in traffic, etcetera). As Figure 3.7 shows, even modes for new store equilibrium, assumed constant growth without an understanding of underlying conditions outside of the physical environment.

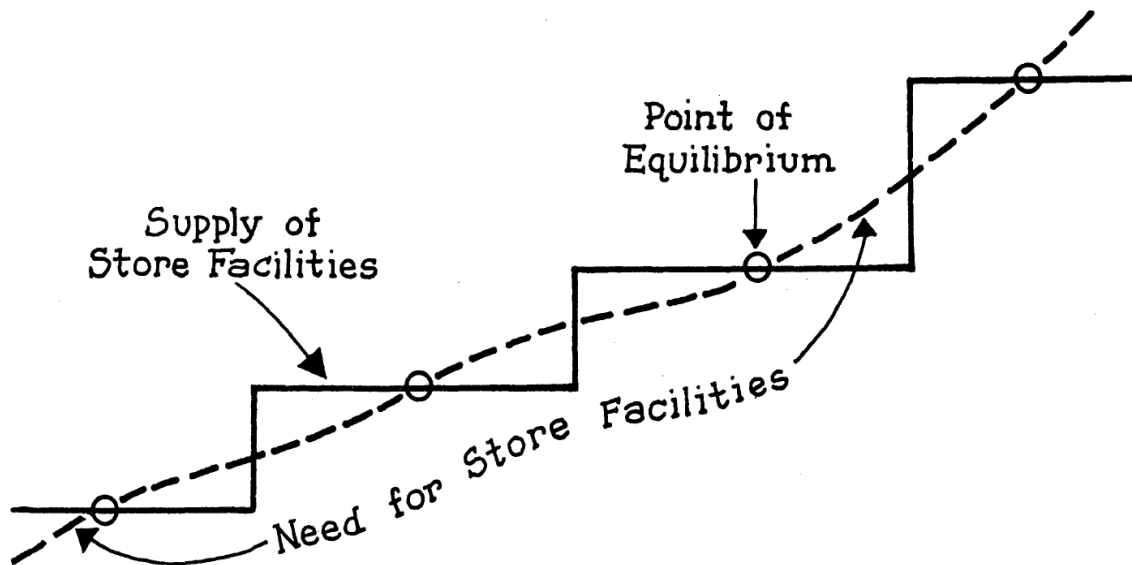


Figure 3.7 General model articulated by Cohen and Applebaum regarding the need for new stores in a given area. While inherently reductive, there is little indicating other factors which may reduce economic demand. (Cohen and Applebaum, 1960)

As a tool for analysis and decision making, determinism was a useful yet flawed framework. In the pursuit of knowledge and as a science, however, it was most certainly not the most relevant intellectual framework. The backlash against determinism within

the discipline was against both environmental determinism but also determinism in general. For example, in Carl Sauer's 1940 Presidential address, he wrote that:

The American geography of today is essentially a native product; predominantly it is bred in the Middle West, and, in dispensing with serious consideration of cultural or historical processes it reflects strongly its background. In the Middle West, original cultural differences faded rapidly in the forging of a commercial civilization based on great natural resources. Perhaps nowhere else and at no other time has a great civilization been shaped so rapidly, so simply, and so directly out of the fat of the land and the riches of the subsoil. Apparently here, if anywhere, the formal logic of costs and returns dominated a rationalized and steadily expanding economic world. The growth of American geography came largely at a time when it seemed reasonable to conclude that **under any given situation of natural environment there was one best, most economical expression of use, adjustment, or response**. Was not the Corn Belt the logical expression of soil and climate of the prairies? Did not its capital, Chicago, show in the character and energy of its growth the manifest destiny inherent in its position at the southern extremity of Lake Michigan, toward the eastern margin of the Prairies? Did not the green sea of corn that overwhelmed the native prairie grasses represent an ideal realization of the most economical use of a site, as did the bending of the strands of communication to meet at the dynamic center of Chicago? Here the growth of centers of heavy industry at points of most economic assembly of raw materials was an almost mathematical demonstration of the function of ton-miles, somewhat conventionalized in terms of freight rate structure.

—Emphasis added, (Sauer, 1941)

As Cronon so masterfully described in *Nature's Metropolis*, this explanation of the rise of Chicago does not match up to the historical record, which shows a far messier, uncertain, and highly contested march towards its dominance of the Midwestern United States (Cronon, 1991). While the above worldview reflected a stereotypical understanding of determinism writ large, it did demonstrate the errors in logic that deterministic thinking led to. Pushing deterministic thinking to the side allowed for a regional and historical geography paradigm to emerge,

which enabled for a more nuanced understanding of the various factors influencing a given area. Yet even within this lens aspects of deterministic thinking emerged, mainly around the creation and delineation of regions themselves. An analysis of any phenomena in the Midwestern United States necessitated a determination of what the Midwest was—did one choose by state boundaries? County boundaries? Generalized boundaries that created a core and periphery of a region?

Applebaum's failure to integrate with the discipline on a theoretical basis largely placed his work in the category of applied scholarship. Especially by the early 1960s, when regional studies was at its zenith and the Quantitative Revolution was just dawning, Applebaum's work did not fit in either camp. For example, Brian Berry, one of the original University of Washington "Space Cadets," engaged with many of the same topics as Applebaum. Berry's dissertation essentially took a quantitative and Central Place Theory-informed view to the development of shopping centers in Spokane, Washington, utilizing ongoing research funded through the newly implemented federal Interstate Highways Systems to understand the linkages between traffic and development.

In his dissertation, Berry noted Applebaum's contributions to two studies conducted in conjunction with *The Boston Globe* (discussed previously in this chapter) and *The Cincinnati Enquirer* in determining the structures of urban business in these cities. Berry wrote that both were a "failure ... to identify precise hierarchical structuring of urban business, and also what is recognized in this study as the supplies-repair-arterial business confirmation...", seemingly unaware of what exactly the goal of these studies

was (Berry, 1958, 3). In essence, the two were talking past each other from different theoretical perspectives.

Within a decade of his graduation in 1958, Berry had risen to be a full Professor at the University of Chicago Department of Geography (Berry, n.d.) and in 1967, he authored the *Geography of Market Centers and Retail Distribution* as part of the Foundations of Economic Geography Series. This series, which issued short specialized books documenting major topics in economic geography, was widely construed in its focus documenting traditional economic geography topics such as international trade and manufacturing, but also including topics as diverse as population geography, natural resources, agriculture, and urban land use, making series a highly useful resource for mid-century geographers. In the book, Berry advanced his argument for a quantitative and Central Place Theory-driven understanding of retail, advancing many of his views about urban and economic development.

Saving the shortest chapter of the shortest section of the book (comprising only five and a half pages) to discuss marketing geography, Berry described the field as “at best [having paid] only lip service to the existence of a field of marketing and an expanding body of literature called marketing science...” (Berry, 1967, 126). He went onto write:

“That the marketing geographers should fail to build their work, after Applebaum’s 1954 plea, within the framework of marketing science is understandable, since geography as a whole was for many years inward looking and often insensitive to progress in related subjects. What is surprising is that they should also have overlooked or rejected as “too abstract” the pioneering theoretical contributions of Christaller and the formalization of fundamental concepts by Lösch. If Schwartz [a researcher in marketing theory] provides a picture of the diversity and lack of integration of the theoretical bases of marketing science, Christaller and

Lösch presented a consistent frame for delineating training areas, selecting retail locations, presenting marketing data, and evaluating markets. Twenty years before Applebaum prepared his paper on marketing geography, a theoretical frame had been developed *within geography!*" (Berry, 1967, 126, emphasis original).²⁶

This critique of marketing geography was reaffirmed in the remaining pages of Berry's chapter by discussing efforts in marketing science towards understanding marketing geography. In effect, this marginalization of marketing geography under the guise of ineffectively situating itself within the discipline, marginalized the contributions that Applebaum provided.²⁷ Moreover, the book was a spectacular success republished nine times and translated into Japanese, Spanish, and French. It currently stands as Berry's second-highest ranked publication, with nearly 1,800 citations, 152 of which are from 2016 to the present. Moreover, in the decades following its publication, the book continued to receive praise from academics, hailed in regional science as "one of 40 path-breaking books" in the discipline (Waldorf, 2003).

In 1992, the book was revisited as part of *Progress in Human Geography's* "Classics in Geography Revisited" series. Here Berry noted that within geography the reaction was mixed, with only one review from an Applebaum advisee, Bart Epstein. Outside of the discipline and especially in trade journals, the book was well received. As Berry stated about the contrasts between the disciplinary perspective and outsiders,

²⁶ The use of italics in the original is significant as the stylistics of the rest of the manuscript conform to the use of italics in more traditional sense (titles of books, the defining of key topics, the use of non-English words, mathematical formulas, etc) and not to convey the authors own personal feelings.

²⁷ It is also important to note Berry's impact on the rest of the discipline: after leaving the University of Chicago, Berry moved to Harvard where he would hold multiple roles—including as the Director of Laboratory for Computer Graphics and Spatial Analysis in the Graduate School of Design—from 1976 to 1981. Here these appointments point to a larger network and the importance of site selection as a form of urban knowledge production.

“Outside geography, social scientists were accustomed to theory and to the insights of science. Within geography, adherents to earlier schools of thought were fighting a defensive battle” (Davies et al., 1992, 222). This shifting of views reflects the disciplinary void that Applebaum found himself in.

Given Berry’s contributions to various publications of the Super Market Institute (which appeared side-by-side with Applebaum’s writing as well) and Berry’s work in 1965 in undertaking statistical analysis and modeling of Stop & Shop’s store locations, their shared interest in applied geographical inquiry did exist. It was a matter of epistemological differences as to the way in which to conduct this research. Moreover, Berry stated that Applebaum was influential to his development of research activities outside of the discipline, acting as a mentor to establish a consulting business and assisting in the development of leads (Personal Correspondence with Berry, 7/6/20). Thus, it is not as if Applebaum was completely ignored by the discipline, rather his impact was felt outside of the pages of academic journals, the halls of American geography departments, and intimate settings of academic conferences. It was a personal impact, felt through mentorship and connection-making.

3.8 Applebaum’s Legacy: Applied Geography, Site Selection, and the Birth of Radical Geography

After more than a decade of teaching at Harvard, Applebaum officially retired in 1968 and relocated to Florida where he continued consulting and publishing, selling his techniques in the form of textbooks. Applebaum would die in 1978, contributing to his fields of knowledge until a few years before his death (Harvard University, 2005).

Applebaum's legacy in the world and the discipline lives on in a number of key ways. Perhaps most obviously, are the practices of site selection in the retail industry writ large and the overall formation of a built environment that prioritizes size, scale, efficiency, and profit over all else. Here, applied and business geographies continue to assist business and government entities in spatially organizing and operating effectively. While Applebaum's work is reflective of the marketing patterns of the mid-twentieth century, the intellectual framework and methods continue to guide a new generation of academics and practitioners (Rice and Hernandez, 2016).

Moreover, while largely forgotten within in the discipline, the desires behind these methods constitute a piece of the development of modern GIS and geotechnology applications. While the use of computer maps beyond the 1960s SYMAP experiments in his research was nonexistent, the integration of geography, marketing, and retailing is an important use of GIS which continues to provide employment for non-academic geographers. In fact, Applebaum was an early advocate for computing in business research and worked with early versions of SYMAP at Harvard to automate and computerize the site selection process (Applebaum, 1968). This map is likely among some of the earliest digital site selection work conducted (Figure 3.8).²⁸

²⁸ Another interesting footnote is the relationship between William Warntz (who took over leadership for the Harvard Laboratory for Computer Graphics in 1968) and Applebaum in their shared interest in food costs. Warntz's dissertation at the University of Pennsylvania Department of Geography and Industry (located in the Warton School of Business nonetheless) was entitled *Towards a Geography of Price* and analyzed crop production and consumer demand (Warntz, 1959).

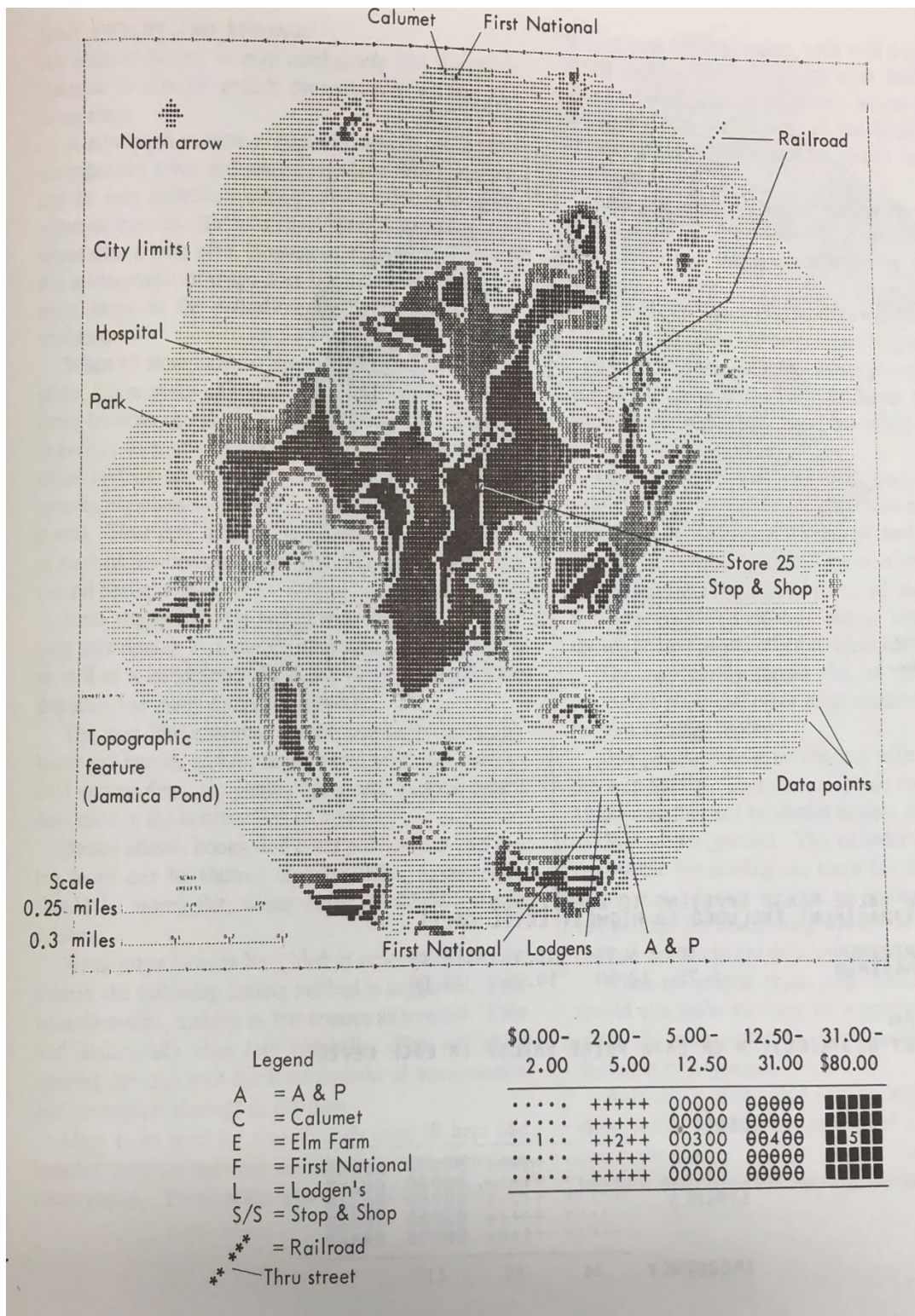


Figure 3.8 Early SYMAP output of supermarkets in the Greater Boston Area indicating average weekly value of groceries sold. (Applebaum, 1968)

Perhaps ironically and paradoxically for someone whose main contributions to the discipline were methodological, empirical, and in business relationship, Applebaum had an impact on that formation of radical geography through his protegee Saul Cohen. Cohen is well-regarded for reinvigorating the geography department at Clark University during the 1960s, which in addition to maintaining non-quantitative human geography also birthed the critical and radical revolutions within the discipline. Cohen, who spent most of 1950s at Boston University, had assisted Applebaum with grant work and set up his own independent site selection company (Waterman, 2002). In the early 1960s, Cohen spent time in Washington, DC cultivating contacts among federal government agencies, allowing him understand the needs and desires of major federal funders (Huber et al., 2019). This education, in convincing funders to provide money and in understanding what the federal government was willing to fund, proved to be important to his future work.

When recruited by Clark University in 1965, the President of the university at the time remarked to Cohen that “I’ll give you anything you want. There’s only one thing I can’t give you—money.” To this Cohen replied, “I don’t need money” (Huber et al., 2019) Utilizing his funding connections and skills Cohen secured a major grant from the National Science Foundation, so large that it allowed the geography department to build a new building on Clark’s campus and to hired a number of young geographers onto the faculty. Several of these hires, including Dick Peet, would help birth radical and critical geography in the United States.²⁹ Doubly ironic is the impact that these events would

²⁹ Ironically, Dick Peet was known to claim that before the advent of Marxist geography, all geographers looked at were supermarkets.

have. Applebaum pioneered the techniques that functionally led to food deserts (here defined as the lack of easy geographical access to grocery stores) in major cities and rural areas, utilizing a matrix of maximum profitability. As Applebaum wrote in a 1964 trade publication, "... most companies address their research to the question, 'Will this location be profitable?', rather than to the more important question, 'Where are the most profitable sites for us?'" (Harvard Business School Archives). Under this rubric, poorer, disenfranchised communities were more likely to have their grocery stores shuttered or not have a new supermarket built, creating the beginnings of the food desert. By 1966, food studies scholars had begun to document the lack of available food in urban areas (Beaulac et al., 2009). By 1970, as smaller chains like A&P began to decline and the large supermarkets well-known to consumers today emerged as the standard in new supermarket construction, places like Cincinnati continued to see the number of supermarkets decline. More than thirty years after Applebaum's departure from Cincinnati, in 1971 had a total 54 stores within the city limits, a decline in 193 grocery stores from 1940 (Gwynn, n.d.). It is ironic then, that the direct impact of Applebaum's expertise would lead to the rise of critical geography, and sustained critical analysis and movement to challenge Applebaum's legacy within the food retailing industry.

CHAPTER 4. CONCLUSION

In writing this thesis, I have explored the social aspects of the discipline, weaving together two separate but related stories that help illuminate the impact of the past on the current state of the discipline. Through the construction of this historical geographical narrative, I have sought to examine the changing nature of geography's practical applications to illuminate where we have been and where we might go. As these chapters have shown, representation and abstraction via cartographic aids and site selection have played an important role in bringing the discipline to bear outside of the academy.

The process writing history is both never neutral and always personal (Barnes, 2014). In the process of writing this thesis, I have also revealed a good deal about my own personal interests and desires for the discipline. Conducting research into the history of one's own discipline is akin to looking at oneself in a funhouse hall of mirrors—your vision of the discipline becomes distorted, with features shrinking and magnifying in mystifying and comical ways. The path forward and backwards is hardly discernible, forcing you to tread cautiously among the many dead-ends, searching for a path forward. And every now and again you walk into a piece of evidence that makes you see stars.

Writing disciplinary history is also a humbling process. In addition to seeping oneself into the debates of yesteryear, disciplinary history exposes you to the routine milieu of the discipline. As Trevor Barnes has written, recanting his trips to the archive and in conducting oral histories, one gathers more than just new perspectives on the past of the discipline but also the social and personal intangibles that are all too infrequently considered (Barnes, 2014). Unverifiable in a scientific sense, these findings speak towards the idea of geography as a practice.

For instance, rumor has it that Applebaum was denied admission to Graduate School of Geography at Clark University due to being Jewish and was forced to return to return to the University of Minnesota for his year of doctoral work. It is well documented that the discipline was anti-Semitic, however I have yet to come across documentation that directly impugns Applebaum due to his faith. These silences of the archive play out in other ways as well. Richard Hartshorne donated his personal papers to the American Geographical Society Library, where along with the papers of other eminent geographers, they play a critical role in preserving the historic milieu of the discipline. Applebaum was acquainted with Hartshorne from the mid-1920s likely until his death in the late 1970s. For this fifty years of relationship, only a single letter of correspondence remains, in a folder labeled “Miscellaneous Correspondence.”

Similarly, these silences beckon us to look further afield in a quest to better contextualize the silence. For much of this writing process, I had conceived of the first chapter as “groundbreaking” due to the lack of published information about Sanborn maps in academic scholarship of any kind. While this type of hubristic thinking does not make for great scholarship, it does reflect an observation about the state of academic scholarship on Sanborn maps. These silences about the company and its products are reflective of a disciplinary engagement with a different series and sort of questions than the company catered to. For example, until the past few years, there were few geographical perspectives on insurance. Moreover, while the term “map” was in the name of the Sanborn Map Company, the company hired surveyors and not cartographers to draw their maps. In addition to the large scale of the maps, it makes sense for Sanborn maps to have more associated with surveying than mapping, reflecting a telling

disciplinary split between surveying and cartography. The everyday practice of surveying was left to the practical work of the engineer, cartography remained in the realm of art and science, and geography turned its back on both looking to discover different types of knowledge. Given these divisions between surveying, cartography, and geography, we can see how these degrees of separation have left the Sanborn Map Company understudied.

Yet part of the history of Sanborn maps in the academy is not just how geographers have utilized them, but also how they became aware that these maps existed. Map libraries, librarians and catalogers, copyright laws, and cartographic training are all important facets to understanding why there is a dearth of empirical research into the operations and impact of the Sanborn Map Company. Without understanding the practice of the discipline—and of other allied disciplines—it becomes difficult to envision how and why various phenomena have manifested themselves in the discipline.

Another facet of this thesis speaks to the importance of representation and meta-level analysis. By understanding the development of a topic over a long period of time, it becomes possible to understand how these ideas fit into larger concepts and historical periods. I do not claim that my thesis is exceptional from others, rather I argue that the view from “40,000 feet” provides a different understanding of the landscape than the more nuanced details of other forms of analysis. Both examples speak well to this concept. For example, each Sanborn map was an exercise in colonial power and the importance of financial protection for a small section of a larger territory. Yet taken in sum, the patterns of fire insurance mapping in Oklahoma reflects the dynamics of a settler-colonial capitalism that sought to produce maximum profit as quickly as possible.

Applebaum operated in a similar framework—on the ground, his site selection policies influenced only small tracts of land. Yet on a mass scale, it assisted in reshaping the American built environment, prioritizing new suburban retail over older forms of urban retail. His work in training new generations of geographers and business students and in consulting for corporations around the world allowed for these tactics to spread further than one individual could realistically ever achieve. Without understanding Applebaum’s long-term commitments, it is not possible to understand how he fits into the discipline.

Here the role of representation and analysis provides an intellectual operational framework to implement new modes of understanding in mass. These operational currents provide not only an important way of understanding the world, but also in crafting a narrative for other non-geographers to buy into; placing the onus of one’s work on the pragmatic applications to a field of business as opposed to contributing to an intellectual endeavor.

In writing a disciplinary history, you also see that generations of previous scholars have struggled with similar issues, each rising to the challenge in their own unique way. In this era of pandemic, frayed social conditions, and overall dim outlook not only for higher education, but the larger nation, and to some extent the globe; where does geography go from here? What are the values of geography? What is the value of geography?

As I completed this thesis, with Black Lives Matter protests literally blocking the street in front of my home, I finally decided to read Bill Bunge’s *Fitzgerald* (Bunge, 2011). Written during the unrest of the late 1960s, the book documents a nearly four-

hundred-year history of a single square mile of Detroit, with an emphasis on the discriminatory nature of the “inner city.” While initially panned in reviews, over the past several decades this work has emerged with an enduring legacy. The book, which in of itself sought to be a piece of applied geographic descriptive work to educate the masses, is well-regarded for its radical combination of historical, graphical, critical, and descriptive analysis. Yet as Trevor Barnes and Nik Heynen have written:

“*Fitzgerald* is a tortured book, controversial, angry, partial, withering, hyperbolic, with non sequiturs and unsubstantiated claims. It is at the opposite polar end of traditional academic scholarship defined by dispassion, measured judgment, comprehensive-ness, balance, precision, transparent logic, and the painstaking documentation of sources.”

—(Bunge et al., 2011)

Fitzgerald, then, is not a piece of geographic scholarship that other geographers seek to cite for its empirics, but rather for its methods, its presentation, and its impact. The “Truth” of its claims is not the object of debate, but rather the way in which one views and uses geography. The negative reviews of *Fitzgerald* failed to see what the work was trying to do; it was a performative piece of scholarship that blew away the bounds of what geographic scholarship was supposed to be. In this sense, this thesis was not an applied or business approach to history of the discipline. It does not seek to provide concrete actions to implement a new intellectual regime, rather to highlight some of the inherent contradictions of the products of the discipline. The book highlights areas of the discipline that operate in similar ways, showing how poorly received scholarship provides future insights and revelations. Similar to the modern critiques levied against Bunge—a crude understanding and manipulation of race and gender, and outright

hostility to queerness—we can point out other forms of scholarship, that with the benefit of hindsight, fall short of our modern expectations.

Yet in terms of a disciplinary perspective, we find the personalities of the discipline are what make it operate. Producing scholars that are capable of a wide variety of work is important: Bunge made rapid shifts from quantitative work to heavily grounded social-theory work in the span of a few years (this also mirrors the development of David Harvey who swung from historical geography to quantification to Marxism in about fifteen years). Perhaps then, the lesson is a need to foster and craft a discipline where geographers are open to embracing to a wide variety of approaches, interests, and intellectual frameworks; asking individuals to command a large breadth of material and skillsets that allow them to morph to fit the world around them. It also then seems critical to explicitly impart this into our teaching, marketing, and overall view of the discipline. Similar to the liberal arts school approach, which stresses the development of critical thinking, geographers can combine our skillset and empirics to develop a wide-ranging field of relevance to civil society, the academy, and the applied world. Thus, it is a commitment to the discipline in all of its forms, regardless of how obscure, perverse, or unjust. It is critical to build a discipline that advances a vision of the shared society where geographers find themselves critical cogs in the system.

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